Development Review Committee

September 11, 2025 at 2:00 PM
Howey-in the-Hills Town Hall
101 N. Palm Ave.,
Howey-in-the-Hills, FL 34737

Join Zoom Meeting: https://us06web.zoom.us/j/85424210949?pwd=y708M7enmhT27wryNtRbQK7MCehCer.1
Meeting ID: 854 2421 0949 | **Passcode:** 187304

AGENDA

CALL TO ORDER
ATTENDANCE

NEW BUSINESS

1. Discussion: **Hillside Groves Amenity Center - Final Site Plan Submittal**
2. Discussion: **Mission Rise - Phase 1 - Final Subdivision Plan Submittal**
3. Discussion: **Esch Final Site Plan Submittal**

PUBLIC COMMENTS
Any person wishing to address the Development Review Committee and who is not on the agenda is asked to speak their name and address. Three (3) minutes is allocated per speaker. The general Public Question & Comment period will be limited to a maximum of thirty (30) minutes unless extended by the Presiding Officer.

ADJOURNMENT

To Comply with Title II of the Americans with Disabilities Act (ADA):

Qualified individuals may get assistance through the Florida Relay Service by dialing 7-1-1. Florida Relay is a service provided to residents in the State of Florida who are Deaf, Hard of Hearing, Deaf/Blind, or Speech Disabled that connects them to standard (voice) telephone users. They utilize a wide array of technologies, such as Text Telephone (TTYs) and ASCII, Voice Carry-Over (VCO), Speech to Speech (STS), Relay Conference Captioning (RCC), CapTel, Voice, Hearing Carry-Over (HCO), Video Assisted Speech to Speech (VA-STS) and Enhanced Speech to Speech.

Howey Town Hall is inviting you to a scheduled Zoom meeting.
Topic: **Development Review Committee**
Time: **Sept. 11, 2025 02:00 PM Eastern Time** (US and Canada)
Join Zoom Meeting
https://us06web.zoom.us/j/85424210949?pwd=y708M7enmhT27wryNtRbQK7MCehCer.1

Meeting ID: 854 2421 0949
Passcode: 187304

Please Note: In accordance with F.S. 286.0105: Any person who desires to appeal any decision or recommendation at this meeting will need a record of the proceedings, and that for such purposes may need to ensure that a verbatim record of the proceedings is made, which includes the testimony and evidence upon which the appeal is based. The Town of Howey-in-the-Hills does not prepare or provide this verbatim record. Note: In accordance with the F.S. 286.26: Persons with disabilities needing assistance to participate in any of these proceedings should contact Town Hall, 101 N. Palm Avenue, Howey-in-the-Hills, FL 34737, (352) 324-2290 at least 48 business hours in advance of the meeting.

September 10, 2025
Prepared for
Town of Howey-in-the-Hills
Attn: Sean O'Keefe, Town Manager

Hillside Groves Amenity Center – Final Site Plan

Applicant: Meritage Homes

Planning staff reviewed the proposed Esch Veterinary final site plan. Review comments are provided below and will need to be addressed before the Planning and Zoning Board can consider the application.

1. Please provide on the West and East elevations an additional massing/articulation detail incorporating the required second massing technique.

2. Please show samples of the building color palette.

3. Can the perimeter trees be a Street Tree instead of the Crape Myrtle? We can discuss this in DRC.

4. Please provide details on any hardscape elements consistent with LDC Section 7.07.00 as applicable. Examples would be dog park receptacles, fencing, benches.

5. The exterior pool fence should be in keeping with the style reflected in the Development Agreement. This would not be plain PVC but more of a stucco or ornate material. I have attached a copy of the Development Agreement. We can discuss this in DRC.

6. Please identify how the irrigation plan is consistent with LDC Sec. 7.06.00.

Record and Return to:

Thomas J. Wilkes
Gray Robinson, P.A.
301 East Pine Street, Suite 1400
Orlando, FL 32801

As approved by Town Council
for the Town of Howey-in-the-Hills, Florida

Electronically recorded in Lake
County, FL on 2/25/2022
at Book 5903, PG 1507

AMENDED AND RESTATED DEVELOPER'S AGREEMENT

THE RESERVE AT HOWEY-IN-THE-HILLS

This **AMENDED AND RESTATED DEVELOPER'S AGREEMENT for THE RESERVE AT HOWEY-IN-THE-HILLS** ("Agreement") is made as of the 8th day of November, 2021, among the **Town of Howey-in-the-Hills, Florida,** a Florida municipal corporation, whose address for purposes of this Agreement is 101 North Palm Avenue, Howey-in-the-Hills, Florida 34737 (the "Town"), **Eagle's Landing at Ocoee, LLC**, a Florida limited liability company f/k/a Eagles Landing at Ocoee, Inc., a Florida corporation, whose address for purposes of this Agreement is P.O. Box 770609, Winter Garden, Florida 34777, **Howey In the Hills, Ltd.**, a Florida limited partnership, whose address for purposes of this Agreement is 10165 NW 19th Street, Miami, Florida 33172 and **REO Funding Solutions, IV, LLC**, a Georgia limited liability company whose address for purposes of this Agreement is 100 N Tampa ST Suite 1850, Tampa, Florida 33602 (collectively, the "Owners").

RECITALS

A. The Owners are the owners of an approximately 378-acre parcel of property more particularly described on **Exhibit "A"** ("the Property").

B. The Property is within the corporate limits of the Town. The Town has assigned the Property a future-land-use designation of Village Mixed Use and has zoned the Property for PUD-Planned Unit Development.

C. The Property is subject to The Reserve at Howey-in-the-Hills Developer's Agreement, among the Town, Florida, Eagle's Landing at Ocoee, Inc., a Florida corporation, and Howey-in-the-Hills, Ltd., a Florida limited partnership, recorded July 30, 2007, in Official Records Book 3480, Page 221 of the Public Records of Lake County, Florida, and the Owners and the Town desire to amend and restate same.

D. The Owners intend to develop the Property as a mixed-use planned development consisting of single-family residential, multi-family residential, commercial and institutional land uses as more specifically set forth herein ("the Project").

INSTRUMENT#: 2022026503 OR BK 5903 PG 1507 PAGES: 37 2/25/2022 9:08:24 AM
GARY J. COONEY, CLERK OF THE CIRCUIT COURT & COMPTROLLER, LAKE COUNTY, FLORID
REC FEES: $316.00

12-9-2021

Record and Return to:

Thomas J. Wilkes
Gray Robinson, P.A.
301 East Pine Street, Suite 1400
Orlando, FL 32801

As approved by Town Council
for the Town of Howey-in-the-Hills, Florida

AMENDED AND RESTATED DEVELOPER'S AGREEMENT

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C. The Property is subject to The Reserve at Howey-in-the-Hills Developer's Agreement, among the Town, Florida, Eagle's Landing at Ocoee, Inc., a Florida corporation, and Howey-in-the-Hills, Ltd., a Florida limited partnership, recorded July 30, 2007, in Official Records Book 3480, Page 221 of the Public Records of Lake County, Florida, and the Owners and the Town desire to amend and restate same.

D. The Owners intend to develop the Property as a mixed-use planned development consisting of single-family residential, multi-family residential, commercial and institutional land uses as more specifically set forth herein ("the Project").

E. The Town and the Owners desire to enter into this Agreement in order to set forth the negotiated terms and conditions of approval for the development of the Property.

NOW, THEREFORE, the Town and the Owners agree as follows:

1. Recitals. The foregoing recitals are true and correct and are hereby incorporated as terms.

2. Authority. This Agreement is entered into by the Town under the home rule powers granted to it by the Florida Constitution (including Article VIII, Section 2(b) thereof), the home-rule powers granted municipalities by statute and otherwise (including Chapters 163 and 166, Florida Statutes), and the Town's Charter. This Agreement does not constitute a "development agreement" under the Florida Local Government Development Agreement Act.

3. Relationship to Land Development Regulations. The Owners shall abide by and comply in all respects with the requirements of the Town's Land Development Regulations, including without limitation, those pertaining to planned unit developments and this Agreement. However, in the event of conflict between this Agreement and the Town's Land Development Regulations, this Agreement shall control to the extent of such conflict.

4. Amendment and Restatement of Prior Developer's Agreement. The Owners or their predecessors in interest previously entered into The Reserve at Howey-in-the-Hills Developer's Agreement, among the Town, Eagle' s Landing at Ocoee, Inc., a Florida corporation, and Howey-in-the-Hills, Ltd., a Florida limited partnership, recorded July 30, 2007 in Official Records Book 3480, Page 221, of the Public Records of Lake County, Florida ("2007 Agreement"). The Owners and the Town desire to amend and restate that 2007 Agreement as set forth herein.

5. Howey in the Hills PUD Plan. The Owners shall develop the Property in compliance with **The Reserve At Howey in the Hills PUD** prepared by Connelly & Wicker, Inc., for the Project and approved by the Town concurrently herewith and attached hereto as **Exhibit "B"** and incorporated herein by reference (the "Plan"). However, in the event of conflict between this Agreement and the Plan, this Agreement shall control to the extent of such conflict.

As depicted on the Plan, the Owners shall have the right to develop the Property with up to 740 single-family residential units, comprised of a mix of detached and attached (townhomes) units, and up to 105,716 square feet of Office/Storage use. The Owners may develop the Property with up to 300,000 square feet of Retail/Office Commercial use and up to 100,000 square feet of Institutional use in conformance with both the Plan and the building pads, building elevations, and square footages set forth on **Exhibit "C"** and **Exhibit "D"** to this Agreement.

Any amendments to the Plan that occur after the effective date of this Agreement shall take effect only if and when approved by the Town Council or Town staff as applicable. Major amendments shall include items such as changes to the location of individual land uses; any increase in the total number of residential units; or relocation of roads and routes for pedestrian and bicycle facilities. Major amendments shall be approved using the same procedure as for adoption of this agreement. Minor amendments shall include items such as minor adjustments of

roads, trails and pedestrian ways based on more detailed site-specific data; modifications to the phasing schedule; adjustments to utility locations based on more detailed engineering data; or adjustments to parks and open space based on more detailed subdivision design. Minor amendments may be approved by the Town Council or Town staff as applicable. Minor amendments to the Plan shall automatically be incorporated into this Agreement and shall modify or replace the Plan to the extent of such amendment to the Plan, without the necessity for an amendment to this Agreement. Whether a proposed amendment is major or minor under this Agreement shall be determined by the Mayor or his/her successor.

The Town hereby acknowledges and agrees that the Project, as depicted on the Plan (and any amendments to the Plan, which amendments must first be approved by the Town Council), is consistent with its Comprehensive Plan and Land Development Regulations. The proposed plans as presented in Exhibit B shall be deemed to meet the requirements for a preliminary subdivision plan provided that a complete survey with boundaries, topography and trees is presented with each phase of the project proposed for approval of a final subdivision plan or final site plan.

Unless the Town Council grants an extension of time, the Owners shall submit a final subdivision plan or final site plan for Phase I or at least one other Phase as designated on the Plan to the Town within eighteen months following the date of execution of this Agreement.

6. Phasing Schedule. The phasing schedule shall be as shown on the Plan. It is recognized that this Phasing Schedule is general in nature and may be modified by notification to the Town and approved by the Town as a minor amendment to this development agreement. The Owner agrees to include the completion of the spine road from the Phase 1 boundary to Number Two Road as part of the Phase 1 improvements.

7. Signage. Entrance signs and informational signage may be located in buffers, setbacks and/or signage easements as approved by the Planning and Zoning Commission.

8. Wetlands. Impacts to wetlands, if any, and wetland buffering shall be subject to the St. Johns River Water Management District regulations.

9. Setbacks.

9.1 SR 19 Setbacks. All buildings shall have a minimum setback distance of 100 feet from the centerline of State Road 19; provided, however, the minimum setback requirement may be reduced to 75 feet from such centerline if a landscape-buffer easement is utilized, which buffer contains, at a minimum, a similar planting schedule and requirement as that approved by the Town for the Venezia South project located adjacent to the Property to the east.

9.2 Perimeter Setbacks. Perimeter setbacks shall as identified in the approved Plan.

9.3 Wetlands Setbacks. Wetlands setbacks shall be as required by the St. Johns River Water Management District.

10. Water, Wastewater and Reclaimed Water Service. The Owners currently have a contract with the Central Lake Community Development District ("CDD") under which the Project will receive wastewater treatment and disposal services from the CDD's wastewater facilities. The Town shall provide potable water and reclaimed water in accordance with all applicable ordinances, resolutions, operating regulations, policies and procedures. Except as may be set forth otherwise in this Agreement, the Owners shall install on-site facilities, connect to the Town's systems, and pay applicable capital and connection charges and other Town rates, fees, and charges.

10.1 Reclaimed Water. The Owners shall install reclaimed water lines, as required by the Town's Code of Ordinances, and shall obtain reclaimed water service for the Project at such time the Town constructs its reclaimed water lines to the Project's boundaries. Until such time as the Town supplies reclaimed water, the Owners may use the reclaimed water lines to irrigate properties within the Project boundaries with stormwater from on-site wet stormwater detention ponds or alternative and available sources acceptable to Owners and the Town.

10.2 Water.

i. Water Service. If and to the extent allowed by, and subject to the limitations and requirements of, the permits issued to the Town from time to time by the St. John's River Water Management District in connection with water consumption, the Town shall provide potable water service to the Property in sufficient quantities as to allow for development of the Project as contemplated herein. Notwithstanding the foregoing, the Town acknowledges and agrees that it has the actual capacity to serve the Property with potable water service in sufficient quantities as to allow for development of the Project as contemplated herein and that such capacity shall be reserved upon the payment of impact fees to the Town.

The Owners shall construct, at their expense, the facilities (exclusive of water treatment plants), lines and appurtenances necessary to serve the Project. The route of any off-site lines shall be according to engineering plans produced by the Owners and approved by the Town Council, which approval shall not be unreasonably withheld, conditioned or delayed. If roads within the Project are private, the Owners shall provide the utility owner with utility easements for waterlines and sewer lines.

ii. Town's Option to Oversize Water Lines. Within ninety (90) days of the date of this Agreement, the Town Council may elect to oversize such lines, improvements or appurtenances for the Town's use in the expansion of its potable water system and will inform the Owners in writing of the specifications for such oversizing. In the event the Town so elects to oversize such improvements, then the Town shall be responsible for the difference in the cost of design, materials and construction to oversize the improvements based on plans and cost estimates provided by the Owners to the Town, and approved by the Town Council, which approval shall not be unreasonably withheld, conditioned or delayed. The Town

shall reimburse the Owners for the difference in such costs in the form of cash. The Town shall make such reimbursement to the Owners within sixty (60) days following a written request therefor from the Owners, accompanied by such supporting documentation as is reasonably necessary to demonstrate that the Owners have incurred and paid the costs which are attributable to such over-sizing in keeping with the plans and cost estimate previously approved by the Town Council.

iii. Permit-Induced Costs, Restrictions, Requirements, and Risks. Under state and federal laws and regulations, the Town may provide its potable water service to the Property and the Owners only if the Town first has been issued certain permits, and the Owners acknowledge that the permits are inevitably conditioned with requirements and restrictions that typically impose costs and risks. The Owners further acknowledge that, for the Town to operate its potable water system in an orderly, dependable, and cost-effective manner, the Town must have the ability legally to spread the costs and risks among its customers and property owners who benefit from the service. The Owners acknowledge, therefore, (i) that from time to time the Town may impose fees and charges and may issue potable water system regulations and policies that impose restrictions and requirements on its customers and benefiting property owners, such as the Owners, and (ii) so long as the Owners are required to pay only their fair share for such fees and charges, then the imposition of such fees and charges and the issuance of such system regulations are not prohibited by or otherwise a breach of this Agreement.

iv. Water Meters and Reuse Meters: In lieu of individual water meters and reuse water meters for each property served, the Owners may propose and the Town may approve the use of master meters for either or both water and reuse water services.

10.3 Wastewater. The parties acknowledge and agree that the Owners have entered into that certain Agreement and Commitment for Utility Services, dated June 21, 2005 (the "Utilities Commitment"), with the CDD, the terms of which provide, in relevant part, that the Project will receive wastewater treatment and disposal service from the wastewater facilities of the CDD.

The Owners acknowledge that (i) from time to time the Town may impose fees and charges and may issue wastewater-system regulations and policies that impose restrictions and requirements on its wastewater customers and benefiting property owners, such as the Owners, and (ii) the imposition of such fees and charges and the increase of such regulations are not prohibited by or otherwise a breach of this Agreement.

11. Owner's Associations.

11.1 Association Responsibilities. The Owners or a homeowner's association and/or a property owner's association created by the Owners, but not the Town, shall be responsible for maintaining any and all parks, open space areas, streetlights, stormwater

management areas, entrance features, boundary walls and/or fences, access tracts and landscaped tracts within the Project. The Town shall maintain waterlines within the Project and the sewer lines which serve the property within the Project.

11.2 Requirement for Plat Recording. Before a plat may be recorded for the Property and the Project, the Owners shall furnish to the Town copies of the pertinent documents for the homeowners' or property owners' association and the covenants, conditions and restrictions for the Property, setting forth the requirements and restrictions enumerated in this section 11 and other applicable parts of this Agreement.

12. Streets, Sidewalks, and Parking.

12.1 Streets. All streets shall be public and shall be dedicated to and maintained by the Town, with the exception of alleys as defined and depicted on Exhibit B, which shall be private and maintained by a homeowners' association and/or a property owners' association. No streets in the Project may be gated or otherwise restricted or obstructed by the Owners, by a homeowners' or property owners' association, or by any other person or entity.

12.2 Sidewalks. All sidewalks within rights-of-way shall be dedicated to and maintained by the Town.

13. Utility Easement. Prior to the issuance of a building permit for any given phase of the Project, the Owners shall convey to the Town a five-foot (5') utility easement to be located adjacent to, and on both sides of, the right-of-way of any street (public or private) serving such phase of the Project. The planting of trees within any such easement shall be prohibited.

14. Irrigation. On-site wet ponds shall be used to irrigate the common landscaped areas, unless prohibited by the St. John's River Water Management District.

15. Necessity of a Letter of Credit. Construction and dedication to the Town of any new public facilities or improvements that are required to be constructed as part of this Agreement will be a condition precedent to final plat approval; provided, however, in lieu of such construction and dedication, the Owners may post a letter of credit with the Town for one hundred twenty-five percent (125%) of the cost of such improvements, in which event the condition precedent to final plat approval will be deemed satisfied.

16. Transportation. The Owners have submitted to the Town a traffic analysis prepared by Traffic & Mobility Consultants, LLC and dated November 2021 (the "Study"). If the results of the Study require any mitigation for traffic generation, the Town and the Owners work together and with any other applicable jurisdiction as required by applicable law to address such mitigation requirements. Any connections to SR-19 shall be approved by permit from the Florida Department of Transportation and any connection to Number Two Road shall be approved by permit from Lake County.

17. School Concurrency. The Project shall be placed on the Town's "exempt" status list to be provided to Lake County and exempted from school concurrency requirements if the following requirements are completed on or before the date that the school concurrency element is adopted by the Town: (i) the Project has Preliminary Plan approval with no outstanding

conditions, and (ii) this Developer's Agreement has been finalized and executed by all parties hereto. Inclusion on the "exempt" status list will not guarantee that the Project will remain on the list until after a formal determination has been rendered by the Town Council as to whether the Project is vested for school concurrency purposes in accordance with Florida law. With submittal of the initial final subdivision plan or site plan, the Owner shall provide written confirmation from the School Board of Lake County confirming the Project's exempt status or otherwise meeting the concurrency requirements of the District.

18. Binding Effect. This Agreement is binding upon and enforceable by and against the parties hereto and their successors in interest. This Agreement runs with the land and is binding on and enforceable by and against all successors in interest. However, no Lot Owner shall have the rights or obligations of the Owners under this Agreement. For that purpose, a "Lot Owner" means an end-user of a lot created within the Property with a completed residential unit constructed thereon, for which a certificate of occupancy has been issued. Each party covenants to each other party that this Agreement is a legal, valid, and binding agreement, enforceable against the party in accordance with its terms. Finally, no persons or entities other than the Owners and the Town and their respective successors in interest have any rights under this Agreement. To that end, the parties declare there are no third-party beneficiaries.

19. Notices. All notices or payments required to be made hereunder shall be made at the following addresses:

To Town:
Hon. Martha MacFarlane, Mayor,
Town of Howey-in-the-Hills
101 North Palm Avenue
Howey-in-the-Hills, FL 34737
mmacfarlane@howey.org

With copies to:
Sean O'Keefe, Town Administrator
Town of Howey-in-the-Hills
101 North Palm Avenue
Howey-in-the-Hills, FL 34737
sokeefe@howey.org

Thomas J. Wilkes
Gray Robinson, P.A.
301 East Pine Street, Suite 1400
Orlando, FL 32801
twilkes@gray-robinson.com

To Owner:
Eagles Landing at Ocoee, Inc.
Attention: Randy June
June Engineering Consultants, Inc.
23 W. Joiner Street
Winter Garden, Florida 34787
randy@jec3.com

With a copy to: C. Nick Asma, *Esquire*
Asma & Asma, P.A.
884 South Dillard Street
Winter Garden, Florida 34787
Phone: 407-656-5750 | Fax: 407-656-0486
Nick.Asma@asmapa.com

To Owner: Howey in the Hills, Ltd.
Attention: Edward J. Easton
10165 NW 19th Street
Miami, FL 33172

With copies to: Joe Hernandez
Weiss, Serota Helfman Cole and Bierman, P.L
2525 Ponce de Leon Blvd. Suite 700
Coral Gables, Florida 33134
jhernandez@wsh-law.com

Lennar
Attn. Mark McDonald
6675 Westwood Boulevard, 5th Floor
Orlando, Florida 32821
Mark.McDonald@Lennar.com

To Owner: REO Funding Solutions IV
100 N Tampa ST
Suite 1850,
Tampa, FL 33602

With copies to: Turnstone Group
Attn: Jason Humm
1170 Peachtree St. NE, STE 1150
Atlanta, Georgia 30309
jhumm@turnstonegroup.com

Mike Ripley, Senior Advisor
399 Carolina Ave, Suite 200
Winter Park, Florida 32789
o|407.425.5988 c|407.310.6701
mripley@landadvisors.com

Jonathon Huels
Lowndes
215 North Eola Drive
Orlando, Florida 32801
Jonathan.huels@lowndes-law.com

20. Entire Agreement. This Agreement constitutes the entire agreement of the parties with respect to the transactions contemplated herein, and it supersedes all prior understandings or agreements between the parties relating to this Agreement. No amendment to the terms of this Agreement shall be effective unless it is in writing signed by all parties hereto. Amendments to this Agreement will take effect and will be binding against the Town only if approved by a vote of the Town Council.

21. Waiver. The failure of any party hereto to insist upon or enforce any right or privilege granted hereunder shall not constitute or operate as a waiver thereof and nothing shall constitute a waiver of any party's right to insist upon strict compliance with the terms hereof. Provided however, any party may, in writing, waive the benefit of any provision or condition for its benefit which is contained herein. Waivers of material provisions of either this Agreement or the Town's Land Development Regulations will be valid and binding against the Town only if approved by a vote of the Town Council.

22. Governing Law. This Agreement shall be governed by the law of the State of Florida. Venue for any judicial proceeding pertaining to the Agreement shall be in the Fifth Judicial Circuit of Florida, in Lake County, Florida.

23. Severability. If any provision of this Agreement is found by a court of competent jurisdiction to be invalid or unenforceable to any extent, the remainder of this Agreement shall not be affected thereby and shall remain enforceable to the greatest extent permitted by law.

24. Recording. This Agreement shall be recorded in the Public Records of Lake County, Florida, by the Owners, at their expense.

25. Negotiated Agreement. The land uses, densities, intensities and all of the conditions of approval of the Plan have been negotiated and agreed to by all the Owners and the Town. The Plan constitutes an agreement among the parties with the knowledge that the Owners' successors in title, the future homeowners and other landowners within the Property, as well as the Town all will rely justifiably on the agreed-to mix of land uses, densities, and intensities being authorized hereby for the Property. For that reason, the Owners and the Owners' successors in interest have the contract right to develop the PUD with the uses, densities and intensities approved by the Town, subject to the restrictions and requirements in the conditions of approval. Neither the Owners (or their successors in interest) nor the Town shall have the right in the future to rezone or downzone the property, or otherwise alter the uses, densities and intensities, or delete, waive or amend any conditions of approval except through an amendment to the Plan (i) negotiated and approved by the Town and the Owner of the then-subject parcel or (ii) as set forth in Section 5 above. This section shall survive the termination and expiration of this Agreement.

26. Effective Date. This Agreement shall become effective concurrently with the effectiveness of Ordinance 2021-10 after its approval by the Town Council and execution of this Agreement by all parties.

[Signatures on the following pages]

IN WITNESS WHEREOF, the parties have executed this instrument as of the day and year first above written.

TOWN OF HOWEY-IN-THE HILLS, FLORIDA
By: its Town Council

By: _____
Martha MacFarlane, Mayor

Attest:

By: _____
John Brock, Town Clerk

Approved as to form and legality:
(for the use and reliance of the Town only)

By: _____
Thomas J. Wilkes, Town Attorney

STATE OF FLORIDA
COUNTY OF LAKE

The foregoing instrument was executed, sworn to and acknowledged before me by means of ✓ physical presence or ___ online notarization, this 4 day of February, ~~2021~~ 2022 by MARTHA MACFARLANE, as Mayor of TOWN OF HOWEY-IN-THE-HILLS, a Florida municipal corporation, on its behalf.

(SEAL)

Notary Public State of Florida
Herbert R. Thomas
My Commission HH 148981
Expires 07/05/2026

_____
Signature of Notary Public

_____
Name of Notary Public
(Typed, Printed or stamped)

Personally Known ✓ ***OR*** Produced Identification _____
(Type of Identification Produced)

IN WITNESS WHEREOF, the parties have executed this instrument as of the day and year first above written.

Signed, sealed and delivered
in the presence of:

"WITNESSES"

Printed Name: Nick Asma

Printed Name: Sharon D. Morgan

"OWNER"

EAGLES LANDING AT OCOEE, LLC,
a Florida limited liability company f/k/a Eagles Landing at Ocoee, Inc., a Florida corporation

By: _____
Printed Name: ROLAND A. JUNE II
As its: MANAGER

STATE OF FLORIDA
COUNTY OF ORANGE

The foregoing instrument was executed, sworn to and acknowledged before me by means of ✓ physical presence or _____ online notarization, this 19 day of JANUARY, 2022, by ROLAND A. JUNE II, as MANAGER of EAGLES LANDING AT OCOEE, LLC, a Florida limited liability company f/k/a Eagles Landing at Ocoee, Inc., a Florida corporation, on its behalf.

(SEAL)

Notary Public State of Florida
Charles Nicholas Asma
My Commission GG 367176
Expires 11/06/2023

Signature of Notary Public

Name of Notary Public
(Typed, Printed or stamped)

Personally Known ✓ ***OR*** Produced Identification _____
(Type of Identification Produced)

IN WITNESS WHEREOF, the parties have executed this instrument as of the day and year first above written.

Signed, sealed and delivered in the presence of:

"WITNESSES"

Printed Name: Carmen Esteban

Printed Name: Lenette Trivett

"OWNER"

HOWEY IN THE HILLS, LTD., a Florida limited partnership

By: _____

Printed Name: Edward W. Easton

Title: _____

STATE OF FLORIDA
COUNTY OF Miami-Dade

The foregoing instrument was executed, sworn to and acknowledged before me by means of ✓ physical presence or _____ online notarization, this 5 day of Jan, 2022 by Edward W Easton, as Manager of HOWEY IN THE HILLS, LTD., a Florida limited partnership, on its behalf.

(SEAL)

LENETTE TRIVETT
Notary Public - State of Florida
Commission # HH 167678
My Comm. Expires Nov 29, 2025
Bonded through National Notary Assn.

Signature of Notary Public

Lenette Trivett

Name of Notary Public
(Typed, Printed or stamped)

Personally Known ✓ ***OR*** Produced Identification _____
(Type of Identification Produced)

IN WITNESS WHEREOF, the parties have executed this instrument as of the day and year first above written.

Signed, sealed and delivered
in the presence of:

"WITNESSES"

Matthew D Sullivan
Printed Name: Matthew Sullivan

Kevin Sullivan
Printed Name: Kevin Sullivan

"OWNER"

REO FUNDING SOLUTIONS IV, LLC, a Georgia limited liability company

By: _____
Printed Name: Rudy Newell
As its: Vice President

STATE OF ~~FLORIDA~~ Minnesota
COUNTY OF Hennepin

The foregoing instrument was executed, sworn to and acknowledged before me by means of X physical presence or _____ online notarization, this 2 day of Feb, 2021, by Rudy Newell, as Vice President of **REO FUNDING SOLUTIONS IV, LLC.**, a Georgia limited liability company, on its behalf.

(SEAL)

Brad Lee Halbersma
NOTARY PUBLIC
MINNESOTA
My Commission Expires Jan 31, 2024

Signature of Notary Public

Brad Halbersma
Name of Notary Public
(Typed, Printed or stamped)

Personally Known X ***OR*** Produced Identification _____
(Type of Identification Produced)

Exhibit A
to
Amended & Restated Developer's Agreement
The Reserve at Howey-in-the-Hills

LEGAL DESCRIPTION

BEGIN AT THE NORTHWEST CORNER OF THE SOUTHWEST 1/4 OF THE NORTHWEST 1/4 OF THE NORTHWEST 1/4 OF THE NORTHEAST 1/4 OF SAID SECTION 35; THENCE RUN EAST ALONG THE NORTH LINE THEREOF TO THE NORTHEAST CORNER OF THE SAID SOUTHWEST 1/4 OF THE NORTHWEST 1/4 OF THE NORTHWEST 1/4 OF THE NORTHEAST 1/4; THENCE RUN SOUTHEASTERLY ALONG A STRAIGHT LINE TO THE NORTHEAST CORNER OF THE SOUTHWEST 1/4 OF THE NORTHWEST 1/4 OF THE NORTHEAST 1/4 OF SAID SECTION 35; THENCE RUN SOUTH ALONG THE EAST LINE THEREOF, TO THE SOUTHEAST CORNER OF THE SAID SOUTHWEST 1/4 OF THE NORTHWEST 1/4 OF THE NORTHEAST 1/4; THENCE RUN WEST ALONG THE SOUTH LINE THEREOF TO THE SOUTHWEST CORNER OF THE SAID NORTHWEST 1/4 OF THE NORTHEAST 1/4; THENCE RUN NORTH ALONG THE WEST LINE OF THE SAID NORTHWEST 1/4 OF THE NORTHEAST 1/4 TO THE POINT OF BEGINNING; LESS ALL RIGHTS OF WAY FOR STREETS IN HOWEY IN THE HILLS, FLORIDA.

AND ALSO:

ALL OF BLOCK D-14 IN PALM GARDENS, A SUBDIVISION IN THE TOWN OF HOWEY IN THE HILLS, FLORIDA, ACCORDING TO THE PLAT THEREOF RECORDED IN PLAT BOOK 12, PAGE 11, OF THE PUBLIC RECORDS OF LAKE COUNTY, FLORIDA.

ANDO ALSO:

THE SOUTH 3/4 OF THE WEST 1/2; THE NORTHWEST 1/4 OF THE NORTHWEST 1/4, LESS THE RIGHT OF WAY OF A COUNTY CLAY ROAD; AND THE SOUTH 1/4 OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA, IN THE TOWN OF HOWEY IN THE HILLS, FLORIDA.

AND ALSO:

THAT PART OF THE SOUTHWEST 1/4 OF THE NORTHEAST 1/4 AND THAT PART OF THE NORTHWEST 1/4 OF THE SOUTHEAST 1/4 LYING NORTH AND WEST OF THE WESTERLY LINE OF THE RIGHT OF WAY OF STATE ROAD NO. 19, IN SECTION 35, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA, IN THE TOWN OF HOWEY IN THE HILLS, FLORIDA; LESS AND EXCEPT THEREFROM THAT PART THEREOF LYING WITHIN TAYLOR MEMORIAL CEMETERY, ACCORDING TO THE PLAT THEREOF RECORDED IN PLAT BOOK 12, PAGE 5, OF THE PUBLIC RECORDS OF LAKE COUNTY, FLORIDA, AND ALSO LESS ALL RIGHTS OF WAY FOR STREETS IN HOWEY IN THE HILLS, FLORIDA.

AND ALSO:

THAT PART OF THE EAST 1/2 OF THE NORTHEAST 1/4 OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 25 EAST, IN THE TOWN OF HOWEY IN THE HILLS, FLORIDA, BOUNDED AND DESCRIBED AS FOLLOWS: BEGIN AT THE NORTHWEST CORNER OF LOT 1, IN BLOCK D-14, IN PALM GARDENS, ACCORDING TO THE PLAT THEREOF RECORDED IN PLAT BOOK 12, PAGE 11, OF THE PUBLIC RECORDS OF LAKE COUNTY, FLORIDA; THENCE RUN WEST TO THE WEST LINE OF THE NORTHEAST 1/4 OF THE NORTHEAST 1/4 OF THE SAID SECTION 35; THENCE RUN SOUTH ALONG THE WEST LINE OF THE EAST 1/2 OF THE NORTHEAST 1/4 OF THE SAID SECTION 35 TO A POINT ON THE NORTHWESTERLY LINE OF THE RIGHT OF WAY OF STATE ROAD NO. 19; THENCE RUN NORTHEASTERLY ALONG THE NORTHWESTERLY ALONG THE WESTERLY LINE OF THE SAID BLOCK D-14, TO THE POINT OF BEGINNING; LESS ALL RIGHTS OF WAY FOR STREETS IN HOWEY IN THE HILLS, FLORIDA.

AND ALSO:

THAT PART OF THE SOUTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 26, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA, LYING SOUTH OF THE SOUTHERLY LINE OF THE RIGHT OF WAY OF THE COUNTY ROAD. DENOTES PARCEL DESIGNATION FOR CLARITY PURPOSES.

AND ALSO:

COMMENCE AT THE EAST 1/4 CORNER OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA; THENCE RUN N89°21'35"W ALONG THE SOUTH LINE OF THE NORTHEAST 1/4 OF SAID SECTION 35, 1487.79 FEET TO A POINT ON THE NORTHWESTERLY RIGHT-OF-WAY LINE OF STATE ROAD NO. 19; THENCE RUN S52°07'27"W ALONG SAID NORTHWESTERLY RIGHT-OF-WAY LINE, 459.23 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE SOUTHEASTERLY; THENCE RUN SOUTHWESTERLY ALONG THE ARC OF SAID CURVE AND SAID NORTHWESTERLY RIGHT-OF-WAY LINE HAVING A CENTRAL ANGLE OF 14°35'56", A RADIUS OF 2341.83 FEET, AN ARC LENGTH OF 596.69 FEET, A CHORD BEARING OF S44°49'31"W AND A CHORD DISTANCE OF 595.08 FEET TO THE POINT OF BEGINNING; THENCE CONTINUE ALONG SAID NORTHWESTERLY RIGHT-OF-WAY LINE BEING A CURVE CONCAVE SOUTHEASTERLY; THENCE RUN SOUTHWESTERLY ALONG SAID CURVE HAVING A CENTRAL ANGLE OF 22°58'29", A RADIUS OF 2341.83 FEET, AN ARC LENGTH OF 939.04 FEET, A CHORD BEARING OF S26°02'16"W AND A CHORD DISTANCE OF 932.76 FEET; THENCE RUN N75°26'58"W, 402.66 FEET; THENCE RUN S68°12'24"W, 668.73 FEET; THENCE RUN N53°42'00"W, 250.16 FEET; THENCE RUN N12°38'17"E, 257.60 FEET; THENCE RUN N77°21'43"W, 125.00 FEET; THENCE RUN N12°38'17"E, 13.01 FEET TO THE POINT OF

CURVATURE OF A CURVE CONCAVE EASTERLY; THENCE RUN NORTHEASTERLY ALONG THE ARC OF SAID CURVE HAVING A CENTRAL ANGLE OF 39°28'41", A RADIUS OF 75.00 FEET, AN ARC LENGTH OF 51.68 FEET, A CHORD BEARING OF N32°22'37"E AND A CHORD DISTANCE OF 50.66 FEET TO THE POINT OF TANGENCY; THENCE RUN N52°06'58"E, 476.63 FEET; THENCE RUN N54°47'17"E, 150.16 FEET; THENCE RUN N52°06'58"E, 205.75 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE SOUTHERLY; THENCE RUN EASTERLY ALONG THE ARC OF SAID CURVE HAVING A CENTRAL ANGLE OF 62°53'19", A RADIUS OF 24.99 FEET, AN ARC LENGTH OF 27.43 FEET, A CHORD BEARING OF N83°33'05"E AND A CHORD DISTANCE OF 26.08 FEET TO THE POINT OF REVERSE CURVATURE OF A CURVE CONCAVE NORTHWESTERLY; THENCE RUN NORTHEASTERLY ALONG THE ARC OF SAID CURVE HAVING A CENTRAL ANGLE OF 125°45'33", A RADIUS OF 99.99 FEET, AN ARC LENGTH OF 219.47 FEET, A CHORD BEARING OF N52°06'58"E AND A CHORD DISTANCE OF 178.00 FEET TO THE POINT OF REVERSE CURVATURE OF A CURVE CONCAVE SOUTHEASTERLY; THENCE RUN NORTHEASTERLY ALONG THE ARC OF SAID CURVE HAVING A CENTRAL ANGLE OF 62°53'19", A RADIUS OF 24.99 FEET, AN ARC LENGTH OF 27.43 FEET, A CHORD BEARING OF N20°40'51"E AND A CHORD DISTANCE OF 26.08 FEET TO THE POINT OF TANGENCY; THENCE RUN N52°06'58"E, 560.98 FEET TO A POINT ON THE NORTHWESTERLY EXTENSION OF THE SOUTHWESTERLY LINE OF TAYLOR MEMORIAL CEMETERY; THENCE RUN S37°58'58"E ALONG SAID NORTHWESTERLY EXTENSION LINE, 613.80 FEET TO THE POINT OF BEGINNING.

AND ALSO:

COMMENCE AT THE EAST 1/4 CORNER OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA; THENCE RUN N89°21'35"W ALONG THE SOUTH LINE OF THE NORTHEAST 1/4 OF SAID SECTION 35, 1487.79 FEET TO A POINT ON THE NORTHWESTERLY RIGHT-OF-WAY LINE OF STATE ROAD NO. 19; THENCE RUN S52°07'27"W ALONG SAID NORTHWESTERLY RIGHT-OF-WAY LINE, 66.25 FEET TO THE POINT OF BEGINNING; THENCE CONTINUE S52°07'27"W ALONG SAID NORTHWESTERLY RIGHT-OF-WAY LINE, 392.98 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE SOUTHEASTERLY; THENCE RUN SOUTHWESTERLY ALONG THE ARC OF SAID CURVE HAVING A CENTRAL ANGLE OF 02°12'24", A RADIUS OF 2341.83 FEET, AN ARC LENGTH OF 90.19 FEET, A CHORD BEARING OF S51°01'15"W AND A CHORD DISTANCE OF 90.19 FEET TO THE MOST EASTERLY CORNER OF TAYLOR MEMORIAL CEMETERY; THENCE RUN N38°00'31"E *(N38°00'31"W)*, ALONG THE NORTHEASTERLY LINE OF SAID TAYLOR MEMORIAL CEMETERY, 547.00 FEET; THENCE RUN N52°06'58"E, 484.34 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE SOUTHERLY; THENCE RUN SOUTHEASTERLY ALONG THE ARC OF SAID CURVE HAVING A CENTRAL ANGLE OF 90°00'00", A RADIUS OF 10.00 FEET, AN ARC LENGTH OF 15.71 FEET, A CHORD BEARING OF S82°53'02"E AND A CHORD DISTANCE OF 14.14 FEET TO THE POINT OF TANGENCY; THENCE RUN

S37°53'02"E, 525.33 TO THE POINT OF CURVATURE OF A CURVE CONCAVE NORTHWESTERLY; THENCE RUN SOUTHWESTERLY ALONG THE ARC OF SAID CURVE HAVING A CENTRAL ANGLE OF 90°00'00", A RADIUS OF 10.00 FEET, AN ARC LENGTH OF 15.71 FEET, A CHORD BEARING OF S07°07'12"W AND A CHORD DISTANCE OF 14.14 FEET TO THE POINT OF BEGINNING.

AND ALSO:

COMMENCE AT THE EAST 1/4 CORNER OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA; THENCE RUN N89°21'35"W ALONG THE SOUTH LINE OF THE NORTHEAST 1/4 OF SAID SECTION 35, 1487.79 FEET TO A POINT ON THE NORTHWESTERLY RIGHT-OF-WAY LINE OF STATE ROAD NO. 19; THENCE RUN N52°07'27"E ALONG SAID NORTHWESTERLY RIGHT-OF-WAY LINE, 673.75 FEET TO THE POINT OF BEGINNING; THENCE RUN N37°53'02"W, 1008.88 FEET; THENCE RUN N00°35'47"E, 116.78 FEET TO A POINT ON THE NORTH LINE OF THE SOUTHWEST 1/4 OF THE NORTHWEST *(NORTHEAST)* 1/4 OF SAID SECTION 35; THENCE RUN S89°24'13"E ALONG SAID NORTH LINE, 270.08 FEET TO A POINT ON THE WEST LINE OF THE NORTHEAST 1/4 OF THE NORTHEAST 1/4 OF SAID SECTION 35; THENCE RUN N00°35'58"E ALONG SAID WEST LINE, 256.12 FEET TO A POINT ON THE SOUTH LINE OF THE RESIDENCE OF DON WHITE; THENCE RUN S89°24'13" *(S89°24'13"E)* ALONG SAID SOUTH LINE, 418.17 FEET; THENCE RUN S00°35'47"W, 709.10 FEET; THENCE RUN S37°52'33"E, 317.47 FEET TO A POINT ON SAID NORTHWESTERLY RIGHT-OF-WAY LINE OF STATE ROAD NO. 19; THENCE RUN S52°07'27"W ALONG SAID NORTHWESTERLY RIGHT-OF-WAY LINE, 329.54 FEET TO THE POINT OF BEGINNING.

JKCJ LEGAL2.DOC
REV'D 05/17/07 SVB

Exhibit B
to
Amended & Restated Developer's Agreement
The Reserve at Howey-in-the-Hills

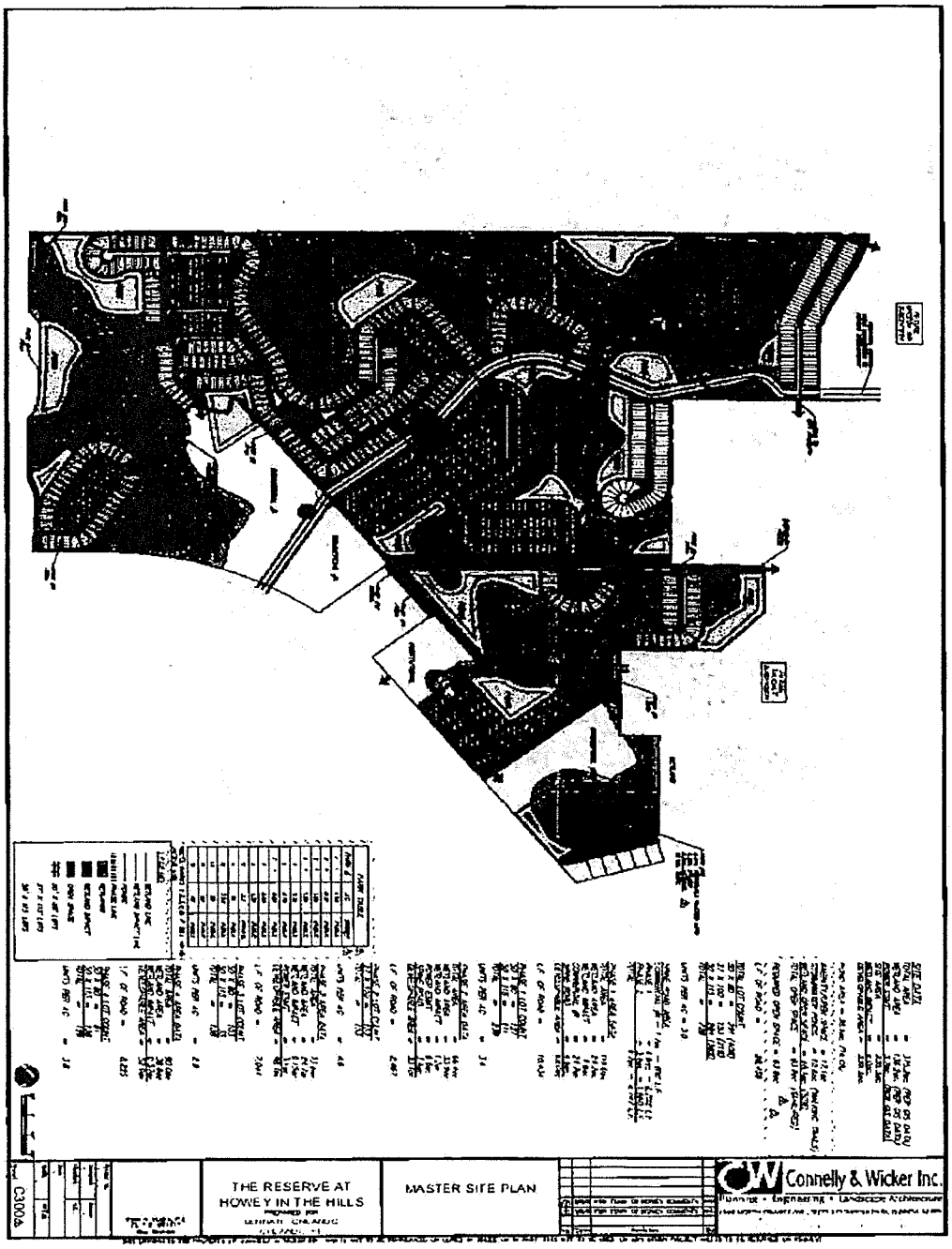
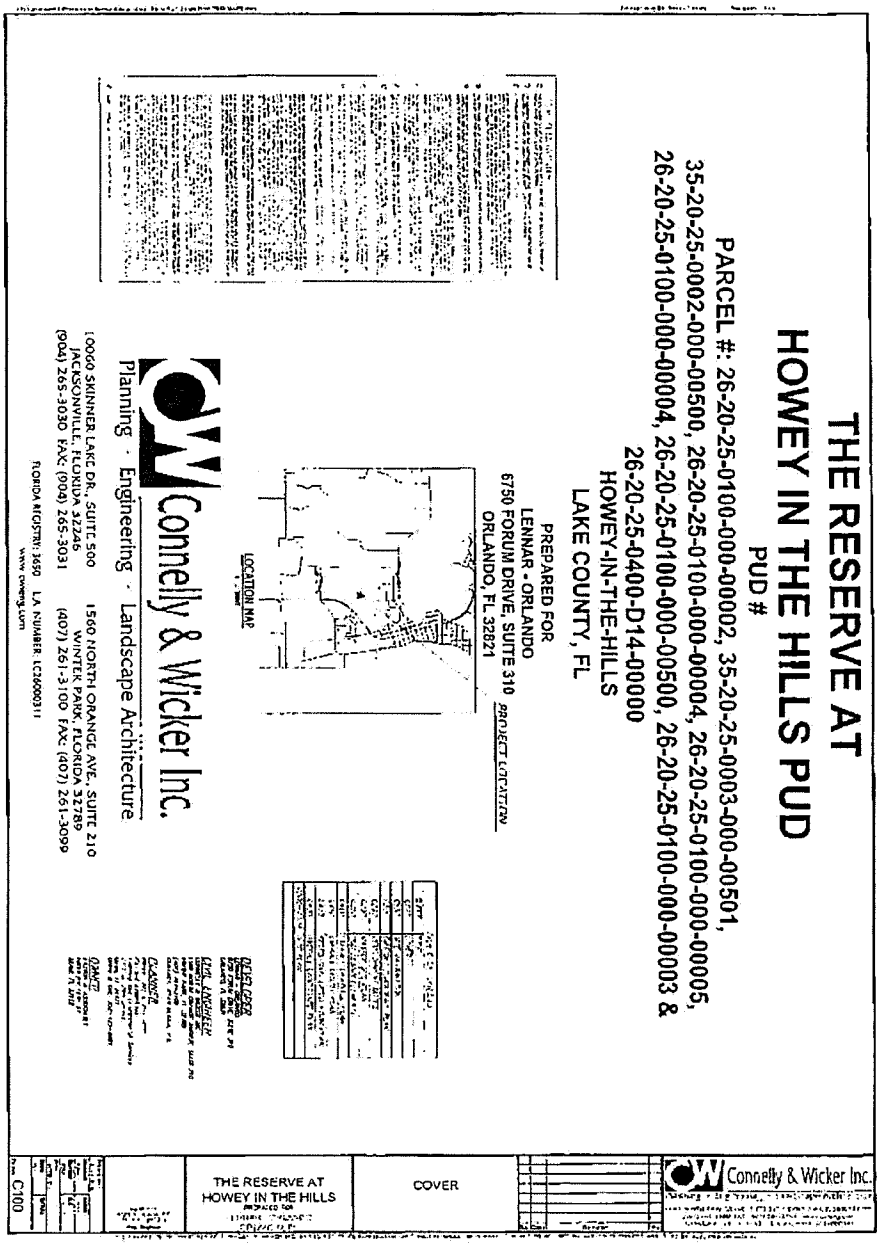
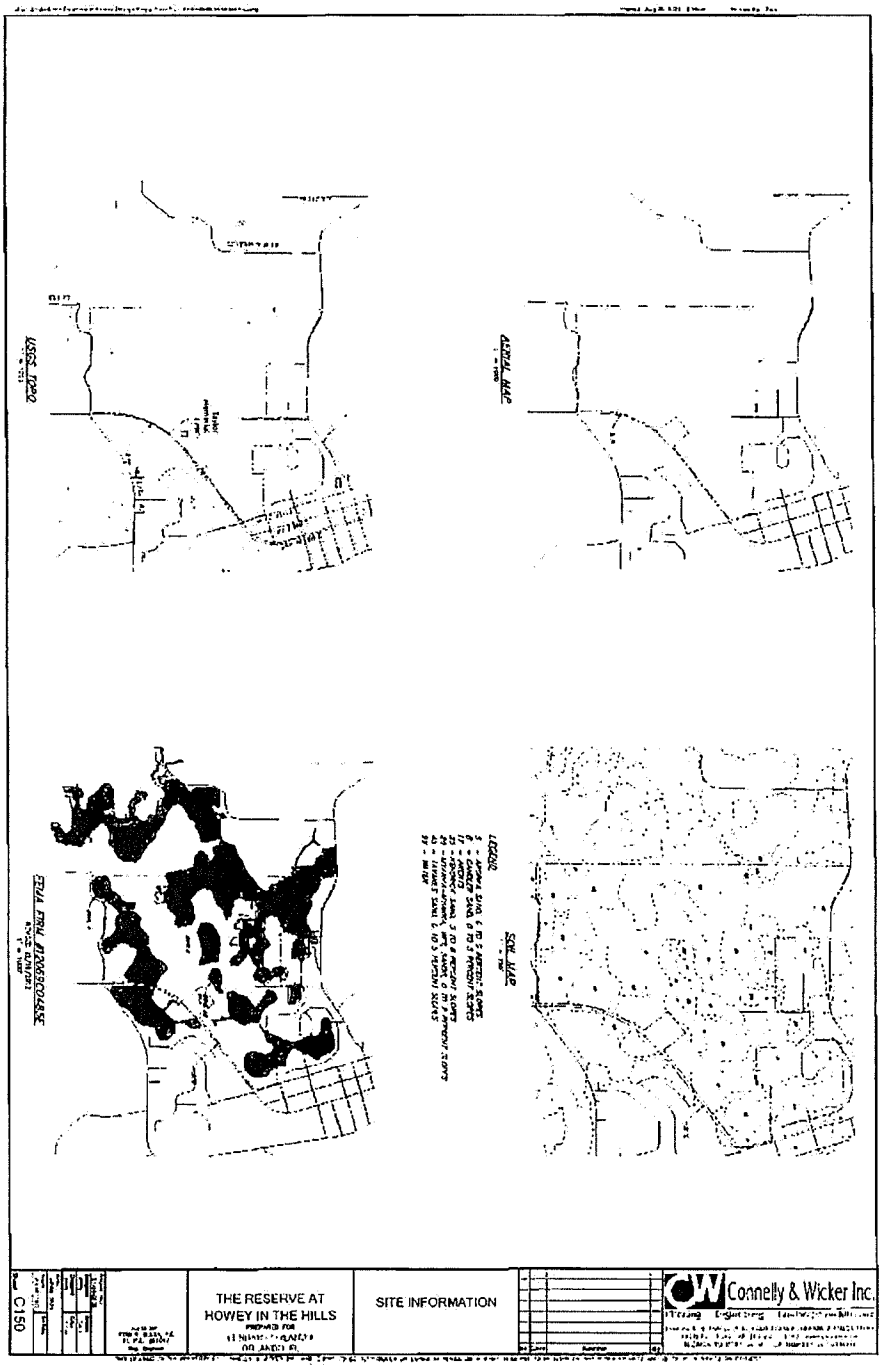
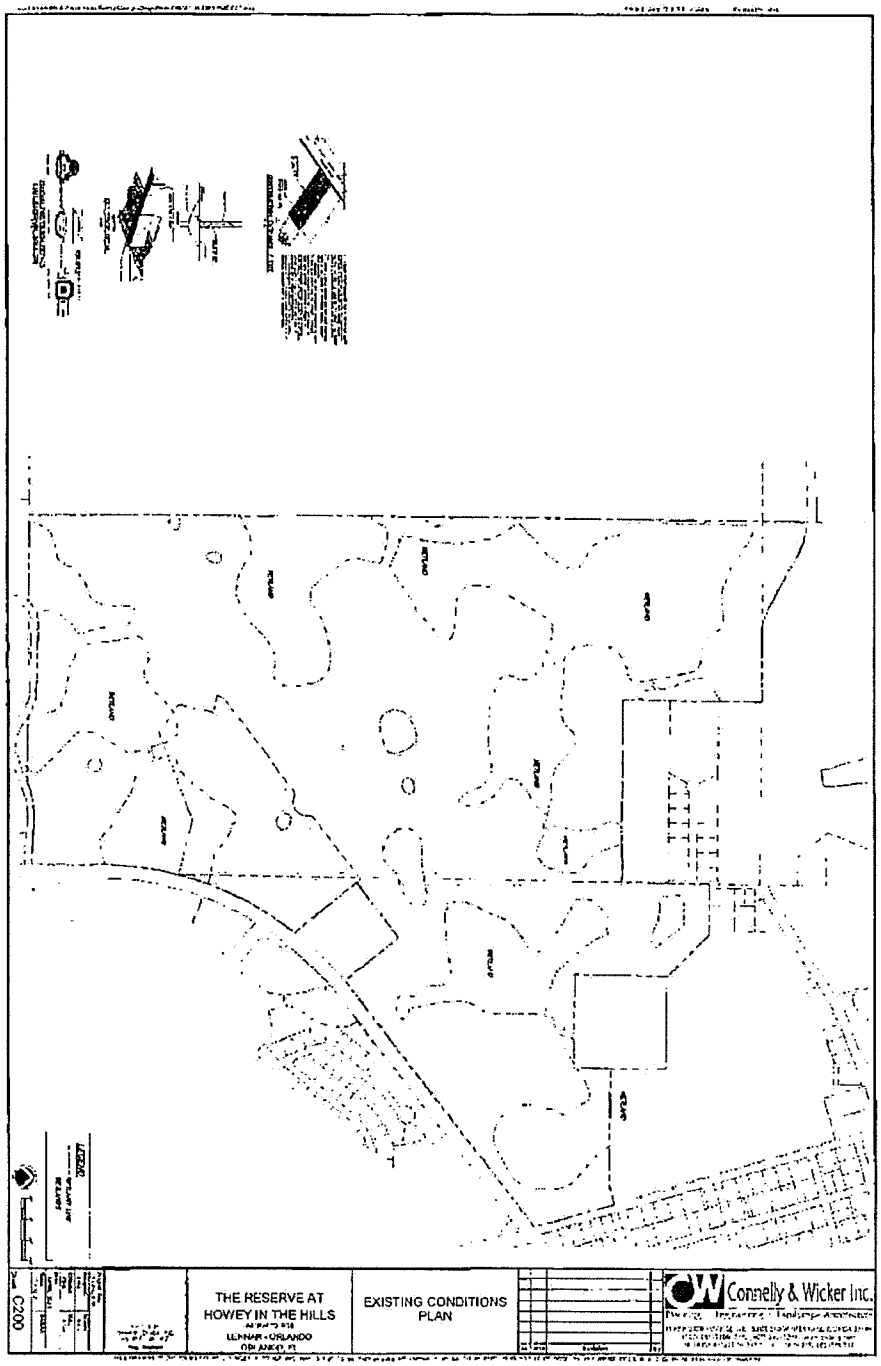


Exhibit C
to
Amended & Restated Developer's Agreement
The Reserve at Howey-in-the-Hills




USGS TOPO
AERIAL MAP
SOIL MAP
LEGEND
THE RESERVE AT HOWEY IN THE HILLS
SITE INFORMATION
C150
Connelly & Wicker Inc.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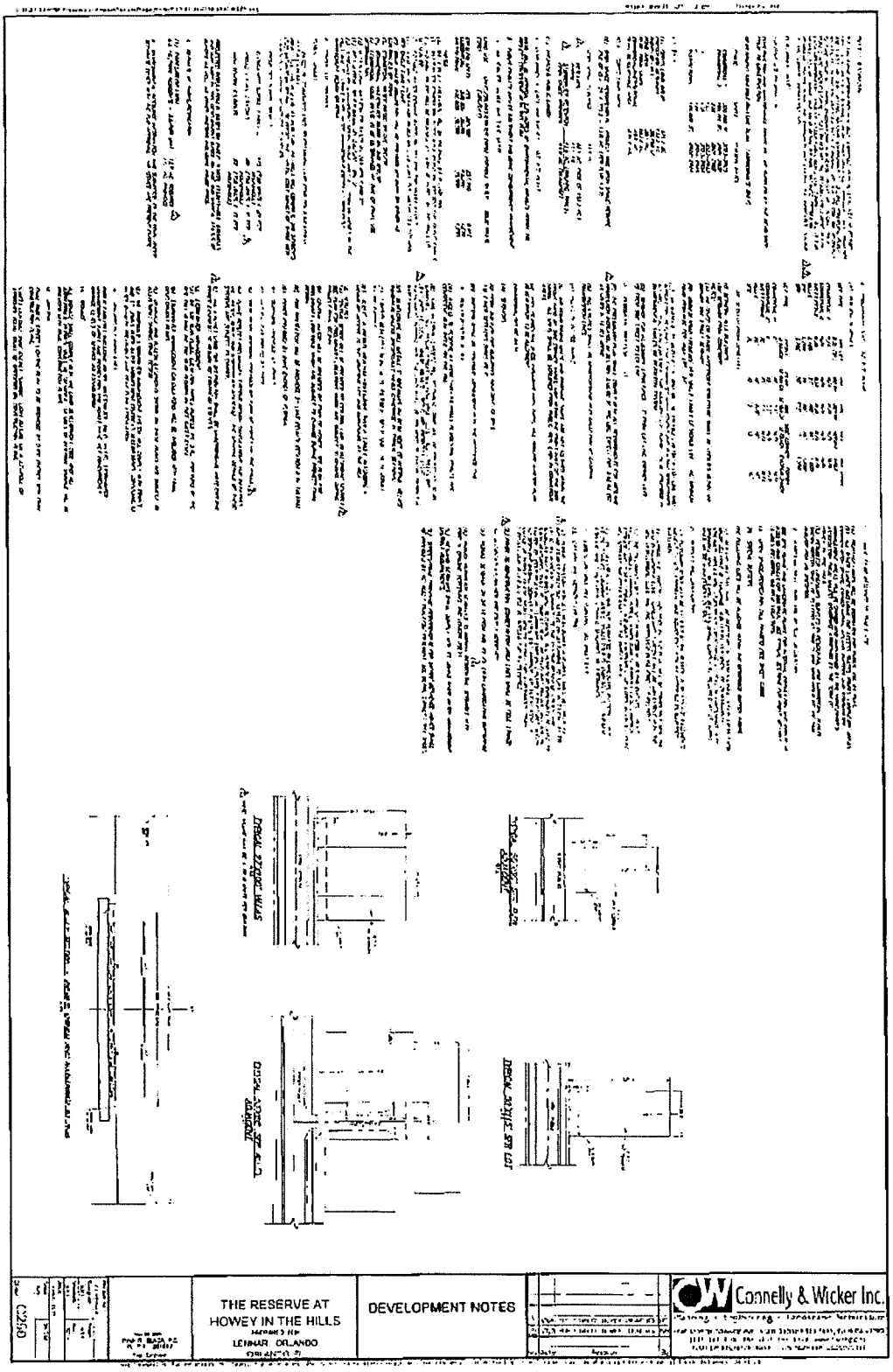
THE RESERVE AT HOWEY IN THE HILLS
LENNAR - ORLANDO
EXISTING CONDITIONS PLAN
Connelly & Wicker Inc.


THE RESERVE AT
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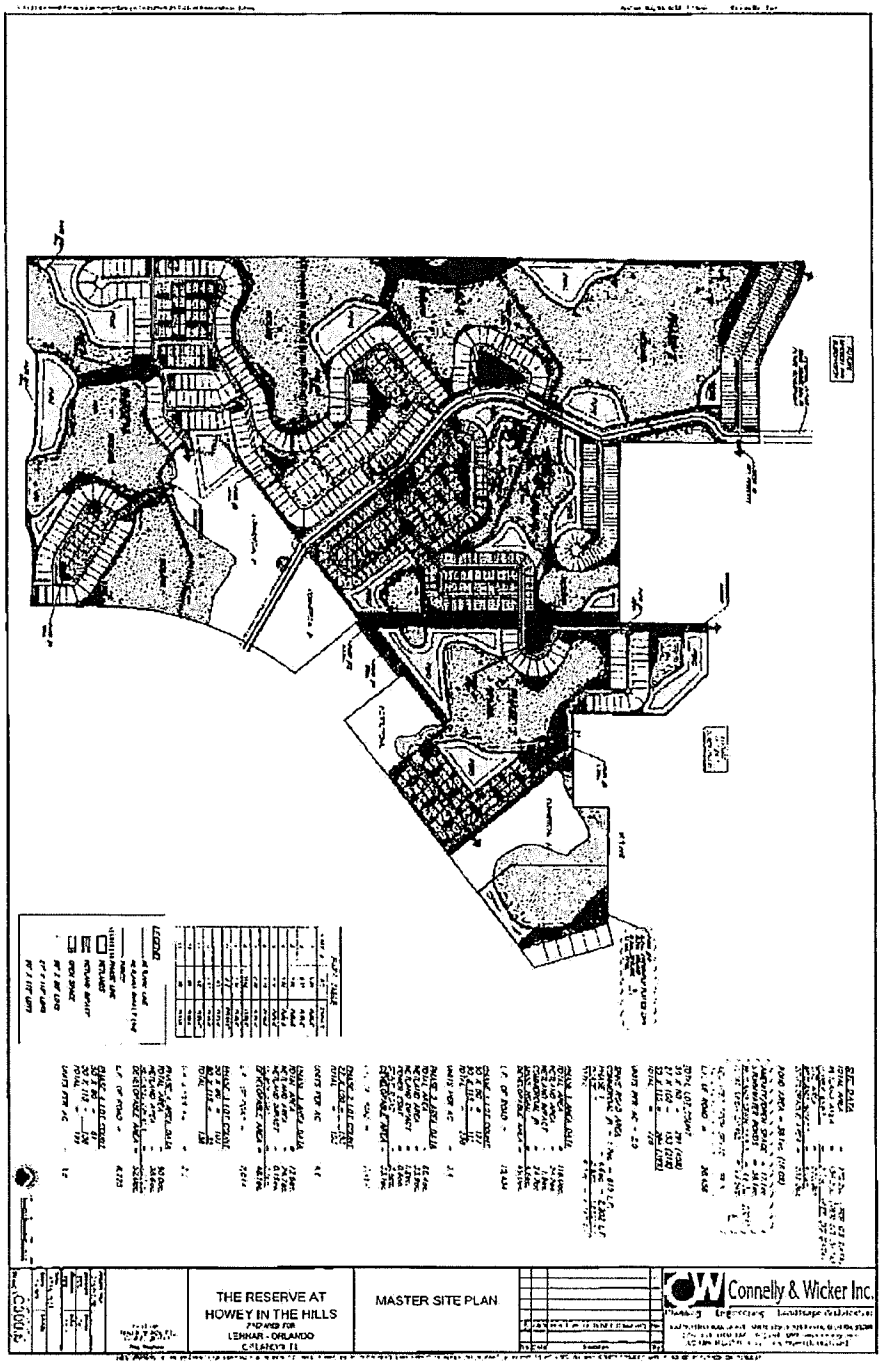
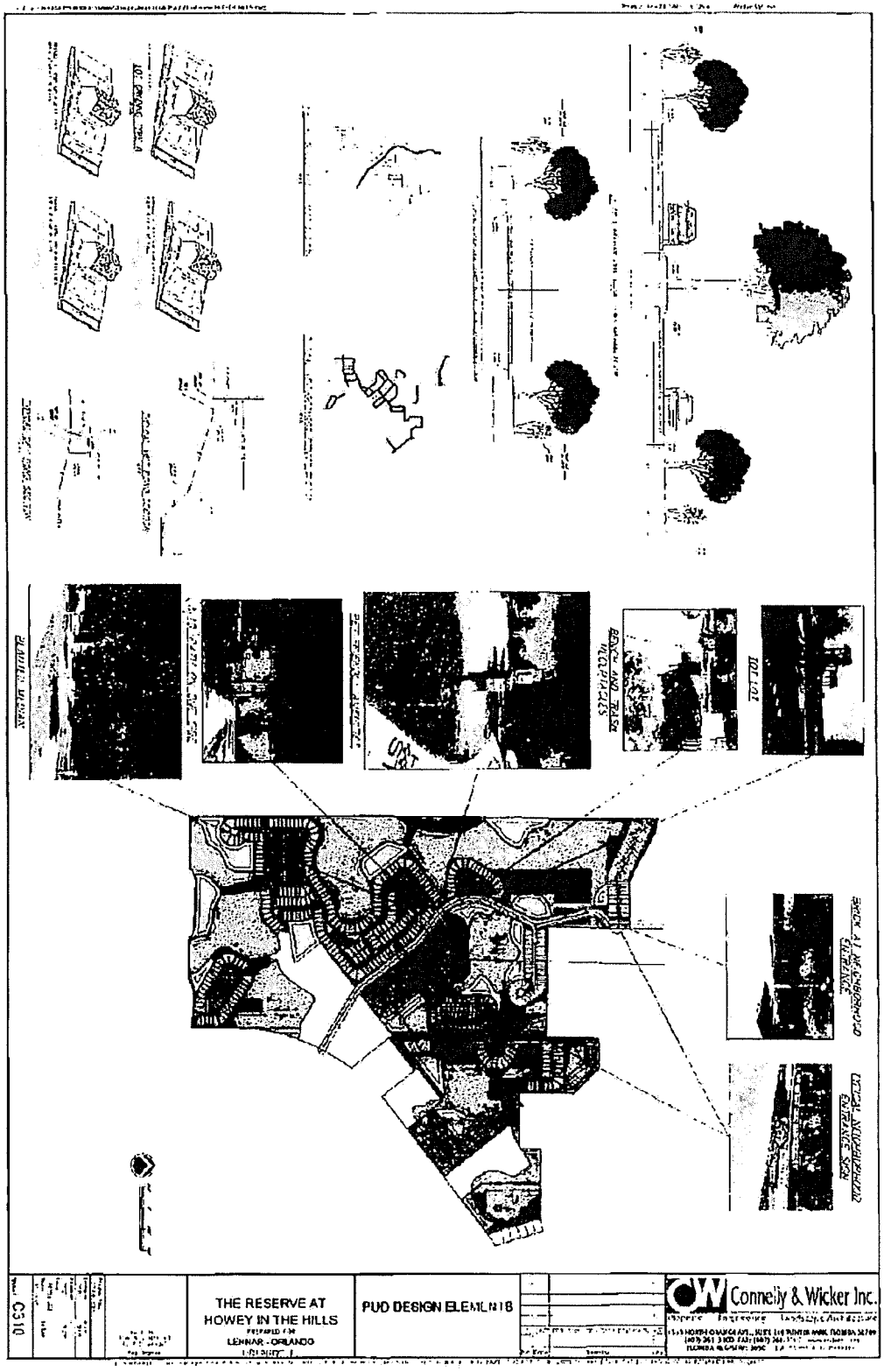
LENNAR ORLANDO
DEVELOPMENT NOTES
Connelly & Wicker Inc.


THE RESERVE AT HOWEY IN THE HILLS
PREPARED FOR
LENNAR - ORLANDO
MASTER SITE PLAN
Connelly & Wicker Inc.


THE RESERVE AT
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LENNAR - ORLANDO
PUD DESIGN ELEMENTS
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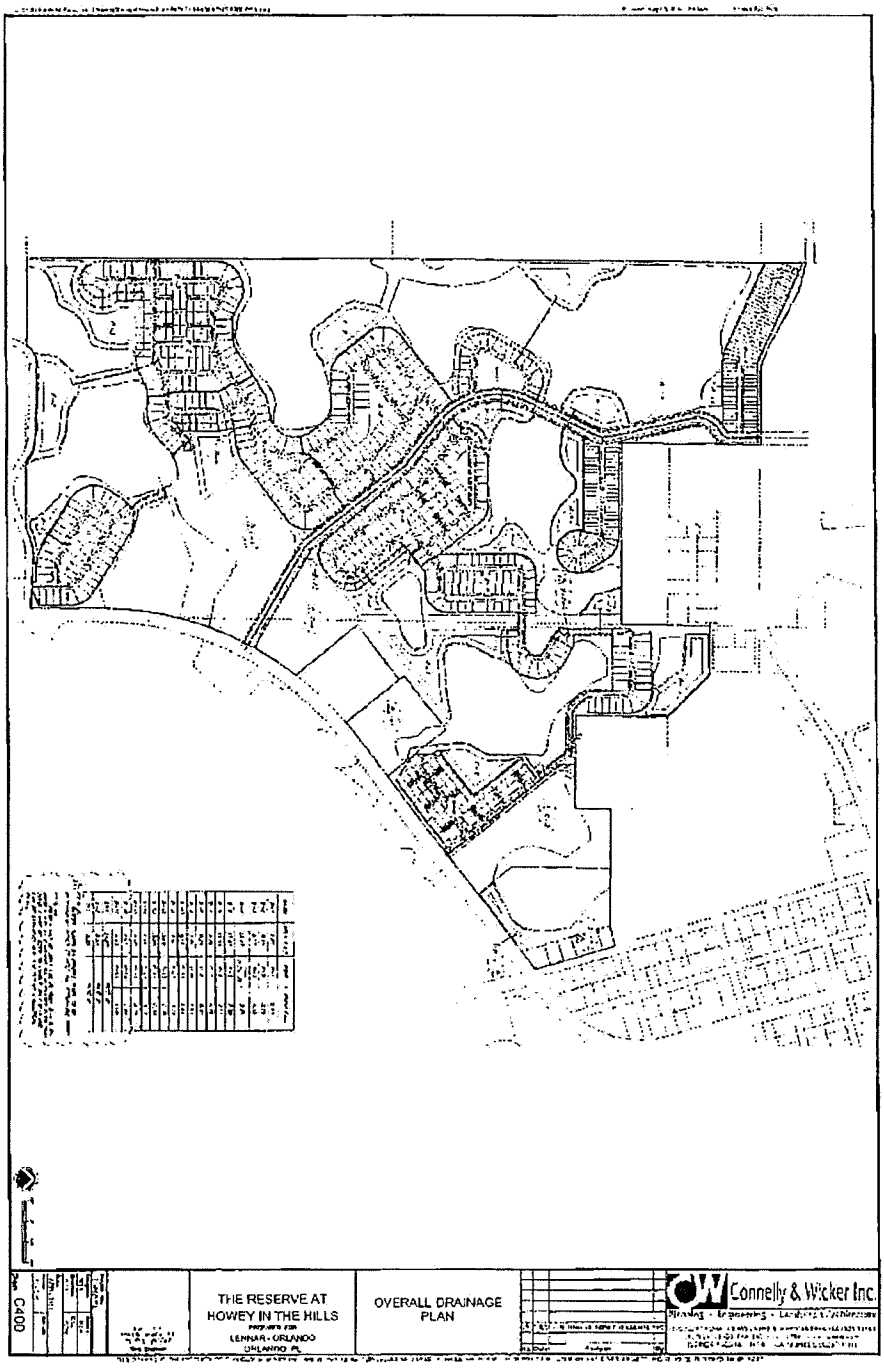
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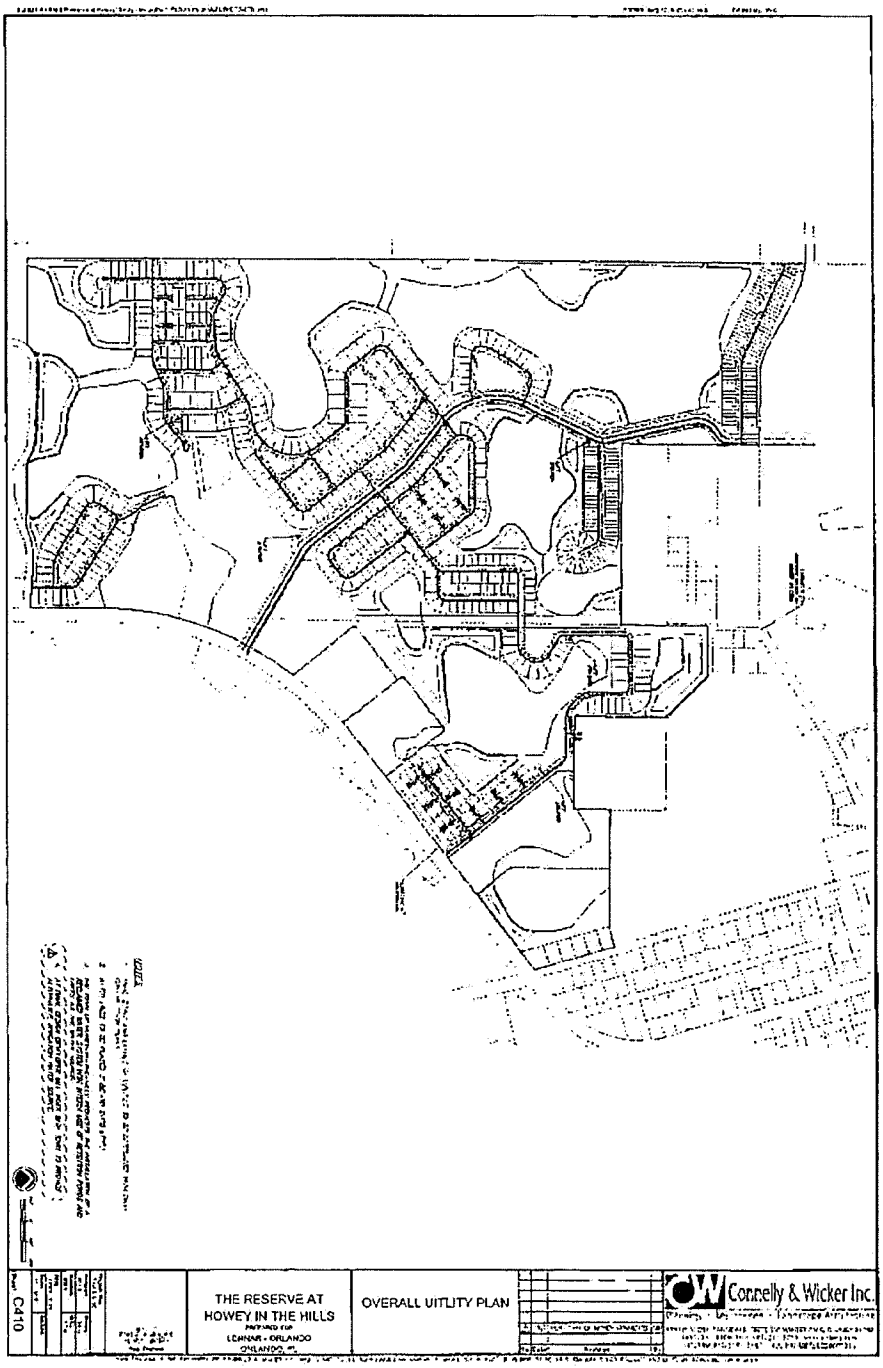
THE RESERVE AT HOWEY IN THE HILLS
LENNAR - ORLANDO
ORLANDO, FL
OVERALL DRAINAGE PLAN
Connelly & Wicker Inc.


THE RESERVE AT
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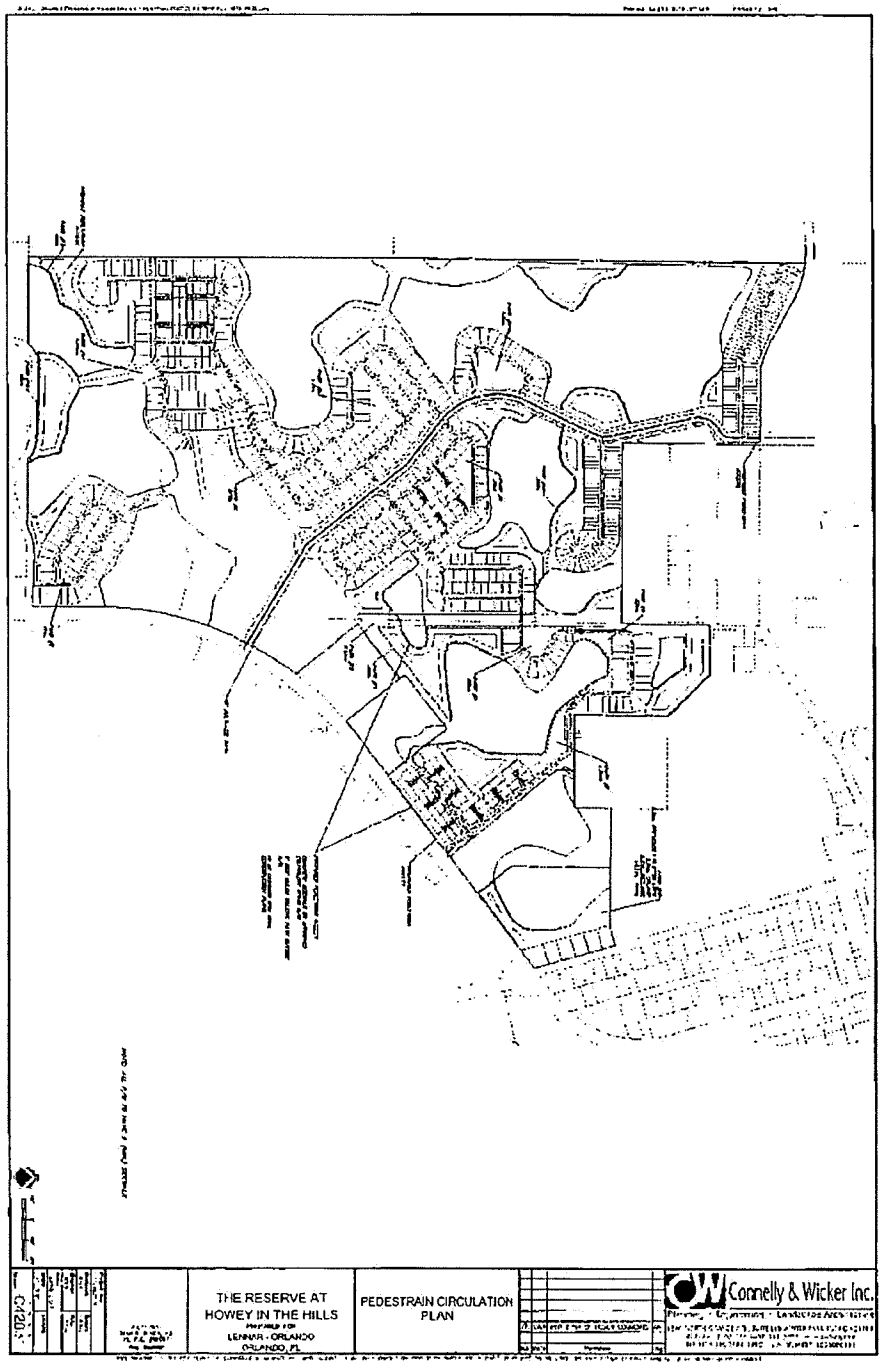
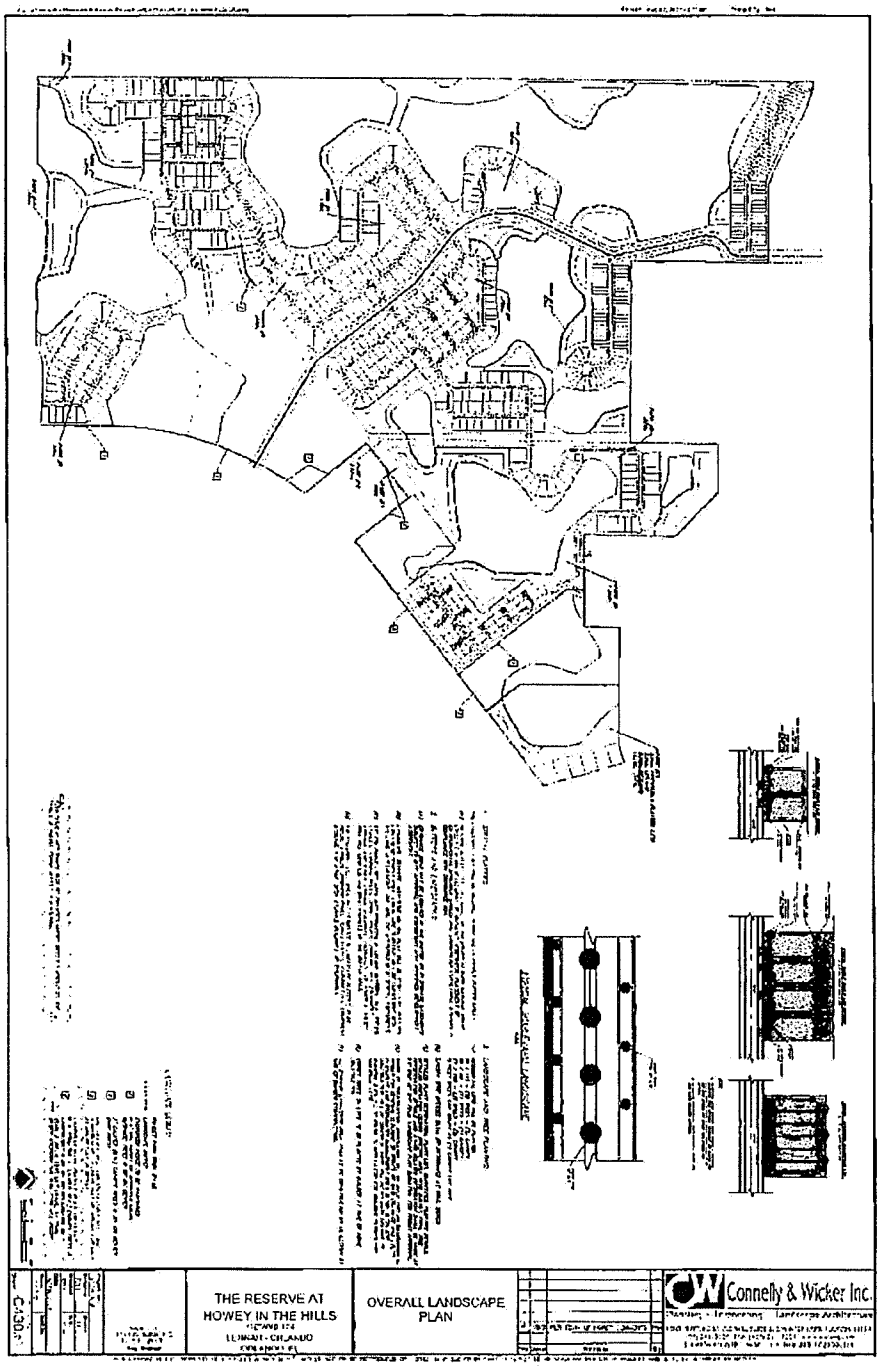
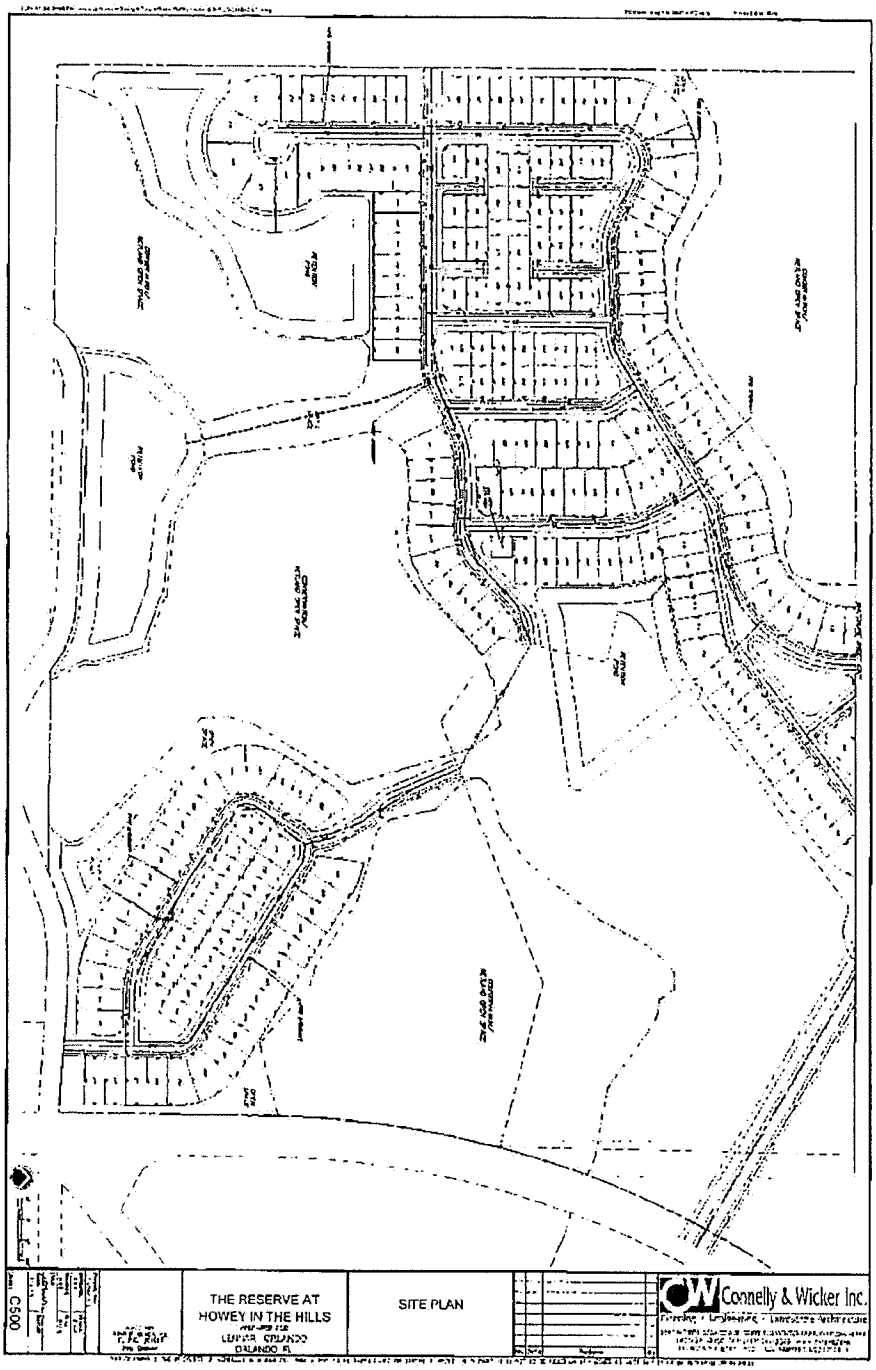
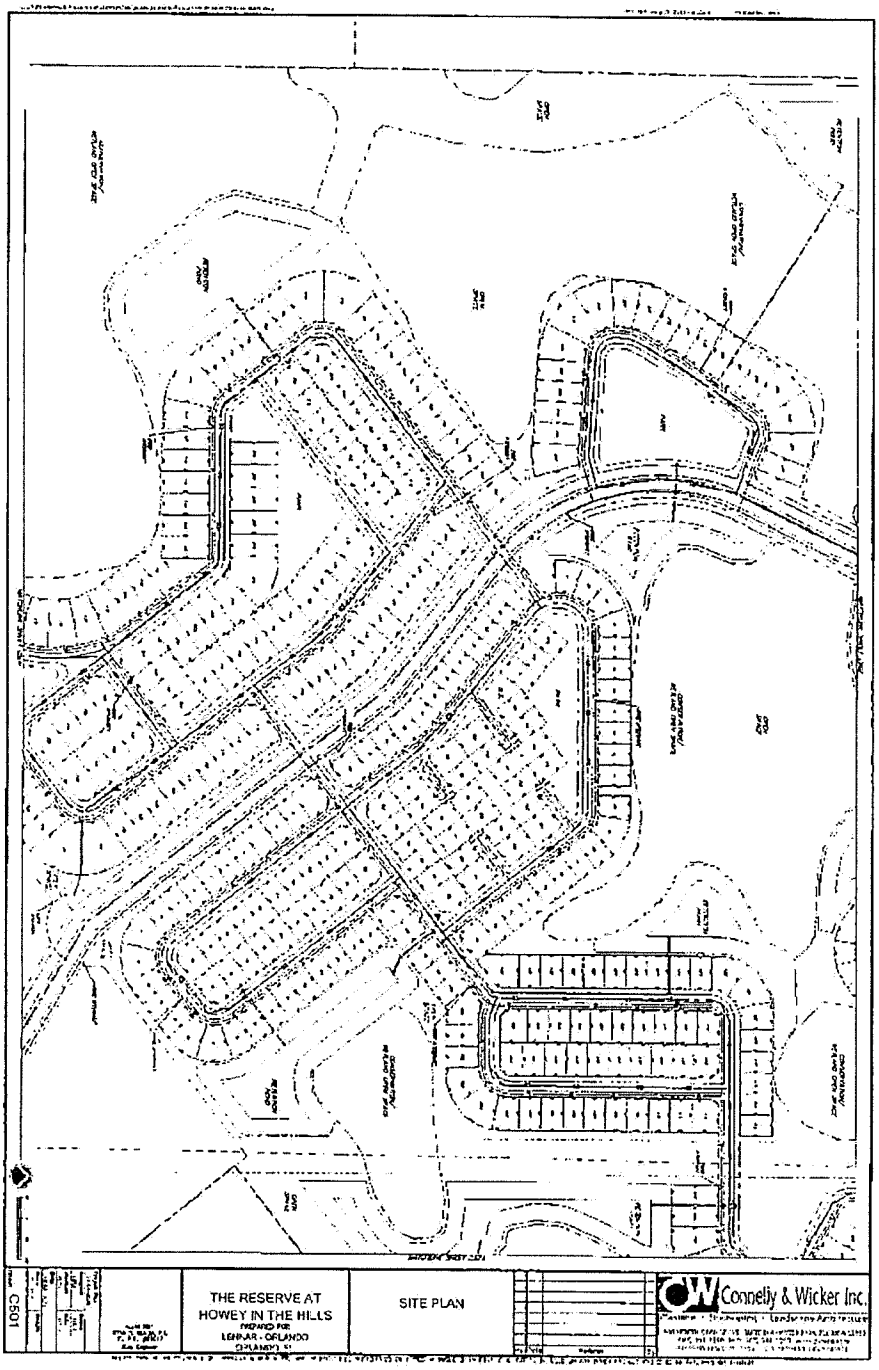
OVERALL UITLITY PLAN
Connelly & Wicker Inc.


THE RESERVE AT
HOWEY IN THE HILLS
LENNAR - ORLANDO
ORLANDO, FL
PEDESTRAIN CIRCULATION
PLAN
Connelly & Wicker Inc.


THE RESERVE AT
HOWEY IN THE HILLS
OVERALL LANDSCAPE
PLAN
Connelly & Wicker Inc.


THE RESERVE AT
HOWEY IN THE HILLS
SITE PLAN
Connelly & Wicker Inc.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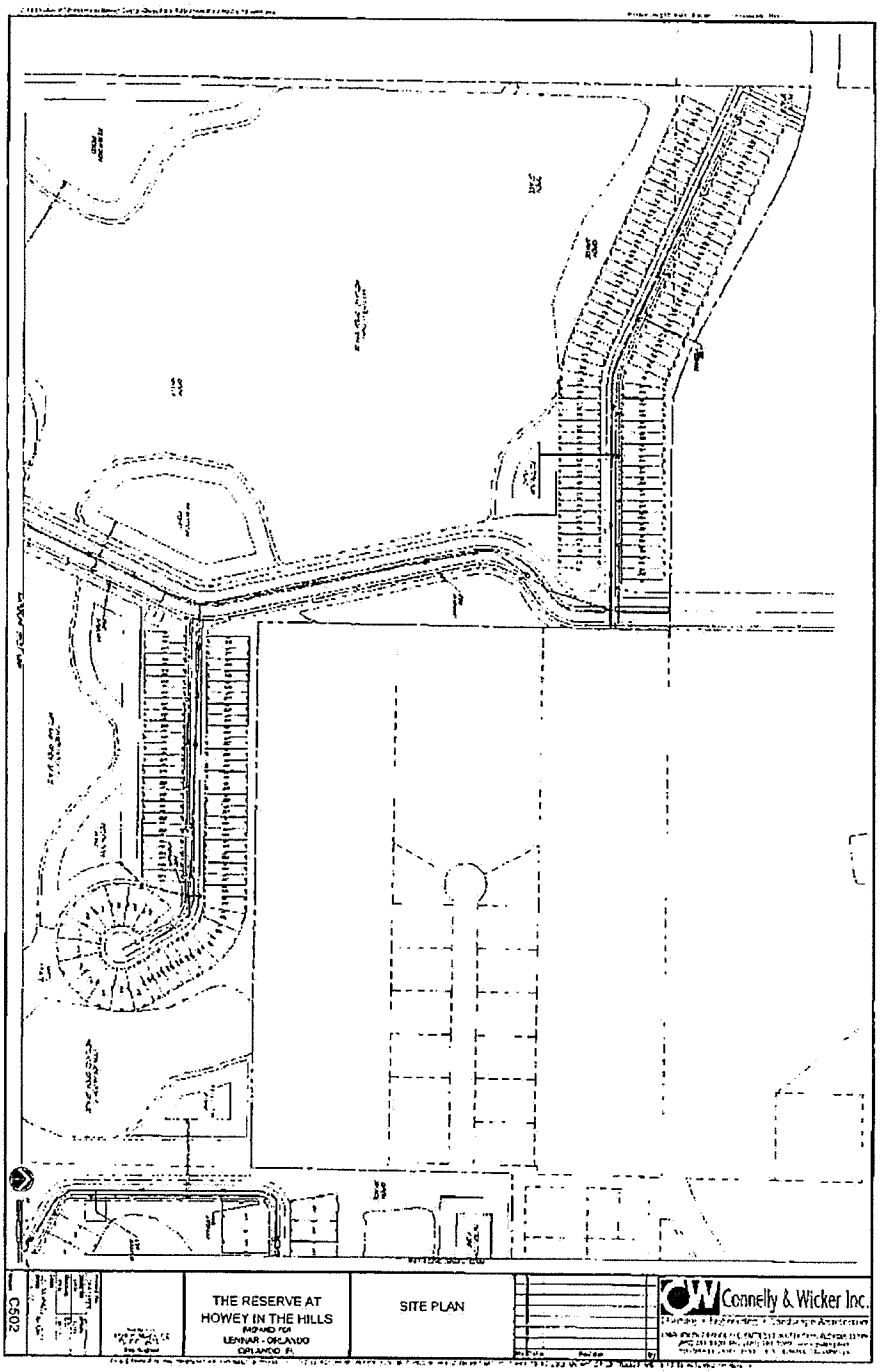
THE RESERVE AT
HOWEY IN THE HILLS
PREPARED FOR:
LENNAR - ORLANDO
SITE PLAN
Connelly & Wicker Inc.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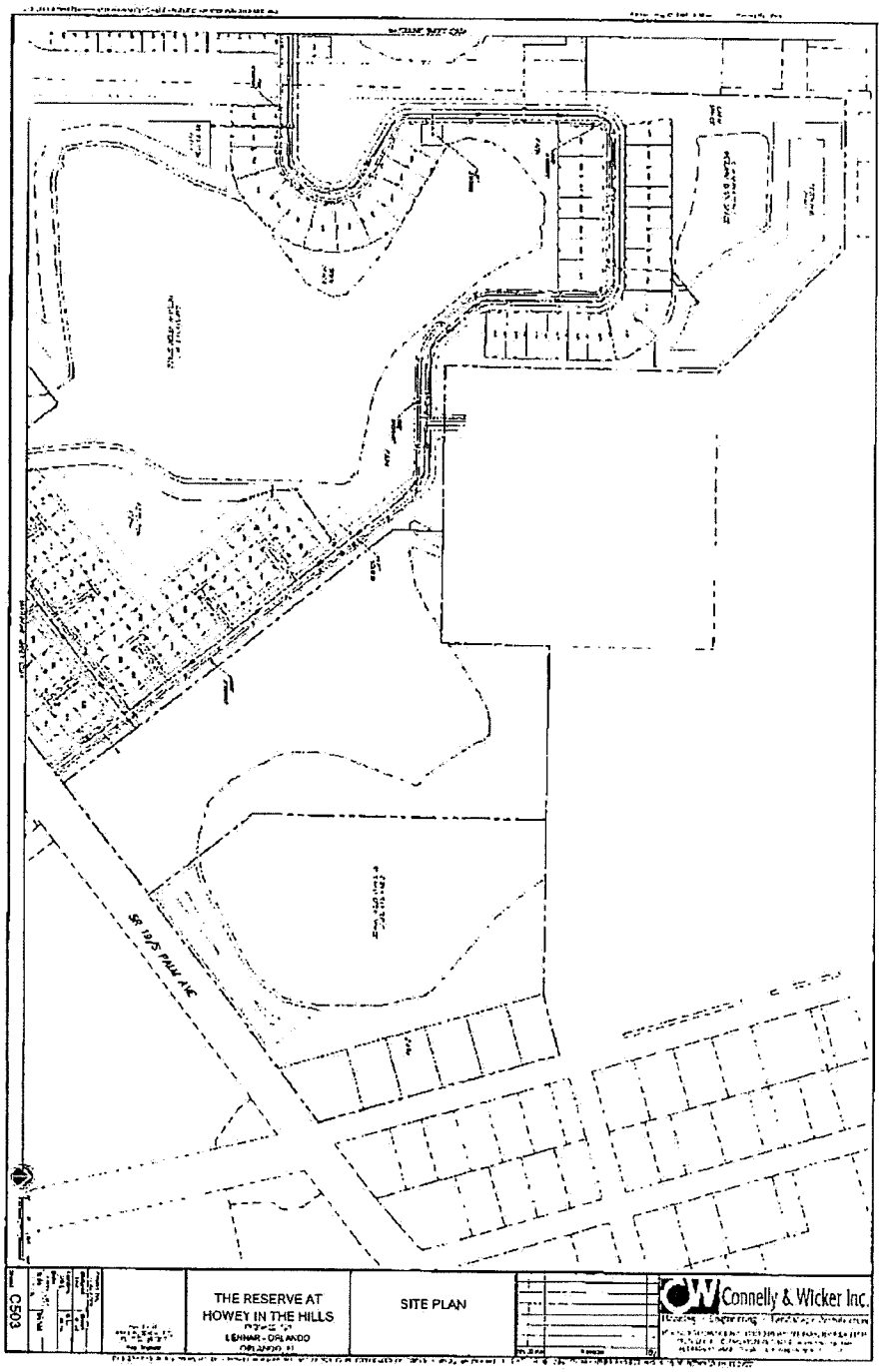
THE RESERVE AT
HOWEY IN THE HILLS
PREPARED FOR
LENNAR - ORLANDO
ORLANDO, FL
SITE PLAN
Connelly & Wicker Inc.


SR 19/S PALM AVE
C503
THE RESERVE AT
HOWEY IN THE HILLS
LENNAR - ORLANDO
SITE PLAN
Connelly & Wicker Inc.

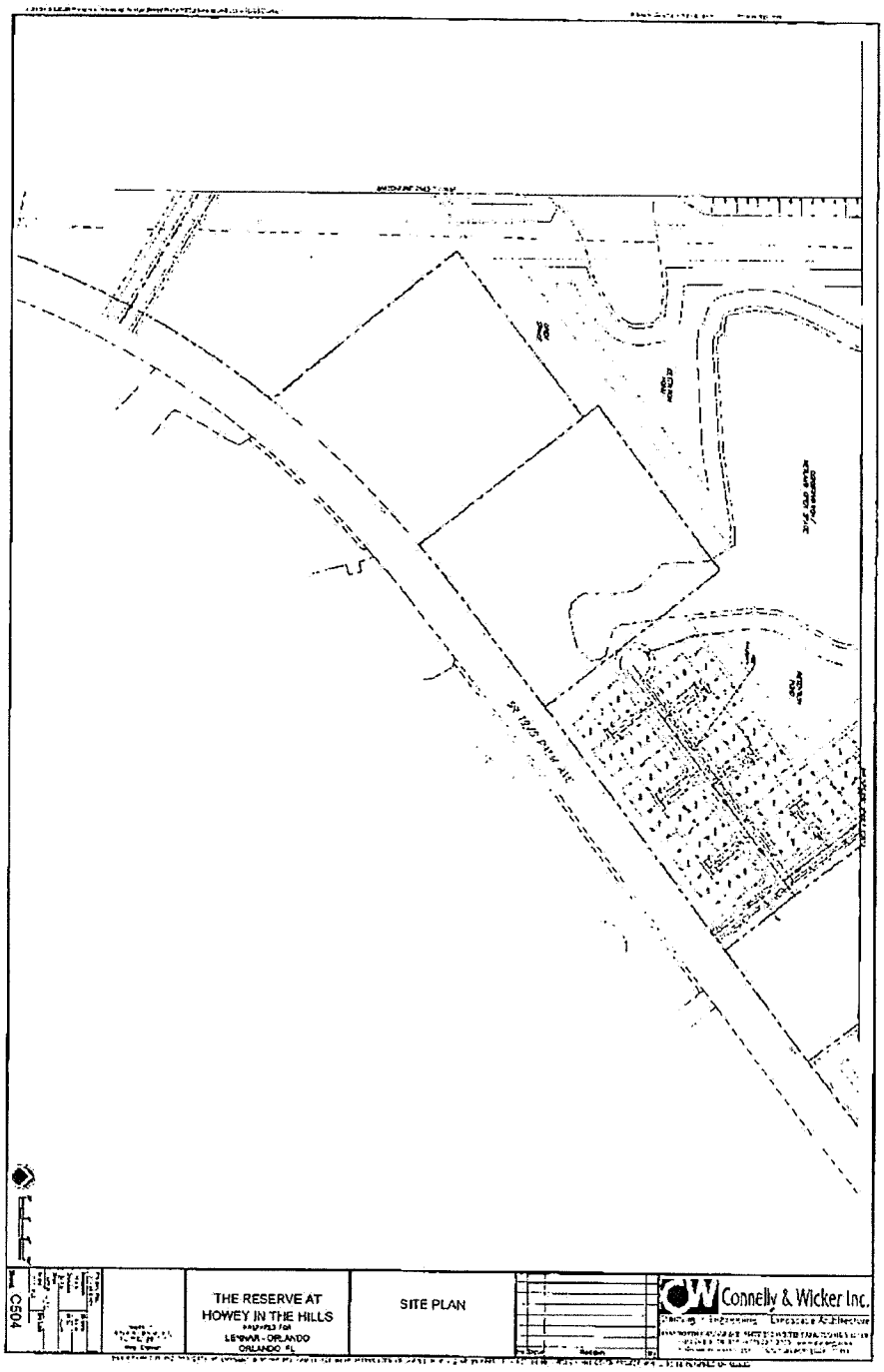
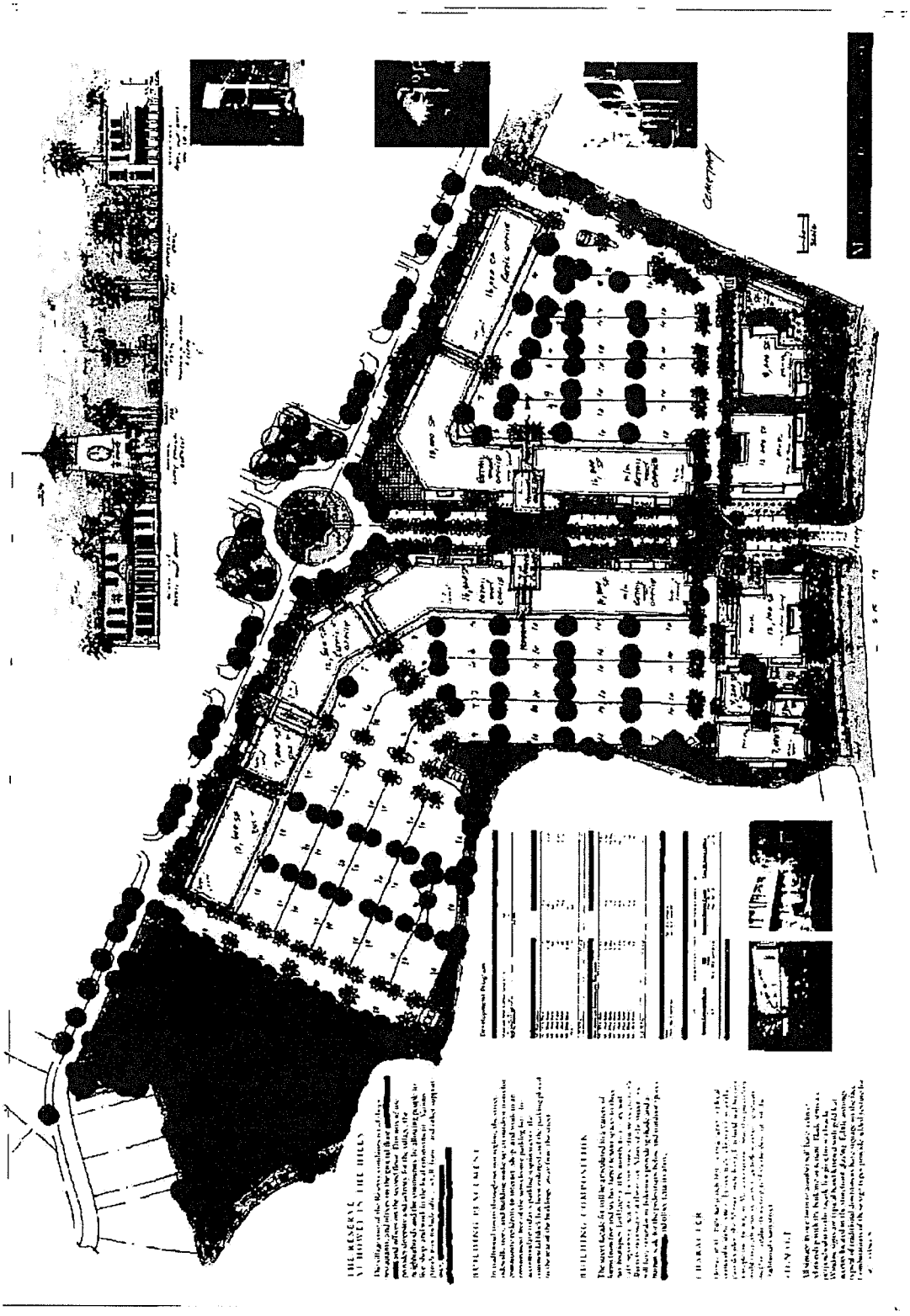
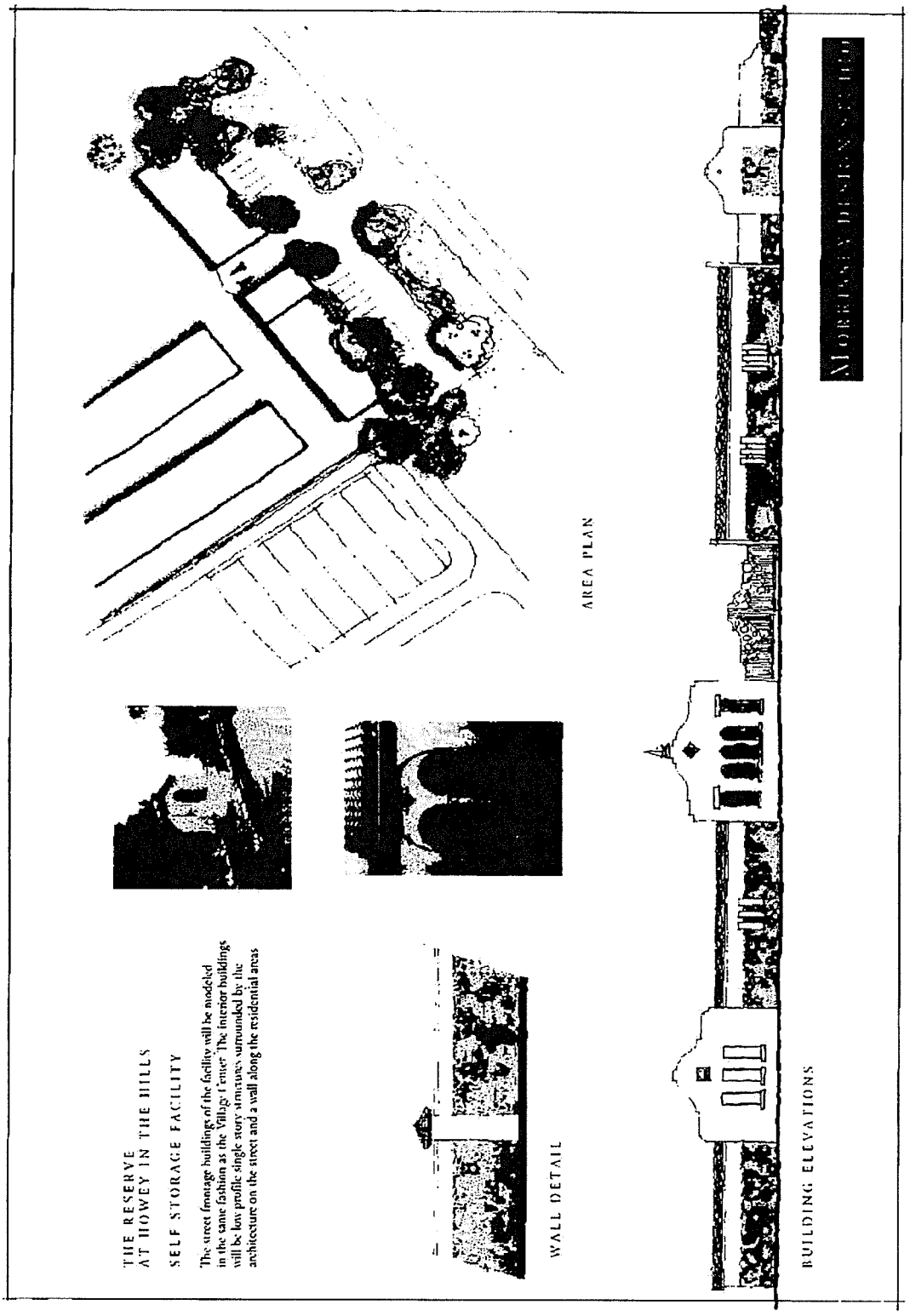

THE RESERVE AT
HOWEY IN THE HILLS
SITE PLAN
Connelly & Wicker Inc.

Exhibit D
to
Amended & Restated Developer's Agreement
The Reserve at Howey-in-the-Hills




THE RESERVE
AT HOWEY IN THE HILLS
SELF STORAGE FACILITY
The street frontage buildings of the facility will be modeled in the same fashion as the Village Center. The interior buildings will be low profile single story structures surrounded by the architecture on the street and a wall along the residential areas
AREA PLAN
WALL DETAIL
BUILDING ELEVATIONS

#45231950 v9

GRIFFEY ENGINEERING, INC.

September 9, 2025
Hillside Groves Amenity - Final Site Plan
Engineering Review Comments
Page 1

Show on the Utility Plan and on the Irrigation Plan the point of service from the irrigation supply main.

Kimley»Horn

August 27, 2025
149658038

Town of Howey-in-the-Hills
101 N. Palm Avenue
Howey-in-the-Hills, FL 34737

RE: Drainage Calculations for Hillside Groves Amenity Center

To whom it may concern,

The following letter is to provide the stormwater calculations of the proposed Hillside Groves Amenity center project. The project includes a proposed amenity center, a pool, playground, and associated parking. The project location is within Tract R, a 1.2 AC tract part of the Hillside Grove development in Howey-in-the-Hills. The stormwater treatment and attenuation was included in the SJRWMD permit modification (18971-21).

The stormwater system was designed for a maximum impervious area of the tract of 70%. The developed area is summarized as follows:

Tract area:	52,849 SF
Allowed Impervious Area:	36,994 SF
Proposed Impervious Area:	33,596 SF

This project does not exceed the maximum allowable impervious area for the site; therefore, this project meets all criteria established by the original permit.

Feel free to contact me at (407) 536-4440 should you have any questions or require any additional information.

Sincerely,

KIMLEY-HORN AND ASSOCIATES, INC.

Blake J. Wagner, P.E.
Project Manager

Blake Wagner
Digitally signed by Blake Wagner
DN: CN=Blake Wagner, dnQualifier=A01410C00001978DE85F06000B65C2, O=KIMLEY-HORN AND ASSOCIATES INC, C=US
Date: 2025.08.27 17:52:41-04'00'

STORM DRAIN TABULATION FORM

PROJECT : Hillside Groves Amenity Center
JOB #: 149658038

PREPARED BY: SJP **DATE:** 8/27/2024
CHECKED BY: BSA **DATE:**

LOCATION OF UPPER END	STRUCTURE NUMBER	TYPE OF STRUCTURE / LINE	LENGTH (FT)	DRAINAGE AREA (AC) C = 0.95 / C = 0.45 / C = 0.20 INCR.	DRAINAGE AREA (AC) TOTAL	SUB TOTAL C * A	INLET PIPE TIME OF CONC. (MIN)	TIME OF FLOW IN SECTION (MIN)	INTENSITY (IN/HR)	TOTAL C * A	INCR. TOTAL INFLOW (CFS)	TOTAL RUNOFF (CFS)	INLET OR GUTTER ELEV. (FT)	HYD. GRADE LINE CROWN FLOWLINE UPPER END ELEV. (FT)	HYD. GRADE LINE CROWN FLOWLINE LOWER END ELEV. (FT)	FALL (FT)	TOTAL MINOR FRICT. HEAD LOSS (FT)	MINOR FRICT. LOSS COEFF.	DIAMETER (IN)	HYD. GRAD. PHYSICAL MIN. PHYS. SLOPE (%)	VELOCITY (FPS)	CAPACITY (CFS)	REMARKS
AREA (AC)	UPPER																						
	LOWER																						
0.17				0.10	0.10	0.10								85.26	85.26	0.00	0.00			0.01	0.5	0.81	
	D-01	D	74	0.00	0.00	0.00	10	0.30	7.41	0.11	0.00	0.81	85.80	83.28	82.92		0.00	0.0	18	**0.49**	4.2	7.34	
	D-02			0.07	0.07	0.01	10.00				0.00			81.78	81.42	0.36	0.00	0.013		0.18	2.5	4.42	
0.14				0.14	0.24	0.22								85.26	85.22	0.04	0.04			0.03	1.0	1.74	
	D-02	P7	136	0.00	0.00	0.00	10	0.54	7.34	0.24	0.00	1.74	86.06	82.92	82.24		0.00	0.0	18	**0.50**	4.2	7.44	
	D-03			0.00	0.07	0.01	10.30				0.00			81.42	80.74	0.68	0.04	0.013		0.18	2.5	4.42	
0.38				0.26	0.50	0.47								85.22	85.04	0.18	0.18			0.12	2.1	3.67	
	D-03	D	147	0.00	0.00	0.00	10	0.58	7.21	0.51	0.00	3.67	86.00	82.24	81.50		0.00	0.0	18	**0.50**	4.2	7.47	
	EX-S-209			0.12	0.19	0.04	10.83				0.00			80.74	80.00	0.74	0.18	0.013		0.18	2.5	4.42	

ZONE: 7 FREQ: 10 (YEAR)
FREQ. FACTOR: 1.00
MIN. HGL COVER = 1.00
MIN. PIPE COVER = 2.00
10 YR Tailwater Elev. 85.04

Please see below Excerpt from SJRWMD PERMIT 18971-28 for Tailwater information at connection to existing storm inlet

DRAINAGE CALCULATIONS

Hillside Grove

LAKE COUNTY, FLORIDA

Prepared for:

Meritage Homes
5337 Millenia Lakes Blvd, Suite 235
Orlando, Florida 32839
Phone: (407) 284-4152

CONNELLY & WICKER INC.
10060 Skinner Lake Drive, Suite 500
Jacksonville, Florida 32246
Florida Registry: 3650
Phone: (904) 265-3030 Fax: (904) 265-3031
www.cwieng.com

CWI Project No.: 21-04-0008
Date: September 6, 2022
Revised Date: April 14, 2025

All elevations referrence the North American Vertical Datum of 1988 (NAVD88)

Upper To Lower	Type Structure Upstream	Pipe Length (Ft)	Drainage Area (Ac +/-) C = VARIES A	C	C*A	Tc (min.)	TL (min.)	i (In / Hr.)	Total (CA)	Q Runoff (cfs)	Top Elev.	Hydraulic Grade EL. Crown / Flowline Up End	Dn End	Fall	Pipe Size Span (in.)	Rise (in.)	Pipe Mat.	n	Hydraulic Gradient / Physical Slope (%)	Vel. (fps)	Q (cfs)	C Head Loss	Minor Loss (str)	Re
S-124	SINGLE		0.22	0.40	0.09							88.95	88.29	0.55					0.34%	3.08	3.78			
To	CURB	162	1.38	0.40	0.55	15.52	0.88	5.85	0.64	0.52	93.26	86.50	86.10		15	15	RCP	0.013				0.7	0.10	
S-121	INLET		1.60	0.40	0.64							85.25	84.85	0.40					0.25%	2.62	3.21			
S-125	SINGLE		0.72	0.40	0.29							90.46	90.40	0.03					0.07%	1.40	1.72			
To	CURB	39	0.00	0.00	0.00	15.00	0.46	5.93	0.29	1.71	93.15	90.50	90.40		15	15	RCP	0.013				1.0	0.03	
S-124	INLET		0.72	0.40	0.29							89.25	89.15	0.10					0.26%	2.67	3.27			
S-126	SINGLE		0.66	0.40	0.26							90.50	90.45	0.02					0.06%	1.29	1.58			
To	CURB	40	0.00	0.00	0.00	15.00	0.52	5.93	0.26	1.57	93.18	90.55	90.45		15	15	RCP	0.013				1.0	0.03	
S-124	INLET		0.66	0.40	0.26							89.30	89.20	0.10					0.25%	2.63	3.23			
S-200	STD.											84.81												SMF-02
	MES		2.13	0.41	0.87	17.86					-	80.60			24	24	HP							10 Yr D.H.W.
												78.60												EL. = 84.81
S-201	TYPE		0.00	0.45	0.00							84.85	84.81	0.01					0.04%	1.55	4.88			
To	J	36	2.13	0.41	0.87	17.48	0.39	5.57	0.87	0.00	87.05	80.70	80.60		24	24	HP	0.012				0.6	0.02	
S-200	MH		2.13	0.41	0.87							78.70	78.60	0.10					0.28%	4.11	12.92			
S-202	SINGLE		0.39	0.45	0.18							84.96	84.85	0.08					0.05%	1.62	5.09			
To	CURB	159	1.74	0.40	0.69	15.84	1.64	5.80	0.87	1.04	86.16	80.90	80.70		24	24	RCP	0.013				0.7	0.03	
S-201	INLET		2.13	0.41	0.87							78.90	78.70	0.20					0.13%	2.55	8.02			
S-203	SINGLE		0.47	0.45	0.21							85.10	84.96	0.09					0.15%	2.32	4.10			
To	CURB	56	1.27	0.38	0.48	15.44	0.40	5.86	0.69	1.25	86.05	83.40	83.25		18	18	RCP	0.013				0.7	0.06	
S-202	INLET		1.74	0.40	0.69							81.90	81.75	0.15					0.27%	3.08	5.44			
S-204	SINGLE		1.27	0.38	0.48							85.17	85.10	0.03					0.08%	1.63	2.89			
To	CURB	43	0.00	0.00	0.00	15.00	0.44	5.93	0.48	2.86	86.06	83.50	83.40		18	18	RCP	0.013				1.0	0.04	
S-203	INLET		1.27	0.38	0.48							82.00	81.90	0.10					0.23%	2.87	5.07			
S-205	STD.											84.81												SMF-02
	MES		3.08	0.42	1.30	16.81					-	79.70			24	24	HP							10 Yr D.H.W.
												77.70												EL. = 84.81
S-206	SINGLE		0.32	0.45	0.14							84.93	84.81	0.06					0.09%	2.38	7.48			
To	CURB	67	2.76	0.42	1.15	16.34	0.47	5.73	1.30	0.85	86.16	79.80	79.70		24	24	HP	0.012				0.6	0.05	
S-205	INLET		3.08	0.42	1.30							77.80	77.70	0.10					0.15%	3.01	9.47			
S-207	SINGLE		0.45	0.45	0.20							85.03	84.93	0.05					0.09%	2.14	6.73			
To	CURB	57													24	24	RCP	0.013				0.7	0.05	
S-206	INLET													0.10					0.18%	3.02	9.48			
S-208	SINGLE													0.09					0.21%	2.39	2.93			
To	CURB	43													15	15	RCP	0.013				1.0	0.09	
S-207	INLET		1.29	0.38	0.49							82.30	82.20	0.10					0.23%	2.54	3.12			
S-209	SINGLE		1.02	0.45	0.46							85.04	85.03	0.01					0.01%	0.87	2.75			
To	CURB	47	0.00	0.00	0.00	15.00	0.90	5.93	0.46	2.72	86.00	80.00	79.90		24	24	HP	0.012				1.0	0.01	
S-207	INLET		1.02	0.45	0.46							78.00	77.90	0.10					0.21%	3.60	11.30			

EXCERPT FROM SJRWMD PERMIT 18971-28:
28-STORM SEWER TABULATION SHEET

HGL TAILWATER

Hydraulic Analysis Report for
Howey in the Hills, FL

Hillside Groves Common
Howey in the Hills, FL

Prepared by:

Kimley-Horn and Associates, Inc.
Orlando, Florida
149658038

August 2025

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Kimley»Horn

Hydraulic Analysis Report for
Howey in the Hills, FL

Hillside Groves Common
Howey in the Hills, FL

Prepared for:

Meritage Homes
5337 Millenia Lakes Blvd, Suite 235
Orlando, Florida 32839

Prepared by:

Kimley-Horn and Associates, Inc.
6876 Marwick Lane, Suite 350
Orlando, Florida 32827

August 2025

Blake Wagner

Digitally signed by Blake Wagner
DN: CN=Blake Wagner, dnQualifier=A01410C000001978DE85F06000B65C2, O=KIMLEY-HORN AND ASSOCIATES INC, C=US
Date: 2025.08.27 19:34:51-04'00'

Blake J. Wagner, P.E.
FL P.E. # 94035

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EXECUTIVE SUMMARY

The Hillside Groves Common Amenity Center proposes a community clubhouse, pool, and associated infrastructure on a 1.22-acre tract. The subject property is located north of State Road 19 and southwest of W. Central Ave and S. Florida Ave. in Howey in the Hills, Lake County, Florida (Section 35, Township 20S, Range 25E). The proposed development, Hillside Groves Common, is part of the larger single-family development, Hillside Groves.

The Town of Howey-in-the-Hills will be the utility provider for potable water for this project. All proposed utilities shall be designed per the latest edition of the Howey-in-the-Hills Construction Specifications Manual.

The Hillside Groves Common Amenity Center will provide a water main connection to the existing system along the local subdivision road surrounding the amenity tract. As shown on the Utility Plan within **Appendix E,** we are proposing to make one connection to the existing 8" PVC water main located along the West side of the project. The proposed system is comprised of a wet tap to the existing 8-inch water main with a 2-inch service saddle and corporation stop, a 1-inch meter and RPZ, a 2-inch water service, and a 1.5-inch connection to the clubhouse. The WaterCAD schematic diagram has been provided in **Appendix C.**

A water distribution analysis has been performed for the proposed Hillside Groves Common project. The average daily flow demands were calculated and determined per conservative estimates from the MEP based on water supply fixture units (WSFU).

Estimated potable water Average Daily Flows (ADF), Max Daily Flows (MDF), and Peak Hourly Flows (PHF) for the proposed site are shown in **Appendix A**. The MDF was determined by multiplying the ADF by a factor of 2.0, while the PHF uses a peaking factor of 4.0.

The potable water distribution system has been modeled in WaterCAD CONNECT Edition 3 Update. The model has been analyzed to ensure adequate flows and pressures are provided within the system during potential worst-case scenarios.

The Needed Fire Flow (NFF) for the Hillside Groves Common project was determined per the NFPA 1 Uniform Fire Code Handbook, 2024 Edition. Building square footages and building types were provided by Total Solutions Group. The NFF was determined to be 1,500 GPM. Please see the Needed Fire Flow Calculations included in **Appendix B**.

The hydraulic information was determined by utilizing the Fire Flow Design Report provided by Connelly & Wicker. The design report provided a total head of roughly 254 feet along the existing 8-inch water main at our point of connection. Please see **Appendix F** for the existing hydraulic information from Connelly & Wicker.

Per Howey-in-the-Hills criteria, the water system must maintain a minimum pressure of 20 psi at all points in the distribution system under all conditions of flow. As determined in our analysis, the lowest pressure in the system during PHF is 62 PSI. The minimum system pressure measured during fire flow is 62 PSI. Therefore, the proposed system meets and/or exceeds Howey-in-the-Hills requirements. Please see the WaterCAD results in **Appendix D** for more details regarding the flows and pressures generated during each scenario.

APPENDIX A

POTABLE WATER DEMAND CALCULATIONS
(ADF, MDD, PHF)

Kimley»Horn

6876 Marwick Lane, Suite 350
Orlando, Florida 32827

Made By: NDF DATE: 8/26/2025
Checked By: BJW DATE: 8/27/2025
KHA Project Number: 149658038

Hillside Groves Common

Potable Water Demand Determination

(per O.C.U. Standards and Construction Specifications October 2021)

Fixture Unit Type	Unit	UNITS / COUNT	ERC per UNIT	TOTAL ERCs	GPD			GPM		
					ADF	MDF	PHF	ADF	MDF	PHF
Water Closet	**Per Fixture**	5	0.500	2.5	875	1,750	3,500	0.6	1.2	2.4
Urinal	**Per Fixture**	1	0.333	0.3	117	233	466	0.1	0.2	0.3
Lavoratory	**Per Fixture**	6	0.167	1.0	351	701	1,403	0.2	0.5	1.0
Service Sink	**Per Fixture**	1	0.250	0.3	88	175	350	0.1	0.1	0.2
Mop Sink	**Per Fixture**	1	0.250	0.3	88	175	350	0.1	0.1	0.2
Electric Water Cooler	**Per Fixture**	1	0.083	0.1	29	58	116	0.0	0.0	0.1
Hose Bib	**Per Fixture**	2	0.042	0.1	29	59	118	0.0	0.0	0.1
Ice Maker Supply Box	**Per Fixture**	1	0.083	0.1	29	58	116	0.0	0.0	0.1
Drinking Fountain	**Per Fixture**	1	0.042	0.04	15	29	59	0.0	0.0	0.0
Subtotal				**4.6**	**1,619**	**3,239**	**6,478**	**1.1**	**2.2**	**4.5**
Total				**4.6**	**1,619**	**3,239**	**6,478**	**1.1**	**2.2**	**4.5**

1 ERU = 350 GPD
Average Daily Flow (ADF)
Max Daily Flow (MDF) = ADF x 2.0
Peak Hour Flow (PHF) = ADF x 4.0

TOTAL SOLUTIONS GROUP
258 Southhall Lane, Suite 200
Maitland, Florida 32751
P: (407) 880-2333
info@mytsghome.com
www.myTSGhome.com

August 27, 2025

To whom it may concern,
We have been informed to provide plumbing fixture unit counts for the proposed Hillside Grove Amenity. This information is provided for the site plan engineering design analysis. Please note that the final plumbing schedule will be submitted with the building plans as part of the permit application and construction documentation.

PLUMBING FIXTURE SCHEDULE

MARK	DESCRIPTION	WASTE	VENT	CW	HW	REMARKS
WC-1 QTY (3)	WATER CLOSET 1.28 GPF LOW CONSUMPTION	3"	2"	½"	---	RIM +15⅝" FIXTURE: STERLING #402312, TWO-PIECE VITREOUS CHINA BOWL, BOWL & TANK, FLOOR OUTLET W/ BOLT CAPS, ELONGATED BOWL, CHROME PLATED TRIP LEVER, STAINLESS STEEL BRAIDED SUPPLY AND STOP VALVE. SEAT: KOHLER K-4636, ELONGATED SOLID WHITE PLASTIC SEAT WITH COVER.
WC-2 QTY (2)	WATER CLOSET 1.28 GPF LOW CONSUMPTION ADA	3"	2"	½"	---	RIM +16½" FIXTURE: STERLING #402313, TWO-PIECE VITREOUS CHINA BOWL, BOWL & TANK, FLOOR OUTLET W/ BOLT CAPS, ELONGATED BOWL, CHROME PLATED TRIP LEVER, STAINLESS STEEL BRAIDED SUPPLY AND STOP VALVE. SEAT: KOHLER K-4636, ELONGATED SOLID WHITE PLASTIC SEAT WITH COVER.
UR-1 QTY (1)	URINAL ADA	1½"	1½"	¾"	---	WALL HUNG - SEE ARCHITECTURAL DWGS. FOR MOUNTING HEIGHT FIXTURE; AMERICAN STANDARD DECORUM #6045.013.002, 0.125 GPF URINAL. WHITE VITREOUS CHINA, WASHOUT URINAL, ¾" TOP SPUD OPERATED FLUSH VALVE, ZURN #Z1221 URINAL CARRIER MOUNTED TO FLOOR
L-1 QTY (4)	LAVATORY	1½"	1½"	½"	½"	FIXTURE: KOHLER #K-2330-0, UNDERCOUNTER, RECTANGULAR, VITREOUS CHINA, REAR OVERFLOW. FAUCET; MOEN #M-POWER 8558BL, BATTERY OPERATED, MATT BLACK, P-TRAP W/CLEANOUT, GRID STRAINER. PROVIDE ANGLE VALVES, STAINLESS STEEL BRAIDED SUPPLIES AND P-TRAP. SOAP DISPENSER; MOEN #8560BL, BATTERY OPERATED
L-2 QTY (2)	LAVATORY ADA	1½"	1½"	½"	½"	WALL HUNG FIXTURE; AMERICAN STANDARD #9024.021EC, WHITE, W/CONCEALED ARMS, WALL MOUNTED LAVATORY WITH SHROUD. FAUCET; MOEN #M-POWER 8558BL, BATTERY OPERATED, MATT BLACK, P-TRAP W/CLEANOUT, GRID STRAINER. PROVIDE ANGLE VALVES, STAINLESS STEEL BRAIDED SUPPLIES AND P-TRAP. PROVIDE ZURN #1231 LAVATORY CARRIER MOUNTED TO FLOOR. SOAP DISPENSER; MOEN #8560BL, BATTERY OPERATED. INSULATE SUPPLIES, STOPS AND WASTE PIPING
S-1 QTY (1)	SINK ADA	1½"	1½"	½"	½"	COUNTERTOP FIXTURE; ELKAY #ECTSRAD33226TBG, 33"x22"x6", DOUBLE COMPARTMENT, 18 GAUGE STAINLESS STEEL, SOUND DEADENED, SELF-RIMMING WITH CRUMB CUP STRAINER & TAILPIECE, 1½" CHROMIUM-PLATED, CONTINUOUS WASTE & P-TRAP, CHROME-PLATED BRASS ANGLED STOP VALVES AND STAINLESS STEEL BRAIDED SUPPLIES. FAUCET; GIMILI #GM1062-B, TOUCHLESS FAUCET, MATT BLACK, PULL OUT SPRAYER (1.8 GPM)
MS-1 QTY (1)	MOP SINK	1½"	1½"	½"	½"	FIXTURE; PRO-FLO #PFMB2424 FLOOR MOUNTED SERVICE SINK CONSTRUCTED OF MOLDED COMPOSITE WITH STAINLESS STEEL DRAIN & STRAINER/LINT BASKET. FAUCET; T&S BRASS #B-0665-BSTR WITH TOP BRACE, VACUUM BREAKER AND INTEGRAL CHECKS.
HB-1 QTY (2)	HOSE BIBB	---	---	½"	---	OUTLET +24" MODEL: WOODFORD #24-CP, CHROME-PLATED WITH ANTI-SIPHON VACUUM BREAKER. PROVIDE LOOSE TEE KEY
EWC-1 QTY (1)	ELECTRIC WATER COOLER ADA ACCESSIBLE	1½"	1½"	½"	---	WALL HUNG, SEE ARCHITECTURAL DWGS. FOR MOUNTING HEIGHT FIXTURE; ELKAY #LZSTL8WSSK, WITH BOTTLE FILLING STATION CAPACITY TO DELIVER 8.0 GPH OF 50° F. WATER WITH INLET TEMP. OF 80° F. AND ROOM TEMP. OF 90° F, WATER FILTER SYSTEM, STAINLESS STEEL BASIN AND GRILL, VANDAL RESISTANT FRONT PUSH BUTTON BUBBLER, AIR COOLED HERMETICALLY SEALED CONDENSING UNIT W/ 1/5 hp., 120 V., 60 CYCLE, 1 PH. W/ OVERLOAD PROTECTION, 1½" P-TRAPS, STOP VALVE, CORD & PLUG
IMB-1 QTY (1)	ICE MAKER SUPPLY BOX	---	---	½"	---	VALVE +24" PROVIDE WATERTITE #AB1201CP ICE MAKER BOX WITH WATER HAMMER ARRESTOR #38684, HIGH IMPACT PLASTIC BOX W/ DIMENSION OF 6" HIGH x 6" WIDE.

NOTES:
1. INSTALL FIXTURES IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL ACCESSIBILITY CODE REQUIREMENTS FOR INDIVIDUALS WITH PHYSICAL IMPAIRMENTS.

APPENDIX B

NEEDED FIRE FLOW CALCULATIONS

August 25, 2025
KHA Job# 149658038

Hillside Groves Common Pool/Amenity

Needed Fire Flow (NFF)

per NFPA 1 Uniform Fire Code Handbook, 2024 Edition

***Building Fire Area=**	2,827	**SF**
Building Type (per NFPA 220) =	V (000)	
Associated Min. Required Fire Flow=	1,500	**GPM**
(per Table 18.4.4.2.1 of the NFPA 1 Uniform Fire Code Handbook)		
Fire Sprinkler - Yes or No=	No	
Calculated Fire Flow=	1,500	**GPM**
(with 75% fire sprinkler credit, if applicable)		
Minimum Fire Flow Required=	1,500	**GPM**

Fire Flow Provided= 1,500 GPM

APPENDIX C

WATERCAD SCHEMATIC DIAGRAM

Plotted By:Ferrer, Nicholas Sheet Set:HILLSIDE GROVES COMMON Layout:C6.0 - UTILITY PLAN August 27, 2025 05:45:05pm K:\ORL_LA\149658038_Hillside Groves Common\CADD\MISC\WaterCAD Schematic.dwg
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

Item 1.

NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

H-10
P-5
J-3
P-6
R-13
HERSCHEL ST
P-4
MANHOLE #54
TYPE "A"
TOP EL. = 87.20
INV. OUT = 81.50
MANHOLE #53
TYPE "S"
TOP EL. = 86.75
INV. IN = 71.35
INV. IN = 81.23
INV. OUT = 71.25
J-1
1.0" MTR
1.0" RPZ
P-7
P-8
P-9
BLD CONNECT
P-3
J-2
P-1
H-11
R-15
ROAD K

Color Coding Legend
Pipe: Diameter (in)

<=	1.5
<=	2.0
<=	6.0
<=	8.0
	Other

No.	REVISIONS	DATE

Kimley»Horn
© 2025 KIMLEY-HORN AND ASSOCIATES, INC.
6876 MARWICK LANE, SUITE 350, ORLANDO, FL 32827
PHONE: (407) 536-4440
WWW.KIMLEY-HORN.COM REGISTRY No. 35106

LICENSED PROFESSIONAL
BLAKE J. WAGNER
FLORIDA LICENSE NUMBER
94035
DATE: _____

KHA PROJECT	149658038
DATE	08/28/2025
SCALE	AS SHOWN
DESIGNED BY	NDF
DRAWN BY	NDF
CHECKED BY	BJW

POTABLE WATER SYSTEM SCHEMATIC

HILLSIDE GROVES COMMON

HOWEY-IN-THE-HILLS FLORIDA

SHEET NUMBER
EX-1

APPENDIX D

WATERCAD RESULTS

“PHF”
PEAK HOURLY FLOW ANALYSIS

Hillside Groves Common

Scenario: PHF

Reservoir Table - Time: 0.00 hours

Label	Elevation (ft)	Hydraulic Grade (ft)	Notes
R-13	254.04	254.04	(J-13 from Hillside Grove Hydraulic Report)
R-15	254.03	254.03	(J-15 from Hillside Grove Hydraulic Report)

Hydrant Table - Time: 0.00 hours

Label	Hydrant Status	Length (Hydrant Lateral) (ft)	Elevation (ft)	Hydraulic Grade (ft)	Demand (gpm)	Pressure (psi)
H-10	Closed	20	87.00	254.04	0.0	72
H-11	Closed	20	87.00	254.03	0.0	72

Hillside Groves Common

Scenario: PHF

Junction Table - Time: 0.00 hours

Label	Demand (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)
BLD CONNECT	4.5	84.50	228.08	62
J-1	0.0	84.62	254.03	73
J-2	0.0	86.60	254.03	72
J-3	0.0	86.60	254.04	72

Hillside Groves Common

Scenario: PHF

Pipe Table - Time: 0.00 hours

Label	Length (ft)	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Hydraulic Grade (Start) (ft)	Hydraulic Grade (Stop) (ft)	Headloss (ft)
P-1	46	8.0	PVC	140.0	21.9	0.14	254.03	254.03	0.00
P-2	6	6.0	PVC	140.0	0.0	0.00	254.03	254.03	0.00
P-3	144	8.0	PVC	140.0	21.9	0.14	254.03	254.03	0.00
P-4	252	8.0	PVC	140.0	26.4	0.17	254.04	254.03	0.01
P-5	6	6.0	PVC	140.0	0.0	0.00	254.04	254.04	0.00
P-6	95	8.0	PVC	140.0	26.4	0.17	254.04	254.04	0.00
P-7	7	2.0	PVC	140.0	-4.5	0.46	254.02	254.03	0.01
P-8	5	1.0	PVC	140.0	4.5	1.84	253.93	253.75	0.18
P-9	72	2.0	PVC	140.0	4.5	0.46	228.13	228.08	0.05

“NFF + MDF”
FIRE FLOW ANALYSIS

Hillside Groves Common

Scenario: NFF

Reservoir Table - Time: 0.00 hours

Label	Elevation (ft)	Hydraulic Grade (ft)	Notes
R-13	254.04	254.04	(J-13 from Hillside Grove Hydraulic Report)
R-15	254.03	254.03	(J-15 from Hillside Grove Hydraulic Report)

Hydrant Table - Time: 0.00 hours

Label	Hydrant Status	Length (Hydrant Lateral) (ft)	Elevation (ft)	Hydraulic Grade (ft)	Demand (gpm)	Pressure (psi)
H-10	Open	20	87.00	250.22	750.0	71
H-11	Open	20	87.00	250.38	750.0	71

Hillside Groves Common

Scenario: NFF

Junction Table - Time: 0.00 hours

Label	Demand (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)
BLD CONNECT	2.2	84.50	228.87	62
J-1	0.0	84.62	253.39	73
J-2	0.0	86.60	253.45	72
J-3	0.0	86.60	253.30	72

Hillside Groves Common

Scenario: NFF

Pipe Table - Time: 0.00 hours

Label	Length (ft)	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Hydraulic Grade (Start) (ft)	Hydraulic Grade (Stop) (ft)	Headloss (ft)
P-1	46	8.0	PVC	140.0	-877.0	5.60	253.45	254.03	0.58
P-2	6	6.0	PVC	140.0	-750.0	8.51	250.38	253.45	3.07
P-3	144	8.0	PVC	140.0	-127.0	0.81	253.39	253.45	0.06
P-4	252	8.0	PVC	140.0	-124.8	0.80	253.30	253.39	0.09
P-5	6	6.0	PVC	140.0	-750.0	8.51	250.22	253.30	3.08
P-6	95	8.0	PVC	140.0	625.2	3.99	254.04	253.30	0.74
P-7	7	2.0	PVC	140.0	-2.2	0.22	253.39	253.39	0.00
P-8	5	1.0	PVC	140.0	2.2	0.90	253.38	253.33	0.05
P-9	72	2.0	PVC	140.0	2.2	0.22	228.88	228.87	0.01

APPENDIX E

UTILITY PLAN/SCHEMATIC DIAGRAM

GENERAL FIRE SERVICE NOTES:

1. ALL UNDERGROUND MAINS SERVING FIRE HYDRANTS OR FIRE PROTECTION SPRINKLER SYSTEMS ON PRIVATE PROPERTY MUST BE PERMITTED PRIOR TO INSTALLATION. THE DRAWING SHALL INDICATE THAT ALL UNDERGOUND FIRE MAINS WILL BE INSTALLED IN ACCORDANCE WITH NFPA 24 (2021 EDITION, "STANDARD FOR THE INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES". [F.A.C. 69A–60.005(2)]
2. ALL FIRE SERVICE MAIN LOCATED DOWNSTREAM OF THE FIRE POINT OF SERVICE SHALL BE INSTALLED BY A QUALIFIED AND LICENSED CONTRACTOR. CONSTRUCTION AND MATERIALS SHALL COMPLY WITH APPLICABLE FIRE CODE. CONTRACTOR TO VERIFY REQUIREMENTS WITH THE TOWN OF HOWEY–IN–THE–HILLS PRIOR TO SHOP DRAWING REVIEW.

August 25, 2025
KHA Job# 149658038

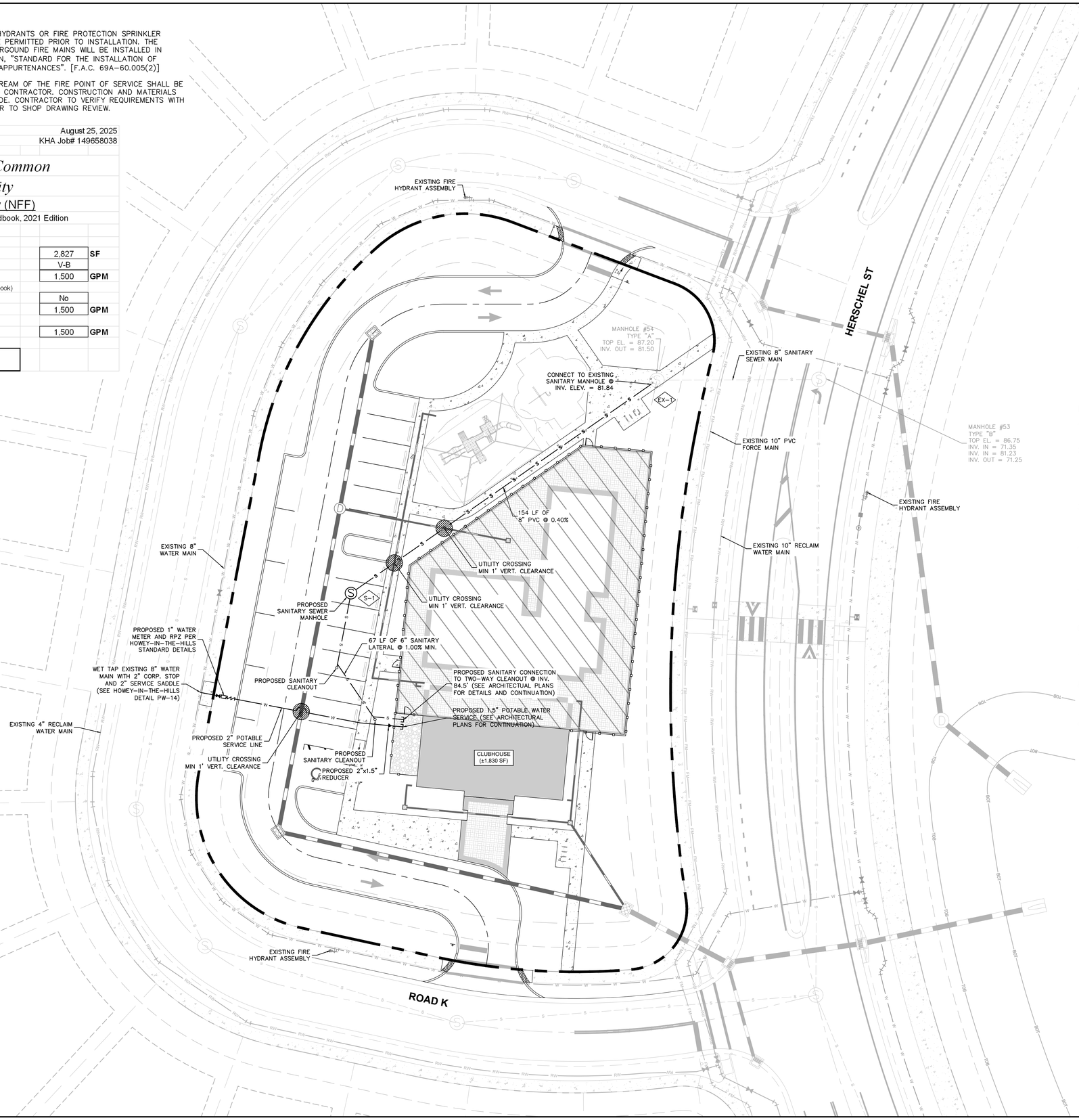
Hillside Groves Common
Pool/Amenity

Needed Fire Flow (NFF)

per NFPA 1 Uniform Fire Code Handbook, 2021 Edition

*Building Fire Area=	2,827	SF
Building Type (per NFPA 220) =	V-B	
Associated Min. Required Fire Flow=	1,500	GPM
(per Table 18.4.4.2.1 of the NFPA 1 Uniform Fire Code Handbook)		
Fire Sprinkler - Yes or No=	No	
Calculated Fire Flow=	1,500	GPM
(with 75% fire sprinkler credit, if applicable)		
Minimum Fire Flow Required=	1,500	GPM

Fire Flow Provided=	1,500 GPM



NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

LEGEND

- PROPERTY LINE
- S — EXISTING SANITARY SEWER LINE
- FM — EXISTING FORCE MAIN LINE
- RW — EXISTING RECLAIM WATER LINE
- W — EXISTING WATER LINE
- EXISTING STORM PIPE
- S — PROPOSED SANITARY LINE
- W — PROPOSED WATER LINE
- PROPOSED STORM PIPE
- PROPOSED FIRE HYDRANT
- EXISTING SANITARY MANHOLE
- EXISTING STORM STRUCTURES
- PROPOSED SANITARY MANHOLE
- PROPOSED STORM STRUCTURES

NOTES:

1. CONTRACTOR TO CONFIRM UNDERGROUND UTILITY LOCATIONS, DEPTHS, AND SIZES PRIOR TO COMMENCING CONSTRUCTION.
2. CONTRACTOR TO COORDINATE PROPOSED TRANSFORMER LOCATIONS AND ELECTRIC SERVICE WITH POWER COMPANY AND OWNER. TRANSFORMERS AND SERVICE LINES SHOWN FOR INFORMATIONAL PURPOSES ONLY. DESIGNED & PERMITTED BY OTHERS. CONTRACTOR TO CONFIRM PAD AND BOLLARD REQUIREMENTS.
3. CONTRACTOR TO COORDINATE PROPOSED TELEPHONE SERVICE AND ROUTING WITH CABLE COMPANY AND OWNER. SERVICE CONNECTIONS SHOWN FOR INFORMATIONAL PURPOSES ONLY. DESIGNED & PERMITTED BY OTHERS.
4. CONTRACTOR TO COORDINATE PROPOSED GAS SERVICE AND ROUTING WITH GAS COMPANY AND OWNER. SERVICE CONNECTIONS SHOWN FOR INFORMATIONAL PURPOSES ONLY. DESIGNED & PERMITTED BY OTHERS.
5. ALL POTABLE WATER UTILITIES SHALL BE IN ACCORDANCE WITH THE TOWN OF HOWEY–IN–THE–HILLS STANDARDS AND SPECIFICATIONS. CONTRACTOR SHALL BE RESPONSIBLE TO BE FAMILIAR WITH THESE STANDARDS.
6. REFER TO THE TOWN OF HOWEY–IN–THE–HILLS STANDARD NOTES & DETAILS, SHEET C8.0–C8.2.
7. ALL UTILITIES LOCATED OUTSIDE PUBLIC RIGHT–OF–WAY AND PUBLIC EASEMENTS SHALL BE PRIVATELY OWNED AND MAINTAINED.
8. MAINTAIN A MINIMUM OF 3 FEET OF COVER OVER ALL PROPOSED WASTEWATER WATER LINES. PLEASE REFER TO THE LATEST VERSION OF THE HOWEY–IN–THE–HILLS CONSTRUCTION SPECIFICATION MANUAL.
9. A MINIMUM OF 3 FEET HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL UTILITY MAINS, CURB, AND STORM WATER STRUCTURES.

STRUCTURE TABLE	
STRUCTURE NAME:	DETAILS:
EX–1	SANITARY MANHOLE TOP: 87.20 SW. INV IN: 81.84 E. INV OUT: 81.50
S–1	SANITARY MANHOLE TOP: 86.80 S. INV IN: 82.63 NE. INV OUT: 82.46

Always call 811 two full business days before you dig to have underground utilities located and marked.
Sunshine811.com

Plotted By: Powers, Steven Sheet Set: HILLSIDE GROVES COMMON Layout: C6.0 - UTILITY PLAN August 27, 2025 09:42:59pm K:\ORL_LA\149658038 - hillside groves common\CAD\CONST\plansheets\C6.0-UTIL.dwg
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No.	REVISIONS	DATE

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WWW.KIMLEY–HORN.COM REGISTRY No. 35106

LICENSED PROFESSIONAL ENGINEER — BLAKE E. WAGNER — No. 74264 — STATE OF FLORIDA — PROFESSIONAL ENGINEER — DATE: 08/28/2025

KHA PROJECT	149658038
DATE	08/28/2025
SCALE	AS SHOWN
DESIGNED BY	NDF
DRAWN BY	NDF
CHECKED BY	BJW

UTILITY PLAN

HILLSIDE GROVES COMMON

HOWEY–IN–THE–HILLS FLORIDA

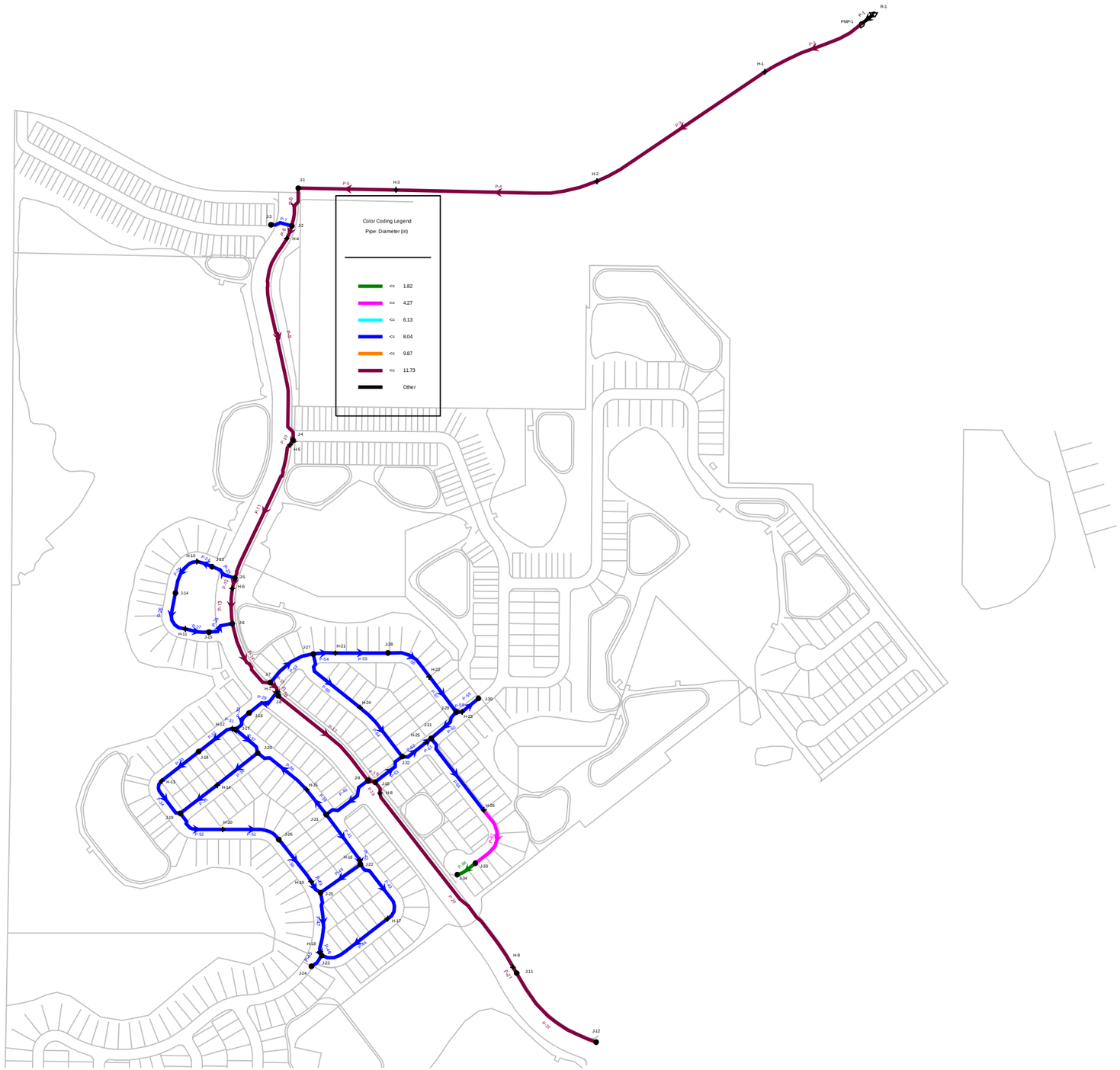
SHEET NUMBER
C6.0

APPENDIX E

TIE-IN PRESSUES

(BASED ON FIRE FLOW DESIGN REPORT
FROM CONNELLY & WICKER)

Scenario: Base



FlexTable: Hydrant Table

Label	Elevation (ft)	Pressure (psi)	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Calculated Residual) (psi)	Satisfies Fire Flow Constraints?
H-1	83.80	73.7	500.00	725.73	20.0	True
H-2	85.20	73.1	500.00	714.86	20.0	True
H-3	84.50	73.4	500.00	711.47	20.0	True
H-4	87.50	72.1	500.00	696.02	20.0	True
H-5	86.90	72.3	500.00	691.11	20.0	True
H-6	87.10	72.2	500.00	685.18	20.0	True
H-7	87.00	72.3	500.00	681.90	20.0	True
H-8	86.40	72.5	500.00	682.19	20.0	True
H-9	87.70	72.0	500.00	672.83	20.1	True
H-10	87.00	72.3	500.00	682.60	20.0	True
H-11	87.00	72.3	500.00	682.07	20.0	True
H-12	87.60	72.0	500.00	674.09	20.1	True
H-13	87.40	72.1	500.00	672.72	20.1	True
H-14	88.60	71.6	500.00	669.10	20.1	True
H-15	88.10	71.8	500.00	671.92	20.1	True
H-16	90.00	71.0	500.00	663.06	20.0	True
H-17	96.70	68.1	500.00	636.31	20.0	True
H-18	93.60	69.4	500.00	647.16	20.0	True
H-19	92.60	69.8	500.00	652.81	20.0	True
H-20	88.80	71.5	500.00	666.59	20.1	True
H-21	86.90	72.3	500.00	677.05	20.1	True
H-22	86.10	72.6	500.00	677.19	20.1	True
H-23	85.30	73.0	500.00	678.61	20.1	True
H-24	87.00	72.3	500.00	676.23	20.1	True
H-25	86.10	72.6	500.00	679.51	20.0	True
H-26	89.40	71.2	500.00	655.17	20.0	True

FlexTable: Junction Table

Label	Demand (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)	Pressure (Residual Lower Limit) (psi)
J-1	0.00	86.20	254.13	72.7	167.93	20.0
J-2	0.00	87.20	254.12	72.2	166.92	20.0
J-3	0.00	87.10	254.12	72.3	167.02	20.0
J-4	0.00	86.70	254.07	72.4	167.37	20.0
J-5	0.00	86.80	254.04	72.4	167.24	20.0
J-6	0.00	86.90	254.03	72.3	167.13	20.0
J-7	0.00	86.60	254.02	72.4	167.42	20.0
J-8	0.00	87.00	254.02	72.3	167.02	20.0
J-9	0.00	87.00	254.01	72.3	167.01	20.0
J-10	0.00	87.00	254.01	72.3	167.01	20.0
J-11	0.00	87.70	254.01	72.0	166.31	20.0
J-12	0.00	86.40	254.01	72.5	167.61	20.0
J-13	1.00	86.60	254.04	72.4	167.44	20.0
J-14	6.00	87.60	254.03	72.0	166.43	20.0
J-15	1.50	86.60	254.03	72.4	167.43	20.0
J-16	1.00	87.20	254.01	72.2	166.81	20.0
J-17	0.00	87.60	254.01	72.0	166.41	20.0
J-18	9.00	88.20	254.01	71.7	165.81	20.0
J-19	8.50	87.90	254.00	71.9	166.10	20.0
J-20	9.00	88.30	254.01	71.7	165.71	20.0
J-21	7.50	87.50	254.01	72.0	166.51	20.0
J-22	5.00	90.80	254.00	70.6	163.20	20.0
J-23	6.00	93.50	254.00	69.4	160.50	20.0
J-24	0.00	93.70	254.00	69.4	160.30	20.0
J-25	4.50	92.80	254.00	69.7	161.20	20.0
J-26	7.00	90.70	254.00	70.7	163.30	20.0
J-27	9.00	87.20	254.01	72.2	166.81	20.0
J-28	6.50	86.50	254.01	72.5	167.51	20.0
J-29	3.50	85.30	254.01	73.0	168.71	20.0
J-30	1.00	85.70	254.01	72.8	168.31	20.0
J-31	5.50	86.10	254.01	72.6	167.91	20.0
J-32	8.50	85.70	254.01	72.8	168.31	20.0
J-33	6.00	91.30	254.00	70.4	162.70	20.0
J-34	1.50	91.90	253.98	70.1	162.08	20.0

HILLSIDE GROVES AMENITY

HOWEY-IN-THE-HILLS, FLORIDA



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KIMLEY-HORN
200 SOUTH ORANGE AVE.
SUITE 600
ORLANDO, FL. 32801
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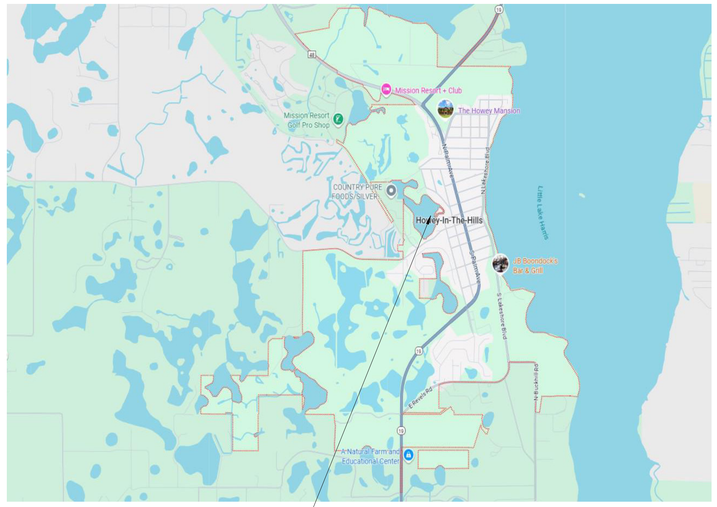

PROJECT LOCATION

VICINITY MAP

SCALE: NTS

DRAWING INDEX

SHEET NUMBER	SHEET NAME	SHEET ISSUE DATE	CURRENT REVISION DATE
0 - GENERAL			
A001	INDEX & BUILDING DATA	08.26.25	
A002	ABBREVIATIONS, LEGENDS, & NOTES	08.26.25	
2 - LIFE SAFETY			
A100	LIFE SAFETY PLAN	08.26.25	
A101	LIFE SAFETY SITE PLAN	08.26.25	
A102	ADA CLEARANCE REQUIREMENTS	08.26.25	
A103	ADA CLEARANCE REQUIREMENTS	08.26.25	
A104	ADA CLEARANCE REQUIREMENTS	08.26.25	
3 - ARCHITECTURAL			
A300	FLOOR PLAN - NOTES	08.26.25	
A302	FLOOR PLAN - DIMENSIONS	08.26.25	
A401	ENLARGED PLANS / INTERIOR ELEVATIONS	08.26.25	
A500	REFLECTED CEILING PLAN	08.26.25	
A600	ROOF PLAN	08.26.25	
A700	BUILDING ELEVATIONS	08.26.25	
A701	BUILDING ELEVATIONS	08.26.25	
A800	BUILDING SECTIONS	08.26.25	
A900	WALL SECTIONS	08.26.25	
A1000	DOOR & WINDOW SCHEDULES & DETAILS	08.26.25	
A1100	WALL PARTITION TYPES	08.26.25	
A1101	DETAILS	08.26.25	
A1200	EXTERIOR PERSPECTIVES	08.26.25	

GROSS AREA TABULATION

AREA NAME	SQUARE FT.
CLUBHOUSE	1829 SF
COVERED LANAI - NON AC	789 SF
FRONT ENTRY - NON AC	207 SF
TOTAL SQUARE FOOTAGE	2826 SF

OCCUPANCY CLASSIFICATION

GROUP - A3 - ASSEMBLY

CONSTRUCTION TYPE

NEW - TYPE VB - NON-SPRINKLED/UNPROTECTED

JURISDICTION

HOWEY-IN-THE-HILLS, FLORIDA — DIGITAL SIGNED & SEALED

APPLICABLE CODES:

FLORIDA BUILDING CODE	FLORIDA BUILDING CODE 2023 8th ED.
FLORIDA PLUMBING CODE	FLORIDA BUILDING CODE 2023 8th ED.
FLORIDA MECHANICAL CODE	FLORIDA BUILDING CODE 2023 8th ED.
FLORIDA FUEL GAS CODE	FLORIDA BUILDING CODE 2023 8th ED.
NFPA 70 NATIONAL ELECTRIC CODE	2020 NEC
FLORIDA FIRE PREVENTION CODE	2023 8th ED. & CURRENT ADOPTED CODES & STANDARD BY THE STATE FLORIDA
NFPA 1 AND NFPA 101 FLORIDA EDITION	2021 EDITION
FLORIDA ACCESSIBILITY CODE	FLORIDA BUILDING CODE 2023 8TH ED.
EXISTING FLORIDA BUILDING CODE	FLORIDA BUILDING CODE 2023 8TH ED.

SITE PLAN SUBMITTAL ONLY

TOTAL SOLUTIONS GROUP
258 Southhall Lane, Suite 200
Maitland, Florida, 32751
(407) 880 2333

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08/28/2025
STATE OF FLORIDA
STEVEN G. TENZEL
AR 100363
REGISTERED ARCHITECT
8/27/2025 4:23:52 PM
STEVEN G TENZEL, RA
LICENSE AR 100363

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HILLSIDE GROVES AMENITY
HOWEY-IN-THE-HILLS, FLORIDA

Revision Schedule

NO	DESCRIPTION	00/00/00
		#####
		8/27/2025 4:23:52 PM
		08/27/25
		MAB
		SGT

INDEX & BUILDING DATA

Project No: 25-01934

Sheet No: A001

ABBREVIATIONS

&	AND	HGT.	HEIGHT
∠	ANGLE	H.C.	HANDICAPPED ACCESSIBLE
@	AT	HM.	HOLLOW METAL
℄	CENTERLINE	HORZ.	HORIZONTAL (LY)
⊏	CHANNEL	HB.	HOSE BIBB
⌀	DIAMETER OR ROUND	HR.	HOUR
⊥	PERPENDICULAR OR STRUCTURAL TEE	INCL.	INCLUDING
#	NUMBER OR POUND	INSUL.	INSULATE (D) (ING) (TION)
ABV.	ABOVE	INT.	INTERIOR
ACOUS./ACT	ACOUSTICAL TILE	JB	JUNCTION BOX (ES)
ADJ.	ADJUSTABLE	JC	JANITORS CLOSET
A/C	AIR CONDITIONING	JCT.	JUNCTION
A.F.F.	ABOVE FINISHED FLOOR	JT.	JOINT
ALT.	ALTERNATE	L.	LENGTH
AL.	ALUMINUM	LAM.	LAMINATE (D)
ALUM.	ALUMINUM	LAV.	LAVATORY
A.S.T.M.	AMERICAN SOCIETY TESTING MATERIALS	LG.	LAMINATED GLASS
A.I.S.C.	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	LDG.	LEADED GLASS
A.I.A.	AMERICAN INSTITUTE OF ARCHITECTS	LL.	LIVE LOAD
AB.	ANCHOR BOLT	LT.WT.	LIGHT WEIGHT
ANOD.	ANODIED	MANUF.	MANUFACTURE (ER)
ARCH.	ARCHITECT(URAL)	MARB.	MARBLE
A.R.	AS REQUIRED	MAS.	MASONRY
AUTO.	AUTOMATIC	M.O.	MASONRY OPENING
A.N.S.I.	AMERICAN NATIONAL STANDARDS INSTITUTE	MAX.	MAXIMUM
AWWM.	ALIGN WITH WINDOW MULLION	MG.	MIRROR GLASS
BKSPL.	BACK SPLASH	MIN.	MINIMUM
BSMT.	BASEMENT	MR.	MOISTURE RESISTANT
BRG.	BEARING	MTD.	MOUNTED
BM.	BEAM	MTL.	METAL
BTWN.	BETWEEN	MECH.	MECHANIC (AL)
BIT.	BITUMINOUS	MAT.	MATERIAL
BLK.	BLOCK	MISC.	MISCELLANEOUS
BLKG.	BLOCKING	NFPA	NATIONAL FIRE PROTECTION AGENCY
BD.	BOARD	N.	NORTH
BOT.	BOTTOM	NTS	NOT TO SCALE
BRK.	BRICK	NEC	NATIONAL ELECTRIC CODE
BLDG.	BUILDING	NR	NON FIRE RATED
BU.	BUILT-UP	NSF	NATIONAL SANITATION FOUNDATION
CO.	CLEAN OUT	OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMIN.
CPT.	CARPET (ED)	OC.	ON CENTER
C.B.	CATCH BASIN	OPG.	OPENING
CTR.	CENTER	OA.	OVERALL
CLG.	CEILING	OD.	OUTSIDE DIAMETER
C.F.C.I.	FURNISHED INSTALLED	O.F.O.I.	OWNER FURNISHED OWNER INSTALLED
CEM.	CEMENT	O.F.C.I.	OWNER FURNISHED CONTRACTOR INSTALLED
C.T.	CERAMIC TILE	O.H.	OPPOSITE HAND
CHAM.	CHAMFER	OWG.	ONE WAY GLASS
CHN LNK	CHAIN LINK	PNT	PAINT
C.I.	CAST IRON	PTD.	PAPER TOWEL DISPENSER
C.I.P.	CAST IN PLACE	PL	PROPERTY LINE
CIR.	CIRCLE	PLAM	PLASTIC LAMINATE
CIRCUM.	CIRCUMFERENCE	PLYWD	PLYWOOD
CLR.	CLEARANCE	P/CF	POUND PER CUBIC FOOT
COL.	COLUMN	P/LF	POUNDS PER LINEAR FOOT
CONC.	CONCRETE	P/SF	POUNDS PER SQUARE FOOT
CMU	CONCRETE MASONRY UNIT	PSI	POUNDS PER SQUARE INCH
CONST.	CONSTRUCTION	PT.	POINT
CONTR.	CONTRACTOR	P.T.	PRESSURE TREATED
CONT.	CONTINUOUS OR CONTINUE	R	FIRE RATED
CJT	CONTROL JOINT	RAD.	RADIUS
CTPG	CLEAR TEMPERED PLATE GLASS	RE:	REFERENCE OR SEE
CTR	COUNTER	REF.	REFERENCE
CW	COLD WATER	REINF.	REINFORCING
DCD	CASE DRAIN	REQ'D.	REQUIRED
D.F.	DRINKING WATER FOUNTAIN	REV.	REVISION (S) (REVISED)
DTL	DETAIL	RO	ROUGH OPENING
DIA	DIAMETER	R/W	RIGHT OF WAY
DIM	DIMENSION	SCH.	SCHEDULE
DS	DOWN SPOUT	SHT.	SHEET
DWG	DRAWING	SC.	SOLID CORE
DL.	DOWN LEADER	S.	SOUTH
DN	DOWN	SPEC.	SPECIFICATION (S)
EA.	EAST	S.S.	STAINLESS STEEL
E	EACH	S/S	SANITARY SEWER
E.H.D.	ELECTRIC HAND DRYER	SPG	SPANDRELITE PANEL GLASS
ELEC	ELECTRIC	STD	STANDARD
EL.	ELEVATION	STL.	STEEL
ELEV	ELEVATION	STOR	STORAGE
EQ.	EQUAL	STRUCT	STRUCTURE (AL)
E.W.	EACH WAY	SUSP.	SUSPENDED
E.W.C.	ELECTRIC WATER COOLER	T & B	TOP AND BOTTOM
E.W.H.	ELECTRIC WATER HEATER	T.M.	TO MATCH
EXH.	EXHAUST	T.M.E.	TO MATCH EXISTING
EJJT/E.J.	EXPANSION JOINT	T.O.C.	TOP OF CONCRETE
EXP.	EXPOSED	TOH.	TOTAL DYNAMIC HEAD
EXIST.EXTG.	EXISTING	T.O.M.	TOP OF MASONRY
EXT.	EXTERIOR	T.O.R.F.	TOP OF ROOF PERIMETER
FA	FIRE ALARM	T.O.R.D.	TOP OF ROOF DECK
FE.	FIRE EXTINGUISHER	T.O.W.	TOP OF WALL
F. CLG/		TTPG	TINTED TEMPERED PLATE GLASS
FIN. CEIL.	FINISH CEILING	T. OF F.	TOP OF FOUNDATION
F.F./FIN. FL.	FINISH FLOOR	TEL.	TELEPHONE
FIN.	FINISH (ED)	TV.	TELEVISION
FLASH.	FLASHING	T & G	TONGUE AND GROOVE
FLR.	FLOOR (ING)	TYP.	TYPICAL
FLUOR	FLUORESCENT	U.N.O.	UNLESS NOTED OTHERWISE
FOC.	FACE OF CONCRETE	V.B.	VAPOR BARRIER
FOF.	FACE OF FINISH	VERT.	VERTICAL
FOFM	FACE OF FINISHED MASONRY	VCT.	VINYL COMPOSITION TILE
FOS	FACE OF STUDS	VP	VENEER PLASTER
F.O.SH.	FACE OF SHEATHING	VTR.	VENT THRU ROOF
F.O.S.M.	FACE OF STRUCTURAL MASONRY	W/	WITH
FTG.	FOOTING	W.	WIDTH OR WEST
FT.	FOOT	WC.	WATER CLOSET
GALV.	GALVANIZED	W. HTR.	WATER HEATER
G.I.	GALVANIZED IRON	WNDW	WINDOW
GD.	GRADE (GRADING)	WO	WITHOUT
GEN.	GENERAL	WD	WOOD
GYP./GWB	GYPSUM WALL BOARD	WG	WIRE GLASS
H OR HT.	HEIGHT	WT.	WEIGHT
HDW.	HARDWARE	WP.	WATER PROOFING
HDR.	HEADER	WWF.	WELDED WIRE FABRIC
HVAC.	HEATING/VENTILATING/AC		

LEGEND OF SYMBOLS

SYMBOL	DESCRIPTION
	NORTH ARROW
ROOM NAME 0000 SQ FT 302	ROOM NAME & NUMBER - SEE FINISH SCHEDULE
100A	DOOR NUMBER - SEE DOOR SCHEDULE
100A	WINDOW NUMBER - SEE WINDOW SCHEDULE
1	COLUMN GRID REFERENCE
P-1	PARTITION TYPE - SEE SHEET A000
CONC.	FLOOR FINISH TAG
EL. 30'-3" TOP OF BEAM	ELEVATION MARK
2 / 5 1 3 / A300 / 4	INTERIOR ELEVATION MARK
#	PLAN NOTE NUMBER
#	LOUVER MARK
#	REVISION MARK
1 / A300	DETAIL MARK
	INSULATION
	CONCRETE
	STUCCO, PLASTER OR G.W.B.
	BRICK / BLOCK ELEV.
	GRADE / EARTH
1 / A300 1 / A300	BUILDING SECTION MARK
1 / A300	WALL SECTION MARK
1 / A300	DETAIL MARK

PROJECT REQUIREMENTS & COMPLIANCE

1. CODE REQUIREMENTS: IT IS THE INTENT THAT ALL WORK SHALL CONFORM TO THE ADOPTED CODES, STANDARDS AND RULES OF THE ADMINISTRATIVE AUTHORITY HAVING JURISDICTION
2. ALL WORK SHALL CONFORM WITH DRAWINGS AND SPECIFICATIONS IN ACCORDANCE WITH THE REQUIREMENTS OF ALL THE FOLLOWING WHERE APPLICABLE:
   A. GOVERNING MUNICIPAL REGULATORY AGENCIES
   B. LOCAL, STATE AND FEDERAL CODES

APPLICABLE CODES:

FLORIDA BUILDING CODE	FLORIDA BUILDING CODE 2023 8th ED.
FLORIDA PLUMBING CODE	FLORIDA BUILDING CODE 2023 8th ED.
FLORIDA MECHANICAL CODE	FLORIDA BUILDING CODE 2023 8th ED.
FLORIDA FUEL GAS CODE	FLORIDA BUILDING CODE 2023 8th ED.
NFPA 70 NATIONAL ELECTRIC CODE	2020 NEC
FLORIDA FIRE PREVENTION CODE	2023 8th ED. & CURRENT ADOPTED CODES & STANDARD BY THE STATE FLORIDA
NFPA 1 AND NFPA 101 FLORIDA EDITION	2021 EDITION
FLORIDA ACCESSIBILITY CODE	FLORIDA BUILDING CODE 2023 8TH ED.
EXISTING FLORIDA BUILDING CODE	FLORIDA BUILDING CODE 2023 8TH ED.

3. THE GENERAL CONTRACTOR SHALL COMPLY WITH ALL THE REQUIREMENTS OF THE SOILS REPORT. OBTAIN FROM THE OWNER THE CURRENT COPY OF THE SOILS INVESTIGATION REPORT IF NECESSARY.
4.ALL DEBRIS SHALL BE REMOVED FROM THE PREMISES BY THE GENERAL CONTRACTOR AND ALL AREAS SHALL BE LEFT IN A CLEAN CONDITION AT ALL TIMES DURING CONSTRUCTION.
5. IT IS UNDERSTOOD THAT ALL INTENDED WORK IS SUBJECT TO REVIEW AND INTERPRETATION BY THE ADMINISTRATIVE AUTHORITY HAVING JURISDICTION. IN NO CASE SHALL WORK BE PERFORMED WITHOUT THE REVIEW AND WRITTEN APPROVAL OF SAID AUTHORITY.
6. ALL TRADES SHALL BE RESPONSIBLE FOR ALL FEES RELATED TO THE ISSUE OF TRADE-SPECIFIC PERMITS, INSPECTIONS AND CERTIFICATES NECESSARY FOR THE EXECUTION AND COMPLETION OF THE WORK, AND THE OCCUPANCY OF THE WORK.
7. EXISTING CONDITIONS: THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND FIELD-COORDINATE THE CORRECTIVE ACTION AS REQUIRED. THE GENERAL CONTRACTOR SHALL NOTIFY THE ARCHITECT/DESIGNER OF ALL CONFLICTS AND DISCREPANCIES THAT AFFECT THE WORK PRIOR TO PROCEEDING WITH SAID WORK.
8. DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS WILL GOVERN. LARGE-SCALE DRAWINGS SHALL GOVERN OVER SMALLER-SCALED DRAWINGS. CONTACT ARCHITECT/DESIGNER TO CONFIRM ALL DISCREPANCIES.
9. THE ARCHITECT/DESIGNER SHALL NOT BE HELD RESPONSIBLE FOR WORK PERFORMED NOT IN ACCORDANCE WITH THESE DOCUMENTS NOR FOR MISINTERPRETATION OF THE DRAWINGS, NOR FOR UNSATISFACTORY WORK BY CONTRACTOR.
10. CONFIRM ALL DIMENSIONS WITH PLANS AND IN FIELD PRIOR TO FABRICATION AND/OR CONSTRUCTION
11. ALL ELECTRICAL AND MECHANICAL INFORMATION CONTAINED IN THESE DRAWINGS IS SOLELY FOR THE PURPOSE OF COORDINATION OF THE ARCHITECT/DESIGNER'S WORK.

TERMITE PROTECTION NOTES

PER FLORIDA BUILDING CODE 2023 8TH EDITION

SOIL CHEMICAL BARRIER METHOD

1. "A PERMANENT SIGN WHICH IDENTIFIES THE TERMITE TREATMENT PROVIDER AND NEED FOR RE-INSPECTION AND TREATMENT CONTRACT RENEWAL SHALL BE PROVIDED. THE SIGN SHALL BE POSTED NEAR WATER HEATER OR ELECTRICAL PANEL."
2. "CONDENSATE AND ROOF DOWNSPOUTS SHALL DISCHARGE AT LEAST 1'-0" AWAY FROM BUILDING SIDE WALLS."
3. "IRRIGATION / SPRINKLER SYSTEMS INCLUDING ALL RISERS AND SPRAY HEADS SHALL NOT BE INSTALLED WITHIN 1'-0" OF BUILDING SIDE WALLS."
4. "TO PROVIDE FOR INSPECTION FOR TERMITE INFESTATION, BETWEEN WALL COVERING AND FINAL EARTH GRADE SHALL NOT BE LESS THAN 6 INCHES." EXCEPTION: PAINT OR DECORATIVE CEMENTIOUS FINISH LESS THAN 5/8" THICK ADHERED DIRECTLY TO THE FOUNDATION WALL.
5. "INITIAL TREATMENT SHALL BE DONE AFTER ALL EXCAVATION AND BACKFILL IS COMPLETE."
6. "SOIL DISTURBED AFTER THE INITIAL TREATMENT SHALL BE RETREATED INCLUDING SPACES BOXED OR FORMED."
7. "BOXED AREAS IN CONCRETE FLOORS FOR SUBSEQUENT INSTALLATION OF TRAPS, ETC., SHALL BE MADE WITH PERMANENT METAL OR PLASTIC FORMS. PERMANENT FORMS MUST BE OF A SIZE AND DEPTH THAT WILL ELIMINATE THE DISTURBANCE OF SOIL AFTER THE INITIAL TREATMENT."
8. "MINIMUM 6 MIL VAPOR RETARDER MUST BE INSTALLED TO PROTECT AGAINST RAIN FALL DILUTION. IF RAIN FALL OCCURS BEFORE VAPOR RETARDER PLACEMENT, RETREAT AS REQUIRED."
9. "CONCRETE OVERPOUR AND MORTAR ALONG FOUNDATION PERIMETER MUST BE REMOVED BEFORE EXTERIOR SOIL TREATMENT."
10. "SOIL TREATMENT MUST BE APPLIED UNDER ALL EXTERIOR CONCRETE OR GRADE WITHIN 1'-0" OF THE STRUCTURE SIDEWALLS."
11. "AN EXTERIOR VERTICAL CHEMICAL BARRIER MUST BE INSTALLED AFTER CONSTRUCTION IS COMPLETE INCLUDING LANDSCAPING AND IRRIGATION. ANY SOIL DISTURBED AFTER THE CHEMICAL BARRIER IS APPLIED, SHALL BE RETREATED."
12. "ALL BUILDINGS ARE REQUIRED TO HAVE PRE-CONSTRUCTION TREATMENT."
13. "A CERTIFICATE OF COMPLIANCE MUST BE ISSUED TO THE BUILDING DEPARTMENT BY A LICENSED PEST CONTROL COMPANY BE FOR CERTIFICATE OF OCCUPANCY WILL BE ISSUED. THE CERTIFICATE OF COMPLIANCE SHALL STATE: 'THE BUILDING HAS RECEIVED A COMPLETE TREATMENT FOR THE PREVENTION OF SUBTERRANEAN TERMITES. THE TREATMENT IS IN ACCORDANCE WITH RULES AND LAWS OF THE FLORIDA BUILDING DEPARTMENT OF AGRICULTURE AND CUSTOMER SERVICES."
14. "AFTER ALL WORK IS COMPLETED, LOOSE WOOD AND FILL MUST BE REMOVED FROM BELOW WITHIN 1'-0" OF THE BUILDING. THIS INCLUDES ALL GRADE STAKES, TUB TRAP BOXES, FORMS, SHORING OR OTHER CELLULOSE CONTAINING MATERIAL."
15. "NO WOOD, VEGETATION, STUMPS, CARDBOARD, TRASH, ETC., SHALL BE BURIED WITHIN 15'-0" OF ANY BUILDING OR PROPOSED BUILDING."

PROJECT NOTES

1. THE SPECIFICATION, IDEAS, DESIGNS, AND ARRANGEMENTS REPRESENTED HEREIN ARE AND SHALL REMAIN THE PROPERTY OF THE DESIGNER AND NO PART THEREOF SHALL BE COPIED, DISCLOSED TO OTHERS OR USED IN CONNECTION WITH ANY WORK OR PROJECT OTHER THAN THE SPECIFIED PROJECT FOR WHICH THEY HAVE BEEN PREPARED AND DEVELOPED WITHOUT WRITTEN CONSENT. VISUAL CONTACT WITH THESE PLANS OR SPECIFICATIONS SHALL CONSTITUTE CONCLUSIVE EVIDENCE OF ACCEPTANCE OF THESE RESTRICTIONS.
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE OWNER PRIOR TO BEGINNING WORK. CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THIS OFFICE MUST BE NOTIFIED OF ANY VARIATION FROM THE DIMENSIONS AND CONDITIONS SHOWN BY THESE DRAWINGS.
3. THE PLANS SHOW THE LOCATION OF ALL FIXTURES AND EQUIPMENT AND ARE INTENDED TO CONVEY THE GENERAL INTENT OF THE WORK IN SCOPE AND LAYOUT. THEY ARE NOT INTENDED TO SHOW IN MINUTE DETAIL EVERY AND ALL ACCESSORIES INTENDED FOR THE PURPOSE OF EXECUTION OF THE WORK, BUT IS UNDERSTOOD THAT SUCH DETAILS ARE PART OF THIS WORK.
4. NO WORK IS TO BE INSTALLED PRIOR TO THE SUBMISSION AND APPROVAL OF APPROPRIATE AND REQUIRED SHOP DRAWINGS, SAMPLES, ETC. AS DESCRIBED IN THE CONTRACT DOCUMENTS.
5. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND FINISHED PRODUCT. ANY ITEMS NOT SPECIFIED, OR IDENTIFIED, BUT REQUIRED TO COMPLETE AN ASSEMBLY, SYSTEM, ETC. SHALL BE CONSIDERED PART OF THIS CONTRACT.
6. THE CONTRACTORS SHALL COORDINATE AND ASSURE THEMSELVES THAT ALL ITEMS OF WORK WILL FIT AND FUNCTION IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS AND THAT INDIVIDUAL PIECES OF THE SAME AND DIFFERENT SYSTEMS WILL PROPERLY FUNCTION IN CONFORMANCE WITH THE MANUFACTURER AND INDUSTRY STANDARD REQUIREMENTS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE, INSIDE OR OUTSIDE THE LIMIT OF WORK DUE TO OPERATIONS. THE CONTRACTOR SHALL RESTORE ALL DAMAGED AREAS OR ITEMS TO THEIR ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY PROTECTION AS REQUIRED TO PROPERLY SECURE THE BUILDING FROM INTRUDERS, ANIMALS, AND THE ELEMENTS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY EXISTING MATERIAL OR SYSTEM INTEGRATED WITH SCOPE OF WORK FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS AND OBJECTIVES OF THIS PROJECT. ALL CLEARANCES AND CONFLICTS OF ANY AND ALL CONSTRUCTION; FRAMING/ MECHANICAL/ PLUMBING/ ELECTRICAL/ ETC REQUIRED SHALL BE ADJUSTED FOR PROPER FIT, ACCESSIBILITY AND FUNCTION.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF ALL TRADES NOT IDENTIFIED, INDICATED OR DESCRIBED IN THE DRAWINGS. INDIVIDUAL CONTRACTORS SHALL BE RESPONSIBLE FOR THE CONFORMANCE OF THEIR DESIGN AND EXECUTION TO ALL APPLICABLE LOCAL, STATE AND FEDERAL BUILDING CODES AND ORDINANCES, ZONING BYLAWS AND GOVERNING AGENCIES AS WELL AS OSHA, NFPA AND THE HEALTH ACTS. THE CONTRACTOR SHALL COORDINATE ALL N.I.C., OWNER SUPPLIED, AND FURNISHED ITEMS AS REQUIRED.
10. THE CONTRACTOR SHALL WORK IN A CLEAN, ORGANIZED, AND PROFESSIONAL MANNER AND SHALL BE RESPONSIBLE FOR MAINTAINING THE SAFETY AND SECURITY OF THE SITE DURING CONSTRUCTION.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF TRASH FROM THE SITE, ON A WEEKLY BASIS, AT A MINIMUM, AND MAINTAIN A SAFE AND ORDERLY CONDITION.
12. MATERIALS SPECIFIED ARE FOR CONFIGURATION, QUALITY, AND PERFORMANCE. DEMONSTRATED EQUALS WILL BE AMENABLE AND ACCEPTABLE WITH OWNER'S WRITTEN APPROVAL (UNLESS OTHERWISE NOTED IN CONTRACT DOCUMENTS.
13. COORDINATE ALL DIMENSIONS OR EQUIPMENT AND BUILT IN ITEMS WITH FINAL PLACEMENT LOCATIONS AS-BUILT CONDITIONS.
14. ALL MATERIAL SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS AND RELATED TRADE PRACTICES OR STANDARDS. THE PREPARATIONS AND MODIFICATIONS OF UNDERLYING CONDITIONS SHALL BE COMPLETE AND READY FOR THE NEXT TRADE OR PRODUCT. ALL WORK SHALL BE IN CONFORMANCE WITH GOOD TRADE PRACTICE AND PERFORMED BY SKILLED WORKERS, TRAINED IN THE INSTALLATION OF THE PRODUCT BEING INSTALLED. WORK NOT CONFORMING TO THESE REQUIREMENTS SHALL BE CAUSE FOR REJECTION. SATISFACTORY REMEDIES MAY INVOLVE COMPLETE REMOVAL AND REPLACEMENT OF DEFECTIVE WORK OR MATERIAL AT THE CONTRACTORS EXPENSE .
15. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED DRAWINGS, CALCULATIONS AND DIAGRAMS FOR PLUMBING, MECHANICAL AND ELECTRICAL PERMITS AND TO INSTALL REQUIRED COMPONENTS TO MEET ALL APPLICABLE CODES.
16. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED DRAWINGS, CALCULATIONS, DIAGRAMS AND CERTIFICATION FOR CONTRACTOR SUPPLIED SYSTEMS FOR REQUIRED PERMITTING AND AS REQUIRED TO MEET ALL APPLICABLE CODES.
17. IN THE EVENT OF A CONFLICT WITH ITEMS OR SYSTEMS SPECIFIED OR DETAILED IN MORE THAN ONE LOCATION, THE CONTRACTOR SHALL PROVIDE THE MORE EXPENSIVE OR HIGHER QUALITY ITEM AT NO COST TO THE OWNER.
18. THE CONTRACTOR IS ADVISED THAT THE OWNER AND OTHER CONTRACTORS MAY BE PERFORMING WORK DURING THE PERFORMANCE OF HIS WORK. COMPLETE COOPERATION AND COORDINATION IS REQUIRED.
19. ANY CONTRACTOR, SUBCONTRACTOR, INDIVIDUAL, COMPANY, OR THEIR DESIGNEES PERFORMING WORK OR SERVICES FOR THIS PROJECT, BE IT FOR MATERIALS, LABOR OR BOTH SHALL BE RESPONSIBLE FOR THE DETAILED EXAMINATION OF EXISTING CONDITIONS AT THE SITE, AS INDICATED IN DRAWINGS, OR IN OTHER INFORMATION AVAILABLE FROM A PUBLIC AGENCY OR UTILITY COMPANY. NO CONSIDERATION SHALL BE GIVEN FOR CLAIMS MADE AS A RESULT OF FAILURE TO UNDERSTAND, IDENTIFY OR ESTABLISH EXISTING CONDITIONS. ANY DAMAGE TO EXISTING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND REPAIRED AT HIS OWN EXPENSE.
20. THE CONTRACTOR SHALL SUPPLY ALL ITEMS IDENTIFIED TO BE PROVIDED IN THE SPECIFICATIONS OR THE DRAWING INDEPENDENT OF BEING INDICATED WITHIN THE OTHER.
21. CONTRACTOR TO PROVIDE 'UTILIGUARD SYSTEM' ENERGY MANAGEMENT SYSTEMS OR APPROVED EQUAL ON ALL ELECTRICAL POWER PANELS FOR ENERGY/GREEN SYSTEMS.

GENERAL NOTES

1. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO PREPARATION OF HIS BID AND THOROUGHLY FAMILIARIZE HIMSELF WITH CONDITIONS OF THE CONSTRUCTION AREA AND WORK REQUIRED TO PERFORM THE WORK OF THIS CONTRACT. OBTAIN DIMENSIONS BY CALCULATION. IF DIMENSIONS ARE IN QUESTION, THE CONTRACTOR SHALL REQUEST CLARIFICATION FROM THE DO NOT SCALE THE DRAWINGS ARCHITECT PRIOR TO CONTINUING CONSTRUCTION OF THE AREA IN QUESTION.
2. THIS BUILDING HAS BEEN DESIGNED IN ACCORDANCE WITH SECTION 1606 OF THE 2023 FLORIDA BUILDING CODE.
3. ALL DIMENSION ARE TAKEN FROM FACE OF MASONRY OR STUD UNLESS NOTED OTHERWISE.
4. ALL CONDUIT, PIPING, AND DUCTWORK PENETRATING ANY RATED ASSEMBLY; FLOOR, CEILING OR WALL SHALL HAVE AN APPROVED FIRE RATED ASSEMBLY FOR THE SPECIFIC APPLICATION.
5. ALL MECHANICAL AND ELECTRICAL EQUIPMENT SHALL BE LOCATED ON SITE PER ARCHITECTURAL OR CIVIL DRAWINGS.
6. ALL LUMBER IN CONTACT WITH THE SOIL, CONCRETE, MASONRY, OR AS INDICATED OR REQUIRED SHALL BE PRESSURE PRESERVATIVE TREATED.
7. ALL EXTERIOR STEEL STUD CONSTRUCTION SHALL BE MINIMUM 20 GAGE WITH A MAXIMUM SPACING OF 24" O.C. ALL INTERIOR STEEL STUD CONSTRUCTION SHALL BE MINIMUM 25 GAGE WITH A MAXIMUM SPACING OF 24" O.C. WITH NO EXCEPTION
8. AT ALL PERIMETER STOREFRONT WINDOW FRAMING PROVIDE CLOSED END FLAT POCKET FILLER.
9. AT ALL PERIMETER STOREFRONT FRAME ASSEMBLIES PROVIDE MIN. |" SHIM. STOREFRONT TO BE CLEANED OF ALL FOREIGN DEBRIS, I.E. STUCCO, PRIOR TO SEALANT APPLICATION.
10. HIGH PERFORMANCE STOREFRONT WINDOW SILL TO BE EXTRUDED ALUMINUM WITH CLOSED END PAN.
11. SEE FLOOR PLANS AND REFLECTED CEILING PLANS FOR SPECIFIC ELEVATIONS AND DETAILS.
12. INSTALL THRESHOLDS AT ALL EXTERIOR DOORS, AT FIRE RATED DOORS, AND DOORS BETWEEN AIR CONDITIONED & NON AIR CONDITIONED SPACES AND WHERE MATERIALS CHANGE ON EITHER SIDE.
13. ALL SOFFIT SYSTEMS, ROOF SYSTEMS AND WINDOW SYSTEMS TO MEET ALL UPLIFT AND SHAPE CRITERIA AS REQUIRED BY CODES.
14. SPECIFICATIONS AND REQUIREMENTS INDICATED ON STRUCTURAL , MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS ARE CONSIDERED MINIMUM ACCEPTABLE CRITERIA AND MAY BE SUPERCEDED BY MORE STRINGENT CRITERIA REQUIRED AS PART OF ARCHITECTURAL DOCUMENTS. CONTRACTOR SHALL NOTIFY THE ARCHITECT FOR ANY POSSIBLE CONFLICTS OR DISCREPANCIES PRIOR TO COMMENCING THE SPECIFIC WORK.
15. CONTRACTOR TO COORDINATE AND VERIFY ALL EXTERIOR WALL CONTROL AND EXPANSION JOINTS PRIOR TO THE COMMENCEMENT OF SPECIFIC WORK.
16. ALL GLASS TO BE TEMPERED PER CODE ADJACENT TO DOORS, ETC.
17. PROVIDE DURAROCK TILE BACKER BOARD @ ALL LOCATIONS SCHEDULED FOR TILE FINISH
18. PROVIDE VINYL BASE @ ALL WALLS UNLESS OTHERWISE SPECIFIED/NOTED.
19. PROVIDE CASING BEADS @ ALL STUCCO AND DRYWALL TRANSITIONS TO DIFFERENT MATERIAL. PROVIDE SEALANT JOINT W/ BACKER ROD OR BOND BREAK. TYPICAL UNLESS NOTED OTHERWISE.
20. PROVIDE CORNER BEADS @ ALL STUCCO & DRYWALL RETURNS.
21. EXTEND ALL NON BEARING WALLS TO 4" ABOVE FINISH CEILING UNLESS NOTED OTHERWISE
22. PROVIDE CONTROL JOINTS BETWEEN DIFFERENT CONSTRUCTION TYPES. I.E. METAL FRAMING AND C.I.P. OR C.M.U. CONSTRUCTION.
23. ALL FINISHES SHALL BE PROTECTED WHERE INDICATED AS FINAL FINISH. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS TO PRODUCE A UNIFORM FINISH.
24. PROVIDE STEEL TROWEL FINISH AT ALL BEAM DETAILS, WINDOW SILLS AND UPPER ROOF AND COLUMN CAPS UNLESS NOTED OTHERWISE.
25. EXTERIOR PAINT - 2 COLOR LOCATIONS - TO BE DETERMINED BY ARCHITECT/OWNER.
26. ARCHITECT SHALL BE INDEMNIFIED, HELD HARMLESS FOR ANY HURT, LOSS , OR DAMAGE DUE TO ANY AND ALL OWNER FINISH SELECTIONS.

SITE PLAN SUBMITTAL ONLY

TSG
Making Dreams Come True
TOTAL SOLUTIONS GROUP
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myTSGhome.com

AIBD AIA fhba GOBA

08/28/2025
STATE OF FLORIDA
STEVEN G. TENZEL
AR 100363
REGISTERED ARCHITECT
8/27/2025 4:23:53 PM
STEVEN G TENZEL, RA
LICENSE ART #100363

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HILLSIDE GROVES AMENITY

HOWEY-IN-THE-HILLS, FLORIDA

Revision Schedule

NO	DESCRIPTION	00/00/00
		####
		8/27/2025 4:23:53 PM
		08/27/25
		MAB
		SGT

ABBREVIATIONS, LEGENDS, & NOTES

Project No: 25-01934

Sheet No: A002

FIXTURE CALCULATIONS

FIRST FLOOR PLAN (BASIS = M - 62, W - 63)

WC MEN @	1/75 =	REQ'D 1	PROVIDED 2
WC WOMEN @	1/75 =	REQ'D 2	PROVIDED 3
LAVS MEN @	1/200 =	REQ'D 1	PROVIDED 3
LAVS WOMEN @	1/200 =	REQ'D 1	PROVIDED 3
SERVICE SINK		REQ'D 1	PROVIDED 1
DRINKING FOUNTAINS @	1/500 =	REQ'D 1	PROVIDED 1

FIXTURE CALCULATIONS - POOL

TABLE 403.6 PUBLIC SWIMMING POOL - REQUIRED FIXTURE COUNT PER SQUARE FOOT OF POOL SERVICE

SIZE OF POOL (SF)	MEN'S RESTROOM			WOMEN'S RESTROOM	
	URINALS	WC	LAVATORY	WC	LAVATORY
3,333 SF	1	2	3	3	3

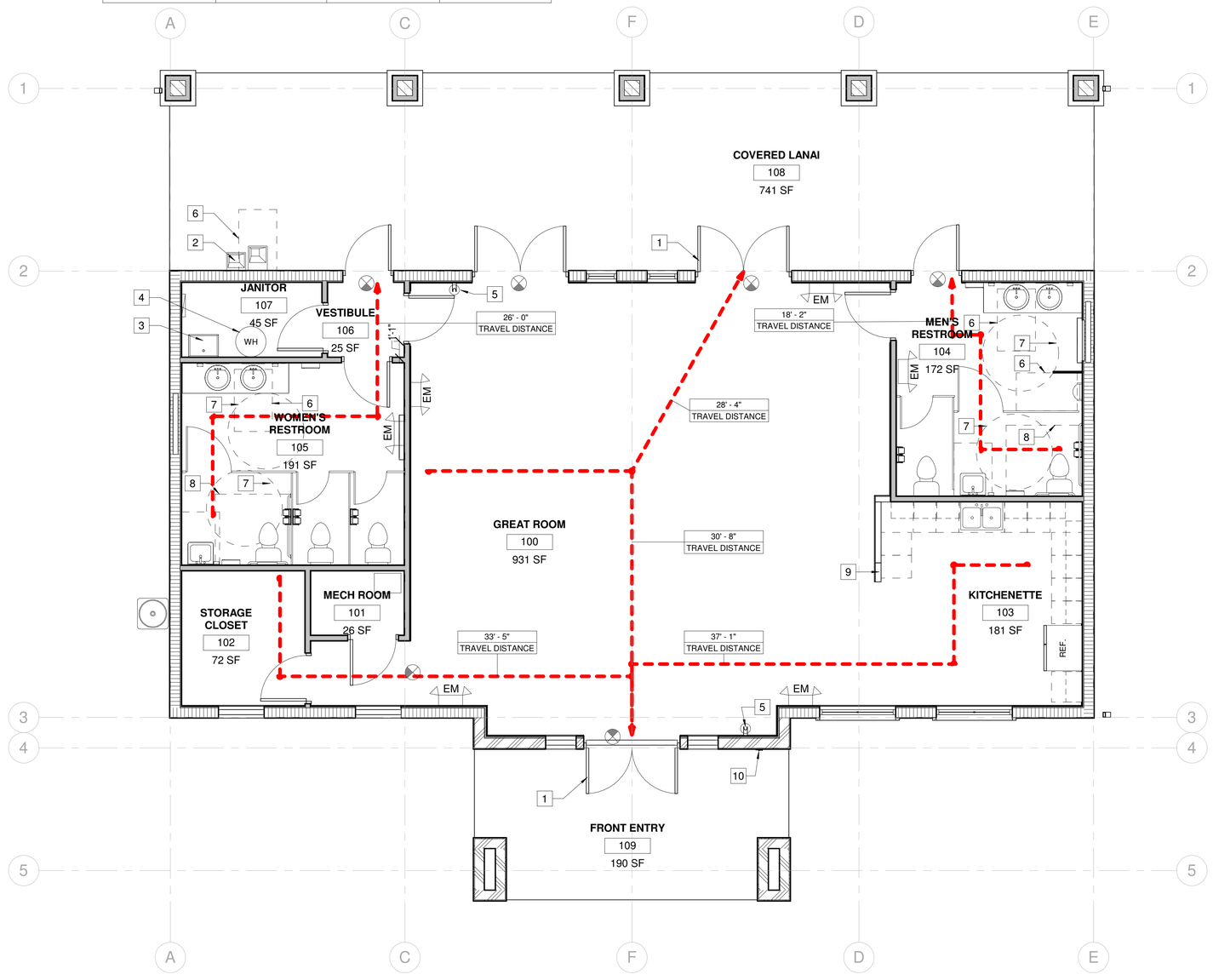
TABLE 403.6 PUBLIC SWIMMING POOL - REQUIRED FIXTURE COUNT PER SQUARE FOOT OF POOL SERVICE

MEN'S RESTROOMS		WOMEN'S RESTROOMS	
WC	LAVATORY	WC	LAVATORY
1 per 2,500 for the first 10,000, 1 per 5,000 for the remainder exceeding 10,000	1 per 5,000 for the first 10,000, 1 per 10,000 for the remainder exceeding 10,000	1 per 1,250 for the first 10,000, 1 per 2,500 for the remainder exceeding 10,000	1 per 5,000 for the first 10,000, 1 per 10,000 for the remainder exceeding 10,000

ROOM OCCUPANCY SCHEDULE

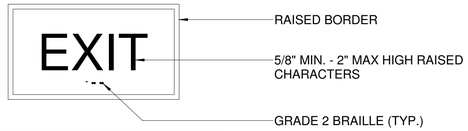
ROOM NUMBER	ROOM NAME	OCCUPANCY CLASSIFACTION	GROSS ROOM AREA	OCCUPANT LOAD FACTOR	OCCUPANCY LOAD CALCULATED	REQUIRED EGRESS WIDTH
100	GREAT ROOM	ASSEMBLY (NON-FIXED SEATS)	931 SF	15 SF NET	62 PPL	12.4"
101	MECH ROOM	NO OCCUPANCY	26 SF	- - -	- - -	- - -
102	STORAGE CLOSET	STORAGE	72 SF	300 SF GROSS	1 PPL	0.2"
103	KITCHENETTE	ASSEMBLY (NON-FIXED SEATS)	180 SF	15 SF NET	12 PPL	2.4"
104	MEN'S RESTROOM	NO OCCUPANCY	171 SF	- - -	- - -	- - -
105	WOMEN'S RESTROOM	NO OCCUPANCY	191 SF	- - -	- - -	- - -
106	VESTIBULE	CIRCULATION	- - -	- - -	- - -	- - -
107	JANITOR	NO OCCUPANCY	45 SF	- - -	- - -	- - -
108	COVERED LANAI	ASSEMBLY (NON-FIXED SEATS)	741 SF	15 SF	50 PPL	10"
109	FRONT ENTRY	CIRCULATION	- - -	- - -	- - -	- - -
				TOTALS:	125 PPL	25.0"
				TOTAL EGRESS PROVIDED:		288"

NOTES:
1. SCHEDULE COMPLIES WITH FBC 2023 8TH EDITION TABLE 1004.5
2. FBC 8TH ED. 2023 CH. 10 SECTION 1005.3.1 - REQUIRED EGRESS WIDTH IN INCHES FOR STAIRWAYS SHALL PROVIDE A MIN. OF .3" PER OCCUPANT, OCCUPANT FACTOR MAY BE REDUCED TO .2" IF THE BUILDING IS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM
3. FBC 8TH ED. 2023 CH. 10 SECTION 1005.3.2 - REQUIRED EGRESS WIDTH IN INCHES FOR OTHER EGRESS COMPONENTS SHALL PROVIDE A MIN. OF .2" PER OCCUPANT, OCCUPANT FACTOR MAY BE REDUCED TO .15" IF THE BUILDING IS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM
4. ANY DOOR IN A REQUIRED MEANS OF EGRESS FROM AN AREA HAVING AN OCCUPANT LOAD OF 100 OR MORE PERSONS SHALL BE PERMITTED TO BE PROVIDED WITH A LATCH OR LOCK ONLY IF THE LATCH OR LOCK IS PANIC HARDWARE OR FIRE EXIT HARDWARE AS PER NFPA 101.12.2.2.2.3
5. FBC 8TH ED. 2023 CH. 10 TABLE 1006.2.1 - AN ASSEMBLY OCCUPANCY OF 49 PPL OR LESS MAY UTILIZE A SINGLE MEANS OF EGRESS, HOWEVER WITH 50 OR MORE, TWO MEANS OF EGRESS SHALL BE REQUIRED W/ NECESSARY SEPARATION & DOORS SHALL BE EQUIPPED WITH PANIC HARDWARE
6. FBC 8TH ED. 2023 CH. 10 SECTION 1004.7 OUTDOOR AREAS



LEGEND

SYMBOL	DISTRIBUTION	NOTES
	PATH OF TRAVEL	
FE	FIRE EXTINGUISHER - G.C. TO COORDINATE FINAL LOCATION WITH FIRE MARSHAL	
	EXIT LIGHT SIGN, REF. ELECTRICAL	
EM	EMERGENCY LIGHTING CEILING PACK, REF. ELECTRICAL	



SIGNS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH NFPA 101, SECT 7.10.1.3 AND ICC/ANSI A117.1, SECT 703.3-703.4

NOTE:
1. ALL COPY AND GRAPHICS SHALL BE RAISED 1/32"
2. LETTER FORM SHALL BE SANS SERIF

EXIT DOOR IDENTIFICATION DETAIL
SCALE: NTS

FIRE EXTINGUISHER DETAIL
SCALE: NTS

2 DETAIL - FIRE EXTINGUISHER-EXIT SIGNAGE
1/4" = 1'-0"

KEY NOTES

1. DOOR EXIT REQUIRES PANIC HARDWARE AS PER NFPA 101:12.2.2.2.3
2. HI-LOW DRINKING FOUNTAIN, REFER TO MEP DRAWINGS , REFER TO DETAIL 8/A102
3. SERVICE SINK, REFER TO MEP DRAWINGS
4. WATER HEATER
5. FIRE EXTINGUISHER, REFER TO DETAIL 2/A100
6. 30"x48" CLEAR FLOOR SPACE
7. 60" DIA.CLEAR FLOOR SPACE
8. 56"x60" CLEAR FLOOR SPACE
9. 34" MAX. HT. ADA COUNTERTOP
10. KNOX BOX INSTALLED AT FRONT ENTRANCE AT 6FT A.F.F.

1 LIFE SAFETY PLAN
1/4" = 1'-0"

SITE PLAN SUBMITTAL ONLY

TOTAL SOLUTIONS GROUP
258 Southhall Lane, Suite 200
Maitland, Florida, 32751
(407) 880 2333
100% Employee Owned
myTSGhome.com

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HILLSIDE GROVES AMENITY
HOWEY-IN-THE-HILLS, FLORIDA

Revision Schedule

NO	DESCRIPTION	00/00/00
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		MAB
		SGT

LIFE SAFETY PLAN
Project No: 25-01934
Sheet No: A100

FIXTURE CALCULATIONS

FIRST FLOOR PLAN (BASIS = M - 62, W - 63)

WC MEN @	1/75 =	REQ'D 1	PROVIDED 2
WC WOMEN @	1/75 =	REQ'D 2	PROVIDED 3
LAVS MEN @	1/200 =	REQ'D 1	PROVIDED 3
LAVS WOMEN @	1/200 =	REQ'D 1	PROVIDED 3
SERVICE SINK		REQ'D 1	PROVIDED 1
DRINKING FOUNTAINS @	1/500 =	REQ'D 1	PROVIDED 1

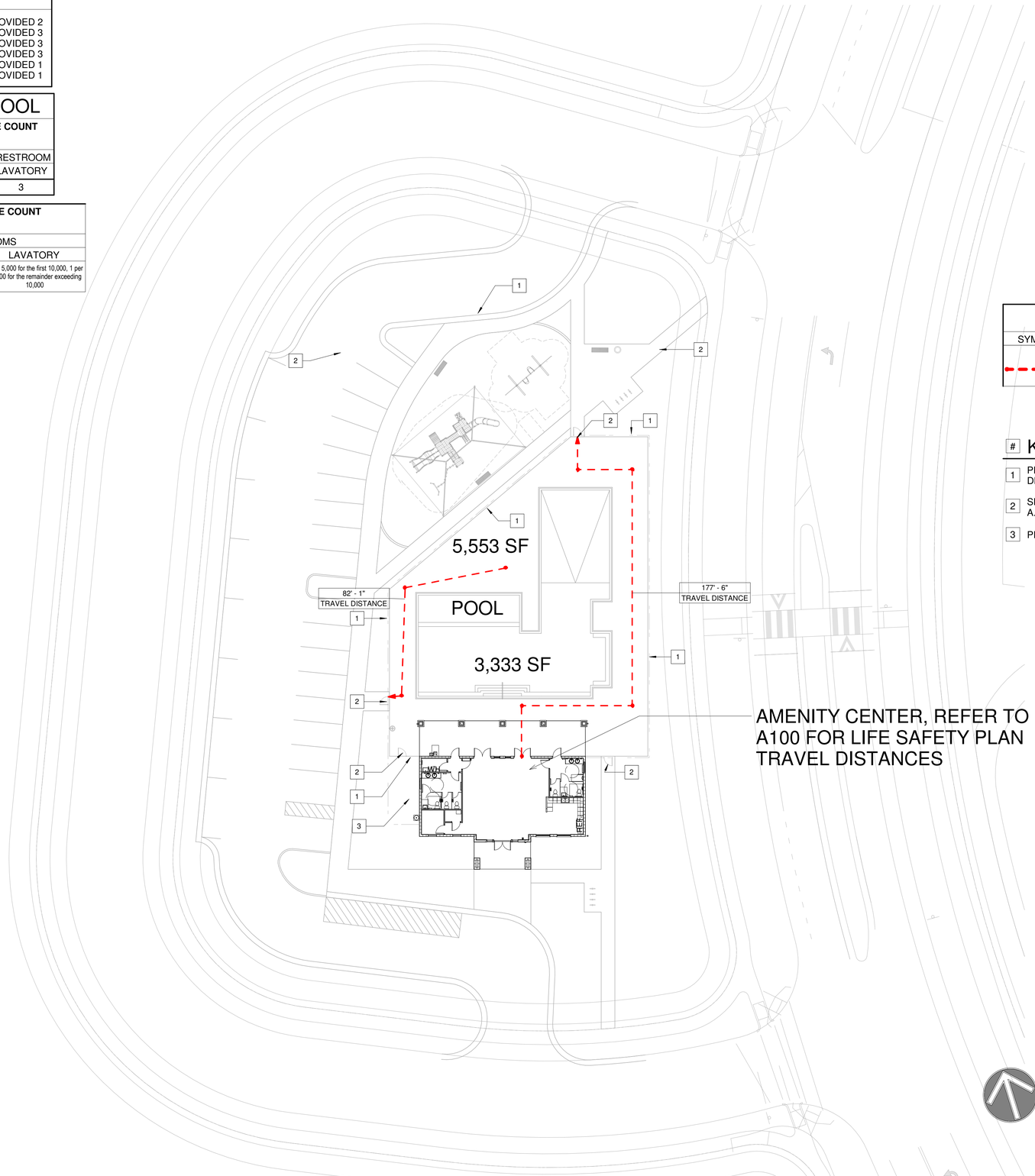
FIXTURE CALCULATIONS - POOL

TABLE 403.6 PUBLIC SWIMMING POOL - REQUIRED FIXTURE COUNT PER SQUARE FOOT OF POOL SERVICE

SIZE OF POOL (SF)	MEN'S RESTROOM			WOMEN'S RESTROOM	
	URINALS	WC	LAVATORY	WC	LAVATORY
3,333 SF	1	2	3	3	3

TABLE 403.6 PUBLIC SWIMMING POOL - REQUIRED FIXTURE COUNT PER SQUARE FOOT OF POOL SERVICE

MEN'S RESTROOMS		WOMEN'S RESTROOMS	
WC	LAVATORY	WC	LAVATORY
1 per 2,500 for the first 10,000, 1 per 5,000 for the remainder exceeding 10,000	1 per 5,000 for the first 10,000, 1 per 10,000 for the remainder exceeding 10,000	1 per 1,250 for the first 10,000, 1 per 2,500 for the remainder exceeding 10,000	1 per 5,000 for the first 10,000, 1 per 10,000 for the remainder exceeding 10,000



GENERAL NOTES

1. THIS SITE PLAN IS PRESENTED FOR INFORMATION PURPOSES OF BUILDING LOCATION ONLY AND SHALL NOT BE VIEWED AS A SURVEY, LANDSCAPE SITE PLAN, IRRIGATION PLAN, PAVING PLAN, GRADING PLAN, DRAINAGE PLAN, OR UTILITY/CIVIL ENGINEERED PLAN

2. ALL BOUNDARY, SETBACK, EASEMENT, UTILITY, AND PERMANENT OBJECT INFORMATION AS SHOWN WAS SUPPLIED TO TOTAL SOLUTIONS GROUP VIA A SURVEY FURNISHED BY A LICENSED SURVEYOR

3. IF A LANDSCAPE SITE PLAN, IRRIGATION PLAN, PAVING PLAN, GRADING PLAN, DRAINAGE PLAN, OR UTILITY/CIVIL ENGINEERED PLAN IS REQUIRED, IT SHALL BE PROVIDED BY OTHERS AS A SEPARATE ATTACHMENT TO THE PERMIT PLAN SET PACKAGE SUBMITTED

4. DIMENSIONS AS SHOWN ARE FROM THE BUILDING CORNERS TO THEIR RESPECTIVE PERPENDICULAR LOCATIONS ALONG THE BOUNDARY LINES

5. PROPOSED FENCES AND/OR GATES ARE PROVIDED AND SUBMITTED BY OTHERS

LEGEND

SYMBOL	DISTRIBUTION	NOTES
	PATH OF TRAVEL	

KEY NOTES

1. PERIMETER FENCE @ MIN. 60" ABV. FINISH DECK
2. SELF CLOSING SELF LATCHING GATE @ 60" A.F.F. BY OTHERS
3. PROPOSED POOL EQUIP. LOCATION

0 10' 20' 40' 60'

1" = 20'-0"

1 LIFE SAFETY SITE PLAN

1" = 20'-0"

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HILLSIDE GROVES AMENITY

HOWEY-IN-THE-HILLS, FLORIDA

Revision Schedule

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		####
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		08/27/25
		Author
		Checked

LIFE SAFETY SITE PLAN

Project No: 25-01934

Sheet No: A101

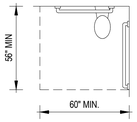
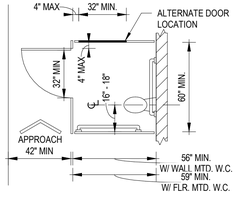
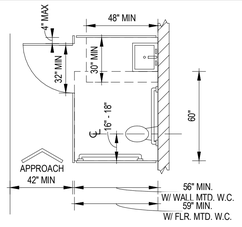


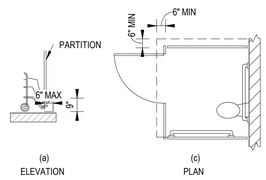
Fig. 604.3.1
CLEARANCE AT WATER CLOSETS



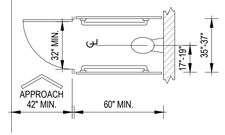
WHEELCHAIR ACCESSIBLE TOILET COMPARTMENT
Ref. Section 604



WHEELCHAIR ACCESSIBLE TOILET COMPARTMENT - NEW CONSTRUCTION
Ref. Section 604



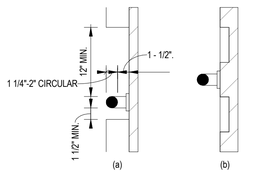
WHEELCHAIR ACCESSIBLE TOILET COMPARTMENT TOE CLEARANCE
Fig. 604.8.2



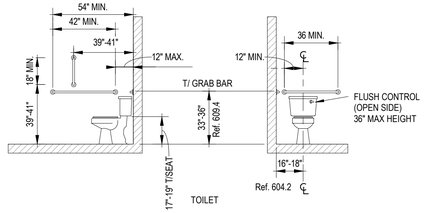
AMBULATORY ACCESSIBLE TOILET COMPARTMENT
Fig. 604.8.2

TOILET ROOM NOTES:

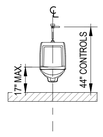
1. A TURNING SPACE PER SECTION 304 IS REQUIRED WITHIN A TOILET ROOM (603.2.1)
2. ONLY THE FOLLOWING OBJECTS ARE PERMITTED TO OVERLAP THE REQUIRED CLEARANCE: GRAB BARS, DISPENSERS, SANITARY NAPKIN DISPOSAL UNIT, COAT HOOKS AND SHELVES (604.3.2)
3. FLUSH CONTROLS SHALL BE LOCATED ON THE OPEN SIDE OF THE WATER CLOSET (604.6)
4. URINALS SHALL HAVE A CLEAR FLOOR SPACE COMPLYING WITH 305 POSITIONED FOR FORWARD APPROACH AND CENTERED ON UNIT (605.3)
5. LAVATORIES SHALL HAVE A CLEAR FLOOR SPACE COMPLYING WITH 305 POSITIONED FOR FORWARD APPROACH AND CENTERED ON UNIT (606.2)
6. KNEE & TOE CLEARANCE COMPLYING WITH 306 SHALL BE PROVIDED (602.2)
7. EXPOSED WATER SUPPLY AND DRAIN PIPES SHALL BE INSULATED. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES (606.5)
8. INSTALL GRAB BARS TO WITHSTAND NOT LESS THAN A 250 POUND FORCE APPLIED AT ANY POINT ON THE BAR (609.8)



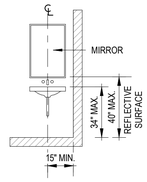
SPACING OF GRAB BARS
Fig. 609.3



TOILET ROOM CLEARANCES & MOUNTING HEIGHTS
Ref. Chapter 6



URINAL
Ref. Section 605



LAVATORY
Ref. Sections 606 & 603.3

1 FBC ADA CHAPTER 6
1/4" = 1'-0"

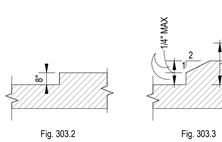
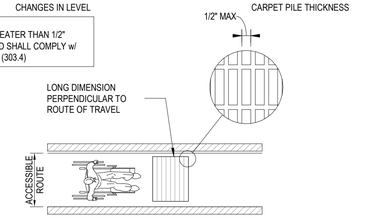


Fig. 303.2 | Fig. 303.3 | Fig. 302.2
CHANGES IN LEVEL | CARPET PILE THICKNESS

NOTE:
CHANGES IN LEVEL GREATER THAN 1/2" SHALL BE RAMPED, AND SHALL COMPLY w/ SECTIONS 405 OR 406. (303.4)



OPENINGS IN FLOOR OR GROUND SURFACE
Ref. Section 302.3

FLOOR & GROUND SURFACES
Ref. Sections 302 & 303

2 FBC ADA SECTIONS 302 & 303
1/4" = 1'-0"

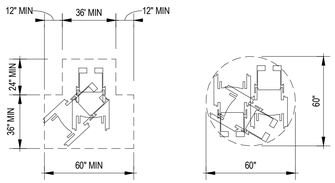


Fig. 304.3.2
T-SHAPED SPACE

Ref. 304.3.1
CIRCULAR SPACE

TURNING SPACE
Ref. Section 304

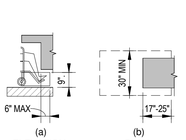


Fig. 306.2
TOE CLEARANCES

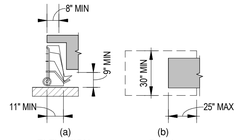


Fig. 306.3
KNEE CLEARANCES

KNEE & TOE CLEARANCES
Ref. Section 306

NOTE:
ANY OPERABLE PART OF ANY DEVICE SHALL BE INSTALLED WITHIN THE REACHES SHOWN (309)

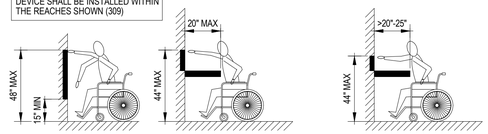


Fig. 308.2.1
UNOBSTRUCTED FORWARD REACH

Fig. 308.2.2
OBSTRUCTED HIGH FORWARD REACH

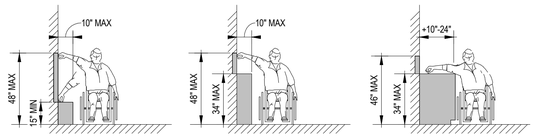


Fig. 308.3.1
UNOBSTRUCTED SIDE REACH

Fig. 308.3.2
OBSTRUCTED HIGH SIDE REACH

REACH RANGES
Ref. Section 308

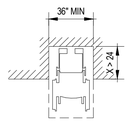


Fig. 305.7.1

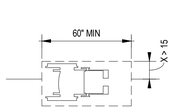
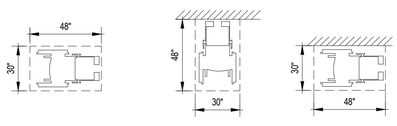


Fig. 305.7.2

CLEAR FLOOR SPACE IN ALCOVES



CLEAR FLOOR SPACE NOTES:

1. DOORS SHALL BE PERMITTED TO SWING INTO TURNING SPACES (304.4)
2. ONE FULL UNOBSTRUCTED SIDE OF THE CLEAR FLOOR SPACE MUST ADJOIN AN ACCESSIBLE ROUTE OR ANOTHER CLEAR FLOOR SPACE (305.6)
3. A CLEAR FLOOR SPACE IS REQUIRED AT ANY DEVICE WITH AN OPERABLE PART (309.2)

MINIMUM CLEAR FLOOR SPACE
Ref. Sections 304 & 305

3 FBC ADA SECTIONS 304 & 305
1/4" = 1'-0"

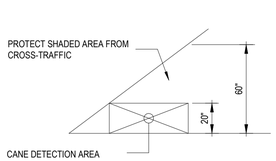


Fig. 307.5
VERTICAL CLEARANCES

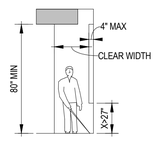
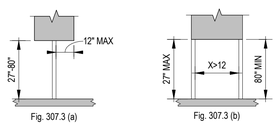


Fig. 307.2
LIMITS OF PROTRUDING OBJECTS



POST-MOUNTED PROTRUDING OBJECTS

PROTRUDING OBJECTS
Ref. Section 307

NOTES:

1. PROTRUDING OBJECTS SHALL NOT REDUCE THE REQUIRED WIDTH OF AN ACCESSIBLE ROUTE (307.5)
2. PROTRUDING OBJECTS ON A CIRCULATION PATH SHALL COMPLY w/ SECTION 307 (204.1)

4 FBC ADA SECTION 306
1/4" = 1'-0"

5 FBC ADA SECTION 307
1/4" = 1'-0"

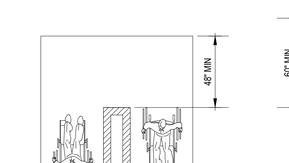


Fig. 403.5.2 (a)

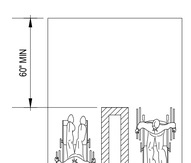
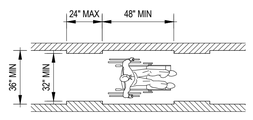


Fig. 403.5.2 (b)

CLEAR WIDTHS AT 180 DEGREE TURNS



CLEAR WIDTHS
Fig. 403.5.1

ACCESSIBLE ROUTE NOTE:

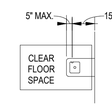
THE SLOPE OF A WALKING SURFACE ALONG AN ACCESSIBLE ROUTE SHALL NOT BE STEEPER THAN 1:20 AND CROSS SLOPES SHALL NOT EXCEED 1:48 (402)

ACCESSIBLE ROUTE
Ref. Section 402

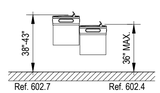
7 FBC ADA SECTION 402
1/4" = 1'-0"

DRINKING FOUNTAIN NOTES:

1. KNEE & TOE CLEARANCE COMPLYING WITH 306 SHALL BE PROVIDED (602.2).
2. WHERE A DRINKING FOUNTAIN IS REQUIRED, TWO SHALL BE PROVIDED; ONE HIGH & ONE LOW (211.2)
3. UNITS SHALL HAVE A CLEAR FLOOR SPACE COMPLYING WITH 305 POSITIONED FOR FORWARD APPROACH AND CENTERED ON UNIT (602.2)



DRINKING FOUNTAIN SPOUT LOCATION
Fig. 602.5



DRINKING FOUNTAIN OUTLET HEIGHTS

DRINKING FOUNTAIN
Ref. Section 602

8 FBC ADA SECTION 602
1/4" = 1'-0"

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HOWEY-IN-THE-HILLS, FLORIDA

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NO	DESCRIPTION	00/00/00
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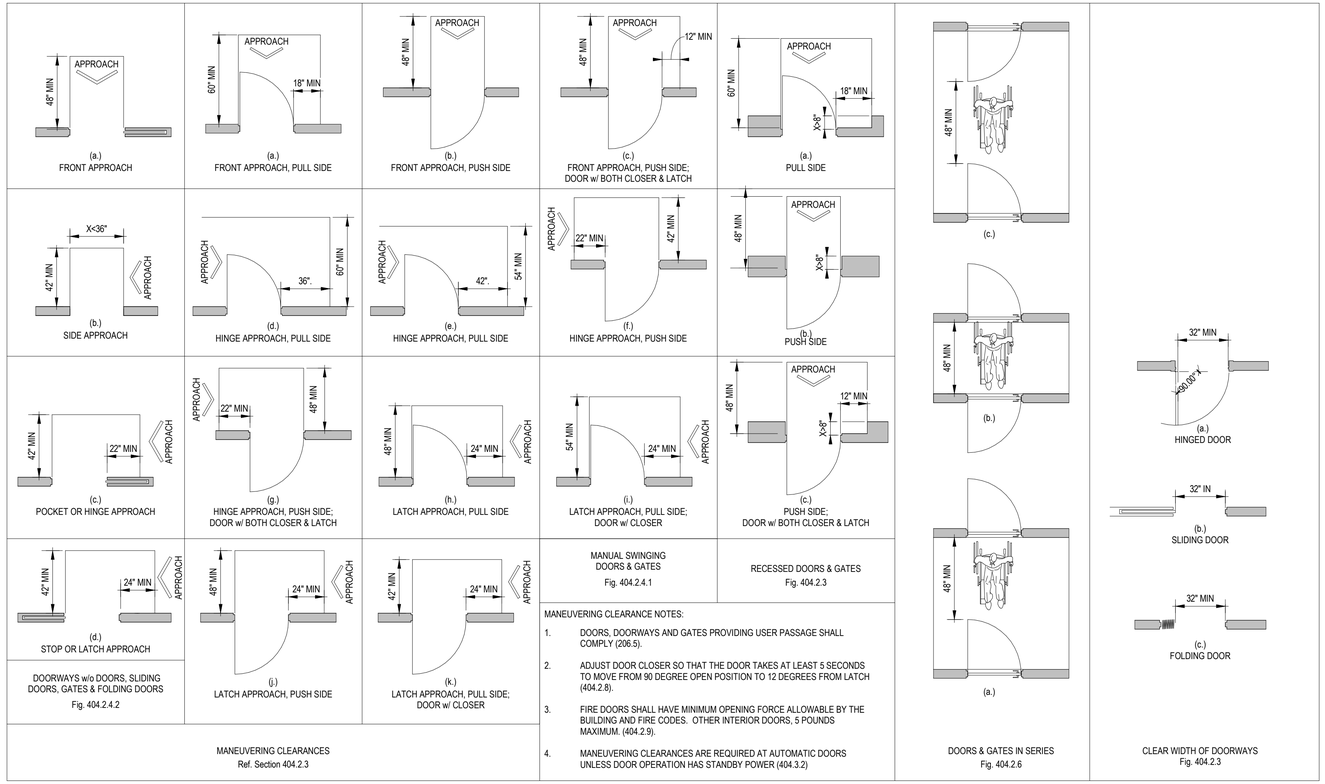
		8/27/2025 4:23:58 PM
		08/27/25
		MAB
		SGT

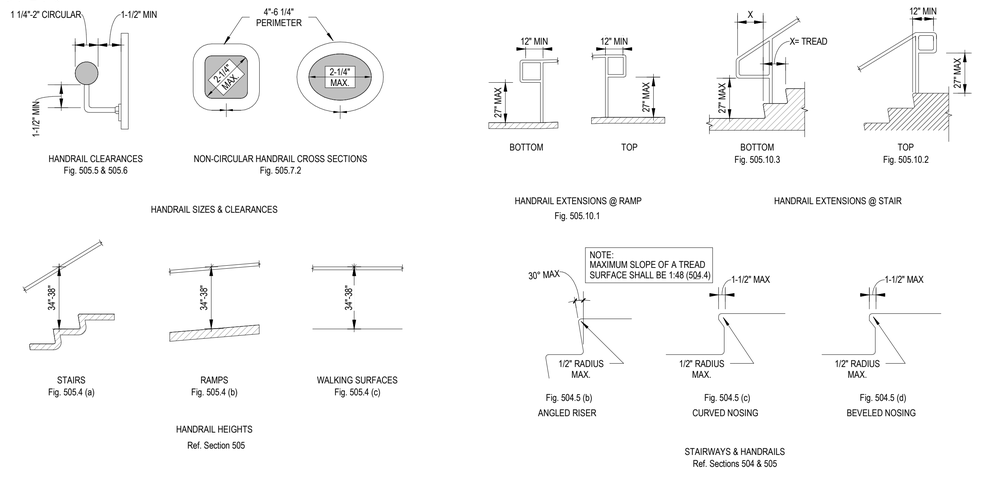
ADA CLEARANCE REQUIREMENTS

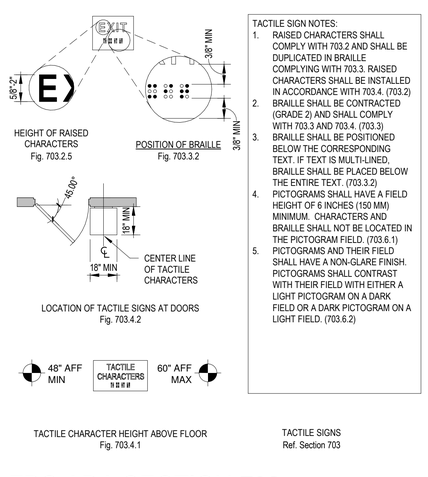
Project No:
25-01934
Sheet No:
A102



1 FBC ADA SECTION 404

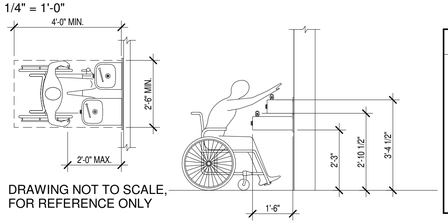
1/4" = 1'-0"





4 FBC ADA SECTIONS 504 & 505

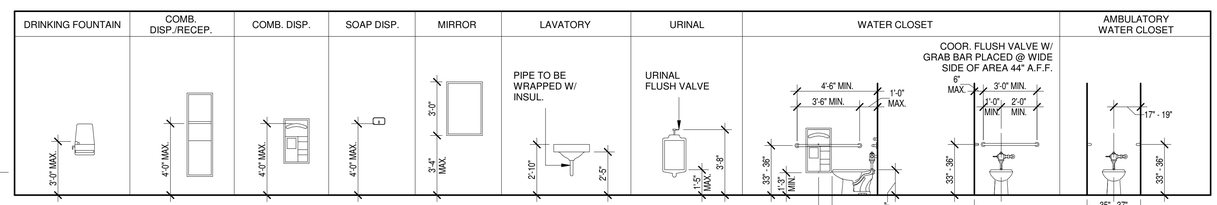
1/4" = 1'-0"



DRAWING NOT TO SCALE, FOR REFERENCE ONLY

5 FBC ADA SECTION 703

1/4" = 1'-0"

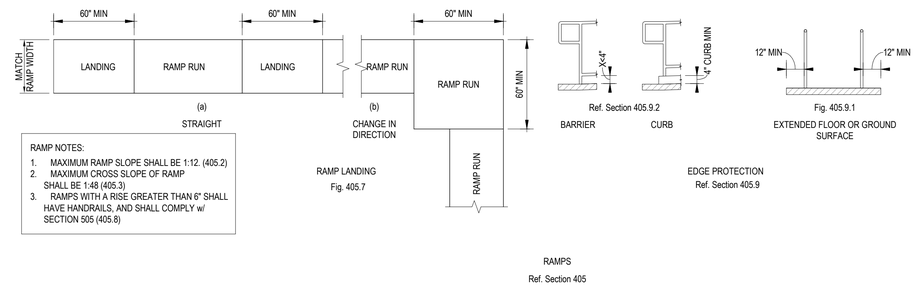


7 DETAIL - DRINKING FOUNTAIN

3/8" = 1'-0"

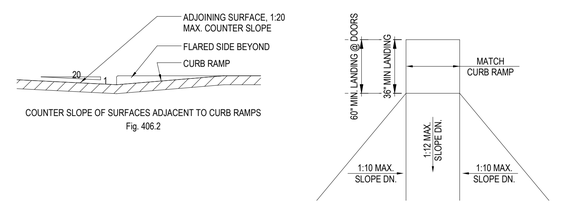
8 DETAIL - TYPICAL MOUNTING HEIGHTS

1/4" = 1'-0"



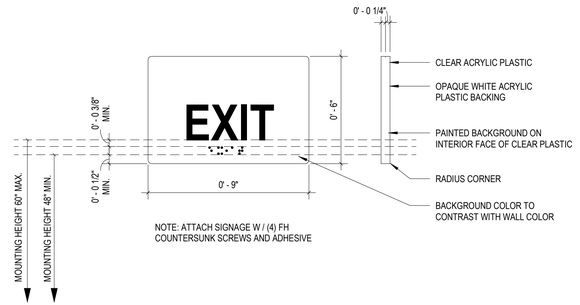
2 FBC ADA SECTION 405

1/4" = 1'-0"



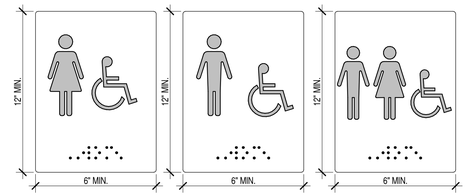
3 FBC ADA SECTION 406

1/4" = 1'-0"



6 ACCESSIBILITY EXIT SIGNAGE

3" = 1'-0"



DRAWING NOT TO SCALE, FOR REFERENCE ONLY
* PROVIDED BY OWNER
** PROVIDE (1) SIGN PER TOILET COMPLYING WITH ADA LOCAL CODE. SIGN TO HAVE RAISED AND BRAILLE CHARACTERS AND PICTORIAL SYMBOL OF ACCESSIBILITY MOUNT 5'-0" TO CENTERLINE A.F.F. & 9" FROM CENTERLINE OF SIGN TO EDGE OF DOOR (OPPOSITE HINGE)
*** TYPICAL INTERIOR ACCESS SIGNS

9 DETAIL - HANDICAP SIGNAGE

1/2" = 1'-0"

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HILLSIDE GROVES AMENITY

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ADA CLEARANCE REQUIREMENTS

Project No: 25-01934

Sheet No: A103

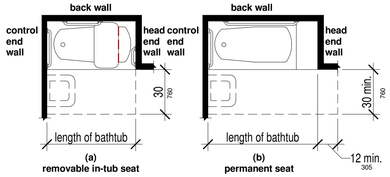


FIGURE 607.2 CLEARANCE FOR BATHTUBS

1 FBC ADA SECTION 607.2

1/4" = 1'-0"

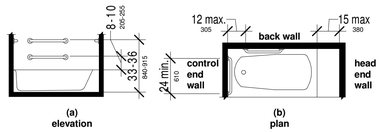


FIGURE 607.4.2 GRAB BARS FOR BATHTUBS WITH PERMANENT SEATS

2 FBC ADA SECTION 607.4.1

1/4" = 1'-0"

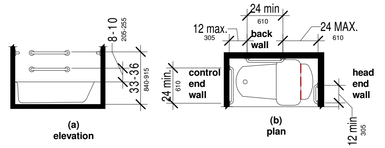


FIGURE 607.4.2 GRAB BARS FOR BATHTUBS WITH REMOVABLE IN-TUB SEATS

3 FBC ADA SECTION 607.4.2

1/4" = 1'-0"

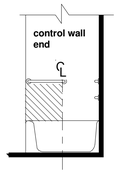
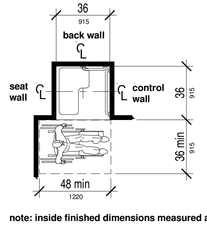


FIGURE 607.5 BATHTUB CONTROL LOCATION

4 FBC ADA SECTION 607.5

1/4" = 1'-0"

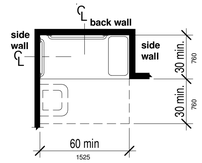


note: inside finished dimensions measured a the center points of opposing sides

FIGURE 608.2.1 TRANSFER TYPE SHOWER COMPARTMENT SIZE AND CLEARANCE

5 FBC ADA SECTION 608.2.1

1/4" = 1'-0"

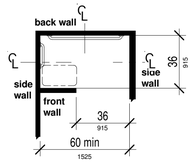


note: inside finished dimensions measured a the center points of opposing sides

FIGURE 608.2.2 STANDARD ROLL-IN TYPE SHOWER COMPARTMENT SIZE AND CLEARANCE

6 FBC ADA SECTION 608.2.2

1/4" = 1'-0"



note: inside finished dimensions measured a the center points of opposing sides

FIGURE 608.2.3 ALTERNATE ROLL-IN TYPE SHOWER COMPARTMENT SIZE AND CLEARANCE

7 FBC ADA SECTION 608.2.3

1/4" = 1'-0"

FIGURE 608.3.1 GRAB BARS FOR TRANSFER TYPE SHOWERS

8 FBC ADA SECTION 608.3.1

1/4" = 1'-0"

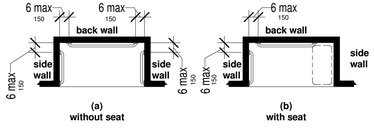


FIGURE 608.3.2 GRAB BARS FOR STANDARD ROLL-IN TYPE SHOWERS

9 FBC ADA SECTION 608.3.2

1/4" = 1'-0"

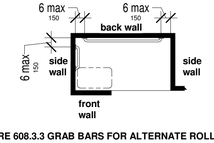


FIGURE 608.3.3 GRAB BARS FOR ALTERNATE ROLL-IN TYPE SHOWERS

10 FBC ADA SECTION 608.3.3

1/4" = 1'-0"

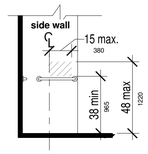


FIGURE 608.5.1
TRANSFER TYPE SHOWER COMPARTMENT CONTROL LOCATION

11 FBC ADA SECTION 608.5.1

1/4" = 1'-0"

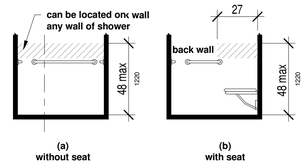


FIGURE 608.5.2
STANDARD ROLL-IN TYPE SHOWER COMPARTMENT CONTROL LOCATION

12 FBC ADA SECTION 608.5.2

1/4" = 1'-0"

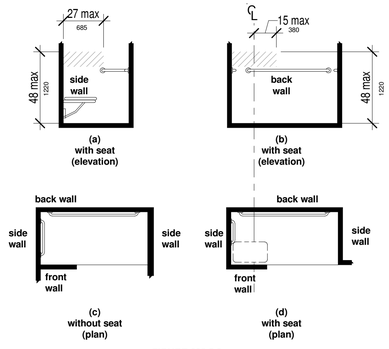


FIGURE 608.5.3
ALTERNATE ROLL-IN TYPE SHOWER COMPARTMENT CONTROL LOCATION

13 FBC ADA SECTION 608.5.3

1/4" = 1'-0"

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HILLSIDE GROVES AMENITY

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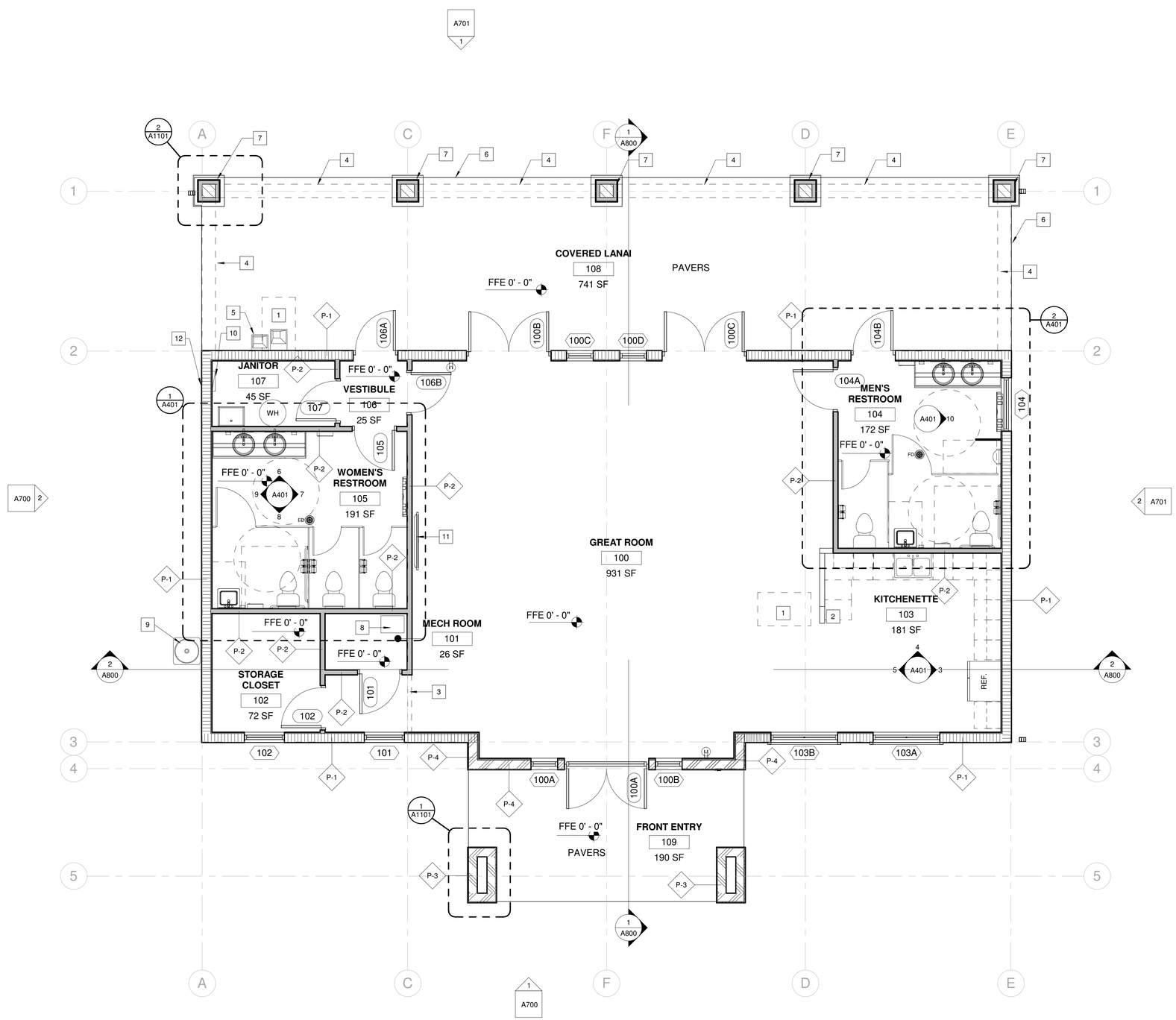
ADA CLEARANCE REQUIREMENTS

Project No: 25-01934

Sheet No: A104



GROSS AREA TABULATION

AREA NAME	SQUARE FT.
CLUBHOUSE	1829 SF
COVERED LANAI - NON AC	789 SF
FRONT ENTRY - NON AC	207 SF
TOTAL SQUARE FOOTAGE	2826 SF

WALL TYPE LEGEND

	8" CONCRETE BLOCK, AT 10'-0" HT
	8" CONCRETE BLOCK, AT 11'-4" HT
	2x 4 WOOD FRAMED WALL

KEYNOTES

1. 30X48 ADA. CLR. FLOOR SPACE
2. 34" MAX. HT. ADA COUNTERTOP
3. HEADER, REFER TO RCP
4. WOOD FRAME BEAM, SEE STRUCT. DWGS.
5. LO/HI ADA. WATER FOUNTAIN
6. CONC. FLOOR SLAB, TIE TO POOL DECK, SEE STRUCT. DWGS
7. 12X12 CMU COL., HARDIE BD. FINISH, WD. FRAMED BASE FINISH WITH STONE VENEER
8. AHU UNIT, REFER TO MECHANICAL DRAWINGS
9. A/C UNIT, REFER TO MECHANICAL DRAWINGS
10. ELECTRICAL PANEL, REFER TO ELECTRICAL DRAWINGS
11. WALL MOUNTED TV, MOUNTING HT. 5'-6" TO CENTER.
12. ELECTRICAL METER CAN LOCATION W/ DISCONNECT

0 2' 4' 8' 12'

1/4" = 1'-0"

1 FIRST FLOOR PLAN - NOTES

1/4" = 1'-0"

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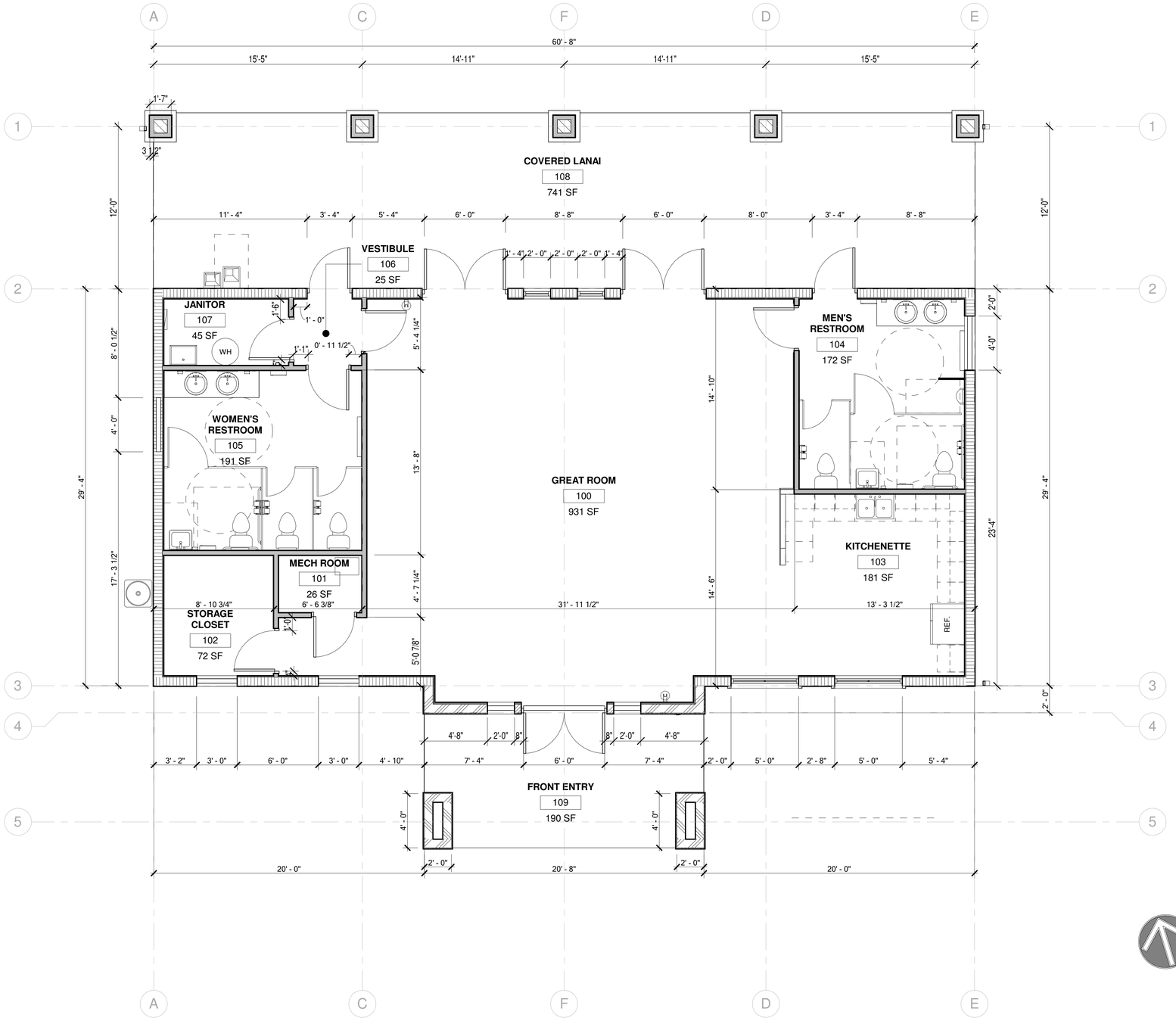
FLOOR PLAN - NOTES

Project No: 25-01934

Sheet No: A300

GROSS AREA TABULATION	
AREA NAME	**SQUARE FT.**
CLUBHOUSE	1829 SF
COVERED LANAI - NON AC	789 SF
FRONT ENTRY - NON AC	207 SF
TOTAL SQUARE FOOTAGE	2826 SF

WALL TYPE LEGEND	
	8" CONCRETE BLOCK, AT 10'-0" HT
	8" CONCRETE BLOCK, AT 11'-4" HT
	2x 4 WOOD FRAMED WALL



0 2' 4' 8' 12'

1/4" = 1'-0"

1 FIRST FLOOR PLAN - DIMENSIONS
1/4" = 1'-0"

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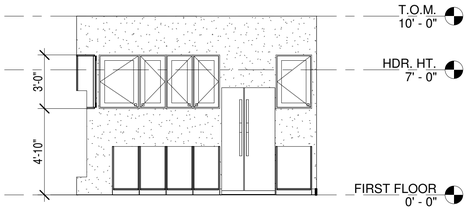
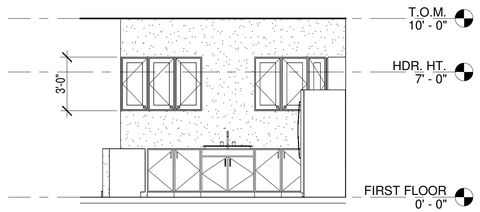
FLOOR PLAN - DIMENSIONS

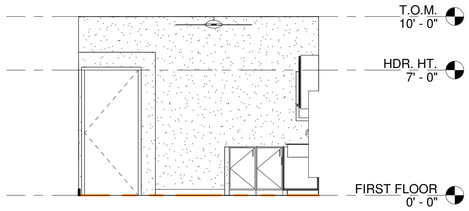
Project No:
25-01934
Sheet No:
A302



3 KITCHENETTE ELEV - EAST
1/4" = 1'-0"



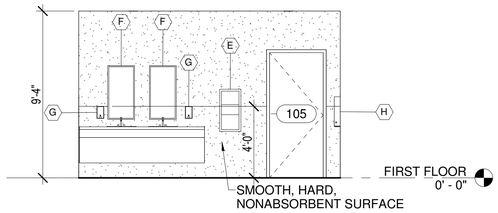
4 KITCHENETTE ELEV - NORTH
1/4" = 1'-0"



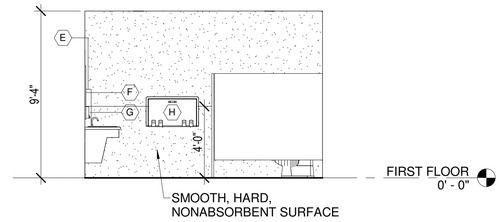
5 KITCHENETTE ELEV - WEST
1/4" = 1'-0"

ROOM SCHEDULE

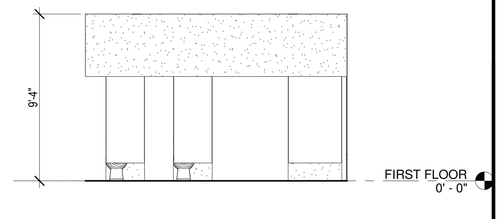
ROOM NUMBER	ROOM NAME	Area	FLOOR FINISH	BASE FINISH	WALL FINISH	CEILING FINISH	CEILING HEIGHT	COMMENTS
100	GREAT ROOM	931 SF	TILE	WOOD	PAINTED GYP. BD.	PAINTED GYP. BD.	10'-0"	TRAY CEILING AT 11'-0"
101	MECH ROOM	26 SF	CONC.	WOOD	PAINTED GYP. BD.	PAINTED GYP. BD.	9'-11 1/2"	
102	STORAGE CLOSET	72 SF	CONC.	WOOD	PAINTED GYP. BD.	PAINTED GYP. BD.	10	
103	KITCHENETTE	181 SF	TILE	WOOD	PAINTED GYP. BD.	PAINTED GYP. BD.	10'-0"	
104	MEN'S RESTROOM	172 SF	TILE	TILE	PAINTED GYP. BD. & TILE	PAINTED GYP. BD.	9'-4"	SMOOTH, HARD, NONABSORBENT SURFACE TO A HEIGHT OF 4' ABV. FFE AT SINK, URINAL AND WC.
105	WOMEN'S RESTROOM	191 SF	TILE	TILE	PAINTED GYP. BD. & TILE	PAINTED GYP. BD.	9'-4"	SMOOTH, HARD, NONABSORBENT SURFACE TO A HEIGHT OF 4' ABV. FFE AT SINK AND WC.
106	VESTIBULE	25 SF	TILE	WOOD	PAINTED GYP. BD.	PAINTED GYP. BD.	9'-4"	
107	JANITOR	45 SF	CONC.	TILE	PAINTED GYP. BD.	PAINTED GYP. BD.	9'-4"	SMOOTH, HARD, NONABSORBENT SURFACE TO A HEIGHT OF 4' ABV. FFE AT SERVICE SINK
108	COVERED LANAI	741 SF	PAVERS	--	(SEE BUILDING ELEVATION)	PAINTED GYP. BD.	9'-11 1/2"	OUTDOOR COVERED
109	FRONT ENTRY	190 SF	PAVERS	--	(SEE BUILDING ELEVATION)	T&G CEILING	11'-4"	OUTDOOR COVERED



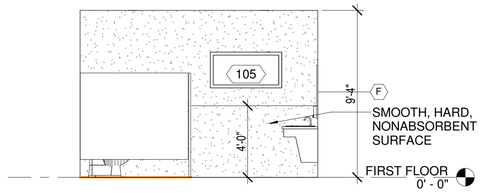
6 WOMEN'S RR ELEVATION 1
1/4" = 1'-0"



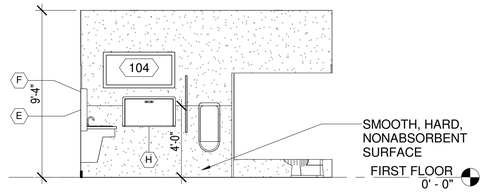
7 WOMEN'S RR ELEVATION 2
1/4" = 1'-0"



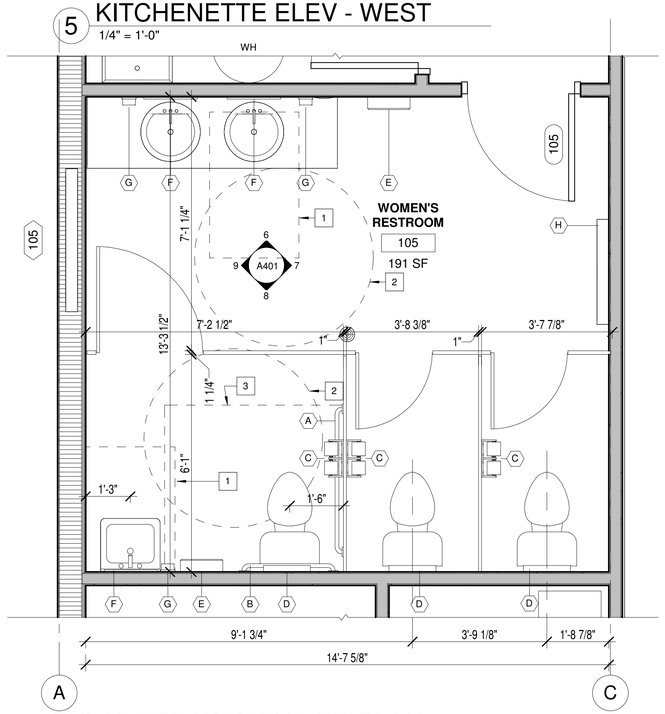
8 WOMEN'S RR ELEVATION 3
1/4" = 1'-0"



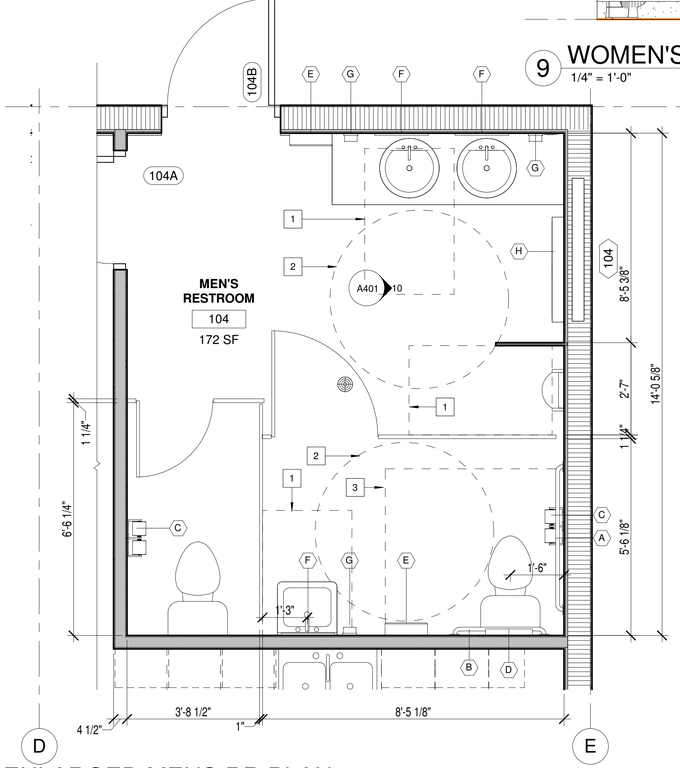
9 WOMEN'S RR ELEVATION 4
1/4" = 1'-0"



10 MEN'S RR ELEVATION
1/4" = 1'-0"



1 ENLARGED WOMENS RR PLAN
1/2" = 1'-0"



2 ENLARGED MENS RR PLAN
1/2" = 1'-0"

KEY NOTES

1. 30"X 48" CLEAR FLOOR SPACE
2. 60" DIA.CLEAR FLOOR SPACE
3. 60"x60" CLEAR FLOOR SPACE

GENERAL NOTES

1. REFER TO SHEET A103 FOR MOUNTING HEIGHTS.
2. FOR DRINKING FOUNTAIN DETAIL, REFER TO 8/A102.
3. FOR HANDICAP SIGNAGE DETAIL, REFER TO 9/A103.

EQUIPMENT SCHEDULE

Type Mark	DESCRIPTION	MODEL NO.	COMMENTS
A	1 1/4" Diameter Stainless Steel Grab Bars with Snap Flange	B-5806 Series	42"
B	1 1/4" Diameter Stainless Steel Grab Bars with Snap Flange	B-5806 Series	36"
C	Bobrick B-2740 Surface Mounted Double Toilet Tissue Dispenser	B-2740	
D	Contura Series Surface Mounted Seat Cover Dispenser	B-4221	
E	Surface-Mounted Paper Towel Dispenser And Waste Receptacle	B-3699 ClassicSeries	
F	Glass Mirror with Stainless Steel Angle Frame	B-290 Series	
G	Classic Series Surface Mounted Soap Dispenser	B-2111	
H	Baby Changing Station		

0 2' 4' 8'
3/8" = 1'-0"

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HILLSIDE GROVES AMENITY
HOWEY-IN-THE-HILLS, FLORIDA

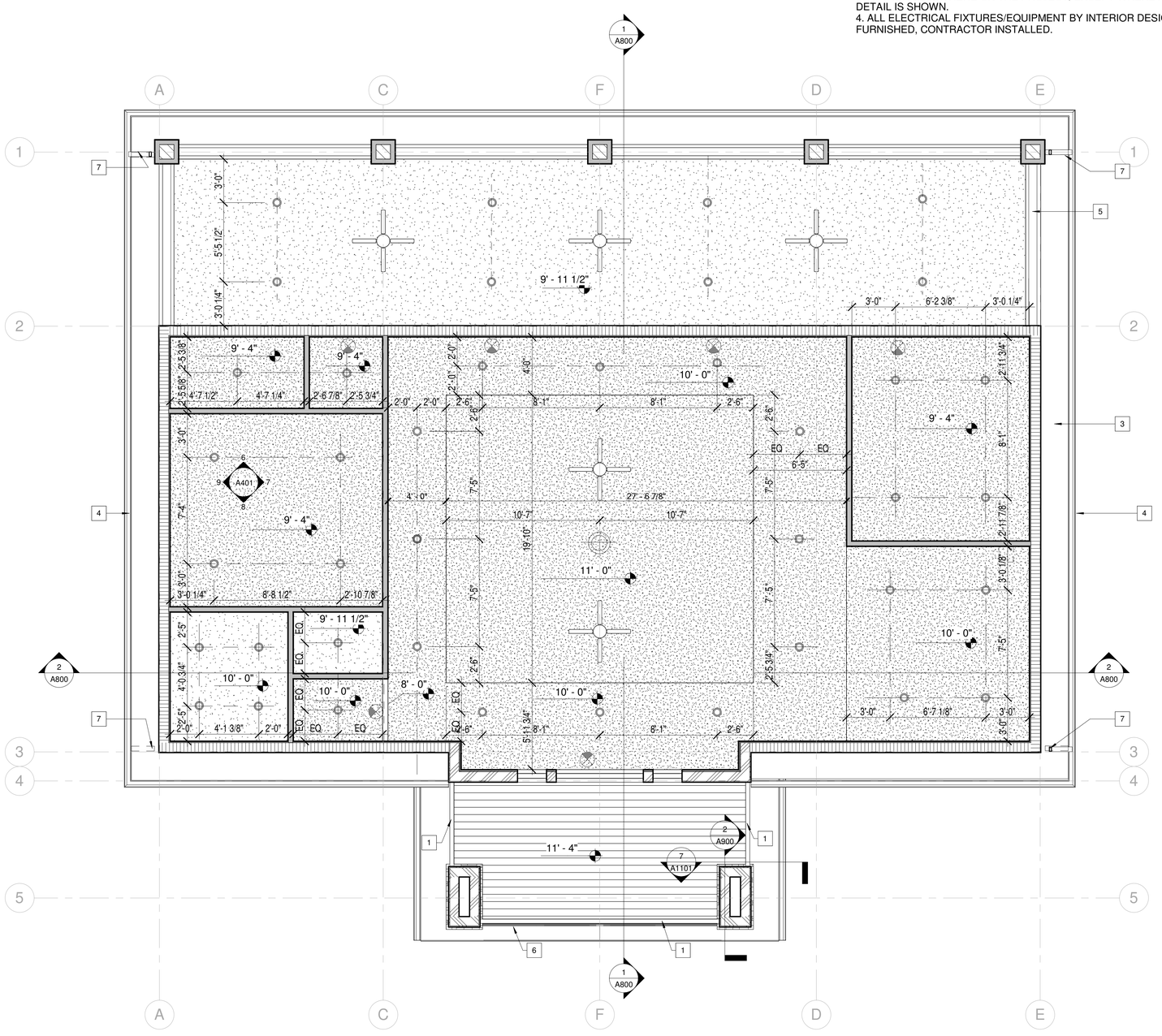
Revision Schedule

NO	DESCRIPTION	00/00/00
		####
		8/27/2025 4:24:05 PM
		08/27/25
		MAB
		SGT

ENLARGED PLANS / INTERIOR ELEVATIONS
Project No: 25-01934
Sheet No: A401

GENERAL NOTES

1. REFER TO ELECTRICAL DRAWINGS FOR FINAL LIGHTING LAYOUT AND FIXTURE INFORMATION
2. REFER TO MECHANICAL DRAWINGS FOR MECHANICAL INFORMATION.
3. ALL DETAILS AND SECTIONS SHOWN ON THE DRAWING ARE INTENDED TO BE TYPICAL AND SHALL BE CONSTRUED TO APPLY TO ANY SIMILAR SITUATION ELSEWHERE ON THE PROJECT, EXCEPT WHERE A DIFFERENT DETAIL IS SHOWN.
4. ALL ELECTRICAL FIXTURES/EQUIPMENT BY INTERIOR DESIGNER, OWNER FURNISHED, CONTRACTOR INSTALLED.



LEGEND - REFLECTED CEILING PLAN

SYMBOL	DESCRIPTION	NOTES
	GYPSUM BOARD CEILING	-
	6" T & G CEILING	
	EMERGENCY LIGHT	REFER TO MEP DRAWINGS
	EXIT SIGNAGE	REFER TO MEP DRAWINGS
	HVAC SUPPLY GRILL	REFER TO MEP DRAWINGS
	HVAC RETURN AIR GRILL	REFER TO MEP DRAWINGS
	RECESSED LIGHT	REFER TO MEP DRAWINGS

KEYNOTES

1. WD STRUCT. BEAM, REFER TO STRUCT. DWGS.
2. NOT USED
3. CONTINUOUS VINYL SOFFIT
4. GUTTER SYSTEM, 5" MIN
5. 2X WD. FRAMED BEAM, SEE STRUCT. DWGS. W/ HARDIE BD. FINISH
6. WD. FRAMED GABLE END W/ HARDIE SMOOTH PANEL AND DECORATIVE HARDIE TRIM, SEE ELEVATION
7. DOWNSPOUT, MIN 4", TIE TO TERMINATE ON SPLASH BLOCK

0 2' 4' 8' 12'

1/4" = 1'-0"

1 REFLECTED CEILING PLAN
1/4" = 1'-0"

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NO	DESCRIPTION	00/00/00
		####
		8/27/2025 4:24:06 PM
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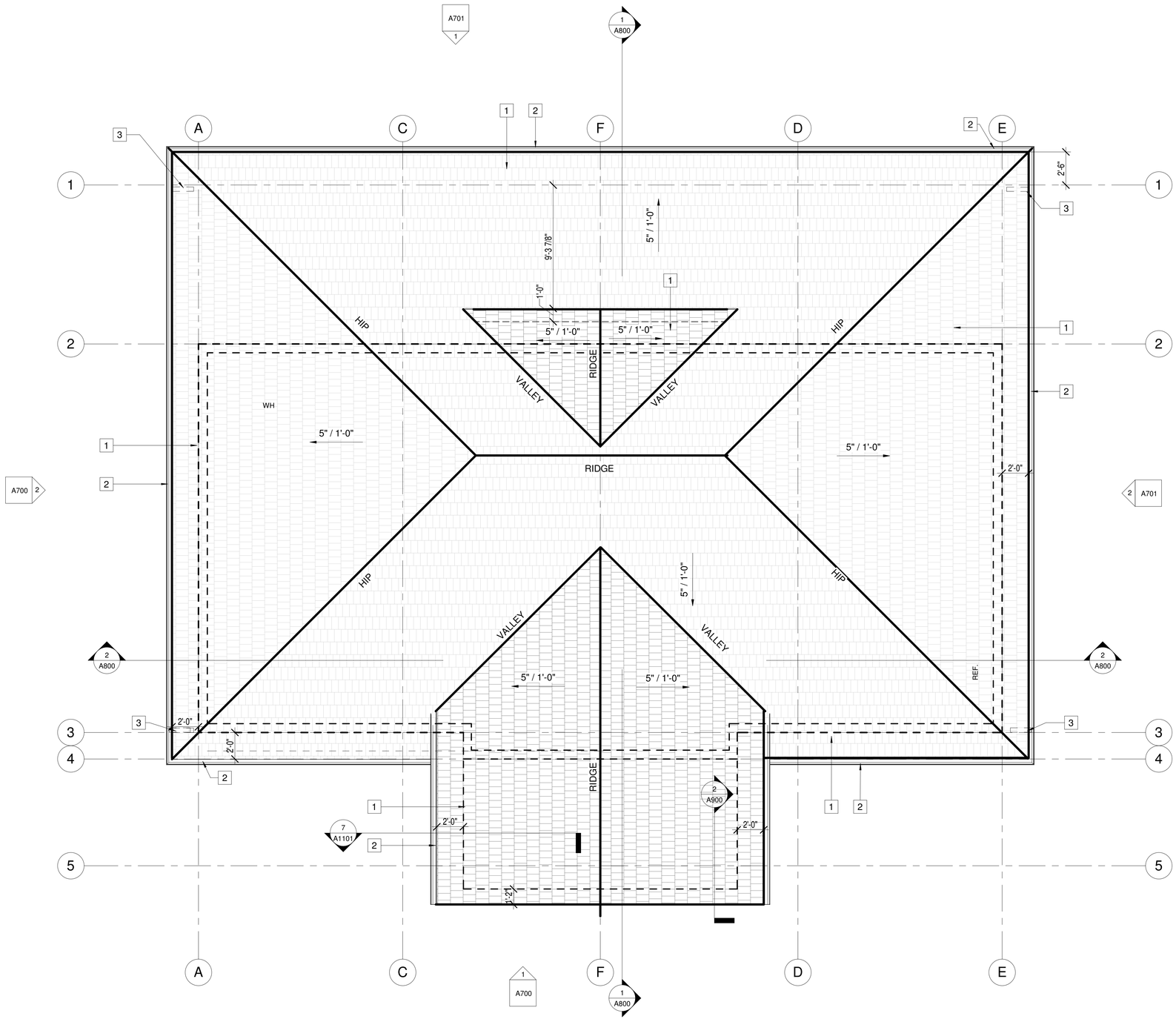
REFLECTED CEILING PLAN

Project No: 25-01934

Sheet No: A500



ROOF TYPE LEGEND

	ARCH. SHINGLES

KEYNOTES

1. ARCH. SHINGLES, ON ROOFING UNDERLAYMENT ON STRUCT. SHEATHING, ON PRE. ENG. WD. TRUSSES
2. ALUMINUM GUTTER SYSTEM, 5" MIN.
3. ALUMINUM DOWNSPOUT, 4" MIN. TERMINATE ON SPLASH BLOCKS.

0 2' 4' 8' 12'

1/4" = 1'-0"

1 ROOF PLAN
1/4" = 1'-0"

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HILLSIDE GROVES AMENITY

HOWEY-IN-THE-HILLS, FLORIDA

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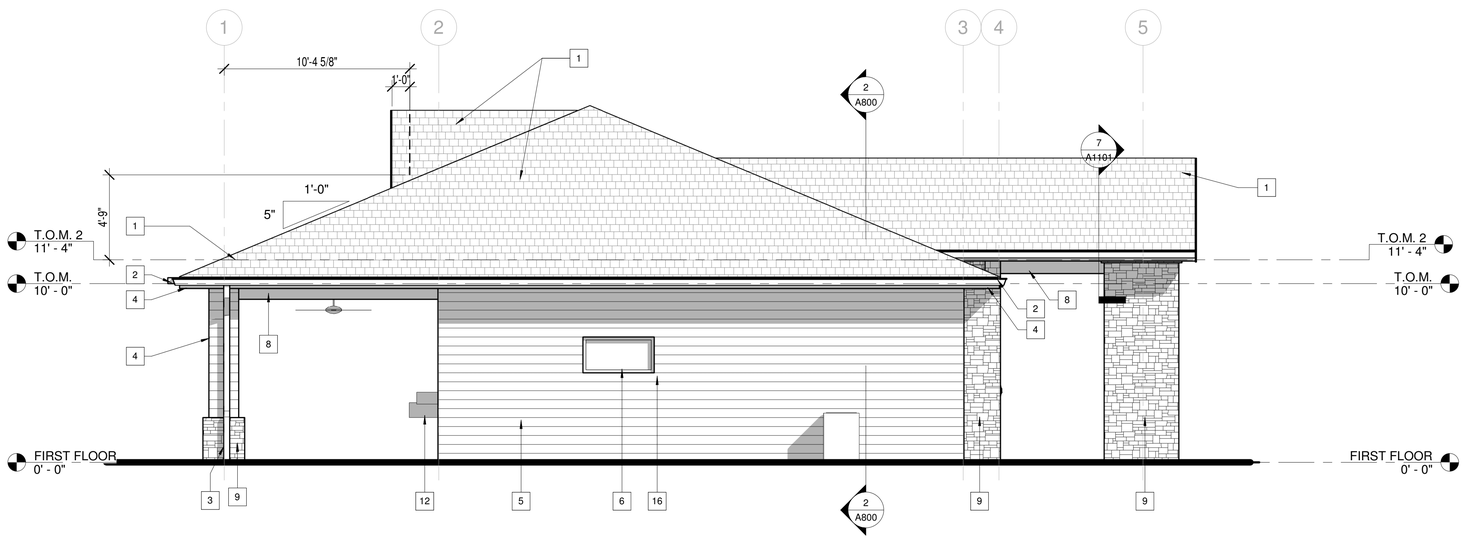
NO	DESCRIPTION	00/00/00



1 BUILDING ELEVATION - SOUTH

1/4" = 1'-0"



2 BUILDING ELEVATION - WEST

1/4" = 1'-0"

KEYNOTES

1. ARCH. SHINGLES, ON ROOFING UNDERLAYMENT ON STRUCT. SHEATHING, ON PRE. ENG. WD. TRUSSES
2. GUTTER SYSTEM, 5" MIN.
3. DOWNSPOUT, 4" MIN. TERMINATE ON SPLASH BLOCK
4. 2X P.T. WOOD FASCIA BD.
5. HORIZONTAL HARDIE PLANK LAP SIDING, ON WATER RESISTANT BARRIERS
6. ALUMINUM WINDOW, REFER TO WINDOW SCHEDULE
7. STOREFRONT ENTRANCE DOOR, REFER TO DOOR SCHEDULE
8. WD. STRUCTURAL BEAM, W/ HARDIE FINISH SEE STRUCT.
9. STONE VENEER W/ STONE CAP SLOPED
10. HEAVY TIMBER TRUSS, REFER TO STRUCT. DWGS.
11. METAL EXTERIOR DOOR, REFER TO DOOR SCHEDULE
12. HI/LO ADA WATER FOUNTAIN
13. HARDIE VERTICAL BOARD & BATTEN SIDING
14. 1X6 HARDIE CORNER BD.
15. STONE STRINGCOURSE
16. HARDIE WINDOW AND DOOR TRIM BD.
17. HARDIE SMOOTH PANEL GABLE END
18. DECORATIVE HARDIE TRIM BOARD
19. FLASHING

Exterior Finishes	
Stucco texture and color	Stucco: Accessible Beige SW7036, Finish (Smooth Cementous)
Exterior Paint	Ceiling: Whitetail SW7103 Doors/Door frames: Granite Peak SW6250 Storage Rooms: Accessible Beige SW7036 Exterior Paint (Hardie): Cadet SW9143 Hardie Trim and Stucco Bands: Snowbound SW7004
Gutters & Downspouts	White 30
Stone Veneer/Mortar	Nappenee Laytile from J&N Stone
Doors/Frames/Hardware	Doors – Granite Peak SW6250 Frames – Granite Peak SW6250 Hardware: Per Drawings Finish- Brushed Alum
Siding & Trim	Hardie siding – Color – Cadet SW9143 Hardie Trim and Stucco bands – Snowbound SW7004
Roofing	Shingle Roof: Certainteed Weathered Wood Metal Roof: 24ga Black snaplock metal roof
Eaves, Flashing & Soffit, Drip Edge	White
Fence & Gate Color	Powder Coated Black
Board & Batten Ceilings	Color – Whitetail SW7103
Toilet Partitions	Pebble 959
Flooring	Resuflor 3561V Epoxy Deco Flake ¼" Velvet Feather

Hardscape/Other Finishes	
Fences & Gates	PVC pool fence color - White
Pool Finishes: Tiles/Surface	Pool Tile – NPT - Terrasini Blue Step Edge tile – LUV Tile-2685 Sapphire Blue Interior/Step Edge Finish – PMM Marquis Series- 050462 Pool Quartz Coping – Buff White Zero Entry Grate – Buff White
Pavers type & Color	Amaretto (12x12 with 4x8 Holland Stone Border at deck edges) Layout – block on block
Playground	Color Scheme – Creamsicle RSP Color – Chocolate & Latte
Sidewalks Concrete Finish	Broom Finish

0 2' 4' 8' 12'

1/4" = 1'-0"

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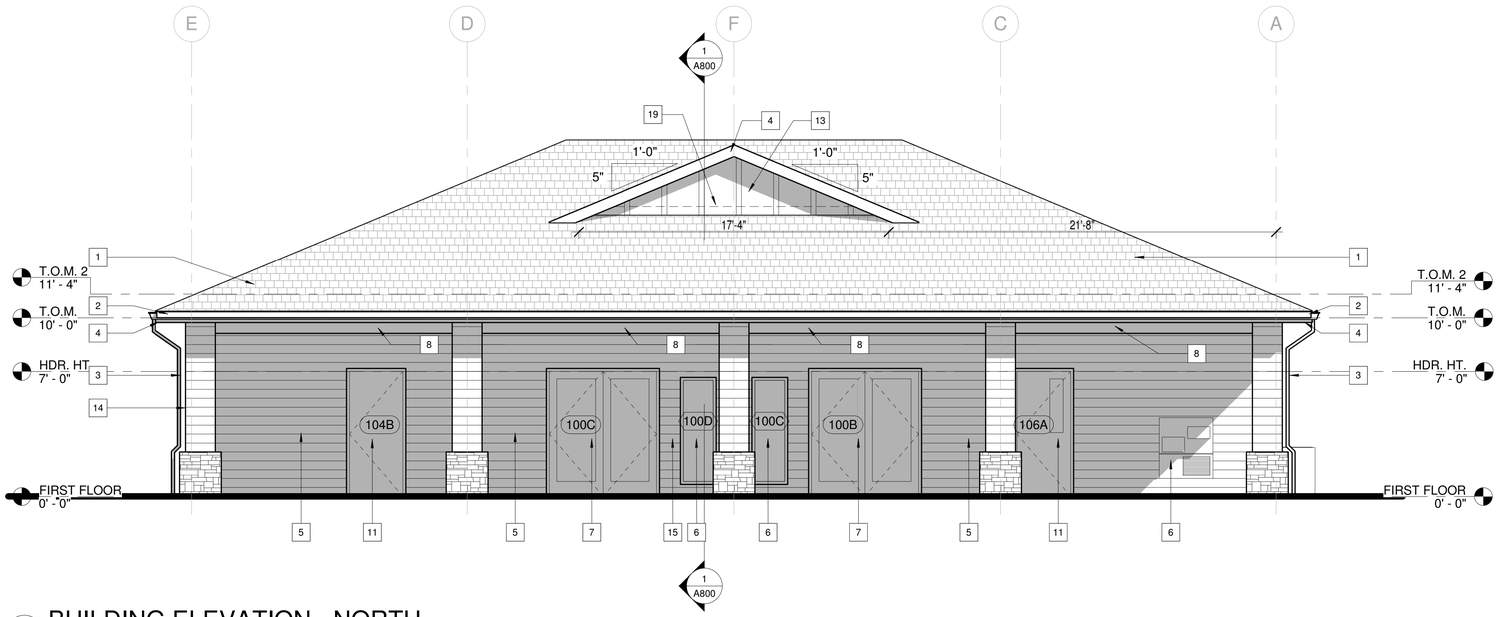
HILLSIDE GROVES AMENITY

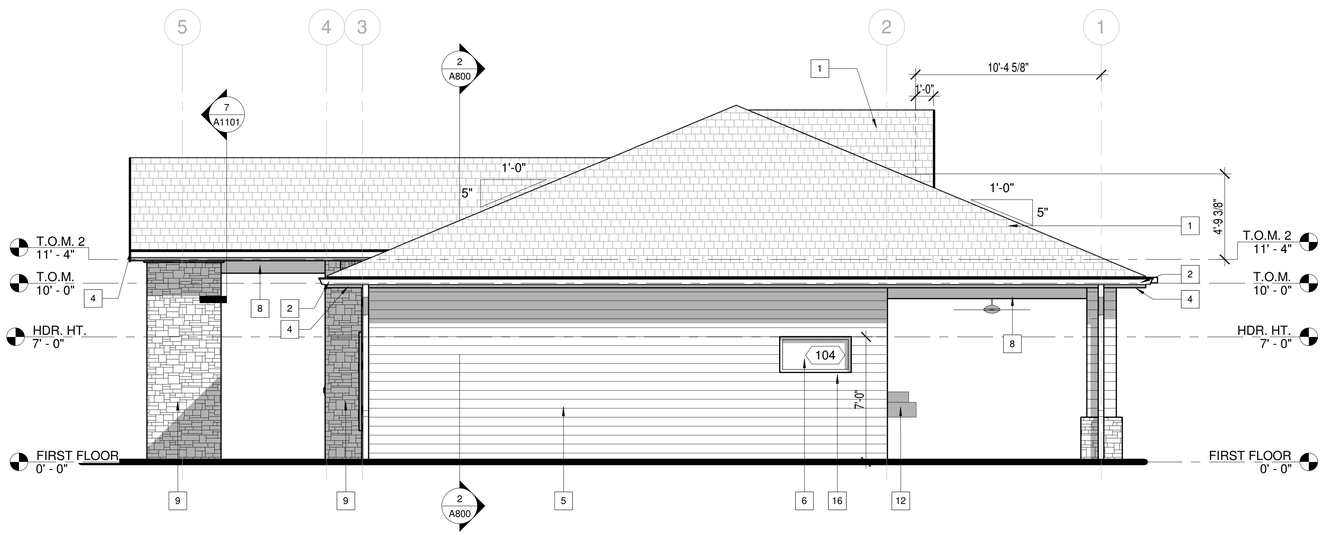
HOWEY-IN-THE-HILLS, FLORIDA

Revision Schedule		
NO	DESCRIPTION	00/00/00



1 BUILDING ELEVATION - NORTH

1/4" = 1'-0"



2 BUILDING ELEVATION - EAST

1/4" = 1'-0"

KEYNOTES

1. ARCH. SHINGLES, ON ROOFING UNDERLAYMENT ON STRUCT. SHEATHING, ON PRE. ENG. WD. TRUSSES
2. GUTTER SYSTEM, 5" MIN.
3. DOWNSPOUT, 4" MIN. TERMINATE ON SPLASH BLOCK
4. 2X P.T. WOOD FASCIA BD.
5. HORIZONTAL HARDIE PLANK LAP SIDING, ON WATER RESISTANT BARRIERS
6. ALUMINUM WINDOW, REFER TO WINDOW SCHEDULE
7. STOREFRONT ENTRANCE DOOR, REFER TO DOOR SCHEDULE
8. WD. STRUCTURAL BEAM, W/ HARDIE FINISH SEE STRUCT.
9. STONE VENEER W/ STONE CAP SLOPED
10. HEAVY TIMBER TRUSS, REFER TO STRUCT. DWGS.
11. METAL EXTERIOR DOOR, REFER TO DOOR SCHEDULE
12. HI/LO ADA WATER FOUNTAIN
13. HARDIE VERTICAL BOARD & BATTEN SIDING
14. 1X6 HARDIE CORNER BD.
15. STONE STRINGCOURSE
16. HARDIE WINDOW AND DOOR TRIM BD.
17. HARDIE SMOOTH PANEL GABLE END
18. DECORATIVE HARDIE TRIM BOARD
19. FLASHING

Exterior Finishes	
Stucco texture and color	Stucco: Accessible Beige SW7036, Finish (Smooth Cementous)
Exterior Paint	Ceiling: Whitetail SW7103 Doors/Door frames: Granite Peak SW6250 Storage Rooms: Accessible Beige SW7036 Exterior Paint (Hardie): Cadet SW9143 Hardie Trim and Stucco Bands: Snowbound SW7004
Gutters & Downspouts	White 30
Stone Veneer/Mortar	Nappenee Laytile from J&N Stone
Doors/Frames/Hardware	Doors – Granite Peak SW6250 Frames – Granite Peak SW6250 Hardware: Per Drawings Finish- Brushed Alum
Siding & Trim	Hardie siding – Color – Cadet SW9143 Hardie Trim and Stucco bands – Snowbound SW7004
Roofing	Shingle Roof: Certainteed Weathered Wood Metal Roof: 24ga Black snaplock metal roof
Eaves, Flashing & Soffit, Drip Edge	White
Fence & Gate Color	Powder Coated Black
Board & Batten Ceilings	Color – Whitetail SW7103
Toilet Partitions	Pebble 959
Flooring	Resuflor 3561V Epoxy Deco Flake ¼" Velvet Feather

Hardscape/Other Finishes	
Fences & Gates	PVC pool fence color - White
Pool Finishes: Tiles/Surface	Pool Tile – NPT - Terrasini Blue Step Edge tile – LUV Tile-2685 Sapphire Blue Interior/Step Edge Finish – PMM Marquis Series- 050462 Pool Quartz Coping – Buff White Zero Entry Grate – Buff White
Pavers type & Color	Amaretto (12x12 with 4x8 Holland Stone Border at deck edges) Layout – block on block
Playground	Color Scheme – Creamsicle RSP Color – Chocolate & Latte
Sidewalks Concrete Finish	Broom Finish

0 2' 4' 8' 12'

1/4" = 1'-0"

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HILLSIDE GROVES AMENITY

HOWEY-IN-THE-HILLS, FLORIDA

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NO	DESCRIPTION	00/00/00
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		08/27/25
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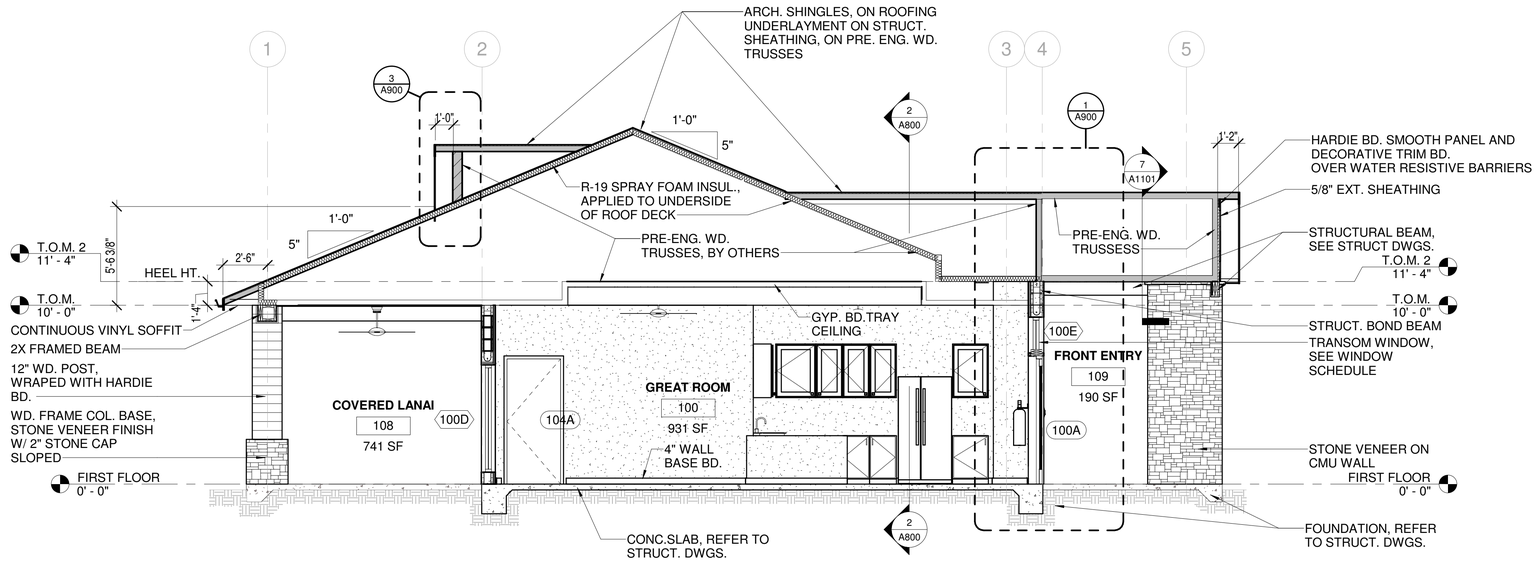
BUILDING ELEVATIONS

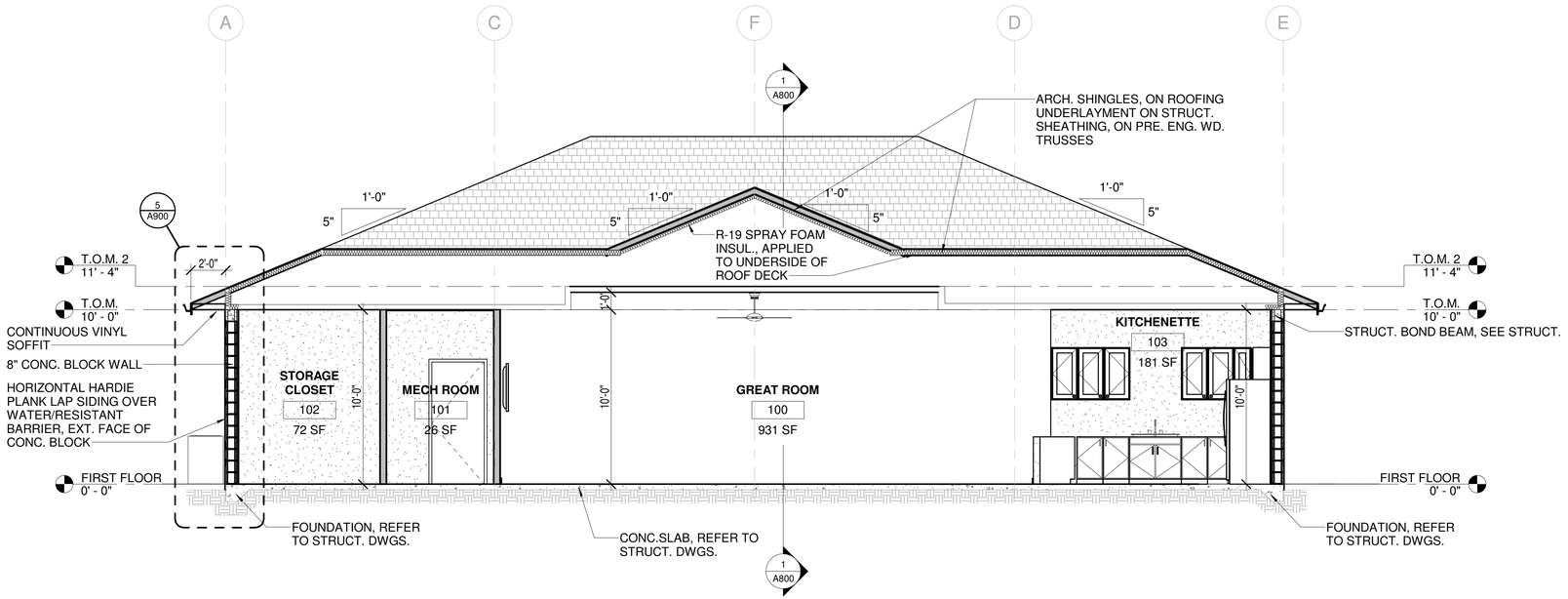
Project No: 25-01934

Sheet No: A701



1 BUILDING SECTION 1

1/4" = 1'-0"



2 BUILDING SECTION 2

1/4" = 1'-0"

0 2' 4' 8' 12'

1/4" = 1'-0"

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HILLSIDE GROVES AMENITY

HOWEY-IN-THE-HILLS, FLORIDA

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	8/27/2025 4:24:13 PM
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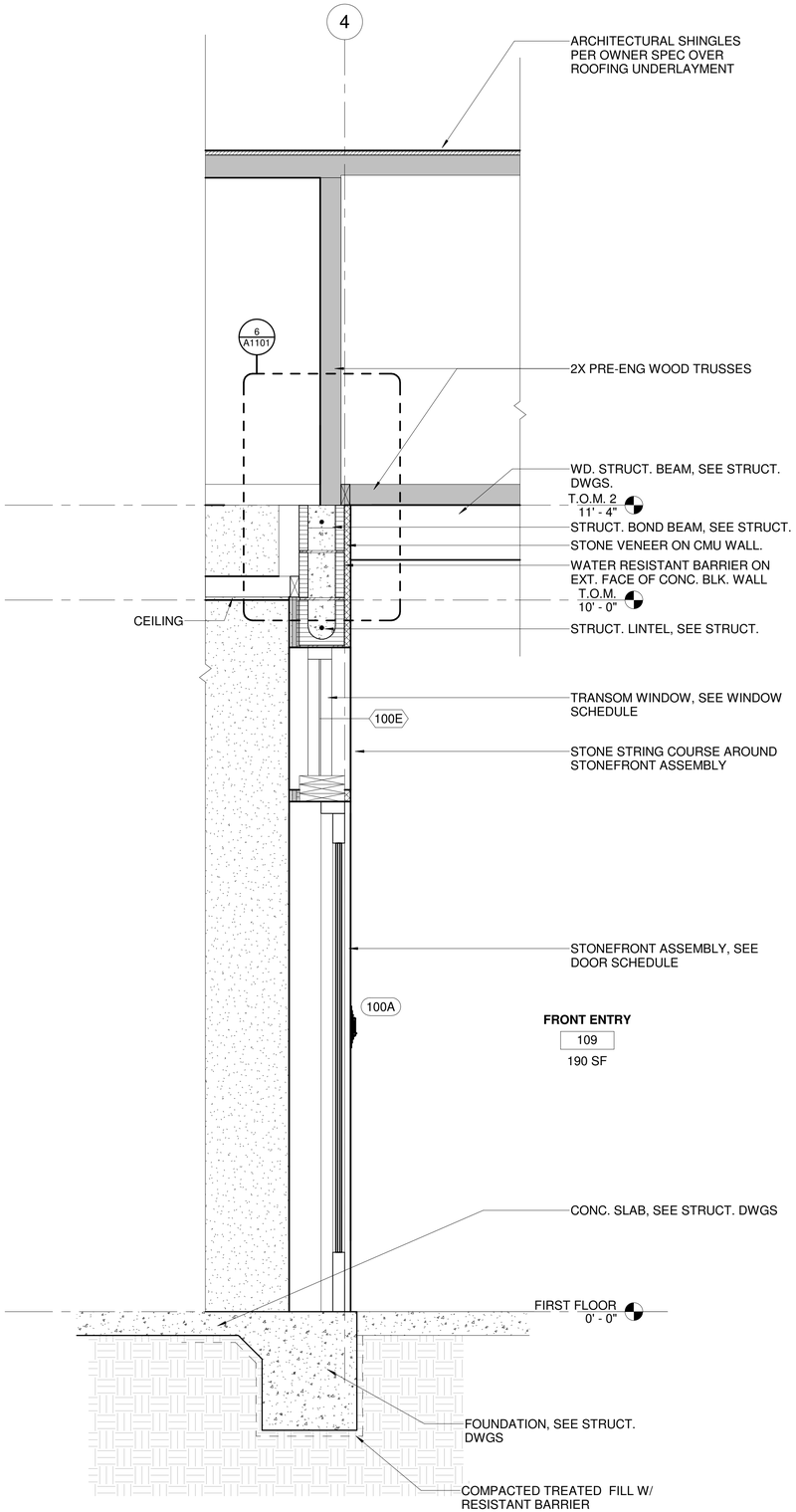
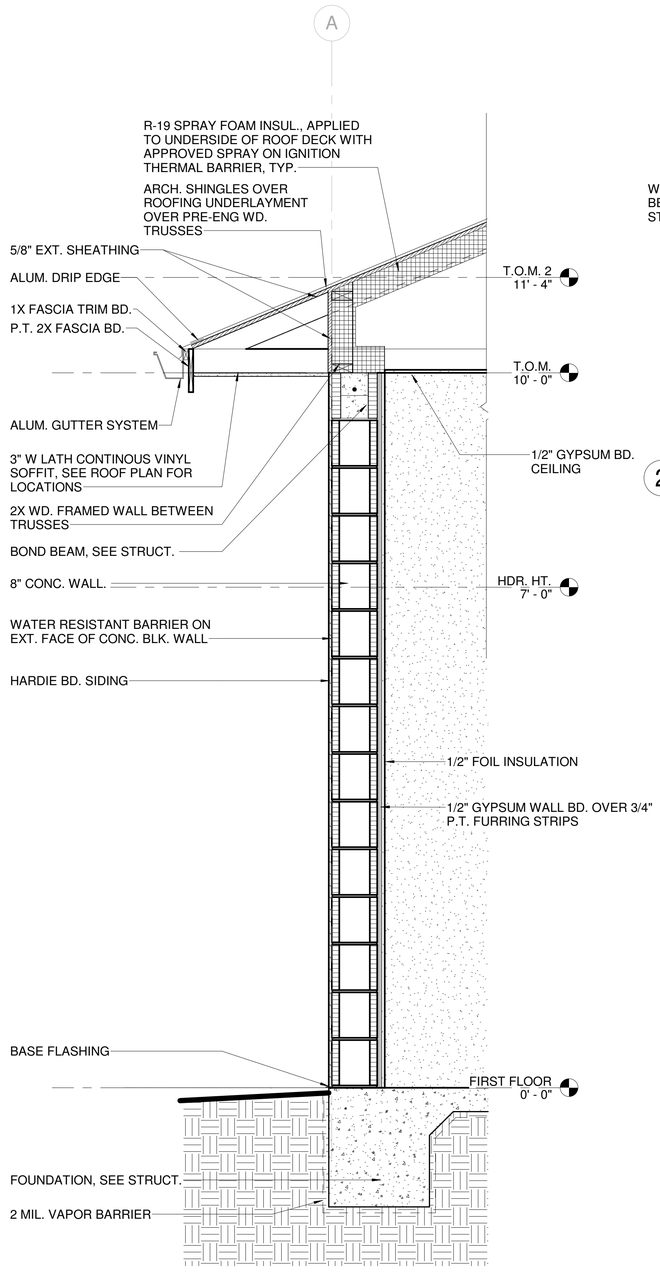
BUILDING SECTIONS

Project No: 25-01934

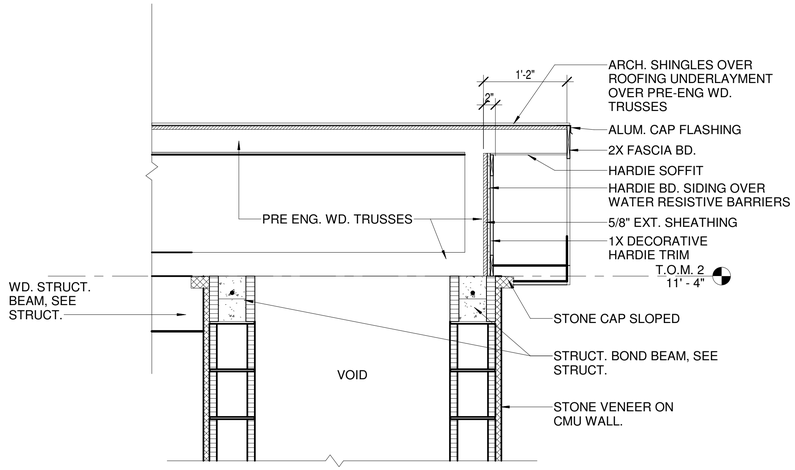
Sheet No: A800



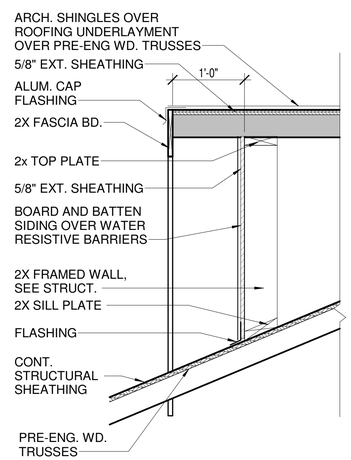
1 WALL SECTION
1" = 1'-0"



5 WALL SECTION
1" = 1'-0"



2 ENTRANCE GABLE DETAIL
1" = 1'-0"



3 WALL SECTION
1" = 1'-0"

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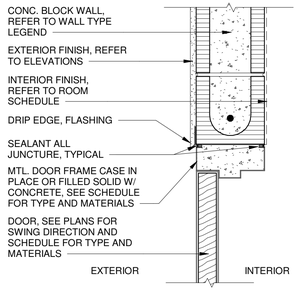
HILLSIDE GROVES AMENITY

HOWEY-IN-THE-HILLS, FLORIDA

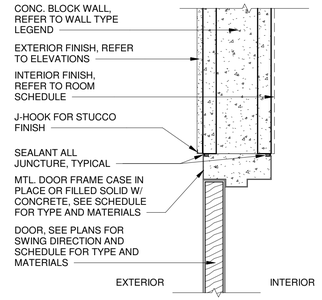
Revision Schedule

NO	DESCRIPTION	00/00/00



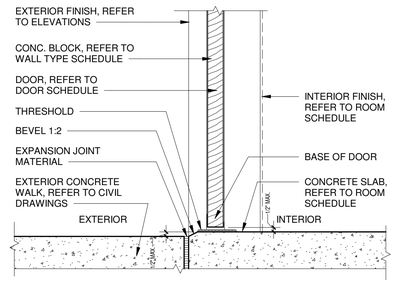
1 DETAIL - DOOR HEAD @ CONCRETE

1 1/2" = 1'-0"



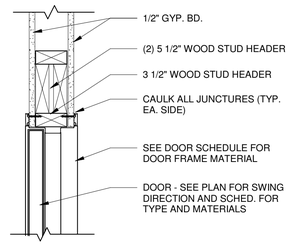
2 DETAIL - DOOR JAMB @ CONCRETE

1 1/2" = 1'-0"

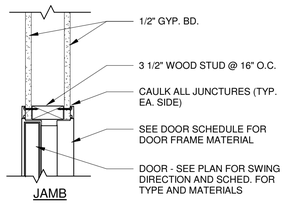


3 DETAIL - DOOR SILL @ CONCRETE

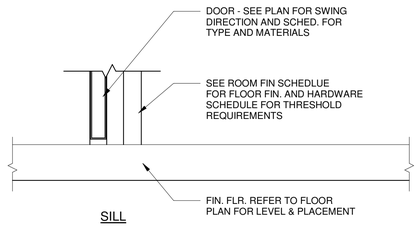
1 1/2" = 1'-0"



HEAD



JAMB



SILL

4 DETAIL - DOOR HEAD WOOD STUD

1 1/2" = 1'-0"

5 DETAIL - DOOR JAMB WOOD STUD

1 1/2" = 1'-0"

6 DETAIL - DOOR SILL WOOD STUD

1 1/2" = 1'-0"

DOOR SCHEDULE

DOOR MARK	ROOM NUMBER	DOOR TYPE	DOOR MATERIAL	FRAME MATERIAL	HARDWARE	DOOR SIZE		DETAIL REFERENCES			COMMENTS
						WIDTH	HEIGHT	SILL DETAIL REF.	JAMB DETAIL REF.	HEAD DETAIL REF.	
100A	100	B	METAL	ALUM	H1	6' - 0"	7' - 0"	3/A1000	2/A1000	1/A1000	ACCESS CONTROL, WITH PANIC HARDWARE
100B	100	B	METAL	ALUM	H1	6' - 0"	7' - 0"	3/A1000	2/A1000	1/A1000	ACCESS CONTROL, WITH PANIC HARDWARE
100C	100	B	METAL	ALUM	H1	6' - 0"	7' - 0"	3/A1000	2/A1000	1/A1000	ACCESS CONTROL, WITH PANIC HARDWARE
101	101	C	WOOD	WOOD	H3	3' - 0"	7' - 0"	6/A1000	5/A1000	4/A1000	
102	102	C	WOOD	WOOD	H3	3' - 0"	7' - 0"	6/A1000	5/A1000	4/A1000	
104A	104	C	METAL	H.M	H2	3' - 0"	7' - 0"	6/A1000	5/A1000	4/A1000	
104B	104	C	METAL	H.M	H2	3' - 0"	7' - 0"	3/A1000	2/A1000	1/A1000	
105	105	C	METAL	H.M	H2	3' - 0"	7' - 0"	6/A1000	5/A1000	4/A1000	
106A	106	A	METAL	H.M	H2	3' - 0"	7' - 0"	3/A1000	2/A1000	1/A1000	
106B	106	C	METAL	H.M	H3	3' - 0"	7' - 0"	6/A1000	5/A1000	4/A1000	
107	107	C	METAL	H.M	H3	3' - 0"	7' - 0"	6/A1000	5/A1000	4/A1000	

HARDWARE TYPE KEY

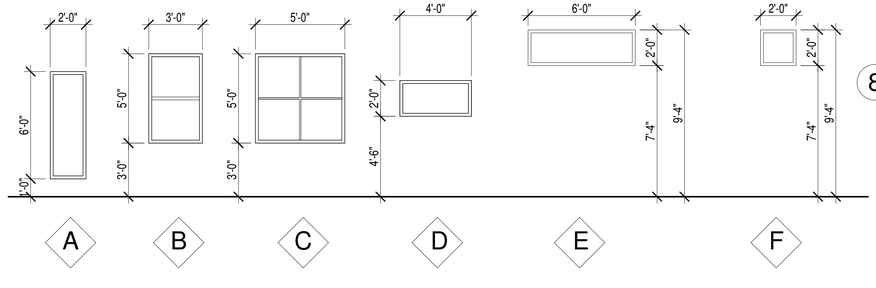
SET	PANIC	LOCKSET	PUSH PULL	DEAD BOLT	DESCRIPTION	LOCATIONS	INSIDE	OUTSIDE
H1			YES	YES	PANEL INSIDE PULL HANDLE OUTSIDE	EXTERIOR MAINS	PANIC BAR	KEY LOCK OR CARD READER WITH HANDLE
H2				YES	ACCESSIBLE LEVER W/ KEY DEAD BOLT LOCK OUTSIDE	UTILITY ROOMS & RESTROOMS	THUMB LOCK, LEVER	KEY LOCK, OR CARD READER LEVER
H3		YES			ACCESSIBLE LEVER W/ KEY LOCK OUTSIDE LEVERLOCK INSIDE	LOCKED STORAGE/UTILITY ROOMS	THUMB LOCK, LEVER	KEY LOCK, LEVER

NOTES: ALL EXTERIOR DOORS SHALL BE KEYED THE SAME BASED ON ONE MASTER KEY SET.

HARDWARE IS GIVEN AS BASIS OF DESIGN FOR OPERATION AND FUNCTIONS ONLY. REFER TO 'ID' FOR SPECS AND FINISHES.

WINDOW SCHEDULE

WINDOW NUMBER	WINDOW TYPE	FRAME TYPE	SIZE BREAKDOWN		DETAIL REFERENCES			COMMENTS
			WIDTH	HEIGHT	HEAD DETAIL REF.	JAMB DETAIL REF.	SILL DETAIL REF.	
100A	A	ALUM	2' - 0"	6' - 0"	7/A1000	8/A1000	9/A1000	
100B	A	ALUM	2' - 0"	6' - 0"	7/A1000	8/A1000	9/A1000	
100C	A	ALUM	2' - 0"	6' - 0"	7/A1000	8/A1000	9/A1000	
100D	A	ALUM	2' - 0"	6' - 0"	7/A1000	8/A1000	9/A1000	
100E	E	ALUM	6' - 0"	2' - 0"	7/A1000	8/A1000	9/A1000	
100F	F	ALUM	2' - 0"	2' - 0"	7/A1000	8/A1000	9/A1000	
100G	F	ALUM	2' - 0"	2' - 0"	7/A1000	8/A1000	9/A1000	
101	B	ALUM	3' - 0"	5' - 0"	7/A1000	8/A1000	9/A1000	
102	B	ALUM	3' - 0"	5' - 0"	7/A1000	8/A1000	9/A1000	
103A	C	ALUM	5' - 0"	5' - 0"	7/A1000	8/A1000	9/A1000	
103B	C	ALUM	5' - 0"	5' - 0"	7/A1000	8/A1000	9/A1000	
104	D	ALUM	4' - 0"	2' - 0"	7/A1000	8/A1000	9/A1000	PRIVACY FILMS
105	D	ALUM	4' - 0"	2' - 0"	7/A1000	8/A1000	9/A1000	PRIVACY FILMS

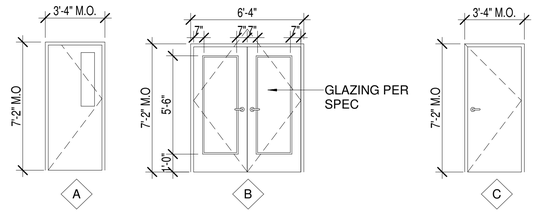


WINDOW TYPES

SCALE: 1/4" = 1'-0"

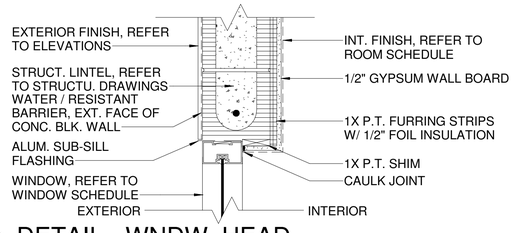
GENERAL NOTES

1. ALL EXTERIOR DOORS TO MEET WIND LOAD CRITERIA
2. ALL GROUND FLOOR UNIT HARDWARE @ ENTRY DOORS SHALL MEET ALL CODES, LAWS AND GUIDELINES FOR HANDICAP ACCESSIBILITY
3. THRESHOLDS AT EXTERIOR DOORS, INCLUDING SLIDING GLASS DOOR TRACKS, ARE NO HIGHER THAN 1/2 INCH, THRESHOLDS AND CHANGES IN LEVEL AT THESE LOCATIONS ARE BEVELED WITH SLOPES NO GREATER THAN 1:12
4. FRAMES ARE TYPICALLY WRAPAROUND; SET EXTERIOR FRAMES AS DETAILED
5. ALL GLASS LIGHTS IN DOORS AND DOORS AND FRAMES SHALL BE TEMPERED UNLESS NOTED AS LABELED; ALL GLASS LIGHTS IN LABELED DOORS AND FRAMES SHALL BE CLEAR FIREGLASS 20 BY TGP OR EQUAL
6. ALL EXT. FRAMES SHALL BE GROUTED FULL
7. ALL DOORS 1 3/4" THICK; ALL FRAMES TO HAVE 5/8" X 1 3/4" RABBETS EACH SIDE, VARY STOP WIDTHS TO ACCOMMODATE CLEAR THROAT DIMENSIONS INDICATED.
8. ALL DOOR AND FRAME LABELS SHALL BE METAL (RIVET OR SCREW ATTACHED), STICK-ON LABELS NOT ACCEPTABLE; PROTECT LABELS FROM BOTH PRIMERS AND FINISH PAINTING, LABELS SHALL BE BRIGHT EMBOSSED METAL PER NFPA 80
9. THRESHOLDS SHALL BE ALUMINUM @ EXTERIOR, INCLUDE TRANSITION STRIPS, CONTINUE FLOOR UNDER DOOR



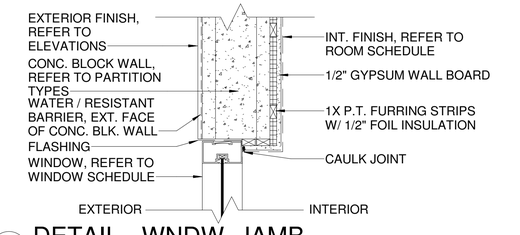
DOOR LEGEND

SCALE: 1/4" = 1'-0"



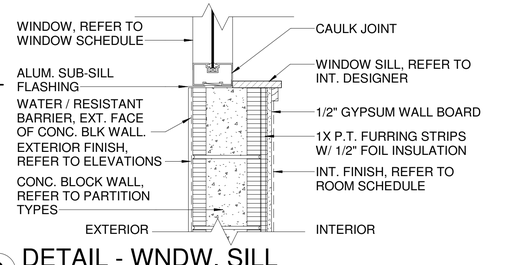
7 DETAIL - WNDW. HEAD

1 1/2" = 1'-0"



8 DETAIL - WNDW. JAMB

1 1/2" = 1'-0"



9 DETAIL - WNDW. SILL

1 1/2" = 1'-0"

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Maitland, Florida, 32751
(407) 880 2333
100% Employee Owned
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AR 100363
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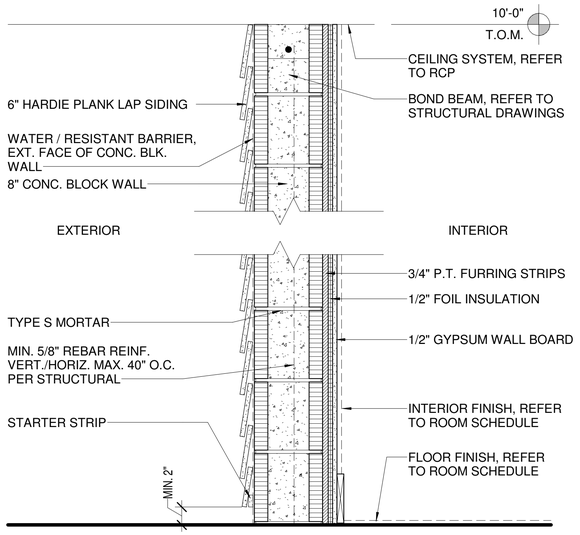
HILLSIDE GROVES AMENITY

HOWEY-IN-THE-HILLS, FLORIDA

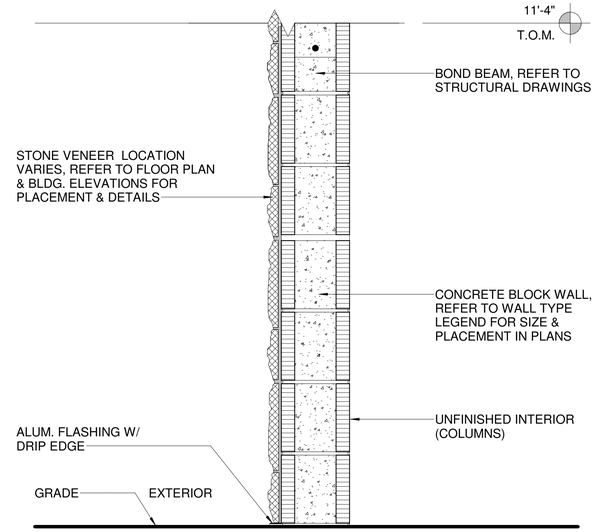
Revision Schedule		
NO	DESCRIPTION	00/00/00
		#####
		8/27/2025 4:24:16 PM
		08/27/25
		MAB
		SGT

DOOR & WINDOW SCHEDULES & DETAILS
Project No: 25-01934
Sheet No: A1000



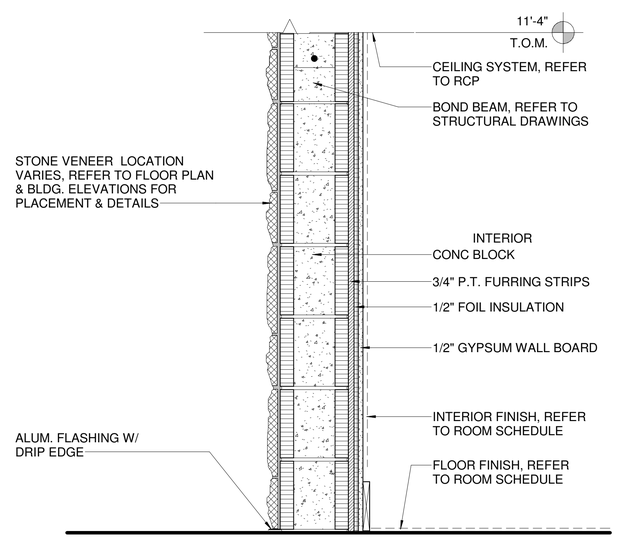
1 P-1 PARTITION TYPE - EXT. CONC. BLOCK WALL & SIDING

1 1/2" = 1'-0"



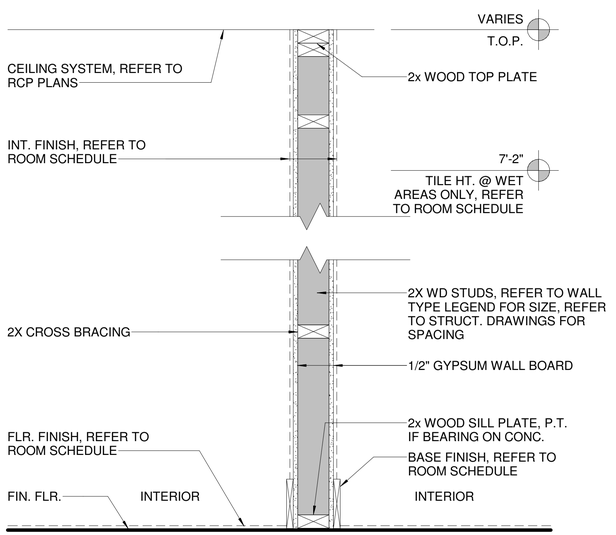
2 P-3 PARTITION TYPE - EXT. CONC. BLOCK & STONE

1 1/2" = 1'-0"



3 P-4 PARTITION TYPE - EXT. CONC. BLOCK & STONE

1 1/2" = 1'-0"



4 P-2 PARTITION TYPE - WD FRAME WALL (NR/NLB)

1 1/2" = 1'-0"

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HILLSIDE GROVES AMENITY

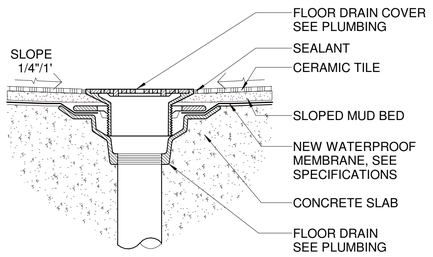
HOWEY-IN-THE-HILLS, FLORIDA

Revision Schedule		
NO	DESCRIPTION	00/00/00
		####
		8/27/2025 4:24:16 PM
		08/27/25
		MAB
		SGT

WALL PARTITION TYPES

Project No: 25-01934

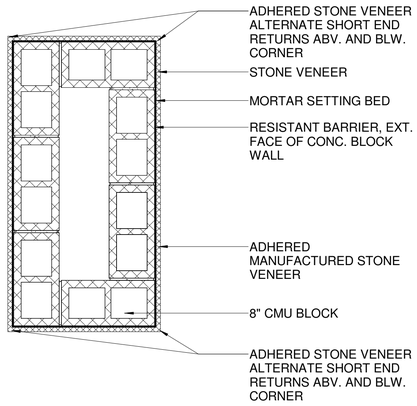
Sheet No: A1100



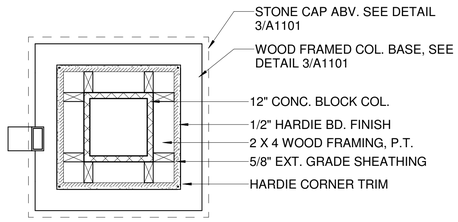
NOTE:

SEE PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.

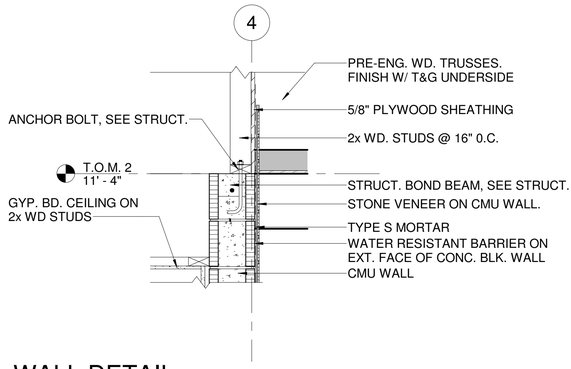
4 FLOOR DRAIN SECTION
3" = 1'-0"



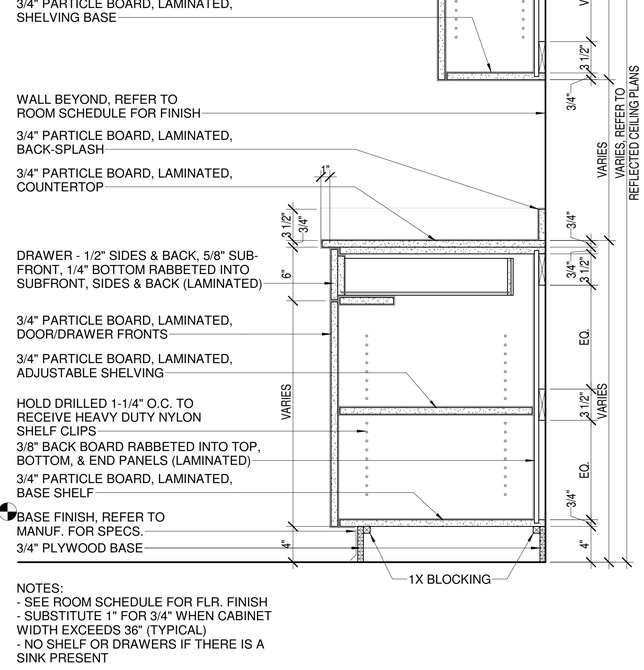
1 TYP. ENLARGED COLUMN PLAN 1
1" = 1'-0"



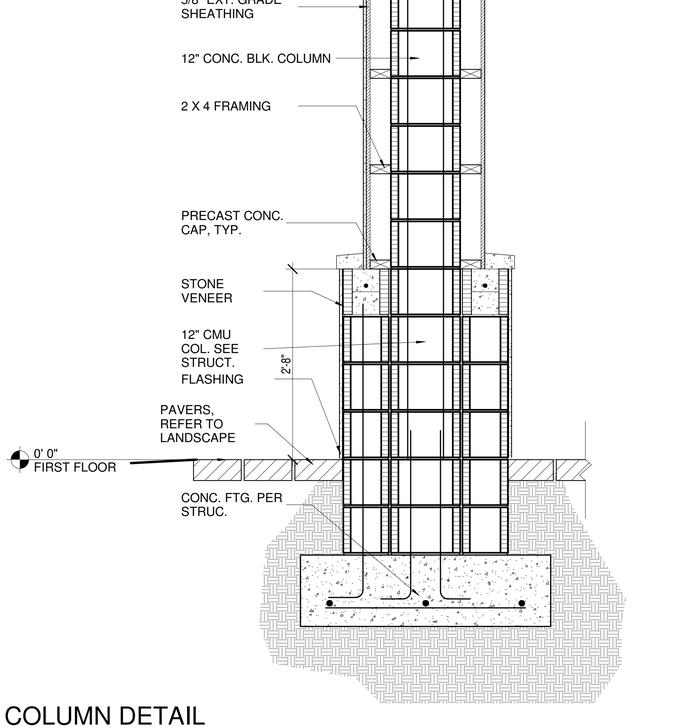
2 TYP. ENLARGED COLUMN PLAN 2
1" = 1'-0"



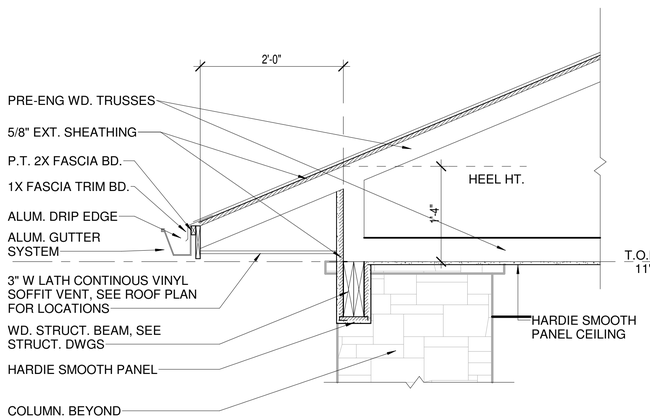
6 WALL DETAIL
1" = 1'-0"



NOTES:
- SEE ROOM SCHEDULE FOR FLR. FINISH
- SUBSTITUTE 1" FOR 3/4" WHEN CABINET WIDTH EXCEEDS 36" (TYPICAL)
- NO SHELF OR DRAWERS IF THERE IS A SINK PRESENT



3 COLUMN DETAIL
1" = 1'-0"



7 ENTRANCE SECTION DETAIL
1" = 1'-0"

5 DETAIL - TYPICAL BASE & UPPER CABINETS
1 1/2" = 1'-0"

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HILLSIDE GROVES AMENITY

HOWEY-IN-THE-HILLS, FLORIDA

Revision Schedule		
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DETAILS

Project No:
25-01934
Sheet No:
A1101

TOTAL SOLUTIONS GROUP
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August 27, 2025

To whom it may concern,
We have been informed to provide plumbing fixture unit counts for the proposed Hillside Grove Amenity. This information is provided for the site plan engineering design analysis. Please note that the final plumbing schedule will be submitted with the building plans as part of the permit application and construction documentation.

PLUMBING FIXTURE SCHEDULE

MARK	DESCRIPTION	WASTE	VENT	CW	HW	REMARKS
WC-1 QTY (3)	WATER CLOSET 1.28 GPF LOW CONSUMPTION	3"	2"	½"	---	RIM +15⅝" FIXTURE: STERLING #402312, TWO-PIECE VITREOUS CHINA BOWL, BOWL & TANK, FLOOR OUTLET W/ BOLT CAPS, ELONGATED BOWL, CHROME PLATED TRIP LEVER, STAINLESS STEEL BRAIDED SUPPLY AND STOP VALVE. SEAT: KOHLER K-4636, ELONGATED SOLID WHITE PLASTIC SEAT WITH COVER.
WC-2 QTY (2)	WATER CLOSET 1.28 GPF LOW CONSUMPTION ADA	3"	2"	½"	---	RIM +16½" FIXTURE: STERLING #402313, TWO-PIECE VITREOUS CHINA BOWL, BOWL & TANK, FLOOR OUTLET W/ BOLT CAPS, ELONGATED BOWL, CHROME PLATED TRIP LEVER, STAINLESS STEEL BRAIDED SUPPLY AND STOP VALVE. SEAT: KOHLER K-4636, ELONGATED SOLID WHITE PLASTIC SEAT WITH COVER.
UR-1 QTY (1)	URINAL ADA	1½"	1½"	¾"	---	WALL HUNG - SEE ARCHITECTURAL DWGS. FOR MOUNTING HEIGHT FIXTURE; AMERICAN STANDARD DECORUM #6045.013.002, 0.125 GPF URINAL. WHITE VITREOUS CHINA, WASHOUT URINAL, ¾" TOP SPUD OPERATED FLUSH VALVE, ZURN #Z1221 URINAL CARRIER MOUNTED TO FLOOR
L-1 QTY (4)	LAVATORY	1½"	1½"	½"	½"	FIXTURE: KOHLER #K-2330-0, UNDERCOUNTER, RECTANGULAR, VITREOUS CHINA, REAR OVERFLOW. FAUCET; MOEN #M-POWER 8558BL, BATTERY OPERATED, MATT BLACK, P-TRAP W/CLEANOUT, GRID STRAINER. PROVIDE ANGLE VALVES, STAINLESS STEEL BRAIDED SUPPLIES AND P-TRAP. SOAP DISPENSER; MOEN #8560BL, BATTERY OPERATED
L-2 QTY (2)	LAVATORY ADA	1½"	1½"	½"	½"	WALL HUNG FIXTURE; AMERICAN STANDARD #9024.021EC, WHITE, W/CONCEALED ARMS, WALL MOUNTED LAVATORY WITH SHROUD. FAUCET; MOEN #M-POWER 8558BL, BATTERY OPERATED, MATT BLACK, P-TRAP W/CLEANOUT, GRID STRAINER. PROVIDE ANGLE VALVES, STAINLESS STEEL BRAIDED SUPPLIES AND P-TRAP. PROVIDE ZURN #1231 LAVATORY CARRIER MOUNTED TO FLOOR. SOAP DISPENSER; MOEN #8560BL, BATTERY OPERATED. INSULATE SUPPLIES, STOPS AND WASTE PIPING
S-1 QTY (1)	SINK ADA	1½"	1½"	½"	½"	COUNTERTOP FIXTURE; ELKAY #ECTSRAD33226TBG, 33"x22"x6", DOUBLE COMPARTMENT, 18 GAUGE STAINLESS STEEL, SOUND DEADENED, SELF-RIMMING WITH CRUMB CUP STRAINER & TAILPIECE, 1½" CHROMIUM-PLATED, CONTINUOUS WASTE & P-TRAP, CHROME-PLATED BRASS ANGLED STOP VALVES AND STAINLESS STEEL BRAIDED SUPPLIES. FAUCET; GIMILI #GM1062-B, TOUCHLESS FAUCET, MATT BLACK, PULL OUT SPRAYER (1.8 GPM)
MS-1 QTY (1)	MOP SINK	1½"	1½"	½"	½"	FIXTURE; PRO-FLO #PFMB2424 FLOOR MOUNTED SERVICE SINK CONSTRUCTED OF MOLDED COMPOSITE WITH STAINLESS STEEL DRAIN & STRAINER/LINT BASKET. FAUCET; T&S BRASS #B-0665-BSTR WITH TOP BRACE, VACUUM BREAKER AND INTEGRAL CHECKS.
HB-1 QTY (2)	HOSE BIBB	---	---	½"	---	OUTLET +24" MODEL: WOODFORD #24-CP, CHROME-PLATED WITH ANTI-SIPHON VACUUM BREAKER. PROVIDE LOOSE TEE KEY
EWC-1 QTY (1)	ELECTRIC WATER COOLER ADA ACCESSIBLE	1½"	1½"	½"	---	WALL HUNG, SEE ARCHITECTURAL DWGS. FOR MOUNTING HEIGHT FIXTURE; ELKAY #LZSTL8WSSK, WITH BOTTLE FILLING STATION CAPACITY TO DELIVER 8.0 GPH OF 50° F. WATER WITH INLET TEMP. OF 80° F. AND ROOM TEMP. OF 90° F, WATER FILTER SYSTEM, STAINLESS STEEL BASIN AND GRILL, VANDAL RESISTANT FRONT PUSH BUTTON BUBBLER, AIR COOLED HERMETICALLY SEALED CONDENSING UNIT W/ 1/5 hp., 120 V., 60 CYCLE, 1 PH. W/ OVERLOAD PROTECTION, 1½" P-TRAPS, STOP VALVE, CORD & PLUG
IMB-1 QTY (1)	ICE MAKER SUPPLY BOX	---	---	½"	---	VALVE +24" PROVIDE WATERTITE #AB1201CP ICE MAKER BOX WITH WATER HAMMER ARRESTOR #38684, HIGH IMPACT PLASTIC BOX W/ DIMENSION OF 6" HIGH x 6" WIDE.

NOTES:
1. INSTALL FIXTURES IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL ACCESSIBILITY CODE REQUIREMENTS FOR INDIVIDUALS WITH PHYSICAL IMPAIRMENTS.

Steven G Tenzel
Digitally signed by Steven G Tenzel
Location: Maitland, FL
Reason: I am approving this document.
Contact Info: steven.tenzel@myTSGhome.com
Date: 2025.08.28 09:24:28-04'00'

STATE OF FLORIDA · STEVEN G. TENZEL · AR 100323 · REGISTERED ARCHITECT

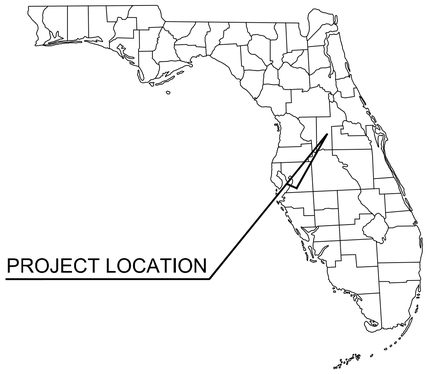
Carl A. Brown, P.E. FL. # 56126
Scott A. Lewkowski, P.E. FL. # 78750
Steven G. Tenzel, R.A. FL. # AR100323
08/28/2025

CONSTRUCTION PLANS
FOR
HILLSIDE GROVES COMMON

PARCEL I.D. # 35-20-25-0002-000-00800

HOWEY-IN-THE-HILLS, FLORIDA

AUGUST 28, 2025





AERIAL PHOTOGRAPH
N.T.S.

LEGAL DESCRIPTION:

TRACT R, HILLSIDE GROVES, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK XX, PAGES XX THROUGH XX OF THE PUBLIC RECORDS OF LAKE COUNTY, FLORIDA.



SOILS MAP
45 - TAVARES SAND
99 - WATER
N.T.S.



SECTION 35 , TOWNSHIP 20S, RANGE 25E
LOCATION MAP
N.T.S.

Sheet List Table

Sheet Number	Sheet Title
C0.0	COVER SHEET
C1.0	GENERAL NOTES
C1.1	GENERAL NOTES
C2.0	STORMWATER POLLUTION PREVENTION PLAN
C2.1	EROSION CONTROL DETAILS
C3.0	EXISTING CONDITIONS
C4.0	SITE PLAN
C4.1	FIRE TRUCK ROUTING PLAN
C5.0	PAVING GRADING AND DRAINAGE
C5.1	SECTIONS
C6.0	UTILITY PLAN
C7.0	CONSTRUCTION DETAILS
C8.0	HOWEY-IN-THE-HILLS DETAILS
C8.1	HOWEY-IN-THE-HILLS DETAILS
C8.2	HOWEY-IN-THE-HILLS DETAILS
L1.00	OVERALL LANDSCAPE PLAN
L1.01	LANDSCAPE PLAN
L1.50	LANDSCAPE DETAILS
L1.51	LANDSCAPE SPECIFICATIONS
L2.00	OVERALL IRRIGATION PLAN
L2.01	IRRIGATION PLAN
L2.50	IRRIGATION DETAILS
L2.51	IRRIGATION SPECIFICATIONS
L3.00	OVERALL HARDSCAPE PLAN
L3.01	HARDSCAPE PLAN
L3.50	HARDSCAPE DETAILS
L3.51	HARDSCAPE DETAILS
L3.52	HARDSCAPE DETAILS
L3.53	HARDSCAPE DETAILS
L3.54	HARDSCAPE DETAILS

Blake Wagner
Digitally signed by Blake Wagner
DN: CN=Blake Wagner, O=KIMLEY-HORN AND ASSOCIATES INC., OU=05
Date: 2025.08.27 18:35:29 -04'00'

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ORLANDO, FL 32839
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PREPARED BY
Kimley»Horn

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6876 Marwick Lane, Suite 350 Orlando, FL 32827
Phone: (407) 536-4440
WWW.KIMLEY-HORN.COM Registry No. 35106

BLAKE J. WAGNER LICENSE No. 94035 STATE OF FLORIDA PROFESSIONAL ENGINEER

BLAKE J. WAGNER, P.E.
FL PE No. 94035

PROJECT TITLE:HILLSIDE GROVES COMMON
DATE: 08/28/2025
ENGINEER'S PROJECT No. 149658038

BY	DATE	REVISIONS

SHEET NUMBER
C0.0

Drawing name: K:\ORL_LA\149658038_hillside groves common\CADD\CONST\plansheets\C0.0-COVR.dwg COVER SHEET Aug 27, 2025 7:11pm by: Blake.Wagner
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Plotted By: Powers, Steven Sheet Set: HILLSIDE GROVES COMMON Layout: C1.0 - GENERAL NOTES August 27, 2025 06:41:23pm K:\ORL_LA\149658038 hillside groves common\CADD\CONST\plansheets\C1.0-NOTES.dwg
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GENERAL

1. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS. THE EXISTING UTILITY INFORMATION SHOWN IS BASED ON HILLSIDE GROVES CONSTRUCTION PLANS DATED 04/18/2025 PROVIDED BY CONNELLY & WICKER INC. THE CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES, AFFECTING THIS AREA PRIOR TO CONSTRUCTION WORK.

2. PRIOR TO THE INITIATION OF SITE CONSTRUCTION, THE CONTRACTOR SHALL VERIFY ANY EXISTING UTILITIES INCLUDING GAS, WATER, ELECTRIC, CABLE TV, COMMUNICATIONS, SANITARY SEWERS AND STORM DRAINAGE SYSTEMS, ON AND / OR ADJACENT TO THE SITE. REMOVE OR CAP AS NECESSARY.

3. THE CONTRACTOR SHALL EXERCISE CAUTION IN AREAS OF BURIED UTILITIES AND SHALL CALL "SUNSHINE" AT 1-800-432-4770 AT LEAST 48 HOURS PRIOR TO CONSTRUCTION TO ARRANGE FOR FIELD LOCATIONS OF BURIED UTILITIES.

4. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING FACILITIES, ABOVE OR BELOW GROUND, THAT MAY OCCUR AS A RESULT OF THE WORK PERFORMED, BY THE CONTRACTOR OR SUB-CONTRACTORS, AS CALLED FOR IN THESE CONTRACT DOCUMENTS.

5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BECOME FAMILIAR WITH THE PERMIT AND INSPECTION REQUIREMENTS SPECIFIED BY THE VARIOUS GOVERNMENTAL AGENCIES AND THE ENGINEER. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION, AND SCHEDULE INSPECTIONS ACCORDING TO AGENCY INSTRUCTION/REQUIREMENTS.

6. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS, ON ALL PRECAST AND MANUFACTURED ITEMS, TO THE OWNER'S ENGINEER FOR REVIEW. FAILURE TO OBTAIN APPROVAL BEFORE INSTALLATION MAY RESULT IN REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.

7. ALL UTILITY SERVICE STUB-OUTS (WATER, SANITARY SEWER, etc.) ARE TO BE INSTALLED WITHIN 5' OF BUILDING(S), UNLESS OTHERWISE NOTED ON PLANS.

8. CONTRACTOR TO COORDINATE WITH THE APPLICABLE ELECTRIC UTILITY SUPPLIER REGARDING ANY NECESSARY RELOCATION(S) OF UNDERGROUND AND/OR OVERHEAD ELECTRIC FACILITIES, AND FOR THE LOCATION AND INSTALLATION OF TRANSFORMER PAD(S) AND ASSOCIATED ELECTRIC FACILITIES.

9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN AN R-O-W UTILIZATION PERMIT (IF REQUIRED) FOR CONSTRUCTION OF THE PROPOSED UTILITIES. THIS PERMIT MUST BE OBTAINED BY A DULY LICENSED PLUMBING CONTRACTOR (OR CLASS A GENERAL CONTRACTOR) PRIOR TO THE START OF CONSTRUCTION. THESE PLANS AND ANY SUBSEQUENT REVISIONS TO THESE PLANS, THAT ARE ISSUED BY THE ENGINEER, WILL BE SUBJECT TO THE APPROVAL CONDITIONS OF THIS PERMIT.

10. THE GRAPHIC INFORMATION DEPICTED ON THESE PLANS HAS BEEN COMPILED TO PROPORTION BY SCALE AS ACCURATELY AS POSSIBLE. HOWEVER, DUE TO REPRODUCTIVE DISTORTION, REDUCTION, AND/OR REVISIONS, INFORMATION CONTAINED HEREIN IS NOT INTENDED TO BE SCALED FOR CONSTRUCTION PURPOSES.

11. ALL SPECIFICATIONS AND DOCUMENTS REFERENCED HEREIN SHALL BE OF THE LATEST REVISION.

12. ALL UNDERGROUND UTILITIES MUST BE IN-PLACE, TESTED AND INSPECTED PRIOR TO BASE AND SURFACE CONSTRUCTION.

13. WORK PERFORMED UNDER THIS CONTRACT SHALL INTERFACE SMOOTHLY WITH ANY OTHER WORK BEING PERFORMED ON SITE BY OTHER CONTRACTORS/SUBCONTRACTORS AND UTILITY COMPANIES. IT WILL BE NECESSARY FOR THE GENERAL CONTRACTOR TO COORDINATE AND SCHEDULE HIS/HER ACTIVITIES ACCORDINGLY.

14. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.

15. ALL SIGNAGE MUST COMPLY WITH THE TOWN OF HOWEY IN THE HILLS LAND DEVELOPMENT CODE (CHAPTER 5 – ACCESSORY AND TEMPORARY USES AND STRUCTURES).

STORM DRAINAGE SYSTEM

1. STANDARD INDEXES REFER TO THE FY 2025-26 EDITION OF F.D.O.T. "STANDARD PLANS FOR ROAD AN BRIDGE CONSTRUCTION".

2. ALL STORM SEWER PIPE SHALL BE REINFORCED CONCRETE CLASS III (ASTM C-76) UNLESS OTHERWISE NOTED ON PLANS. ALL DRAINAGE STRUCTURES SHALL BE IN ACCORDANCE WITH F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS UNLESS OTHERWISE NOTED ON PLANS.

3. PIPE LENGTHS SHOWN ARE APPROXIMATE AND TO CENTER OF DRAINAGE STRUCTURES, WITH THE EXCEPTION OF MITERED END AND FLARED END SECTIONS, WHICH ARE NOT INCLUDED IN LENGTHS.

4. ALL DRAINAGE STRUCTURE GRATES AND COVERS, EITHER EXISTING OR PROPOSED SHALL BE TRAFFIC RATED FOR H-20 LOADINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY NECESSARY UPGRADES TO EXISTING DRAINAGE STRUCTURES.

5. CONSTRUCTION OF THE STORMWATER MANAGEMENT SYSTEM MUST BE COMPLETE AND ALL DISTURBED AREAS STABILIZED IN ACCORDANCE WITH THE PERMITTED PLANS AND CONDITIONS PRIOR TO ANY OF THE FOLLOWING: ISSUANCE OF THE FIRST CERTIFICATE OF OCCUPANCY; INITIATION OF INTENDED USE OF THE INFRASTRUCTURE; OR TRANSFER OF RESPONSIBILITY FOR MAINTENANCE OF THE SYSTEM TO A LOCAL GOVERNMENT OR OTHER RESPONSIBLE ENTITY.

DRAINAGE SYSTEM TESTING AND INSPECTION

1. THE STORM DRAINAGE PIPING SYSTEM SHALL BE SUBJECT TO A VISUAL INSPECTION BY THE OWNER'S ENGINEER PRIOR TO THE PLACEMENT OF BACKFILL. CONTRACTOR TO NOTIFY THE ENGINEER 2 FULL BUSINESS DAYS IN ADVANCE TO SCHEDULE INSPECTION.

2. THE CONTRACTOR SHALL MAINTAIN AND PROTECT FROM MUD, DIRT, DEBRIS, ETC. THE STORM DRAINAGE SYSTEM UNTIL FINAL ACCEPTANCE OF THE PROJECT. THE STORM SYSTEM WILL BE REINSPECTED BY THE OWNER'S ENGINEER PRIOR TO APPROVAL FOR CERTIFICATE OF OCCUPANCY PURPOSES. THE CONTRACTOR MAY BE REQUIRED TO RECLEAN PIPES AND INLETS AT THE CONTRACTORS EXPENSE AND PRIOR TO FINAL ACCEPTANCE.

PAVING, GRADING AND DRAINAGE

1. ALL DELETERIOUS SUBSURFACE MATERIAL (I.E. MUCK, PEAT, BURIED DEBRIS, ETC.) IS TO BE EXCAVATED AND REPLACED WITH SUITABLE/COMPACTED SOILS, AS DIRECTED BY THE GEOTECHNICAL ENGINEER OF RECORD OR THE OWNERS ENGINEERS. DELETERIOUS MATERIAL IS TO BE STOCKPILED OR REMOVED FROM THE SITE AS DIRECTED BY THE OWNER OR OWNER'S ENGINEER. EXCAVATED AREAS ARE TO BE BACKFILLED WITH APPROVED MATERIALS AND COMPACTED AS SHOWN ON THESE PLANS AND PER THE GEOTECHNICAL REPORT. CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ANY PERMITS THAT ARE NECESSARY FOR REMOVING DELETERIOUS MATERIAL FROM THE SITE.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXCAVATIONS AGAINST COLLAPSE AND WILL PROVIDE BRACING, SHEETING OR SHORING AS NECESSARY. DEWATERING METHODS SHALL BE USED AS REQUIRED TO KEEP TRENCHES DRY WHILE PIPE AND APPURTENANCES ARE BEING PLACED.

3. ALL NECESSARY FILL AND EMBANKMENT THAT IS PLACED DURING CONSTRUCTION SHALL CONSIST OF MATERIAL SPECIFIED BY THE OWNER'S SOILS TESTING COMPANY OR ENGINEER AND BE PLACED AND COMPACTED ACCORDING TO THESE PLANS.

4. PROPOSED SPOT ELEVATIONS REPRESENT FINISHED PAVEMENT OR GROUND SURFACE GRADES, UNLESS OTHERWISE NOTED.

5. IT MAY BE NECESSARY TO FIELD ADJUST PAVEMENT ELEVATIONS TO PRESERVE THE ROOT SYSTEMS OF TREES SHOWN TO BE SAVED. CONTRACTOR TO COORDINATE WITH OWNER'S ENGINEER PRIOR TO ANY ELEVATION CHANGES.

6. CONTRACTOR SHALL TRIM, TACK AND MATCH EXISTING PAVEMENT AT LOCATIONS WHERE NEW PAVEMENT MEETS EXISTING PAVEMENT.

7. CURBING SHALL BE PLACED AT THE EDGES OF ALL PAVEMENT, UNLESS OTHERWISE NOTED. REFER TO THE FY 2023-24 EDITION OF F.D.O.T. "STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION" FOR DETAILS AND SPECIFICATIONS OF ALL F.D.O.T. TYPE CURB AND GUTTERS CALLED FOR IN THESE PLANS.

8. PRIOR TO CONSTRUCTING CONCRETE PAVEMENT, THE CONTRACTOR IS TO SUBMIT A PROPOSED JOINTING PATTERN TO THE SOILS ENGINEER FOR APPROVAL.

9. CONTRACTOR TO PROVIDE A 1/2" TO 1" BITUMINOUS EXPANSION JOINT MATERIAL WITH SEALER AT ABUTMENT OF CONCRETE AND OTHER MATERIALS (STRUCTURES, OTHER POURED)

10. ALL PAVEMENT MARKINGS SHALL BE MADE IN ACCORDANCE WITH F.D.O.T. STANDARD INDEX #711-001.

11. THE CONTRACTOR WILL STABILIZE BY SEED AND MULCH, SOD, OR OTHER APPROVED MATERIALS ANY DISTURBED AREAS WITHIN ONE WEEK FOLLOWING CONSTRUCTION OF THE UTILITY SYSTEMS AND PAVEMENT AREAS. CONTRACTOR SHALL MAINTAIN SUCH AREAS UNTIL FINAL ACCEPTANCE BY OWNER. CONTRACTOR TO COORDINATE WITH OWNER REGARDING TYPE OF MATERIAL, LANDSCAPING AND IRRIGATION REQUIREMENTS.

12. THE CONTRACTOR SHALL RESTORE OFF-SITE CONSTRUCTION AREAS TO EQUAL AND/OR BETTER CONDITION THAN EXISTING PRIOR TO START OF CONSTRUCTION.

13. UNLESS OTHERWISE NOTED, GRADE TO MEET EXISTING ELEVATION AT PROPERTY LINES.

14. SURVEY MONUMENTS OR BENCHMARKS, WHICH HAVE TO BE DISTURBED BY THIS WORK, SHALL BE REPLACED UPON COMPLETION OF WORK BY A REGISTERED LAND SURVEYOR AT CONTRACTORS EXPENSE.

15. FINAL GRADES SHOWN INCLUDE SOD HEIGHT. ALL AREAS SHALL BE GRADED TO DRAIN AWAY FROM THE BUILDINGS.

16. LIME ROCK AS-BUILTS ARE TO BE APPROVED BY OWNER'S ENGINEER PRIOR TO PAVING.

17. ALL WORK TO BE PERFORMED IN ACCORDANCE WITH ALL LOCAL, STATE AND JURISDICTIONAL PERMITTING AGENCIES.

PAVING/GRADING TESTING AND INSPECTION

1. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING APPLICABLE TESTING WITH THE SOILS ENGINEER. TESTS WILL BE REQUIRED PURSUANT WITH THE SOILS REPORT. UPON COMPLETION OF WORK THE SOILS ENGINEER WILL SUBMIT CERTIFICATIONS TO THE OWNER AND OWNER'S ENGINEER STATING THAT ALL REQUIREMENTS HAVE BEEN MET.

2. A QUALIFIED TESTING LABORATORY SHALL PERFORM ALL TESTING NECESSARY TO ASSURE COMPLIANCE OF THE IN-PLACE MATERIALS AS REQUIRED BY THESE PLANS AND GEOTECHNICAL REPORT, THE VARIOUS AGENCIES AND PERMIT CONDITIONS. SHOULD ANY RETESTING BE REQUIRED DUE TO THE FAILURE OF ANY TESTS TO MEET THESE REQUIREMENTS, THE CONTRACTOR WILL BEAR ALL COSTS OF SAID RETESTING.

POTABLE WATER SYSTEM

1. ALL DIP PIPE SHALL BE CLASS 50 OR HIGHER. REFER TO NOTE #4 BELOW FOR ADDITIONAL DIP SPECIFICATIONS. ADEQUATE MEASURES AGAINST CORROSION SHALL BE UTILIZED.

2. ALL WATER MAIN PIPE FITTINGS AND APPURTENANCES SHALL BE INSTALLED TO COMPLY WITH TOWN OF HOWEY-IN-THE-HILLS STANDARDS AND SPECIFICATIONS.

3. ALL WATER SERVICE LINES, VALVES AND METERS SHALL BE INSTALLED TO COMPLY WITH APPLICABLE MUNICIPALITY/AGENCY DEPARTMENT STANDARDS AND SPECIFICATIONS.

4. ALL DUCTILE IRON PIPE, 4" TO 24", SHALL BE MANUFACTURED IN ACCORDANCE WITH THE LATEST EDITION OF AWWA C151/A21.51. PIPE SHALL BE FURNISHED IN 18 OR 20 FOOT SECTIONS, PIPE THICKNESS SHALL BE CLASS 50, UNLESS OTHERWISE SPECIFIED.

5. ALL WATER SYSTEM CONSTRUCTION, UP TO AND INCLUDING POINT OF METERING AND BACK FLOW PREVENTION (IF REQUIRED), SHALL BE BUILT ACCORDING TO TOWN OF HOWEY-IN-THE-HILLS UTILITIES STANDARDS AND SPECIFICATIONS.

6. CONTRACTOR TO INSTALL TEMPORARY BLOWOFFS, AT THE END(S) OF PROPOSED WATER MAINS AND SERVICE LATERALS TO BUILDING(S), TO ASSURE ADEQUATE FLUSHING AND DISINFECTION/CHLORINATION.

7. ALL WATER MAINS SHALL BE PRESSURE TESTED IN ACCORDANCE WITH AWWA MANUAL M23, CONCERNING HYDROSTATIC TESTING OF PVC PIPING. OFF-SITE UTILITIES HYDROSTATIC TESTING TO BE WITNESSED BY TOWN OF HOWEY-IN-THE-HILLS WATER DEPARTMENT INSPECTOR.

8. ALL WATER MAINS SHALL BE STERILIZED IN ACCORDANCE WITH THE APPLICABLE SECTION OF THE LATEST AWWA SPECIFICATION C651 AND TOWN OF HOWEY-IN-THE-HILLS WATER DEPARTMENT SPECIFICATIONS.

9. ALL PVC WATER MAIN, 4" TO 8" DIAMETER PIPING, SHALL CONFORM TO ASTM D2241 AND ASTM 1784. PIPE SHALL BE AWWA C-900 DR-18. JOINTS SHALL BE RUBBER GASKETED PUSH-ON CONFORMING TO ASTM D1869.

10. POTABLE WATER MAINS WILL BE PVC SDR 21 (200 PSI) FOR PIPES LESS THEN 4". SCHEDULE 40 AND SCHEDULE 80 PIPING MATERIAL ARE ALSO ACCEPTABLE FOR PIPES SIZES LESS THAN 4". THE ABOVE TYPE INSTALLATIONS MUST BEAR THE "NFS" STAMP FOR COMPATIBILITY WITH POTABLE WATER USE.

11. ALL POLYVINYL CHLORIDE PIPE SHALL BE LAID WITH AN INSULATED 12 GAUGE A.W.G. SOLID STRAND COPPER WIRE WOUND AROUND THE PIPE FORMING ONE COMPLETE SPIRAL PER JOINT OF PIPE. THIS WIRE IS TO BE CONTINUOUS WITH SPLICES MADE ONLY BY METHODS APPROVED BY THE ENGINEER. THIS WIRE IS TO BE SECURED TO ALL VALVES, TEES AND ELBOWS.

12. ALL POTABLE WATER WORK SHALL CONFORM WITH APPLICABLE TOWN OF HOWEY-IN-THE-HILLS UTILITIES DEPARTMENT STANDARDS AND SPECIFICATIONS.

POTABLE WATER TESTING AND INSPECTION

1. ALL COMPONENTS OF THE WATER SYSTEM, INCLUDING FITTINGS, HYDRANTS, CONNECTIONS, AND VALVES SHALL REMAIN UNCOVERED UNTIL PROPERLY PRESSURE TESTED AND ACCEPTED BY THE OWNER'S ENGINEER. PRESSURE TESTS TO BE IN ACCORDANCE WITH WINTER PARK UTILITIES DEPARTMENT SPECIFICATIONS. CONTRACTOR TO NOTIFY THE OWNER'S ENGINEER AND APPLICABLE AGENCY INSPECTORS 2 FULL BUSINESS DAYS IN ADVANCE OF PERFORMING TESTS.

2. CONTRACTOR TO PERFORM CHLORINATION AND BACTERIOLOGICAL SAMPLING, AND OBTAIN CLEARANCE OF DOMESTIC AND FIRE LINE WATER SYSTEM(S). COPIES OF ALL BACTERIOLOGICAL TEST RESULTS ARE TO BE SUBMITTED TO THE OWNER'S ENGINEER FOR CERTIFICATION PURPOSES.

SANITARY SYSTEM

1. ALL PVC PIPE SHALL BE SOLID WALL POLYVINYL CHLORIDE PIPE AND COMPLY WITH ASTM D 3034 AND ALL APPLICABLE ASTM DOCUMENTS AS COVERED IN SECTION NO. 2 OF ASTM D 3034. MAIN LINES SHALL BE A MINIMUM OF 8" DIAMETER, AND LATERALS SHALL BE A MINIMUM 6" DIAMETER.

2. ALL GRAVITY SEWERS MUST BE SDR 35 PVC, EXCEPT FOR PIPE DEEPER THAN 14 FEET, IN WHICH CASE SDR 26 PIPE SHALL BE USED. ELASTOMERIC GASKET JOINTS SHALL BE UTILIZED FOR PVC PIPE, AND SHALL COMPLY WITH ASTM F477, ASTM D3034 & ASTM F679. JOINTS SHALL COMPLY WITH ASTM D3212.

3. ALL ON-SITE PVC FORCE MAINS (IF REQUIRED) SHALL BE CLASS 200, DR 14 FOR 4" DIAMETER, AND CLASS 150 DR 18 FOR 6" TO 12" DIAMETER PIPE, IN ACCORDANCE WITH AWWA C900 STANDARDS. PVC FORCE MAIN PIPE SMALLER THAN 4" DIAMETER SHALL BE CLASS 200, SDR 21, IN ACCORDANCE WITH ASTM D 2241. FORCE MAIN SHALL BE SPIRAL WRAPPED WITH 2 INCH WIDE DARK GREEN STICK-ON VINYL TAPE. FORCE MAINS WITHIN THE RIGHT-OF-WAY SHALL BE CLASS 52 DIP, MINIMUM 4" DIAMETER.

4. ALL SANITARY MANHOLES SHALL BE LOCATED NO MORE THAN 400 FEET APART AND SHALL CONFORM TO THE DETAILS CONTAINED HEREIN, AS WELL AS WITH ASTM C478.

5. ALL SLOPES FOR GRAVITY SEWER MAINS AND SERVICE CONNECTIONS SHALL COMPLY WITH THE FOLLOWING MINIMUM GRADES: 4" @ 2.00%; 6" @ 1.00% ; AND 8" @ 0.40%.

6. ALL SANITARY SEWER WORK SHALL CONFORM WITH APPLICABLE TOWN OF HOWEY-IN-THE-HILLS UTILITIES DEPARTMENT STANDARDS AND SPECIFICATIONS.

7. PRIOR TO COMMENCING WORK WHICH REQUIRES CONNECTING PROPOSED FACILITIES TO EXISTING LINES OR APPURTENANCES, THE CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION(S) OF EXISTING CONNECTION POINT(S) AND NOTIFY THE OWNER'S ENGINEER OF ANY CONFLICTS OR DISCREPANCIES.

8. SANITARY SEWER MAINS SHALL HAVE SUITABLE MAGNETIC LOCATOR TAPE(S) BURIED AT LEAST 18 INCHES ABOVE THE MAIN LINES.

SANITARY TESTING AND INSPECTION

1. ALL GRAVITY SEWER PIPING SHALL BE SUBJECT TO A VISUAL INSPECTION BY THE OWNER'S ENGINEER AND APPLICABLE MUNICIPALITY/AGENCY. THE CONTRACTOR SHALL NOTIFY THE ENGINEER 48 HOURS IN ADVANCE TO SCHEDULE INSPECTION(S). THE CONTRACTOR SHALL BE RESPONSIBLE FOR COSTS ASSOCIATED WITH A TELEVISED INSPECTION (TV) OF THE PROPOSED GRAVITY SEWER LINE CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE COPIES OF THE TV INSPECTION TAPE TO THE ENGINEER, THE OWNER AND THE APPLICABLE MUNICIPALITY/AGENCY.

2. THE CONTRACTOR SHALL PERFORM AN INFILTRATION/EXFILTRATON TEST ON ALL GRAVITY SEWERS IN ACCORDANCE WITH THE REGULATORY AGENCY HAVING JURISDICTION. SAID TESTS ARE TO BE CERTIFIED BY THE ENGINEER OF RECORD AND SUBMITTED TO THE REGULATORY AGENCY FOR APPROVAL. THE SCHEDULING, COORDINATION AND NOTIFICATION OF ALL PARTIES IS THE CONTRACTOR'S RESPONSIBILITY.

3. LEAKAGE TESTS ARE SPECIFIED REQUIRING THAT:
   A. THE LEAKAGE EXFILTRATION OR INFILTRATION DOES NOT EXCEED 200 GALLONS PER INCH OF PIPE DIAMETER PER MILE PER DAY FOR ANY SECTION OF THE SYSTEM.
   B. EXFILTRATION OR INFILTRATION TESTS BE PERFORMED WITH A MINIMUM POSITIVE HEAD OF 2 FEET
   C. AIR TESTS, AS A MINIMUM, CONFORM TO THE TEST PROCEDURE DESCRIBED IN ASTM C-828 FOR CLAY PIPE, ASTM C 924 FOR CONCRETE PIPE, ASTM F-1417 FOR PLASTIC PIPE, AND FOR OTHER MATERIALS APPROPRIATE TEST PROCEDURES.

4. CONTRACTOR TO PERFORM APPROPRIATE DEFLECTION TESTS FOR ALL FLEXIBLE PIPE. TESTING IS REQUIRED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS TO PERMIT STABILIZATION OF THE SOIL-PIPE SYSTEM. TESTING REQUIREMENTS SPECIFY:
   A. NO PIPE SHALL EXCEED A DEFLECTION OF 5%.
   B. USING A RIGID BALL OR MANDREL FOR THE DEFLECTION TEST WITH A DIAMETER NOT LESS THAN 95% OF THE BASE INSIDE DIAMETER OR AVERAGE INSIDE DIAMETER OF THE PIPE, DEPENDING ON WHICH IS SPECIFIED IN THE ASTM SPECIFICATION, INCLUDING THE APPENDIX, TO WHICH THE PIPE IS MANUFACTURED.
   C. PERFORMING THE TEST WITHOUT MECHANICAL PULLING DEVICES.

5. CONTRACTOR TO INSPECT & TEST MANHOLE FOR WATERTIGHTNESS OR DAMAGE PRIOR TO PLACING INTO SERVICE. AIR TESTING, IF SPECIFIED FOR CONCRETE SEWER MANHOLES, SHALL CONFORM TO THE TEST PROCEDURES DESCRIBED IN ASTM C-1244.

CONTRACTOR'S AS-BUILT

1. UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL FURNISH THE OWNER'S ENGINEER WITH COMPLETE "AS-BUILT" INFORMATION, CERTIFIED BY A LICENSED LAND SURVEYOR CURRENTLY REGISTERED IN THE STATE OF FLORIDA. AT A MINIMUM, THIS "AS-BUILT" INFORMATION SHALL INCLUDE: TOP OF PIPE/INVERT ELEVATIONS AND HORIZONTAL LOCATIONS OF ALL WATER, SANITARY SEWER, AND RECLAIM WATER UTILITIES INSTALLED (AS APPLICABLE); PAVEMENT GRADE BREAK LOCATIONS AND SUFFICIENT ELEVATIONS OF FINISHED GRADE SURFACES WHICH ALLOW THE ENGINEER TO DETERMINE COMPLIANCE WITH THE PROPOSED DESIGN; TOP, GRATE, & INVERT ELEVATIONS OF THE STORMWATER COLLECTION SYSTEM, INCLUDING THE POND GRADES (TOP, BANK, BOTTOM), POND CONTROL STRUCTURE, & SWALES; ANY IMPROVEMENTS WITHIN FDOT OR CITY RIGHT-OF-WAYS.
2. THE DIGITAL "AS-BUILT" FILE, PROVIDED IN AUTOCAD FORMAT, SHALL ALSO BE PROVIDED IN THE FLORIDA STATE PLANE COORDINATE SYSTEM. NO ENGINEER'S CERTIFICATIONS OF COMPLETION OR REQUESTS FOR FINAL ACCEPTANCE WILL BE SUBMITTED UNTIL THIS INFORMATION HAS BEEN RECEIVED AND APPROVED BY THE OWNER'S ENGINEER.
3. SURVEYOR AS-BUILT SHALL BE PROVIDED IN ACCORDANCE WITH TOWN OF HOWEY-IN-THE-HILLS STANDARDS AND SPECIFICATIONS.

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Item 1.

No.	REVISIONS	DATE

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LICENSED PROFESSIONAL ENGINEER STATE OF FLORIDA BLAKE WAGNER 82827

KHA PROJECT	149658038
DATE	08/28/2025
SCALE	AS SHOWN
DESIGNED BY	NDF
DRAWN BY	NDF
CHECKED BY	BJW

GENERAL NOTES

HILLSIDE GROVES COMMON
HOWEY-IN-THE-HILLS FLORIDA

SHEET NUMBER
C1.0

Plotted By: Powers, Steven Sheet Set: HILLSIDE GROVES COMMON Layout: C1.1 - GENERAL NOTES August 27, 2025 08:41:25pm K:\ORL_LA\149658038_hillside groves common\CADD\CONST\plansheets\C1.0-NOTES.dwg
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TREES AND VEGETATION

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL LANDSCAPE BUFFERS AND RETENTION AND DETENTION FACILITIES UNTIL THE WORK HAS BEEN ACCEPTED BY THE OWNER. ALL DISTURBED AREAS SHALL BE RETURNED TO THEIR ORIGINAL CONDITION.
2. REFER TO LANDSCAPE PLANS FOR DETAILS REGARDING TREE REMOVAL AND TREE PRESERVATION.

PAVEMENT MARKING AND SIGNAGE

1. THE INSTALLATION, SHAPE, AND SIZE OF ALL SIGNS AND THEIR LETTERING SHALL COMPLY WITH THE LATEST EDITIONS OF THE U.S. DEPARTMENT OF TRANSPORTATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD), AND THE F.D.O.T. "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", AND THE F.D.O.T. "STANDARD PLANS". WHERE CONFLICTS EXIST BETWEEN THE PLANS AND THE ABOVE MENTIONED SPECIFICATIONS, THE MORE STRINGENT CRITERIA SHALL PREVAIL.
2. STOP BARS AND STOP SIGNS ARE TO BE PROVIDED AT ALL INTERNAL, ONSITE INTERSECTIONS, WITH THE EXCEPTION OF SIGNALIZED INTERSECTIONS (UNLESS OTHERWISE NOTED).
3. ALL PAVEMENT MARKINGS SHALL COMPLY WITH F.D.O.T. STANDARD PLANS #711-001 (2025-26).

STORM DRAINAGE SYSTEM

1. THE LATEST EDITION OF F.D.O.T. "STANDARD PLANS" IS REFERRED TO FOR THE STRUCTURAL DESIGN OF DRAINAGE STRUCTURES SPECIFIED IN THESE PLANS, AS REFERENCED BY STANDARD INDEX. ALL SPECIALTY DRAINAGE STRUCTURES REQUIRE SEPARATE STRUCTURAL DESIGN, WHICH IS NOT INCLUDED IN THESE PLANS. STATION OFFSETS ARE TO THE CENTERLINE OF THE STRUCTURE TOP (I.E. DITCH BOTTOM INLET OR CURB INLET TOP), AS OPPOSED TO THE STRUCTURE BASE.
2. STORM WATER PIPES, STRUCTURES, MINIMUM COVER, AND INSTALLATION PROCEDURES TO BE IN ACCORDANCE WITH F.D.O.T. AND THE TOWN OF HOWEY-IN-THE-HILLS CODE OF ORDINANCES.
3. DURING CONSTRUCTION, NO DIRECT DISCHARGE OF WATER TO DOWNSTREAM RECEIVING WATERS WILL BE ALLOWED. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING WATER QUALITY AND SHALL ROUTE DISCHARGE WATER IN SUCH A MANNER AS TO ADEQUATELY REMOVE SILT PRIOR TO RUNOFF FROM THE SITE.
4. ALL DRAINAGE PIPES SHALL BE FILTER FABRIC WRAPPED PER FDOT STANDARD DESIGN INDEX (2025-26) #430-001.
5. THE CONTRACTOR SHALL MAINTAIN AND PROTECT THE STORMWATER COLLECTION SYSTEM (INLETS, PIPES) FROM EXCESSIVE MUD, SILT, DIRT, DEBRIS, TRASH, ETC. UNTIL FINAL ACCEPTANCE OF THE PROJECT. THE STORM SYSTEM WILL BE INSPECTED BY THE OWNER'S ENGINEER PRIOR TO APPROVAL FOR CERTIFICATE OF OCCUPANCY PURPOSES. PRIOR TO FINAL ACCEPTANCE, THE CONTRACTOR SHALL CLEAN AND FLUSH STORM PIPES AND INLETS OF ALL EXCESSIVE SILT, DEBRIS, ETC.

SAFETY

1. ALL SUBSURFACE CONSTRUCTION SHALL COMPLY WITH THE "TRENCH SAFETY ACT". THE CONTRACTOR SHALL INSURE THAT THE METHOD OF TRENCH PROTECTION AND CONSTRUCTION IS IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY AND ENFORCE ALL APPLICABLE SAFETY REGULATIONS. THE ABOVE INFORMATION HAS BEEN PROVIDED FOR THE CONTRACTOR'S INFORMATION ONLY AND DOES NOT IMPLY THAT THE OWNER OR ENGINEER WILL INSPECT AND/OR ENFORCE SAFETY REGULATIONS.
2. DURING THE CONSTRUCTION AND/OR MAINTENANCE OF THIS PROJECT, ALL SAFETY REGULATIONS ARE TO BE ENFORCED. THE CONTRACTOR OR HIS REPRESENTATIVE SHALL BE RESPONSIBLE FOR THE CONTROL AND SAFETY OF THE TRAVELING PUBLIC AND THE SAFETY OF HIS/HER PERSONNEL. LABOR SAFETY REGULATIONS SHALL CONFORM TO THE PROVISIONS SET FORTH BY OSHA IN THE FEDERAL REGISTER OF THE DEPARTMENT OF TRANSPORTATION. THE MINIMUM STANDARDS AS SET FORTH IN THE CURRENT EDITION OF "THE STATE OF FLORIDA, MANUAL ON TRAFFIC CONTROL AND SAFE PRACTICES FOR STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE AND UTILITY OPERATIONS" SHALL BE FOLLOWED IN THE DESIGN, APPLICATION, INSTALLATION, MAINTENANCE AND REMOVAL OF ALL TRAFFIC CONTROL DEVICES, WARNING DEVICES AND BARRIERS NECESSARY TO PROTECT THE PUBLIC AND CONSTRUCTION PERSONNEL FROM HAZARDS WITHIN THE PROJECT LIMITS. CONTRACTOR SHALL PROVIDE FOR THE SAFETY AND CONTROL OF LOCAL TRAFFIC DURING CONSTRUCTION. ADDITIONAL INFORMATION MAY BE REQUIRED IF LANE CLOSURE DURATIONS ARE LONGER THAN DAYTIME OPERATIONS.
3. CONTRACTOR TO PREPARE MAINTENANCE OF TRAFFIC (M.O.T.) PLAN FOR APPROVAL BY ENGINEER OF RECORD. M.O.T. PLAN SHALL MEET THE FDOT INDEX 600 REQUIREMENTS. A MINIMUM OF ONE LANE MUST BE MAINTAINED ALONG ALL ROADS AT ALL TIMES. LANES MAY ONLY BE CLOSED DURING ACTIVE WORK PERIODS. MAINTAINING TRAFFIC MAY REQUIRE DETAILED PHASING INCLUDING, BUT NOT LIMITED TO TEMPORARY ASPHALT, TEMPORARY SIGNING AND MARKING AND CONCRETE BARRIER WALLS. CONTRACTOR M.O.T. SHOULD BE PREPARED BY PROFESSIONAL ENGINEER.
4. SAFETY:
   A. DURING THE CONSTRUCTION AND/OR MAINTENANCE OF THIS PROJECT, ALL SAFETY REGULATIONS ARE TO BE ENFORCED. THE CONTRACTOR OR HIS REPRESENTATIVE SHALL BE RESPONSIBLE FOR THE CONTROL AND SAFETY OF THE TRAVELING PUBLIC AND THE SAFETY OF HIS/HER PERSONNEL.
   B. LABOR SAFETY REGULATIONS SHALL CONFORM TO THE PROVISIONS SET FORTH BY OSHA.
   C. THE MINIMUM STANDARDS AS SET FORTH IN THE 2013 EDITION OF "THE STATE OF FLORIDA, MANUAL ON TRAFFIC CONTROL AND SAFE PRACTICES FOR STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE AND UTILITY OPERATIONS" SHALL BE FOLLOWED IN THE DESIGN, APPLICATION, INSTALLATION, MAINTENANCE AND REMOVAL OF ALL TRAFFIC CONTROL DEVICES, WARNING DEVICES AND BARRIERS NECESSARY TO PROTECT THE PUBLIC AND CONSTRUCTION PERSONNEL FROM HAZARDS WITHIN THE PROJECT LIMITS.
   D. ALL TRAFFIC CONTROL MARKINGS AND DEVICES SHALL CONFORM TO THE PROVISIONS SET FORTH IN THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES PREPARED BY THE U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION.
   E. ALL SUBSURFACE CONSTRUCTION SHALL COMPLY WITH THE "TRENCH SAFETY ACT". THE CONTRACTOR SHALL INSURE THAT THE METHOD OF TRENCH PROTECTION AND CONSTRUCTION IS IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS.
   F. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY AND ENFORCE ALL APPLICABLE SAFETY REGULATIONS. THE ABOVE INFORMATION HAS BEEN PROVIDED FOR THE CONTRACTOR'S INFORMATION ONLY AND DOES NOT IMPLY THAT THE OWNER OR ENGINEER WILL INSPECT AND/OR ENFORCE SAFETY REGULATIONS.

DEMOLITION

1. CONTRACTOR SHALL CONDUCT SITE DEMOLITION OPERATIONS TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKS, AND OTHER ADJACENT OCCUPIED OR USED FACILITIES. DO NOT CLOSE OR OBSTRUCT STREETS, WALKS OR OTHER OCCUPIED OR USED FACILITIES WITHOUT PERMISSION FROM AUTHORITIES HAVING JURISDICTION.
2. CONTRACTOR SHALL PROVIDE PROTECTION NECESSARY TO PREVENT DAMAGE TO EXISTING IMPROVEMENTS INDICATED ON PLAN "TO REMAIN".
3. CONTRACTOR SHALL RESTORE DAMAGED IMPROVEMENTS TO THEIR ORIGINAL CONDITION, AS ACCEPTABLE TO PARTIES HAVING JURISDICTION.
4. CONTRACTOR SHALL REMOVE WASTE MATERIALS AND UNSUITABLE AND EXCESS TOPSOIL FROM PROPERTY AND DISPOSE OF OFF-SITE IN A LEGAL MANNER.
5. CONTRACTOR SHALL DEMOLISH AND COMPLETELY REMOVE FROM SITE MATERIAL INDICATED ON PLAN OR NOTES "TO BE REMOVED".
6. CONTRACTOR SHALL PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES FROM DAMAGE CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING, WASHOUT AND OTHER HAZARDS CREATED BY THE DEMOLITION OPERATION.

DEWATERING NOTES

1. DURING THE EXCAVATION OF THE STORMWATER FACILITIES, AND IF GROUNDWATER IS ENCOUNTERED, THE CONTRACTOR SHALL CONSTRUCT A SEDIMENT BASIN TO PROVIDE A DISCHARGE POINT FOR DEWATERING. THE SEDIMENT BASIN CAN BE A CELL IN THE PROPOSED EXCAVATION AREA OF A POND OR IT CAN BE A BERMED AREA ABOVE GROUND. ALL DEWATERING MUST BE HELD IN THE SEDIMENT AREA UNTIL THE WATER IS CLEAN SUCH THAT THERE WOULD BE NO TURBID DISCHARGE. AFTER THE WATER IN THE SEDIMENT BASIN IS CLEAN, THE WATER MAY BE RELEASED INTO THE ON-SITE POND PROVIDED THERE IS NO ADVERSE IMPACT TO THE EXISTING WATER QUALITY.
2. UNDER NO CIRCUMSTANCES WILL THE DISCHARGE FROM THE ON-SITE DEWATERING BE DIRECTLY DISCHARGED OFFSITE.
3. IF CONTRACTOR ENCOUNTERS SILTY/CLAY SAND, WHICH CAUSES THE WATER TO BECOME TURBID, HE/SHE SHALL TREAT THE SEDIMENT BASIN WITH CHEMICAL ADDITIVE SUCH AS ALUM IN ORDER TO PROMOTE THE COAGULATION OF THE PARTICLES WHICH ALLOW THE TO SETTLE AND THE WATER TO BECOME LESS TURBID. IF TURBID WATER ENCOUNTERED DURING EXCAVATION OF THE PONDS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY TO DETERMINE THE COURSE OF ACTION THAT IS APPROPRIATE TO ELIMINATE THE TURBIDITY AND ALLOW DISCHARGE THAT MEETS WATER QUALITY STANDARDS.
4. THE CONTRACTOR SHALL SEQUENCE THE EXCAVATION OF THE STORMWATER PONDS SUCH THAT A SEDIMENT BASIN WILL BE AVAILABLE AT ALL TIMES. THE SEDIMENT BASIN CAN BE RELOCATED AS NECESSARY SUBJECT TO THE WATER WITHIN THE SEDIMENT BASIN BEING NON-TURBID AND ACCEPTABLE FOR DISCHARGE OFF-SITE.
5. THE CONTRACTOR SHALL OBTAIN ANY REQUIRED PERMITS ASSOCIATED WITH DEWATERING.

EARTHWORK / GRADING / DEMUCKING PROCEDURES

1. A GEOTECHNICAL ENGINEER SHALL BE RETAINED BY THE CONTRACTOR TO PROVIDE ON-SITE INSPECTIONS DURING EXCAVATION/FILL OPERATIONS AND TESTING OF THE COMPACTED FILL SO THAT PROPER DOCUMENTATION OF THE REQUIRED COMPACTING CRITERIA CAN BE PROVIDED.
2. ALL EXISTING DEBRIS (ABOVE OR BELOW GROUND), CONSTRUCTION DEBRIS AND OTHER WASTE MATERIAL SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR, IN ACCORDANCE WITH APPLICABLE REGULATORY AGENCY REQUIREMENTS IN A LEGAL MANNER.
3. THE CONTRACTOR SHALL INSURE THAT PROPER SOIL DENSITIES ARE ACHIEVED FOR PLACEMENT OF ALL HEADWALL/ENDWALL FOOTINGS, RETAINING WALL FOOTINGS, AND IN GENERAL, ANY FOOTING SUPPORT DESCRIBED ON THESE PLANS. IT WILL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT SUFFICIENT SOILS TESTING HAS BEEN PERFORMED PRIOR TO FINAL INSTALLATION OF IMPROVEMENTS.
4. IF ANY UNSUITABLE ORGANIC SOIL IS FOUND, NOTIFY THE ENGINEER AND THE ARCHITECT FOR REMOVAL PROCEDURES.

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Item 1.

No.	REVISIONS	DATE

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PHONE: (407) 536-4440
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Blake Wagner
Digitally signed by Blake Wagner
DN: C=US, E=blake.wagner@kimley-horn.com, O=Kimley-Horn and Associates, Inc., CN=Blake Wagner
Date: 2025.08.28 08:39:30 -04'00'
LICENSED PROFESSIONAL ENGINEER STATE OF FLORIDA
* PROFESSIONAL ENGINEER

KHA PROJECT	149658038
DATE	08/28/2025
SCALE	AS SHOWN
DESIGNED BY	NDF
DRAWN BY	NDF
CHECKED BY	BJW

GENERAL NOTES

HILLSIDE GROVES COMMON
HOWEY-IN-THE-HILLS FLORIDA

SHEET NUMBER
C1.1

STORMWATER POLLUTION PREVENTION PLAN

SITE DESCRIPTION

PROJECT NAME AND LOCATION

HILLSIDE GROVE COMMON
TAX PARCEL: 35-20-25-0002-000-00800
HOWEY-IN-THE-HILLS, FLORIDA

*SEE COVER SHEET FOR LOCATION MAP

DEVELOPER NAME AND ADDRESS

MERITAGE HOMES
5337 MILLENIA LAKES BLVD, SUITE 235
ORLANDO, FL 32839
CONTACT: CLAUDIO TORRES
PHONE: (407) 284-4152
EMAIL: CLAUDIO.TORRES@MERITAGEHOMES.COM

PROJECT DESCRIPTION

THE PROJECT PROPOSES AN AMENITY CENTER IN HOWEY-IN-THE-HILLS, FLORIDA, AS AN ADDITION TO A NEW SINGLE-FAMILY SUBDIVISION. IT CONSISTS OF THE CLEARING AND GRUBBING OF THE EXISTING AREA ON THE 1.22-ACRE SITE. THE PROJECT INCLUDES THE CONSTRUCTION OF A STATE-OF-THE-ART POOL AND SUPPORTING AMENITIES, AS WELL AS THE INSTALLATION OF PARKING INFRASTRUCTURE.

PROJECT AREA: 1.22 ACRES
CONTRIBUTING DRAINAGE AREA: 1.22 ACERS

CONTROL STRUCTURE : S-5
LONGITUDE : W81° 47' 09.30"
LATITUDE: N28° 42' 18.50"

ULTIMATE RECEIVING WATERS: LAKE ILLINOIS

ACTIVITIES THAT REQUIRE EROSION CONTROL

SITE CLEARING AND GRUBBING; PROVIDING A STABILIZED CONSTRUCTION ENTRANCE, PERIMETER, AND OTHER EROSION AND SEDIMENT CONTROLS; EXCAVATION FOR THE RETENTION POND; SITE GRADING; INSTALLATION OF STORM WATER, SANITARY SEWER, AND WATER STRUCTURES; CURB, ROADWAYS, AND PARKING FACILITIES.

*SEE PLANS FOR THE LOCATION OF TEMPORARY SEDIMENT BARRIERS AND OTHER EROSION CONTROL METHODS.

SOIL PARAMETERS

SOIL TYPES:

SERIES NAME	HYDROLOGIC GROUP
TAVARES SAND, 0 TO 5 PERCENT SLOPES	A

SEQUENCE OF MAJOR ACTIVITIES

THE ORDER OF CONSTRUCTION IS AS FOLLOWS:

1. PROVIDE STABILIZED CONSTRUCTION ENTRANCE
2. INSTALL SILT FENCES AND OTHER EROSION CONTROL METHODS
3. CLEAR AND GRUB FOR SEDIMENT BASIN AND EARTH DIKE
4. CONSTRUCT EARTH DIKE AND SEDIMENT BASIN
5. FINISH CLEARING AND GRUBBING
6. REMOVE AND STORE TOPSOIL
7. PROVIDE INITIAL GRADING AS REQUIRED
8. STABILIZE ALL DISTURBED AREAS AS SOON AS POSSIBLE
9. INSTALL UTILITIES, STORM SEWER, CURB AND GUTTER
10. INSTALL BASE TO ROAD AND PARKING AREA
11. FINISH GRADING ENTIRE SITE
12. CONSTRUCT FINAL PAVING
13. REMOVE ACCUMULATED SEDIMENT
14. REMOVE ANY ITEMS THAT ARE NOT REQUIRED

NOTE: THE SEQUENCE OF CONSTRUCTION SHOWN ABOVE IS A GENERAL OVERVIEW AND IS INTENDED TO CONVEY THE GENERAL CONCEPTS OF THE EROSION CONTROL DESIGN AND SHOULD NOT BE RELIED UPON FOR CONSTRUCTION PURPOSES. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETAILED PHASING AND CONSTRUCTION SEQUENCING NECESSARY TO CONSTRUCT THE PROPOSED IMPROVEMENTS INCLUDED IN THESE PLANS. THE CONTRACTOR SHALL NOTIFY ENGINEER IN WRITING IMMEDIATELY, PRIOR TO AND/OR DURING CONSTRUCTION IF ANY ADDITIONAL INFORMATION ON THE CONSTRUCTION SEQUENCE IS NECESSARY. CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLYING WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION AND ALL OTHER APPLICABLE LAWS.

TIMING OF CONTROL MEASURES

THE INSTALLATION OF SILT FENCE (AND OTHER EROSION CONTROL MEASURES), A STABILIZED ENTRANCE AND SEDIMENT BASIN SHALL OCCUR PRIOR TO CLEARING AND GRUBBING ACTIVITY. AFTER CONSTRUCTION IS COMPLETE, THE ACCUMULATED SEDIMENT SHALL BE REMOVED AND THE AREAS SHALL BE REGRADED AND PERMANENTLY STABILIZED AS SHOWN ON THE PLANS.

EROSION AND SEDIMENT CONTROLS

BEST MANAGEMENT PRACTICES SHALL BE USED FOR THIS PROJECT TO CONTROL EROSION AND TURBIDITY CAUSED BY STORM WATER RUN-OFF. THE LOCATION AND DETAILS OF EROSION CONTROL METHODS ARE SHOWN ON THE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR PLACING AND MAINTAINING THESE CONTROL METHODS AS SHOWN ON THE PLANS OR AS REQUIRED. HE/SHE SHALL ALSO PROVIDE THE REQUIRED EROSION PROTECTION AS REQUIRED BY LOCAL, STATE AND FEDERAL LAW.

STORM WATER MANAGEMENT

STORM WATER COLLECTION SHALL BE PROVIDED BY CATCH BASINS. THE AREAS THAT ARE REGRADED SHALL BE STABILIZED IMMEDIATELY AFTER REGRADING.

STABILIZATION PRACTICES:

TEMPORARY STABILIZATION - TOPSOIL STOCK PILES AND DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY TEMPORARILY OR PERMANENTLY CEASE, SHALL BE STABILIZED WITH TEMPORARY SEED AND MULCH WITHIN 7 DAYS OF THE LAST CONSTRUCTION ACTIVITY IN THAT AREA. THE TEMPORARY SEED REQUIRED CAN BE FOUND IN TABLE 1.65 A OF THE FLORIDA DEVELOPMENT MANUAL. PRIOR TO SEEDING, WHERE SOILS ARE ACIDIC 2 TONS OF PULVERIZED AGRICULTURAL LIMESTONE SHOULD BE ADDED PER ACRE AND 450 POUNDS OF 10-20-20 FERTILIZER SHALL BE APPLIED TO EACH ACRE. AFTER SEEDING, EACH AREA SHALL BE IMMEDIATELY MULCHED WITH STRAW OR EQUIVALENT EQUAL. AREAS OF THE SITE WHICH ARE TO BE PAVED SHALL BE TEMPORARILY STABILIZED BY APPLYING GEOTEXTILE AND STONE SUB-BASE UNTIL BITUMINOUS PAVEMENT CAN BE APPLIED.

PERMANENT STABILIZATION - DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES PERMANENTLY CEASE SHALL BE STABILIZED WITH PERMANENT SEED NO LATER THAN 7 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY. THE APPROPRIATE PERMANENT SEED MIX CAN BE FOUND IN TABLES 1.66A, 1.66B AND 1.66C OF THE FLORIDA DEVELOPMENT MANUAL. PRIOR TO SEEDING, 2 TONS/ACRE OF FINELY GROUND AGRICULTURAL LIMESTONE AND THE PROPER FERTILIZER BASED ON THE TYPE OF SEEDING SHALL BE APPLIED TO EACH ACRE TO PROVIDE PLANT NUTRIENTS. AFTER SEEDING, EACH AREA SHALL BE MULCHED IMMEDIATELY.

STRUCTURAL PRACTICES:

EARTH DIKE - IF REQUIRED, AN EARTH DIKE SHALL BE CONSTRUCTED ALONG THE SITE PERIMETER. A PORTION OF THE DIKE SHALL DIVERT RUN-ON AROUND THE CONSTRUCTION SITE. THE REMAINING PORTION OF THE DIKE SHALL COLLECT RUNOFF FROM THE DISTURBED AREA AND DIRECT THE RUNOFF TO THE SEDIMENT BASIN.

SEDIMENT BASIN - A SEDIMENT BASIN SHALL BE CONSTRUCTED IN THE COMMON DRAINAGE AREA FOR THE SITE. ALL SEDIMENT COLLECTED IN THE BASIN MUST BE REMOVED FROM THE BASIN UPON COMPLETION OF CONSTRUCTION. SEDIMENT FROM THE BASIN MAY BE USED AS FILL ON THE SITE IF IT IS SUITABLE SOIL.

WASTE DISPOSAL

WASTE MATERIALS - ALL WASTE MATERIALS SHALL BE COLLECTED AND STORED IN A METAL DUMPSTER WITH A SECURE LID IN ACCORDANCE WITH ALL LOCAL AND STATE LAWS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE SHALL BE DEPOSITED IN THE DUMPSTER. THE SUPERINTENDENT SHALL COORDINATE WITH THE LOCAL UTILITIES TO HAVE THE DUMPSTER EMPTIED AT LEAST TWICE A WEEK AND THE WASTE TAKEN TO AN APPROPRIATE LANDFILL. NO CONSTRUCTION WASTE MATERIALS SHALL BE BURIED ON SITE. THE SUPERINTENDENT SHALL ORGANIZE TRAINING FOR THE EMPLOYEES IN THE PROPER PRACTICES WHEN DEALING WITH WASTE MATERIALS. THE SUPERINTENDENT SHALL BE RESPONSIBLE FOR POSTING AND ENFORCING WASTE MATERIAL PROCEDURES.

HAZARDOUS WASTE - HAZARDOUS WASTE MATERIALS SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL LOCAL AND STATE LAWS OR AS DIRECTED BY THE MANUFACTURER. THE SUPERINTENDENT SHALL ORGANIZE THE PROPER TRAINING FOR EMPLOYEES IN THE PROPER PRACTICES WHEN DEALING WITH HAZARDOUS WASTE MATERIALS. THESE PROCEDURES SHALL BE POSTED ON THE SITE. THE PERSON WHO MANAGES THE SITE SHALL BE RESPONSIBLE FOR ENFORCING THE PROCEDURES.

SANITARY WASTE - SANITARY WASTE SHALL BE COLLECTED AND DISPOSED OF IN ACCORDANCE WITH ALL LOCAL AND STATE LAWS. THE SUPERINTENDENT SHALL COORDINATE WITH THE LOCAL UTILITY FOR COLLECTION OF THE SANITARY WASTE AT LEAST THREE TIMES A WEEK TO PREVENT SPILLAGE ONTO THE SITE.

OFF-SITE TRACKING

A STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROVIDED TO REDUCE SEDIMENT TRACKING OFFSITE. THE MAJOR ROAD CONNECTED TO THE PROJECT SHALL BE CLEANED ONCE A DAY TO REMOVE ANY EXCESS MUD, DIRT OR ROCK RESULTING FROM CONSTRUCTION TRAFFIC. ALL TRUCKS HAULING MATERIALS OFFSITE SHALL BE COVERED WITH A TARPAULIN.

DUST & DEBRIS CONTROL
THE CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL WITHIN THE CONSTRUCTION LIMITS AS WELL AS ALONG HAUL ROUTES AND ROADWAYS USED BY THE EQUIPMENT AND VEHICLES. THE CONTRACTOR SHALL ENSURE THAT EXCESSIVE DUST IS NOT TRANSPORTED BEYOND THE LIMITS OF CONSTRUCTION IN POPULATED AREAS. THE CONTRACTOR MAY CONTROL DUST FOR EMBANKMENTS OR OTHER CLEARED OR UNSURFACED AREAS BY APPLYING WATER. INSTALL MULCH, SEED, SOD, OR TEMPORARY PAVING AS EARLY AS PRACTICAL. CONTROL DUST DURING STORAGE AND HANDLING OF DUSTY MATERIALS BY WETTING, COVERING, OR OTHER MEANS AS APPROVED BY THE ENGINEER.

DEBRIS SHALL NOT BE ALLOWED TO ACCUMULATE ON THE PROJECT SITE.

ITEMS REQUIRING POLLUTION PREVENTION

THE FOLLOWING ITEMS ARE EXPECTED TO BE PRESENT ON THE PROJECT SITE:

-ASPHALT
-CONCRETE
-FERTILIZERS
-METAL PIECES
-PETROLEUM BASED PRODUCTS
-TAR
-CLEANING SUPPLIES
-DETERGENTS
-MASONARY BLOCK/BRICKS
-PAINT
-WOOD

THE FOLLOWING ARE NON-STORM WATER SOURCES THAT WILL BE ENCOUNTERED AT THE SITE AND SHOULD BE DIRECTED TO THE SEDIMENT BASIN PRIOR TO DISCHARGE:

-UNCONTAMINATED GROUNDWATER EXPOSED DURING EXCAVATION
-WATER FROM WATER LINE FLUSHING
-PAVEMENT WASH WATERS (WHERE NO SPILLS OR LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE OCCURRED).

SPILL PREVENTION AND CONTROL

THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF.

GOOD HOUSEKEEPING

-SUPERINTENDENT SHALL INSPECT PROJECT AREA DAILY FOR PROPER STORAGE, USE, AND DISPOSAL OF CONSTRUCTION MATERIALS.

-STORE ONLY ENOUGH MATERIAL ON SITE FOR PROJECT COMPLETION.

-ALL SUBSTANCES SHOULD BE USED BEFORE DISPOSAL OF CONTAINER.

-ALL CONSTRUCTION MATERIALS STORED SHALL BE ORGANIZED AND IN THE PROPER CONTAINER AND IF POSSIBLE, STORED UNDER A ROOF OR PROTECTIVE COVER.

-PRODUCTS SHALL NOT BE MIXED UNLESS DIRECTED BY THE MANUFACTURER.

-ALL PRODUCTS SHALL BE USED AND DISPOSED OF ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

HAZARDOUS PRODUCTS

-MATERIALS SHOULD BE KEPT IN ORIGINAL CONTAINER WITH LABELS UNLESS THE ORIGINAL CONTAINERS CANNOT BE RESEALED. IF ORIGINAL CONTAINERS CANNOT BE USED, LABELS AND PRODUCT INFORMATION SHALL BE SAVED.

-PROPER DISPOSAL PRACTICES SHALL ALWAYS BE FOLLOWED IN ACCORDANCE WITH MANUFACTURER AND LOCAL/STATE REGULATIONS.

PRODUCT SPECIFIC PRACTICES

-PETROLEUM PRODUCTS MUST BE STORED IN PROPER CONTAINERS AND CLEARLY LABELED. VEHICLES CONTAINING PETROLEUM PRODUCTS SHALL BE PERIODICALLY INSPECTED FOR LEAKS. PRECAUTIONS SHALL BE TAKEN TO AVOID LEAKAGE OF PETROLEUM PRODUCTS ON SITE.

-THE MINIMUM AMOUNT OF FERTILIZER SHALL BE USED AND MIXED INTO THE SOIL IN ORDER TO LIMIT EXPOSURE TO STORM WATER. FERTILIZERS SHALL BE STORED IN A COVERED SHED. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER SHALL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

-PAINT CONTAINERS SHALL BE SEALED AND STORED WHEN NOT IN USE. EXCESS PAINT MUST BE DISPOSED OF IN AN APPROVED MANNER.

-CONCRETE TRUCKS SHALL NOT BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ON THE SITE.

SPILL CONTROL PRACTICES

IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES SHALL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:

-SPILL CLEANUP INFORMATION SHALL BE POSTED ON SITE TO INFORM EMPLOYEES ABOUT CLEANUP PROCEDURES AND RESOURCES.

-THE FOLLOWING CLEAN-UP EQUIPMENT MUST BE KEPT ON-SITE NEAR THE MATERIAL STORAGE AREA: GLOVES, MOPS, RAGS, BROOMS, DUST PANS, SAND, SAWDUST, LIQUID ABSORBER, GOGGLES, AND TRASH CONTAINERS.

-ALL SPILLS SHALL BE CLEANED UP AS SOON AS POSSIBLE.

-WHEN CLEANING A SPILL, THE AREA SHOULD BE WELL VENTILATED AND THE EMPLOYEE SHALL WEAR PROPER PROTECTIVE COVERING TO PREVENT INJURY.

-TOXIC SPILLS MUST BE REPORTED TO THE PROPER AUTHORITY REGARDLESS OF THE SIZE OF THE SPILL.

-AFTER A SPILL, THE PREVENTION PLAN SHALL BE REVIEWED AND CHANGED TO PREVENT FURTHER SIMILAR SPILLS FROM OCCURRING. THE CAUSE OF THE SPILL, MEASURES TO PREVENT IT, AND HOW TO CLEAN THE SPILL UP SHALL BE RECORDED.

-THE SUPERINTENDENT SHALL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR AND IS RESPONSIBLE FOR THE DAY TO DAY SITE OPERATIONS. THE SUPERINTENDENT ALSO OVERSEES THE SPILL PREVENTION PLAN AND SHALL BE RESPONSIBLE FOR EDUCATING THE EMPLOYEES ABOUT SPILL PREVENTION AND CLEANUP PROCEDURES.

MAINTENANCE AND INSPECTION PRACTICES

THE FOLLOWING ARE MAINTENANCE AND INSPECTION PRACTICES THAT SHALL BE COMPLETED BY THE CONTRACTOR:

-AN INSPECTOR, CERTIFIED BY THE STATE OF FLORIDA OR EXPERIENCED IN THE INSTALLATION AND MAINTENANCE OF EROSION CONTROLS, IS REQUIRED TO INSPECT THE EROSION AND SEDIMENTATION CONTROL MEASURES AS SHOWN ON THE APPROVED STORMWATER POLLUTION PREVENTION PLAN. INSPECTION REPORTS ARE TO BE COMPLETED ON THE CITY OF SANFORD'S FORM ONCE EVERY WEEK AND AFTER EVERY RAINFALL EVENT OF 0.50" OR MORE DURING THE CONSTRUCTION PHASE. THESE REPORTS SHALL BE MADE AVAILABLE TO THE CITY AT ANY TIME AND COPIES OF ALL OF THE INSPECTIONS SHALL BE SUBMITTED TO THE CITY PRIOR TO THE ISSUANCE OF CERTIFICATE OF COMPLETION OR OCCUPANCY.

-ALL SEDIMENT AND EROSION CONTROL METHODS SHALL BE KEPT IN GOOD CONDITION. REPAIRS MUST BE MADE WITHIN 24 HOURS OF REPORT.

-THE SILT FENCE SHALL BE INSPECTED PERIODICALLY FOR HEIGHT OF SEDIMENT AND CONDITION OF FENCE.

-THE SILT FENCE SHALL BE CLEARED OF SEDIMENT WHEN SEDIMENT MEASURES ONE-THIRD THE HEIGHT OF THE FENCE.

-THE SEDIMENT BASINS/DITCHES SHALL BE CHECKED MONTHLY FOR DEPTH OF SEDIMENT. THEY SHALL BE CLEANED WHEN SEDIMENT REACHES 10% OF TOTAL CAPACITY AND AFTER CONSTRUCTION IS COMPLETE.

-DIVERSION DIKES SHALL BE INSPECTED MONTHLY. ANY BREACHES SHALL BE PROMPTLY REPAIRED.

-ALL SEEDING SHALL BE CHECKED FOR PROPER GROWTH AND UNIFORMITY. UNSTABALIZED AREAS SHALL BE RE-SODDED.

-A MAINTENANCE REPORT SHALL BE COMPLETED DAILY AFTER EACH INSPECTION OF THE SEDIMENT AND EROSION CONTROL METHODS. THE REPORTS SHALL BE FILED IN AN ORGANIZED MANNER AND RETAINED ON-SITE DURING CONSTRUCTION. AFTER CONSTRUCTION IS COMPLETED, THE REPORTS SHALL BE SAVED FOR AT LEAST THREE YEARS. THE REPORTS SHALL BE AVAILABLE FOR ANY AGENCY THAT HAS JURISDICTION OVER EROSION CONTROL.

-THE SUPERINTENDENT SHALL ORGANIZE THE TRAINING FOR INSPECTION PROCEDURES AND PROPER EROSION CONTROL METHODS FOR EMPLOYEES THAT COMPLETE INSPECTIONS AND REPORTS.

POLLUTION PREVENTION PLAN CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

SIGNED: _____ DATE:_____

BLAKE J. WAGNER, P.E.
FLORIDA REGISTRATION NUMBER: 94035
PROFESSIONAL ENGINEER

CONTRACTOR'S CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND, SHALL COMPLY WITH, THE TERMS AND CONDITIONS OF THE STATE OF FLORIDA GENERIC PERMIT FOR STORMWATER DISCHARGE FORM LARGE AND SMALL CONSTRUCTION ACTIVITIES AND THIS STORMWATER POLLUTION PREVENTION PLAN PREPARED THEREUNDER.

SIGNATURE AND DATE	NAME AND TITLE, COMPANY / ADDRESS AND TELEPHONE NUMBER	RESPONSIBILITY

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Blake Wagner

LICENSED PROFESSIONAL ENGINEER — STATE OF FLORIDA

KHA PROJECT	149658038
DATE	08/28/2025
SCALE	AS SHOWN
DESIGNED BY	NDF
DRAWN BY	NDF
CHECKED BY	BJW

STORMWATER POLLUTION PREVENTION PLAN

HILLSIDE GROVES COMMON — HOWEY-IN-THE-HILLS, FLORIDA

SHEET NUMBER
C2.0

Plotted By: Powers, Steven Sheet Set: HILLSIDE GROVES COMMON Layout: C2.0 - SWPP PLAN August 27, 2025 09:41:31pm K:\ORL_LA\149658038_hillside groves common\CADD\CONST\plansheets\C2.0-SWPPP.dwg
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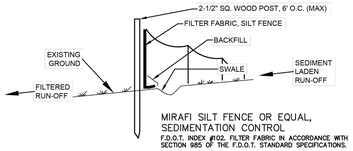


MIRAFI SILT FENCE OR EQUAL, SEDIMENTATION CONTROL
F.D.O.T. INDEX #102. FILTER FABRIC IN ACCORDANCE WITH SECTION 985 OF THE F.D.O.T. STANDARD SPECIFICATIONS.

NOTES:

1. TEMPORARY EROSION CONTROL STRUCTURE TO BE UTILIZED DURING CONSTRUCTION AT AREAS DESIGNATED BY ENGINEER OR AREAS ON-SITE WHERE UNSTABILIZED GRADES MAY CAUSE EROSION PROBLEMS. EROSION CONTROL STRUCTURE MAY BE REMOVED AFTER UPSLOPE AREA HAS BEEN STABILIZED BY SOD, OR COMPACTED AS DETERMINED BY CONTRACTOR.
2. CONSTRUCT STORMWATER SYSTEMS BEFORE ANY BUILDING OR ROAD CONSTRUCTION IS STARTED.
   a.) PROTECT SYSTEM FROM SILTING AND DEBRIS BY METHODS PROVIDED IN DETAILS.
   b.) PROTECT SWALE BOTTOM FROM SEALING BY EXCAVATING ALL SILT DEPOSITS DURING CONSTRUCTION. THIS SHALL BE DONE BEFORE SOD & SEEDING & MULCHING IS FINISHED

THE FOLLOWING LIST REPRESENTS A BASIC EROSION AND SEDIMENT CONTROL PROGRAM WHICH IS TO BE IMPLEMENTED TO HELP PREVENT OFF-SITE SEDIMENTATION DURING AND AFTER CONSTRUCTION OF THE PROJECT.

PERMANENT EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AT THE EARLIEST PRACTICAL TIME CONSISTENT WITH GOOD CONSTRUCTION PRACTICES. ONE OF THE FIRST CONSTRUCTION ACTIVITIES SHOULD BE THE PLACEMENT OF PERMANENT AND TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AROUND THE PERIMETER OF THE PROJECT OR THE INITIAL WORK AREA TO PROTECT THE PROJECT, ADJACENT PROPERTIES AND WATER RESOURCES.

TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE COORDINATED WITH PERMANENT MEASURES TO ASSURE ECONOMICAL, EFFECTIVE AND CONTINUOUS CONTROL THROUGHOUT THE CONSTRUCTION PHASE. TEMPORARY MEASURES SHALL NOT BE CONSTRUCTED FOR EXPEDIENCY IN LIEU OF PERMANENT MEASURES.

EROSION AND SEDIMENT CONTROL MEASURES SHALL BE ADEQUATELY MAINTAINED TO PERFORM THEIR INTENDED FUNCTION DURING CONSTRUCTION OF THE PROJECT.

NECESSARY REPAIRS TO BARRIERS OR REPLACEMENT OF BARRIERS SHALL BE ACCOMPLISHED PROMPTLY.

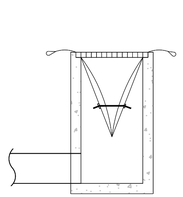
SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH RAINFALL. THEY MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.

MATERIAL FROM SEDIMENT TRAPS SHALL NOT BE STOCKPILED OR DISPOSED OF IN A MANNER WHICH MAKES THEM READILY SUSCEPTIBLE TO BEING WASHED INTO ANY WATERCOURSE BY RUNOFF OR HIGH WATER.

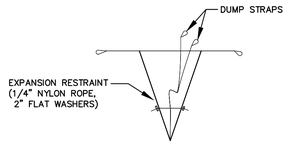
ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE BARRIERS ARE NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

EROSION & SEDIMENT CONTROL
(N.T.S.)

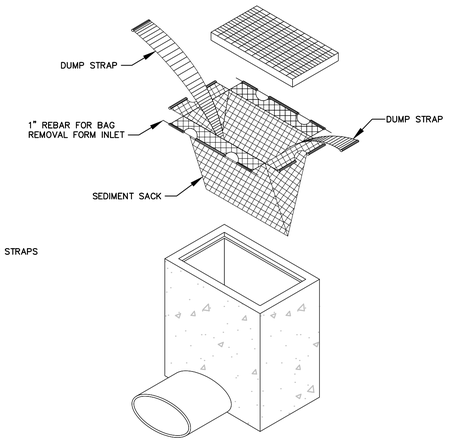
Howey-in-the-Hills Standard Details	DATE: FEB 2022
	DETAIL G-1



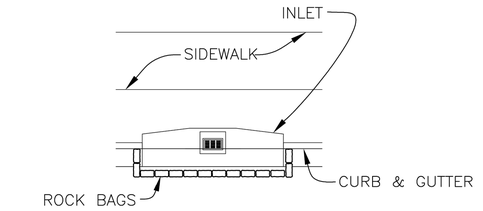
INSTALLATION DETAIL



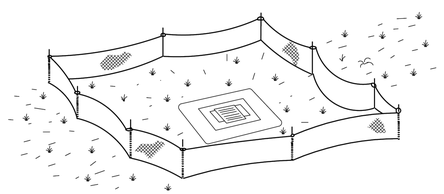
BAG DETAIL



STANDARD INLET SEDIMENT CONTROL DEVICE
NTS



CURB INLET

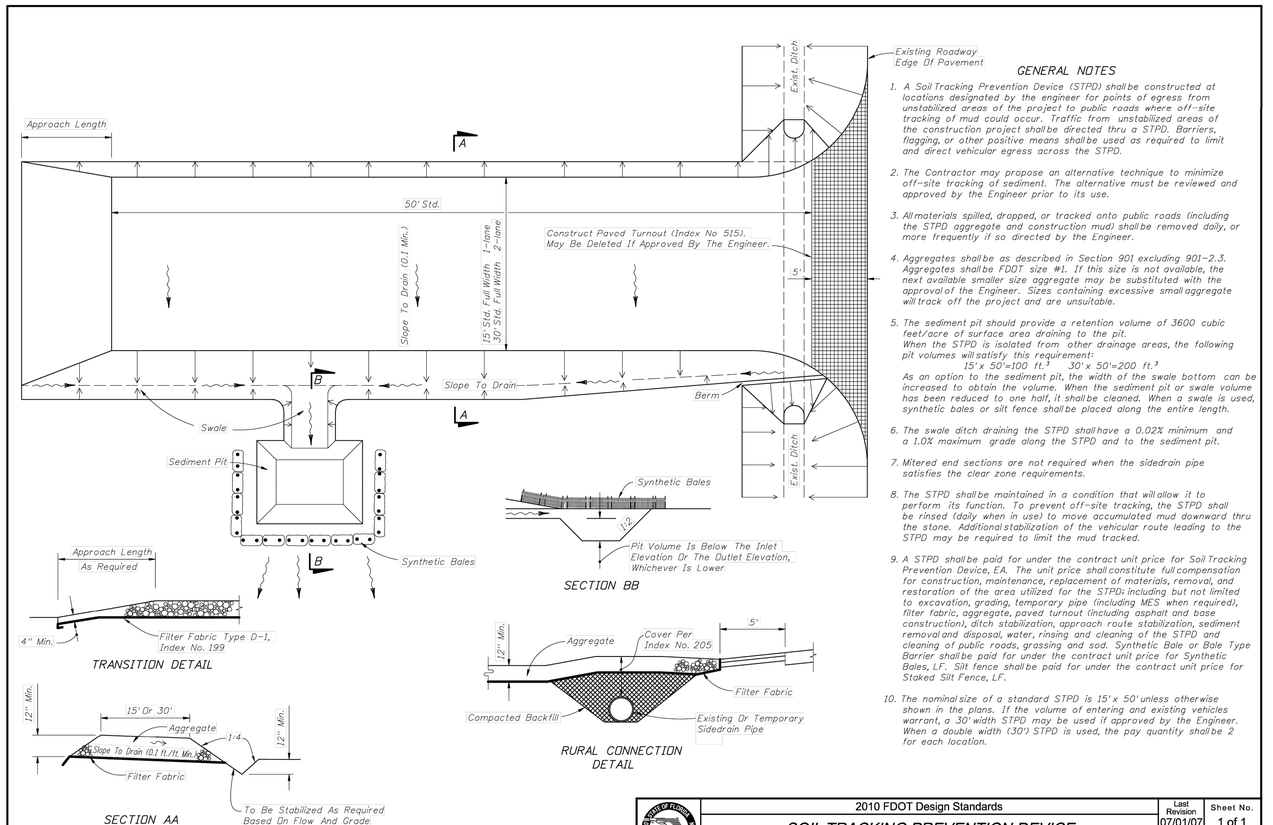


TYPE III SILT FENCE PROTECTION AROUND DITCH BOTTOM INLETS

ALTERNATE DESIGNS MAY BE PROPOSED BY ENGINEER

INLET PROTECTION (N.T.S.)

Howey-in-the-Hills Standard Details	DATE: FEB 2022
	DETAIL G-3



GENERAL NOTES

1. A Soil Tracking Prevention Device (STPD) shall be constructed at locations designated by the engineer for points of egress from unstabilized areas of the project to public roads where off-site tracking of mud could occur. Traffic from unstabilized areas of the construction project shall be directed thru a STPD. Barriers, flagging, or other positive means shall be used as required to limit and direct vehicular egress across the STPD.
2. The Contractor may propose an alternative technique to minimize off-site tracking of sediment. The alternative must be reviewed and approved by the Engineer prior to its use.
3. All materials spilled, dropped, or tracked onto public roads (including the STPD aggregate and construction mud) shall be removed daily, or more frequently if so directed by the Engineer.
4. Aggregates shall be as described in Section 901 excluding 901-2.3. Aggregates shall be FDOT size #1. If this size is not available, the next available smaller size aggregate may be substituted with the approval of the Engineer. Sizes containing excessive small aggregate will track off the project and are unsuitable.
5. The sediment pit should provide a retention volume of 3600 cubic feet/acre of surface area draining to the pit. When the STPD is isolated from other drainage areas, the following pit volumes will satisfy this requirement:
   15' x 50'=100 ft.³ 30' x 50'=200 ft.³
   As an option to the sediment pit, the width of the swale bottom can be increased to obtain the volume. When the sediment pit or swale volume has been reduced to one half, it shall be cleaned. When a swale is used, synthetic bales or silt fence shall be placed along the entire length.
6. The swale ditch draining the STPD shall have a 0.02% minimum and a 1.0% maximum grade along the STPD and to the sediment pit.
7. Mitered end sections are not required when the sidedrain pipe satisfies the clear zone requirements.
8. The STPD shall be maintained in a condition that will allow it to perform its function. To prevent off-site tracking, the STPD shall be rinsed (daily when in use) to move accumulated mud downward thru the stone. Additional stabilization of the vehicular route leading to the STPD may be required to limit the mud tracked.
9. A STPD shall be paid for under the contract unit price for Soil Tracking Prevention Device, EA. The unit price shall constitute full compensation for construction, maintenance, replacement of materials, removal, and restoration of the area utilized for the STPD; including but not limited to excavation, grading, temporary pipe (including MES when required), filter fabric, aggregate, paved turnout (including asphalt and base construction), ditch stabilization, approach route stabilization, sediment removal and disposal, water, rinsing and cleaning of the STPD and cleaning of public roads, grassing and sod. Synthetic Bale or Bale Type Barrier shall be paid for under the contract unit price for Synthetic Bales, LF. Silt fence shall be paid for under the contract unit price for Staked Silt Fence, LF.
10. The nominal size of a standard STPD is 15' x 50' unless otherwise shown in the plans. If the volume of entering and existing vehicles warrant, a 30' width STPD may be used if approved by the Engineer. When a double width (30') STPD is used, the pay quantity shall be 2 for each location.

2010 FDOT Design Standards	Last Revision 07/01/07	Sheet No. 1 of 1
SOIL TRACKING PREVENTION DEVICE TYPE A		Index No. 106

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No.	REVISIONS	DATE

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LICENSED PROFESSIONAL ENGINEER STATE OF FLORIDA

KHA PROJECT 149658038	DESIGNED BY NDF
DATE 06/28/2025	DRAWN BY NDF
SCALE AS SHOWN	CHECKED BY BJW

EROSION CONTROL DETAILS

HILLSIDE GROVES COMMON
HOWEY-IN-THE-HILLS FLORIDA

SHEET NUMBER C2.1

Plotted By: Powers, Steven Sheet Set: HILLSIDE GROVES COMMON Layout: C2.1 - EROSION CONTROL & DETAILS August 27, 2025 06:41:43pm K:\ORL_LA\149658038_hillside groves common\CAD\CONST\plansheets\C2.1-EROSION CONTROL DETAILS.dwg
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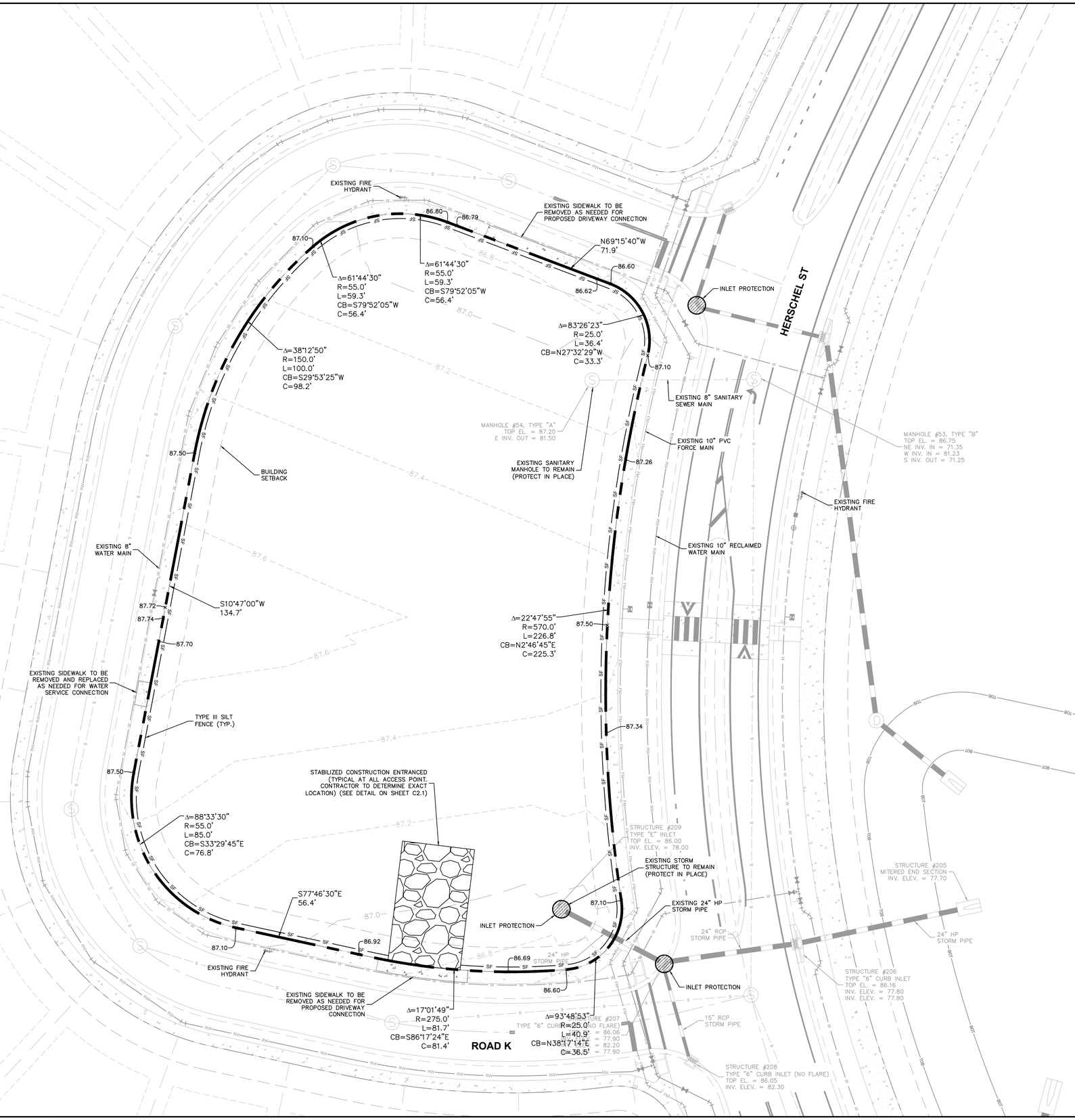

NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

LEGEND

- TRACT LINE
- SF — SILT FENCE
- S — EXISTING SANITARY SEWER LINE
- FM — EXISTING FORCE MAIN LINE
- RW — EXISTING RECLAIM WATER LINE
- W — EXISTING WATER LINE
- 87.0 — EXISTING CONTOUR
- ×87.50 — EXISTING SPOT ELEVATION
- EXISTING STORM PIPE
- EXISTING SANITARY MANHOLE
- EXISTING STORM STRUCTURES
- INLET PROTECTION
- SOIL TRACKING PREVENTION DEVICE

NOTES:

1. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS. THE EXISTING UTILITY INFORMATION SHOWN IS BASED ON THE HILLSIDE GROVE CONSTRUCTION PLANS DATED 04/18/2025 PROVIDED BY CONNELLY & WICKER INC. THE CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES, AFFECTING THIS AREA PRIOR TO CONSTRUCTION WORK.
2. ELEVATIONS SHOWN ON THIS PLAN ARE RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), BASED ON THE HILLSIDE GROVE CONSTRUCTION PLANS DATED 04/18/2025 PROVIDED BY CONNELLY & WICKER INC.
3. THERE MAY BE ON-SITE UNDERGROUND EXISTING UTILITIES (INCLUDING BUT NOT LIMITED TO IRRIGATION, SANITARY SEWER, POTABLE WATER LINES, NATURAL GAS LINES, ELECTRIC, TELEPHONE, AND CABLE LINES) THAT WERE NOT LOCATED OR IDENTIFIED BY THE PROJECT SURVEYOR. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL FIELD VERIFY ALL EXISTING ON-SITE UTILITIES AND RIGHT-OF-WAY UTILITIES.
4. IF EXISTING UTILITIES ARE DISCOVERED THAT ARE NOT IDENTIFIED BY THE CONSTRUCTION DOCUMENTS, AND WILL BE IMPACTED BY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY PRIOR TO PROCEEDING WITH CONSTRUCTION.
5. CONTRACTOR TO COORDINATE WITH UTILITY COMPANY FOR DEMOLITION REQUIREMENTS OF ELECTRICAL SYSTEMS.
6. INSTALL AND MAINTAIN SILT FENCE AT LIMITS OF CONSTRUCTION. WIRE MESH REINFORCED SILT FENCE SHALL BE USED AT ALL POINTS ALONG PROPERTY BOUNDARY WITH OFF-SITE STORMWATER FLOWS. SEE DETAIL SHEET C2.1
7. REFER FOR SWPPP SHEET C2.0 FOR ADDITIONAL NOTES AND DETAILS.
8. PROVIDE SOIL TRACKING PREVENTION DEVICE AT ALL CONSTRUCTION ACCESS POINTS. SEE DETAIL SHEET C2.1.
9. INSTALL AND MAINTAIN FILTER FABRIC UNDER GRATES OF EXISTING/PROPOSED INLETS, SEE SHEET C2.1.
10. CONTRACTOR TO ENSURE ADEQUATE COVER REMAINS OVER ALL EXISTING UTILITIES.
11. CONTRACTOR TO VERIFY EXISTING SANITARY, STORM, WATER, ELECTRIC, PHONE, CABLE, AND NATURAL GAS SERVICES TO BUILDINGS SCHEDULED FOR DEMOLITION. SERVICES ARE TO BE ISOLATED FROM THE MAIN UTILITY SERVICE CONNECTIONS, AND CAPPED AND/OR REMOVED AS REQUIRED BY THE UTILITY PROVIDER. UTILITY SERVICES ARE TO BE ISOLATED IN A MANNER THAT WILL ENSURE THAT ADJACENT PROPERTIES REMAIN CONNECTED WITHOUT EXPERIENCING AN INTERRUPTION OF SERVICE.
12. ALL VEGETATION TO BE REMOVED UNLESS NOTED TO REMAIN.
13. ALL SIDEWALK CLOSURES SHALL BE IN COMPLIANCE WITH FDOT INDEX #102-660.
14. ALL WORK WITHIN RIGHT-OF-WAY AND ADJACENT TO TRAVEL LANES TO FOLLOW FDOT INDEX #102-602 AND #102-603 FOR MAINTENANCE OF TRAFFIC. CONTRACTOR TO COORDINATE WITH THE TOWN OF HOWEY-IN-THE-HILLS FOR ANY LANE CLOSURES.

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Blake Wagner

STATE OF FLORIDA
PROFESSIONAL ENGINEER

KHA PROJECT 149658038	
DATE	08/28/2025
SCALE	AS SHOWN
DESIGNED BY	NDF
DRAWN BY	NDF
CHECKED BY	BJW

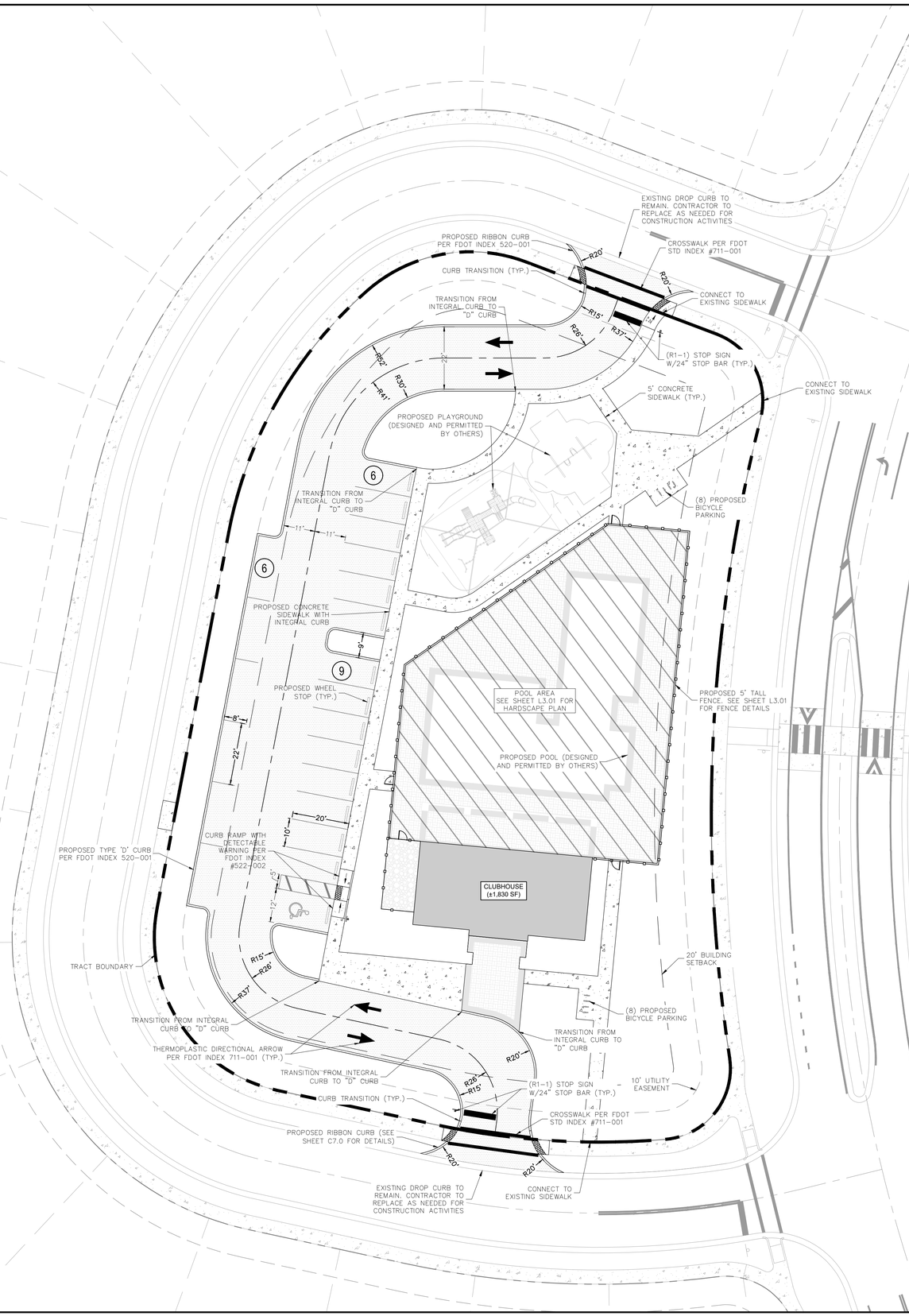
EXISTING CONDITIONS

HILLSIDE GROVES COMMON

FLORIDA

HOWEY-IN-THE-HILLS

SHEET NUMBER
C3.0



NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

LEGEND

- TRACT BOUNDARY
- UTILITY EASEMENT
- BUILDING SETBACK
- LANDSCAPE SETBACK
- PROPOSED FENCE
- PROPOSED CONCRETE SIDEWALK
- PROPOSED MEDIUM DUTY ASPHALT PAVEMENT (SEE SHEET C7.0 FOR DETAILS)

SITE DATA

PARCEL NUMBER:	35-20-25-0002-000-00800
TOTAL SITE AREA:	1.22 AC (53,144 SF)
EXISTING ZONING:	PUD
FUTURE LAND USE:	PUD
EXISTING USE:	VACANT
PROPOSED USE:	PUD – AMENITY CENTER
MAX BUILDING HEIGHT:	35 FT
PROPOSED PARKING:	21 SPACES (14 STANDARD, 6 PARALLEL, 1 ADA). SEE NOTE 4 BELOW FOR JUSTIFICATION.
PROPOSED BICYCLE PARKING:	16 SPACES

BUILDING SUMMARY (1 STRUCTURE)

PROPOSED INTERIOR BUILDING AREA

INTERIOR FLOOR AREA:	1,643 SF
MAXIMUM FAR	0.50
PROPOSED FAR:	0.03 (1,643 SF/53,144 SF)
TOTAL ROOF AREA:	2,827 SF
CONSTRUCTION TYPE:	V–B

IMPERVIOUS AREA & OPEN SPACE SUMMARY

MAXIMUM ALLOWABLE (ISR):	70%
EXISTING IMPERVIOUS (ISR):	0%
PROPOSED IMPERVIOUS (ISR):	64% (0.78 ACRES)

*OPEN SPACE PROVIDED FOR IN OVERALL SUBDIVISION

GENERAL NOTES:

1. ALL RADII ARE TO BE 3' OR 10' UNLESS OTHERWISE NOTED.
2. ALL MEASUREMENTS TO FACE OF CURB UNLESS OTHERWISE NOTED.
3. ALL AFFECTED SIDEWALKS, RAMPS, AND CROSSWALKS, WILL BE BUILT AND INSPECTED TO MEET CURRENT ADA REQUIREMENTS.
4. HANDICAP (HC) RAMPS MUST BE CONSTRUCTED AT THE STREET INTERSECTION(S) AND DRIVEWAY CONNECTION(S) TO COMPLY WITH THE AMERICAN WITH DISABILITY ACT (ADA) AND WILL MEET FDOT DESIGN STANDARDS.
5. DETECABLE WARNING SURFACE WILL BE REQUIRED AT ALL PLACES WHERE PEDESTRIAN PATH MEETS VEHICULAR PATH.
6. ALL PAVEMENT MARKINGS WILL BE THERMOPLASTIC.
7. ALL CONSTRUCTION IN THE FDOT ROW SHALL CONFORM TO THE LATEST EDITIONS OF THE FDOT DESIGN STANDARD PLANS (INDEXES), THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AND THE FDOT UTILITY ACCOMMODATION MANUAL.
8. NONE OF THE PROPERTY DESIGNATED AS STREETS OR ALLEYS (COMMON AREAS), ARE NOT AND WILL NOT BE A PART OF THE TOWN OF HOWEY–IN–THE–HILLS SYSTEMS OF PUBLIC ROADS, AND SHALL REMAIN PRIVATE AND THE SOLE AND EXCLUSIVE PROPERTY OF THE OWNER, ITS SUCCESSORS, AND/OR ASSIGNS.

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Date: 2025.08.28 09:30:36 -04'00'

STATE OF FLORIDA
LICENSED LANDSCAPE ARCHITECT
BLAKE J. WAGNER
No. 6667667
PROFESSIONAL
DATE: 08/28/2025

KHA PROJECT 149658038	DESIGNED BY	NDF
DATE 08/28/2025	DRAWN BY	NDF
SCALE AS SHOWN	CHECKED BY	BJW

SITE PLAN

HILLSIDE GROVES COMMON

HOWEY-IN-THE-HILLS FLORIDA

SHEET NUMBER
C4.0

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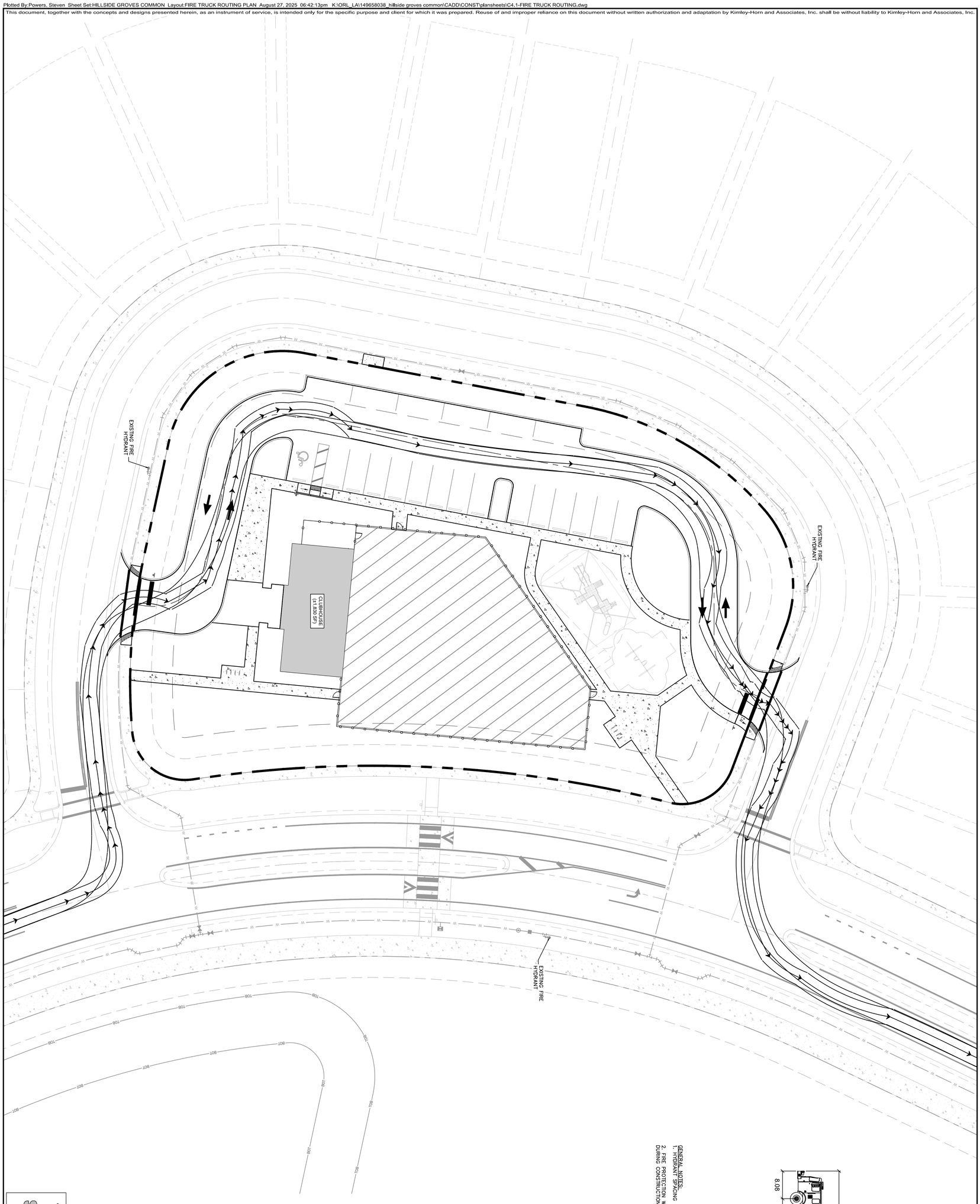
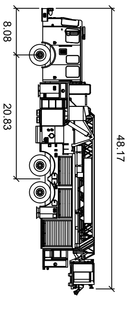


GENERAL NOTES:
1. HYDRANT SPACING AND HOSE LENGTH PER NFPA 1, SECTION 18.2.3.2.2.
2. FIRE PROTECTION WATER SUPPLY TO BE AVAILABLE PRIOR TO AND DURING CONSTRUCTION.



Smeal Platform MM 100ft

	feet
Width	8.33
Track	7.92
Lock to Lock Time	6.0
Steering Angle	45.0

GRAPHIC SCALE IN FEET
0 10 20 40

NORTH

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SHEET NUMBER	C4.1
HILLSIDE GROVES COMMON	
HOWEY-IN-THE-HILLS	FLORIDA
FIRE TRUCK ROUTING PLAN	
KHA PROJECT	149658038
DATE	08/28/2025
SCALE	AS SHOWN
DESIGNED BY	NDF
DRAWN BY	NDF
CHECKED BY	BJW

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No.	REVISIONS	DATE	By

101

Item 1.

STRUCTURE TABLE	
STRUCTURE NAME:	DETAILS:
D-01	TYPE "D" INLET PER FDOT INDEX #425-052 TOP: 85.80 S. INV OUT: 81.78
D-02	TYPE "P7" MANHOLE PER FDOT INDEX #425-010 TOP: 86.43 N. INV IN: 81.42 E. INV IN: 83.54 S. INV OUT: 81.42
D-03	TYPE "D" INLET PER FDOT INDEX #425-052 TOP: 86.06 N. INV IN: 80.74 E. INV OUT: 80.74
EX-01	TYPE "E" INLET PER FDOT INDEX #425-052 TOP: 86.24 W. INV IN: 80.00 NW. INV IN: 83.29 SE. INV OUT: 78.00
YD-01	YARD DRAIN TOP: 87.38 N. INV IN: 84.57 E. INV IN: 84.57
YD-02	YARD DRAIN TOP: 87.42 N. INV IN: 83.88 W. INV IN: 83.88 SE. INV OUT: 83.71



LEGEND

- TRACT BOUNDARY
- 73.00 — PROPOSED SPOT ELEVATION
- 78.29 / 77.79 — PROPOSED TOP OF CURB/PAVEMENT ELEVATION
- 87.0 — EXISTING CONTOUR
- 87.0 — PROPOSED CONTOUR
- PROPOSED STORM PIPE
- EXISTING STORM PIPE
- PROPOSED STORM STRUCTURES
- EXISTING STORM STRUCTURES
- PROPOSED CONCRETE SIDEWALK

GENERAL NOTES:

1: ALL EXISTING STRUCTURES, UNLESS OTHERWISE NOTED TO REMAIN, FENCING, TREES, ETC WITHIN CONSTRUCTION AREA SHALL BE REMOVED AND DISPOSED OFF SITE. ANY BURNING ON SITE SHALL BE SUBJECT TO LOCAL ORDINANCES. SEE SPECIFICATIONS.
2: ALL DRAINAGE STRUCTURES SHALL BE PRE-CAST.
3: ALL DRAINAGE STRUCTURES AND STORM SEWER PIPES SHALL MEET HEAVY DUTY TRAFFIC (H20) LOADING AND BE INSTALLED ACCORDINGLY.
4: GENERAL CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES HAVING UNDERGROUND UTILITIES ON SITE OR IN RIGHT-OF-WAY PRIOR TO EXCAVATION. CONTRACTOR SHALL CONTACT UTILITY LOCATING COMPANY AND LOCATE ALL UTILITIES PRIOR TO GRADING START.
5: SITE GRADING SHALL NOT PROCEED UNTIL EROSION CONTROL MEASURES HAVE BEEN INSTALLED, INSPECTED AND APPROVED BY LOCAL AUTHORITIES.
6: ALL CUT OR FILL SLOPES SHALL BE 3:1 OR FLATTER UNLESS OTHERWISE NOTED OR PER JURISDICTIONAL REQUIREMENTS.
7: EXISTING DRAINAGE STRUCTURES TO BE INSPECTED AND REPAIRED AS NEEDED, AND EXISTING PIPES ARE TO BE CLEANED OUT TO REMOVE ALL SILT AND DEBRIS.
8: IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION, IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR OR REPLACE THE EXISTING STRUCTURE AS NECESSARY.
9: ALL STORM PIPE ENTERING STRUCTURES SHALL BE GROUTED TO ASSURE CONNECTION AND STRUCTURE IS WATER TIGHT.
10: CONTRACTOR IS TO ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.
11: CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS AND STRUCTURES FOR ALL GRASSED AND PAVED AREAS.
12: CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE GOVERNING CODES AND BE CONSTRUCTED TO THE SAME.
13: CONTRACTOR IS RESPONSIBLE FOR TEMPORARY ACCESS ROADS, MAINTAIN POSITIVE DRAINAGE THROUGHOUT CONSTRUCTION AND AVOID PONDING OR RUTTING.
14: DETENTION POND OUTFLOW DEVICES SHALL BE DESIGNATED TO LIMIT FLOWS TO CAPACITY LEVELS OF DOWNSTREAM DRAINAGE STRUCTURES.
15: CONTRACTOR TO VERIFY T.A.S./A.D.A. COMPLIANCE PRIOR TO POURING CONCRETE. FOR ANY QUESTIONS, CONTACT CIVIL ENGINEER IMMEDIATELY.
16: GRADES IN ALL ACCESSIBLE ROUTES, INCLUDING DRIVEWAY CROSSINGS, SHALL CONFORM TO ALL APPLICABLE A.D.A. AND T.A.S. STANDARDS: MAXIMUM RUNNING SLOPE FOR ALL PATHS IS 5%, MAX CROSS SLOPE FOR ALL PATHS IS 2%, FOR THE FIRST FIVE FEET FROM THE DOOR, A 2% SLOPE IN ALL DIRECTIONS (MAX) MUST BE MAINTAINED.
17: IN GENERAL, THE MAXIMUM RUNNING SLOPE SHALL NOT EXCEED 5%, THE MINIMUM SLOPE SHALL NOT BE INFERIOR THAN 1.5% AND THE PREFERRED SLOPE SHALL BE 2.5%.
18: REFER TO LANDSCAPE PLANS FOR LANDSCAPE/HARDSCAPE DETAILS.
19: THE CONTRACTOR SHALL INSTALL, AS PART OF THE INFRASTRUCTURE AND PRIOR TO CERTIFICATE OF COMPLETION, DROP CURBS AND HANDICAP RAMPS AT ALL INTERSECTIONS OF THE SIDEWALK WITH THE PROPOSED PAVEMENT TO MEET HOWEY IN THE HILLS AND A.D.A. SPECIFICATIONS.
20: CONTRACTOR TO VERIFY ENGINEERING PLANS MATCH ARCHITECTURAL/STRUCTURAL PLANS PRIOR TO CONSTRUCTION STAKING.
21: LANDSCAPE AREAS ADJACENT TO BUILDING TO DRAIN AWAY FROM BUILDING AT A MINIMUM OF 2% SLOPE.
22: AFTER PLACEMENT OF SUBGRADE AND PRIOR TO PLACEMENT OF PAVEMENT, CONTRACTOR SHALL TEST AND OBSERVE PAVEMENT AREAS FOR EVIDENCE OF PONDING. ALL AREAS SHALL ADEQUATELY DRAIN TOWARDS THE INTENDED STRUCTURE TO CONVEY STORM RUNOFF, CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER AND ENGINEER IF ANY DISCREPANCIES ARE DISCOVERED.
23: CONCRETE VALLEY GUTTER SHALL BE CONSTRUCTED IF ASPHALT PAVEMENT IS USED. REFER TO CONSTRUCTION DETAILS
24: SEE SHEET C3.0 FOR APPROXIMATE LOCATION OF EXISTING UTILITIES.
25: ALL THE ELEVATIONS SHOWN ARE FINISHED GRADE ELEVATIONS. CONTRACTOR TO SUBTRACT PAVEMENT THICKNESS AND FLOOR SLAB THICKNESS FOR SUBGRADE ELEVATIONS.
26: CONTRACTOR SHALL REFER TO ARCHITECTURAL AND PLUMBING PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF ALL VESTIBULES/ENTRIES, SIDEWALKS, EXIT PORCHES, RAMPS, TRUCK DOCKS, PRECISE BUILDING DIMENSIONS AND EXACT UTILITY ENTRANCE LOCATIONS.
27: TERMITE SPRAY IF NEEDED IS TO BE PROVIDED FOR FOUNDATION BY FOUNDATION CONTRACTOR.
28: SITE PREPARATION TO BE PROVIDED BY CONTRACTOR TO INCLUDE:
A. PROTECTING EXISTING VEGETATION TO REMAIN.
B. REMOVING EXISTING VEGETATION.
C. CLEARING AND GRUBBING.
D. STRIPPING AND STOCKPILING TOPSOIL
E. REMOVING ABOVE-AND BELOW-GRADE SITE IMPROVEMENTS.
F. DISCONNECTING, CAPPING OR SEALING SITE UTILITIES.
G. TEMPORARY EROSION AND SEDIMENTATION CONTROL.
35: NONE OF THE PROPERTY DESIGNATED AS STREETS OR ALLEYS (COMMON AREAS), ARE NOT AND WILL NOT BE A PART OF THE TOWN OF HOWEY-IN-THE-HILLS SYSTEMS OF PUBLIC ROADS, AND SHALL REMAIN PRIVATE AND THE SOLE AND EXCLUSIVE PROPERTY OF THE OWNER, ITS SUCCESSORS, AND/OR ASSIGNS.

Always call 811 two full business days before you dig to have underground utilities located and marked.

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No.	REVISIONS	DATE

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Blake Wagner
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Date: 2025.08.28 14:30:39 -04'00'
LICENSED PROFESSIONAL ENGINEER
STATE OF FLORIDA

KHA PROJECT	149658038
DATE	08/28/2025
SCALE	AS SHOWN
DESIGNED BY	NDF
DRAWN BY	NDF
CHECKED BY	BJW

HILLSIDE GROVES COMMON

HOWEY-IN-THE-HILLS FLORIDA

PAVING GRADING AND DRAINAGE

SHEET NUMBER
C5.0

Plotted By:Wagner, Blake Sheet Set:HILLSIDE GROVES COMMON Layout:PAVING GRADING AND DRAINAGE August 27, 2025 07:08:14pm K:\ORL_LA\149658038_hillside groves common\CADD\CONST\plansheets\C&G-PG.dwg
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Plotted By: Powers, Steven Sheet Set: HILLSIDE GROVES COMMON Layout: C5.1 - SECTIONS August 27, 2025 08:42:46pm K:\ORL_LA\149658038 - hillside groves common\CADD\CONST\plansheets\C5.1-DRAIN.dwg
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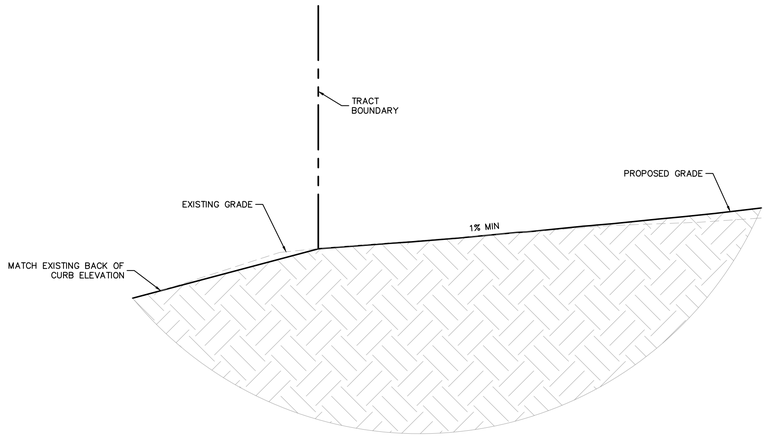
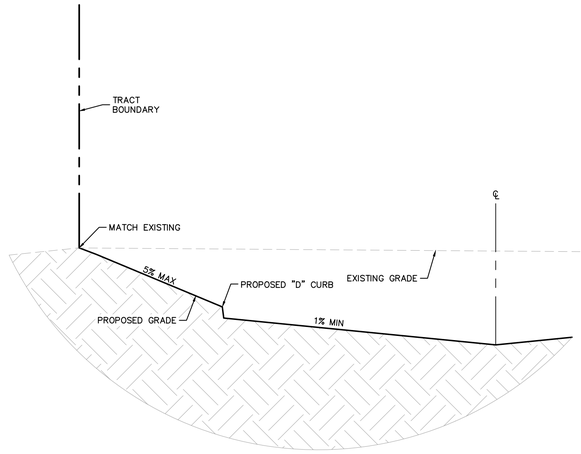


SECTION A–A
NTS



SECTION B–B
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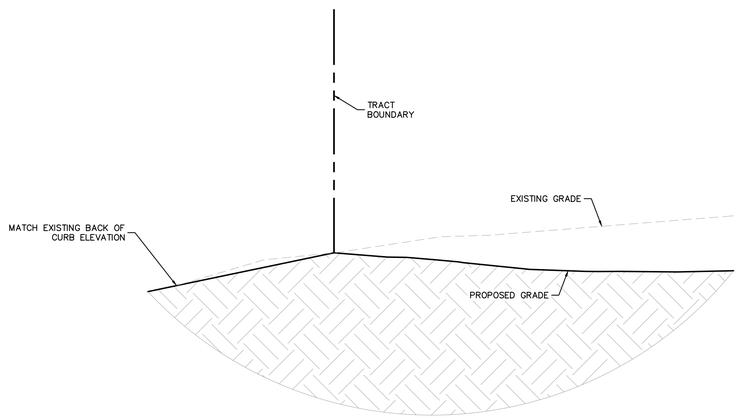

SECTION C–C
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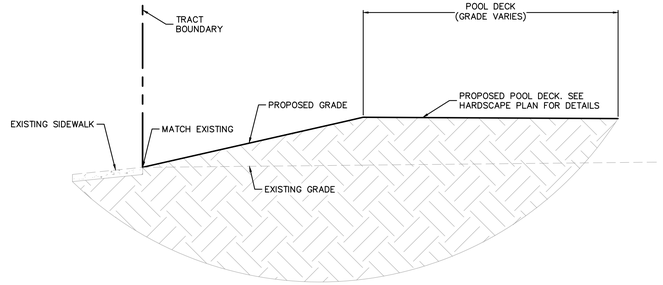

SECTION D–D
NTS

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Blake Wagner
LICENSED PROFESSIONAL ENGINEER
STATE OF FLORIDA
PROFESSIONAL ENGINEER
DATE: 08/28/2025

KHA PROJECT	149658038
DATE	08/28/2025
SCALE	AS SHOWN
DESIGNED BY	NDF
DRAWN BY	NDF
CHECKED BY	BJW

SECTIONS

HILLSIDE GROVES COMMON

HOWEY-IN-THE-HILLS FLORIDA

SHEET NUMBER
C5.1

GENERAL FIRE SERVICE NOTES:

1. ALL UNDERGROUND MAINS SERVING FIRE HYDRANTS OR FIRE PROTECTION SPRINKLER SYSTEMS ON PRIVATE PROPERTY MUST BE PERMITTED PRIOR TO INSTALLATION. THE DRAWING SHALL INDICATE THAT ALL UNDERGOUND FIRE MAINS WILL BE INSTALLED IN ACCORDANCE WITH NFPA 24 (2021 EDITION, "STANDARD FOR THE INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES". [F.A.C. 69A–60.005(2)]
2. ALL FIRE SERVICE MAIN LOCATED DOWNSTREAM OF THE FIRE POINT OF SERVICE SHALL BE INSTALLED BY A QUALIFIED AND LICENSED CONTRACTOR. CONSTRUCTION AND MATERIALS SHALL COMPLY WITH APPLICABLE FIRE CODE. CONTRACTOR TO VERIFY REQUIREMENTS WITH THE TOWN OF HOWEY–IN–THE–HILLS PRIOR TO SHOP DRAWING REVIEW.

August 25, 2025
KHA Job# 149658038

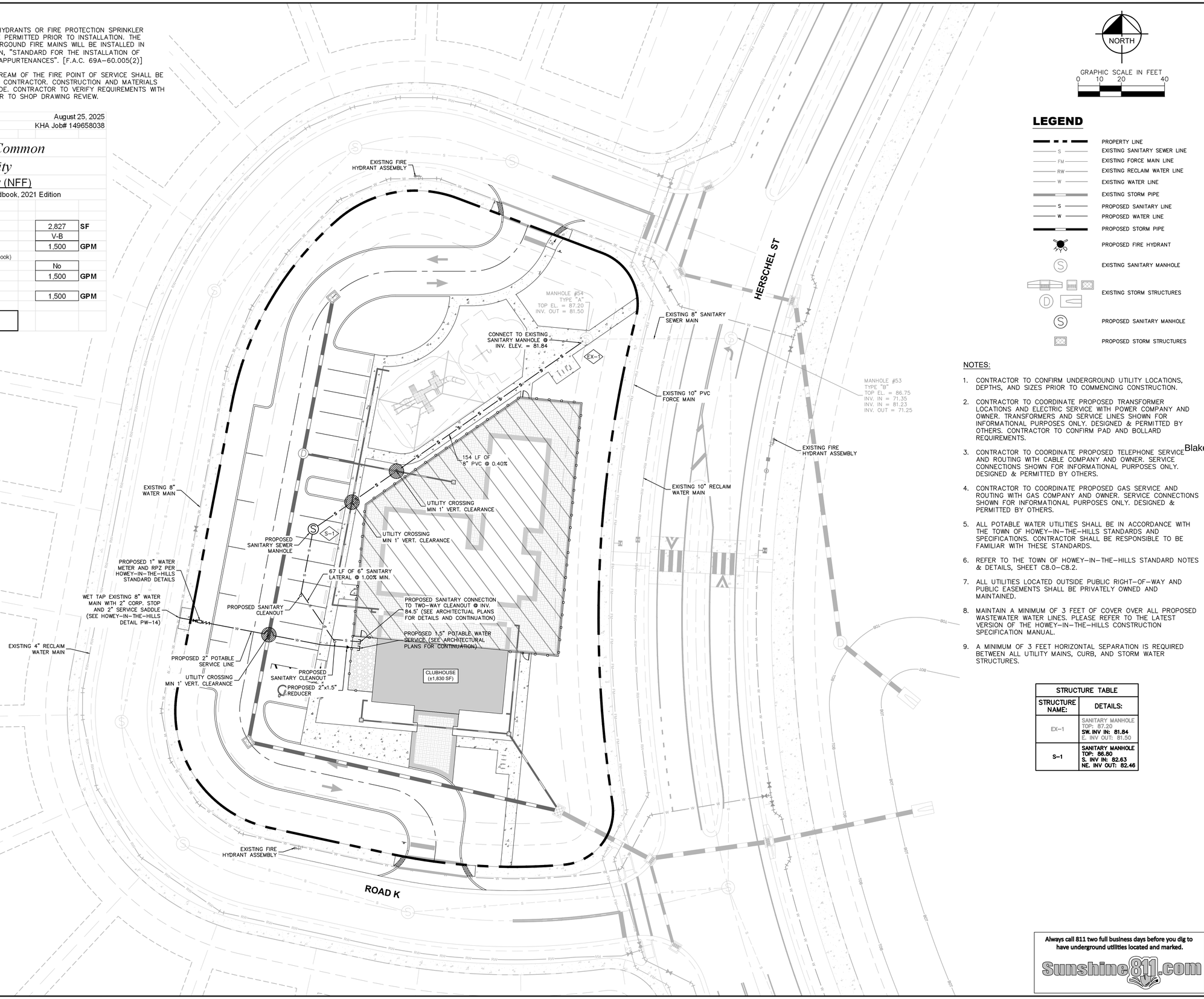
Hillside Groves Common
Pool/Amenity

Needed Fire Flow (NFF)

per NFPA 1 Uniform Fire Code Handbook, 2021 Edition

*Building Fire Area=	2,827	SF
Building Type (per NFPA 220) =	V-B	
Associated Min. Required Fire Flow=	1,500	GPM
(per Table 18.4.4.2.1 of the NFPA 1 Uniform Fire Code Handbook)		
Fire Sprinkler - Yes or No=	No	
Calculated Fire Flow=	1,500	GPM
(with 75% fire sprinkler credit, if applicable)		
Minimum Fire Flow Required=	1,500	GPM

Fire Flow Provided=	1,500 GPM



NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

LEGEND

- PROPERTY LINE
- S — EXISTING SANITARY SEWER LINE
- FM — EXISTING FORCE MAIN LINE
- RW — EXISTING RECLAIM WATER LINE
- W — EXISTING WATER LINE
- EXISTING STORM PIPE
- S — PROPOSED SANITARY LINE
- W — PROPOSED WATER LINE
- PROPOSED STORM PIPE
- PROPOSED FIRE HYDRANT
- EXISTING SANITARY MANHOLE
- EXISTING STORM STRUCTURES
- PROPOSED SANITARY MANHOLE
- PROPOSED STORM STRUCTURES

NOTES:

1. CONTRACTOR TO CONFIRM UNDERGROUND UTILITY LOCATIONS, DEPTHS, AND SIZES PRIOR TO COMMENCING CONSTRUCTION.
2. CONTRACTOR TO COORDINATE PROPOSED TRANSFORMER LOCATIONS AND ELECTRIC SERVICE WITH POWER COMPANY AND OWNER. TRANSFORMERS AND SERVICE LINES SHOWN FOR INFORMATIONAL PURPOSES ONLY. DESIGNED & PERMITTED BY OTHERS. CONTRACTOR TO CONFIRM PAD AND BOLLARD REQUIREMENTS.
3. CONTRACTOR TO COORDINATE PROPOSED TELEPHONE SERVICE AND ROUTING WITH CABLE COMPANY AND OWNER. SERVICE CONNECTIONS SHOWN FOR INFORMATIONAL PURPOSES ONLY. DESIGNED & PERMITTED BY OTHERS.
4. CONTRACTOR TO COORDINATE PROPOSED GAS SERVICE AND ROUTING WITH GAS COMPANY AND OWNER. SERVICE CONNECTIONS SHOWN FOR INFORMATIONAL PURPOSES ONLY. DESIGNED & PERMITTED BY OTHERS.
5. ALL POTABLE WATER UTILITIES SHALL BE IN ACCORDANCE WITH THE TOWN OF HOWEY–IN–THE–HILLS STANDARDS AND SPECIFICATIONS. CONTRACTOR SHALL BE RESPONSIBLE TO BE FAMILIAR WITH THESE STANDARDS.
6. REFER TO THE TOWN OF HOWEY–IN–THE–HILLS STANDARD NOTES & DETAILS, SHEET C8.0–C8.2.
7. ALL UTILITIES LOCATED OUTSIDE PUBLIC RIGHT–OF–WAY AND PUBLIC EASEMENTS SHALL BE PRIVATELY OWNED AND MAINTAINED.
8. MAINTAIN A MINIMUM OF 3 FEET OF COVER OVER ALL PROPOSED WASTEWATER WATER LINES. PLEASE REFER TO THE LATEST VERSION OF THE HOWEY–IN–THE–HILLS CONSTRUCTION SPECIFICATION MANUAL.
9. A MINIMUM OF 3 FEET HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL UTILITY MAINS, CURB, AND STORM WATER STRUCTURES.

STRUCTURE TABLE	
STRUCTURE NAME:	DETAILS:
EX–1	SANITARY MANHOLE TOP: 87.20 SW. INV IN: 81.84 E. INV OUT: 81.50
S–1	SANITARY MANHOLE TOP: 86.80 S. INV IN: 82.63 NE. INV OUT: 82.46

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Reason: I am approving this document
Date: 2025.08.28 12:30:40 -04'00'

No.	REVISIONS	DATE

KHA PROJECT 149658038
DATE 08/28/2025
SCALE AS SHOWN
DESIGNED BY NDF
DRAWN BY NDF
CHECKED BY BJW

UTILITY PLAN

HILLSIDE GROVES COMMON

HOWEY–IN–THE–HILLS FLORIDA

SHEET NUMBER
C6.0

Plotted By: Powers, Steven Sheet Set: HILLSIDE GROVES COMMON Layout: C6.0 - UTILITY PLAN August 27, 2025 09:42:59pm K:\ORL_LA\149658038 - hillside groves common\CAD\CONST\plansheets\C6.0-UTIL.dwg
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Posted By:Powers, Steven Sheet Set:HILLSIDE GROVES COMMON Layout:C7.0 CONSTRUCTION DETAILS August 27, 2025 06:43:03pm K:\ORL_Lia\149658038-hillside groves common\CADD\CONST\plansheets\C6.0 – CONSTRUCTION DETAILS.dwg
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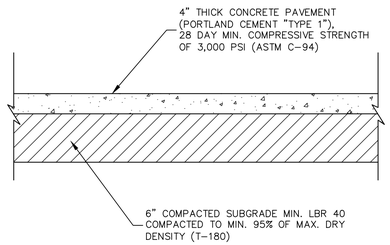
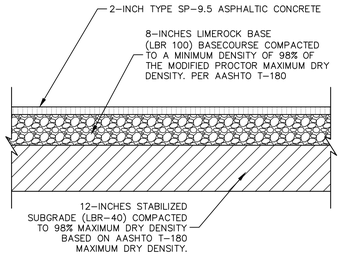
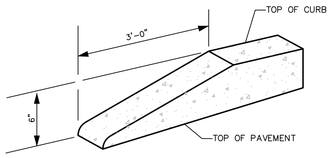


CONCRETE SIDEWALK DETAIL
NTS

SIDEWALK NOTES:
1. ALL CONCRETE SIDEWALKS SHALL BE CONSTRUCTED PER FDOT STANDARD PLANS #522-001.

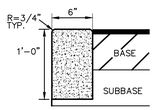


TYPICAL "MEDIUM DUTY" ASPHALT PAVEMENT DETAIL
NTS



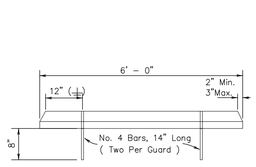
CURB TERMINUS TRANSITION DETAIL
NTS

NOTE:
ALL CURBS TO HAVE STANDARD 3' TRANSITION FROM 6" HEIGHT TO FLUSH (0" HEIGHT). A STANDARD TEMPLATE SHALL BE USED AT ALL LOCATIONS TO PROVIDE UNIFORM CURB TRANSITION THROUGHOUT THE PROJECT.

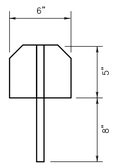


RIBBON CURB
NTS

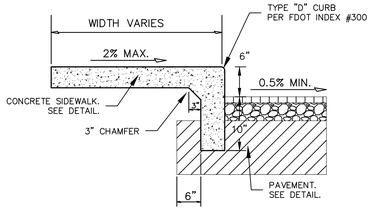
NOTES:
1. ALL CURBS TO BE CONSTRUCTED OF 28 DAY, 3000 P.S.I. CONCRETE
2. 1/2" PRE-MOLDED EXPANSION JOINT REQUIRED EVERY 500', CONSTRUCTION JOINT REQUIRED EVERY 10' MAXIMUM (4' MINIMUM).
3. 6" SUBBASE TO BE COMPACTED AND TESTED TO 98% DENSITY BASED ON AASHTO T-180 MODIFIED PROCTOR TEST AND SHALL BE STABILIZED TO A MINIMUM L.B.R. 40.
4. IN NO INSTANCE SHALL EXTRUDED CURBS (DEFINED AS HEADER-TYPE CURBS INSTALLED DIRECTLY ON TOP OF PAVEMENT) BE PERMITTED.



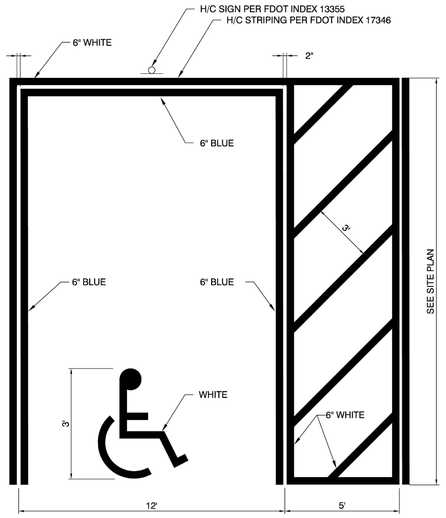
WHEEL STOP FRONT VIEW
NTS



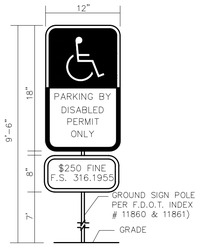
WHEEL STOP PROFILE (TYP.)
NTS



SIDEWALK INTEGRAL CURB DETAIL
NTS

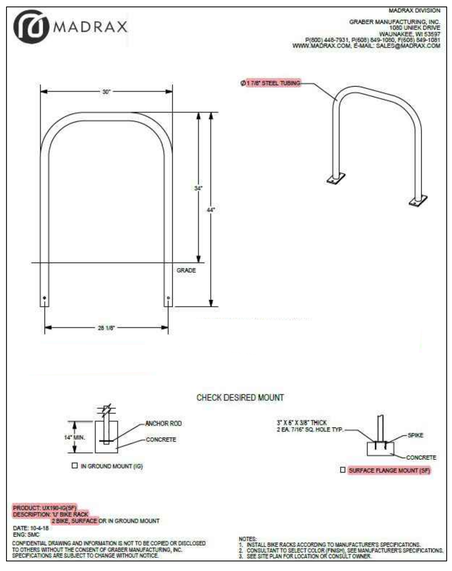


HANDICAP PARKING PAVEMENT MARKING
N.T.S.



NOTES:
1. ALL LETTERS ARE 1" SERIES "C" PER MUTCD.
2. TOP PORTION OF SIGN SHALL HAVE REFLECTORIZED (ENGINEERING GRADE) BLUE BACKGROUND WITH WHITE REFLECTORIZED LEGEND AND BORDER.
3. BOTTOM PORTION OF SIGN SHALL HAVE A REFLECTORIZED (ENGINEERING GRADE) WHITE BACKGROUND WITH BLACK OPAQUE LEGEND AND BORDER.
4. FINE NOTIFICATION SIGN SHALL HAVE A REFLECTORIZED (ENGINEERING GRADE) WHITE BACKGROUND WITH BLACK OPAQUE LEGEND AND BORDER.
5. ONE (1) SIGN REQUIRED FOR EACH PARKING SPACE.
6. INSTALLATION HEIGHT OF SIGN SHALL BE IN ACCORDANCE WITH SECTION 24-23 OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

HANDICAP SIGN DETAIL
N.T.S.



Circle Bike Rack - 2 Bike Capacity, Black



Clean, minimalist design for metro areas.

- 2 contact points for locking frame and wheel.
- 10-gauge, galvanized steel or attractive powder coating.
- Mounting hardware included.

MODEL NO.	DESCRIPTION	SIZE L x W x H	BIKE CAPACITY	WT. (LBS.)
H-6572BL	Circle	35 x 2 1/2 x 33"	2	32

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Item 1.

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Blake Wagner
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Date: 2025.08.28 09:30:43 -04'00'

LICENSED ARCHITECT STATE OF FLORIDA PROFESSIONAL

KHA PROJECT 149658038	SCALE AS SHOWN	DESIGNED BY NDF
DATE 08/28/2025	DRAWN BY NDF	CHECKED BY BJW

CONSTRUCTION DETAILS

HILLSIDE GROVES COMMON
HOWEY-IN-THE-HILLS FLORIDA

SHEET NUMBER
C7.0

Plotted By:Powers, Steven Sheet Set:HILLSIDE GROVES COMMON Layout:HOWEY-IN-THE-HILLS DETAILS August 27, 2025 09:43:28pm K:\ORL_LAV\149658038 hillside groves common\CADD\CONSTplansheets\C7.0-DETAILS.dwg
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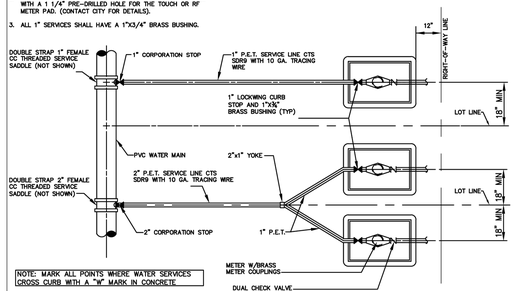
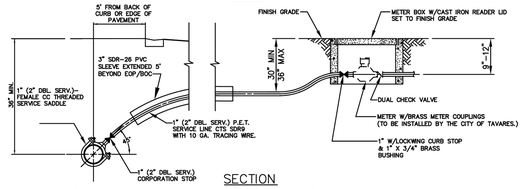
NOTES:

1. METERS TO BE INSTALLED BY THE CITY OF TAVARES.
2. ALL METER BOXES SHALL BE STANDARD PLASTIC RECTANGLE WITH A 1 1/4" PRE-DRILLED HOLE FOR THE TOUCH OR RF METER PAD. (CONTACT CITY FOR DETAILS).
3. ALL 1" SERVICES SHALL HAVE A 1"x3/4" BRASS BUSHING.



NOTE: MARK ALL POINTS WHERE WATER SERVICES CROSS CURB WITH A "W" MARK IN CONCRETE

PLAN



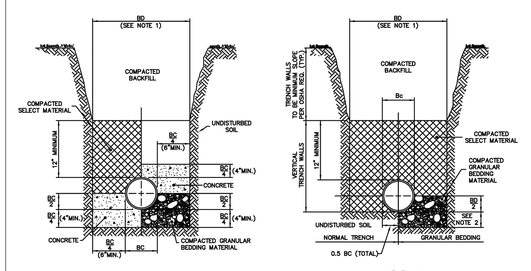
SECTION

SERVICE CONNECTION—SINGLE FAMILY

NOT TO SCALE

(NOTE: METERS TO BE INSTALLED BY CITY OF TAVARES.)

Howey-in-the-Hills	Standard Details	DATE: FEB 2022 DETAIL PW-1



CLASS "A" BEDDING
SPECIAL CONDITIONS

CLASS "B" BEDDING
NORMAL CONDITIONS

NOTES: FOR BEDDING AND TRENCHING

1. DIMENSION BC = PIPE O.D.
   DIMENSION BD = TRENCH WIDTH AT TOP OF PIPE
   MAXIMUM BD = BC + 30"
   MINIMUM BD = MAXIMUM DIMENSION OF BELL + 8" (UNSHEETED TRENCH)
2. DEPTH FOR REMOVAL FOR UNSUITABLE MATERIAL SHALL BE AS REQUIRED TO REACH SUITABLE FOUNDATION. FOR ROCK OR OTHER NON-CUSHIONING MATERIAL, DEPTH SHALL BE 6" BELOW BOTTOM OF UTILITY.
3. ALL BACKFILL AND SELECT MATERIAL UNDER ALL ROADWAYS, DRIVES (INCLUDING DIRT DRIVES), AND PARKING AREAS SHALL BE COMPACTED TO 98% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY. (AASHTO T-180). BACKFILL AND SELECT MATERIAL UNDER ALL OTHER AREAS SHALL BE COMPACTED AS FOLLOWS: FROM BOTTOM OF TRENCH TO 12" ABOVE TOP OF PIPE — 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY (AASHTO T-180). FROM 12" ABOVE TOP OF PIPE TO TOP OF BACKFILL — 90% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY (AASHTO T-180)

TRENCHING AND BEDDING

NOT TO SCALE

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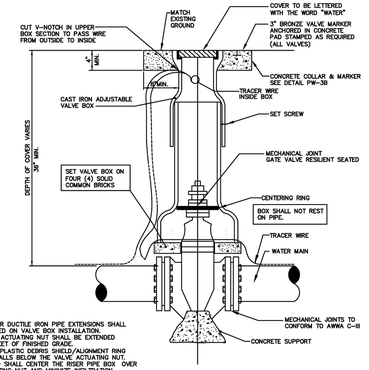


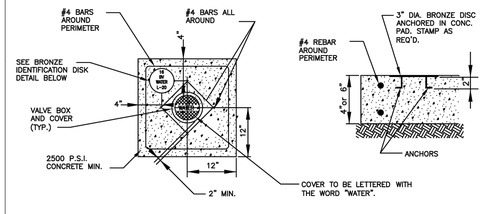
NOTES

1. PVC PIPE OR DUCTILE IRON PIPE EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.
2. THE VALVE ACTUATING NUT SHALL BE EXTENDED WITHIN 2 FEET OF FINISHED GRADE.
3. PROVIDE A PLASTIC DEBRIS SHIELD/ALIGNMENT RING FOR EACH VALVE BOX. THE SHIELD SHALL BE PLACED ON THE VALVE BOTTOM AND SHALL COVER THE VALVE OPENING BELOW OVER THE ACTUATING NUT AND MINIMIZE INFILTRATION.
4. FOR NEW CONSTRUCTION, THE VALVE BOX SHALL BE ADJUSTED TO MIDRANGE TO ALLOW FOR FUTURE BOX ADJUSTMENTS.
5. VALVE BOX SHALL BE A TWO PIECE SCREW TYPE.

GATE VALVE AND BOX

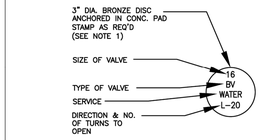
NOT TO SCALE

Howey-in-the-Hills	Standard Details	DATE: FEB 2022 DETAIL PW-3A



NOTE:

1. BRONZE IDENTIFICATION DISC SHALL BE REQUIRED FOR ALL VALVES.
2. 6" THICK CONCRETE PAD IN ROADWAY OR PAVED AREAS, 4" THICK CONCRETE PAD IN OTHER AREAS.

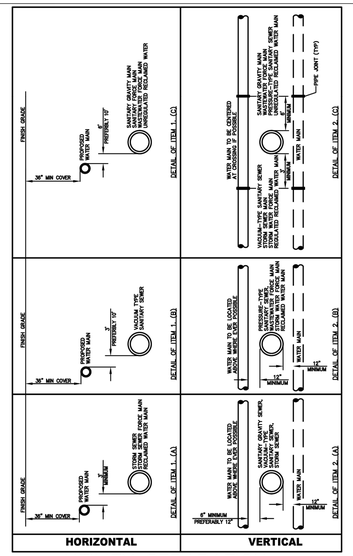


BRONZE IDENTIFICATION DISC DETAIL

VALVE COLLAR

NOT TO SCALE

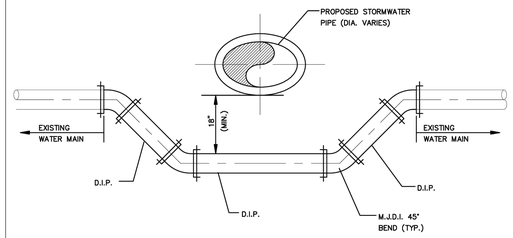
Howey-in-the-Hills	Standard Details	DATE: FEB 2022 DETAIL PW-3B



UTILITY SEPARATION

NOT TO SCALE

Howey-in-the-Hills	Standard Details	DATE: FEB 2022 DETAIL PW-11A



NOTES:

1. ALL PROPOSED JOINTS SHALL BE RESTRAINED.
2. ALL EXISTING JOINTS WITHIN SHALL BE RESTRAINED IN ACCORDANCE WITH GR-6.
3. ALL PIPING CLEARANCES SHALL BE IN ACCORDANCE WITH CHAPTER 62-555.314 F.A.C.

WATER LINE CROSSING

NOT TO SCALE

Howey-in-the-Hills	Standard Details	DATE: FEB 2022 DETAIL PW-11B

GENERAL WATER NOTES

1. WATER SYSTEM COMPONENTS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND REGULATIONS. CLEANED, DISINFECTED AND BACTERIOLOGICALLY CLEARED FOR SERVICE IN ACCORDANCE WITH THE LATEST AWWA STANDARDS AND CHAPTER 62-555 FLORIDA ADMINISTRATIVE CODE.
2. ALL PIPING SHALL BEAR THE "NSF" SEAL FOR POTABLE WATER.
3. WATER MAINS SHALL BE PVC CONFORMING TO AWWA C-900, DR 18 FOR PIPE SIZES 4"-12". PIPES 14" OR LARGER SHALL BE AWWA C-905, DR 18. ALL COUPLINGS, CLEANING COMPOUNDS, SOLVENTS, LUBRICANTS, AND PIPE PREPARATION, FOR LAYING, SHALL BE IN ACCORDANCE WITH THE PIPE MANUFACTURER'S LATEST RECOMMENDATIONS.
4. DEPTH OF WATER LINES TO BE 36" MINIMUM COVER FROM FINISH GRADE.
5. WATER MAINS TO BE LOCATED 5' FROM BACK OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
6. ALL WATER MAINS UNDER PAVEMENT SHALL BE DUCTILE IRON.
7. ALL CASINGS UNDER PAVEMENT SHALL EXTEND 5' BEYOND THE BACK OF CURB
8. DISINFECTING: FOLLOWING THE PRESSURE TESTING, THE CONTRACTOR SHALL DISINFECT ALL SECTIONS OF THE NEW WATER DISTRIBUTION SYSTEM. DISINFECTION SHALL BE IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF AWWA STANDARD C651 "DISINFECTING WATER MAINS", AND ALL APPROPRIATE AGENCY APPROVAL.
9. ALL HYDROSTATIC TESTS SHALL BE IN ACCORDANCE WITH AWWA C600 FOR DUCTILE IRON PIPE AND C605/M23 FOR PVC PIPE.
10. ALL WATER MAINS SHALL BE INSTALLED, PRESSURE AND LEAK TESTED IN ACCORDANCE WITH AWWA C600, (62-555.320(21)(B)1 AND 62-555.330, F.A.C. ALL INSTALLATION, TESTING AND FIELD PROCEDURES MUST BE PROVIDED AND MUST CONFORM TO THE APPLICABLE AWWA STANDARDS.
11. ALL PIPING MATERIALS AND SPECIFICATIONS COVERING PIPES, JOINTS AND PACKING MATERIALS, INTERNAL COATING AND LININGS, FITTINGS, SPECIALS AND APPURTENANCES SHALL ALL BE IN ACCORDANCE WITH THE CORRESPONDING AWWA STANDARDS AND BE CONFORMING TO NSF REQUIREMENTS, AS MAY BE APPLICABLE, WITH EXCEPTIONS ALLOWED ONLY IF DOCUMENTATION AND ASSURANCES ARE PROVIDED IN COMPLIANCE WITH PARAGRAPHS 62-555.320(3) (D), 62-555.320 (3) (B), AND 62-555.320 (21) (C), F.A.C. THE LEAD USE PROHIBITION IN RULE 62-555.322, F.A.C. SHALL ALSO APPLY. POLYETHYLENE TUBING SHALL BE PER AWWA C901. UNDERGROUND SERVICE LINES AND VALVES SHALL BE PER AWWA C800.

COLOR CODING

ALL PIPE AND PIPE FITTINGS INSTALLED UNDER THIS PROJECT WILL BE COLOR CODED OR MARKED IN ACCORDANCE WITH SUBPARAGRAPH 62-555.320(21)(B)3, F.A.C., USING BLUE AS A PREDOMINANT COLOR. (UNDERGROUND PLASTIC PIPE WILL BE SOLID-WALL BLUE PIPE, WILL HAVE A CO-EXTRUDED BLUE EXTERNAL SKIN, OR WILL BE WHITE OR BLACK PIPE WITH BLUE STRIPES INCORPORATED INTO, OR APPLIED TO, THE PIPE WALL; AND UNDERGROUND METAL OR CONCRETE PIPE WILL HAVE BLUE STRIPES APPLIED TO THE PIPE WALL. PIPE STRIPED DURING MANUFACTURING OF THE PIPE WILL HAVE CONTINUOUS STRIPES THAT RUN PARALLEL TO THE AXIS OF THE PIPE, THAT ARE LOCATED AT NO GREATER THAN 90-DEGREE INTERVALS AROUND THE PIPE, AND THAT WILL REMAIN INTACT DURING AND AFTER INSTALLATION OF THE PIPE. IF TAPE OR PAINT IS USED TO STRIPE PIPE DURING INSTALLATION OF THE PIPE, THE TAPE OR PAINT WILL BE APPLIED IN A CONTINUOUS LINE THAT RUNS PARALLEL TO THE AXIS OF THE PIPE AND THAT IS LOCATED ALONG THE TOP OF THE PIPE; FOR PIPE WITH AN INTERNAL DIAMETER OF 24 INCHES OR GREATER, TAPE OR PAINT WILL BE APPLIED IN CONTINUOUS LINES ALONG EACH SIDE OF THE PIPE AS WELL AS ALONG THE TOP OF THE PIPE. ABOVEGROUND PIPE WILL BE PAINTED BLUE OR WILL BE COLOR CODED OR MARKED LIKE UNDERGROUND PIPE.) [FAC 62/CELL 555.320(21)(B)3]

UNLESS DESCRIBED IN THE CITY CSM ELSEWHERE, ALL WATER MAINS SHALL BE INSTALLED IN ACCORDANCE WITH **CHAPTER 62-555.314, F.A.C.,** AND ANY UPDATES TO THE F.A.C., AND IN CONFORMANCE WITH ALL SEPARATION REQUIREMENTS AS FOUND THEREIN.

62-555.314 LOCATION OF PUBLIC WATER SYSTEM MAINS.

FOR THE PURPOSE OF THIS SECTION, THE PHRASE "WATER MAINS" SHALL MEAN MAINS, INCLUDING TREATMENT PLANT PROCESS PIPING, CONVEYING EITHER RAW, PARTIALLY TREATED, OR FINISHED DRINKING WATER; FIRE HYDRANT LEADS; AND SERVICE LINES THAT ARE UNDER THE CONTROL OF A PUBLIC WATER SYSTEM AND THAT HAVE AN INSIDE DIAMETER OF THREE INCHES OR GREATER.

(1) HORIZONTAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS.

(A) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C

(B) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER.

(C) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS SHALL BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER.

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GENERAL WATER NOTES

(D) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST TEN FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM" AS DEFINED IN SECTION 381.0065(2), F.S., AND RULE 64E-6.002, F.A.C.

(2) VERTICAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS AND RECLAIMED WATER PIPELINES.

(A) NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY- OR VACUUM-TYPE SANITARY SEWER OR STORM SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES, AND PREFERABLY 12 INCHES, ABOVE OR AT LEAST 12 INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE; HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

(3) SEPARATION BETWEEN WATER MAINS AND SANITARY OR STORM SEWER MANHOLES:

(A) NO WATER MAIN SHALL PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A SANITARY SEWER MANHOLE.

(B) EFFECTIVE AUGUST 28, 2003, WATER MAINS SHALL NOT BE CONSTRUCTED OR ALTERED TO PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A STORM SEWER MANHOLE OR INLET STRUCTURE. WHERE IT IS NOT TECHNICALLY FEASIBLE OR ECONOMICALLY SENSIBLE TO COMPLY WITH THIS REQUIREMENT (I.E., WHERE THERE IS A CONFLICT IN THE ROUTING OF A WATER MAIN AND A STORM SEWER AND WHERE ALTERNATIVE ROUTING OF THE WATER MAIN OR THE STORM SEWER IS NOT TECHNICALLY FEASIBLE OR IS NOT ECONOMICALLY SENSIBLE), THE DEPARTMENT SHALL ALLOW EXCEPTIONS TO THIS REQUIREMENT (I.E., THE DEPARTMENT SHALL ALLOW CONSTRUCTION OF CONFLICT MANHOLES), BUT SUPPLIERS OF WATER OR PERSONS PROPOSING TO CONSTRUCT CONFLICT MANHOLES MUST FIRST OBTAIN A SPECIFIC PERMIT FROM THE DEPARTMENT AND MUST PROVIDE IN THE PRELIMINARY DESIGN REPORT OR DRAWINGS, SPECIFICATIONS, AND DESIGN DATA ACCOMPANYING THEIR PERMIT APPLICATION THE FOLLOWING INFORMATION:

1. TECHNICAL OR ECONOMIC JUSTIFICATION FOR EACH CONFLICT MANHOLE.
2. A STATEMENT IDENTIFYING THE PARTY RESPONSIBLE FOR MAINTAINING EACH CONFLICT MANHOLE.
3. ASSURANCE OF COMPLIANCE WITH THE DESIGN AND CONSTRUCTION REQUIREMENTS IN SUB-PARAGRAPHS A. THROUGH D. BELOW. - 361
   A. EACH WATER MAIN PASSING THROUGH A CONFLICT MANHOLE SHALL HAVE A FLEXIBLE, WATERTIGHT JOINT ON EACH SIDE OF THE MANHOLE TO ACCOMMODATE DIFFERENTIAL SETTLING BETWEEN THE MAIN AND THE MANHOLE.
   B. WITHIN EACH CONFLICT MANHOLE, THE WATER MAIN PASSING THROUGH THE MANHOLE SHALL BE INSTALLED IN A WATERTIGHT CASING PIPE HAVING HIGH IMPACT STRENGTH (I.E., HAVING IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25-INCH-THICK DUCTILE IRON PIPE).
   C. EACH CONFLICT MANHOLE SHALL HAVE AN ACCESS OPENING, AND SHALL BE SIZED, TO ALLOW FOR EASY CLEANING OF THE MANHOLE.
   D. GRATINGS SHALL BE INSTALLED AT ALL STORM SEWER INLETS UPSTREAM OF EACH CONFLICT MANHOLE TO PREVENT LARGE OBJECTS FROM ENTERING THE MANHOLE.

(4) SEPARATION BETWEEN FIRE HYDRANT DRAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS.

(A) NEW OR RELOCATED FIRE HYDRANTS WITH UNDERGROUND DRAINS SHALL BE LOCATED SO THAT THE DRAINS ARE AT LEAST THREE FEET FROM ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.; AT LEAST THREE FEET, AND PREFERABLY TEN FEET, FROM ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER; AT LEAST SIX FEET, AND PREFERABLY TEN FEET, FROM ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.; AND AT LEAST TEN FEET FROM ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM" AS DEFINED IN SECTION 381.0065(2), F.S., AND RULE 64E-6.002, F.A.C.

Howey-in-the-Hills	Standard Details	DATE: FEB 2022 DETAIL PW-11D

Always call 811 two full business days before you dig to have underground utilities located and marked.

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PHONE: (407) 536-4440
WWW.KIMLEY-HORN.COM REGISTRY No. 35106

No.	REVISIONS	DATE

LICENSED PROFESSIONAL
BLAKE J. WAGNER
FLORIDA LICENSE NUMBER
94035
DATE: 08/27/2025

KHA PROJECT 149658038
DATE: 08/28/2025
SCALE AS SHOWN
DESIGNED BY NDF
DRAWN BY NDF
CHECKED BY BJW

HOWEY-IN-THE-HILLS DETAILS

HILLSIDE GROVES COMMON

HOWEY-IN-THE-HILLS FLORIDA

SHEET NUMBER
C8.0

Plotted By: Powers, Steven Sheet Set: HILLSIDE GROVES COMMON Layout: HOWEY-IN-THE-HILLS DETAILS (2) August 27, 2025 08:43:35pm K:\ORL_LA\149658038_hillside groves common\CADD\CONST\plansheets\C7.0-DETAILS.dwg
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GENERAL WATER NOTES

(5) EXCEPTIONS. WHERE IT IS NOT TECHNICALLY FEASIBLE OR ECONOMICALLY SENSIBLE TO COMPLY WITH THE REQUIREMENTS IN SUBSECTION (1) OR (2) ABOVE, THE DEPARTMENT SHALL ALLOW EXCEPTIONS TO THESE REQUIREMENTS IF SUPPLIERS OF WATER OR CONSTRUCTION PERMIT APPLICANTS PROVIDE TECHNICAL OR ECONOMIC JUSTIFICATION FOR EACH EXCEPTION AND PROVIDE ALTERNATIVE CONSTRUCTION FEATURES THAT AFFORD A SIMILAR LEVEL OF RELIABILITY AND PUBLIC HEALTH PROTECTION. ACCEPTABLE ALTERNATIVE CONSTRUCTION FEATURES INCLUDE THE FOLLOWING:

(A) WHERE AN UNDERGROUND WATER MAIN IS BEING LAID LESS THAN THE REQUIRED MINIMUM HORIZONTAL DISTANCE FROM ANOTHER PIPELINE AND WHERE AN UNDERGROUND WATER MAIN IS CROSSING ANOTHER PIPELINE AND JOINTS IN THE WATER MAIN ARE BEING LOCATED LESS THAN THE REQUIRED MINIMUM DISTANCE FROM JOINTS IN THE OTHER PIPELINE:
1. USE OF PRESSURE-RATED PIPE CONFORMING TO THE AMERICAN WATER WORKS ASSOCIATION STANDARDS INCORPORATED INTO RULE 62-555.330, F.A.C., FOR THE OTHER PIPELINE IF IT IS A GRAVITY- OR VACUUM-TYPE PIPELINE;
2. USE OF WELDED, FUSED, OR OTHERWISE RESTRAINED JOINTS FOR EITHER THE WATER MAIN OR THE OTHER PIPELINE; OR
3. USE OF WATERTIGHT CASING PIPE OR CONCRETE ENCASEMENT AT LEAST FOUR INCHES THICK FOR EITHER THE WATER MAIN OR THE OTHER PIPELINE.

(B) WHERE AN UNDERGROUND WATER MAIN IS BEING LAID LESS THAN THREE FEET HORIZONTALLY FROM ANOTHER PIPELINE AND WHERE AN UNDERGROUND WATER MAIN IS CROSSING ANOTHER PIPELINE AND IS BEING LAID LESS THAN THE REQUIRED MINIMUM VERTICAL DISTANCE FROM THE OTHER PIPELINE:
1. USE OF PIPE, OR CASING PIPE, HAVING HIGH IMPACT STRENGTH (I.E., HAVING AN IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25-INCH-THICK DUCTILE IRON PIPE) OR CONCRETE ENCASEMENT AT LEAST FOUR INCHES THICK FOR THE WATER MAIN, AND
2. USE OF PIPE, OR CASING PIPE, HAVING HIGH IMPACT STRENGTH (I.E., HAVING AN IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25-INCH-THICK DUCTILE IRON PIPE) OR CONCRETE ENCASEMENT AT LEAST FOUR INCHES THICK FOR THE OTHER PIPELINE IF IT IS NEW AND IS CONVEYING WASTEWATER OR RECLAIMED WATER.

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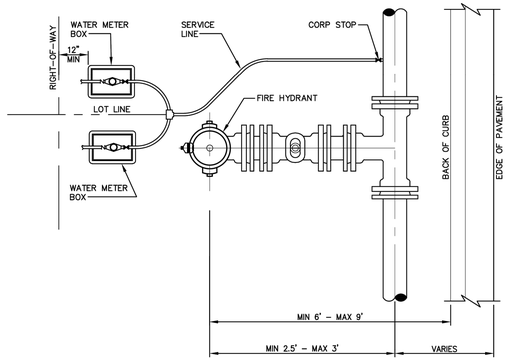
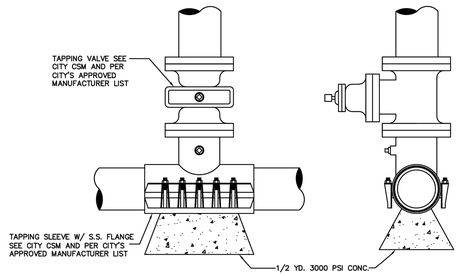


NOTES:
1. ALL METER BOXES TO BE LOCATED INSIDE ROAD R/W LINE
2. DETAIL TO BE USED WHERE FIRE HYDRANTS AND WATER SERVICES ARE LOCATED ON PLANS AND CONFLICT APPEARS APPARENT.

TYPICAL WATER SERVICE AND HYDRANT LOCATION
NOT TO SCALE

Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL PW-14

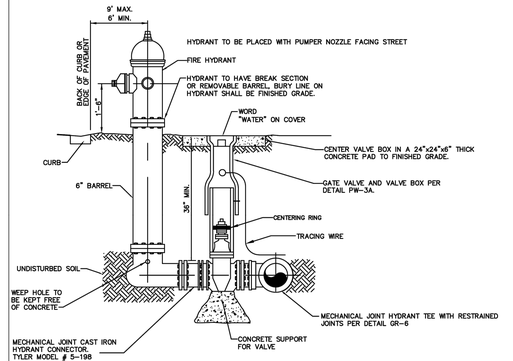


WET TAP SLEEVE AND TAPPING VALVE
NOT TO SCALE

Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL PW-17

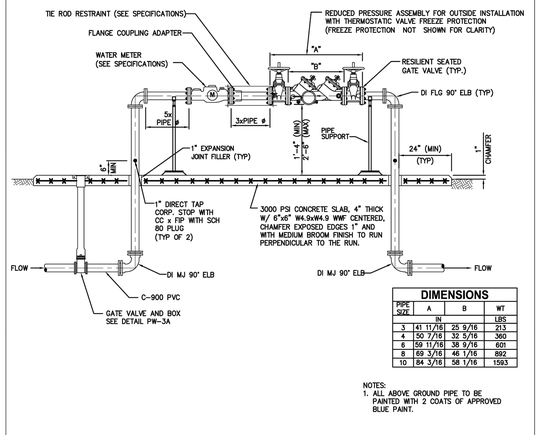
PAINTING
1. APPLY TWO COATS OF OSHA SAFETY INDUSTRIAL RED PAINT TO HYDRANT BARREL.
2. APPLY TWO COATS OF OSHA SAFETY INDUSTRIAL ENAMEL PAINT TO THE BONNET AND NOZZLE CAPS. THE UTILITY DEPARTMENT INSPECTOR WILL DETERMINE THE COLOR TO PAINT THE HYDRANT BONNET AND NOZZLE CAPS BY FLOW TESTING HYDRANT.
   - BLUE 1500 GPM OR MORE (SHERWIN WILLIAMS #SW4086)
   - GREEN 1000 GPM TO 1499 GPM (SHERWIN WILLIAMS #B54614)
   - ORANGE 500 GPM TO 999 GPM (SHERWIN WILLIAMS #B54E39)
   - RED 499 GPM OR LESS (SHERWIN WILLIAMS #B54R38)
   - RED HYDRANT BARREL (SHERWIN WILLIAMS #B54R38)

SPECIFICATIONS
1. AWWA SPECIFICATIONS C-502
2. TWO 2-1/2" HOSE NOZZLE DISCHARGE
3. ONE 4-1/2" PUMPER NOZZLE DISCHARGE
4. ONE 1-1/2" OPERATING NUT, LEFT
5. ALL HYDRANTS SHALL BE EQUIPPED WITH FITTINGS TO ALLOW FOR ELEVATION ADJUSTMENTS.
6. 5¼" MAIN VALVE OPENING
7. RESTRAINED JOINTS OR ALL THREADED ROD REQUIRED TO SECURE PIPE, RISER AND VALVE IN THE FIRE HYDRANT ASSEMBLY TO THE MAIN



FIRE HYDRANT WITH VALVE
NOT TO SCALE
(STANDARD FIRE HYDRANT ASSEMBLY)

Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL PW-18



DIMENSIONS			
PIPE SIZE	A	B	WT
	IN		LBS
3	41 11/16	25 9/16	213
4	50 7/16	32 5/16	360
6	59 11/16	38 9/16	601
8	69 3/16	46 1/16	892
10	84 3/16	58 1/16	1593

NOTES:
1. ALL ABOVE GROUND PIPE TO BE PAINTED WITH 2 COATS OF APPROVED BLUE PAINT.

REDUCED PRESSURE BACKFLOW PREVENTER W/ WATER METER DETAIL
NOT TO SCALE

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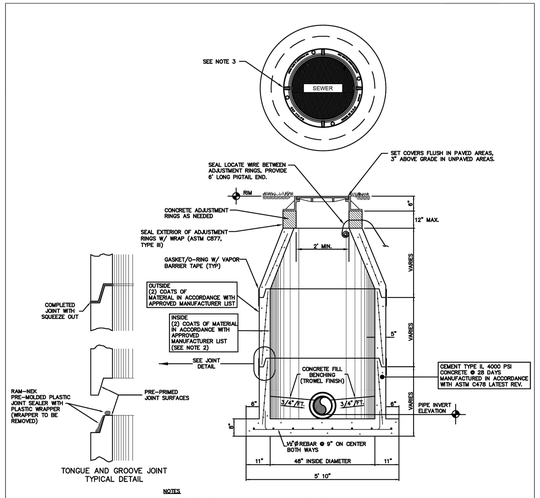
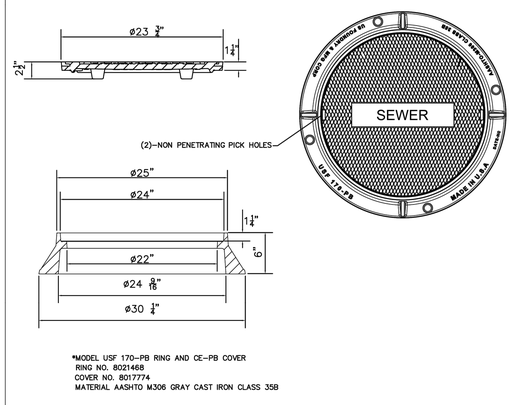


NOTES:
1. ALTERNATE-PRECAST MANHOLE TOPS MUST BE APPROVED IN ADVANCE.
2. LINER (120 MILS DFT) SHALL BE USED WHERE SHOWN ON DRAWINGS AND/OR REQUIRED BY THE CITY.
3. MANHOLE TOP SHALL BE SET TO FINISH GRADE AT PAVEMENT.
4. INSTALL ONE CONTINUOUS PIECE OF RAM-NEK AROUND ENTIRE MATING SURFACE BETWEEN ADJUSTMENT RINGS AND MANHOLE FRAME.

SANITARY PRECAST MANHOLE
NOT TO SCALE

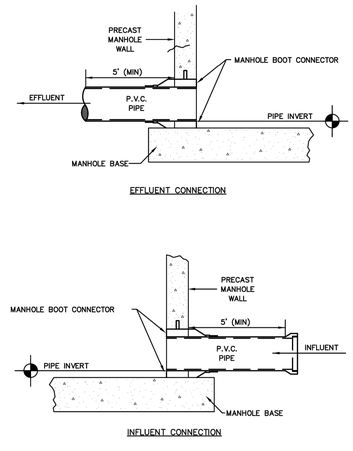
Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL WW-1



*MODEL USF 170-PR RING AND CE-PB COVER
RING NO. 8021468
COVER NO. 8017774
MATERIAL AASHTO M306 GRAY CAST IRON CLASS 35B

SANITARY MANHOLE COVER
NOT TO SCALE

Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL WW-2



PIPE CONNECTION TO PRECAST SANITARY MANHOLE
NOT TO SCALE

Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL WW-3

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Sunshine811.com

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PHONE: (407) 536-4440
WWW.KIMLEY-HORN.COM REGISTRY No. 35106

LICENSED PROFESSIONAL
DATE
BLAKE J. WAGNER
FLORIDA LICENSE NUMBER
94035
DATE: 08/27/2025

KHA PROJECT 149658038
DATE 08/28/2025
SCALE AS SHOWN
DESIGNED BY NDF
DRAWN BY NDF
CHECKED BY BJW

HOWEY-IN-THE-HILLS DETAILS

HILLSIDE GROVES COMMON

HOWEY-IN-THE-HILLS FLORIDA

SHEET NUMBER
C8.1

Plotted By: Powers, Steven Sheet Set: HILLSIDE GROVES COMMON Layout: HOWEY-IN-THE-HILLS DETAILS (I) August 27, 2025 08:43:38pm K:\ORL_LA\149658038_hillside groves common\CADD\CONST\plansheets\C7.0-DETAILS.dwg
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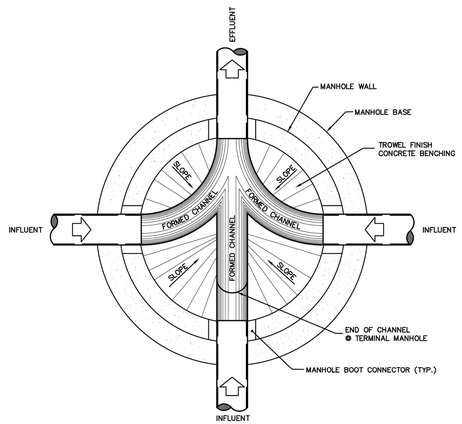


FLOW PATTERNS FOR INVERT CHANNELS

NOTES:

1. INVERT CHANNELS TO BE CONSTRUCTED FOR SMOOTH FLOW WITH NO OBSTRUCTIONS. HALF PIPE INVERT CHANNELS.
2. SPILLWAYS SHALL BE CONSTRUCTED BETWEEN PIPES WITH DIFFERENT INVERT ELEVATIONS PROVIDING FOR SMOOTH FLOWS.
3. CHANNELS FOR FUTURE CONNECTIONS (STUBS) SHALL BE CONSTRUCTED, FILLED WITH SAND AND COVERED WITH 1" OF MORTAR.

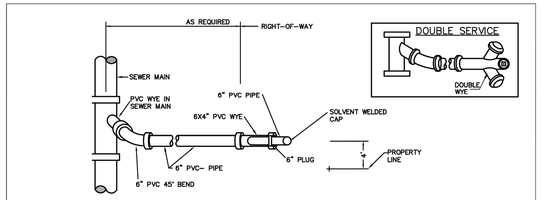
TYPICAL MANHOLE PLAN

NOT TO SCALE

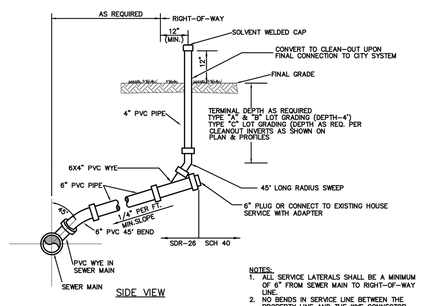
Howey-in-the-Hills Standard Details

DATE: FEB 2022

DETAIL WW-4



PLAN VIEW



SIDE VIEW

NOTES:
1. ALL SERVICE LATERALS SHALL BE A MINIMUM OF 6" FROM SEWER MAIN TO RIGHT-OF-WAY LINE.
2. NO BENDS IN SERVICE LINE BETWEEN THE PROPERTY LINE AND THE WYE CONNECTOR.

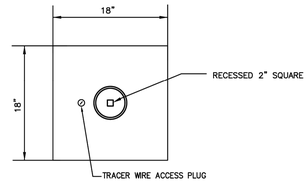
SANITARY SEWER SERVICE

PVC SEWER SERVICE – NOT TO SCALE

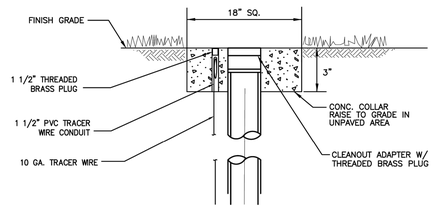
Howey-in-the-Hills Standard Details

DATE: FEB 2022

DETAIL WW-6



PLAN VIEW



SIDE VIEW

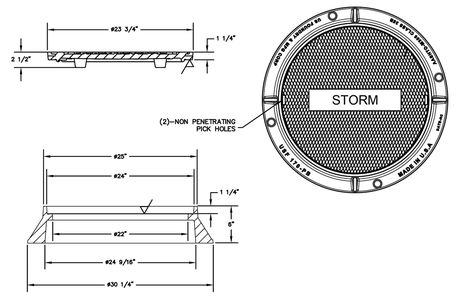
SERVICE CLEANOUT

NOT TO SCALE

Howey-in-the-Hills Standard Details

DATE: FEB 2022

DETAIL WW-7



*MODEL USF 170-PB RING AND CE-PB COVER
RING NO. 8021468
COVER NO. 8017533
MATERIAL AASHTO M306 GRAY IRON CLASS35B

STORMWATER MANHOLE COVER

NOT TO SCALE

Howey-in-the-Hills Standard Details

DATE: FEB 2022

DETAIL SW-1

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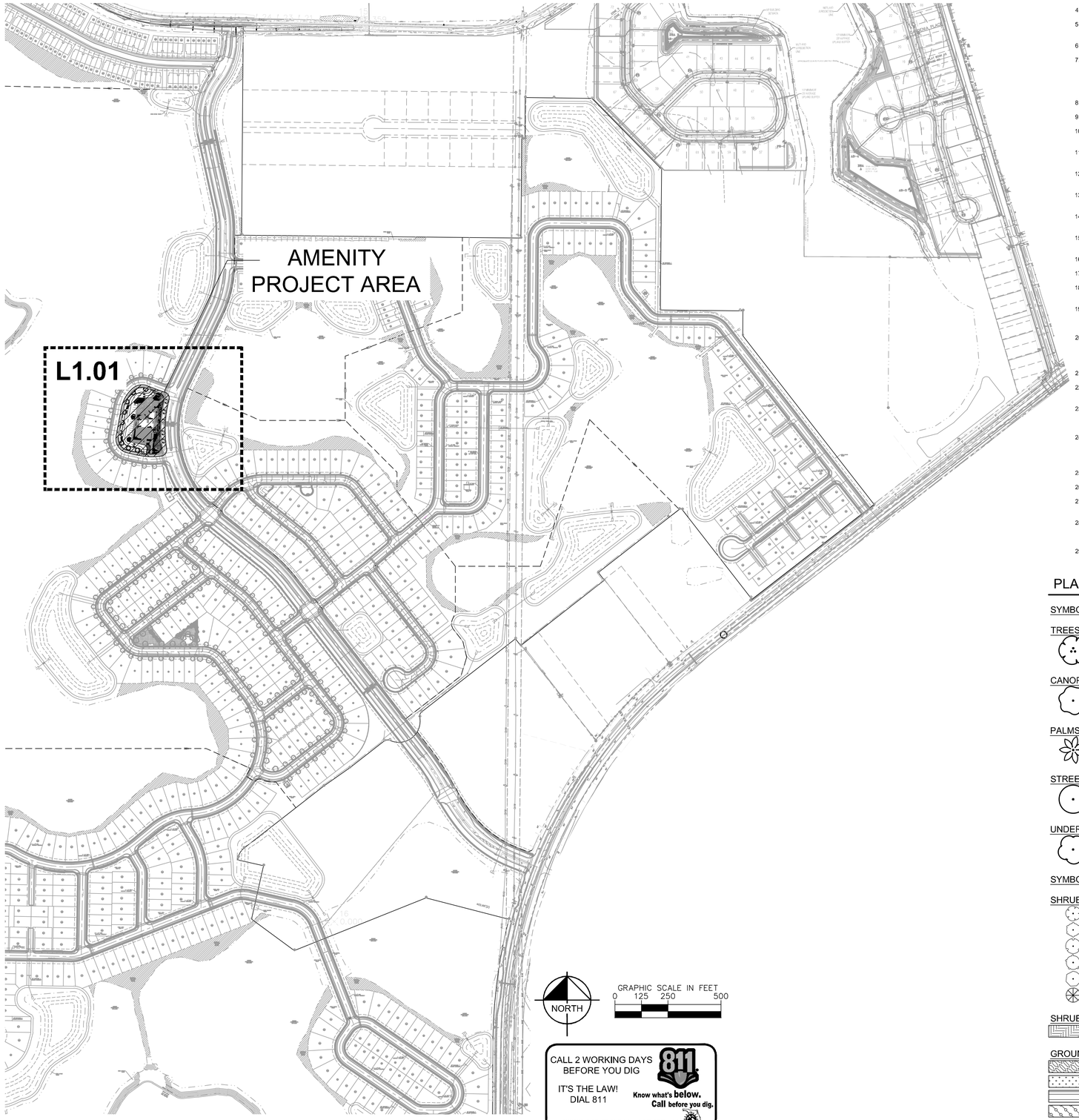
HILLSIDE GROVES COMMON

HOWEY-IN-THE-HILLS FLORIDA

HOWEY-IN-THE-HILLS DETAILS

SHEET NUMBER C8.2



LANDSCAPE NOTES:

1. ALL LANDSCAPE MATERIAL TO BE FLORIDA GRADE #1 OR BETTER QUALITY
2. ALL LANDSCAPED AREAS ARE TO RECEIVE A MINIMUM OF 4" OF TOPSOIL.
3. ALL PLANT MATERIAL SHALL BE HEALTHY, VIGOROUS, AND FREE OF PESTS AND DISEASE.
4. ALL MATERIALS ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT BEFORE, DURING, AND AFTER INSTALLATION.
5. ALL TREES SHALL BE STAKED AND GUYED AT THE TIME OF PLANTING FOR A PERIOD OF ONE GROWING SEASON. ALL TREES MUST BE GUYED OR STAKED AS SHOWN IN THE DETAILS.
6. ALL PLANTING AREAS SHALL BE COMPLETELY MULCHED AS SPECIFIED.
7. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL AVOID DAMAGE TO ALL UTILITIES DURING THE COURSE OF THE WORK. LOCATIONS OF EXISTING BURIED UTILITY LINES SHOWN ON THE PLANS ARE BASED UPON BEST AVAILABLE INFORMATION AND ARE TO BE CONSIDERED APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR 1) TO VERIFY THE LOCATIONS OF UTILITY LINES AND ADJACENT TO THE WORK AREA 2) TO PROTECT OF ALL UTILITY LINES DURING THE CONSTRUCTION PERIOD 3) TO REPAIR ANY AND ALL DAMAGE TO UTILITIES, STRUCTURES, SITE APPURTENANCES, ETC. WHICH OCCURS AS A RESULT OF THE CONSTRUCTION.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON THESE PLANS BEFORE PRICING THE WORK.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR DELIVERY SCHEDULE AND PROTECTION BETWEEN DELIVERY AND PLANTING TO MAINTAIN HEALTHY PLANT CONDITIONS.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FULLY MAINTAINING (INCLUDING BUT NOT LIMITED TO: WATERING, SPRAYING, MULCHING, FERTILIZING, ETC.) ALL OF THE PLANT MATERIALS AND LAWN FOR THE WARRANTY PERIOD.
11. ANY PLANT MATERIAL WHICH IS DISEASED, DISTRESSED, DEAD, OR REJECTED (PRIOR TO SUBSTANTIAL COMPLETION) SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY, AND SIZE AND MEETING ALL PLANT LIST SPECIFICATIONS.
12. THE CONTRACTOR SHALL COMPLETELY GUARANTEE ALL PLANT MATERIAL FOR WARRANTY PERIOD. THE CONTRACTOR SHALL PROMPTLY MAKE ALL REPLACEMENTS DURING THE NORMAL PLANTING SEASON.
13. STANDARDS SET FORTH IN "AMERICAN STANDARD FOR NURSERY STOCK" REPRESENT GUIDELINE SPECIFICATIONS ONLY AND SHALL CONSTITUTE MINIMUM QUALITY REQUIREMENTS FOR PLANT MATERIAL.
14. ALL LANDSCAPING SHALL BE INSTALLED ACCORDING TO SOUND NURSERY PRACTICES, AND SHALL BE FLORIDA NO. 1 OR BETTER AS GIVEN IN "GRADES AND STANDARDS FOR NURSERY PLANTS, PARTS I AND II," STATE OF FLORIDA, DEPARTMENT OF AGRICULTURE.
15. ALL INVASIVE / EXOTIC SPECIES AND PROHIBITED TREE SPECIES SHALL BE REMOVED FROM SITE, INCLUDING ROOT BALLS TO THE EXTENT POSSIBLE WITH NO DAMAGE TO ADJACENT EXISTING TREES.
16. ALL LANDSCAPE AREAS WILL BE PROVIDED WITH PERMANENT AUTOMATIC IRRIGATION SYSTEM.
17. TREE SUPPORT MATERIALS ARE TO BE REMOVED FROM EACH TREE ONCE IT IS "ESTABLISHED" (AS APPROVED BY THE LANDSCAPE ARCHITECT).
18. ALL PLANT SPECIFICATIONS IN THE PLANT SCHEDULE SHALL BE CONSIDERED THE MINIMUM ALLOWABLE SPECIFICATIONS. CONTRACTOR SHALL PROCURE PLANT MATERIALS AND UPSIZE AS NECESSARY TO MEET THE MOST STRINGENT SPECIFICATION.
19. ALL REQUIRED LANDSCAPING AND IRRIGATION SHALL BE INSTALLED AND MAINTAINED TO BE CONSISTENT WITH THE WATER-EFFICIENT LANDSCAPING REQUIREMENTS ESTABLISHED HEREIN. LANDOWNERS ARE ADDITIONALLY ENCOURAGED TO FOLLOW WATERWISE FLORIDA LANDSCAPES, FLORIDA WATER STAR PROGRAM, AND FLORIDA IRRIGATION SOCIETY STANDARDS.
20. LANDSCAPE PLANTS SHALL BE SELECTED BASED ON APPROPRIATENESS TO THE SITE CONSIDERING CONDITIONS SUCH AS SOIL TYPE, MOISTURE, AND SUNLIGHT USING THE PRINCIPLE OF "RIGHT PLANT – RIGHT PLACE." AS DESCRIBED BY THE FLORIDA FRIENDLY LANDSCAPING PROGRAM. THE PLANTS SHALL BE GROUPED AND IRRIGATED BY HYDROZONE IN ACCORDANCE WITH THEIR RESPECTIVE WATER NEEDS. A LIST OF APPROPRIATE PLANTS AND PLANT RESOURCES IS CONTAINED IN THE PLANT LIST FOR LAKE COUNTY.
21. SYNTHETIC LAWNS AND PLANTS: SYNTHETIC OR ARTIFICIAL TURF, TREES AND PLANTS SHALL BE PROHIBITED FROM USE IN LIEU OF REQUIRED LIVE PLANTINGS.
22. FOR EACH INDIVIDUAL LOT, IRRIGATED TURF GRASSES MAY BE INSTALLED ON A MAXIMUM OF SIXTY (60) PERCENT OF THE PERVIOUS (LANDSCAPE) AREA OF ANY LOT OR PARCEL AND SHALL BE PLACED SO THAT IT CAN BE IRRIGATED SEPARATELY.
23. FOR SINGLE FAMILY LOTS THAT ARE ONE HALF ACRE OR LESS IN SIZE, A MINIMUM OF THREE (3) CANOPY TREES IS REQUIRED. EACH SUCH SINGLE-FAMILY LOT WILL BE REQUIRED TO HAVE ONE (1) TREE WITH A CALIPER OF AT LEAST FOUR INCHES (4") AND TWO (2) TREES EACH WITH A CALIPER OF AT LEAST TWO- AND ONE-HALF INCHES (2½"). THESE TREES SHALL HAVE A MINIMUM HEIGHT OF 10 FEET AT TIME OF PLANTING. THESE TREES SHOULD BE CANOPY TREES AS LISTED IN LDC CHAPTER 7.
24. ONE OF THE CANOPY TREES ON EACH SUCH SINGLE-FAMILY LOT SHALL BE PLANTED IN THE FRONT YARD, NO LESS THAN 7.5 FEET AND NO MORE THAN 10 FEET FROM THE SIDEWALK OR LOT LINE. CANOPY TREES PLANTED WITHIN 10 FEET OF A SIDEWALK MUST HAVE ROOT BARRIERS. THESE TREES WILL HELP TO FORM A CANOPY OVER THE SIDEWALK AND STREET SIDES. CORNER LOTS ARE REQUIRED TO PROVIDE TWO SUCH TREES, ONE ON THE FRONT AND ONE ON THE SIDE OF THE LOT, ADDITIONALLY, IF THE LOT IS MORE THAN 100 FEET WIDE AT THE SIDEWALK, THEN THE LOT WILL BE REQUIRED TO HAVE TWO SUCH TREES.
25. A MINIMUM OF TWO (2) UNDERSTORY TREES ARE REQUIRED FOR SINGLE FAMILY LOTS OF ONE-HALF ACRE OR LESS IN SIZE.
26. A MAXIMUM OF FIFTY PERCENT (50%) OF THE LANDSCAPED AREA MAY BE COVERED WITH SOD. OTHER GROUND COVERS SHOULD BE USED TO THE EXTENT POSSIBLE.
27. SHRUBS AND OTHER PLANTS SHALL BE USED AS FOUNDATION PLANTS ALONG THE OUTLINE OF THE HOUSE, EXCEPT WHERE DOORS OR PATIOS ARE LOCATED. ALTERNATE PLANTINGS MAY BE PERMITTED IF THE ARCHITECTURAL STYLE OF THE HOUSE WARRANTS IT.
28. A MINIMUM OF TWO AREAS OF THE YARD THAT HAVE AT LEAST 400 SQUARE FEET OF NON-TURF PLANTINGS IN A ROW OR CLUSTER, NOT INCLUDING THE FOUNDATION PLANTINGS, IS REQUIRED. FOR SINGLE FAMILY LOTS GREATER THAN ONE HALF ACRE IN SIZE, AN ADDITIONAL 400 SQUARE FEET OF NON-TURF PLANTINGS IN A ROW OR CLUSTER, NOT INCLUDING THE FOUNDATION PLANTINGS, IS REQUIRED FOR EACH ADDITIONAL EIGHTH OF AN ACRE, OR PORTION THEREOF.
29. AT LEAST 60% OF THE LANDSCAPED AREA FOR EACH SINGLE-FAMILY LOT SHALL BE DROUGHT TOLERANT OR FLORIDA FRIENDLY PLANTS. FLORIDA FRIENDLY PLANTS REQUIRE A MINIMUM OF IRRIGATION AND SHALL BE GROUPED TOGETHER ON THE LOT IN ORDER TO REDUCE THE IRRIGATION REQUIREMENT FOR THOSE ZONES. TURF AREA MAY EXCEED 40% IF THE TURF AREA OVER 40% IS UNIRRIGATED.

PLANT SCHEDULE

SYMBOL	CODE	QTY	COMMON NAME	BOTANICAL NAME	CONT	CAL	SIZE
TREES							
	LW	8	WATERMELON RED CRAPE MYRTLE MULTI-TRUNK, 3 TRUNK MIN., FL #1	LAGERSTROEMIA INDICA 'WATERMELON RED'	FG	5" CAL. TOT.	8` HT., 5` SPR. MIN
CANOPY TREE							
	QV	12	SOUTHERN LIVE OAK STRAIGHT, FL #1	QUERCUS VIRGINIANA	FG	4" CAL MIN	10' HT. MIN.
PALMS							
	SS	9	SABAL PALM STRAIGHT, SLICK, HURRICANE CUT, FL #1, 12'-15' MIXED.	SABAL PALMETTO	FG		12'-18' CT
STREET TREES							
	UA	1	DRAKE ELM STRAIGHT, FL #1	ULMUS PARVIFOLIA 'DRAKE'	FG	4" CAL MIN	10' HT. MIN.
UNDERSTORY TREES							
	LM	7	MUSKOGEE CRAPE MYRTLE STRAIGHT, SINGLE-TRUNK, FL #1	LAGERSTROEMIA INDICA X FAURIEI 'MUSKOGEE'	FG	2.5" CAL MIN	8` HT

SYMBOL	CODE	QTY	COMMON NAME	BOTANICAL NAME	CONT	SIZE	SPACING
SHRUBS							
	CQ	9	QUEEN EMMA CRINUM LILY FULL	CRINUM AUGUSTUM 'QUEEN EMMA'	7 GAL	48" HT	SEE PLAN
	HF	5	FIREBUSH FULL	HAMELIA PATENS	7 GAL	48" HT	60" OC
	IN	103	DWARF YAUPON HOLLY FULL	ILEX VOMITORIA 'NANA'	3 GAL	24" FULL	30" OC
	PD	45	DWARF PRINGLES YEW PODOCARPUS FULL	PODOCARPUS MACROPHYLLUS 'DWARF PRINGLES'	3 GAL	18" FULL	24" OC
	VO	46	SWEET VIBURNUM FULL	VIBURNUM ODORATISSIMUM	3 GAL	18" FULL	36" OC
	ZF	133	COONTIE PALM FULL	ZAMIA FLORIDANA	3 GAL	24" FULL	30" OC
SHRUB AREAS							
	MC	68	PINK MUHLY GRASS FULL	MUHLENBERGIA CAPILLARIS	3 GAL	18" FULL	24" OC
GROUND COVERS							
	HD	642	DUNE SUNFLOWER FULL	HELIANTHUS DEBILIS	3 GAL	12" FULL	18" OC
	LE	765	EMERALD GODDESS LILYTURF FULL	LIRIOPE MUSCARI 'EMERALD GODDESS'	1 GAL	12" SPRD MIN	18" OC
	TM	634	MINIMA JASMINE FULL	TRACHELOSPERMUM ASIATICUM `MINIMA`	3 GAL	12" FULL	18" OC
	TV2	301	SOCIETY GARLIC FULL	TULBAGHIA VIOLACEA	3 GAL	10" HT. MIN.	18" OC
SOD							
	ZJ	5,380 SF	ZOYSIA GRASS ROLLED TIGHT, 100% WEED/INSECT/DIESEASE/DEBRIS FREE	ZOYSIA JAPONICA	SOD		

No.	REVISIONS	DATE

Kimley»Horn
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PHONE: 407-898-1511
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Digitally signed by Gregory S Witherspoon
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Date: 2025.08.28 09:42:52-04'00'

08/28/2025

KHA PROJECT 149658036
DATE 04/15/2025
SCALE AS SHOWN
DESIGNED BY JTD
DRAWN BY JTD
CHECKED BY GSW

OVERALL AMENITY LANDSCAPE PLAN

HILLSIDE GROVE
HOWEY-IN-THE-HILLS FLORIDA

SHEET NUMBER
L1.00

Plotted By:Dumbuya, Jimmy Sheet Set:HILLSIDE GROVES COMMON Layout:L100 August 28, 2025 09:11:07am K:\ORL_LA\149658036_Hillside Groves\CAD\CONSTY\Plan\Sheets\L100 AMENITY LANDSCAPE PLAN.dwg
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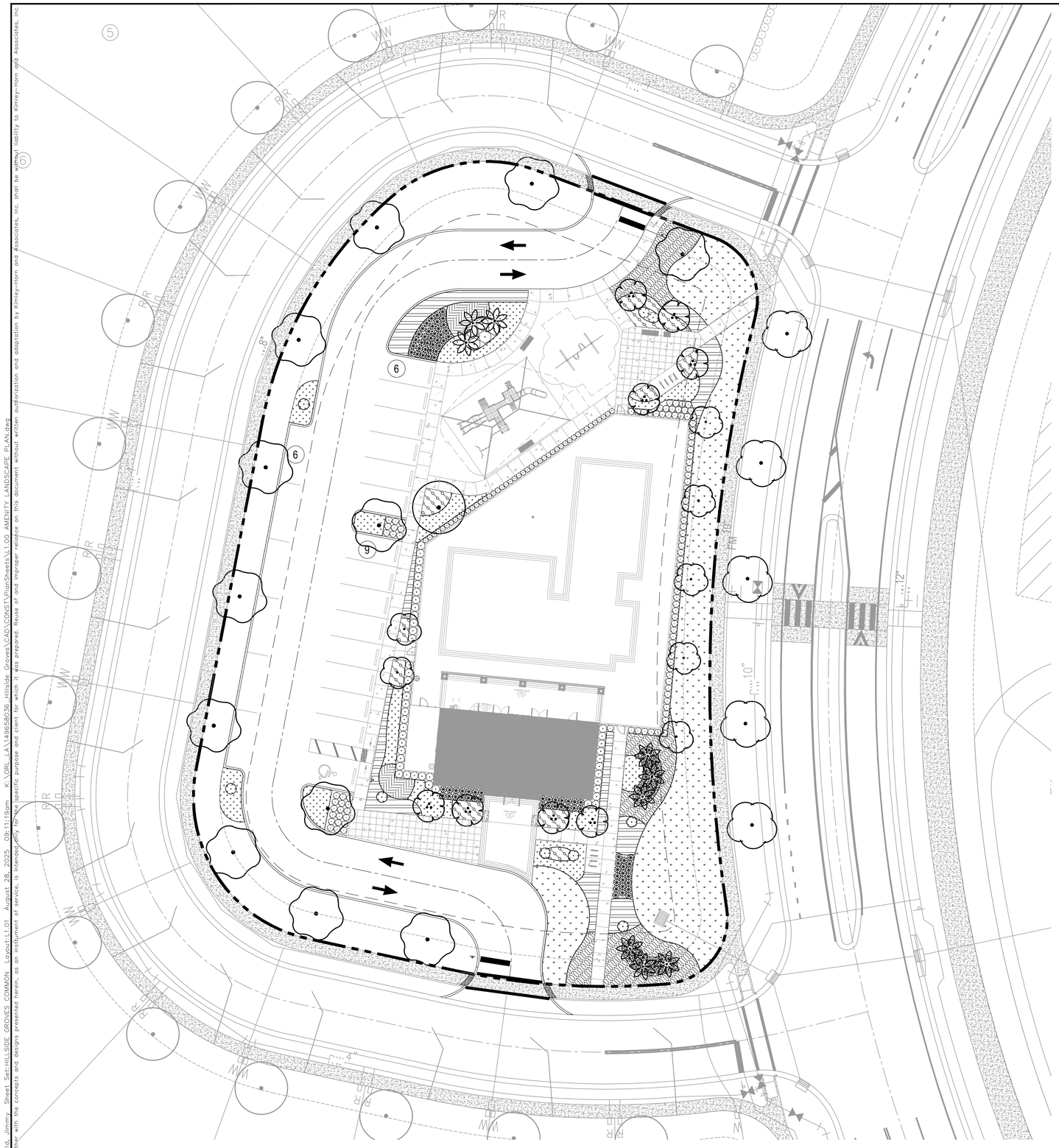

PLANT SCHEDULE

SYMBOL	CODE	QTY	COMMON NAME	BOTANICAL NAME	CONT	CAL	SIZE	WATER USE
TREES								
	LW	8	WATERMELON RED CRAPE MYRTLE MULTI-TRUNK, 3 TRUNK MIN., FL #1	LAGERSTROEMIA INDICA 'WATERMELON RED'	FG	5" CAL. TOT.	8` HT., 5` SPR. MIN	
CANOPY TREE								
	QV	12	SOUTHERN LIVE OAK STRAIGHT, FL #1	QUERCUS VIRGINIANA	FG	4" CAL MIN	10' HT. MIN.	LOW
PALMS								
	SS	9	SABAL PALM STRAIGHT, SLICK, HURRICANE CUT, FL #1, 12'-15' MIXED.	SABAL PALMETTO	FG		12'-18' CT	LOW
STREET TREES								
	UA	1	DRAKE ELM STRAIGHT, FL #1	ULMUS PARVIFOLIA 'DRAKE'	FG	4" CAL MIN	10' HT. MIN.	LOW
UNDERSTORY TREES								
	LM	7	MUSKOGEE CRAPE MYRTLE STRAIGHT, SINGLE-TRUNK, FL #1	LAGERSTROEMIA INDICA X FAURIEI 'MUSKOGEE'	FG	2.5" CAL MIN	8` HT	LOW

SYMBOL	CODE	QTY	COMMON NAME	BOTANICAL NAME	CONT	SIZE	SPACING	WATER USE
SHRUBS								
	CQ	9	QUEEN EMMA CRINUM LILY FULL	CRINUM AUGUSTUM 'QUEEN EMMA'	7 GAL	48" HT	SEE PLAN	
	HF	5	FIREBUSH FULL	HAMELIA PATENS	7 GAL	48" HT	60" OC	
	IN	103	DWARF YAUPON HOLLY FULL	ILEX VOMITORIA 'NANA'	3 GAL	24" FULL	30" OC	
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	VO	46	SWEET VIBURNUM FULL	VIBURNUM ODORATISSIMUM	3 GAL	18" FULL	36" OC	MEDIUM
	ZF	133	COONTIE PALM FULL	ZAMIA FLORIDANA	3 GAL	24" FULL	30" OC	
SHRUB AREAS								
	MC	68	PINK MUHLY GRASS FULL	MUHLENBERGIA CAPILLARIS	3 GAL	18" FULL	24" OC	LOW
GROUND COVERS								
	HD	642	DUNE SUNFLOWER FULL	HELIANTHUS DEBILIS	3 GAL	12" FULL	18" OC	
	LE	765	EMERALD GODDESS LILYTURF FULL	LIRIOPE MUSCARI 'EMERALD GODDESS'	1 GAL	12" SPRD MIN	18" OC	
	TM	634	MINIMA JASMINE FULL	TRACHELOSPERMUM ASIATICUM `MINIMA`	3 GAL	12" FULL	18" OC	
	TV2	301	SOCIETY GARLIC FULL	TULBAGHIA VIOLACEA	3 GAL	10" HT, MIN,	18" OC	
SOD								
	ZJ	5,380 SF	ZOYSIA GRASS ROLLED TIGHT, 100% WEED/INSECT/DISEASE/DEBRIS FREE	ZOYSIA JAPONICA	SOD			MEDIUM

MISC.	QTY	BOTANICAL/COMMON NAME	SPECIFICATIONS
MULCH	TBD	FLORIMULCH - DESIGNER BROWN MELALEUCA MULCH	3" DEPTH MINIMUM, SHREDDED, FREE OF WEEDS/INVASIVE PLANT MATERIAL

*NOTE: ALL SOD AREAS NOT IDENTIFIED TO BE UNIRRIGATED BAHIA SOD.

NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

No.	REVISIONS	DATE

Kimley»Horn
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dnQualifier=A01410D000018C57892000000277
O=KIMLEY-HORN AND ASSOCIATES INC, C=US
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08/28/2025

KHA PROJECT 149658036
DATE 04/15/2025
SCALE AS SHOWN
DESIGNED BY JTD
DRAWN BY JTD
CHECKED BY GSW

AMENITY LANDSCAPE PLAN

HILLSIDE GROVE

SHEET NUMBER
L1.01

Plotted By:Dumbauld, Jimmy Sheet Set:HILLSIDE GROVES COMMON Layout:L1.01 August 28, 2025 09:11:13am K:\ORL_LA\149658036-Hillside Groves\CAD\CONST\PlanSheets\L1.00 AMENITY LANDSCAPE PLAN.dwg
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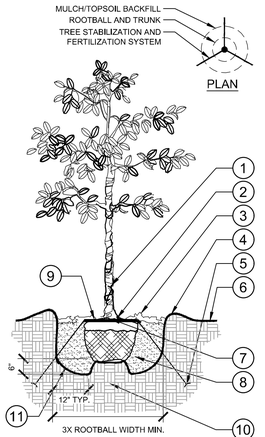


SECTION

1. TRUNK/ROOT BALL TO BE CENTERED AND PLUMB/LEVEL IN PLANTING PIT.
2. 6" DIA. CLEAR OF MULCH AT TRUNK FLARE.
3. 3" MINIMUM MULCH AS SPECIFIED. WHERE TREES ARE PLACED IN SOD, MULCH RING FOR TREES SHALL BE 6' DIAMETER (MIN.) OR AS DIRECTED BY OWNER'S REPRESENTATIVE.
4. 4" HIGH BERM, FIRMLY COMPACTED.
5. TREE FROG ANCHOR SYSTEM INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
6. FINISHED GRADE. (SEE GRADING PLAN)
7. TOP OF ROOTBALL MIN. 1" ABOVE FINISHED GRADE.
8. PREPARED PLANTING SOIL AS SPECIFIED.
9. TOP OF ROOTBALL SHALL BE +1" ABOVE FINISHED GRADE. ROOTBALLS GREATER THAN 24" DIAMETER SHALL BE PLACED ON MOUND OF UNDISTURBED SOIL TO PREVENT SETTLING. ROOTBALLS SMALLER THAN 24" IN DIAMETER MAY SIT ON COMPACTED EARTH.
10. UNDISTURBED NATIVE SOIL.
11. SCARIFY BOTTOM AND SIDES OF PLANTING PIT.

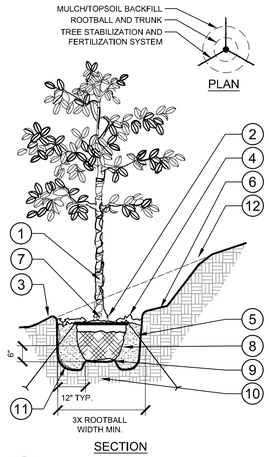
NOTES:

A. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.

B. REMOVE BURLAP, WIRE AND STRAPS (ANYTHING THAT COULD GIRDLE TREE OR RESTRICT ROOT GROWTH) ON UPPER 1/3 OF ROOTBALL.

C. PRUNE ALL TREES IN ACCORDANCE WITH ANSI A-300.

1 TREE PLANTING
L1.50 SECTION / PLAN NTS



SECTION

1. TRUNK/ROOT BALL TO BE CENTERED AND PLUMB/LEVEL IN PLANTING PIT.
2. 6" DIA. CLEAR OF MULCH AT TRUNK FLARE.
3. 3. 4" HIGH BERM, FIRMLY COMPACTED.
4. 3" MINIMUM OF HARDWOOD BARK MULCH AS SPECIFIED. WHERE TREES ARE PLACED IN SOD, MULCH RING FOR TREES SHALL BE 6' DIAMETER (MIN.) OR AS DIRECTED BY OWNER'S REPRESENTATIVE.
5. TREE FROG ANCHOR SYSTEM INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
6. 4" MIN. OF TOPSOIL TO BRING TO FINISHED GRADE. (SEE GRADING PLAN)
7. TOP OF ROOTBALL MIN. 1" ABOVE FINISHED GRADE.
8. PREPARED PLANTING SOIL AS SPECIFIED.
9. ROOTBALLS GREATER THAN 24" DIAMETER SHALL BE PLACED ON MOUND OF UNDISTURBED SOIL TO PREVENT SETTLING. ROOTBALLS SMALLER THAN 24" IN DIAMETER MAY SIT ON COMPACTED EARTH.
10. UNDISTURBED NATIVE SOIL.
11. SCARIFY BOTTOM AND SIDES OF PLANTING PIT.
12. CUT BACK SLOPE TO PROVIDE A FLAT SURFACE FOR PLANTING.

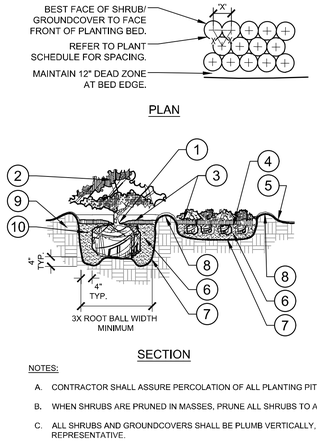
NOTES:

A. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.

B. REMOVE BURLAP, WIRE AND STRAPS (ANYTHING THAT COULD GIRDLE TREE OR RESTRICT ROOT GROWTH) ON UPPER 1/3 OF ROOTBALL.

C. PRUNE ALL TREES IN ACCORDANCE WITH ANSI A-300.

2 TREE PLANTING ON A SLOPE
L1.50 SECTION / PLAN NTS



SECTION

1. TOP OF SHRUB ROOTBALLS TO BE PLANTED 1" - 2" HIGH WITH SOIL MOUNDING UP TO THE TOP OF ROOTBALL.
2. PRUNE ALL SHRUBS TO ACHIEVE A UNIFORM MASS/HEIGHT.
3. 3" MULCH LAYER AS SPECIFIED.
4. EXCAVATE ENTIRE BED SPECIFIED FOR GROUNDCOVER BED.
5. FINISHED GRADE (SEE GRADING PLAN).
6. PREPARED PLANTING SOIL AS SPECIFIED. (SEE LANDSCAPE NOTES) NOTE: WHEN GROUND-COVERS AND SHRUBS USED IN MASSES, ENTIRE BED TO BE AMENDED WITH PLANTING SOIL MIX AS SPECIFIED.
7. SCARIFY OF PLANTING PIT SIDES AND BOTTOM.
8. 4" HIGH BERM FIRMLY COMPACTED.
9. UNDISTURBED NATIVE SOIL.
10. FERTILIZER TABLETS (MAX 3" DEEP)

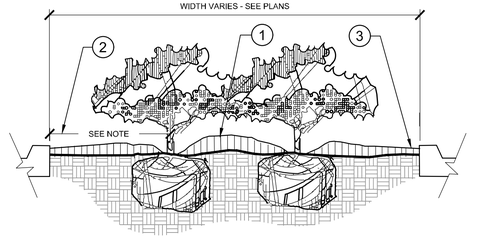
NOTES:

A. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.

B. WHEN SHRUBS ARE PRUNED IN MASSES, PRUNE ALL SHRUBS TO ACHIEVE UNIFORM MASS / HEIGHT.

C. ALL SHRUBS AND GROUNDCOVERS SHALL BE PLUMB VERTICALLY, UNLESS OTHERWISE DIRECTED BY OWNERS REPRESENTATIVE.

3 SHRUB/GROUNDCOVER PLANTING
L1.50 SECTION / PLAN NTS



1. CROWN ISLANDS @ 5:1 SLOPES (OR AS SPECIFIED ON THE LANDSCAPE PLANS).
2. CLEAR ZONE: 36" MIN. FROM BACK OF CURB TO CENTER OF NEAREST SHRUB. CLEAR ZONE SHALL CONTAIN 3" CONTINUOUS MULCH OR TURF, SEE PLANS.
3. 2" MIN VERTICAL CLEARANCE, TOP OF CURB TO TOP OF MULCH.

NOTES:

A. EXCAVATE A CONTINUOUS 24" DEEP PIT (FROM TOP OF CURB) FOR ENTIRE LENGTH AND WIDTH OF ISLAND & BACKFILL WITH APPROVED PLANTING MIX.

B. PROTECT AND RETAIN ALL CURBS AND BASE. COMPACTED SUBGRADE TO REMAIN FOR STRUCTURAL SUPPORT OF CURB SYSTEM (TYP.).

C. ALL ISLANDS SHALL UTILIZE POOR DRAINAGE DETAIL WHEN PERCOLATION RATES ARE 2" PER HOUR OR LESS.

4 PLANTED PARKING LOT ISLANDS/MEDIANS
L1.50 SECTION NTS

SECTION

1. TOP OF SHRUB ROOTBALLS TO BE PLANTED 1" - 2" HIGH WITH SOIL MOUNDING UP TO THE TOP OF ROOTBALL.
2. PRUNE SHRUBS AS DIRECTED BY OWNER'S REPRESENTATIVE.
3. 3" MINIMUM OF MULCH AS SPECIFIED. WHERE SHRUBS ARE PLACED IN MASSES, MULCH SHALL BE SPREAD IN A CONTINUOUS BED.
4. SOIL BERM TO HOLD WATER. TOP OF PLANTING PIT "BERM" TO BE LEVEL ACROSS PIT. SLOPE DOWNHILL PORTION OF BERM AS REQUIRED TO MEET EXISTING GRADE, MULCH OVER EXPOSED TOPSOIL.
5. FINISHED GRADE (SEE GRADING PLAN)
6. PREPARED PLANTING SOIL AS SPECIFIED. (SEE LANDSCAPE NOTES).
7. SCARIFY SIDES AND BOTTOM OF PLANTING PIT.
8. FERTILIZER TABLETS (MAX 3" DEEP).
9. UNDISTURBED NATIVE SOIL

NOTES:

A. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.

B. WHEN SHRUBS ARE PRUNED IN MASSES, PRUNE ALL SHRUBS TO ACHIEVE UNIFORM MASS / HEIGHT.

C. ALL SHRUBS AND GROUNDCOVERS SHALL BE PLUMB VERTICALLY, UNLESS OTHERWISE DIRECTED BY OWNERS REPRESENTATIVE.

5 SHRUB/GROUNDCOVER PLANTING ON A SLOPE
L1.50 SECTION NTS

NOTES:

1. CLEAR ZONE: 36" MIN. FROM BUILDING TO CENTER OF NEAREST SHRUB.
2. INSTALL SPECIFIED MULCH: 24" MIN. FROM BUILDING. SPECIFIED MULCH TO BE INSTALLED AT A DEPTH OF 3" (MIN.)

6 PLANTINGS ADJACENT TO BUILDINGS
L1.50 SECTION NTS

1. INSTALL CONTINUOUS MULCH BED ADJACENT TO PARKING SPACES AS SHOWN. MULCH SHALL BE MIN. 3" DEEP. NO POP-UP IRRIGATION HEADS SHALL BE LOCATED WITHIN 24" OF A PARKING SPACE ON ANY SIDE.
2. CURB / PARKING LOT EDGE.

7 PARKING SPACE/CURB PLANTING
L1.50 SECTION NTS

SECTION

PLAN

1. FIRE HYDRANT.
2. NO PLANT EXCEEDING 12" MATURE HEIGHT MATERIAL SHALL BE PLACED WITHIN SHOWN RADIUS OF ALL PROPOSED OR EXISTING FIRE HYDRANTS. CONTRACTOR SHALL ADJUST PLANT MATERIAL SO THAT NO CONFLICTS WITH FIRE HYDRANTS OCCUR ON SITE.
3. FRONT OF HYDRANT (TOWARD CURB)

8 SHRUB PLANTING AT FIRE HYDRANT
L1.50 SECTION / PLAN NTS

PLAN

SECTION

1. FINISH GRADE (SEE GRADING PLANS).
2. BACKFILL WITH PREPARED PLANTING SOIL MIX AS SPECIFIED.
3. FILTER CLOTH, MIRAFI 500X OR BETTER.
4. SLOPE BOTTOM TO DRAIN.
5. AUGURED HOLE @ ±18" PENETRATE THROUGH OCCLUDING LAYER TO WATER TABLE OR TO A DEPTH OF 7' TO ASSURE PROPER PERCOLATION.
6. BACKFILL WITH 1/2" - 3/4" GRAVEL TO REQUIRED DEPTH THROUGH OCCLUDING LAYER TO ASSURE PROPER PERCOLATION.
7. WATER TABLE. (DEPTH VARIES)
8. UNDISTURBED NATIVE SOIL.
9. SET ROOTBALL ON UNDISTURBED STABLE SUBSOIL SO THAT TOP OF ROOT BALL IS 1" ABOVE FINISHED GRADE.

NOTES:

A. THIS DETAIL SHALL BE IMPLEMENTED WHERE PERCOLATION RATES ARE 2" PER HOUR OR LESS.

B. CONTRACTOR TO PERFORM PERCOLATION TEST AS REQUIRED, AND NOTIFY OWNER/LANDSCAPE ARCHITECT.

C. SEE TYPICAL TREE PLANTING DETAIL THIS SHEET FOR PLANT STAKING.

9 POOR DRAINAGE CONDITION
L1.50 SECTION / PLAN NTS

1. 6'H "PERIMETER PLUS" CONSTRUCTION FENCE BY CONWED PLASTICS OR OWNER'S REPRESENTATIVE APPROVED EQUAL. SUBMIT PRODUCT INFORMATION FOR APPROVAL PRIOR TO INSTALLATION.
2. 8' TALL METAL "T" POSTS OR 2" x 2" X 8' PRESSURE TREATED WOOD POSTS WITH 24" BURIAL BELOW GRADE.

INSTALLATION NOTES:

A. POST SELECTION SHOULD BE BASED ON EXPECTED STRENGTH NEEDS AND THE LENGTH OF TIME FENCE WILL BE IN PLACE. FLEXIBLE FIBERGLASS ROD POSTS ARE RECOMMENDED FOR PARKS, ATHLETIC EVENTS AND CROWD CONTROL INSTALLATIONS. METAL "T" POSTS OR TREATED WOOD POSTS ARE TYPICALLY USED FOR CONSTRUCTION AND OTHER APPLICATIONS.

B. POSTS SHOULD BE DRIVEN INTO THE GROUND TO A DEPTH OF 1/3 OF THE HEIGHT OF THE POST. FOR EXAMPLE, A 6' POST SHOULD BE SET AT LEAST 2' INTO THE GROUND.

C. SPACE POSTS EVERY 6' (MIN.) TO 8' (MAX.).

D. SECURE FENCING TO POST WITH NYLON CABLE TIES (AVAILABLE FROM CONWED PLASTICS). WOOD STRIPS MAY BE ALSO BE USED TO PROVIDE ADDITIONAL SUPPORT AND PROTECTION BETWEEN TIES AND POSTS.

NOTE: IF WIRE TIES ARE USED, AVOID DIRECT CONTACT WITH FENCE. WIRE MAY DAMAGE FENCE OVER TIME.

10 TREE PROTECTION FENCING
L1.50 ELEVATION / PLAN NTS

1. 5 LAYERS OF BURLAP TO PROTECT TRUNK.
2. FIVE 2" X 4" X 18" WOOD BATTENS.
3. SECURE BATTENS WITH 2- 3/4" CARBON STEEL BANDS TO HOLD BATTENS IN PLACE. NO NAILS SHALL BE DRIVEN INTO PALM. HEIGHT OF BATTENS SHALL BE LOCATED IN RELATION TO THE HEIGHT OF THE PALM FOR ADEQUATE BRACING.
4. (3) 2"X4"X8' SUPPORTS, NAIL (DRILL AN NAIL IF NECESSARY) TO BATTENS AND 2" 4" STAKES. STAIN DARK BROWN.
5. 3" SPECIFIED MULCH
6. BERM SOIL TO HOLD WATER.
7. FINISH GRADE
8. 2X4X24" (MIN) P.T. WOOD STAKES (TYP.) NAIL TO SUPPORT POLES.
9. PREPARED PLANTING SOIL AS SPECIFIED. (SEE LANDSCAPE NOTES).

NOTES:

A. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.

B. ALL TREE STAKING IS TO BE WITHIN MULCH BED AREA OUTSIDE TREE PIT.

C. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION - REFER TO POOR DRAINAGE CONDITION DETAIL.

11 PALM PLANTING
L1.50 SECTION / PLAN NTS

SECTION

1. BASE OF TREE SHALL BE PLANTED SLIGHTLY ABOVE (1" MIN.) ADJACENT FINISH GRADE. REMOVE ALL TWINE & STRAPS & CUT BURLAP FROM TOP 1/3 OF ROOT BALL. NO SYNTHETIC BURLAP WILL BE ACCEPTED.
2. 4" SHREDDED HARDWOOD MULCH OR APPROVED EQUAL.
3. DIAMETER OF TREE PIT TO BE TWICE THE DIAMETER OF ROOT BALL-ROUGHEN SIDES OF TREE PIT.
4. 3" HIGH SOIL BERM TO HOLD WATER.
5. TOPSOIL MIX BACKFILL.
6. TREE WRAP.
7. 4" MIN. OF TOPSOIL TO BRING TO FINISHED GRADE (SEE GRADING PLAN).
8. ROOT BALLS GREATER THAN 24" DIAMETER SHALL BE PLACED ON MOUND OF UNDISTURBED SOIL TO PREVENT SETTLING ROOT BALLS SMALLER THAN 24" IN DIA. MAY SIT ON COMPACTED EARTH.
9. UNDISTURBED SUBSOIL.
10. PREPARE PLANTING SOIL AS SPECIFIED.
11. **Tree Frog® RBK40pt** FOR UP TO 4" TREE CALIPER OR **Tree Frog® RBK60pt** FOR GREATER THAN 4" AND UP TO 6" TREE CALIPER. REFER TO SITEWORK SPECIFICATIONS FOR APPROVED MATERIALS AND INSTALLATION REQUIREMENTS.

NOTES:

A. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.

B. SET TREE AT ORIGINAL DEPTH. REMOVE BURLAP, WIRE AND STRAPS (ANYTHING THAT COULD GIRDLE TREE OR RESTRICT ROOT GROWTH) ON UPPER 1/3 OF ROOTBALL.

C. SEE LANDSCAPE NOTES FOR THE TYPE OF MULCH MATERIAL TO USE.

D. PRUNE TREE AS DIRECTED BY LANDSCAPE ARCHITECT

E. ASSURE PERCOLATION OF ALL PLANTING PITS

12 MULTI-TRUNK TREE PLANTING
L1.50 SECTION/PLAN NTS

Kimley»Horn
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No.	REVISIONS	DATE

Digitally signed by Gregory S Witherspoon
DN: CN=Gregory S Witherspoon, C=US
dnQualifier=A01410D000018C57989200B2C0077
O=KIMLEY-HORN AND ASSOCIATES INC, C=US
Date: 2025.08.28 09:42:55-04'00'

08/28/2025

KHA PROJECT 149658036
DATE 04/15/2025
SCALE AS SHOWN
DESIGNED BY JTD
DRAWN BY JTD
CHECKED BY GSW

LANDSCAPE DETAILS

HILLSIDE GROVE

HOWEY-IN-THE-HILLS FLORIDA

SHEET NUMBER
L1.50

Plotted By:Dumbauld, Jimmy Street Set:HILLSIDE GROVES COMMON Layout:L1.50 August 28, 2025 09:11:24am K:\ORL_LA\149658036-Hillside Groves\Cad\CONST\Plan\Streets\L1.00 AMENITY LANDSCAPE PLAN.dwg
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GENERAL LANDSCAPE SPECIFICATIONS AND NOTES

A. SCOPE OF WORK

1. THE WORK CONSISTS OF: FURNISHING ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, TRANSPORTATION, AND ANY OTHER APPURTENANCES NECESSARY FOR THE COMPLETION OF THIS PROJECT AS SHOWN ON THE DRAWINGS, AS INCLUDED IN THE PLANT LIST, AND AS SPECIFIED HEREIN.

2. WORK SHALL INCLUDE MAINTENANCE AND WATERING OF ALL CONTRACT PLANTING AREAS UNTIL CERTIFICATION OF ACCEPTANCE BY THE OWNER.

B. PROTECTION OF EXISTING STRUCTURES

1. ALL EXISTING BUILDINGS, WALKS, WALLS, PAVING, PIPING, OTHER SITE CONSTRUCTION ITEMS, AND PLANTING ALREADY COMPLETED OR ESTABLISHED AND DESIGNATED TO REMAIN SHALL BE PROTECTED FROM DAMAGE BY THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. ALL DAMAGE RESULTING FROM NEGLIGENCE SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER, AT NO COST TO THE OWNER.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL NECESSARY BMP DEVICES ACCORDING TO ALL REGULATORY AGENCY'S STANDARDS THROUGH THE DURATION OF ALL CONSTRUCTION ACTIVITIES.

3. THE CONTRACTOR SHALL SUBMIT A DETAILED PROJECT SPECIFIC WORK ZONE TRAFFIC CONTROL PLAN UNLESS THE WORK REQUIRES NOTHING MORE THAN A DIRECT APPLICATION OF FDOT DESIGN STANDARDS, INDEX 600. IF A DIRECT APPLICATION OF INDEX 600 IS PROPOSED, THE CONTRACTOR SHALL SUBMIT IN WRITING A STATEMENT INDICATING THE STANDARD INDEX AND PAGE NUMBER NO LESS THAN 10 BUSINESS DAYS PRIOR TO START OF CONSTRUCTION. WHEN A DIRECT APPLICATION OF FDOT STANDARD INDEX 600 IS NOT ACCEPTABLE A PROJECT SPECIFIC WORK ZONE TRAFFIC CONTROL PLAN SHALL BE PREPARED BY A FLORIDA PROFESSIONAL ENGINEER WHO HAS SUCCESSFULLY COMPLETED ADVANCED TRAINING IN MAINTENANCE OF TRAFFIC, AS DEFINED BY FDOT FOR APPROVAL BY THE COUNTY ENGINEER'S REPRESENTATIVE.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES, WHETHER PUBLIC OR PRIVATE, PRIOR TO EXCAVATION. THE INFORMATION AND DATA SHOWN WITH RESPECT TO EXISTING UNDERGROUND FACILITIES AT OR CONTIGUOUS TO THE SITE IS APPROXIMATE AND BASED ON INFORMATION FURNISHED BY THE OWNER OF SUCH UNDERGROUND FACILITIES OR ON PHYSICAL APPURTENANCES OBSERVED IN THE FIELD. THE OWNER AND DESIGN PROFESSIONAL SHALL NOT BE RESPONSIBLE FOR THE ACCURACY AND COMPLETENESS OF ANY SUCH INFORMATION OR DATA. THE CONTRACTOR SHALL HAVE FULL RESPONSIBILITY FOR: REVIEWING AND CHECKING ALL SUCH INFORMATION AND DATA; LOCATING ALL UNDERGROUND FACILITIES DURING CONSTRUCTION, THE SAFETY AND PROTECTION THEREOF; REPAIRING ANY DAMAGE THERETO RESULTING FROM THE WORK. THE COST OF ALL WILL BE CONSIDERED AS HAVING BEEN INCLUDED IN THE CONTRACT PRICE. THE CONTRACTOR SHALL NOTIFY ANY AFFECTED UTILITY COMPANIES OR AGENCIES IN WRITING AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.

C. PROTECTION OF EXISTING PLANT MATERIALS

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL UNAUTHORIZED CUTTING OR DAMAGE TO TREES AND SHRUBS EXISTING OR OTHERWISE, CAUSED BY CARELESS EQUIPMENT OPERATION, MATERIAL STOCKPILING, ETC., . THIS SHALL INCLUDE COMPACTION BY DRIVING OR PARKING INSIDE THE DRIP-LINE AND SPILLING OIL, GASOLINE, OR OTHER DELETERIOUS MATERIALS WITHIN THE DRIP-LINE. NO MATERIALS SHALL BE BURNED ON SITE. EXISTING TREES KILLED OR DAMAGED SO THAT THEY ARE MISSHAPEN AND/OR UNSIGHTLY SHALL BE REPLACED AT THE COST TO THE CONTRACTOR OF THREE HUNDRED DOLLARS ($300) PER CALIPER INCH ON AN ESCALATING SCALE WHICH ADDS AN ADDITIONAL TWENTY (20) PERCENT PER INCH OVER FOUR (4) INCHES CALIPER AS FIXED AND AGREED LIQUIDATED DAMAGES. CALIPER SHALL BE MEASURED SIX (6) INCHES ABOVE GROUND LEVEL FOR TREES UP TO AND INCLUDING FOUR (4) INCHES IN CALIPER AND TWELVE (12) INCHES ABOVE GROUND LEVEL FOR TREES OVER FOUR (4) INCHES IN CALIPER.

2. SEE TREE MITIGATION PLAN AND NOTES, IF APPLICABLE.

D. MATERIALS

1. GENERAL

MATERIAL SAMPLES LISTED BELOW SHALL BE SUBMITTED FOR APPROVAL, ON SITE OR AS DETERMINED BY THE OWNER, UPON APPROVAL, DELIVERY OF MATERIALS MAY COMMENCE.

MATERIAL	SAMPLE SIZE
MULCH	ONE (1) CUBIC FOOT
TOPSOIL MIX	ONE (1) CUBIC FOOT
PLANTS	ONE (1) OF EACH VARIETY (OR TAGGED IN NURSERY)

2. PLANT MATERIALS

a. PLANT SPECIES AND SIZE SHALL CONFORM TO THOSE INDICATED ON THE DRAWINGS. ALL NURSERY STOCK SHALL BE IN ACCORDANCE WITH GRADES AND STANDARDS FOR NURSERY PLANTS, LATEST EDITION, PUBLISHED BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES. ALL PLANTS SHALL BE FLORIDA GRADE NO. 1 OR BETTER AS DETERMINED BY THE FLORIDA DIVISION OF PLANT INDUSTRY. ALL PLANTS SHALL BE HEALTHY, VIGOROUS, SOUND, WELL-BRANCHED, AND FREE OF DISEASE AND INSECTS, INSECT EGGS AND LARVAE AND SHALL HAVE ADEQUATE ROOT SYSTEMS. TREES FOR PLANTING IN ROWS SHALL BE UNIFORM IN SIZE AND SHAPE. ALL MATERIALS SHALL BE SUBJECT TO APPROVAL BY THE OWNER. WHERE ANY REQUIREMENTS ARE OMITTED FROM THE PLANT LIST, THE PLANTS FURNISHED SHALL BE NORMAL FOR THE VARIETY. PLANTS SHALL BE PRUNED PRIOR TO DELIVERY ONLY WITH APPROVAL FROM OWNER OR OWNER'S REPRESENTATIVE. NO SUBSTITUTIONS SHALL BE MADE WITHOUT WRITTEN PERMISSION FROM THE OWNER'S REPRESENTATIVE.

b. MEASUREMENTS: THE HEIGHT AND/OR WIDTH OF TREES SHALL BE MEASURED FROM THE GROUND OR ACROSS THE NORMAL SPREAD OF BRANCHES WITH THE PLANTS IN THEIR NORMAL POSITION. THIS MEASUREMENT SHALL NOT INCLUDE THE IMMEDIATE TERMINAL GROWTH. PLANTS LARGER IN SIZE THAN THOSE SPECIFIED IN THE PLANT LIST MAY BE USED IF APPROVED BY THE OWNER. IF THE USE OF LARGER PLANTS IS APPROVED, THE BALL OF EARTH OR SPREAD OF ROOTS SHALL BE INCREASED IN PROPORTION TO THE SIZE OF THE PLANT.

c. INSPECTION: PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL AT THE PLACE OF GROWTH, OR UPON DELIVERY TO THE SITE, AS DETERMINED BY THE OWNER, FOR QUALITY, SIZE, AND VARIETY. SUCH APPROVAL SHALL NOT IMPAIR THE RIGHT OF INSPECTION AND REJECTION AT THE SITE DURING PROGRESS OF THE WORK OR AFTER COMPLETION FOR SIZE AND CONDITION OF ROOT BALLS OR ROOTS, LATENT DEFECTS OR INJURIES. REJECTED PLANTS SHALL BE REMOVED IMMEDIATELY FROM THE SITE. NOTICE REQUESTING INSPECTION SHALL BE SUBMITTED IN WRITING BY THE CONTRACTOR AT LEAST ONE (1) WEEK PRIOR TO ANTICIPATED DATE.

E. SOIL MIXTURE (PLANTING MEDIUM, PLANTING MIX, TOPSOIL MIX)

1. CONTRACTOR SHALL TEST EXISTING SOIL AND AMEND AS NECESSARY IN ACCORDANCE WITH THE GUIDELINES BELOW:

2. SOIL MIXTURE (PLANTING MEDIUM FOR PLANT PITS) SHALL CONSIST OF TWO PARTS OF TOPSOIL AND ONE PART SAND, AS DESCRIBED BELOW. CONTRACTOR TO SUBMIT SAMPLES AND PH TESTING RESULTS OF SOIL MIXTURE FOR OWNER'S REPRESENTATIVE APPROVAL PRIOR TO PLANT INSTALLATION OPERATIONS COMMENCE.

a. TOPSOIL FOR USE IN PREPARING SOIL MIXTURE FOR BACKFILLING PLANT PITS SHALL BE FERTILE, FRIABLE, AND OF A LOAMY CHARACTER; REASONABLY FREE OF SUBSOIL, CLAY LUMPS, BRUSH WEEDS AND OTHER LITTER; FREE OF ROOTS, STUMPS, STONES LARGER THAN 2" IN ANY DIRECTION, AND OTHER EXTRANEOUS OR TOXIC MATTER HARMFUL TO PLANT GROWTH. IT SHALL CONTAIN THREE (3) TO FIVE (5) PERCENT DECOMPOSED ORGANIC MATTER AND HAVE A PH BETWEEN 5.5 AND 7.0.

b. SAND SHALL BE COARSE, CLEAN, WELL-DRAINING, NATIVE SAND.

c. SOIL AMENDMENT (IF NEEDED PER SOIL TESTING) THE CONTRACTOR SHALL FURNISH AND INSTALL A 3" LAYER OF AMENDED PLANTING SOIL IN ALL PLANTING BEDS, EXCLUDING SOD AREAS. THE AMENDED PLANTING SOIL SHALL BE COMPOSED OF 35% FERTICOMP 20% FLORIDA PEAT 45% SANDY LOAM. THE AMENDED PLANTING SOIL SHALL BE MIXED INTO THE BEDS UPON PLANTING.

2. TREES SHALL BE PLANTED IN THE EXISTING NATIVE SOIL ON SITE, UNLESS DETERMINED TO BE UNSUITABLE - AT WHICH POINT THE CONTRACTOR SHALL CONTACT OWNER'S REPRESENTATIVE TO DISCUSS ALTERNATE RECOMMENDATION PRIOR TO PLANTING (SUBMIT SOIL TESTING RESULTS AFTER INCORPORATING AMENDMENTS TO DEMNSTRATE COMPLIANCE WITH SOIL QUALITY REQUIREMENTS .

F. WATER

1. WATER NECESSARY FOR PLANTING AND MAINTENANCE SHALL BE OF SATISFACTORY QUALITY TO SUSTAIN ADEQUATE PLANT GROWTH AND SHALL NOT CONTAIN HARMFUL, NATURAL OR MAN-MADE ELEMENTS DETRIMENTAL TO PLANT GROWTH. WATER MEETING THE ABOVE STANDARD SHALL BE OBTAINED ON THE SITE FROM THE OWNER, IF AVAILABLE, AND THE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE ARRANGEMENTS FOR ITS USE BY HIS TANKS, HOSES, SPRINKLERS, ETC... IF SUCH WATER IS NOT AVAILABLE AT THE SITE, THE CONTRACTOR SHALL PROVIDE SATISFACTORY WATER FROM SOURCES OFF THE SITE AT NO ADDITIONAL COST TO THE OWNER.

* WATERING/IRRIGATION RESTRICTIONS MAY APPLY - REFER TO PROPERTY'S JURISDICTIONAL AUTHORITY.

G. FERTILIZER

CONTRACTOR SHALL PROVIDE FERTILIZER APPLICATION SCHEDULE TO OWNER, AS APPLICABLE TO SOIL TYPE, PLANT INSTALLATION TYPE, AND SITE'S PROPOSED USE. SUGGESTED FERTILIZER TYPES SHALL BE ORGANIC OR OTHERWISE NATURALLY-DERIVED.

* FERTILIZER RESTRICTIONS MAY APPLY - REFER TO PROPERTY'S JURISDICTIONAL AUTHORITY.

H. MULCH

1. MULCH MATERIAL SHALL BE MOISTENED AT THE TIME OF APPLICATION TO PREVENT WIND DISPLACEMENT, AND APPLIED AT A DEPTH OF THREE (3) INCHES. CLEAR MULCH FROM EACH PLANT'S CROWN (BASE). MULCH SHALL BE "FLORIMULCH," EUCALYPTUS MULCH, OR SIMILAR SUSTAINABLY HARVESTED MULCH UNLESS SPECIFIED OTHERWISE.

2. PROVIDE A THREE (3) INCH MINIMUM LAYER OF SPECIFIED MULCH OVER THE ENTIRE AREA OF EACH SHRUB BED, GROUND COVER, VINE BED, AND TREE PIT (6' MINIMUM) PLANTED UNDER THIS CONTRACT.

I. DIGGING AND HANDLING

1. PROTECT ROOTS OR ROOT BALLS OF PLANTS AT ALL TIMES FROM SUN, DRYING WINDS, WATER AND FREEZING, AS NECESSARY UNTIL PLANTING. PLANT MATERIALS SHALL BE ADEQUATELY PACKED TO PREVENT DAMAGE DURING TRANSIT. TREES TRANSPORTED MORE THAN TEN (10) MILES OR WHICH ARE NOT PLANTED WITHIN THREE (3) DAYS OF DELIVERY TO THE SITE SHALL BE SPRAYED WITH AN ANTITRANSPIRANT PRODUCT ("WILTPRUF" OR EQUAL) TO MINIMIZE TRANSPIRATIONAL WATER LOSS.

2. BALLED AND BURLAPPED (B&B), AND FIELD GROWN (FG) PLANTS SHALL BE DUG WITH FIRM, NATURAL BALLS OF SOIL OF SUFFICIENT SIZE TO ENCOMPASS THE FIBROUS AND FEEDING ROOTS OF THE PLANTS. NO PLANTS MOVED WITH A ROOT BALL SHALL BE PLANTED IF THE BALL IS CRACKED OR BROKEN. PLANTS SHALL NOT BE HANDLED BY STEMS.

3. PLANTS MARKED "BR" IN THE PLANT LIST SHALL BE DUG WITH BARE ROOTS. CARE SHALL BE EXERCISED THAT THE ROOTS DO NOT DRY OUT DURING TRANSPORTATION AND PRIOR TO PLANTING.

4. PROTECTION OF PALMS: ONLY A MINIMUM OF FRONDS SHALL BE REMOVED FROM THE CROWN OF THE PALM TREES TO FACILITATE MOVING AND HANDLING. CLEAR TRUNK (CT) SHALL BE AS SPECIFIED AFTER THE MINIMUM OF FRONDS HAVE BEEN REMOVED. ALL PALMS SHALL BE BRACED PER PALM PLANTING DETAIL.

5. EXCAVATION OF TREE PITS SHALL BE PERFORMED USING EXTREME CARE TO AVOID DAMAGE TO SURFACE AND SUBSURFACE ELEMENTS SUCH AS UTILITIES OR HARDSCAPE ELEMENTS, FOOTERS AND PREPARED SUB-BASES.

J. CONTAINER GROWN STOCK

1. ALL CONTAINER GROWN MATERIAL SHALL BE HEALTHY, VIGOROUS, WELL-ROOTED PLANTS ESTABLISHED IN THE CONTAINER IN WHICH THEY ARE SOLD. THE PLANTS SHALL HAVE TOPS WHICH ARE OF GOOD QUALITY AND ARE IN A HEALTHY GROWING CONDITION.

2. AN ESTABLISHED CONTAINER GROWN PLANT SHALL BE TRANSPLANTED INTO A CONTAINER AND GROWN IN THAT CONTAINER SUFFICIENTLY LONG ENOUGH FOR THE NEW FIBROUS ROOTS TO HAVE DEVELOPED SO THAT THE ROOT MASS WILL RETAIN ITS SHAPE AND HOLD TOGETHER WHEN REMOVED FROM THE CONTAINER. CONTAINER GROWN STOCK SHALL NOT BE HANDLED BY THEIR STEMS.

3. ROOT BOUND PLANTS ARE NOT ACCEPTABLE AND WILL BE REJECTED.

4. RPG= "ROOTS PLUS GROWER" CONTAINER PRODUCTS SHALL BE USED WHERE SPECIFIED.

K. COLLECTED STOCK

WHEN THE USE OF COLLECTED STOCK IS PERMITTED AS INDICATED BY THE OWNER OR OWNER'S REPRESENTATIVE, THE MINIMUM SIZES OF ROOTBALLS SHALL BE EQUAL TO THAT SPECIFIED FOR THE NEXT LARGER SIZE OF NURSERY GROWN STOCK OF THE SAME VARIETY.

L. NATIVE STOCK

PLANTS COLLECTED FROM WILD OR NATIVE STANDS SHALL BE CONSIDERED NURSERY GROWN WHEN THEY HAVE BEEN SUCCESSFULLY RE-ESTABLISHED IN A NURSERY ROW AND GROWN UNDER REGULAR NURSERY CULTURAL PRACTICES FOR A MINIMUM OF TWO (2) GROWING SEASONS AND HAVE ATTAINED ADEQUATE ROOT AND TOP GROWTH TO INDICATE FULL RECOVERY FROM TRANSPLANTING INTO THE NURSERY ROW.

M. MATERIALS LIST

QUANTITIES NECESSARY TO COMPLETE THE WORK ON THE DRAWINGS SHALL BE FURNISHED BY THE CONTRACTOR. QUANTITY ESTIMATES HAVE BEEN MADE CAREFULLY, BUT THE LANDSCAPE ARCHITECT OR OWNER ASSUMES NO LIABILITY FOR OMISSIONS OR ERRORS. SHOULD A DISCREPANCY OCCUR BETWEEN THE PLANS AND THE PLANT LIST QUANTITY, THE OWNER'S REPRESENTATIVE SHALL BE NOTIFIED FOR CLARIFICATION PRIOR TO BIDDING OR INSTALLATION. ALL DIMENSIONS AND/OR SIZES SPECIFIED SHALL BE THE MINIMUM ACCEPTABLE SIZE.

N. FINE GRADING

1. FINE GRADING UNDER THIS CONTRACT SHALL CONSIST OF FINAL FINISHED GRADING OF LAWN AND PLANTING AREAS THAT HAVE BEEN ROUGH GRADED BY OTHERS. BERMING AS SHOWN ON THE DRAWINGS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, UNLESS OTHERWISE NOTED.

2. THE CONTRACTOR SHALL FINE GRADE THE LAWN AND PLANTING AREAS TO BRING THE ROUGH GRADE UP TO FINAL FINISHED GRADE ALLOWING FOR THICKNESS OF SOD AND/OR MULCH DEPTH. CONTRACTOR SHALL FINE GRADE BY HAND AND/OR WITH ALL EQUIPMENT NECESSARY INCLUDING A GRADING TRACTOR WITH FRONT-END LOADER FOR TRANSPORTING SOIL WITHIN THE SITE.

3. ALL PLANTING AREAS SHALL BE GRADED AND MAINTAINED FOR POSITIVE DRAINAGE TO SURFACE/SUBSURFACE STORM DRAIN SYSTEMS. AREAS ADJACENT TO BUILDINGS SHALL SLOPE AWAY FROM THE BUILDINGS. REFER TO CIVIL ENGINEER'S PLANS FOR FINAL GRADES, IF APPLICABLE.

O. PLANTING PROCEDURES

1. CLEANING UP BEFORE COMMENCING WORK: THE CONTRACTOR SHALL CLEAN WORK AND SURROUNDING AREAS OF ALL RUBBISH OR OBJECTIONABLE MATTER DAILY. ALL MORTAR, CEMENT, AND TOXIC MATERIAL SHALL BE REMOVED FROM THE SURFACE OF ALL PLANT BEDS. THESE MATERIALS SHALL NOT BE MIXED WITH THE SOIL. SHOULD THE CONTRACTOR FIND SUCH SOIL CONDITIONS BENEATH THE SOIL WHICH WILL IN ANY WAY ADVERSELY AFFECT THE PLANT GROWTH, HE SHALL IMMEDIATELY CALL IT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE. FAILURE TO DO SO BEFORE PLANTING SHALL MAKE THE CORRECTIVE MEASURES THE RESPONSIBILITY OF THE CONTRACTOR.

2. VERIFY LOCATIONS OF ALL UTILITIES, CONDUITS, SUPPLY LINES AND CABLES, INCLUDING BUT NOT LIMITED TO: ELECTRIC, GAS (LINES AND TANKS), WATER, SANITARY SEWER, STORMWATER SYSTEMS, CABLE, AND TELEPHONE. PROPERLY MAINTAIN AND PROTECT EXISTING UTILITIES. CALL SUNSHINE STATE ONE CALL OF FLORIDA, INC. (811) TO LOCATE UTILITIES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION.

3. SUBGRADE EXCAVATION: CONTRACTOR IS RESPONSIBLE TO REMOVE ALL EXISTING AND IMPORTED LIMEROCK AND LIMEROCK SUB-BASE FROM ALL LANDSCAPE PLANTING AREAS TO A MINIMUM DEPTH OF 36" OR TO NATIVE SOIL. CONTRACTOR IS RESPONSIBLE TO BACKFILL THESE PLANTING AREAS TO ROUGH FINISHED GRADE WITH CLEAN TOPSOIL FROM AN ON-SITE SOURCE OR AN IMPORTED SOURCE. IF LIMEROCK OR OTHER ADVERSE CONDITIONS OCCUR IN PLANTED AREAS AFTER 36" DEEP EXCAVATION BY THE CONTRACTOR, AND POSITIVE DRAINAGE CAN NOT BE ACHIEVED, CONTRACTOR SHALL UTILIZE POOR DRAINAGE CONDITION PLANTING DETAIL.

4. FURNISH NURSERY'S CERTIFICATE OF COMPLIANCE WITH ALL REQUIREMENTS AS SPECIFIED HEREIN. INSPECT AND SELECT PLANT MATERIALS BEFORE PLANTS ARE DUG AT NURSERY OR GROWING SITE.

5. COMPLY WITH APPLICABLE FEDERAL, STATE, COUNTY, AND LOCAL REGULATIONS GOVERNING LANDSCAPE MATERIALS AND WORK. CONFORM TO ACCEPTED HORTICULTURAL PRACTICES AS USED IN THE TRADE. UPON ARRIVAL AT THE SITE, PLANTS SHALL BE THOROUGHLY WATERED AND PROPERLY MAINTAINED UNTIL PLANTED. PLANTS STORED ONSITE SHALL NOT REMAIN UNPLANTED OR APPROPRIATELY HEALED IN FOR A PERIOD EXCEEDING TWENTY-FOUR (24) HOURS. AT ALL TIMES WORKMANLIKE METHODS CUSTOMARY IN GOOD HORTICULTURAL PRACTICES SHALL BE EXERCISED.

6. THE WORK SHALL BE COORDINATED WITH OTHER TRADES TO PREVENT CONFLICTS. COORDINATE PLANTING WITH IRRIGATION WORK TO ASSURE AVAILABILITY OF WATER AND PROPER LOCATION OF IRRIGATION APPURTENANCES AND PLANTS.

7. ALL PLANTING PITS SHALL BE EXCAVATED TO SIZE AND DEPTH IN ACCORDANCE WITH THE USA STANDARD FOR NURSERY STOCK 260.1, UNLESS SHOWN OTHERWISE ON THE DRAWINGS, AND BACK FILLED WITH THE PREPARED PLANTING SOIL MIXTURE AS SPECIFIED IN SECTION E. TEST ALL TREE PITS WITH WATER BEFORE PLANTING TO ASSURE PROPER DRAINAGE PERCOLATION IS AVAILABLE. NO ALLOWANCE WILL BE MADE FOR LOST PLANTS DUE TO IMPROPER DRAINAGE. IF POOR DRAINAGE EXISTS, UTILIZE "POOR DRAINAGE CONDITION" PLANTING DETAIL. TREES SHALL BE SET PLUMB AND HELD IN POSITION UNTIL THE PLANTING MIXTURE HAS BEEN FLUSHED INTO PLACE WITH A SLOW, FULL HOSE STREAM. ALL PLANTING SHALL BE PERFORMED BY PERSONNEL FAMILIAR WITH PLANTING PROCEDURES AND UNDER THE SUPERVISION OF A QUALIFIED LANDSCAPE FOREMAN. PROPER "JETTING IN" SHALL BE ASSURED TO ELIMINATE AIR POCKETS AROUND THE ROOTS. "JET STICK" OR EQUAL IS RECOMMENDED.

8. TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO BUILDINGS AND BUILDING STRUCTURES WHILE INSTALLING TREES.

9. SOIL MIXTURE SHALL BE AS SPECIFIED IN SECTION E OF THESE SPECIFICATIONS.

10. TREES AND SHRUBS SHALL BE SET STRAIGHT AT AN ELEVATION THAT, AFTER SETTLEMENT, THE PLANT CROWN WILL STAND ONE (1) TO TWO (2) INCHES ABOVE GRADE. EACH PLANT SHALL BE SET IN THE CENTER OF THE PIT. PLANTING SOIL MIXTURE SHALL BE BACK FILLED, THOROUGHLY TAMPED AROUND THE BALL, AND SETTLED BY WATER (AFTER TAMPING).

11. AMEND PINE AND OAK PLANT PITS WITH ECTOMYCORRHIZAL SOIL APPLICATION PER MANUFACTURER'S RECOMMENDATION. ALL OTHER PLANT PITS SHALL BE AMENDED WITH ENDOMYCORRHIZAL SOIL APPLICATION PER MANUFACTURER'S RECOMMENDATION. PROVIDE PRODUCT INFORMATION SUBMITTAL PRIOR TO INOCULATION.

12. FILL HOLE WITH SOIL MIXTURE, MAKING CERTAIN ALL SOIL IS SATURATED. TO DO THIS, FILL HOLE WITH WATER AND ALLOW TO SOAK MINIMUM TWENTY (20) MINUTES. STIRRING IF NECESSARY TO GET SOIL THOROUGHLY WET. PACK LIGHTLY WITH FEET, ADD MORE WET SOIL MIXTURE. DO NOT COVER TOP OF BALL WITH SOIL MIXTURE. ALL BURLAP, ROPE, WIRES, BASKETS, ETC.., SHALL BE REMOVED FROM THE SIDES AND TOPS OF BALLS, BUT NO BURLAP SHALL BE PULLED FROM UNDERNEATH.

13. TREES SHALL BE PRUNED, AT THE DIRECTION OF THE OWNER OR OWNER'S REPRESENTATIVE, TO PRESERVE THE NATURAL CHARACTER OF THE PLANT. ALL SOFT WOOD OR SUCKER GROWTH AND ALL BROKEN OR BADLY DAMAGED BRANCHES SHALL BE REMOVED WITH A CLEAN CUT. ALL PRUNING TO BE PERFORMED BY CERTIFIED ARBORIST, IN ACCORDANCE WITH ANSI A-300.

14. SHRUBS AND GROUND COVER PLANTS SHALL BE EVENLY SPACED IN ACCORDANCE WITH THE DRAWINGS AND AS INDICATED ON THE PLANT LIST. MATERIALS INSTALLED SHALL MEET MINIMUM SPECIMEN REQUIREMENTS OR QUANTITIES SHOW ON PLANS, WHICHEVER IS GREATER. CULTIVATE ALL PLANTING AREAS TO A MINIMUM DEPTH OF 6", REMOVE AND DISPOSE ALL DEBRIS. MIX TOP 4" THE PLANTING SOIL MIXTURE AS SPECIFIED IN SECTION E. THOROUGHLY WATER ALL PLANTS AFTER INSTALLATION.

15. TREE GUYING AND BRACING SHALL BE INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH THE PLANS TO INSURE STABILITY AND MAINTAIN TREES IN AN UPRIGHT POSITION. IF THE CONTRACTOR AND OWNER DECIDE TO WAIVE THE TREE GUYING AND BRACING, THE OWNER SHALL NOTIFY THE PROJECT LANDSCAPE ARCHITECT IN WRITING AND AGREE TO INDEMNIFY AND HOLD HARMLESS THE PROJECT LANDSCAPE ARCHITECT IN THE EVENT UNSUPPORTED TREES PLANTED UNDER THIS CONTRACT FALL AND DAMAGE PERSON OR PROPERTY.

16. ALL PLANT BEDS SHALL BE KEPT FREE OF NOXIOUS WEEDS UNTIL FINAL ACCEPTANCE OF WORK. IF DIRECTED BY THE OWNER, "ROUND-UP" SHALL BE APPLIED FOR WEED CONTROL BY QUALIFIED PERSONNEL TO ALL PLANTING AREAS IN SPOT APPLICATIONS PER MANUFACTURER'S PRECAUTIONS AND SPECIFICATIONS, PRIOR TO FINAL INSPECTION. TREAT ALL PLANTING BEDS WITH AN APPROVED PRE-EMERGENT HERBICIDE AT AN APPLICATION RATE RECOMMENDED BY THE MANUFACTURER. (AS ALLOWED BY JURISDICTIONAL AUTHORITY)

P. LAWN SODDING

1. THE WORK CONSISTS OF LAWN BED PREPARATION, SOIL PREPARATION, AND SODDING COMPLETE, IN STRICT ACCORDANCE WITH THE SPECIFICATIONS AND THE APPLICABLE DRAWINGS TO PRODUCE A TURF GRASS LAWN ACCEPTABLE TO THE OWNER.

2. ALL AREAS THAT ARE TO BE SODDED SHALL BE CLEARED OF ANY ROUGH GRASS, WEEDS, AND DEBRIS BY MEANS OF A SOD CUTTER TO A DEPTH OF THREE (3) INCHES, AND THE GROUND BROUGHT TO AN EVEN GRADE. THE ENTIRE SURFACE SHALL BE ROLLED WITH A ROLLER WEIGHING NOT MORE THAN ONE-HUNDRED (100) POUNDS PER FOOT OF WIDTH, DURING THE ROLLING, ALL DEPRESSIONS CAUSED BY SETTLEMENT SHALL BE FILLED WITH ADDITIONAL SOIL, AND THE SURFACE SHALL BE REGRADED AND ROLLED UNTIL PRESENTING A SMOOTH AND EVEN FINISH TO THE REQUIRED GRADE.

3. PREPARE LOOSE BED FOUR (4) INCHES DEEP. HAND RAKE UNTIL ALL BUMPS AND DEPRESSIONS ARE REMOVED. WET PREPARED AREA THOROUGHLY.

4. SODDING

a. THE CONTRACTOR SHALL SOD ALL AREAS THAT ARE NOT PAVED OR PLANTED AS DESIGNATED ON THE DRAWINGS WITHIN THE CONTRACT LIMITS, UNLESS SPECIFICALLY NOTED OTHERWISE.

b. THE SOD SHALL BE CERTIFIED TO MEET FLORIDA STATE PLANT BOARD SPECIFICATIONS, ABSOLUTELY TRUE TO VARIETAL TYPE, AND FREE FROM WEEDS, FUNGUS, INSECTS AND DISEASE OF ANY KIND.

c. SOD PANELS SHALL BE LAID TIGHTLY TOGETHER SO AS TO MAKE A SOLID SODDED LAWN AREA. SOD SHALL BE LAID UNIFORMLY AGAINST THE EDGES OF ALL CURBS AND OTHER HARDSCAPE ELEMENTS, PAVED AND PLANTED AREAS, ADJACENT TO BUILDINGS, A 24 INCH STONE MULCH STRIP SHALL BE PROVIDED. IMMEDIATELY FOLLOWING SOD LAYING, THE LAWN AREAS SHALL BE ROLLED WITH A LAWN ROLLER CUSTOMARILY USED FOR SUCH PURPOSES, AND THEN THOROUGHLY IRRIGATED. IF, IN THE OPINION OF THE OWNER, TOP-DRESSING IS NECESSARY AFTER ROLLING TO FILL THE VOIDS BETWEEN THE SOD PANELS AND TO EVEN OUT INCONSISTENCIES IN THE SOD, CLEAN SAND, AS APPROVED BY THE OWNER'S REPRESENTATIVE, SHALL BE UNIFORMLY SPREAD OVER THE ENTIRE SURFACE OF THE SOD AND THOROUGHLY WATERED IN. FERTILIZE INSTALLED SOD AS ALLOWED BY PROPERTY'S JURISDICTIONAL AUTHORITY.

5. DURING DELIVERY, PRIOR TO, AND DURING THE PLANTING OF THE LAWN AREAS, THE SOD PANELS SHALL AT ALL TIMES BE PROTECTED FROM EXCESSIVE DRYING AND UNNECESSARY EXPOSURE OF THE ROOTS TO THE SUN. ALL SOD SHALL BE STACKED SO AS NOT TO BE DAMAGED BY SWEATING OR EXCESSIVE HEAT AND MOISTURE.

6. LAWN MAINTENANCE

a. WITHIN THE CONTRACT LIMITS, THE CONTRACTOR SHALL PRODUCE A DENSE, WELL ESTABLISHED LAWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR AND RE-SODDING OF ALL ERODED, SUNKEN OR BARE SPOTS (LARGER THAN 12"X12") UNTIL CERTIFICATION OF ACCEPTANCE BY THE OWNER'S REPRESENTATIVE. REPAIRED SODDING SHALL BE ACCOMPLISHED AS IN THE ORIGINAL WORK (INCLUDING REGRADING IF NECESSARY).

b. CONTRACTOR RESPONSIBLE FOR ESTABLISHING AND MAINTAINING SOD/LAWN UNTIL ACCEPTANCE BY THE OWNER'S REPRESENTATIVE. PRIOR TO AND UPON ACCEPTANCE, CONTRACTOR TO PROVIDE WATERING/IRRIGATION SCHEDULE TO OWNER. OBSERVE ALL APPLICABLE WATERING RESTRICTIONS AS SET FORTH BY THE PROPERTY'S JURISDICTIONAL AUTHORITY.

Q. CLEANUP

UPON COMPLETION OF ALL PLANTING WORK AND BEFORE FINAL ACCEPTANCE, THE CONTRACTOR SHALL REMOVE ALL MATERIAL, EQUIPMENT, AND DEBRIS RESULTING FROM HIS WORK. ALL PAVED AREAS SHALL BE CLEANED AND THE SITE LEFT IN A NEAT AND ACCEPTABLE CONDITION AS APPROVED BY THE OWNER'S REPRESENTATIVE.

R. PLANT MATERIAL MAINTENANCE

ALL PLANTS AND PLANTING INCLUDED UNDER THIS CONTRACT SHALL BE MAINTAINED BY WATERING, CULTIVATING, SPRAYING, AND ALL OTHER OPERATIONS (SUCH AS RE-STAKING OR REPAIRING GUY SUPPORTS) NECESSARY TO INSURE A HEALTHY PLANT CONDITION BY THE CONTRACTOR UNTIL CERTIFICATION OF ACCEPTANCE BY THE OWNER'S REPRESENTATIVE.

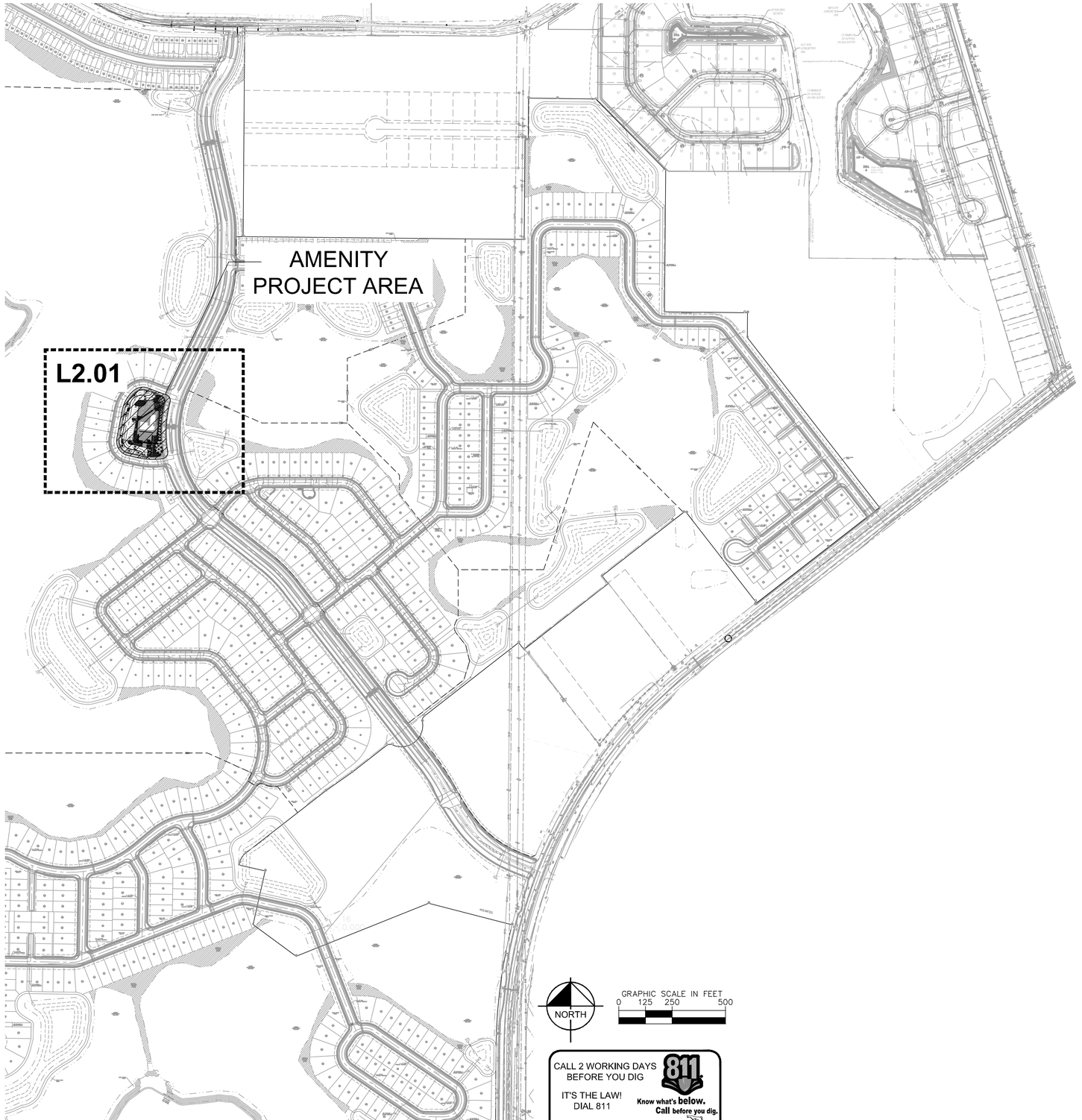
S. FINAL INSPECTION AND ACCEPTANCE OF WORK

FINAL INSPECTION AT THE END OF THE WARRANTY PERIOD SHALL BE ON PLANTING, CONSTRUCTION AND ALL OTHER INCIDENTAL WORK PERTAINING TO THIS CONTRACT. ANY REPLACEMENT AT THIS TIME SHALL BE SUBJECT TO THE SAME ONE (1) YEAR WARRANTY (OR AS SPECIFIED BY THE LANDSCAPE ARCHITECT OR OWNER IN WRITING) BEGINNING WITH THE TIME OF REPLACEMENT AND ENDING WITH THE SAME INSPECTION AND ACCEPTANCE HEREIN DESCRIBED.

T. WARRANTY

1. THE LIFE AND SATISFACTORY CONDITION OF ALL PLANT MATERIAL INSTALLED (INCLUDING SOD) BY THE LANDSCAPE CONTRACTOR SHALL BE WARRANTED BY THE CONTRACTOR FOR A MINIMUM OF ONE (1) CALENDAR YEAR COMMENCING AT THE TIME OF CERTIFICATION OF ACCEPTANCE BY THE OWNER'S REPRESENTATIVE.

2. ANY PLANT NOT FOUND IN A HEALTHY GROWING CONDITION AT THE END OF THE WARRANTY PERIOD SHALL BE REMOVED FROM THE SITE AND REPLACED AS SOON AS WEATHER CONDITIONS PERMIT. ALL REPLACEMENTS SHALL BE PLAN



IRRIGATION NOTES

1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, EQUIPMENT QUANTITIES, ETC. PRIOR TO BEGINNING WORK.
2. CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES IN PLANS OR SPECIFICATIONS PRIOR TO BEGINNING OR CONTINUING WORK.
3. THE CONTRACTOR SHALL MAKE NO SUBSTITUTIONS, DELETIONS, OR ADDITIONS TO THIS PLAN WITHOUT APPROVAL OF THE LANDSCAPE ARCHITECT.
4. ALL CONSTRUCTION SHALL CONFORM TO CITY, COUNTY, STATE, AND FEDERAL REQUIREMENTS. IT SHALL BE THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO ENSURE THAT ALL IRRIGATION EQUIPMENT MEETS GOVERNMENT REGULATIONS. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS OR APPROVALS.
5. THIS PLAN IS SCHEMATIC AND DUE TO THE NATURE OF CONSTRUCTION SLIGHT FIELD MODIFICATIONS MAY BE NECESSARY TO IMPLEMENT PLAN.
6. CONTRACTOR TO VERIFY ACTUAL AVAILABLE WATER PRESSURE BEFORE BEGINNING INSTALLATION. CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT IF AVAILABLE WATER PRESSURE WILL NOT ALLOW SYSTEM MODIFICATION TO BE POSSIBLE.
7. IRRIGATION SYSTEMS CONNECTED TO POTABLE WATER SUPPLY, SHALL HAVE A BACKFLOW PREVENTER INSTALLED.
8. WHERE APPLICABLE IRRIGATION HEADS ARE TO BE ADJUSTED FOR COMPLETE COVERAGE WITH MINIMUM OVER SPRAY BEYOND LANDSCAPE AREAS.
9. EXISTING TREES TO REMAIN ARE TO BE PROTECTED FROM DAMAGE. DO NOT TRENCH OR EXCAVATE WITHIN THE CRITICAL ROOT ZONE OF ANY TREE.
10. ALL IRRIGATION SLEEVING TO BE THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR. ELECTRICAL WIRES FOR IRRIGATION VALVES AND IRRIGATION LINES ARE TO BE PLACED IN SEPARATE SLEEVES.
11. IRRIGATION CONTRACTOR SHALL REVIEW WINTERIZATION PROCEDURES FOR IRRIGATION SYSTEM WITH OWNER'S REPRESENTATIVE.
12. ALL PLANT MATERIAL IN TREE HOLDING AREAS SHALL BE MANUALLY WATERED/IRRIGATED TO KEEP MOIST UNTIL PLANTED.
13. CONTRACTOR TO PROVIDE PERMANENT BENCH-MARKS ON ALL CURB LINES AT RELATED SLEEVE LOCATIONS (TYP).
14. THE IRRIGATION SYSTEM SHALL BE DESIGNED AND INSTALLED TO MINIMIZE ROOT DISTURBANCE IN EXISTING TREES.
15. IRRIGATION SPRAYS AND ROTORS ARE NOT COMBINED ON THE SAME CONTROL VALVE CIRCUIT - LANDSCAPE BEDS AND TURF ON SEPARATE CIRCUITS.
16. MATCH PRECIPITATION RATES WITH ANY HEADS THAT ARE REPLACED.

NOTE: IF SOURCE TO BE RECLAIMED (NON-POTABLE) ALL EQUIPMENT TO BE INDICATED AS SUCH AND PURPLE IN COLOR. FOLLOW ALL LOCAL JURISDICTION STANDARDS FOR RECLAIMED IRRIGATION SYSTEMS.

IRRIGATION CONTRACTOR IS RESPONSIBLE FOR PERFORMING ALL NECESSARY MODIFICATIONS REQUIRED TO MEET THE SCHEMATIC INTENT OF THESE PLANS PRIOR TO SUBMITTING PROPOSAL. THESE PLANS OUTLINE THE OVERALL LAYOUT THE SYSTEM AND IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ZONE THE SYSTEM ACCORDINGLY BASED ON FLOW AND PRESSURE AVAILABLE. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE FOLLOWING BUT NOT LIMITED TO AVAILABLE FLOW, AVAILABLE PRESSURE, CONNECTION ASSEMBLY, CAPACITY OF THE SYSTEM.

No.	REVISIONS	DATE

Kimley»Horn
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Digitally signed by Gregory S Witherspoon
DN: CN=Gregory S Witherspoon, E=
dnQualifier=A01410D000018C97B9200020077
O=KIMLEY-HORN AND ASSOCIATES INC, C=US
Date: 2025.08.28 09:42:57-04'00'

8/28/2025

KHA PROJECT 149658036
DATE 04/15/2025
SCALE AS SHOWN
DESIGNED BY JTD
DRAWN BY JTD
CHECKED BY GSW

OVERALL AMENITY IRRIGATION PLAN

HILLSIDE GROVE
HOWEY-IN-THE-HILLS FLORIDA

SHEET NUMBER
L2.00

Plotted By:Dumbauld, Jimmy Sheet Set:HILLSIDE GROVES COMMON Layout:L2.00 August 28, 2025 09:12:04am K:\ORL_LA\149658036_Hillside Groves\CAD\CONST\PlanSheets\L2.00 AMENITY IRRIGATION PLAN.dwg
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Posted By:Dumbuya, Jimmy Sheet Set:HILLSIDE GROVES COMMON Layout:L2.01 August 28, 2025 09:12:15am K:\ORL_LA\149658036_Hillside Groves\CAD\CONST\PlanSheets\L2.00 AMENITY IRRIGATION PLAN.dwg
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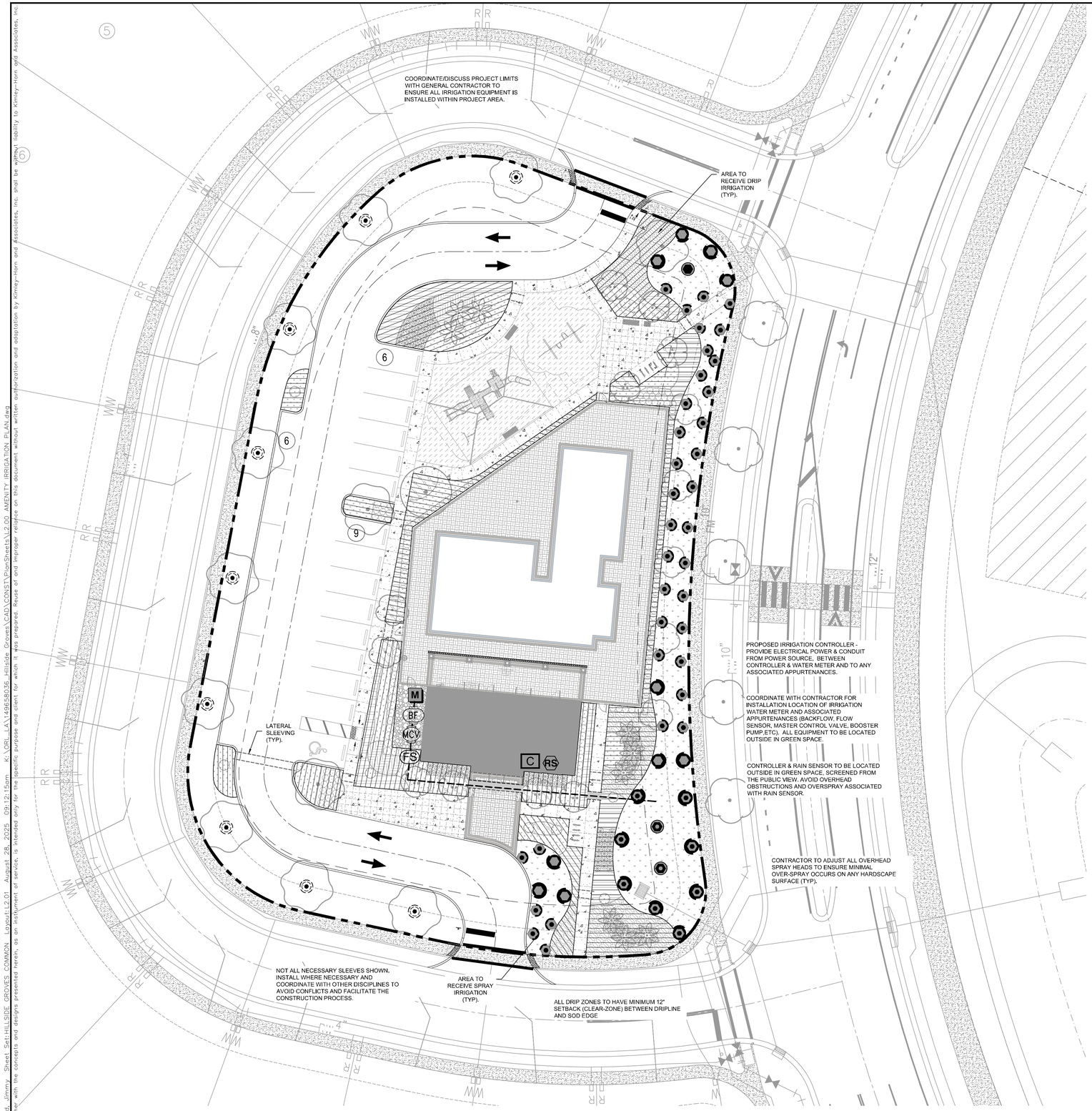

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI
14 ADJ 14 F	RAIN BIRD R-VAN14 RD-06-S-P45-NP TURF ROTARY, 8FT.-14FT, 45-270 DEGREES AND 360 DEGREES. HAND ADJUSTABLE MULTI-STREAM ROTARY W/RD1800 TURF SPRAY BODY ON 6IN. POP-UP, WITH CHECK VALVE AND 45 PSI IN-STEM PRESSURE REGULATOR. 1/2IN. NPT FEMALE THREADED INLET. W/ NON-POTABLE PURPLE CAP.	36	30
18 ADJ 18 F	RAIN BIRD R-VAN18 RD-06-S-P45-NP TURF ROTARY, 13FT.-18FT. 45-270 DEGREES AND 360 DEGREES. HAND ADJUSTABLE MULTI-STREAM ROTARY W/RD1800 TURF SPRAY BODY ON 6IN. POP-UP, WITH CHECK VALVE AND 45 PSI IN-STEM PRESSURE REGULATOR. 1/2IN. NPT FEMALE THREADED INLET. W/ NON-POTABLE PURPLE CAP.	11	30
24 ADJ 24 F	RAIN BIRD R-VAN24 RD-06-S-P45-NP TURF ROTARY, 17FT.-24FT. 45-270 DEGREES AND 360 DEGREES. HAND ADJUSTABLE MULTI-STREAM ROTARY W/RD1800 TURF SPRAY BODY ON 6IN. POP-UP, WITH CHECK VALVE AND 45 PSI IN-STEM PRESSURE REGULATOR. 1/2IN. NPT FEMALE THREADED INLET. W/ NON-POTABLE PURPLE CAP.	10	30

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	RAIN BIRD XFDEP-09-12 DRIP RING	9
	AREA TO RECEIVE DRIPLINE RAIN BIRD XFDEP-09-12 XFDE ON-SURFACE PRESSURE COMPENSATING LANDSCAPE DRIPLINE. 0.9 GPH EMITTERS AT 12" O.C. DRIPLINE LATERALS SPACED AT 12" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. UV & KINK RESISTANT. USE XF INSERT FITTINGS.	7,600 LF

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
MCV	RAIN BIRD PESB-PRS-D 1" 1IN., 1-1/2IN., 2IN., 3IN. PLASTIC INDUSTRIAL MASTER VALVES. LOW FLOW OPERATING CAPABILITY, GLOBE CONFIGURATION. WITH PRESSURE REGULATING MODULE, AND SCRUBBER TECHNOLOGY FOR RELIABLE PERFORMANCE IN DIRTY WATER IRRIGATION APPLICATIONS.	1
BF	FEBCO 825Y 3/4" REDUCED PRESSURE BACKFLOW PREVENTER	1
C	RAIN BIRD ESPLXME2 12 STATION TRADITIONALLY-WIRED, COMMERCIAL CONTROLLER. INDOOR/OUTDOOR, PLASTIC WALL-MOUNT ENCLOSURE.	1
RS	RAIN BIRD WR2-RC WIRELESS RAIN SENSOR COMBO, INCLUDES 1 RECEIVER AND 1 RAIN SENSOR TRANSMITTER.	1
FS	RAIN BIRD FS-100-P 1IN. FLOW SENSOR, PLASTIC PVC MODEL. SUGGESTED OPERATING RANGE 5.4 GPM TO 54 GPM. SIZE FOR FLOW NOT ACCORDING TO PIPE SIZE. RAIN BIRD COMPATIBLE CONTROLLERS: ESP-LXIVM(P) | LXD | LXME2(P) | ME3, OR CONTROLLERS ACCEPTING CUSTOM K-FACTOR AND OFFSET. INSTALL IN RAIN BIRD VALVE BOX	1
M	WATER METER 3/4" POTABLE	1
	IRRIGATION MAINLINE: PVC SCHEDULE 40	130.8 LF
	PIPE SLEEVE: PVC SCHEDULE 40 - LATERAL SLEEVE	101.1 LF
	PIPE SLEEVE: PVC SCHEDULE 40 - MAINLINE SLEEVE	26.8 LF

FLOW TOTALS

Area for Dripline:	114.0
Drip Ring:	6.6
Turf Rotary:	41.0
Total:	161.6 GPM

IRRIGATION CONTRACTOR IS RESPONSIBLE FOR PERFORMING ALL NECESSARY MODIFICATIONS REQUIRED TO MEET THE SCHEMATIC INTENT OF THESE PLANS PRIOR TO SUBMITTING PROPOSAL. THESE PLANS OUTLINE THE OVERALL LAYOUT THE SYSTEM AND IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ZONE THE SYSTEM ACCORDINGLY BASED ON FLOW AND PRESSURE AVAILABLE. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE FOLLOWING BUT NOT LIMITED TO AVAILABLE FLOW, AVAILABLE PRESSURE, CONNECTION ASSEMBLY, CAPACITY OF THE SYSTEM.

NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

Item 1.

No.	REVISIONS	DATE

Kimley»Horn
© 2024 KIMLEY-HORN AND ASSOCIATES, INC.
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Digitally signed by Gregory S Witherspoon
DN: CN=Gregory S Witherspoon, C=US, E=greg.witherspoon@kimley-horn.com, O=KIMLEY-HORN AND ASSOCIATES INC, OU=US
Date: 2025.08.28 09:42:58-04'00'

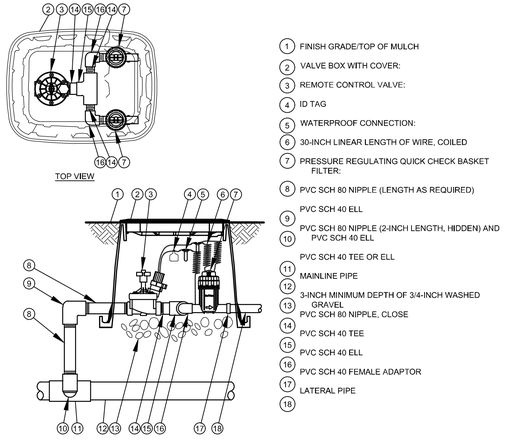
08/28/2025

KHA PROJECT 149658036
DATE 04/15/2025
SCALE AS SHOWN
DESIGNED BY JTD
DRAWN BY JTD
CHECKED BY GSW

AMENITY IRRIGATION PLAN

HILLSIDE GROVE

SHEET NUMBER
L2.01

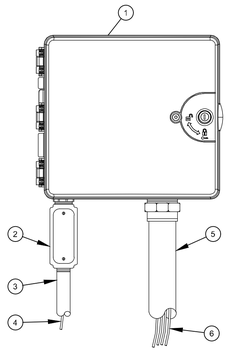


TOP VIEW

SIDE VIEW

1. FINISH GRADE/TOP OF MULCH
2. VALVE BOX WITH COVER:
3. REMOTE CONTROL VALVE:
4. ID TAG
5. WATERPROOF CONNECTION:
6. 30-INCH LINEAR LENGTH OF WIRE, COILED
7. PRESSURE REGULATING QUICK CHECK BASKET FILTER:
8. PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
9. PVC SCH 40 ELL
10. PVC SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND PVC SCH 40 ELL
11. PVC SCH 40 TEE OR ELL
12. MAINLINE PIPE
13. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
14. PVC SCH 80 NIPPLE, CLOSE
15. PVC SCH 40 TEE
16. PVC SCH 40 ELL
17. PVC SCH 40 FEMALE ADAPTOR
18. LATERAL PIPE

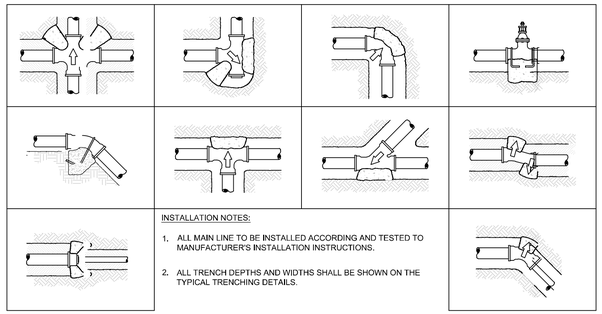
1 COMMERCIAL CONTROL DRIP ZONE VALVE KIT
L2.50 SECTION / PLAN — NTS



1. IRRIGATION CONTROLLER: CONTROLLER (OWNER TO SPECIFY WALL MOUNT OR STAINLESS STEEL PEDESTAL MOUNT). INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
2. JUNCTION BOX
3. 1-INCH CONDUIT AND FITTINGS TO POWER SUPPLY
4. POWER SUPPLY WIRE
5. 2-INCH CONDUIT AND FITTINGS FOR STATION WIRES
6. WIRES TO REMOTE CONTROL VALVES

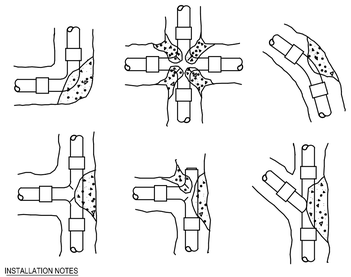
NOTES:
1. FOR EASE OF INSTALLATION INTO A CONTROLLER WITH MORE THAN 24 STATIONS, INSTALL A JUNCTION BOX AT THE BASE OF CONTROLLER AND TRANSITION LARGER VALVE AND COMMON WIRES FROM FIELD TO 18 AWG MULTI CONDUCTOR WIRE TO BE USED IN CONTROLLER.
2. USE STEEL CONDUIT FOR ABOVE GRADE AND SCH 40 PVC CONDUIT FOR BELOW GRADE CONDITIONS.
3. PROVIDE PROPER GROUNDING COMPONENTS TO ACHIEVE GROUND RESISTANCE OF 10 OHMS OR LESS.

2 TYPICAL CONTROLLER
L2.50 ELEVATION — NTS



INSTALLATION NOTES:
1. ALL MAIN LINE TO BE INSTALLED ACCORDING AND TESTED TO MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. ALL TRENCH DEPTHS AND WIDTHS SHALL BE SHOWN ON THE TYPICAL TRENCHING DETAILS.

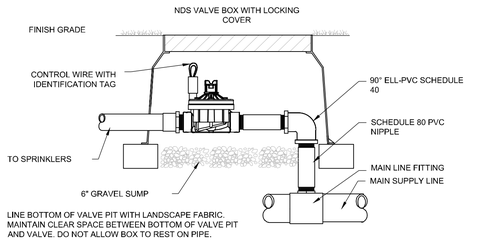
3 TYPICAL THRUST BLOCK
L2.50 SECTION — NTS



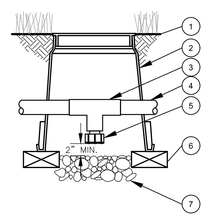
INSTALLATION NOTES
1. 3000 PSI CONCRETE OR BETTER IS TO BE USED FOR THRUST BLOCKS.
2. FOR 45°/90° FITTINGS, MINIMUM OF 2 CUBIC FEET OF CONCRETE TO BE USED.
3. FOR 22-1/2° FITTINGS, MINIMUM OF 0.5 CUBIC FEET OF CONCRETE TO BE USED.
4. FOR TEES, MINIMUM OF 2 CUBIC FEET OF CONCRETE TO BE USED. THRUST

BLOCKS REQUIRED FOR IRRIGATION MAINLINE 2 1/2" AND LARGER.

4 THRUST BLOCK REINFORCEMENT
L2.50 SECTION — NTS

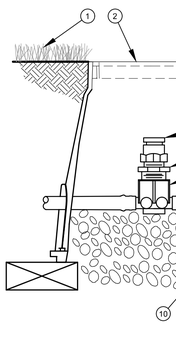


5 TYPICAL CONTROL VALVE
L2.50 SECTION — NTS



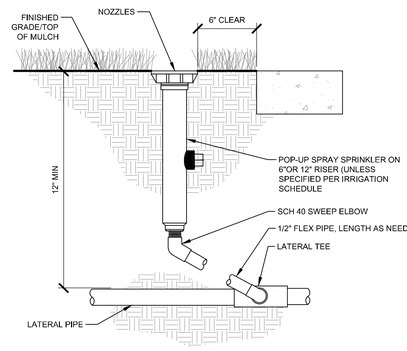
1. FINISH GRADE/TOP OF MULCH
2. VALVE BOX WITH COVER:
3. PVC SCH 40 TEE
4. PVC LATERAL PIPE
5. FILTERED DRAIN VALVE:
6. BRICK (1 OF 2)
7. 6-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL

6 DRAIN VALVE
L2.50 SECTION — NTS

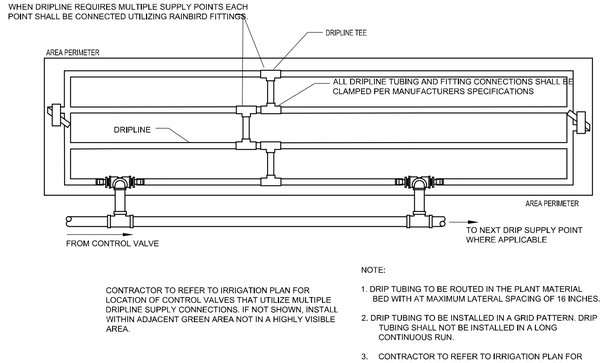


1. TURF GRASS
2. VALVE BOX LID
3. FINISH GRADE
4. ½" AIR RELIEF VALVE: TO BE INSTALLED AT HIGH POINTS IN DRIP ZONE
5. ½" X ½" PVC REDUCER BUSHING
6. BARB X FEMALE THREAD CONNECTOR:
7. ½" BLANK DRIPLINE TUBING:
8. BARB X MALE THREAD CONNECTOR:
9. PVC TEE CONNECTED TO PVC HEADER PIPE
10. 3" MINIMUM DEPTH OF ½" WASHED GRAVEL
11. BRICK (1 OF 2)

7 AIR RELIEF VALVE IN XFS DRIP LINE
L2.50 SECTION — NTS



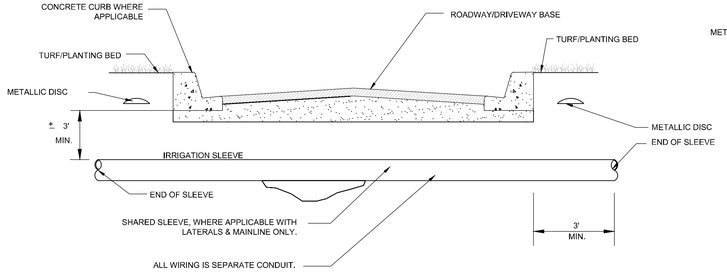
8 TYPICAL IRRIGATION HEAD
L2.50 SECTION — NTS



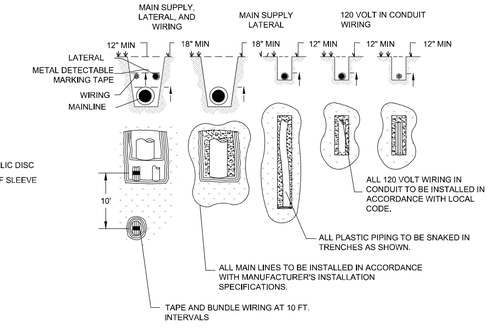
CONTRACTOR TO REFER TO IRRIGATION PLAN FOR LOCATION OF CONTROL VALVES THAT UTILIZE MULTIPLE DRIPLINE SUPPLY CONNECTIONS. IF NOT SHOWN, INSTALL WITHIN ADJACENT GREEN AREA NOT IN A HIGHLY VISIBLE AREA.

NOTE:
1. DRIP TUBING TO BE ROUTED IN THE PLANT MATERIAL BED WITH AT MAXIMUM LATERAL SPACING OF 16 INCHES.
2. DRIP TUBING TO BE INSTALLED IN A GRID PATTERN. DRIP TUBING SHALL NOT BE INSTALLED IN A LONG CONTINUOUS RUN.
3. CONTRACTOR TO REFER TO IRRIGATION PLAN FOR LOCATION OF CONTROL VALVES THAT UTILIZE MULTIPLE DRIPLINE SUPPLY CONNECTIONS (IF SHOWN).

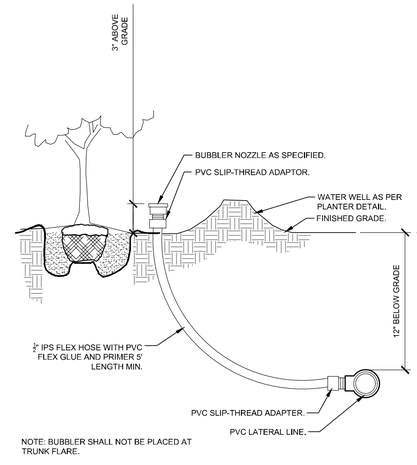
9 TYPICAL DRIP LINE
L2.50 PLAN — NTS



10 TYPICAL SLEEVING
L2.50 SECTION — NTS



11 TYPICAL TRENCHING
L2.50 SECTION / PLAN — NTS



NOTE: BUBBLER SHALL NOT BE PLACED AT TRUNK FLARE.

12 TYPICAL BUBBLER
L2.50 SECTION — NTS

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dnQualifier=A01410D000018C57989200000277
O=KIMLEY-HORN AND ASSOCIATES INC, C=US
Date: 2025.08.28 09:42:59-04'00'

8/28/2025

KHA PROJECT 149658036		
DATE	04/15/2025	
SCALE	AS SHOWN	
DESIGNED BY	JTD	
DRAWN BY	JTD	
CHECKED BY	GSW	

IRRIGATION DETAILS

HILLSIDE GROVE

HOWEY-IN-THE-HILLS FLORIDA

SHEET NUMBER
L2.50

Plotted By:Dumbauld, Jimmy Sheet Set:HILLSIDE GROVES COMMON Layout:L2.60 August 28, 2025 09:12:18am K:\ORL_LA\149658036-Hillside Groves\CAD\CONST\PlanSheets\L2.00 AMENITY IRRIGATION PLAN.dwg
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BI-LINGUAL LAWNBOSS™
RECLAIMED WATER WARNING SIGN
AND STAKE (BY RECYCLE
REMINDERS - PART# K-9493, COLOR
PURPLE) TO BE UTILIZED WHERE
INDICATED ON PLANS. CONTRACTOR
TO INSTALL PER MANUFACTURER'S
SPECIFICATIONS.

WWW.RECYCLEREMINDERS.COM

1 / L2.51 RECLAIMED WATER WARNING SIGN 1" = 1"

IRRIGATION SYSTEM NOTES:

1. THE IRRIGATION MAINLINE LAYOUT IS DIAGRAMMATIC. ANY CHANGES MADE IN THE IRRIGATION MAINLINE DUE TO FIELD CONDITIONS OR CONTRACTOR'S SUBMITTED DESIGN SHALL BE IN ACCORDANCE WITH THESE STANDARDS.
2. SET SPRAY HEADS 6" AND ROTORS 12" IN FROM BACK OF CURB OR 24" IF PAVEMENT HAS NO CURB.
3. IRRIGATION CONTRACTOR IS RESPONSIBLE FOR PERFORMING ALL NECESSARY MODIFICATIONS REQUIRED TO MEET THE SCHEMATIC INTENT OF THESE PLANS PRIOR TO SUBMITTING PROPOSAL. THESE PLANS OUTLINE THE OVERALL LAYOUT THE SYSTEM AND IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ZONE THE SYSTEM ACCORDINGLY BASED ON FLOW AND PRESSURE AVAILABLE. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE FOLLOWING BUT NOT LIMITED TO AVAILABLE FLOW, AVAILABLE PRESSURE, CONNECTION ASSEMBLY, CAPACITY OF THE SYSTEM.
4. CONTRACTOR TO PROVIDE NEW AUTOMATIC CONTROLLER FOR PROPOSED SYSTEM (NO BATTERY OPERATED CONTROLLERS ALLOWED). COORDINATE LOCATION WITH OWNER.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AUTOMATIC RAIN SENSOR. COORDINATE LOCATION W/ OWNER.
6. IRRIGATION SHALL NOT BE COMBINED ON A SINGLE ZONE AND SHALL BE ZONED ACCORDING TO IRRIGATION TYPE, PRECIPITATION RATE, AND THE SYSTEM'S AVAILABLE WATER / PRESSURE. CONTRACTOR TO SUBMIT SHOP DRAWINGS TO OWNER FOR REVIEW PRIOR TO INSTALLATION.
7. VERIFY LOCATIONS OF ALL UNDERGROUND UTILITIES PRIOR TO INSTALLATION OF IRRIGATION SYSTEM. ALL UTILITIES AND STRUCTURES MAY NOT BE SHOWN ON THESE PLANS-CONTRACTOR SHALL FIELD VERIFY.
8. CONTRACTOR TO FIELD VERIFY ALL POINT OF CONNECTION SOURCE INFORMATION INCLUDING PSI AND GPM PRIOR TO CONSTRUCTION.
9. INSTALLATION OF WORK SHALL BE COORDINATED WITH OTHER CONTRACTORS IN SUCH A MANNER AS TO ALLOW FOR A SPEEDY AND ORDERLY COMPLETION OF ALL WORK ON-SITE.
10. CONTRACTOR SHALL COORDINATE WITH THE PLANTING PLAN FOR PLANTER BED AND TREE LOCATIONS TO ENSURE ALL PLANT MATERIAL IS COVERED BY 100% HEAD-TO-HEAD IRRIGATION.
11. CONTRACTOR SHALL PROVIDE "AS-BUILT" DRAWINGS OF THE FINAL INSTALLATION TO OWNER AT SUBSTANTIAL COMPLETION BEFORE RECEIVING FINAL PAYMENT.
12. PRODUCTS SHALL BE AS SPECIFIED OR APPROVED EQUAL.

PRE-APPROVED MANUFACTURERS:
1. TORO
2. HUNTER
3. RAINBIRD

13. IRRIGATION CONTRACTOR SHALL SECURE ANY AND ALL NECESSARY PERMITS FOR THE WORK PRIOR TO COMMENCEMENT OF HIS OPERATIONS ON-SITE. COPIES OF THE PERMITS SHALL BE SENT TO THE OWNER/GENERAL CONTRACTOR. WORK IN THE R.O.W. SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF LOCAL AND/OR STATE JURISDICTION.
14. LOCATE ALL IRRIGATION LINES WITHIN LANDSCAPED AREAS WHENEVER POSSIBLE. ALL LINES UNDER PAVEMENT MUST BE SLEEVED WITHIN SCH. 40 PVC 2x SIZE OF PIPE AND FREE OF STONES/DEBRIS. ALL VALVES SHALL BE LOCATED WITHIN LANDSCAPED AREAS.
15. MAINLINE SHALL NOT BE LOCATED WITHOUT PRIOR APPROVAL OF THE OWNER'S REPRESENTATIVE.
16. THE IRRIGATION CONTRACTOR SHALL BE DIRECTLY RESPONSIBLE FOR SLEEVING AND DIRECTIONAL BORES.
17. ALL SLEEVES UTILIZED BY THE IRRIGATION CONTRACTOR WHETHER INSTALLED BY HIM OR NOT, SHALL BE LOCATED ON THE "AS-BUILT" DRAWINGS. THE DEPTH BELOW FINISH GRADE, TO THE NEAREST FOOT OF EACH END OF THE SLEEVE SHALL BE NOTED AT EACH SLEEVE LOCATION ON THE "AS-BUILT" DRAWINGS. ALL SLEEVES ON PLAN FOR WALL PENETRATIONS AND UNDER SIDEWALKS SHALL BE SIZED TWO PIPE SIZES GREATER THAN THE PIPE IT CARRIES.
18. ALL PRESSURIZED MAINLINES AND LATERALS UNDER PAVEMENT SHALL BE WITHIN SCH. 40 PVC SLEEVES. WHERE ELECTRIC OR HYDRAULIC VALVE CONTROL LINES PASS THROUGH A SLEEVE WITH OTHER MAIN OR LATERAL LINES THEY SHALL BE CONTAINED WITHIN A SEPARATE, SMALLER CONDUIT.
19. NUMBER THE TOP OF ALL VALVE BOX LIDS WITH MINIMUM 1" HEIGHT BLACK LETTERS TO CORRESPOND TO AUTOMATIC AND GATE VALVE DESIGNATIONS. ALL HOSE BIBB VALVE BOXES SHALL BE LABELED IN A SIMILAR MANNER WITH THE DESIGNATION "HB", LETTER OUTSIDE OF TIME CLOCK CABINETS TO CORRESPOND WITH IRRIGATION CLOCK PROGRAM DESIGNATION.
20. THE IRRIGATION CONTRACTOR SHALL INSTALL A COLOR CODED METAL DETECTABLE MARKING TAPE WHICH CLEARLY NOTES: "CAUTION: IRRIGATION LINE BURIED BELOW." THE TAPE SHALL BE INSTALLED THE FULL LENGTH OF THE IRRIGATION MAINLINE.
21. ELECTRIC SERVICE TO THE CONTROLLER SHALL BE PROVIDED BY THE GENERAL CONTRACTOR.
22. ALL 24 VAC WIRING FROM DECODER TO VALVE SHALL BE OF DIRECT BURIAL COPPER WIRE. MAXIMUM LENGTH OF WIRE FROM DECODER TO VALVE SHALL NOT EXCEED 400 FEET. AS FOLLOWS:
    CONTROL WIRES - #14
    COMMON WIRES - #14
23. ALL VALVES, SPLICES WITHIN CONTROL LINES, AND QUICK COUPLERS SHALL BE LOCATED WITHIN NDS VALVE BOXES AS FOLLOWS:
    -RECTANGULAR 12"X17" HEAVY DUTY BOX. (PURPLE COVER FOR REUSE TO BE PROVIDED WHERE APPROPRIATE).
24. ALL IRRIGATION HEADS/DRIP TUBING SHALL BE LOCATED ONE (1) FOOT FROM BACK OF CURB WHEN NEXT TO A ROADWAY, (THIS SHALL NOT INCLUDE PARKING AREAS OR DRIVE AISLES).
25. HEADS, LATERALS, EMITTERS, AND VALVES ARE NOT SHOWN, BUT ARE NECESSARY FOR A FULLY FUNCTIONING IRRIGATION SYSTEM.
26. LOCATE ALL VALVES IN PLANTING BEDS WITH A MINIMUM OF 3'-0" FROM BACK OF CURB OR EDGE OF PAVEMENT, UNLESS OTHERWISE NOTED. PIPE SIZES ON EITHER SIDE OF SECTION VALVES CONNECTING MAINLINE TO SECTION LATERAL SHALL BE ONE (1) PIPE SIZE LARGER THAN VALVE SIZE. WHERE MAINLINES RUN PARALLEL TO PAVEMENT OR CURBING, THE MAINLINE SHALL BE OFFSET 2'-0" FROM THE EDGE OF PAVEMENT OR CURB.
27. IRRIGATION ZONES SHALL BE SEPARATED FOR HIGH AND LOW WATER USE REQUIREMENTS AND OPERATED ON DIFFERENT WATERING CYCLES. BUBBLERS, DRIPLINE, AND SPRAY HEADS SHALL BE SEPARATED ON DIFFERENT VALVES. AT NO TIME SHALL MULTIPLE IRRIGATION HEAD TYPES BE LOCATED ON THE SAME VALVE.
28. ALL DRIP ZONES SHALL BE INSTALLED WITH A FLUSH VALVE AND AIR RELIEF VALVE. IN THE EVENT THAT A DRIP ZONE HAS MORE THAN ONE HIGH OR LOW POINT, MORE THAN ONE AIR RELIEF VALVE OR FLUSH VALVE WILL BE REQUIRED FOR THAT ZONE. DRIPLINE SHALL PROVIDE 0.9 GPH EMITTERS, 12" O.C. WITH 12" LINE SPACING AT A MINIMUM.
29. ALL WIRING FOR CONNECTION OF THE VALVES TO THE CONTROLLER SHALL FOLLOW MANUFACTURERS SPECIFICATIONS. IF REQUIRED, ALL WIRING FOR A TWO WIRE PATH SHALL BE WITH RED/BLUE TWISTED PAIR 14 AWG. ELECTRIC CONTROL LINES FROM THE DECODER TO THE SOLENOID VALVES SHALL BE TWISTED PAIR 18 AWG. ALL DECODERS SHALL BE GROUNDED EVERY 1,000 L.F. OR EVERY 10 DEVICES. ALL WIRE SHALL BE FURNISHED IN MINIMUM 2,500' REELS AND SPLICING SHALL BE MINIMIZED. BURY SPLICE KIT. ALL 24 VOLT WIRING SHALL BE DONE IN ACCORDANCE WITH EXISTING CODES. SPLICING SHALL BE IN VALVE BOXES OR CONTROLLERS ONLY. IRRIGATION SYSTEM CONTROL SHALL BE TWO WIRE PATH. CONTRACTOR SHALL FOLLOW ALL MANUFACTURER'S REQUIREMENTS FOR THIS INSTALLATION. TWO WIRE SYSTEM SHALL HAVE 2-WAY COMMUNICATIONS FIELD PROGRAMMABILITY, STATION SPECIFICATIONS AND INTEGRATED SURGE PROTECTION.
30. ALL CONTROL WIRE SHALL BE INSTALLED IN A 1 ½" ELECTRICAL CONDUIT.
31. SMALLEST DIAMETER LATERAL PIPE SHALL BE 3/4".
32. IRRIGATION SYSTEM SHALL BE CAPABLE OF SUPPLYING AN AVERAGE OF 1.05" OF WATER PER WEEK WITHIN WATERING RESTRICTIONS AS APPLICABLE.
33. IRRIGATION SYSTEM SHALL NOT BE INSTALLED THROUGH EXISTING, OR PRESERVED PLANT COMMUNITIES. DO NOT TRENCH THROUGH EXISTING ROOT SYSTEMS OF ANY VEGETATION INTENDED TO BE PRESERVED.
34. CONTRACTOR TO MINIMIZE IRRIGATION OVERTHROW TO IMPERVIOUS AND NATURAL AREAS THROUGH FIELD ADJUSTMENTS TO INDIVIDUAL HEADS.
35. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED BY THE CONTRACTOR TO THE CONDITION DENOTED ON THE LANDSCAPE PLAN.
36. IRRIGATION PIPING INSTALLED UNDER ROADS AND SIDEWALKS SHALL BE IN SCHEDULE 40 PVC SLEEVING AT 2X THE PIPE SIZE. ALL SLEEVING SHALL BE FREE OF STONES AND DEBRIS.
37. IRRIGATION SOURCE TO BE EITHER WELL, POTABLE, OR NON-POTABLE WATER. IRRIGATION CONTRACTOR TO VERIFY SOURCE PRIOR TO DESIGN.
38. POINT OF CONNECTION TO BE DETERMINED BY OWNER. IRRIGATION SYSTEM CONNECTIONS TO THE LOCAL JURISDICTION SERVICE SHALL COMPLY WITH ALL APPLICABLE CODES.
39. IRRIGATION CONNECTION MAY REQUIRE BACKFLOW PREVENTION, VERIFY WITH LOCAL JURISDICTION.
40. IRRIGATION SYSTEM SHALL COMPLY WITH THE LOCAL JURISDICTION LAND DEVELOPMENT CODE.

2 / L2.51 TYPICAL SCHEMATIC IRRIGATION NOTES

No.	REVISIONS	DATE

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dnQualifier=A01410D000018C5798920D00027
O=KIMLEY-HORN AND ASSOCIATES INC, C=US
Date: 2025.08.28 09:43:00-04'00'

8/28/2025

KHA PROJECT 149658036
DATE 04/15/2025
SCALE AS SHOWN
DESIGNED BY JTD
DRAWN BY JTD
CHECKED BY GSW

IRRIGATION SPECIFICATIONS

HILLSIDE GROVE

FLORIDA

HOWEY-IN-THE-HILLS

SHEET NUMBER
L2.51

Plotted By:Dumbauld, Jimmy Sheet Set:HILLSIDE GROVES COMMON Layout:L2.51 August 28, 2025 09:12:23am K:\ORL_LA\149658036_Hillside Groves\CAD\CONST\PlanSheets\L2.00 AMENITY IRRIGATION PLAN.dwg
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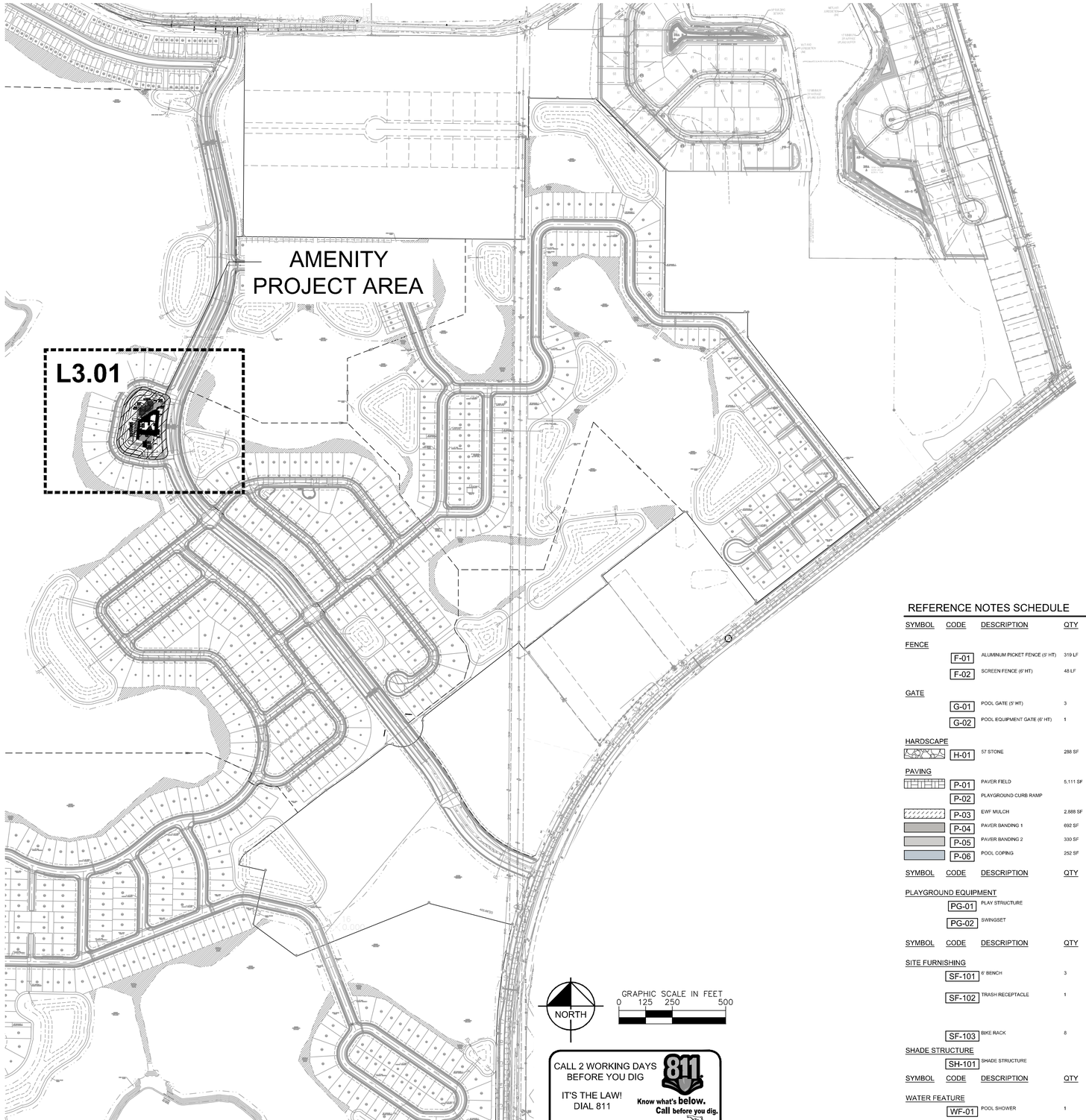

REFERENCE NOTES SCHEDULE

SYMBOL	CODE	DESCRIPTION	QTY	DETAIL	MANUFACTURER	PRODUCT	FINISH/COLOR	SIZE	REMARKS
FENCE									
	F-01	ALUMINUM PICKET FENCE (5' HT)	319 LF	2/L3.51	-	ALUMINUM PICKET FENCE	POWDER COATED BLACK	5' HT	PICKET SPACING TO REJECT A 4" DIA. SPHERE. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL. CONTRACTOR TO SUBMIT PRODUCT SPECIFICTION FOR APPROVAL BY LANDSCAPE ARCHITECT / FOOTING PER FENCE MANUFACTURER
	F-02	SCREEN FENCE (6' HT)	48 LF	/	SUPERIOR FENCE & RAIL	HAMILTON PRIVACY FENCE	VINYL / WHITE	6' HT	
GATE									
	G-01	POOL GATE (5' HT)	3	/	-	ALUMINUM PICKET GATE	POWDER COATED BLACK	5' HT	PICKET SPACING TO REJECT A 4" DIA. SPHERE. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL. CONTRACTOR TO SUBMIT PRODUCT SPECIFICTION FOR APPROVAL BY LANDSCAPE ARCHITECT / FOOTING PER FENCE MANUFACTURER
	G-02	POOL EQUIPMENT GATE (6' HT)	1	3/L3.53	SUPERIOR FENCE & RAIL	HAMILTON PRIVACY FENCE	VINYL / WHITE	6' HT	
HARDSCAPE									
	H-01	57 STONE	288 SF		-	WASHED #57 STONE	-	4" DEPTH	LAY ON TOP OF FILTER FABRIC. APPLY PRE-EMERGENT PRIOR TO INSTALLATION.
PAVING									
	P-01	PAVER FIELD	5,111 SF	4/L3.53	TREMRON	BRICK PAVERS	GLACIER	4"X8"X2-3/8" BASKETWEAVE PATTERN	INSTALL PER MANUFACTURER'S SPECIFICATIONS
	P-02	PLAYGROUND CURB RAMP		7/L3.50	-	4000 PSI STANDARD CONCRETE	FINISH: LIGHT BROOM	5' W X 8' L	
	P-03	EWF MULCH	2,888 SF	5/L3.53	FIBAR	FIBARSYSTEM 300			INSTALL PER MANUFACTURER'S SPECIFICATIONS. DEPTH PER FALL ZONE REQUIREMENTS.
	P-04	PAVER BANDING 1	692 SF	6/L3.53	TREMRON	BRICK PAVERS	GLACIER SOLDIER COURSE	4" X 8"	INSTALL PER MANUFACTURERS INSTRUCTIONS
	P-05	PAVER BANDING 2	330 SF	7/L3.53	TREMRON	BRICK PAVER	WHITE	4"X8"	INSTALL PER MANUFACTURER'S SPECIFICATIONS
	P-06	POOL COPING	252 SF	8/L3.53	TREMRON	BULLNOSE COPING	GLACIER	4"X9"	INSTALL PER MANUFACTURERS INSTRUCTIONS

SYMBOL	CODE	DESCRIPTION	QTY	DETAIL	MANUFACTURER	PRODUCT	COLOR/FINISH	NOTES
PLAYGROUND EQUIPMENT								
	PG-01	PLAY STRUCTURE		2/L3.52	PARKFORMS	MODIFIED MINI + AGE: 5-12 (BY OWNER)	RSP COLOR: SLATE & MIST COLOR SCHEME: CUSTOM	INSTALL PER MANUFACTURER'S SPECIFICATIONS
	PG-02	SWINGSET		1/L3.53	PARKFORMS	MODIFIED MINI + AGE: 5-12 (BY OWNER)	RSP COLOR: SLATE & MIST COLOR SCHEME: CUSTOM	INSTALL PER MANUFACTURER'S SPECIFICATIONS

SYMBOL	CODE	DESCRIPTION	QTY	DETAIL	MANUFACTURER	PRODUCT	FINISH/COLOR	SIZE	REMARKS
SITE FURNISHING									
	SF-101	6' BENCH	3	9/L3.53	ANOVA	AE2690LF AIR LEAF 6FT. CONTOUR BENCH	FRAME: WHITE TEXTURE COATED SEAT: WHITE TEXTURE COATED	6'	INSTALL PER MANUFACTURER'S SPECIFICATIONS
	SF-102	TRASH RECEPTACLE	1	1/L3.54	ANOVA	AE2645CBTLF AIR LEAF 45-GAL TRASH/RECYCLER WITH SIDE DOOR, CURVE TOP	FRAME: WHITE TEXTURE COATED PANEL/LID: WHITE TEXTURE COATED	45-GAL	SURFACE-MOUNT, INSTALL PER MANUFACTURER'S SPECIFICATIONS
	SF-103	BIKE RACK	8	2/L3.54	ANOVA	CIRCLEBR	WHITE TEXTURE COATED	32IN.H X 68IN.W X 36IN.LRN	SURFACE MOUNT, INSTALL PER MANUFACTURER'S SPECIFICATIONS
SHADE STRUCTURE									
	SH-101	SHADE STRUCTURE		1/L3.52	PARKFORMS	MODIFIED MINI + (BY OWNER)	RSP COLOR: SLATE & MIST COLOR SCHEME: CUSTOM	(BY OWNER)	INSTALL PER MANUFACTURER'S SPECIFICATIONS

SYMBOL	CODE	DESCRIPTION	QTY	DETAIL	MANUFACTURER	PRODUCT	FINISH/COLOR	REMARKS
WATER FEATURE								
	WF-01	POOL SHOWER	1	4/L3.51	SIGNATURE HARDWARE	WALL-MOUNT OUTDOOR SHOWER SH401595	STAINLESS STEEL	INSTALL PER MANUFACTURERS SPECIFICATIONS, STRUCTURAL DESIGN PROVIDED BY OTHERS.

Kimley»Horn
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No.	REVISIONS	DATE
B		

Digitally signed by Gregory S Witherspoon
DN: CN=Gregory S Witherspoon, C=US, E=greg.witherspoon@kimley-horn.com, O=KIMLEY-HORN AND ASSOCIATES INC, C=US
Date: 2025.08.28 09:43:01-04'00'

08/28/2025

KHA PROJECT 149658036
DATE 04/15/2025
SCALE AS SHOWN
DESIGNED BY JTD
DRAWN BY JTD
CHECKED BY GSW

OVERALL AMENITY HARDSCAPE PLAN

HILLSIDE GROVE

HOWEY-IN-THE-HILLS FLORIDA

SHEET NUMBER
L3.00

Plotted By:Dumbauld, Jimmy Sheet Set:HILLSIDE GROVES COMMON Layout:L3.00 August 28, 2025 09:12:55am K:\ORL_LA\149658036_Hillside Groves\CAD\CONST\PlanSheets\L3.00 AMENITY HARDSCAPE PLAN.dwg
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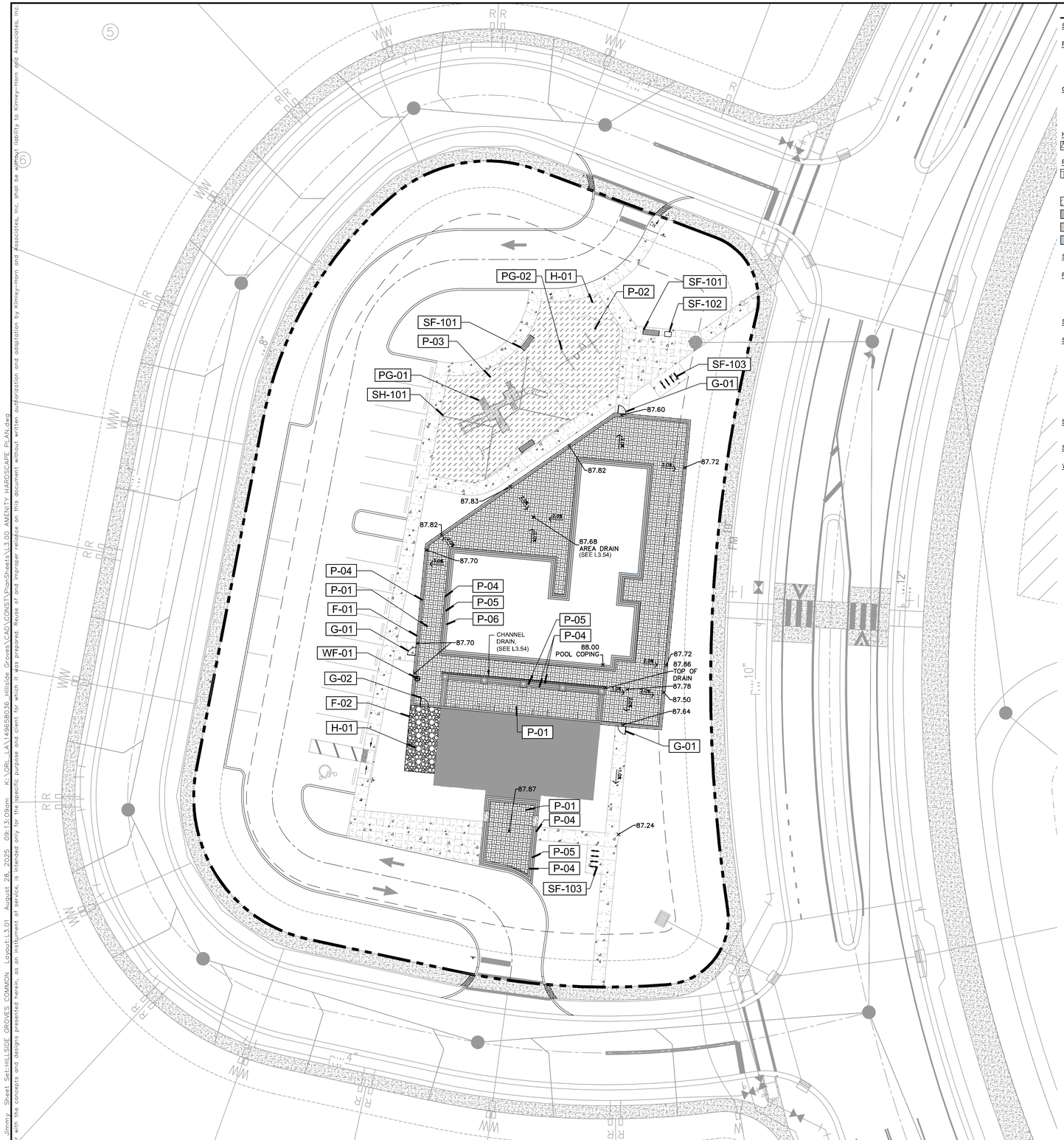

REFERENCE NOTES SCHEDULE

SYMBOL	CODE	DESCRIPTION	QTY	DETAIL	MANUFACTURER	PRODUCT	FINISH/COLOR	SIZE	REMARKS
FENCE									
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	F-02	SCREEN FENCE (6' HT)	48 LF	/	SUPERIOR FENCE & RAIL	HAMILTON PRIVACY FENCE	VINYL / WHITE	6' HT	CONTRACTOR TO SUBMIT PRODUCT SPECIFICTION FOR APPROVAL BY LANDSCAPE ARCHITECT / FOOTING PER FENCE MANUFACTURER
GATE									
	G-01	POOL GATE (5' HT)	3	/	-	ALUMINUM PICKET GATE	POWDER COATED BLACK	5' HT	PICKET SPACING TO REJECT A 4" DIA. SPHERE. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL.
	G-02	POOL EQUIPMENT GATE (6' HT)	1	3/L3.53	SUPERIOR FENCE & RAIL	HAMILTON PRIVACY FENCE	VINYL / WHITE	6' HT	CONTRACTOR TO SUBMIT PRODUCT SPECIFICTION FOR APPROVAL BY LANDSCAPE ARCHITECT / FOOTING PER FENCE MANUFACTURER
HARDSCAPE									
	H-01	57 STONE	288 SF		-	WASHED #57 STONE	-	4" DEPTH	LAY ON TOP OF FILTER FABRIC. APPLY PRE-EMERGENT PRIOR TO INSTALLATION.
PAVING									
	P-01	PAVER FIELD	5,111 SF	4/L3.53	TREMRON	BRICK PAVERS	GLACIER	4"X8"X2-3/8" BASKETWEAVE PATTERN	INSTALL PER MANUFACTURER'S SPECIFICATIONS
	P-02	PLAYGROUND CURB RAMP		7/L3.50	-	4000 PSI STANDARD CONCRETE	FINISH: LIGHT BROOM	5' W X 8' L	
	P-03	EWF MULCH	2,888 SF	5/L3.53	FIBAR	FIBARSYSTEM 300			INSTALL PER MANUFACTURER'S SPECIFICATIONS, DEPTH PER FALL ZONE REQUIREMENTS.
	P-04	PAVER BANDING 1	692 SF	6/L3.53	TREMRON	BRICK PAVERS	GLACIER SOLDIER COURSE	4" X 8"	INSTALL PER MANUFACTURERS INSTRUCTIONS
	P-05	PAVER BANDING 2	330 SF	7/L3.53	TREMRON	BRICK PAVER	WHITE	4"X8"	INSTALL PER MANUFACTURER'S SPECIFICATIONS
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SYMBOL	CODE	DESCRIPTION	QTY	DETAIL	MANUFACTURER	PRODUCT	COLOR/FINISH	NOTES
PLAYGROUND EQUIPMENT								
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	PG-02	SWINGSET		1/L3.53	PARKFORMS	MODIFIED MINI + AGE: 5-12 (BY OWNER)	RSP COLOR: SLATE & MIST COLOR SCHEME: CUSTOM	INSTALL PER MANUFACTURER'S SPECIFICATIONS

SYMBOL	CODE	DESCRIPTION	QTY	DETAIL	MANUFACTURER	PRODUCT	FINISH/COLOR	SIZE	REMARKS
SITE FURNISHING									
	SF-101	6' BENCH	3	9/L3.53	ANOVA	AE2660LF ARI LEAF 6FT, CONTOUR BENCH	FRAME: WHITE TEXTURE COATED SEAT: WHITE TEXTURE COATED	6'	INSTALL PER MANUFACTURER'S SPECIFICATIONS
	SF-102	TRASH RECEPTACLE	1	1/L3.54	ANOVA	AE2643CSTLF ARI LEAF 45-GAL TRASH/RECYCLER WITH SIDE DOOR, CURVE TOP	FRAME: WHITE TEXTURE COATED PANELLED: WHITE TEXTURE COATED	45-GAL	SURFACE-MOUNT, INSTALL PER MANUFACTURER'S SPECIFICATIONS
	SF-103	BIKE RACK	8	2/L3.54	ANOVA	CIRCLEBR	WHITE TEXTURE COATED	32IN.H X 6IN.W X 36IN.LRN	SURFACE MOUNT, INSTALL PER MANUFACTURER'S SPECIFICATIONS
SHADE STRUCTURE									
	SH-101	SHADE STRUCTURE		1/L3.52	PARKFORMS	MODIFIED MINI + (BY OWNER)	RSP COLOR: SLATE & MIST COLOR SCHEME: CUSTOM	(BY OWNER)	INSTALL PER MANUFACTURER'S SPECIFICATIONS

SYMBOL	CODE	DESCRIPTION	QTY	DETAIL	MANUFACTURER	PRODUCT	FINISH/COLOR	REMARKS
WATER FEATURE								
	WF-01	POOL SHOWER	1	4/L3.51	SIGNATURE HARDWARE	WALL-MOUNT OUTDOOR SHOWER SH401596	STAINLESS STEEL	INSTALL PER MANUFACTURERS SPECIFICATIONS. STRUCTURAL DESIGN PROVIDED BY OTHERS.

NORTH

GRAPHIC SCALE IN FEET
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No.	REVISIONS	DATE

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dnQualifier=A01410D000018C57989200000277
O=KIMLEY-HORN AND ASSOCIATES INC., C=US
Date: 2025.08.28 09:43:03-04'00'

08/28/2025

KHA PROJECT 149658036
DATE 04/15/2025
SCALE AS SHOWN
DESIGNED BY JTD
DRAWN BY JTD
CHECKED BY GSW

AMENITY HARDSCAPE PLAN

HILLSIDE GROVE

SHEET NUMBER
L3.01

Plotted By:Dumbauld, Jimmy Sheet Set:HILLSIDE GROVES COMMON Layout:L3.01 August 28, 2025 09:13:03am K:\ORL_LA\149658036 Hillside Groves\CAD\CONST\PlanSheets\L3.01 AMENITY HARDSCAPE PLAN.dwg
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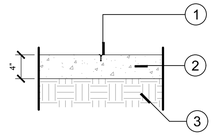
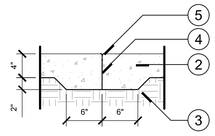
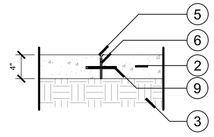


3 CONTROL JOINT



4 CONSTRUCTION JOINT

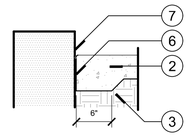


5 EXPANSION JOINT

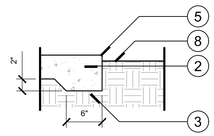
1. SAWCUT JOINTS, 1" DEEP (MIN.), 1/8" WIDE PER PLAN LOCATIONS
2. 4" THICK FDOT CLASS I (3,000 PSI) CONCRETE. WIDTH PER HARDSCAPE PLANS. CONTROL AND EXPANSION JOINTS PER PLANS.
3. COMPACTED SUBGRADE TO 98% MOD. PROCTOR, T-180
4. APPLY BOND BREAKER
5. 1/8" TOOLED RADIUS
6. 3/8" NON-EXTRUDED BITUMINOUS PREMOULDED EXPANSION JOINT (SEALED WITH RESILENT FILLER), FULL DEPTH, FLUSH WITH SURFACE, PLACE PER SPECIFICATIONS
7. VERTICAL ELEMENT, SEE HARDSCAPE PLANS
8. ADJACENT PLANTING AREA. HOLD GRADE 1" BELOW FINISHED ELEVATION OF PAVING AT SOD AND 2" BELOW AT SHRUB / MULCH BEDS.
9. #4 SMOOTH DOWEL @ 18" O.C. COAT ONE END TO PREVENT BOND.

NOTES:

- REFER TO HARDSCAPE SCHEDULE SHEET FOR CONCRETE PAVING FINISH AND COLOR
- MAXIMUM SURFACE AREA BETWEEN CONTROL JOINTS NOT TO EXCEED 100 S.F.
- MAXIMUM SURFACE AREA BETWEEN EXPANSION JOINTS NOT TO EXCEED 400 S.F.
- PROVIDE ISOLATION JOINT BETWEEN CONCRETE AND PAVING AND ALL FIXED VERTICAL SITE ELEMENTS
- FINISH GRADE TO SLOPE AWAY FROM ALL VERTICAL SITE ELEMENTS TO PROVIDE POSITIVE DRAINAGE



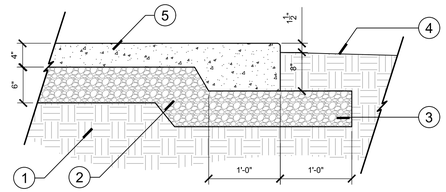
1 ISOLATION JOINT



2 CONCRETE PAVEMENT @ LANDSCAPE EDGE

1 CONCRETE PAVEMENT - JOINT & EDGE DETAIL

1" = 1'-0"



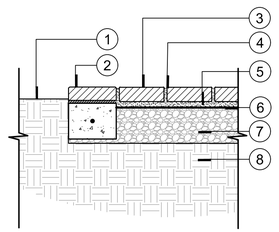
1. COMPACTED SUB-GRADE-95% STANDARD PROCTOR DENSITY
2. 6" GRADED AGGREGATE PER FDOT SECTION 204 OR RECYCLED CONCRETE PER FDOT SECTION 911 1/4 MINUS
3. EXTEND BASE 12" BEYOND EDGE OF PAVING
4. FINISH GRADE
5. 4" THICK CONCRETE PAVING - 4000 PSI AT 28 DAYS MIN.

NOTES:

- REFER TO HARDSCAPE SCHEDULE SHEET FOR CONCRETE PAVING FINISH AND COLOR
- MAXIMUM SURFACE AREA BETWEEN CONTROL JOINTS NOT TO EXCEED 100 S.F.
- MAXIMUM SURFACE AREA BETWEEN EXPANSION JOINTS NOT TO EXCEED 400 S.F.
- PROVIDE ISOLATION JOINT BETWEEN CONCRETE AND PAVING AND ALL FIXED VERTICAL SITE ELEMENTS
- FINISH GRADE TO SLOPE AWAY FROM ALL VERTICAL SITE ELEMENTS TO PROVIDE POSITIVE DRAINAGE

2 CONCRETE PAVEMENT - 4" THICK

1" = 1'-0"



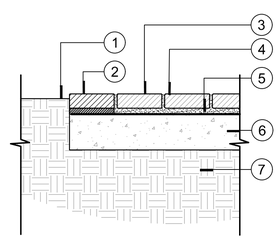
1. ADJACENT PLANTING AREA. HOLD GRADE 1" BELOW FINISHED ELEVATION OF PAVING AT SOD AND 2" BELOW AT SHRUB / MULCH BEDS. REFER TO HARDSCAPE PLANS.
2. PEDESTRIAN CONCRETE PAVER EDGE TO BE MORTAR SET TO CAST-IN-PLACE CONCRETE EDGE WITH 1 #4 CONT. REBAR.
3. PAVER, REFER TO HARDSCAPE PLAN/SCHEDULE FOR PAVER SELECTION AND LAYOUT ORIENTATION.
4. 1/8" POLYMERIC SAND FILLED JOINTS
5. 1" MIN. SAND BEDDING COURSE PER ASTM C-33 SPECIFICATIONS.
6. MIRAFI 160 N NONWOVEN POLYPROPYLENE GEOTEXTILE (PERMEABLE) FABRIC OR APPROVED EQUAL UNDER BEDDING SAND-JOINT, TURN UP ON ENDS.
7. 6" GRADED AGGREGATE PER FDOT SECTION 204 OR RECYCLED CONCRETE AGGREGATE PER FDOT SECTION 911
8. COMPACTED SUBGRADE TO 95% STANDARD PROCTOR.

NOTES:

- CONTRACTOR TO INSTALL ALL PAVERS PER MANUFACTURER'S SPECIFICATIONS.
- ALL INTERLOCKING CONCRETE PAVERS SHALL MEET THE REQUIREMENTS IN ASTM C936 "STANDARD SPECIFICATIONS FOR SOLID INTERLOCKING CONCRETE PAVING UNITS", AND SHALL COMPLY WITH APPLICABLE ICPI (INTERLOCKING CONCRETE PAVEMENT INSTITUTE) TECHNICAL SPECIFICATIONS.
- ALL AREAS OF INTERLOCKING CONCRETE PAVERS, AS SHOWN ON THE PLANS SHALL BE SET WITH FLUSH TOP SURFACE AND SHALL MAINTAIN A MINIMUM SLOPE OF 0.5%, UNLESS OTHERWISE NOTED ON THE PLANS, ICPI TECHNICAL SPECIFICATIONS, OR DETAILS.
- BEDDING SAND SHALL CONFORM TO THE GRADING REQUIREMENTS OF ASTM C33. MASON SAND IS NOT ACCEPTABLE. ALL BEDDING SAND SHALL BE SCREENED TO AN EVEN THICKNESS.
- ALL AREAS OF INTERLOCKING CONCRETE PAVERS SHALL COMPLY WITH CURRENT ADA (AMERICANS WITH DISABILITIES ASSOCIATION) REQUIREMENTS FOR ACCESSIBLE ROUTES.
- ALL INTERLOCKING CONCRETE PAVER "CUTS" SHALL BE MADE WITH A SPLITTER OR MASONRY SAW.

3 PEDESTRIAN CONCRETE PAVERS - TYP.

1" = 1'-0"



1. ADJACENT PLANTING AREA. HOLD GRADE 1" BELOW FINISHED ELEVATION OF PAVING AT SOD AND 2" BELOW AT SHRUB / MULCH BEDS. REFER TO HARDSCAPE PLANS.
2. PEDESTRIAN CONCRETE PAVER EDGE TO BE MORTAR SET
3. PAVER, REFER TO HARDSCAPE PLAN/SCHEDULE.
4. 1/8" POLYMERIC SAND FILLED JOINTS
5. 1" MIN. SAND BEDDING COURSE PER ASTM C-33 SPECIFICATIONS.
6. BUILDING STRUCTURAL SLAB. REFER TO ARCHITECTURAL / STRUCTURAL ENGINEERING DRAWINGS
7. COMPACTED SUBGRADE TO 95% STANDARD PROCTOR.

NOTES:

- CONTRACTOR TO INSTALL ALL PAVERS PER MANUFACTURER'S SPECIFICATIONS.
- ALL INTERLOCKING CONCRETE PAVERS SHALL MEET THE REQUIREMENTS IN ASTM C936 "STANDARD SPECIFICATIONS FOR SOLID INTERLOCKING CONCRETE PAVING UNITS", AND SHALL COMPLY WITH APPLICABLE ICPI (INTERLOCKING CONCRETE PAVEMENT INSTITUTE) TECHNICAL SPECIFICATIONS.
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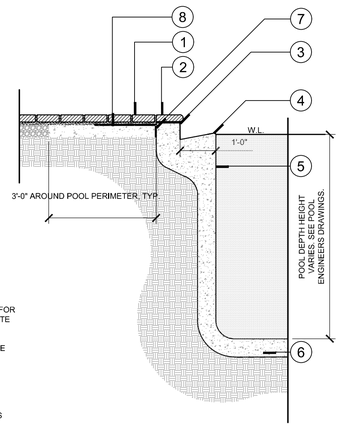
4 PEDESTRIAN CONC. PAVERS @ BLDG. SLAB

1" = 1'-0"



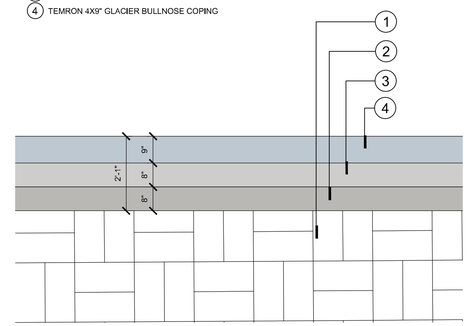
1. POOL PAVER DECK, SEE HARDSCAPE PLANS. PITCH AWAY 1/4" PER FT. MINIMUM. 1/2" PER FT. MAXIMUM.
2. BULLNOSE POOL COPING
3. POOL GUTTER TILE
4. POOL 2"X6" MUD CAP NONSKID WATERLINE TILE
5. POOL PLASTER FINISH
6. POOL SHELL, SEE POOL ENGINEER PLANS
7. EXPANSION JOINT
8. 4" THICK CONCRETE BASE

NOTES:

- INSTALL POOL PRODUCTS PER MANUFACTURER'S SPECIFICATIONS.
- CONTRACTOR TO SUBMIT PRODUCT SAMPLE FOR DESIGN TEAM REVIEW.
- FINAL PRODUCT SELECTION AND COLOR TO BE REVIEWED AND APPROVED BY OWNER.

5 POOL GUTTER & COPING - DESIGN INTENT

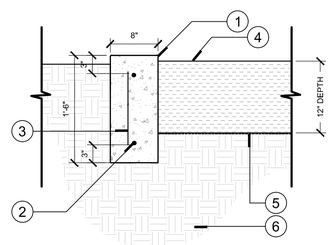
1/2" = 1'-0"



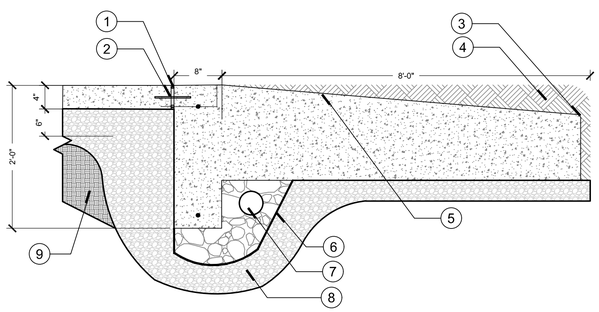
1. TREMRON 4X8X2-3/8" BASKETWEAVE GLACIER PAVER FIELD
2. TREMRON 4X8X2-3/8" SOLDIER COURSE GLACIER PAVER BANDING
3. TREMRON 4X8X2-3/8" SOLDIER COURSE WHITE PAVER BANDING
4. TEMRON 4X9" GLACIER BULLNOSE COPING

6 POOL DECK PAVING ENLARGEMENT

1/2" = 1'-0"



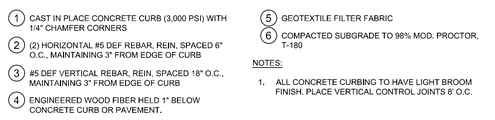
1. 1/2" EXPANSION JOINT WITH WATERPROOF SEAL
2. #4 x 6" REBAR DOWEL, 4" O.C.
3. TURN DOWN AT END OF RAMP
4. WOOD FIBER FILL 12" MIN DEPTH (FINAL DEPTH PER PLAYGROUND MANUFACTURER)
5. ACCESSIBLE CONCRETE RAMP INTO PLAY AREA
6. GEOTEXTILE FILTER FABRIC
7. 4" PERFORATED DRAIN TILE WITH FILTER SOCK - PLACE PEA GRAVEL UNDER AND AROUND DURING INSTALLATION
8. COMPACTED BASE MATERIAL
9. COMPACTED OR UNDISTRUBED SUBGRADE



NOTE:
ALL CONCRETE CURBING TO HAVE LIGHT BROOM FINISH, PLACE VERTICAL CONTROL JOINTS EVERY 8' O.C.

7 PLAYGROUND CURB RAMP

1"=1'-0"



1. CAST IN PLACE CONCRETE CURB (3,000 PSI) WITH 1/4" CHAMFER CORNERS
2. (2) HORIZONTAL #5 DEF REBAR, REIN. SPACED 6" O.C., MAINTAINING 3" FROM EDGE OF CURB
3. #5 DEF VERTICAL REBAR, REIN. SPACED 18" O.C., MAINTAINING 3" FROM EDGE OF CURB
4. ENGINEERED WOOD FIBER HELD 1" BELOW CONCRETE CURB OR PAVEMENT.
5. GEOTEXTILE FILTER FABRIC
6. COMPACTED SUBGRADE TO 98% MOD. PROCTOR, T-180

NOTES:

1. ALL CONCRETE CURBING TO HAVE LIGHT BROOM FINISH. PLACE VERTICAL CONTROL JOINTS 8' O.C.

8 CONCRETE CURB - PLAYGROUND

1" = 1'-0"

No.	REVISIONS	DATE

Kimley»Horn
© 2024 KIMLEY-HORN AND ASSOCIATES, INC.
200 S. ORANGE AVENUE, SUITE 600, ORLANDO, FL 32801
PHONE: 407-898-1511
WWW.KIMLEY-HORN.COM REGISTRY No. 35106

Digitally signed by Gregory S Witherspoon
DN: CN=Gregory S Witherspoon, C=US, dnQualifier=A01410D000018C57989200800027, O=KIMLEY-HORN AND ASSOCIATES INC.
Date: 2025.08.28 09:43:03-04'00'

08/28/2025

KHA PROJECT	149658036
DATE	04/15/2025
SCALE	AS SHOWN
DESIGNED BY	JTD
DRAWN BY	JTD
CHECKED BY	GSW

AMENITY HARDSCAPE PLAN

HILLSIDE GROVE

SHEET NUMBER
L3.50

Plotted By:Dumbould, Jimmy Sheet Set:HILLSIDE GROVES COMMON Layout:L3.50 August 28, 2025 09:35:23am K:\ORL_LA\149658036_Hillside Groves\CAD\CONST\PlanSheets\L3.00 AMENITY HARDSCAPE PLAN.dwg
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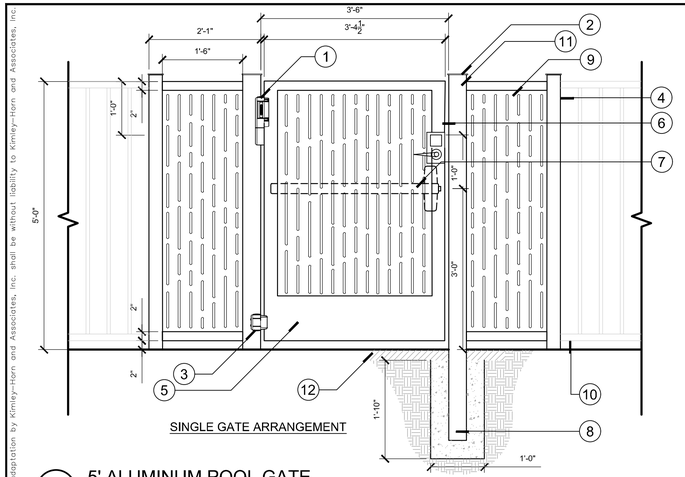
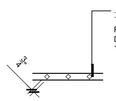


SINGLE GATE ARRANGEMENT

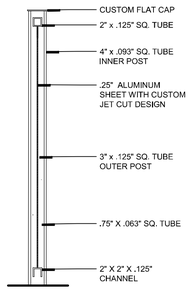
1. LOCINOX MAMMOTH 180 SELF-CLOSING HINGE
2. CUSTOM FLAT CAP
3. LOCINOX DINO HINGE
4. 3" X .125" SQ. TUBE POST
5. 2" x 10" X .125" KICK PLATE FOR ADA COMPLIANCY
6. SIMPLEX L1021 LEVER MECHANICAL PUSHBUTTON LOCK KEY BYPASS
7. PANIC BAR & WEATHERPROOF ELECTRIC STRIKE, SEE NOTES
8. EXTEND POST INTO CONC. FOOTING BENEATH HARDSCAPE MATERIAL. SHAPE TOP TO SHED WATER
9. PERFORATED ALUMINUM PANEL TO PREVENT REACH THROUGH (FLUSH FINISH PAINT TO MATCH FENCE)
10. 4' ALUMINUM POOL FENCE, TYP.
11. 4" X .125" SQ. TUBE POST
12. PEDESTRIAN PAVERS, SEE HARDSCAPE PLANS

NOTES:

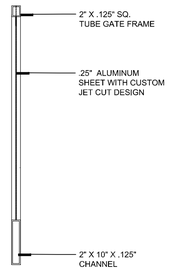
- CONTRACTOR IS REQUIRED TO SUBMIT PRODUCT DATA AND SHOP DRAWINGS FOR ALL GATE COMPONENTS FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
- ALL PERIMETER POOL GATES TO HAVE FULL PANIC BAR AND WEATHERPROOF ELECTRIC STRIKE, FENCE FABRICATOR TO PROVIDE SHOP DRAWING FOR INSTALLATION AND GROUNDING.
- CONTRACTOR TO ENSURE GATES ARE INSTALLED IN COMPLIANCE WITH ADA MANEUVERING CLEARANCES. REFER TO ADA GATE SWING RADIUS DETAIL FOR CRITICAL DIMENSIONS.
- CONTRACTOR TO ENSURE GATE HARDWARE IS IN COMPLIANCE WITH ADA HEIGHT FROM FINISH GRADE REQUIREMENTS.
- ALL ALUMINUM GATE COMPONENTS TO BE POWDER COATED BLACK.
- GRIND ALL WELDS SMOOTH.
- PLATES TO BE WELDED TO THE POST WITH A CONTINUOUS 1/4" WELD GROUND SMOOTH AND ALL PRIMED/PAINTED TO MATCH THE FENCE.
- ANCHOR SYSTEM TO BE RED HEAD TRU-BOLT WEDGE ANCHOR 1/4" x 2 1/8" WW304S.S (OR APPROVED EQUAL
- GATE DETAIL ASSISTANCE PROVIDED BY THE MANUFACTURER BARFIELD FENCE AND FABRICATION. CONTACT: 321.396.001



PICKET ORIENTATION
CUT VIEW



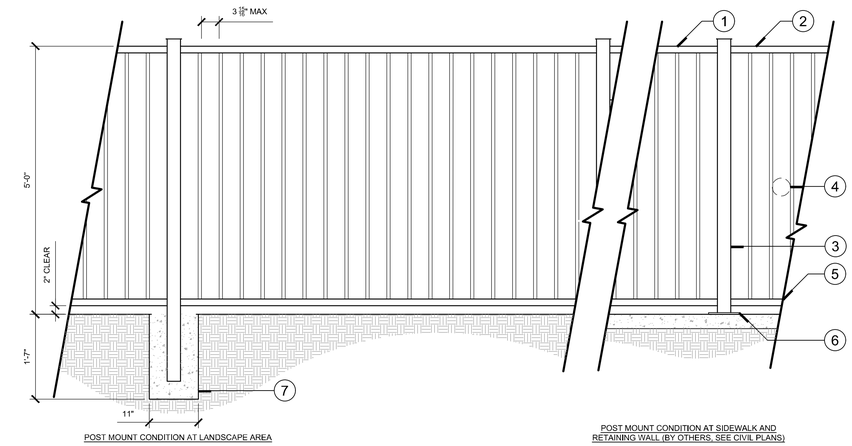
WING PANEL CUT VIEW



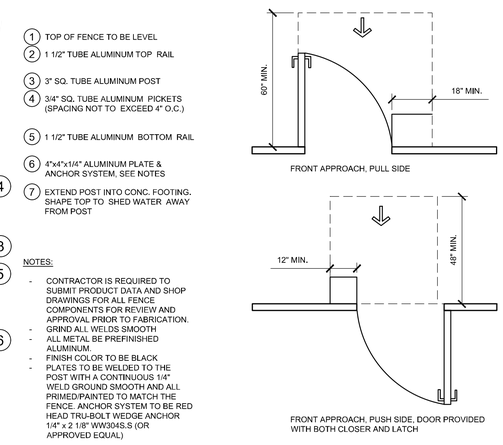
GATE CUT VIEW

1 5' ALUMINUM POOL GATE

3/4" = 1'-0"



POST MOUNT CONDITION AT LANDSCAPE AREA



POST MOUNT CONDITION AT SIDEWALK AND RETAINING WALL (BY OTHERS, SEE CIVIL PLANS)

1. TOP OF FENCE TO BE LEVEL
2. 1 1/2" TUBE ALUMINUM TOP RAIL
3. 3" SQ. TUBE ALUMINUM POST
4. 3/4" SQ. TUBE ALUMINUM PICKETS (SPACING NOT TO EXCEED 4" O.C.)
5. 1 1/2" TUBE ALUMINUM BOTTOM RAIL
6. 4"x4"x1/4" ALUMINUM PLATE & ANCHOR SYSTEM, SEE NOTES
7. EXTEND POST INTO CONC. FOOTING. SHAPE TOP TO SHED WATER AWAY FROM POST

NOTES:

- CONTRACTOR IS REQUIRED TO SUBMIT PRODUCT DATA AND SHOP DRAWINGS FOR ALL FENCE COMPONENTS FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
- GRIND ALL WELDS SMOOTH
- ALL METAL BE PREFINISHED ALUMINUM.
- FINISH COLOR TO BE BLACK
- PLATES TO BE WELDED TO THE POST WITH A CONTINUOUS 1/4" WELD GROUND SMOOTH AND ALL PRIMED/PAINTED TO MATCH THE FENCE. ANCHOR SYSTEM TO BE RED HEAD TRU-BOLT WEDGE ANCHOR 1/4" x 2 1/8" WW304S.S (OR APPROVED EQUAL)

2 ALUMINUM POOL FENCE

3/4" = 1'-0"

FRONT APPROACH, PULL SIDE

FRONT APPROACH, PUSH SIDE, DOOR PROVIDED WITH BOTH CLOSER AND LATCH

3 ADA GATE SWING RADIUS

NTS

MDF
MOST DEPENDABLE FOUNTAINS, INC.

MOST DEPENDABLE FOUNTAINS, INC.
5705 COMMANDER DR. P.O. BOX 587
ARLINGTON, TN 38002-0587
PHONE: (901) 867-0039
www.mostdependable.com

PHOTO EXAMPLE:



FINISH/COLOR:
STAINLESS STEEL

PRODUCT INFORMATION:

MANUFACTURER: MOST DEPENDABLE FOUNTAINS
MODEL: 500 SMSS
FINISH/COLOR: STAINLESS STEEL

NOTES:

1. PROVIDE HOSE BIB WITH LOCKING COVER, TO BE LOCATED ON RIGHT SIDE OF SHOWER.
2. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS
3. CONTRACTOR MUST SUBMIT SHOP DRAWING FOR REVIEW AND APPROVAL PRIOR TO PROCUREMENT.

4 OUTDOOR SHOWER

N.T.S.

Item 1.

No.	REVISIONS	DATE

Kimley»Horn
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200 S. ORANGE AVENUE, SUITE 600, ORLANDO, FL 32801
PHONE: 407-898-1511
WWW.KIMLEY-HORN.COM REGISTRY No. 35106

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dnQualifier=A01410D000018C57892000
O=KIMLEY-HORN AND ASSOCIATES INC, C=US
Date: 2025.08.28 09:43:05-04'00'

08/28/2025

KHA PROJECT	149658036
DATE	04/15/2025
SCALE	AS SHOWN
DESIGNED BY	JTD
DRAWN BY	JTD
CHECKED BY	GSW

AMENITY
HARDSCAPE PLAN

HILLSIDE
GROVE

SHEET NUMBER
L3.51

Plotted By:Dumbauld, Jimmy Sheet Set:HILLSIDE GROVES COMMON Layout:L3.51 August 28, 2025 09:13:19am K:\ORL_LA\149658036-Hillside Groves\CAD\CONSTY\PlanSheets\L3.00 AMENITY HARDSCAPE PLAN.dwg
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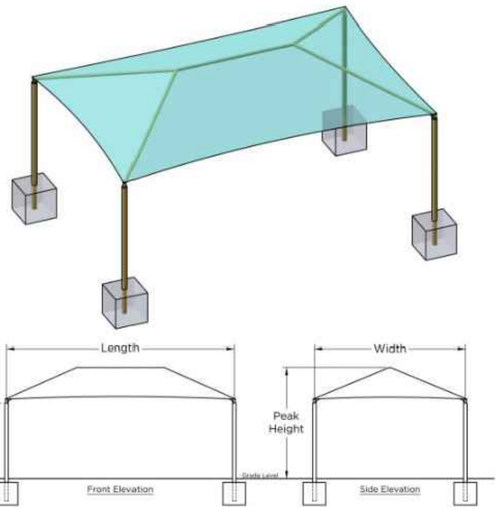
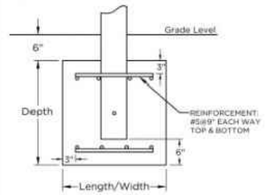
Hip Shade

Length	38'	**Width**	28'	**Entry Height**	10'
Peak Height	15.65'	**Elbow**	Glide	**Column Mount**	Embedded
Column Size	Ø6.6" Sch-40	**Rafter Size**	Ø5.0" 11-Ga	**Ridge Size**	Ø5.0" 11-Ga
Column Length	13'	**Rafter Length**	19.91'	**Ridge Length**	12.06'
Dome Qty.	1	**Column Qty.**	4		



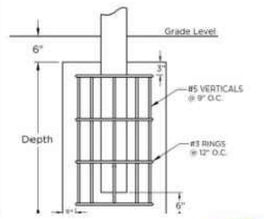
Square Footing

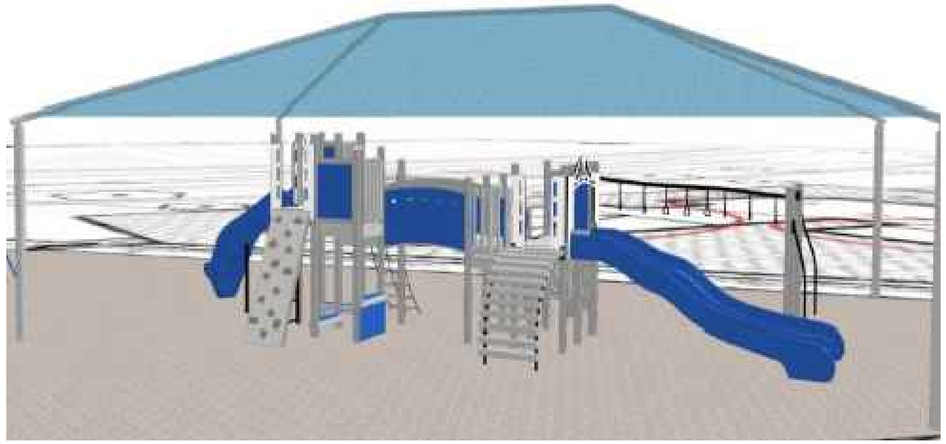
Column	Length & Width	Depth
Single Cap	4.27'	3
Double Cap	N/A	3

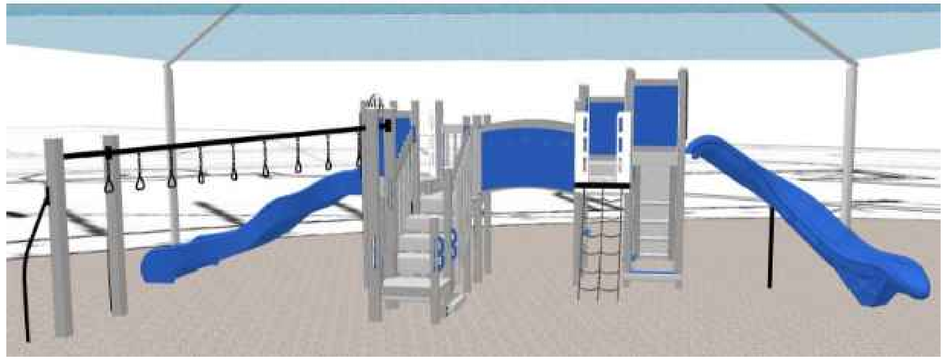


Auger Footing

Diameter	Single Cap Depth	Double Cap Depth
1'-6"		
2'-0"	Out of range	N/A
2'-6"	Out of range	N/A
3'-0"	6.2	N/A







1 SHADE STRUCTURE
1" = 1'-0"

2 PLAY STRUCTURE
1" = 1'-0"

Plotted By:Dumbauld, Jimmy Sheet Set:HILLSIDE GROVES COMMON Layout:L3.52 August 28, 2025 09:13:24am K:\ORL_LA\149658036_Hillside Groves\CAD\CONST\PlanSheets\L3.00 AMENITY HARDSCAPE PLAN.dwg
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200 S. ORANGE AVENUE, SUITE 600, ORLANDO, FL 32801
PHONE: 407-898-1511
WWW.KIMLEY-HORN.COM REGISTRY No. 35106

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dnQualifier=A01410D000018C57B9200000272
O=KIMLEY-HORN AND ASSOCIATES INC, C=US
Date: 2025.08.28 09:43:06-04'00'

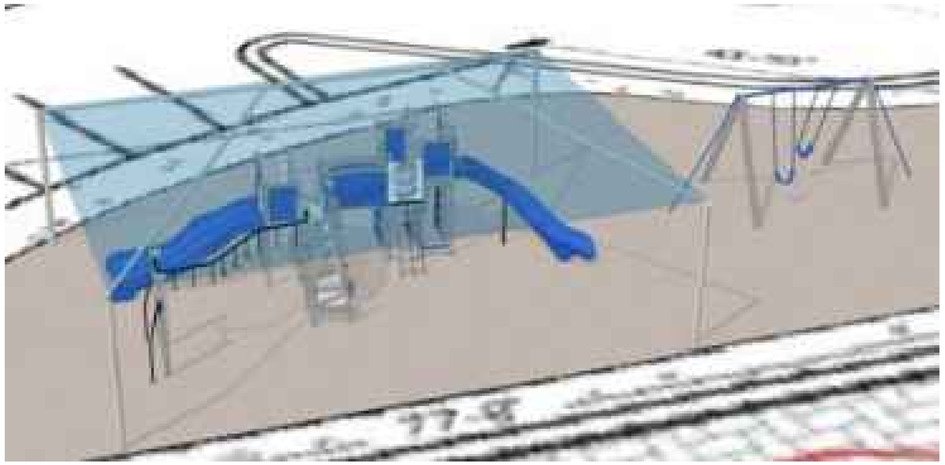
08/28/2025

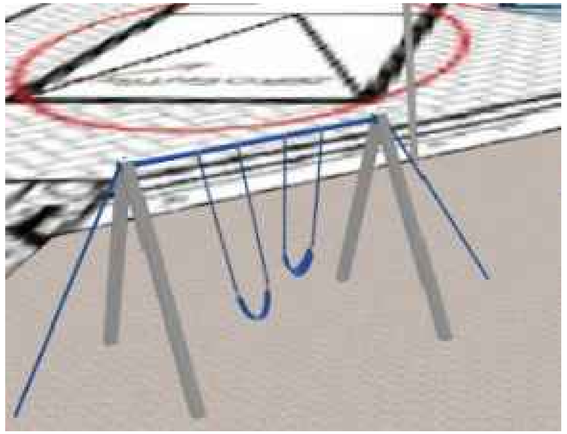
KHA PROJECT 149658036
DATE 04/15/2025
SCALE AS SHOWN
DESIGNED BY JTD
DRAWN BY JTD
CHECKED BY GSW

AMENITY HARDSCAPE PLAN

HILLSIDE GROVE

SHEET NUMBER
L3.52





1 SWINGSET

1" = 1'-0"

PAVER SAMPLE PHOTO:





PRODUCT INFORMATION:

MANUFACTURER:	TREMRON
PRODUCT:	4X8 BRICK PAVER
THICKNESS:	2 3/8" - 60MM
PAVER COLOR:	GLACIER
PATTERN:	SOLDIER COURSE

HTTPS://WWW.TREMRON.COM/PAVERS/4X8-BRICK

NOTES:

- INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
- CONTRACTOR IS REQUIRED TO SUBMIT PRODUCT DATA FOR REVIEW AND APPROVAL PRIOR TO ORDERING.
- CONTRACTOR TO FIELD VERIFY QUANTITY PRIOR TO PROCUREMENT.

6 PAVER BANDING 1

N.T.S.



PRODUCT INFORMATION:

MANUFACTURER:	SUPERIOR FENCE & RAIL
PRODUCT:	HAMILTON PRIVACY FENCE
MATERIAL:	VINYL
SIZE:	6' HEIGHT
COLOR:	WHITE
ORLANDO CONTACT:	ORLANDO FENCE INSTALLATION & FENCE COMPANY (407) 307-3555

HTTPS://WWW.SUPERIORFENCEANDRAIL.COM/FENCE-TYPES/VINYL-FENCE/VINYL-FENCE-GALLERY/?TX_PORTFOLIO_CATEGORY=RANCH-RAIL

NOTES:

- INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
- CONTRACTOR IS REQUIRED TO SUBMIT PRODUCT DATA AND SHOP DRAWINGS FOR ALL FENCE COMPONENTS FOR REVIEW AND APPROVAL PRIOR TO ORDERING.

2 6' VINYL POOL FENCE

N.T.S.

PAVER SAMPLE PHOTO:





PRODUCT INFORMATION:

MANUFACTURER:	TREMRON
PRODUCT:	4X8 BRICK PAVER
THICKNESS:	2 3/8" - 60MM
PAVER COLOR:	GLACIER
PATTERN:	BASKETWEAVE PATTERN

HTTPS://WWW.TREMRON.COM/PAVERS/4X8-BRICK

NOTES:

- INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
- CONTRACTOR IS REQUIRED TO SUBMIT PRODUCT DATA FOR REVIEW AND APPROVAL PRIOR TO ORDERING.
- CONTRACTOR TO FIELD VERIFY QUANTITY PRIOR TO PROCUREMENT.

4 PAVER FIELD

N.T.S.

PAVER SAMPLE PHOTO:





PRODUCT INFORMATION:

MANUFACTURER:	TREMRON
PRODUCT:	4X8 BRICK PAVER
THICKNESS:	2 3/8" - 60MM
PAVER COLOR:	WHITE
PATTERN:	SOLDIER COURSE

HTTPS://WWW.TREMRON.COM/PAVERS/4X8-BRICK

NOTES:

- INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
- CONTRACTOR IS REQUIRED TO SUBMIT PRODUCT DATA FOR REVIEW AND APPROVAL PRIOR TO ORDERING.
- CONTRACTOR TO FIELD VERIFY QUANTITY PRIOR TO PROCUREMENT.

7 PAVER BANDING 2

N.T.S.



PRODUCT INFORMATION:

MANUFACTURER:	SUPERIOR FENCE & RAIL
PRODUCT:	HAMILTON PRIVACY GATE
MATERIAL:	VINYL
SIZE:	6' HEIGHT
COLOR:	WHITE
ORLANDO CONTACT:	ORLANDO FENCE INSTALLATION & FENCE COMPANY (407) 307-3555

HTTPS://WWW.SUPERIORFENCEANDRAIL.COM/FENCE-TYPES/VINYL-FENCE/VINYL-FENCE-GALLERY/?TX_PORTFOLIO_CATEGORY=RANCH-RAIL

NOTES:

- INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
- CONTRACTOR IS REQUIRED TO SUBMIT PRODUCT DATA AND SHOP DRAWINGS FOR ALL FENCE COMPONENTS FOR REVIEW AND APPROVAL PRIOR TO ORDERING.

3 6' VINYL POOL GATE

N.T.S.



PRODUCT INFORMATION:

MANUFACTURER:	FIBAR
PRODUCT:	FIBARSYSTEM 200
DEPTH:	12" MINIMUM
COLOR:	STANDARD

HTTPS://WWW.FIBAR.COM/FIBAR-SYSTEM-200

NOTES:

- INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
- CONTRACTOR TO COORDINATE WITH FIBAR FOR PROPER MULCH DEPTH BASED ON FALL HEIGHT OF FINAL PLAYGROUND EQUIPMENT SELECTED.
- CONTRACTOR TO PROVIDE PROPER DRAINAGE.

5 EWF MULCH

N.T.S.

PAVER SAMPLE PHOTO:





PRODUCT INFORMATION:

MANUFACTURER:	TREMRON
PRODUCT:	4X9 REGULAR BULLNOSE COPING
THICKNESS:	2 3/8" - 60MM
PAVER COLOR:	GLACIER
PATTERN:	BULLNOSE COPING

HTTPS://WWW.TREMRON.COM/PAVERS/BULLNOSE-COPING

NOTES:

- INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
- CONTRACTOR IS REQUIRED TO SUBMIT PRODUCT DATA FOR REVIEW AND APPROVAL PRIOR TO ORDERING.
- CONTRACTOR TO FIELD VERIFY QUANTITY PRIOR TO PROCUREMENT.

8 POOL COPING

N.T.S.



PRODUCT INFORMATION:

MANUFACTURER:	ANOVA
PRODUCT:	AIRI LEAF CONTOUR BENCH 6'
ITEM #:	AE2680LF
DIMENSIONS:	35"H x 23"W x 75"L
SEAT COLOR:	WHITE TEXTURE COATED
FRAME COLOR:	WHITE TEXTURE COATED
MOUNTING:	SURFACE MOUNT

HTTPS://WWW.ANOVAFURNISHINGS.COM/AIRI-LEAF-6-CONTOUR-BENCH

NOTES:

- INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

9 6' BENCH

N.T.S.

No.	REVISIONS	DATE

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Digitally signed by Gregory S Witherspoon
DN: CN=Gregory S Witherspoon, C=US, E=greg.witherspoon@kimley-horn.com, O=KIMLEY-HORN AND ASSOCIATES INC, C=US
Date: 2025.08.28 09:43:07-04'00'

08/28/2025

KHA PROJECT	149658036
DATE	04/15/2025
SCALE	AS SHOWN
DESIGNED BY	JTD
DRAWN BY	JTD
CHECKED BY	GSW

AMENITY HARDSCAPE PLAN

HILLSIDE GROVE

SHEET NUMBER
L3.53

Plotted By:Dumbauld, Jimmy Sheet Set:HILLSIDE GROVES COMMON Layout:L3.53 August 28, 2025 09:43:29am K:\ORL_LA\149658036_Hillside Groves\CAD\CONST\PlanSheets\L3.00 AMENITY HARDSCAPE PLAN.dwg
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PRODUCT INFORMATION:

MANUFACTURER:	ANOVA
PRODUCT:	AIRI LEAF TRASH/RECYCLER WITH SIDE DOOR
ITEM #:	AE26454CT-LF
DIMENSIONS:	47"H x 26"W x 22"D, 45 GALLON
PANEL/LID COLOR:	WHITE TEXTURE COATED
FRAME COLOR:	WHITE TEXTURE COATED
MOUNTING:	SURFACE MOUNT

HTTPS://WWW.ANOVAFURNISHINGS.COM/COLLECTIONS/AIRI/AIRI-LEAF-45-GAL-DUAL-TRASH-RECYCLER-WITH-SIDE-DOOR

NOTES:

- INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

1 TRASH RECEPTACLE

N.T.S.

PRODUCT INFORMATION:

MANUFACTURER:	ANOVA
PRODUCT:	TANDEM POWDER COATED BIKE RACK
ITEM #:	CIRCLEBR
DIMENSIONS:	32"H x 6"W x 36
COLOR:	WHITE TEXTURE COATED
MOUNTING:	SURFACE MOUNT

HTTPS://WWW.ANOVAFURNISHINGS.COM/TANDEM-POWDER-COATED-BIKE-RACK-SURFACE-MOUNT

NOTES:

- INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

2 BIKE RACK

N.T.S.



PRODUCT INFORMATION:

MANUFACTURER:	NDS
PRODUCT:	SQUARE CATCH BASIN DRAIN GRATE
ITEM #:	SKU: 930B
DIMENSIONS:	9"X9"
COLOR:	SILVER

HTTPS://WWW.NDSPRO.COM/US/EN/PRODUCT/DRAINAGE/CATCH-BASINS-AND-GRATES/930B-9-IN-SQUARE-CATCH-BASIN-DRAIN-GRATE-BRASS

NOTES:

- INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

3 AREA DRAIN

1" = 1'-0"



PRODUCT INFORMATION:

MANUFACTURER:	NDS
PRODUCT:	SLIM CHANNEL DRAIN KIT WITH CHANNEL, SAND GRATES, END CAPS/OUTLETS, COUPLING, ANCHOR CLIPS
ITEM #:	SKU: 9206SKIT
DIMENSIONS:	2-1/4" X 72"
COLOR:	SILVER

HTTPS://WWW.NDSPRO.COM/US/EN/PRODUCT/DRAINAGE/CHANNEL-AND-TRENCH-DRAINS-AND-GRATES/9206SKIT-SLIM-CHANNEL-DRAIN-KIT-2-1-4-IN-X-6-FT-WITH-CHANNEL-SAND-GRATES-END-CAPS-OUTLETS-COUPLING-ANCHOR-CLIPS

NOTES:

- INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

4 CHANNEL DRAIN

1" = 1'-0"

Item 1.

No.	REVISIONS	DATE

Kimley»Horn
© 2024 KIMLEY-HORN AND ASSOCIATES, INC.
200 S. ORANGE AVENUE, SUITE 600, ORLANDO, FL 32801
PHONE: 407-898-1511
WWW.KIMLEY-HORN.COM REGISTRY No. 35106

Digitally signed by Gregory S Witherspoon
DN: CN=Gregory S Witherspoon, E=
dnQualifier=A01410D000018C97989200000277
O=KIMLEY-HORN AND ASSOCIATES INC, C=US
Date: 2025.08.28 09:43:08-04'00'

08/28/2025

KHA PROJECT	149658036
DATE	04/15/2025
SCALE	AS SHOWN
DESIGNED BY	JTD
DRAWN BY	JTD
CHECKED BY	GSW

AMENITY HARDSCAPE PLAN

HILLSIDE GROVE

SHEET NUMBER
L3.54

ZONING MEMORANDUM

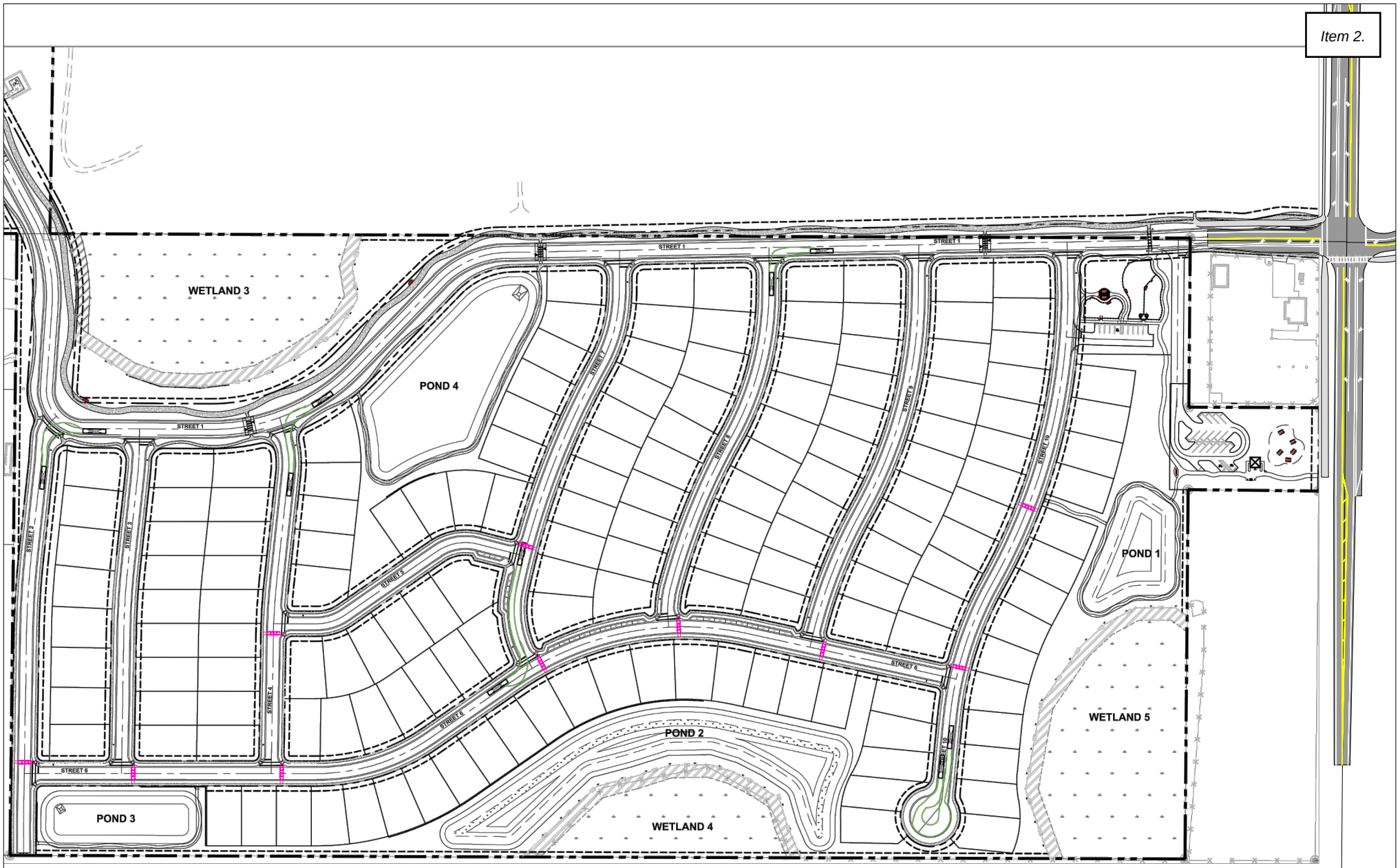
September 10, 2025
Prepared for
Town of Howey-in-the-Hills
Attn: Sean O'Keefe, Town Manager

Mission Rise: Final Subdivision Plan- Phase 1 Review Comments

Applicant: ASF TAP FL I LLC c/o Jason Humm

Planning staff reviewed the proposed Mission Rise Final Subdivision Plans. Please address the comments before the plans may be considered by the Planning and Zoning Board.

1. Please revise the dog park fencing in the landscaping/ hardscape plans to something other than chain link fencing as the Land Development Code prohibits chain link in single-family residential.
2. The dog wash station on LS600 looks like a fountain detail. Should this be something different?
3. Will there be any shade over park benches?
4. Please revise the Plant Schedule on Sheet LP101-LP 600 to be consistent with LDC Table 7.10.00 and 7.10.02. Once this is done, these sheets can be fully reviewed.
5. Please provide the percentage of sodded area for Phase 1 on LP 601.
6. Please provide street lighting detail consistent with the Development Agreement Sec. l.
7. Please provide detail of the required multi-modal trail consistent with the Development Agreement Sec. j (2). Additionally, the trail width shown on the plans appears to be 8 feet wide. This is required to be 12 feet wide per the Development Agreement.
8. Please call out all buffers consistent with the Preliminary Subdivision Plan and provide enlarged buffer detail for each type of buffer shown for review.
9. Sheet LP 106 calls out a "landscape easement" next to Pond 12. Is this the same thing as the 10-foot landscape buffer?
10. Please provide an irrigation plan.


WETLAND 3
POND 4
STREET 1
STREET 2
STREET 3
STREET 4
STREET 5
STREET 6
STREET 7
STREET 8
STREET 9
STREET 10
POND 1
WETLAND 5
POND 2
POND 3
WETLAND 4

GRIFFEY ENGINEERING, INC.

September 7, 2025
Mission Rise Phase 1 Construction Plan
Engineering Review Comments
Page 1

General Comments

1. Additional comments may be added to these with the reviews of subsequent submittals.

2. Provide copies of FFWCC, SJRWMD, FDEP Water & Sewer, and FDOT Accesss & Utility permits before commencing work.

3. The submitted environmental report is about to turn 3 years old. Provide a more recent environmental study.

4. Modifications to the FEMA flood lines due to the proposed grading will need a LOMR submitted post-construction to update the flood maps.

Survey

5. On Sheet 1 of 14 in the Line Table, the distances for L3 & L5 do not appear to be correct.

Grading

6. Will site grading of Phases 2 & 3 be included with the Phase 1 construction? If so, add a note on the grading plan pages that all exposed areas will be seeded & mulched upon the completion of the grading of that area, and that the seeded areas will be watered and maintained until a viable ground cover is established.

7. Provide an erosion control plan showing the extent of silt fencing to be installed.

8. Provide a detail of the retaining wall & safety rail.

Roads

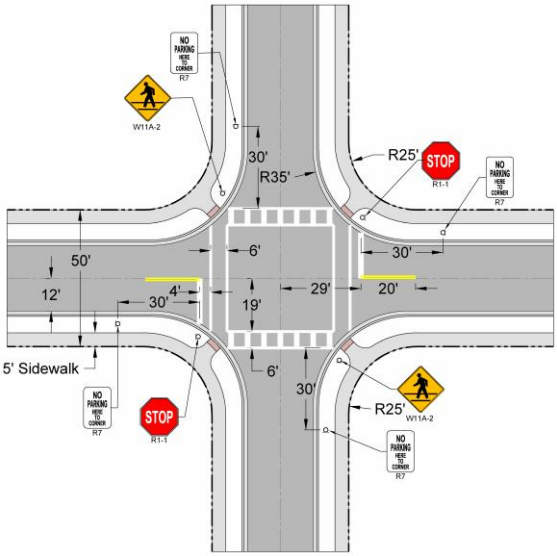
9. The intersection of SR 19 and Revels Road will need to have turn lanes installed to manage the increased traffic as an interim condition until a roundabout can be approved, designed, and constructed. Attached is a concept plan showing the interim condition. The project needs to incorporate the interim turn lane improvements into the construction plans. The interim improvements should also include a trail connection between the trailhead to the intersection of SR 19 & Revels Rd. Per the Development Agreement, the roundabout will be addressed with the Phase 2 submittal.

10. The configuration of Revels Road (Street 1) at SR 19 needs to follow the layout in the interim plan. Eliminate the divided median.

11. The alignment of Street 1 (Revels Road) encroaches onto the Hillside Groves

development. This road design needs to be coordinated with the design plans for that development. The proposed road grading will impact two of their stormwater ponds and involves extensive filling within a jurisdictional wetland. Hillside Groves will also need to dedicate additional right-of-way for the trail and realigned road. The project engineers for Mission Rise and Hillside Groves will need to work together with the town to develop a road design that works for both developments. The attached exhibit shows the two plans together.

12. The intersections of the residential streets need to provide full pedestrian accommodation. Pedestrians need to have clearly designated means (crosswalks & signage) to safely traverse an intersection from any corner to any other corner or side. Intersection design needs to meet that intent and comply as much as possible with the town's road detail R1A (shown). Provide additional crosswalks at the locations shown on the attached striping markup. Include the signage as shown in R1A.



13. The road detail on Sheet C800 is the current town road standard: 60' r/w, 11' travel lanes & 8' on-street parking (38' pavement width). The PUD was approved with the old road standard (50' r/w, 12' travel lanes). The current detail is not applicable and should be removed to avoid confusion. Add a Standard Asphalt Pavement Section to Sheet C803. Also, identify on the plans which road sections are to be Heavy Duty Asphalt.

14. The LDC calls for a minimum EOP corner radius of 35'.

15. The P&P pages for Street 1 need to show the raised crosswalks in both the plan and profile views.

16. P&P Sheet C614 is missing.

17. Identify on the plans the sections of sidewalk that don't front along lots. These and all curb ramps are to be constructed with the roads.

18. Provide a paving detail (or reference the pavement section) for the park & trailhead sites.

Potable & Irrigation Water

19. Identify on the plans that all pressure mains under pavement are to be DIP.

20. Add a prominent note to the utility & road plans that valves are not to be placed in curb lines or in curb ramps. Adjust the depiction of the valves on the plans to show them outside of curbs

and curb ramps.

21. Show on the utility plans the proposed canopy trees from the landscape plan that are within the right-of-way. Call out in the plan that the trenches for the water and irrigation mains need to be lined with a root barrier for at least 30' either side of the proposed tree.

22. Provide a plan for the irrigation water supply system.

23. Show on the plans the irrigation water services.

24. Identify on the plans water & irrigation main gate valves spaced no greater than 500 feet apart.

25. For all pressure pipes (WM, Irrig, & FM) call out air release valves at high points.

26. Include plans for the offsite utility (WM & FM) connections in the SR 19 R/W.

27. Provide water and sewer to the trailhead. Both should include stub-outs to the south to serve the adjoining property owner. The water line should include a fire hydrant at the site.

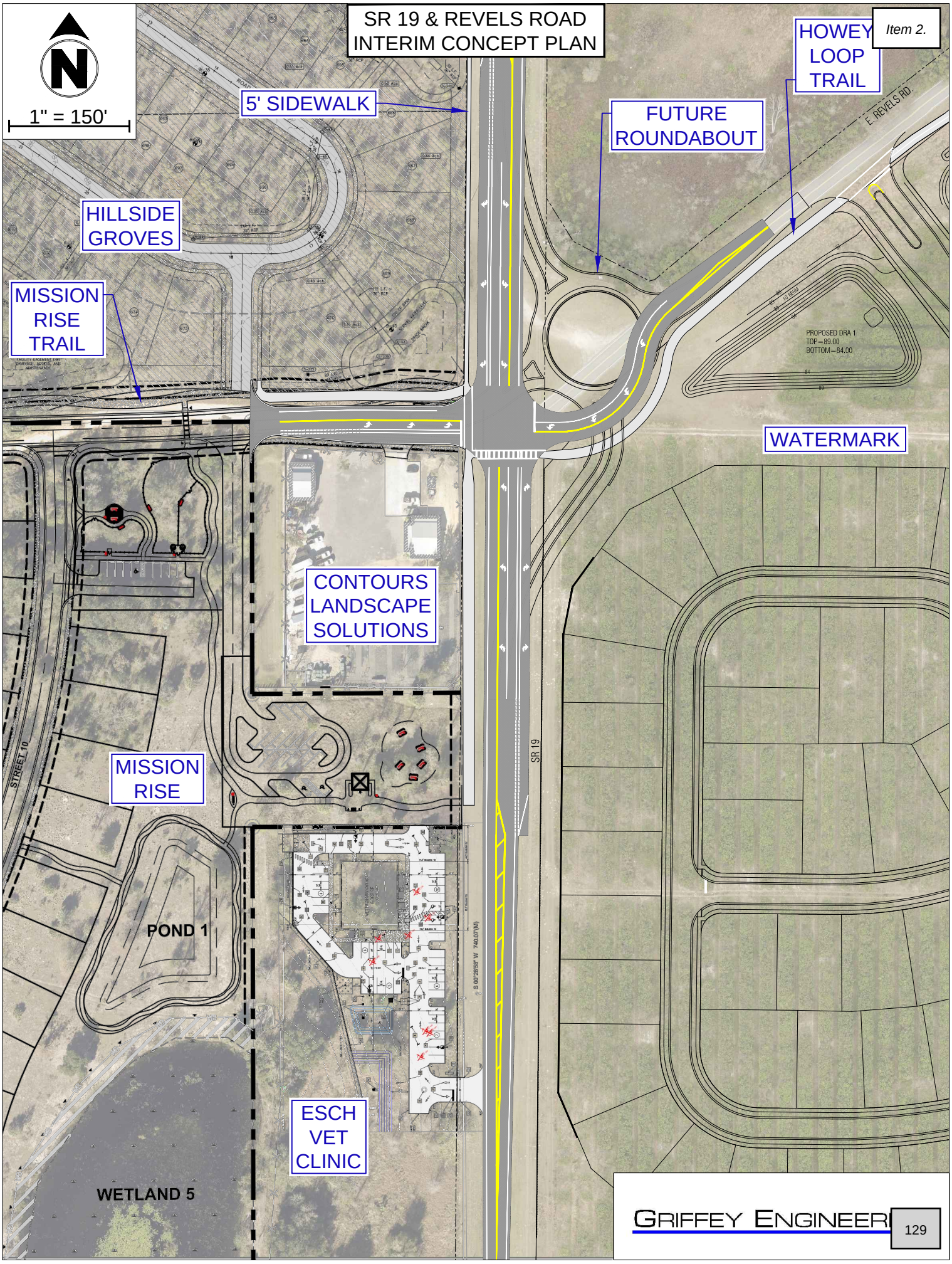
Wastewater

28. The lift station calcs should address Phase 1 alone and full build-out. Phase 3 should flow to this station. The Phase 3 lift station FM can just discharge into the nearest Phase 2 manhole and then gravity flow to the Phase 1 LS.

29. Per Note #1 in the town's lift station detail, pumps shall be Hydromatic Submersible Solids Handling pumps.

30. Identify on the plans force main plug valves spaced no greater than 1,000 feet apart.

31. Sanitary services are to connect to a gravity main, not directly into a manhole.


SR 19 & REVELS ROAD
INTERIM CONCEPT PLAN
1" = 150'
5' SIDEWALK
HOWEY LOOP TRAIL
FUTURE ROUNDABOUT
HILLSIDE GROVES
MISSION RISE TRAIL
WATERMARK
CONTOURS LANDSCAPE SOLUTIONS
MISSION RISE
POND 1
ESCH VET CLINIC
WETLAND 5
SR 19
E. REVELS RD.
STREET 10
PROPOSED DRA 1
TOP=89.00
BOTTOM=84.00
GRIFFEY ENGINEERI

1" = 100'

HILLSIDE GROVES BOUNDARY

STREET 1

1" = 175'

HILLSIDE GROVES BOUNDARY

WETLAND 3

POND 4

POND 1

STREET 1

STREET 2

STREET 3

STREET 5

STREET 7

STREET 8

STREET 9

STREET 10

Bio-Tech Consulting Inc.
Environmental and Permitting Services

November 4, 2022

Jason Humm
Turnstone Group
1170 Peachtree St NE
Suite 1150
Atlanta, GA 30309

Proj: Mission Rise Property – Lake County, Florida
Section 2, Township 21 South, Range 25 East &
Sections 27 & 34, Township 20 South, Range 25 East
(BTC File #1433-01)

Re: Environmental Assessment Report

Dear Mr. Humm:

During October and November of 2022, Bio-Tech Consulting, Inc. (BTC) conducted an environmental assessment of the approximately 243-acre Mission Rise Property. This property is located on the east side of Silverwood Lane, south of Number 2 Road, within Section 2, Township 21 South, Range 25 East and Sections 27 & 34, Township 21 South, Range 25 East in Lake County, Florida (Figures 1, 2 & 3). This environmental assessment included the following elements:

- Review of soil types mapped within the site boundaries;
- Evaluation of land use types/vegetative communities present;
- Field review for occurrence of protected flora and fauna;
- Delineation of on-site wetland communities; and,
- Environmental constraints.

SOILS

According to the Soil Survey of Lake County, Florida, prepared by the U.S. Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS), eleven (11) soil types exist within the subject site (Figure 4). These soil types include the following:

Orlando: Main Office
3025 East South Street
Orlando, FL 32803

Jacksonville Office
11235 St Johns Industrial Pkwy N
Suite 2
Jacksonville, FL 32246

Tampa Office
6011 Benjamin Road
Suite 101-B
Tampa, FL 33634

Vero Beach Office
4445 North A1A
Suite 221
Vero Beach, FL 32963

Key West Office
1107 Key Plaza
Suite 259
Key West, FL 33040

Land & Aquatic Management
3825 Rouse Road
Orlando, FL 32817

407.894.5969
877.894.5969
407.894.5970 fax

info@bio-techconsulting.com www.bio-techconsulting.com

- **Sparr sand, 0 to 5 percent slopes (#1)**
- **Apopka sand, 0 to 5 percent slopes (#5)**
- **Candler sand, 0 to 5 percent slopes (#8)**
- **Arents (#17)**
- **Immokalee sand (#20)**
- **Kendrick sand, 5 to 8 percent slopes (#25)**
- **Myakka-Myakka, wet sands, 0 to 2 percent slopes (#28)**
- **Lochloosa sand (#30)**
- **Ocoee mucky peat, frequently flooded (Oe) (#31)**
- **Placid and Myakka fine sands, depressional (#40)**
- **Tavares sand, 0 to 5 percent slopes (#45)**

The following presents a brief description of each soil type mapped for the subject property:

Sparr sand, 0 to 5 percent slopes (#1) consists of very deep, somewhat poorly drained, moderately slowly to slowly permeable soils on uplands of the coastal plain. They formed in thick beds of sandy and loamy marine sediments. Somewhat poorly drained; slow to moderately slow permeability in the subsoil. The water table is at depths of 20 to 40 inches for periods of 1 to 4 months. The water table is usually perched on the surface of the loamy layers but the loamy layers can also be saturated.

Apopka sand, 0 to 5 percent slopes (#5) is a nearly level to gently sloping, well drained sandy soil that has a sandy clay loam subsoil at a depth of about 55 inches. Typically, the surface layer of this soil type is dark gray sand about 6 inches thick. The water table for this soil type is at a depth of more than 84 inches. Permeability of this soil type is rapid in the sandy surface and subsurface layers and moderate or moderately rapid in the subsoil.

Candler sand, 0 to 5 percent slopes (#8) is a nearly level to gently sloping, excessively drained soil found on the rolling uplands of Florida's central ridge. The surface layer of this soil type generally consists of dark gray sand about 7 inches thick. The water table for this soil type is at a depth of more than 120 inches. Permeability is very rapid throughout the profile of this soil type.

Arents (#17) are deeply disturbed soils consisting of loamy soil material that has been mixed, reworked and leveled or shaped by earth-moving equipment. These units are mostly 12 to 60 inches thick. The water table for this soil type is at a depth of 30 to 60 inches except in low-lying areas, where it is at a depth of 10 to 30 inches, and in a few dry areas, where it is at a depth of more than 60 inches.

Immokalee sand (#20) is a nearly level, poorly drained soil that has a layer at a depth of 30 inches or more that is stained by organic matter. These soils usually occur in broad areas in the flatwoods

and in low areas between sand ridges and lakes, ponds and sloughs. The surface layer of this soil type generally consists of black sand about 4 inches thick. The water table for this soil type is normally at a depth of 10 to 40 inches. It is within a depth of 10 inches for 1 to 2 months during rainy seasons and falls below 40 inches during prolonged drought. Permeability of this soil type is moderate in the weakly cemented layer and rapid in the other layers.

Kendrick sand, 5 to 8 percent slopes (#25) is a sloping, well-drained soil that has a loamy subsoil. Typically, the surface layer of this soil type consists of very dark grayish brown sand. The water table for this soil type is at a depth of more than 120 inches. Permeability of this soil type is rapid in the surface and subsurface layers and moderate in the subsoil.

Myakka-Myakka, wet sands, 0 to 2 percent slopes (#28) is a nearly level, poorly drained hydric soil that has a layer stained by organic material at a depth of less than 30 inches. The water table is normally at a depth of 10-40 inches during extended dry seasons. The surface and subsurface layers and the layer at a depth of 56 to 85 inches have rapid permeability, low water available water capacity, and very low natural fertility.

Lochloosa sand (#30) is a nearly level to gently sloping, somewhat poorly drained soil that has a loamy subsoil. This soil is mainly found on the upland ridge and to a lesser extent on the flatwoods on knolls and ridges. Typically, the surface layer of this soil type is very dark gray sand about 7 inches thick. The water table for this soil type is at a depth of 40 to 60 inches for about 6 months and is below 60 inches during the rest of the year. Permeability of this soil type is rapid to a depth of about 33 inches and moderate below.

Ocoee mucky peat, frequently flooded (Oe) (#31) is a nearly level, very poorly drained organic soil that overlies sandy materials. The surface layer of this soil type generally consists of dark reddish brown peat about 7 inches thick. The water table for this soil type is at the surface, and the soils are covered with shallow water except during extended dry periods. Permeability of this soil type is rapid in the organic layers and very rapid in the sandy layers.

Placid and Myakka fine sands, depressional (#40) are very poorly drained hydric soils found in depressions mostly on the flatwoods. The surface layer of this soil type generally consists of black fine sand about 18 inches thick. Placid soil is ponded for at least 6 months during most years. Permeability of this soil type is rapid.

Tavares sand, 0 to 5 percent slopes (#45) is a nearly level to gently sloping soil, moderately well drained soil. It has a very dark grayish-brown sandy surface layer approximately 7 inches thick. Below this layer are 4 levels of sand beginning at 7 inches, 25 inches, 34 inches, and 61 inches. The water table for this soil type is at a depth of 40 to 60 inches for more than 6 months out of the year and below 60 inches during dry periods. This soil type is rapidly permeable throughout.

LAND USE TYPES/VEGETATIVE COMMUNITIES

The Mission Rise Property currently supports eight (8) land use types/vegetative communities. These land use types/vegetative communities were identified utilizing the Florida Land Use, Cover and Forms Classification System, Level III (FLUCFCS, FDOT, January 2004) (Figure 5). The on-site upland land use types/vegetative communities are classified as Residential, Low Density (110), Unimproved Pasture (212), Fallow Crop Land (261), Pine Flatwoods (411) and Live Oak (427). The on-site wetland/surface water land use types/vegetative communities are classified as Streams & Waterways (510), Reservoirs (530) and Freshwater Marsh (641). The following provides a brief description of the on-site land use types/vegetative communities:

Uplands:

110 Residential, Low Density

One (1) single-family home is located on the northwest corner of the property. This area is most consistent with the Residential, Low Density (110), FLUCFCS classification. Vegetation observed within this community type includes cabbage palm (*Sabal Palmetto*), Brazilian pepper (*Schinus terebinthifolia*), and slash pine (*Pinus ellottii*), bahia grass (*Paspalum notatum*), bermuda grass (*Cynodon dactylon*), common ragweed (*Ambrosia artemisiifolia*), and dogfennel (*Eupatorium capillifolium*).

212 Unimproved Pasture

The majority of uplands within the subject property consist of unmaintained pasture areas that are currently being utilized by cattle. These pasture areas also contain some remnant islands of trees and shrubs. This land use/vegetative community would be classified as Unimproved Pasture (212), per the FLUCFCS. Vegetative species observed within this community include a scattered canopy of camphor tree (*Cinnamomum camphora*) and longleaf pine (*Pinus palustris*); with an understory of bahiagrass (*Paspalum notatum*), carpet grass (*Axonopus fissifolius*), common ragweed (*Ambrosia artemisiifolia*), dog fennel (*Eupatorium capillifolium*), broomsedge (*Andropogon virginicus*), beggarticks (*Bidens alba*), meadow beauty (*Rhexia* sp.), and blackberry (*Rubus pensilvanicus*).

261 Fallow Crop Land (Citrus)

Throughout the site there are remnants of former citrus groves. Although the groves are no longer under management for citrus, these areas contain a variety of citrus trees (*Citrus spp.*) camphor tree (*Cinnamomum camphora*), longleaf pine (*Pinus palustris*), rose natalgrass (*Melinis repens*),

blackberry (*Rubus pensilvanicus*) and sandbur (*Cenchrus spp*). This area best meets the Fallow Crop Land (261) FLUCFCS classification.

411 Pine Flatwoods

A pine dominated upland system is present on the northern portion of the site. This area best meets the Pine Flatwoods (411) FLUCFCS classification. Vegetation observed within this land use type includes slash pine *(Pinus elliottii)*, gallberry *(Ilex glabra)*, poison ivy *(Toxicodendron radicans)*, saw palmetto *(Serenoa repens)*, broomsedge *(Andropogon virginicus)*, bracken fern *(Pteridium aquilinum)*, greenbriar *(Smilax* spp.*)*, wax myrtle *(Myrica cerifera)*, saltbush *(Baccharis halimifolia)*, rusty lyonia *(Lyonia ferruginea)*, muscadine grapevine *(Vitis rotundifolia)*, common ragweed *(Ambrosia* spp.*)*, dogfennel *(Eupatorium capillifolium)*, blackberry (*Rubus pensilvanicus*) and bahiagrass *(Paspalum notatum)*.

427 Live Oak

A portion of forested uplands are present in the north-central portion of the site. Vegetative species identified within this community type include live oak (*Quercus virginiana*), slash pine (*Pinus elliottii*), camphor tree (*Cinnamomum camphora*), citrus species (*citrus* spp.), cherry laurel (*Prunus laurocerasus)*, Brazilian pepper (*Schinus terebinthifolius*), musky mint *(Hyptis alata)*, saw palmetto (*Serenoa repens*), common pokeweed *(Phytolacca americana)*, beautyberry (*Callicarpa americana*), wild balsam apple (*Momordica balsamina*), Caesar's weed (*Urena lobata*), wax myrtle *(Myrica cerifera)*, poison ivy (*Toxicodendron radicans*), greenbriar vine *(Smilax spp.)*, blackberry (*Rubus pensilvanicus*) and resurrection fern *(Pleopeltis polypodiodes var. michauxiana)*,

<u>Wetlands/Surface Waters</u>:

510 Streams and Waterways

Two ditch systems were constructed during active agricultural management of the site. This land use/vegetative community is most consistent with the Streams and Waterways (510) FLUCFCS classification. Vegetation observed along the bank of these ditches includes Brazilian pepper (*Schinus terebinthifolia*), and cabbage palm (*Sabal palmetto*) along the raised edges in addition to dogfennel (*Eupatorium capillifolium*). Within the ditch itself exists sporadic aquatic vegetation such as Mexican primrose willow (*Ludwigia octovalvis*), pickerelweed (*Pontederia cordata*), water pennywort (*Hydrocotyle umbellata*), spatterdock (*Nuphar lutea*), lanceleaf arrowhead (*Sagittaria lancifolia*), cattail (*Typha latifolia*), duckweed (*Lemna valdiviana*), blackberry (*Rubus pensilvanicus*) and soft rush (*Juncus effusus*).

530 Reservoirs

There are two (2) borrow ponds present on the site. These are most consistent with the Reservoirs (530) FLUCFCS classification. Vegetation observed within this community type includes Mexican primrose willow (*Ludwigia octovalvis*), pickerelweed (*Pontederia cordata*), maidencane (*Panicum hemitomon*), wax myrtle (*Morella cerifera*), blackberry (*Rubus pensilvanicus*) and cogongrass (*Imperata cylindrica*).

641 Freshwater Marsh

Herbaceous wetlands are present throughout the site. These communities are most consistent with the Freshwater Marsh (641) FLUCFCS classification. Vegetative species observed within this community include Carolina willow (*Salix caroliniana*), laurel cherry (*Prunus laurocerasus*), wax myrtle (*Morella cerifera*), dahoon holly (*Ilex cassine var. cassine*), creeping primrose willow (*Ludwigia repens*), Mexican primrose willow (*Ludwigia octovalvis*), elderberry (*Sambucus nigra subsp. canadensis*), salt bush (*Atriplex pentandra*), ceasarweed (*Urena lobata*), buttonbush (*Cephalanthus occidentalis*), grapevine (*Vitis vinifera*), lemon bacopa (*Bacopa caroliniana*), swamp smartweed (*Persicaria hydropiperoides*), pickerel weed (*Pontederia cordata*), southern watergrass (*Luziola fluitans*), torpedograss (*Panicum repens*), sand cordgrass (*Spartina bakeri*), maidencane (*Panicum hemitomon*), blue maidencane (*Amphicarpum muehlenbergianum*), sawgrass (*Cladium jamaicense*), yellow-eyed grass (*Xyris caroliniana*), bermudagrass (*Cynodon dactylon*), blackberry (*Rubus cuneifolius*), pennywort (*Centella asiatica*), cattail (*Typha domingensis*), water lily (*Nymphaea* sp.), red ludwigia (*Ludwigia repens*), angle pipewort (*Eriocaulon decangulare*), pink sundew (*Drosera capillaris*), cinnamon fern (*Osmunda cinnamomea*), royal fern (*Osmunda regalis*), and meadowbeauty (*Rhexia* sp.).

PROTECTED SPECIES

Utilizing methodologies outlined in the Florida's Fragile Wildlife (Wood, 2001); Measuring and Monitoring Biological Diversity Standard Methods for Mammals (Wilson, et al., 1996); and Florida Fish and Wildlife Conservation Commission's (FFWCC) Gopher Tortoise Permitting Guidelines (April 2008 – revised July 2020), an assessment for "listed" floral and faunal species occurring within the subject site boundaries was conducted on October 20th & November 1st, 2022. The cursory survey, which covered approximately 75% of the subject site's suitable habitat, included both direct observations and indirect evidence, such as tracks, burrows, tree markings and vocalizations that indicated the presence of species observed. The assessment focused on species that are "listed" by the FFWCC's Official Lists - Florida's Endangered Species, Threatened Species and Species of Special Concern (June 2021) that have the potential to occur in Lake County (Table 1).

No plant species listed by either The Florida Department of Agriculture (FDA) or U.S. Fish and Wildlife Service (USFWS) was identified on the project site during the assessment conducted. However, two (2) fern species were identified that are listed as "commercially exploited" by the Florida Department of Agriculture and Consumer Services (FDACS). The harvesting of these species, cinnamon fern (*Osmunda cinnamomea*) and royal fern (*Osmunda regalis*), for commercial gain, is not allowed. However, the listing of these species poses no restrictions towards the development of the subject site. The following is a list of those wildlife species identified during the evaluation of the site:

Reptiles and Amphibians
brown anole (*Norops sagrei*)
eastern racer (*Coluber constrictor*)
Florida leopard frog (*Lithobates sphenocephalus sphenocephalus*)
gopher tortoise (*Gopherus polyphemus*)
green anole (*Anolis carolinensis*)
oak toad (*Anaxyrus quercicus*)
six-lined racerunner (*Cnemidophorus sexlineatus*)

Birds
American Coot (*Fulica americana*)
American Crow (*Corvus caurinus*)
Anhinga (*Anhinga anhinga*)
Black Vulture (*Coragyps atratus*)
Cattle Egret (*Bubulcus ibis*)
Common Ground Dove (*Columbina passerine*)
Fish Crow (*Corvus ossifragus*)
Gray Catbird (*Dumetella carolinensis*)
Great Blue Heron (*Ardea herodias*)
Great Egret (*Ardea alba*)
Mourning Dove (*Zenaida macroura*)
Northern Cardinal (*Cardinalis cardinalis*)
Northern Mockingbird (*Mimus polyglottos*)
Pileated Woodpecker (*Dryocopus pileatus*)
Red-shouldered Hawk (*Buteo lineatus*)
Sandhill Crane (*Antigone canadensis*)
Snowy Egret (*Egretta thula*)
Swallow-tailed Kite (*Elanoides forficatus*)
Tufted Titmouse (*Baeolophus bicolor*)
Yellow-rumped Warbler (*Setophaga coronata*)

Mammals
eastern cottontail (*Sylvilagus floridanus*)
eastern gray squirrel (*Sciurus carolinensis*)
marsh rabbit (*Sylvilagus palustris*)
nine-banded armadillo (*Dasypus novemcinctus*)
northern raccoon (*Procyon lotor*)
Virginia opossum (*Didelphis virginiana*)
white-tailed deer (*Odocoileus virginianus*)
wild boar (*Sus scrofa*)

Two (2) of the above wildlife species, the gopher tortoise (*Gopherus polyphemus*) and Sandhill Crane (*Antigone canadensis*), were identified in the FFWCC's Official Lists - Florida's Endangered Species, Threatened Species and Species of Special Concern (June 2021). The following provides a brief description of wildlife species as they relate to the development of the site.

Gopher Tortoise (Gopherus polyphemus)
State Listed as "Threatened" by FFWCC

Numerous gopher tortoise burrows (*Gopherus polyphemus*) have been identified within the on-site upland areas. Currently the gopher tortoise is classified as a "Category 2 Candidate Species" by the U.S. Fish and Wildlife Service (USFWS), and as of September 2007, is now classified as "Threatened" by FFWCC, and as "Threatened" by FCREPA. The basis of the "Threatened" classification by the FFWCC for the gopher tortoise is due to habitat loss and destruction of burrows. Gopher tortoises are commonly found in areas with well-drained soils associated with xeric pine-oak hammock, scrub, pine flatwoods, pastures and abandoned citrus groves. Several other protected species known to occur in Lake County have a possibility of occurring in this area, as they are gopher tortoise commensal species. However, none of these species were observed during the survey conducted.

The subject site was surveyed for the existence of gopher tortoises through the use of pedestrian and vehicular transects (Figure 9). The cursory survey covered approximately 90% of the suitable habitat present within the subject site boundaries and those properties within 25-feet. A total of one-hundred twelve (112) active/inactive gopher tortoise burrows were observed and recorded using GPS technology. Based on one-hundred twelve (112) potentially occupied burrows, it is estimated that approximately sixty-eight (68) burrows may be inhabited by a gopher tortoise. This number was calculated using the factored occupancy rate of 0.614 (Auffenburg-Franz 1982). Therefore, for the purpose of estimating costs associated with the subject project, as many as sixty-eight (68) gopher tortoises are estimated to occupy these burrows.

The FFWCC provides three (3) options for developers that have gopher tortoises on their property. These options include: 1) avoidance (i.e., maintain at least a 25-foot distance from construction activities), 2) preservation of habitat, and 3) off-site relocation. As such, resolution of the gopher tortoise issue will need to be permitted through FFWCC prior to any construction activities.

Florida Sandhill Crane (Antigone canadensis pratensis)
State Listed as "Threatened" by FFWCC

Two (2) adult Sandhill Cranes were observed flying across the limits of the subject site. The Florida Sandhill Crane is a subspecies of Sandhill Crane that occurs exclusively and is resident to Florida (Stys 1997). Of the six (6) subspecies of Sandhill Crane, the Greater Sandhill Crane *(Grus canadensis tabida)* is the only other subspecies of Sandhill Crane that occurs regularly in Florida (Stys 1997). This subspecies is a winter migrant, arriving in Florida during late fall (October/November) and leaving in late February (Stys 1997). Since the Florida Sandhill Crane and Greater Sandhill Crane cannot be distinguished from one another in the field, Stys (1997) recommends conducting surveys between May and September to validate the presence of this protected species. Due to the time of year the recent survey was conducted (January-February), it cannot be assumed that the observed cranes were the State listed subspecies.

Although the cranes were observed flying through the site, no nests were identified within or in close proximity to the subject site. If nesting does occur, FFWCC typically requires a 400-foot buffer around nests in order to prevent nest disturbance and potential nest abandonment. Since cranes do not re-use the same nest year after year this 400-foot buffer is only temporary during the nesting season (i.e., anytime from January through June). Since no nests were observed on-site or nearby, there will be no development constraints unless a nest is found.

Indigo Snake (Drymarchon couperi)
Federally Listed as "Threatened" by USFWS

The indigo snake *(Drymarchon couperi)* is a federally listed threatened species. The basis for this listing was a result of dramatic population declines caused by over-collecting for the domestic and international pet trade as well as mortalities caused by rattlesnake collectors who gassed gopher tortoise burrows to collect snakes. Since its listing, habitat loss and fragmentation by residential and commercial expansion have become much more significant threats to the eastern indigo snake. This species is widely distributed throughout central and south Florida and primarily occurs in sandhills habitat in northern Florida and southern Georgia.

No evidence of indigo snakes was observed within the subject site during the wildlife survey conducted by BTC. However, the site does contain gopher tortoise burrows and habitat to support this species. Thus, based upon the USFWS's August 2013 Consultation Key for the Eastern Indigo

Snake, the site is located within Lake County and will result in the removal of greater than 25 acres of eastern indigo snake habitat and greater that 25 gopher tortoise, a key determination would result in a finding of "may affect." Based on the required permit conditions that would allow the above finding, a survey specific to indigo snakes may be required. The survey can be accomplished from October 1st thru April 30 for a minimum of five (5) surveys with 2 days of optimal weather (overnight low temperature above 60º F). At a minimum, the federal permit (if applicable) will be conditioned for the use of the USFWS's "Standard Protection Measures for the Eastern Indigo Snake." It will also be conditioned "such that all gopher tortoise burrows, active or inactive, will be excavated prior to site manipulation in the vicinity of the burrow. If an eastern indigo snake is encountered, the snake must be allowed to vacate the area prior to additional site manipulation in the vicinity." Any permit will also be conditioned "such that holes, cavities, and snake refugia other than gopher tortoise burrows will be inspected each morning before planned site manipulation of a particular area, and, if occupied by an eastern indigo snake, no work will commence until the snake has vacated the vicinity of proposed work." As long as the above mentioned "Standard Protection Measures" are adhered to, the development activities associated with the subject site would result in a key determination of "may affect, but not likely to adversely affect" (NLAA) the eastern indigo snake.

It should also be noted that Indigo snake mitigation may be purchased in lieu of conducting the indigo snake survey. Additionally, during site clearing, the USFWS may also require following the recommendations in the Service's Standard Protection Measures for the Eastern Indigo Snake which may include posting eastern indigo snake identification signage and educational material at the site.

Bald Eagle (Haliaeetus leucocephalus)
State protected by F.A.C. 68A-16.002 and federally protected by both the Migratory Bird Treaty Act (*1918*) *and the Bald and Golden Eagle Protection Act* (*1940*)

In August of 2007, the US Fish and Wildlife Service (USFWS) removed the Bald Eagle from the list of federally endangered and threatened species. Additionally, the Bald Eagle was removed from FFWCC's imperiled species list in April of 2008. Although the Bald Eagle is no longer protected under the Endangered Species Act, it is still protected under the Bald and Golden Eagle Protection Act, the Migratory Bird Treaty Act, and FFWCC's Bald Eagle rule (Florida Administrative Code 68A-16.002 Bald Eagle (*Haliaeetus Leucocephalus*).

In May of 2007, the USFWS issued the National Bald Eagle Management Guidelines. In April of 2008, the FFWCC adopted a new Bald Eagle Management Plan that was written to closely follow the federal guidelines. In November of 2017, the FFWCC issued "A Species Action Plan for the Bald Eagle" in response to the sunset of the 2008 Bald Eagle Management Plan. Under the USFWS's management plans, buffer zones are recommended based on the nature and magnitude

of the project or activity. The recommended protective buffer zone is 660 feet or less from the nest tree, depending on what activities or structures are already near the nest. As provided within the above referenced Species Action Plan, the USFWS is the regulating body responsible for issuing permits for Bald Eagles. In 2017, the need to obtain a State permit (FFWCC) for the take of Bald Eagles or their nests in Florida was eliminated following revisions to Rule 68A-16.002, F.A.C.. A USFWS Bald Eagle "Non-Purposeful Take Permit" is not needed for any activity occurring outside of the 660-foot buffer zone. No activities are permitted within 330 feet of a nest without a USFWS permit.

In addition to the on-site evaluation for "listed" species, BTC conducted a review of the FFWCC Eagle Nest Locator (2016-2017) and the Audubon's EagleWatch (2020-2021) database for any recorded Bald Eagle nests on or in the vicinity of the subject site. This review revealed one (1) Bald Eagle nests (Nest ID#: LA220) located within the subject site boundary. Bald eagle nest OS075 was located and the nest appeared to be in good condition, see Figure 9. There were signs of recent activity (bones, carcasses, feathers, droppings, etc.) found within the vicinity of the nest. Based on the condition of the LA220 nest, it is assumed the nest is active during the current nesting season. No other nests were located on the subject site. Should any new bald eagle nest be found prior to or during construction, the US Fish and Wildlife Service National Bald Eagle Management Guidelines should be implemented.

In order to develop any lots that exist within the 660' buffer, a Non-Purposeful Take Permit will be required by the USFWS. As part of this application, a number of Minimization Measures will be required (i.e., the implementation of Bald Eagle Monitoring Guidelines (USFWS 2007), maintaining a minimum distance of 100' from the nest and scheduling of construction activities within the buffers to occur outside of nesting season (October – May). Additionally, if activities are to occur within 330' of the nest, two (2) Conservation Measures will be required. One (1) of these measures is a $42,000 contribution to the Bald Eagle Management Fund to support bald eagle monitoring and research. The second measure is the providing of financial assurance (surety bond) in the amount of $50,000 to USFWS or alternate measures such as the granting a conservation easement over the 330' buffer zone of an active or alternate Bald Eagle nest within the same or an adjacent county, or within the same core nesting area, etc. *It should be stated that the issuance of the Non-Purposeful Take Permit is at the discretion of the USFWS and is not guaranteed.* If issued, the permit can be extended annually if work within the 660' buffer continues. The conservation measures are only required to be provided once (i.e., $42,000 contribution). The $50,000 surety bond is released once the nesting pair returns to the nest the following nesting season. If they do not, the bond is kept by USFWS as the nest is considered taken.

As touched upon previously, if a Non-Purposeful Take Permit has been issued by USFWS, monitoring of the Bald Eagle nest must be implemented according to the Bald Eagle Monitoring

Guidelines (USFWS 2007). Per these guidelines initial monitoring is to be conducted beginning October 1 until positive direct or indirect evidence that the Bald Eagles have returned to the nesting territory is observed. This is to be conducted for a minimum of 2 hours per day once a week. (It should be noted that if no nesting activity is observed by February 1, monitoring may cease as the nest will be determined as inactive for the current nesting season.) Once nesting behavior has commenced, monitoring of the nest increases to a minimum of 4 hours per day 3 days per week. This monitoring sequence continues through 4 weeks post-hatching. Beginning the fifth week post-hatching, monitoring of the nest/young is reduced to 4 hours per day once a week. This continues until fledging occurs of May 15th, whichever occurs first. The estimated annual cost for monitoring of a Bald Eagle's nest – based on typical nesting behavior and timeline – is approximately $30,000 per year.

USFWS CONSULTATION AREAS

The U.S. Fish and Wildlife Service has established "consultation areas" for certain listed species. Generally, these consultation areas only become an issue if USFWS consultation is required, which is usually associated with permitting through the U.S. Army Corps of Engineers. The reader should be aware that species presence and need for additional review are often determined to be unnecessary early in the permit review process due to lack of appropriate habitat or other conditions. However, the USFWS makes the final determination.

Consultation areas are typically very regional in size, often spanning multiple counties where the species in question is known to exist. Consultation areas by themselves do not indicate the presence of a listed species. They only indicate an area where there is a potential for a listed species to occur and that additional review might be necessary to confirm or rule-out the presence of the species. The additional review typically includes the application of species-specific criteria to rule-out or confirm the presence of the species in question. Such criteria might consist of a simple review for critical habitat types. In other cases, the review might include the need for species-specific surveys using established methodologies that have been approved by the USFWS.

The following paragraphs include a list of the USFWS Consultation Areas associated with the subject site. Also included, is a brief description of the respective species habitat and potential for additional review:

Florida Sand Skink (Neoseps reynoldsi)
Federally Listed as "Threatened" by USFWS

The project site falls within the Florida Sand Skink Consultation Area for the United States Fish and Wildlife Service (USFWS). The Florida sand skink is listed as "Threatened" by the USFWS. The Florida sand skink exists in areas vegetated with sand pine *(Pinus clausa)* - rosemary

(Ceratiola ericoides) scrub or a long leaf pine *(Pinus palustris)* - turkey oak *(Quercus laevis)* association. Habitat destruction is the primary threat to this species' survival. Citrus groves, residential, commercial and recreational facilities have depleted the xeric upland habitat of the Florida sand skink. All properties within the limits of this consultation area that are located at elevations greater than 80' and contain suitable (moderate-to-well drained soils) soils are believed by USFWS to be areas of potential Florida sand skink habitat.

The results of the most recent pedestrian survey October & November of 2022 showed no evidence (i.e. sinusoidal tracks) that indicate the presence of the Florida sand skink. However, the entire site is located at an elevation that exceeds the 80-foot above sea level requirement, with portions of the site consisting of moderately well to excessively drained soils (appropriate soil types for the Florida sand skink), and areas of suitable vegetation/habitat for the Florida sand skink. Due to these factors, it is advisable to conduct a formal sand skink survey, as it may be required by federal, state, and/or local government permitting agencies. The survey will need to be conducted between March 1 and May 15, in which 2' x 2' boards will be placed in the open sandy areas at a density of approximately 40 boards per acre and checked once per week for four (4) consecutive weeks. The main objective of the survey is to determine whether sand skinks inhabit the project site.

***Florida Scrub-Jay* (*Aphelocoma coerulescens*)**
Federally Listed as "Threatened" by USFWS

Currently the Florida Scrub-Jay is listed as threatened by the USFWS. Florida Scrub Jays are largely restricted to scattered, often small and isolated patches of sand pine scrub, xeric oak, scrubby flatwoods, and scrubby coastal stands in peninsular Florida (Woolfenden 1978a, Fitzpatrick et al. 1991). They avoid wetlands and forests, including canopied sand pine stands. Optimal Scrub-Jay habitat is dominated by shrubby scrub, live oaks, myrtle oaks, or scrub oaks from 1 to 3 m (3 to 10 ft.) tall, covering 50% to 90 % of the area; bare ground or sparse vegetation less than 15 cm (6 in) tall covering 10% to 50% of the area; and scattered trees with no more than 20% canopy cover (Fitzpatrick et al. 1991).

No Florida Scrub-Jays were observed on the project site during the cursory wildlife survey conducted by BTC. As minimal habitat exists within the limits of the site, it is not anticipated that a formal survey would be required by the USFWS or another agency to determine if any Florida Scrub-Jays utilize any portions of the site.

***Everglade Snail Kite* (*Rostrhamus sociabilis*)**
Federally Listed as "Endangered" by USFWS

The subject site falls within the USFWS Consultation Area for the Everglade Snail Kite. Currently the Everglade Snail Kite is listed as "Endangered" by the USFWS. Everglade Snail Kites are similar in size to Red-shouldered Hawks. All Everglade Snail Kites have deep red eyes and a white rump patch. Males are slate gray, and females and juveniles vary in amounts of white, light brown, and dark brown, but the females always have white on their chin. Everglade Snail Kites vocalize mainly during courtship and nesting. They may occur in nearly all of the wetlands of central and southern Florida. They regularly occur in lake shallows along the shores and islands of many major lakes, including Lakes Okeechobee, Kissimmee, Tohopekaliga (Toho) and East Toho. They also regularly occur in the expansive marshes of southern Florida such as Water Conservation Areas 1, 2, and 3, Everglades National Park, the upper St. John's River marshes and Grassy Waters Preserve.

No Everglade Snail Kites were observed during the wildlife survey conducted by BTC. As there is suitable habitat within the limits of the subject site, a formal survey may be required by the USFWS or another agency to determine if any Everglade Snail Kites utilize any portions of the site.

ENVIRONMENTAL CONSTRAINTS

Permitting through Lake County, the St. Johns River Water Management District (SJRWMD), and the Florida Department of Environmental Protection (FDEP) would be required to develop the project site. The site resides in the Southern Ocklawaha River drainage basin (Figure 8).

St. Johns River Water Management District (SJRWMD)

An Environmental Resource Permit (ERP) will be required through the St. Johns River Water Management District (SJRWMD) for all wetland and/or other surface water impacts (both direct and secondary) in association with the proposed development plan. Impacts to the project's wetland and/or other surface water communities would be permittable by SJRWMD as long as the issues of elimination and reduction of wetland impacts have been addressed and as long as the mitigation offered is sufficient to offset the functional losses incurred via the proposed impacts.

Florida Department of Environmental Protection (FDEP)

Section 404 of the Clean Water Act (CWA) requires that federal authorization be obtained for all activities that propose the placement of dredged or fill material in "Waters of the United States" (WOTUS). The regulatory program established by CWA Section 404 is jointly implemented by the United States Environmental Protection Agency (EPA) and the United States Army Corps of Engineers (USACE) and applies to regulated activities associated with development, water resource projects (dams, levees, etc.), infrastructure, and mining. Guidelines that outline the

conditions under which the implementing agency may, or may not, issue a permit are described in CWA Section 404(b)(1) Guidelines. Included in those guidelines is the mandate that discharges of dredged or fill material into WOTUS are not permissible if (a) a practicable alternative exists that is less damaging to the aquatic environment, or (2) the nation's waters would be significantly degraded. Under that mandate, in most cases, the applicant's burden to justify impacts to jurisdictional wetlands includes an alternative sites analysis, in which the applicant is required to justify that the subject site is the most viable in the vicinity for the project, and will result in lesser environmental impacts compared to alternative site locations. The applicant is then required to demonstrate on-site avoidance and minimization of impacts, to the maximum practicable extent, while allowing for the project purpose.

CWA Section 404(b)(1) Guidelines also define conditions under which a State may assume the permitting authority under CWA Section 404. In December of 2020, the Florida Department of Environmental Protection (FDEP) assumed federal permitting authority for most wetland and surface water resources regulated exclusively under Section 404 of the Clean Water Act (CWA). The State 404 Program is a separate program and process from the existing State ERP Program described in the SJRWMD section above, and applies only to those waters not regulated under other federal legislation. Wetlands and surface water resources associated with tidal waters or traditional navigable waters are regulated under Section 10 of the Rivers and Harbors Act. For those waters ("retained waters"), including wetlands and/or other surface waters that fall within the 300-foot guideline established from the ordinary high-water mark or mean high tide line of the Section 10 waters, the USACE will retain federal permitting authority. It should be noted that regulated activities proposed in waters assumed by the State 404 Program are still required to meet all standards mandated under the CWA Section 404(b)(1) guidelines.

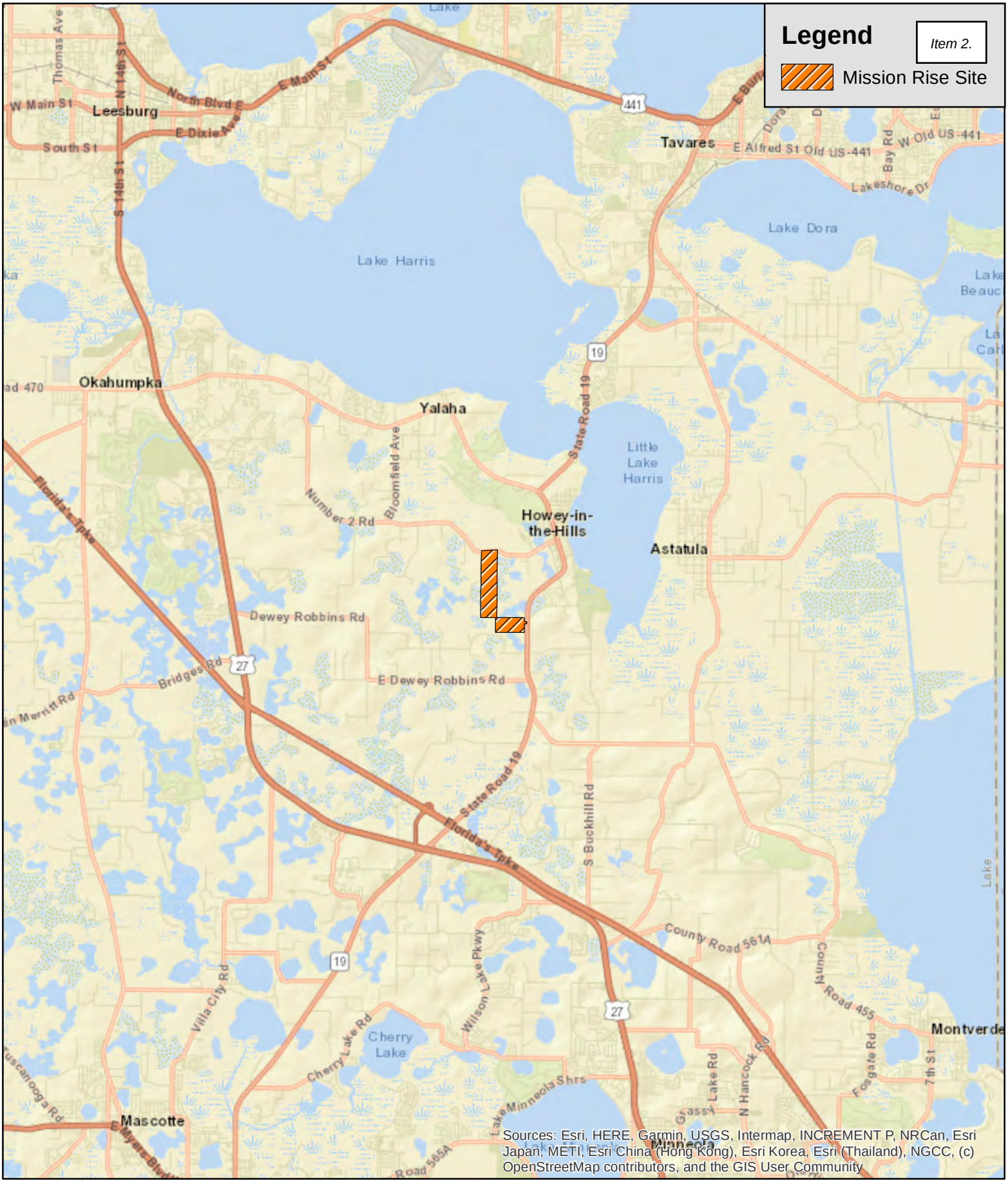
With respect to the subject site, no portions of the on-site wetlands are associated with Section 10 waters. Thus, as Section 10 waters are not anticipated to be impacted, the federal permitting authority would be "assumed" by the FDEP under Section 404. Currently, FDEP considers all wetland and/or surface water resources to be federally jurisdictional unless the applicant provides documentation proving otherwise.

The environmental limitations described in this document are based on observations and technical information available on the date of the on-site evaluation. This report is for general planning purposes only. The limits of any on-site wetlands/surface waters can only be determined and verified through field delineation and/or on-site review by the pertinent regulatory agencies. The wildlife surveys conducted within the subject property boundaries do not preclude the potential for any listed species, as noted on Table 1 (attached), currently or in the future. Should you have any questions or require any additional information, please do not hesitate to contact our office at (407) 894-5969. Thank you.

Regards,

Kate Groninger

Kate Groninger
Project Manager



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Mission Rise Site
Lake County, Florida
Figure 1
Location Map

N
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2
Miles

Project #:1433-01
Produced B H
Date: 6/23/2022



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Mission Rise Site
Lake County, Florida
Figure 2
2020 Aerial Map

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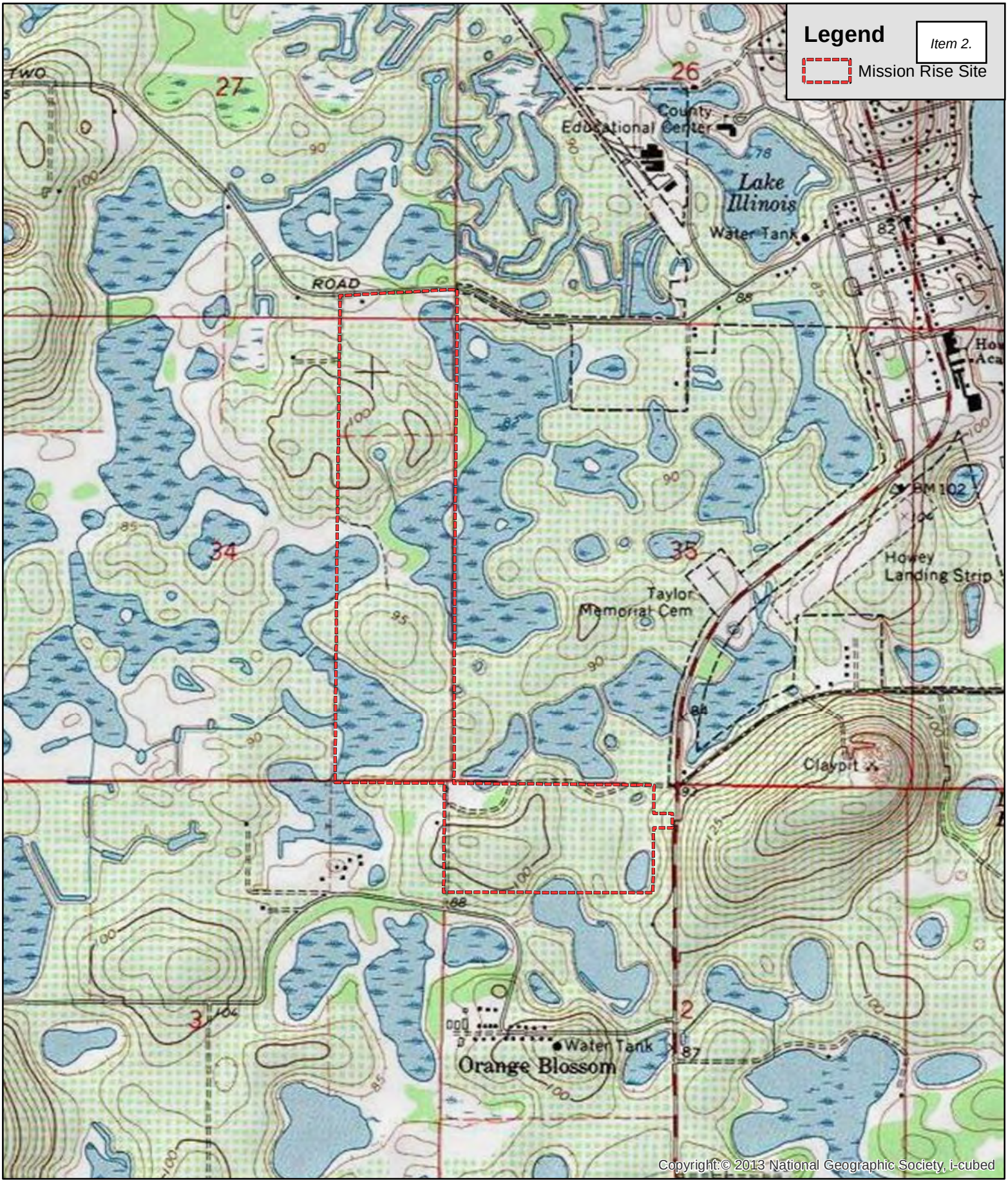
Project #:1433-01
Produced B H
Date: 6/23/2022



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Mission Rise Site
Lake County, Florida
Figure 3
USGS Topographic Map

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Mission Rise Site
Lake County, Florida
Figure 4
SSURGO Soils Map

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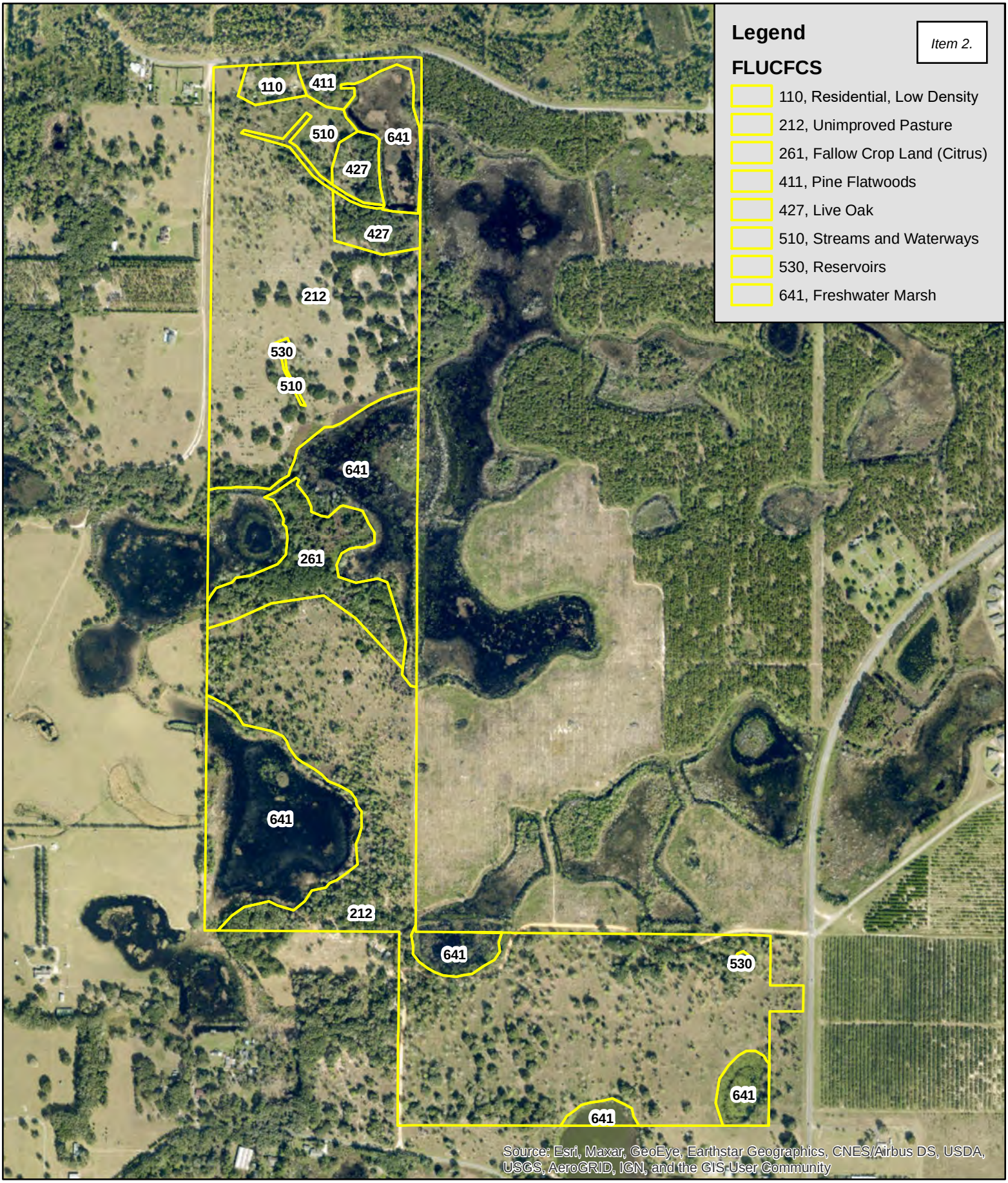
Project #:1433-01
Produced B H
Date: 6/23/2022



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Mission Rise Site
Lake County, Florida
Figure 5
FLUCFCS Map

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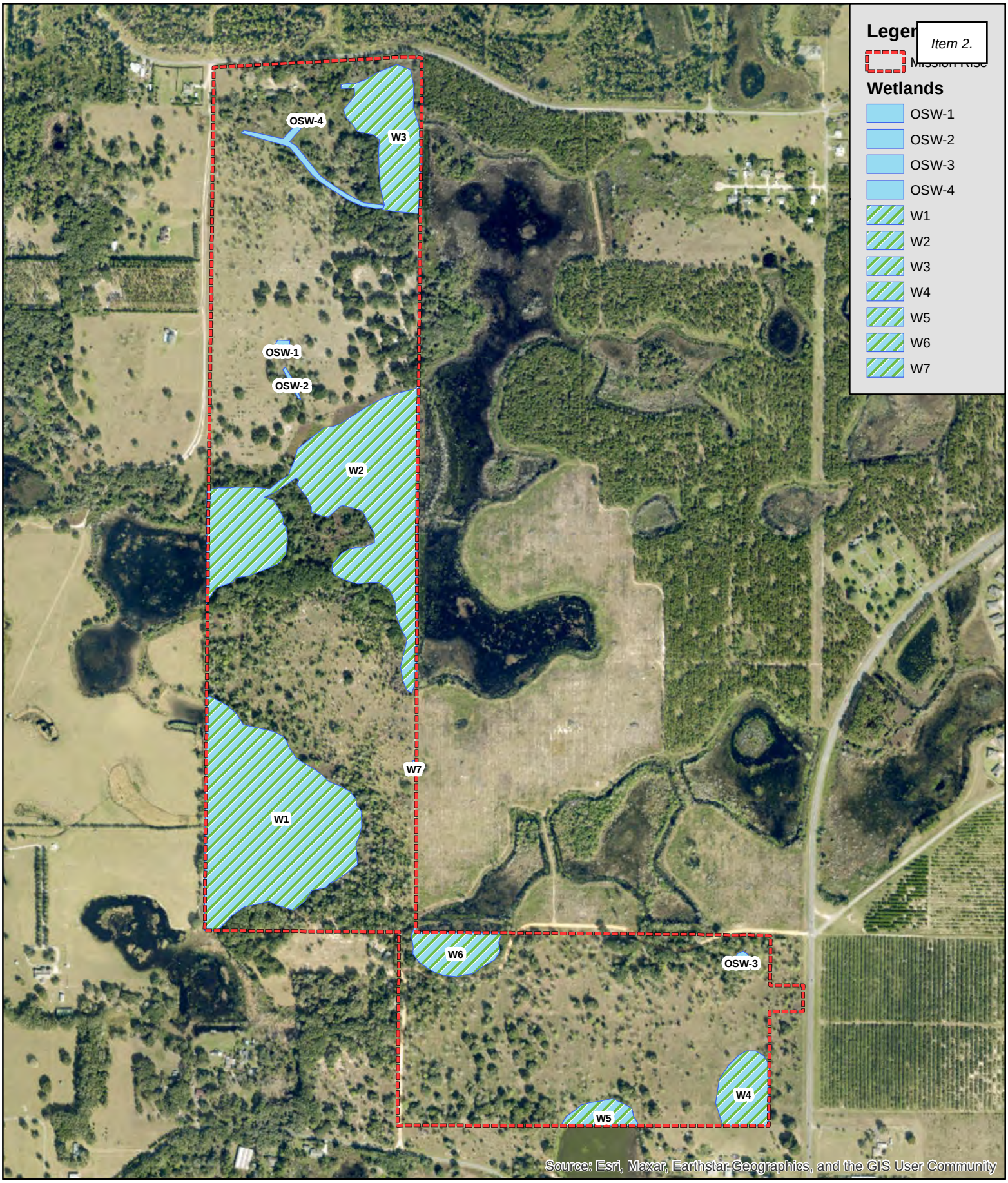
Project #:1433-01
Produced B G
Date: 11/2/2022



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Mission Rise Site
Lake County, Florida
Figure 6
BTC Wetland Boundaries

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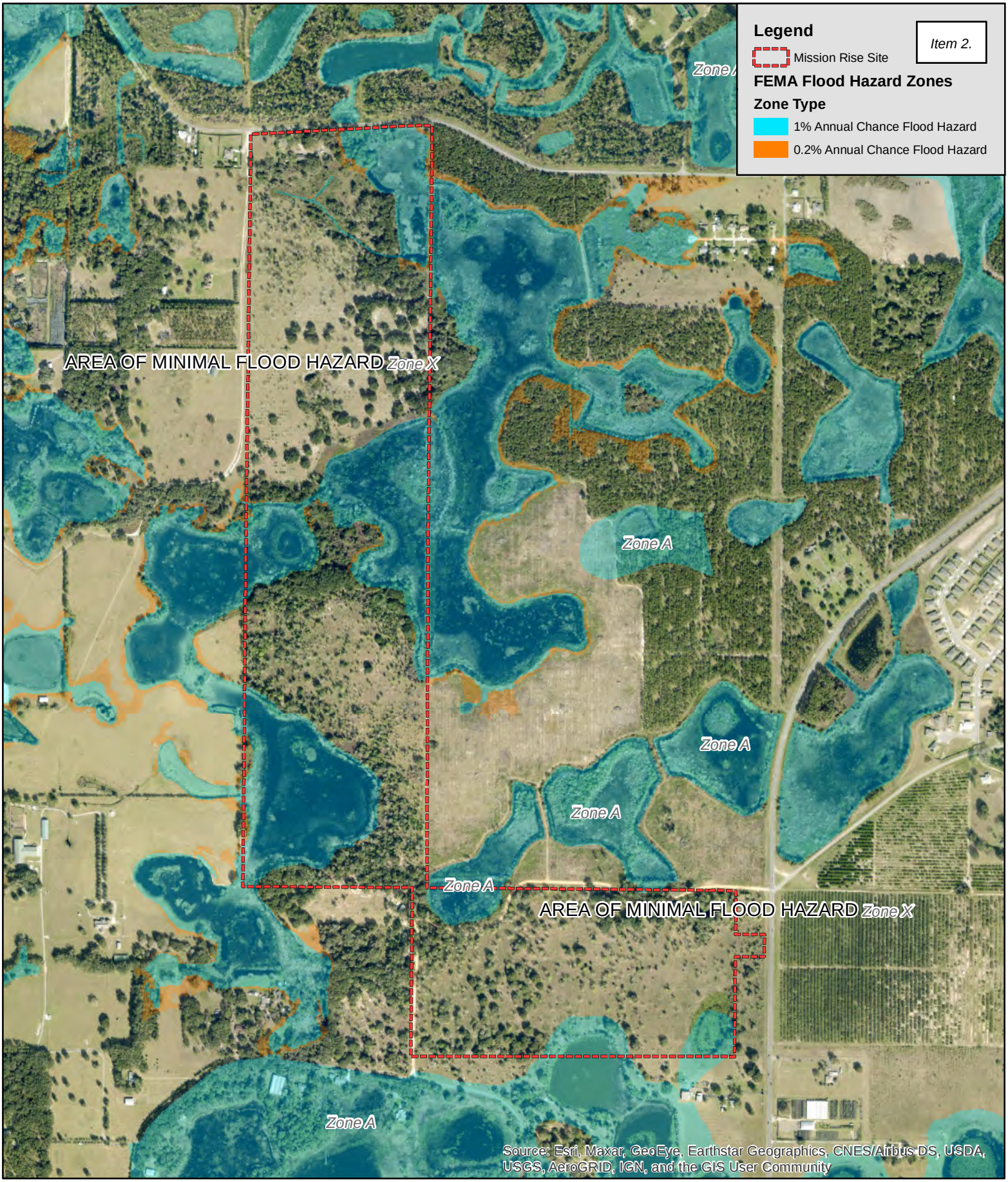
Project #:1433-01
Produced B G
Date: 11/4/2022



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Mission Rise Site
Lake County, Florida
Figure 7
FEMA Flood Hazard Zones

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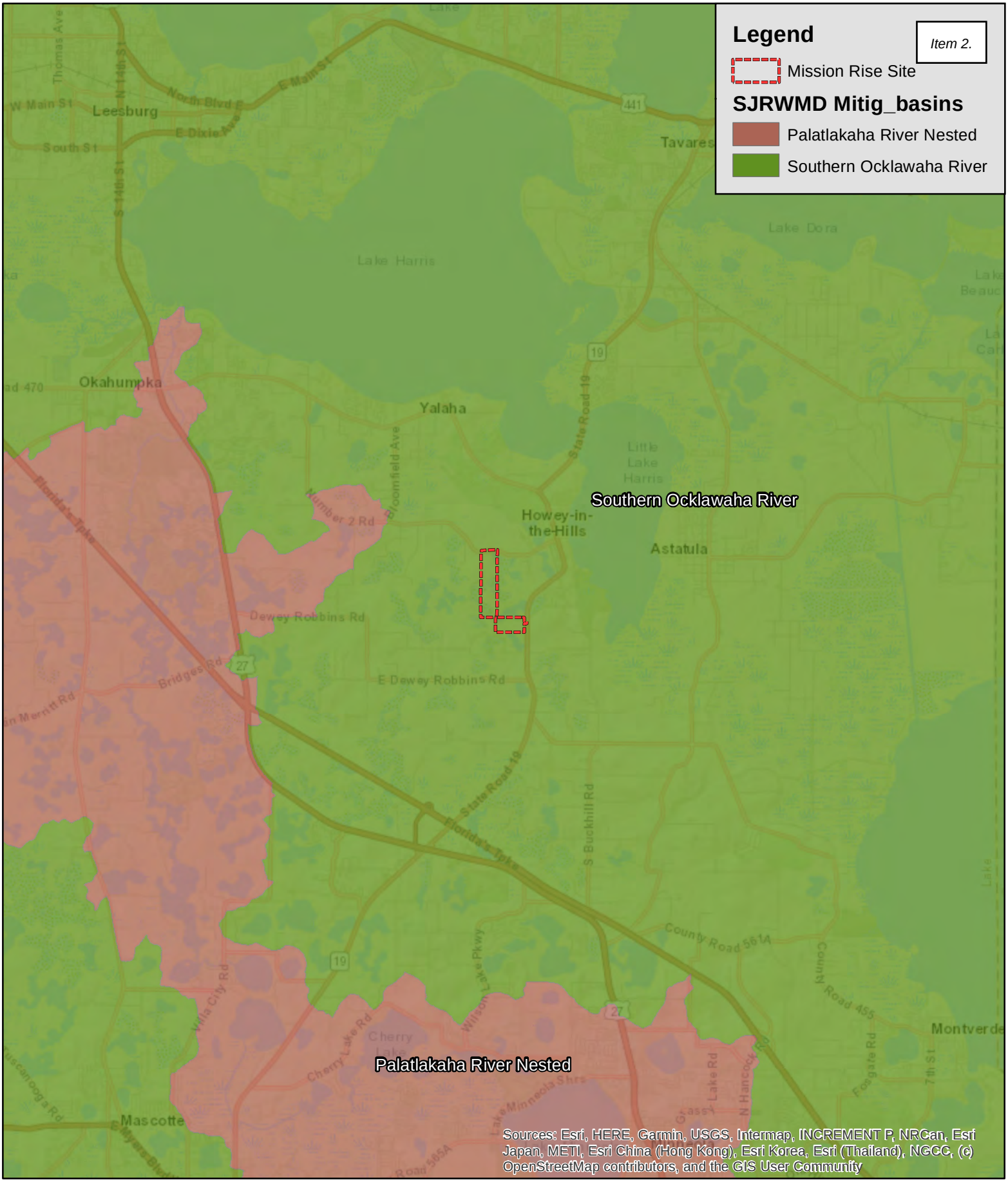
Project #:1433-01
Produced B H
Date: 6/23/2022



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Mission Rise Site
Lake County, Florida
Figure 8
SJRWMD Mitigation Basins

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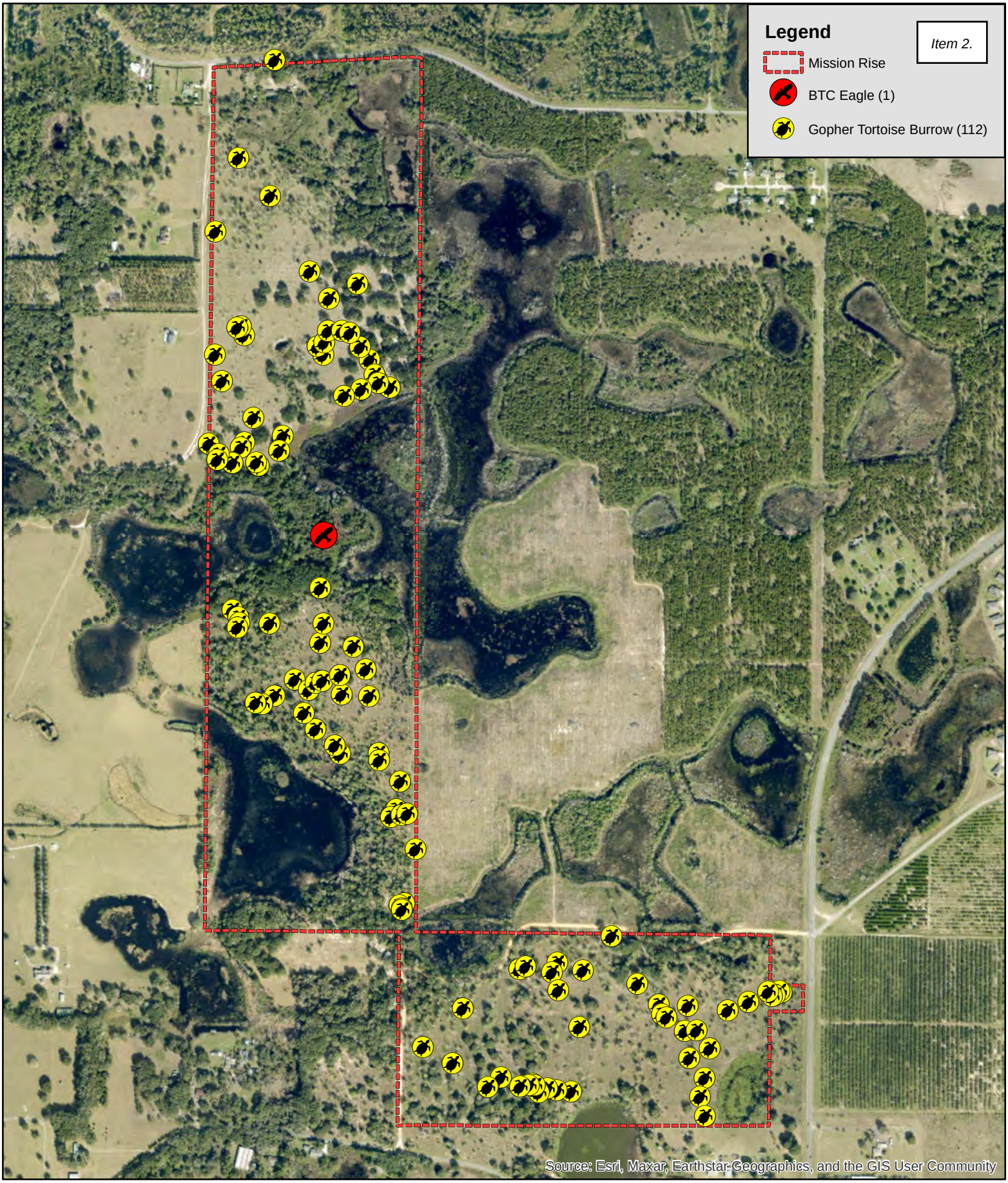
Project #:1433-01
Produced B H
Date: 6/23/2022



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Mission Rise Site
Lake County, Florida
Figure 9
Wildlife Survey

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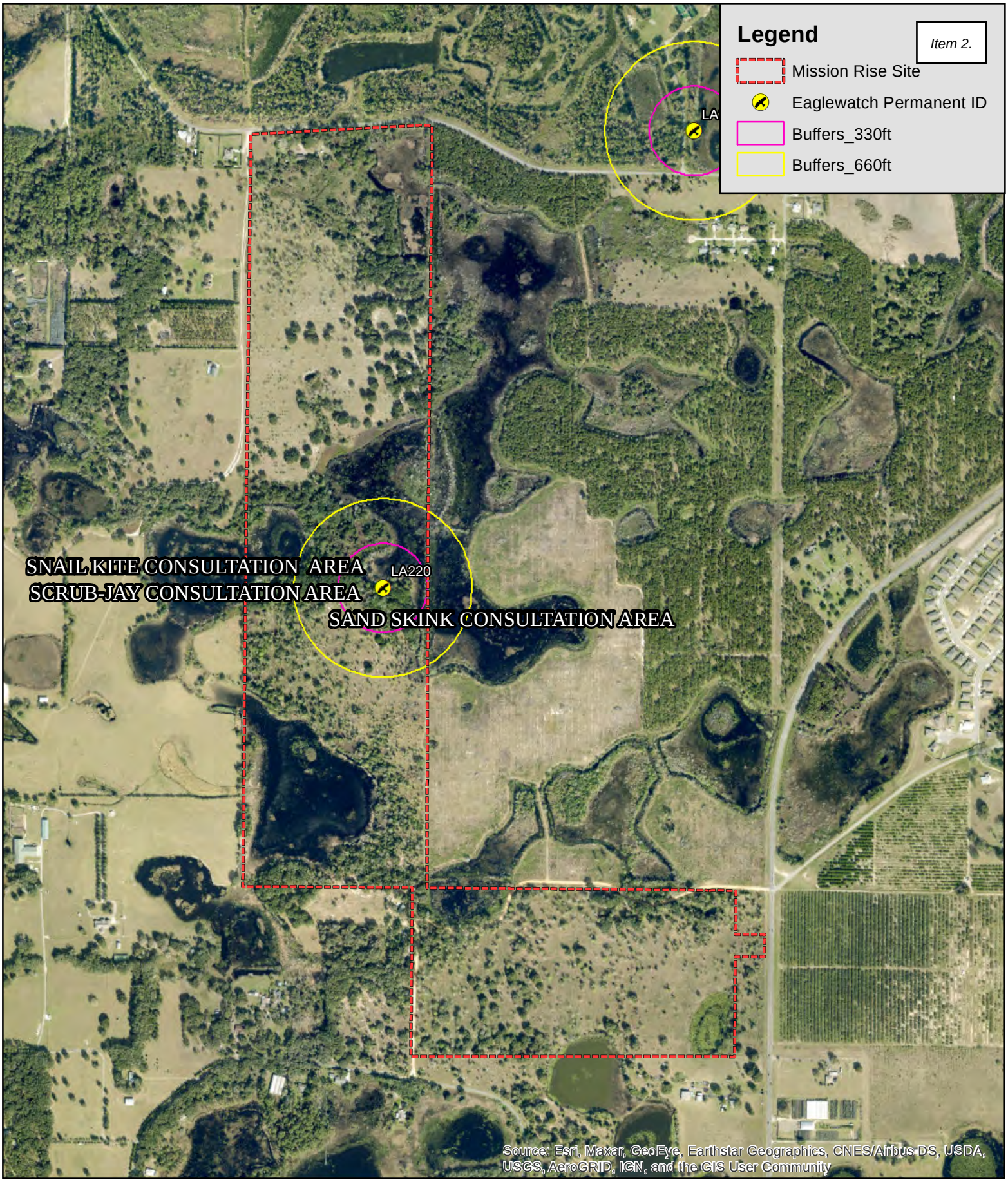
Project #:1433-01
Produced B G
Date: 11/4/2022



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Mission Rise Site
Lake County, Florida
Figure 10
USFWS Consultation Areas

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Project #:1433-01
Produced B H
Date: 6/23/2022

Table 1 :	Potentially Occuring Listed Wildlife and Plant Species in Lake County, F		
Scientific Name	**Common Name**	**Federal Status**	**State Status**
FISH			
Pteronotropis welaka	Bluenose Shiner	N	ST
REPTILES			
Alligator mississippiensis	American Alligator	SAT	FT(S/A)
Drymarchon corais couperi	Eastern Indigo Snake	LT	FT
Gopherus polyphemus	Gopher Tortoise	C	ST
Lampropeltis extenuata	Short-Tailed Snake	N	ST
Pituophis melanoleucus mugitus	Florida Pine Snake	N	ST
Plestiodon reynoldsi	Sand Skink	LT	FT
BIRDS			
Antigone canadensis pratensis	Florida Sandhill Crane	N	ST
Aphelocoma coerulescens	Florida Scrub-Jay	LT	FT
Athene cunicularia floridana	Florida Burrowing Owl	N	ST
Egretta caerulea	Little Blue Heron	N	ST
Egretta tricolor	Tricolored Heron	N	ST
Falco sparverius paulus	Southeastern American kestrel	N	ST
Grus americana	Whooping Crane	XN	FXN
Mycteria americana	Wood Stork	LT	FT
Picoides borealis	Red-Cockaded Woodpecker	LE	FE
MAMMALS			
Trichechus manatus	West Indian Manatee	LT	FT
VASCULAR PLANTS			
Bonamia grandiflora	Florida bonamia	LT	E
Carex chapmanii	Chapman's Sedge	N	T
Centrosema arenicola	Sand Butterfly Pea	N	E
Chionanthus pygmaeus	pygmy fringe tree	LE	E
Clitoria fragrans	scrub pigeon-wing	LT	E
Coelorachis tuberculosa	Piedmont Jointgrass	N	T
Coeleataenia abscissa	Cutthroat Grass	N	E
Cucurbita okeechobeensis	Okeechobee Gourd	LE	E
Eriogonum longifolium var *gnaphalifolium*	Scrub Buckwheat	LT	E
Hartwrightia floridana	Hartwrightia	N	T
Hasteola robertiorum	Florida Hasteola	N	E
Illicium parviflorum	Star Anise	N	E
Justicia cooleyi	Cooley's Water-Willow	LE	E
Lechea cernua	Nodding Pinweed	N	T
Matelea floridana	Florida Spiny-Pod	N	E
Monotropa hypopithys	Pinesap	N	E
Najas filifolia	Narrowleaf Naiad	N	T
Nemastylis floridana	Celestial Lily	N	E
Nolina brittoniana	Britton's Beargrass	LE	E
Paronychia chartacea ssp *chartacea*	Paper-Like Nailwort	LT	E
Pecluma plumula	Plume Polypody	N	E
Pecluma ptilota var. bourgeauana	Comb Polypody	N	E
Polygala lewtonii	Lewton's Polygala	LE	E
Polygonella myriophylla	Small's Jointweed	LE	E
Prunus geniculata	Scrub Plum	LE	E

Pteroglossaspis ecristata	Giant Orchid	N	T
Salix floridana	Florida Willow	N	E
Sideroxylon alachuense	Silver Buckthorn	N	E
Stylisma abdita	Scrub Stylisma	N	E
Vicia ocalensis	Ocala Vetch	N	E
Warea amplexifolia	Clasping Warea	LE	E
Warea carteri	Carter's Warea	LE	E

FEDERAL LEGAL STATUS

LE-Endangered: species in danger of extinction throughout all or a significant portion of its range.
LT-Threatened: species likely to become Endangered within the foreseeable future throughout all or a significant portion of its range.
SAT-Endangered due to similarity of appearance to a species which is federally listed such that enforcement personnel have difficulty in attempting to differentiate between the listed and unlisted species.

C-Candidate species for which federal listing agencies have sufficient information on biological vulnerability and threats to support proposing to list the species as Endangered or Threatened.
XN-Non-essential experimental population.
N-Not currently listed, nor currently being considered for listing as Endangered or Threatened.

STATE LEGAL STATUS - ANIMALS

FE- Listed as Endangered Species at the Federal level by the U. S. Fish and Wildlife Service
FT- Listed as Threatened Species at the Federal level by the U. S. Fish and Wildlife Service
FXN- Federal listed as an experimental population in Florida
FT(S/A)- Federal Threatened due to similarity of appearance
ST- State population listed as Threatened by the FFWCC. Defined as a species, subspecies, or isolated population which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat is decreasing in area at a rapid rate and as a consequence is destined or very likely to become an endangered species within the foreseeable future.
SSC-Listed as Species of Special Concern by the FFWCC. Defined as a population which warrants special protection, recognition, or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance, or substantial human exploitation which, in the foreseeable future, may result in its becoming a threatened species. (SSC* for Pandion haliaetus (Osprey) indicates that this status applies in Monroe county only.)
N-Not currently listed, nor currently being considered for listing.

*** State protected by F.A.C. 68A-16.002 and federally protected by both the Migratory Bird Treaty Act (1918) and the Bald and Golden Eagle Protection Act (1940)*

STATE LEGAL STATUS - PLANTS

E-Endangered: species of plants native to Florida that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of a decline in the number of plants continue; includes all species determined to be endangered or threatened pursuant to the U.S. Endangered Species Act.

T-Threatened: species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in number as to cause them to be Endangered.
N-Not currently listed, nor currently being considered for listing.

Utility & StormCAD Report

For

MISSION RISE PHASE 1

ASF TAP LF I LLC
3565 Piedmont Rd NE Bldg. One, #200
Atlanta, GA 30305

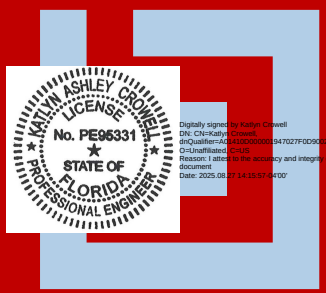
ATWELL

CONSULTING. ENGINEERING. CONSTRUCTION.

Date: August 29,2025

Atwell PN: 23000180

Prepared by:
Atwell, LLC
111 North Magnolia Avenue
Suite 1350
Orlando, FL 32801



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Engineer's Report Narrative

111 North Magnolia Avenue, Suite 1350, Orlando, Florida 32801
www.atwell-group.com
Tel: 407.743.3524

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Project Description

The following calculations have been performed in support of the construction of the proposed project, Mission Rise. The project site is located within Howey in the Hills, Florida in Lake County. The project proposes 405 Single-Family community on a +/- 240.56-acre site. The work is comprised of roadway, drainage, utilities, and sidewalks.

The project is following the PUD Development Agreement (BK 6406 PG 1267) recorded on September 30, 2024. There are wetlands on site, and the project lies within Zone AE and Zone A per FEMA FIRM Panel # 12069C0485E Dated 12/18/2012.

All elevations are based upon the vertical datum of NAVD 1988.

General Site Information

1) Location: The project is located at Howey in the Hills Town.
2) Project Area: The total proposed limit of work is 204.56 acres.
3) Existing Land Use: The project area is currently undeveloped with wetlands, various trees and average grass cover. There is also an existing access roadway through Revels Rd in the Southeast.
4) Proposed project: 405 Single-Family community with roadway, drainage, utilities, and sidewalks.
5) The project site mainly consists of hydrologic soil type A and A/D. Refer to the enclosed soil report for additional information.
6) 100-year Floodplain: FEMA map number 12069C0485E dated 12/18/2012, indicated that the site lies within Zone AE and Zone A.
7) Wetland Impacts: Wetlands exist onsite. Refer to the environmental report for additional information.
8) Project consist of three Phases. This Utility report is presenting the water line serving Phase 1 and lift station serving Phase 1 and Future Phase 2.
9) Force Main and Water Main will be connected to SR 19

Public Lift Station

A public lift station is proposed to be constructed onsite to support the sanitary sewer services to the community. A lift station design calculation is enclosed with this report.

Per Howey in the Hills Town Code, the average sewage flow of Single -Family is 250 GPD. Phase 1 proposes 157 units and future Phase 2 will propose 79 units. The total average daily flow is approximate 41.0 GPM.

Based on the calculation results, a Wet Well with 8 ft diameter and 6” Force Main is required. The point of connection is Town’s existing force main system running along SR 19 at the project frontage.

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Water Demand and Fire Flow

The water system is modeled with Bentley WaterCAD 10.03.01.08.

Per Howey in the Hills Town Code, 1 ERU equals the Average Water Consumption of 300 GPD. This development proposes a total of 157 units in Phase 1. The total Average Daily Flow is 32.71 GPM, the Maximum Daily Flow shall be the Average Daily Flow times a factor of two, which yields 65.42 GPM. A total of 130.83 GPM is used to the peak hourly flow, using a factor of hour.

Per Howey in the Hills Code, fire flow shall meet the minimum requirements of 1,000 GPM at 20 psi residual pressure.

All elevations of junctions and hydrants are based upon existing or proposed grades.

Stormwater Pipe Collection System

1) Design Criteria:

   Per Howey in the Hills code, for collector and local streets, the hydraulic gradient line of the pipe collection system shall maintain a minimum of 0.5 ft below the gutter flowline elevation during the 10-year 24-hour design storm event.

   Spread (4in/hr) dimension:

   - For collector street inlets shall be spaced to prevent the spread of stormwater runoff from exceeding half of a travel lane width.
   - For local and subdivision streets inlets shall be spaced to prevent the spread of stormwater runoff from exceeding one inch above the crown of the road.

2) Methodology:

   All new impervious areas are collected and conveyed to the proposed onsite pond for treatment and conveyance. The tailwater condition of the pipe collection system is set at the pond stage at the time of peak inflow for the 10-year 24-hour design storm event. The pipe system is modeled with StormCAD.

   Rational method is used to determine the flow into all onsite inlets.

   Rainfall intensity per the FDOT Drainage Manual “Zone 7” for a 10-year event.

   Inlets are following type per FDOT Standard Index (Inlet Type 5, Inlet Type 6, Type V and Type C).

3) Results:

   The system, as designed, adequately conveys stormwater runoff from impervious areas to the pond.

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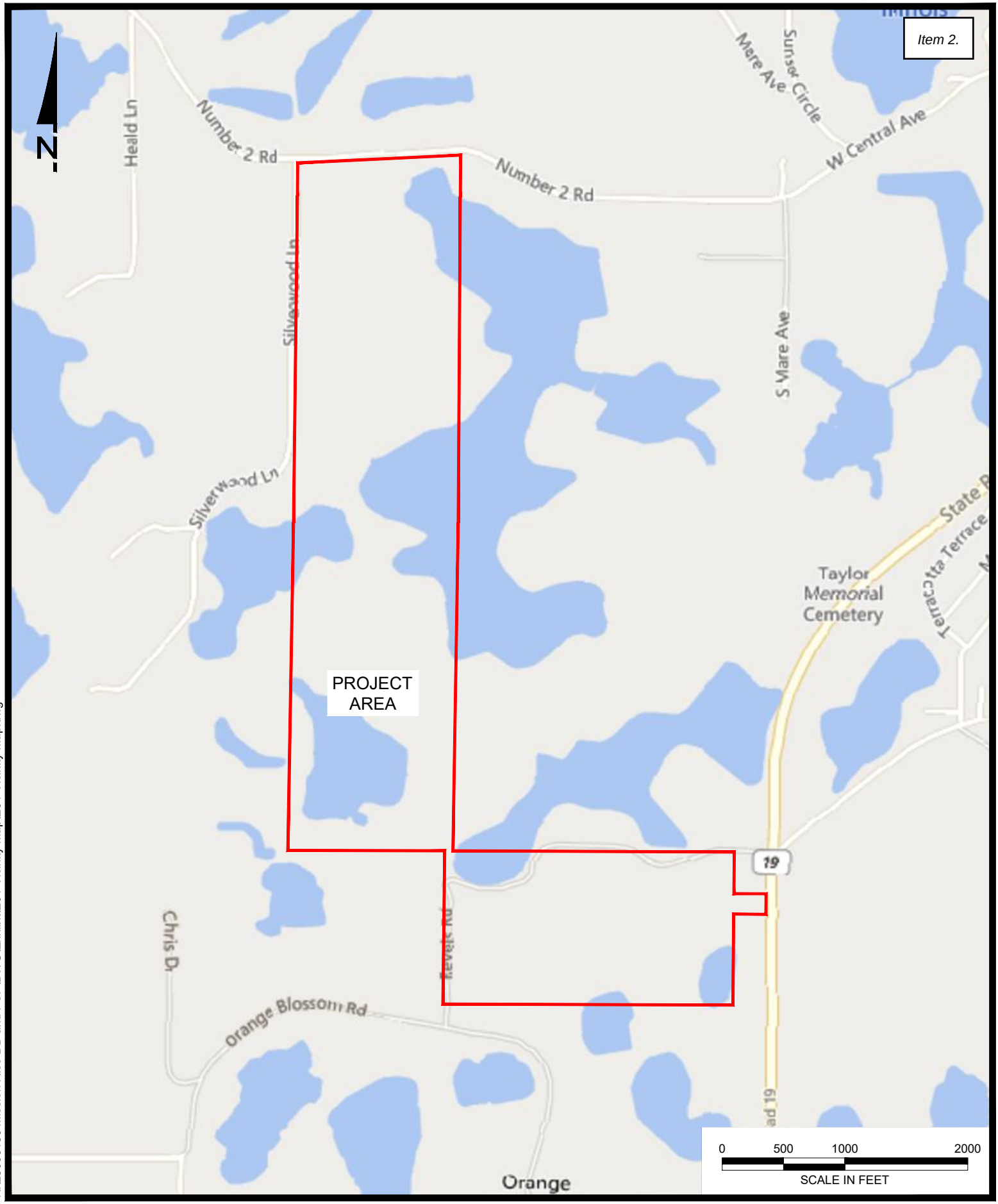
Location/Aerial Map



K:\23000180 Mission Rise DD and PSP\DWG\Exhibit\E04-Vicinity Map\E04-Vicinity Map.dwg

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ORLANDO, FL 32801
407.743.3524

LOCATION MAP

MISSION RISE



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AERIAL MAP

MISS[illegible]E

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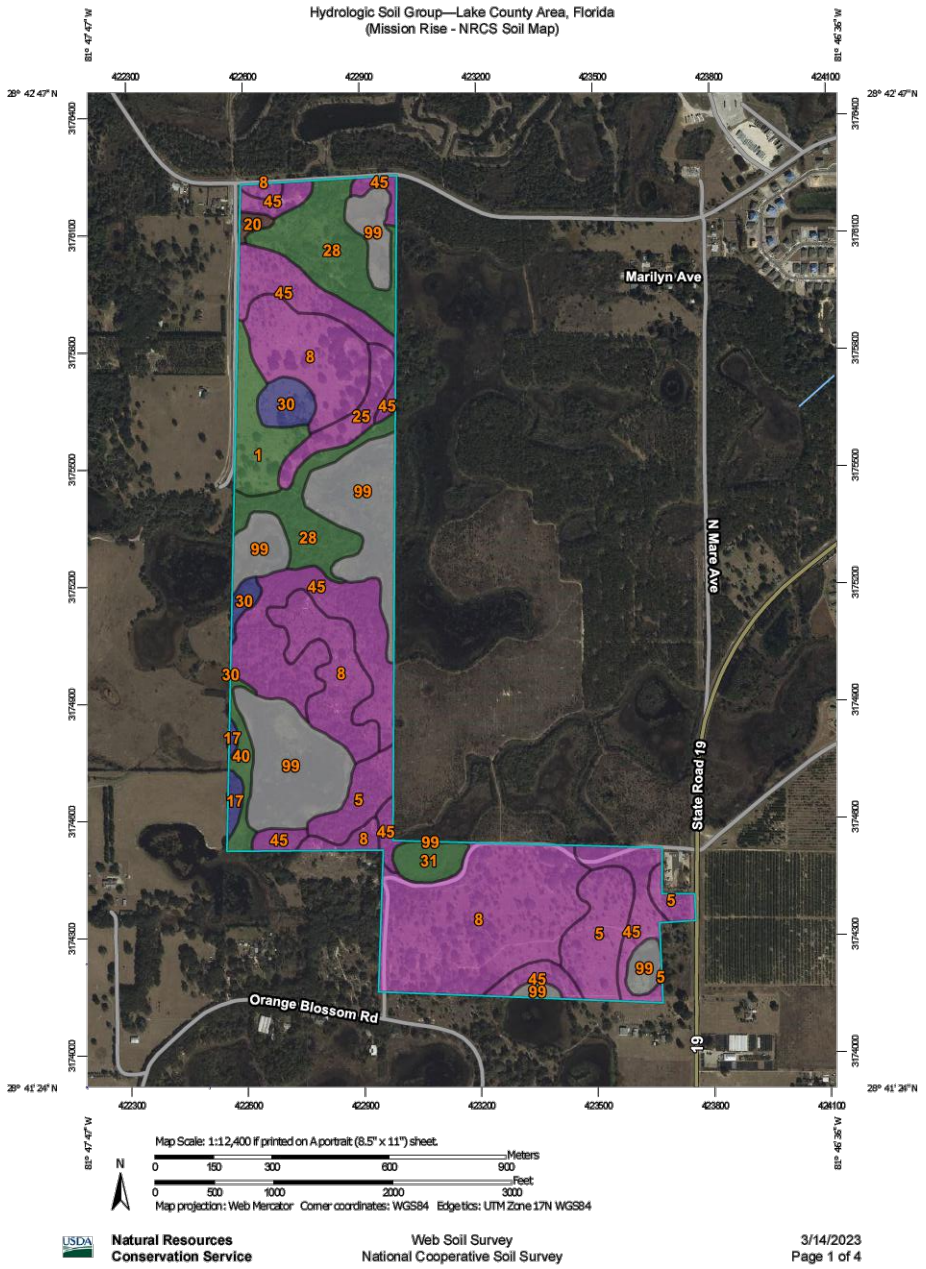
Soils Map



Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Sparr sand, 0 to 5 percent slopes	A/D	8.4	3.8%
5	Apopka sand, 0 to 5 percent slopes	A	18.6	7.9%
8	Candler sand, 0 to 5 percent slopes	A	72.3	29.1%
17	Arenta	B	1.7	0.7%
20	Immokalee sand	B/D	1.0	0.4%
25	Kendrick sand, 5 to 8 percent slopes	A	6.2	2.5%
28	Myakka-Myakka, wet, sands, 0 to 2 percent slopes	A/D	26.7	10.8%
30	Lochloosa sand	B	5.4	2.2%
31	Ocoee mucky peat	A/D	4.1	1.7%
40	Placid and Myakka sands, depressional	A/D	3.8	1.5%
45	Tavares sand, 0 to 5 percent slopes	A	50.6	20.4%
99	Water		47.4	19.1%
Totals for Area of Interest			248.2	100.0%

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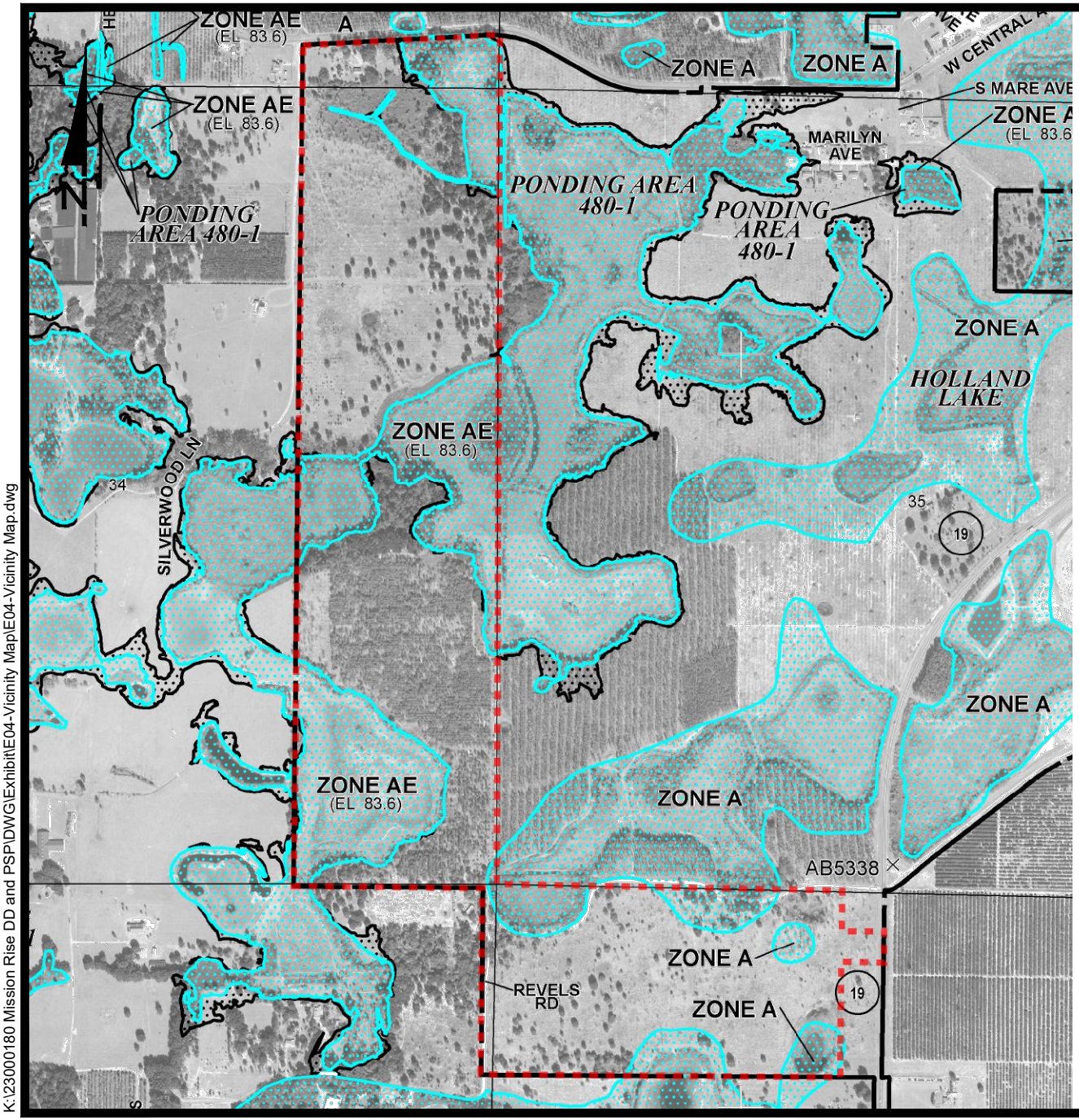
FEMA FIRM Panel Exhibit



NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0485E

FIRM

FLOOD INSURANCE RATE MAP

LAKE COUNTY, FLORIDA

AND INCORPORATED AREAS

PANEL 485 OF 750

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ASTATULA, TOWN OF	120581	0485	E
HOWEY IN THE HILLS, TOWN OF	120585	0485	E
LAKE COUNTY	120421	0485	E
TAVARES, CITY OF	120138	0485	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
12069C0485E

MAP REVISED
DECEMBER 18, 2012

Federal Emergency Management Agency

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Force Main Calculation

111 North Magnolia Avenue, Suite 1350, Orlando, Florida 32801
www.atwell-group.com
Tel: 407.743.3524

COMPUTATION OF FORCE MAIN SIZE BASED ON PEAK RATE FLOW :

of Units 405

Design Flow Rate in Pipe = 285.00 GPM x (1 Cft. / 7.48 Gals) x (1 Min. / 60 Secs) = 0.64 Cfs.

	Pipe Diamter			Cross Section Area		Flow Velocity		Flow = GPM
1.	Use 4.00	Inch	Pipe	0.09	Sq.Ft	7.28	Ft/Sec.	285.000
2.	Use 6.00	Inch	Pipe	0.20	Sq.Ft	3.23	Ft/Sec.	285.000
3.	Use 8.00	Inch	Pipe	0.35	Sq.Ft	1.82	Ft/Sec.	285.000
4.	Use 10.00	Inch	Pipe	0.55	Sq.Ft	1.16	Ft/Sec.	285.000
5.	Use 12.00	Inch	Pipe	0.79	Sq.Ft	0.81	Ft/Sec.	285.000
6.	Use 16.00	Inch	Pipe	1.40	Sq.Ft	0.45	Ft/Sec.	285.000

USE 6.00 " DIAMETER FORCE MAIN

Minimum Allowable Flow Rate =	176.24	**GPM**	@	**2.00**	**Ft/Sec**
Maximum Allowable Flow Rate =	440.61	**GPM**	@	**5.00**	**Ft/Sec**

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Lift Station Calculations

ATWELL LLC

DESIGN OF SANITARY SEWAGE LIFT STATION 1

PROJECT NAME : **Mission Rise** DATE : 18-Aug-24
PROJECT NUMBER : **23000180** BY : **KC/ZOR**

COMPUTATION OF AVERAGE DAILY FLOW (ADF), PEAK FLOW (Q_p) & FORCE MAIN SIZE :

TYPE OF DEVELOPMENT	QUANTITY	UNITS	FLOW GPD / Unit	G.P.D.	G.P.M.
Single Family (attached and detached) Phase 1	157	1 ERU per Unit	250.00	39,250	27.26
Future Single Family Phase 2	79.00	1 ERU per Unit	250.00	19,750	13.72

TOTAL ERU = 236.00 ERU'S

Actual Average Daily Flow = 59,000 GPD = 40.97 G.P.M.
For Design, Use Average Daily Flow (ADF) = Qi = 41.00 G.P.M.

COMPUTATION OF MINIMUM PUMP CAPACITY :

To determine Required Pumping Capacity use Peak Factor = 4.00

The Required Minimum Pumping Rate = Qpr = 41.00 x 4.00 = 164.00 G.P.M.

PROVIDE ACTUAL PUMP RATE = Qp = 170.00 G.P.M.

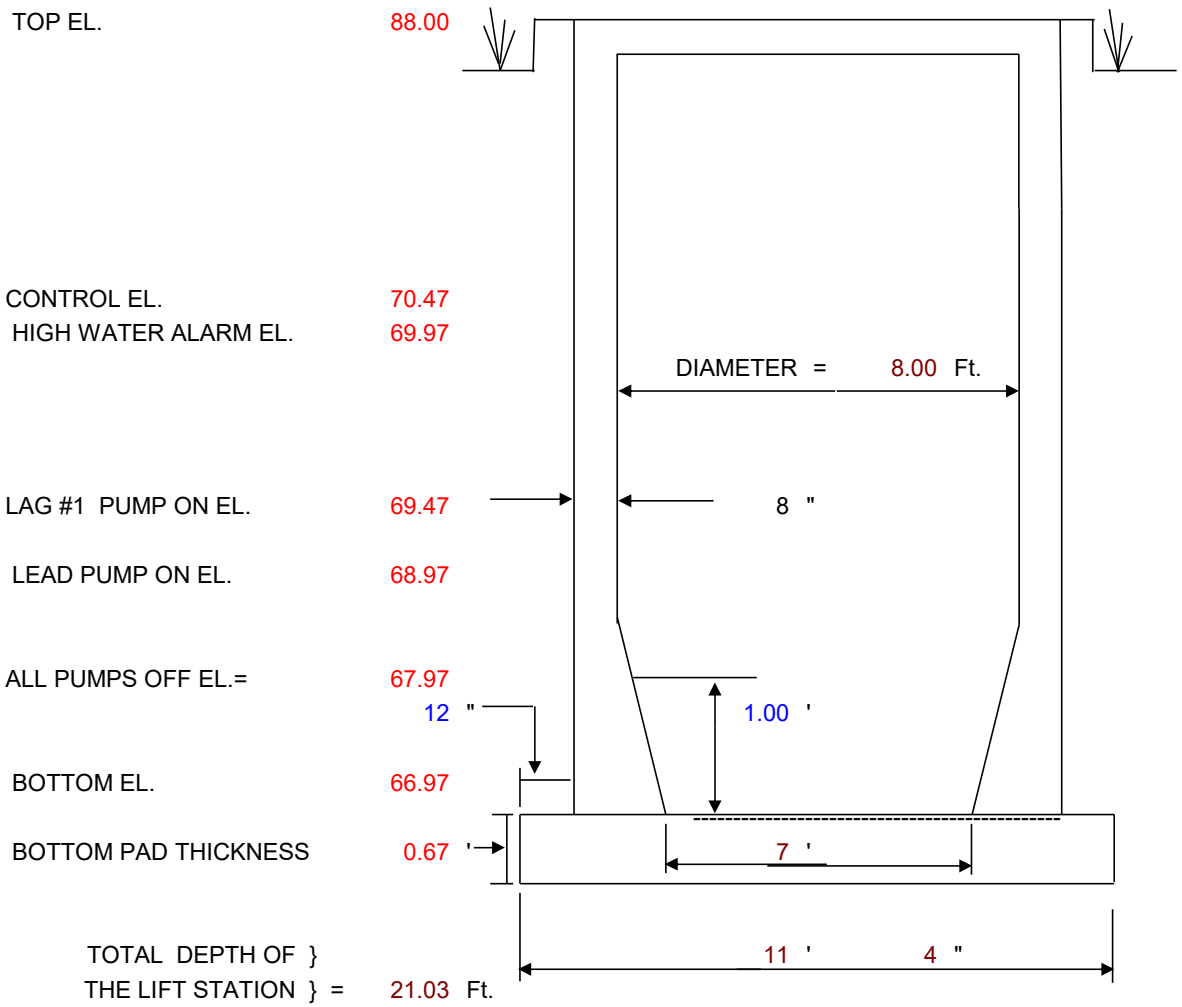
LIFT STATION FOR : Mission Rise
PROJECT NUMBER : 23000180

DESIGN OF WET WELL :

Assume a Pump Cycle Time = T = 10.0 Minutes
Wetwell Storage Required = V = (((T * Qp) - (T * Qi)) / Qp) * Qi
Wetwell Storage Required = V = 311.118 Gals = 41.59 Cft

Diameter of Wet Well (Ft.)	8.00	10.00	12.00	14.00	16.00	18.00	20.00
Storage Height (Ft.)	0.83	0.53	0.37	0.27	0.21	0.16	0.13

Provide Wetwell of Internal Diameter = 8 Ft. AND Storage Height = 1.00 Ft.
Actual Storage volume provided in the Wetwell = Va = 50.27 Cft. = 375.99 Gals.
Actual Pump Cycle Time Provided = Tp = (V / Qi) + (V / (Qp - Qi)) Mins.
i.e. ACTUAL TOTAL TIME FOR ONE COMPLETE PUMP CYCLE = Tp = 12.09 Mins.



LIFT STATION FOR : Mission Rise | **Page 5 Of 8**
PROJECT NUMBER : 23000180

CHECK STABILITY OF WET WELL

ASSUME :	Unit Weight of Soil		=	100	Lbs. Per Cu. Ft.
	Unit Weight of Concrete		=	150	Lbs. Per Cu. Ft.
WET WELL :	Thickness of Top Cover	= 8 "	=	0.67	Ft.
	Thickness of Wall	= 8 "	=	0.67	Ft.
	Thickness of Bottom Pad	= 8 "	=	0.67	Ft.
	Height of Wet Well		=	21.03	Ft.
Ground Water Elevation at Wet Well			=	75.00	

COMPUTATION OF SELF WEIGHT OF WET WELL :

Top Cover	:	Pi x (4.67) ^2 x	0.67	x	150			=	6842	Lbs.
Walls	:	Pi x (8.67) x	0.67	x	21.03	x	150	=	57253	Lbs.
Bottom Pad	:	Pi x (5.67) ^2 x	0.67	x	150			=	10088	Lbs.
Soil Over Extns.	:	Pi x (10.33) x	1.00	x	21.03	x	100	=	68263	Lbs.
		TOTAL DOWNWARD PRESSURE							142446	Lbs.

COMPUTATION OF UPLIFT FORCE :

Height of water Column } Over Bottom of Wet Well }	=	75.00	-	66.97	+	0.67	=	8.69	Ft.
UPLIFT FORCE									
Wet Well	=	Pi x (4.67) ^2	x	62.4	x	8.03	=	34273	Lbs.
Bottom Slab	=	Pi x (5.67) ^2	x	62.4	x	0.67	=	58	Lbs.
UPLIFT FORCE	=						=	34331	Lbs.

FACTOR OF SAFETY (Allowable Minimum = 1.2) :

$$\text{FACTOR OF SAFETY} = \frac{\text{Downward Pressure}}{\text{Uplift Force}} = \frac{142446}{34331} = \mathbf{4.15}$$

LIFT STATION FOR : Mission Rise	Page 6 of 8
PROJECT NUMBER : 23000180	

COMPUTATION OF STATION & LINE LOSSES AND DEVELOPMENT OF SYSTEMS CURVE

STATIC HEAD : FEET

Both Pumps Off Elevation	=	67.97	TDH @ POC	=	8.03
Maximum Elevation in Line to POC	=	102.00	TDH @ TIE IN AT	=	0.00
Total Static Head to POC	=	34.03	Buildout 3.5 PSI		
Maximum Elevation in Line		102.00			
Total Static Head in Line	=	34.03			

WET-WELL / STATION LOSSES :

4 " Piping Equivalent @ C =	120	30 ' @	1.00	=	30.00
0 x 4 " x 45^0 Bends		@	3.50	=	0.00
2 x 4 " x 90^0 Bends		@	5.90	=	11.80
1 x 4 " Gate Valve		@	2.90	=	2.90
1 x 4 " Check Valve		@	38.00	=	38.00
1 x 4 " Tee Branch Flow		@	12.00	=	12.00
TOTAL STATION LOSSES	4 " Pipe Equivalent @	C =	120	=	94.70

LINE LOSSES : (From Lift Station to POC)

4 " Pipe Length @ C =	120	314.5 ' @	1.00	=	314.50
2 x 4 " x 45^0 Bends		@	3.50	=	7.00
0 x 4 " x 90^0 Bends		@	5.90	=	0.00
1 x 4 " Plug Valve		@	2.90	=	2.90
1 x 4 " Tee Branch Flow		@	12.00	=	12.00
	4 " Pipe Equivalent @	C =	120	=	336

ADDITIONAL LINE LOSSES - 1 : (From xx to xx)

4 " Pipe Length @ C =	120	0 ' @	1.00	=	0.00
0 x 4 " x 45^0 Bends		@	3.50	=	0.00
0 x 4 " x 90^0 Bends		@	5.90	=	0.00
0 x 4 " Plug Valve		@	2.90	=	0.00
0 x 4 " Tee Branch Flow		@	12.00	=	0.00
	4 " Pipe Equivalent @	C =	120	=	0

LIFT STATION FOR : **Mission Rise**

PROJECT NUMBER : **23000180** Pumping Conditions : **ALL PUMPS ON (All Lift Stations pumping)**

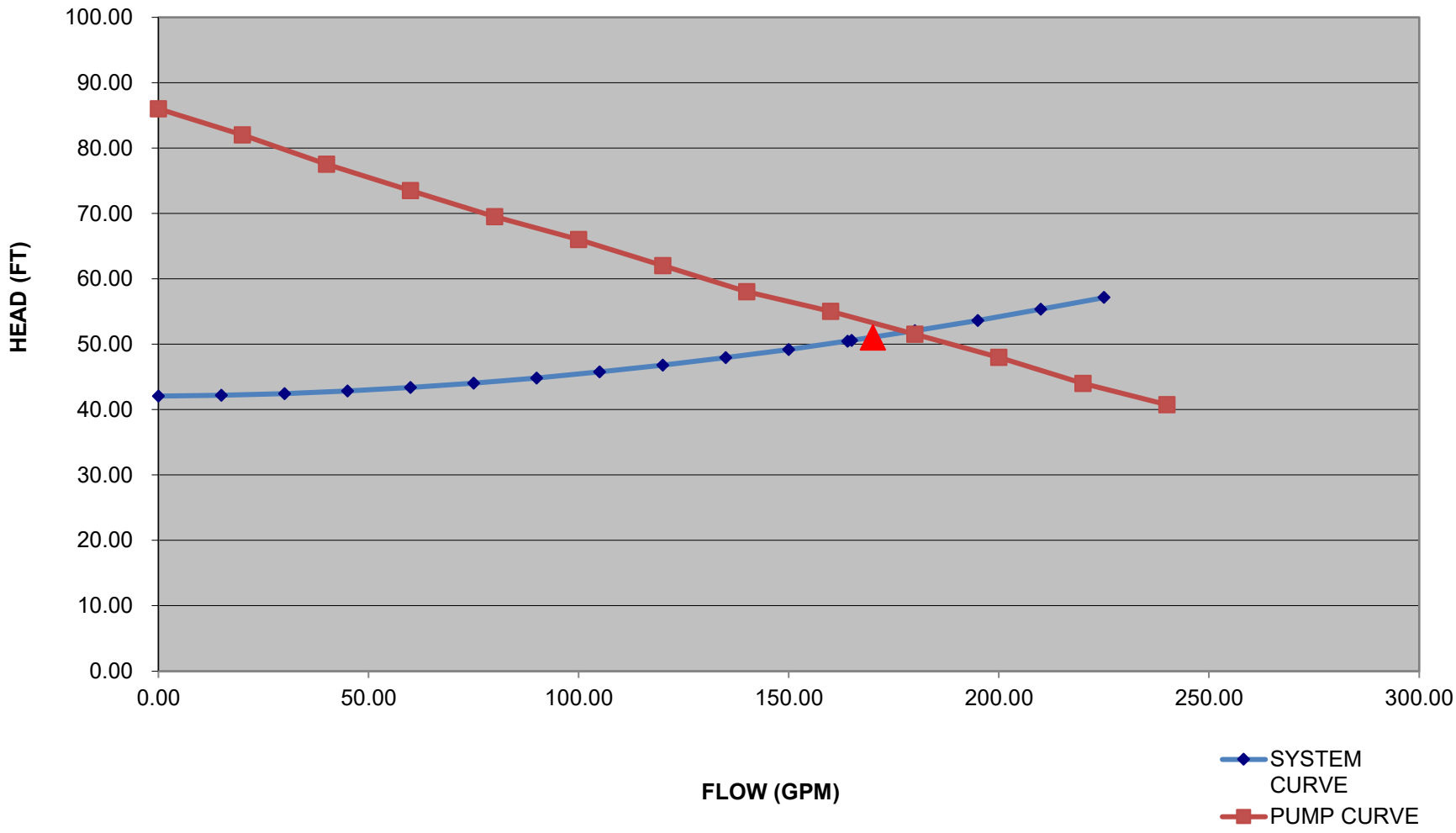
SYSTEMS CURVE : **PUMP STATION THROUGH FM TO MANIFOLD AT POINT OF CONNECTION**

DESIGN CONDITION	:	**164**	**G.P.M.**	**AT**	**50.46** **Ft. T.D.H.**
OPERATING CONDITION	:	**170**	**G.P.M.**	**AT**	**51.04** **Ft. T.D.H.**

FLOW ADDITIONAL	WETWELL LOSS* C= 120 Dia = 4 " 95 Ft.	LINE LOSS C= 120 Dia. = 4 " 336 Ft.	LINE LOSS C= 120 Dia. = 4 " 0 Ft.	LINE LOSS C= 120 Dia. = 8 " 0 Ft.	LINE LOSS C= 120 Dia. = 8 " 0 Ft.	TOTAL HEAD AT CONNECTION POINT (Feet)	TOTAL STATIC HEAD (Feet)	TOTAL DYNAMIC HEAD (Feet)
0.00	0.00	0.00	0.00	0.00	0.00	8.03	34.03	42.06
15.00	0.01	0.09	0.00	0.00	0.00	8.03	34.03	42.16
30.00	0.04	0.32	0.00	0.00	0.00	8.03	34.03	42.42
45.00	0.09	0.67	0.00	0.00	0.00	8.03	34.03	42.83
60.00	0.16	1.15	0.00	0.00	0.00	8.03	34.03	43.37
75.00	0.24	1.73	0.00	0.00	0.00	8.03	34.03	44.04
90.00	0.34	2.43	0.00	0.00	0.00	8.03	34.03	44.83
105.00	0.45	3.23	0.00	0.00	0.00	8.03	34.03	45.74
120.00	0.58	4.13	0.00	0.00	0.00	8.03	34.03	46.77
135.00	0.72	5.14	0.00	0.00	0.00	8.03	34.03	47.92
150.00	0.88	6.24	0.00	0.00	0.00	8.03	34.03	49.18
165.00	1.05	7.45	0.00	0.00	0.00	8.03	34.03	50.56
180.00	1.23	8.75	0.00	0.00	0.00	8.03	34.03	52.04
195.00	1.43	10.15	0.00	0.00	0.00	8.03	34.03	53.63
210.00	1.64	11.6	0.00	0.00	0.00	8.03	34.03	55.33
225.00	1.86	13.2	0.00	0.00	0.00	8.03	34.03	57.14
164.00	1.04	7.37	0.00	0.00	0.00	8.03	34.03	50.46
170.00	1.11	7.87	0.00	0.00	0.00	8.03	34.03	51.04

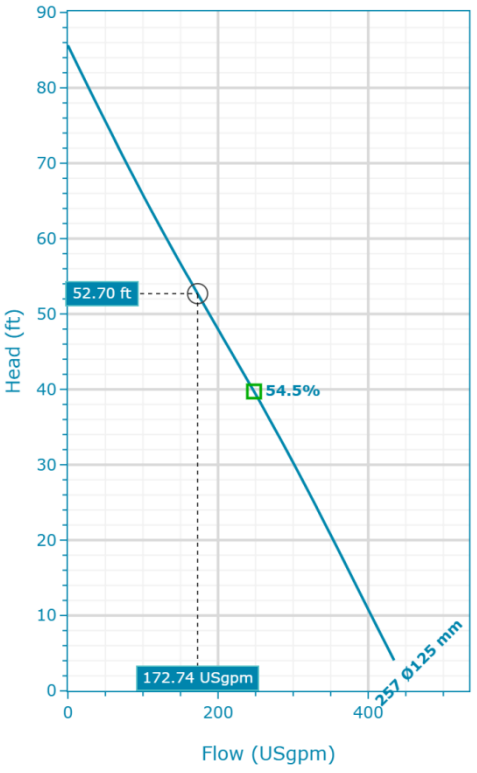
PUMP CURVE

	FLOW (GPM)		HEAD (TDH)	
0	0.00		86.00	
20	20.00		82.00	
40	40.00		77.50	
60	60.00		73.50	
80	80.00		69.50	
100	100.00		66.00	
120	120.00		62.00	
140	140.00		58.00	
160	160.00		55.00	
180	180.00		51.50	
200	200.00		48.00	
220	220.00		44.00	
240	240.00		40.75	


SYSTEM CURVE - ALL PUMPS ON
HEAD (FT)
100.00
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
FLOW (GPM)
SYSTEM CURVE
PUMP CURVE

NP 3102 SH 3~ Adaptive 257 | Configuration Summary





Curve: ISO 9906

Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances. Please consult your local Flygt representative for performance guarantees.

Flygt's self-cleaning non-clog N-pumps feature innovative designs and functions that deliver high sustained efficiency and the most reliable operation. This makes them the most reliable choice available for a broad range of wastewater applications for tough applications such as unscreened sewage, wastewater and sludge up to an 8 percent solids concentration. Impeller material available in Hardened cast Iron, Hard Iron and Stainless Steel to fit any wastewater application.

GENERAL

Explosion Proof
No

Impeller Diameter
125 mm

Max. Pumped Media Temp.
104 °F

MATERIAL AND COATING

Impeller Material
Hard-Iron

Stator Cover Material
Grey Cast Iron

Volute Material
Grey Cast Iron

MOTOR

Rated Voltage
460 V

Motor Efficiency Class
Standard

Coupling
Y

Rated Power
6.5 Hp

INSTALLATION

Installation Type
P - Semi-Permanent, Wet

NP 3102 SH 3~ Adaptive 257 | Product Details

Description

N 3102

Wastewater N-Technology Pump With Adaptive N® Impeller

Flygt N-pumps take on the toughest applications and get the job done. Every component is designed and manufactured to deliver sustained high efficiency. Thanks to patented N-technology with its innovative self-cleaning impeller, Flygt N-pumps deliver the highest total efficiency. They lower your energy bill and reduce unplanned maintenance costs. That adds up to total peace of mind – and big savings over the long term. Most solid objects entering the pump will pass through the impeller between the impeller vanes. If an object gets caught on the leading edge of one of the vanes, it will slide along the backswept shape towards the perimeter of the inlet. Due to the mechanical self-cleaning design, a sludge concentration up to 8% can easily be pumped.

Flexible and Modular Design

- This self-cleaning pump features innovative functions that make it the best choice for a broad range of applications. The modular hydraulic design enables you to tailor the hydraulics to meet the requirements of virtually any application.
- Replaceable wear ring in two materials, gray iron or Hard-Iron, for different operation conditions
- Hardened gray iron impeller for typical wastewater applications
- Hard-Iron impeller for abrasive and corrosive applications
- Stainless steel impeller for special applications that require duplex stainless steel
- Short shaft overhang reduces shaft deflection and increases seal and bearing life
- Motor designed for submersible use. Heat is concentrated to the stator core for improved cooling properties
- The double mechanical seal system consists of two sets of mechanical shaft seals that work independently to provide double security. Available in Tungsten carbide (WCCR) or Silicone carbide (SiC) depending on pumped media.
- Griploc mechanical face seal system secures locking to the shaft, no rubber friction, no grub screws and no shaft damage
- Motor cable SUBCAB ® specially developed for submersible use.

Product Features

- Sustained high efficiency
- Hardened cast iron, optional Duplex stainless steel and Hard-Iron impellers
- State-of-the-art wastewater pump with enhanced Adaptive N® hydraulic
- Sustained high efficiency with energy savings up to 25%
- Flexible and modular design
- Robust and reliable

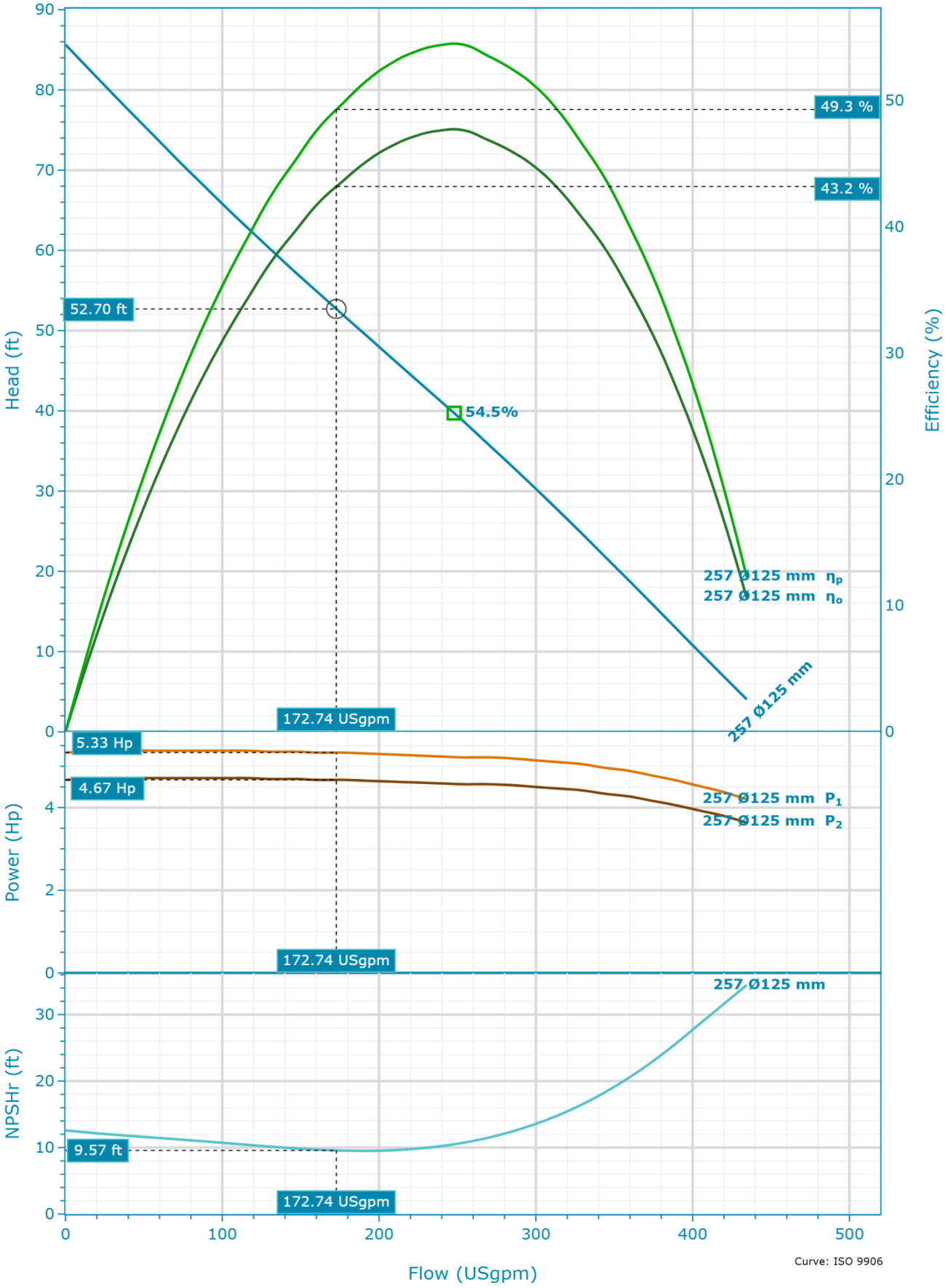
Construction Materials

Impeller Material	Volute Material	Stator Cover Material
Hard-Iron	Grey Cast Iron	Grey Cast Iron

Motor

Rated Power 6.5 Hp	Number Of Phases 3	Start Current Ratio 9.51	Motor Issue 18
Motor Denomination 18-10-2AL	Rated Motor Speed 3,515 RPM	Insulation Class H	Locked Rotor Code K
Motor Efficiency Class Standard	Rated Voltage 460 V	Approval Standard	Max starts per hour 30
Version Code 060	Rated Current 8 A	Total moment of inertia 0.3703 ft²lbf	Power Factor 100% 0.91
Frequency 60 Hz	Start Current 72 A	Type of duty S1	Power Factor 75% 0.88
Max P2 (1x) 4.72 Hp	Starting Current, Direct Starting 72 A	Stator Variant 62	Power Factor 50% 0.82
Number Of Poles 2	Starting Current, Star Delta 24 A	Motor Module 150	Efficiency 100% 87 %
			Efficiency 75% 87.4 %
			Efficiency 50% 86.1 %

NP 3102 SH 3~ Adaptive 257 | Hydraulic Data & Performance Curve



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances. Please consult your local Flygt representative for performance guarantees.

Selection

Series	Curve Code
N 3000	257
Name	Impeller Diameter

Fluid

Fluid Type	Density
Water	62.428 lb/ft³
Fluid Temperature	Dynamic Viscosity

NP 3102 SH 3~ Adaptive 257

Frequency
60 Hz

Total Flow
170.00 USgpm

Total Head
51.04 ft

Pump Flow
170.00 USgpm

Pump Head
51.04 ft

System Type
Single Pump

Operating Pumps
1

Standby Pumps
No Standby Pump

125 mm

Inlet Diameter
100 mm

Outlet Diameter
3 in

Number Of Vanes
2

39.2 °F

Specific Gravity
1

1.567212 cP

Fluid Vapor Pressure
0.118 psi

Design Point

Flow
172.74 USgpm

Head
52.7 ft

Overall Efficiency (ηo)
43.20 %

Pump Efficiency (ηp)
49.30 %

Input Power (P1)
5.33 Hp

Shaft power (P2)
4.67 Hp

NPSHR
9.57 ft

Flow To BEP Ratio
69.7 %

Design Curve

Rated Speed
60 Hz

Max Flow
434.47 USgpm

H@QMin
85.64 ft

H@QMax
4.05 ft

BEP
54.5 %

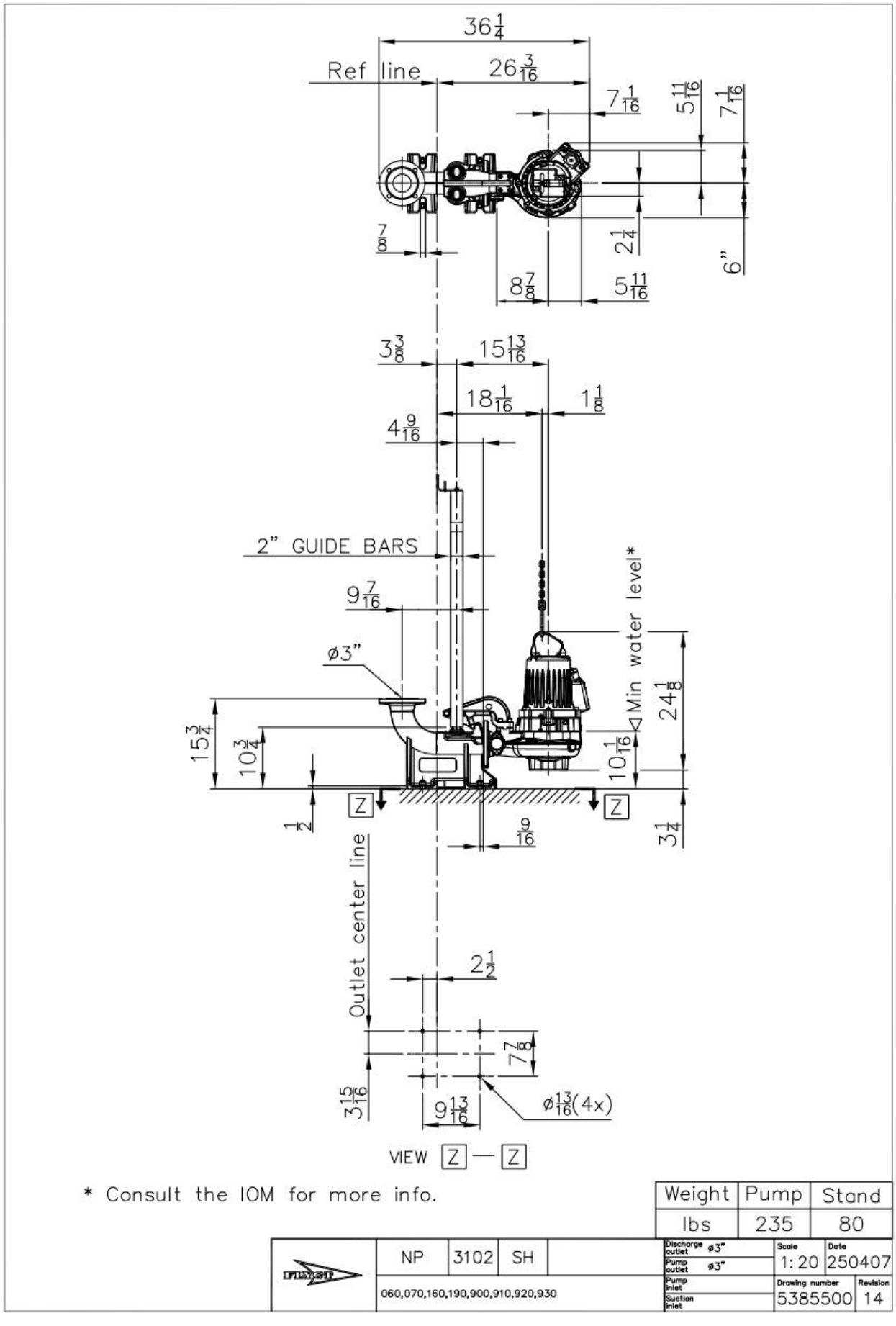
BEP Flow
247.94 USgpm

BEP Head
39.72 ft

Max P2
4.72 Hp

Specific Energy
0.000384 kWh/USgal

NP 3102 SH 3~ Adaptive 257 | Dimensional Data & Drawing



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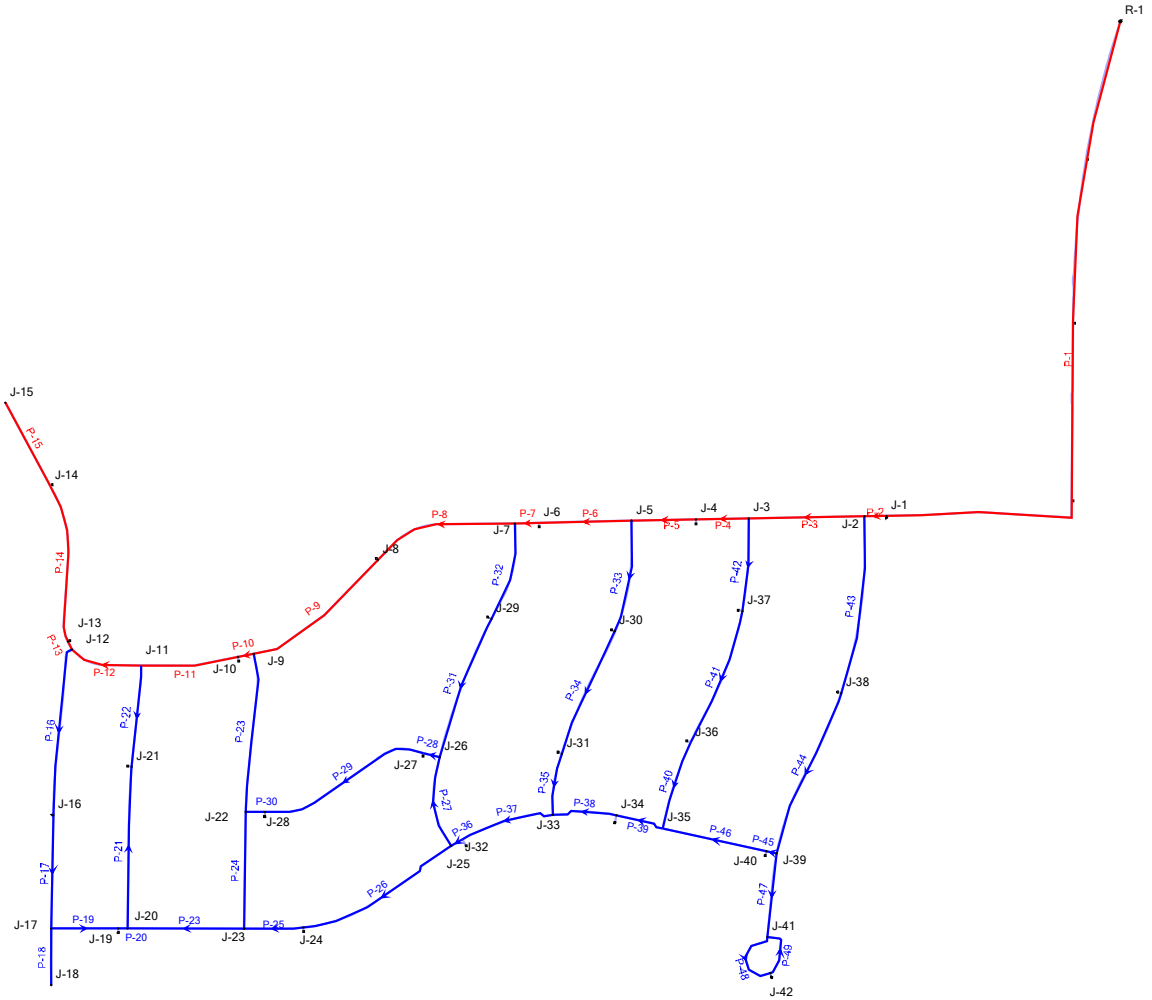
WaterCAD Report

Scenario: FF + MDF



FlexTable: Junction Table

FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Pressure (psi)	Pressure Head (ft)
J-1	89.32	1	65	150.94
J-2	88.59	0	66	151.44
J-3	87.48	0	66	151.97
J-4	89.70	1	65	149.53
J-5	90.92	0	64	148.04
J-6	94.58	3	62	144.07
J-7	94.92	0	62	143.62
J-8	92.69	0	63	145.51
J-9	93.91	0	62	143.94
J-10	94.65	3	62	143.12
J-11	98.37	0	60	139.11
J-12	94.51	0	62	142.97
J-13	94.00	0	62	143.48
J-14	86.19	0	65	151.29
J-15	88.26	0	65	149.22
J-16	100.91	0	59	136.45
J-17	93.53	0	62	143.76
J-18	91.00	0	63	146.29
J-19	97.82	2	60	139.42
J-20	98.52	0	60	138.71
J-21	108.28	1,005	55	127.54
J-22	106.51	0	57	131.40
J-23	101.39	0	59	136.44
J-24	100.72	5	59	137.26
J-25	96.95	0	61	141.44
J-26	98.13	0	61	140.22
J-27	98.55	5	60	139.73
J-28	105.80	4	57	132.17
J-29	96.30	3	62	142.15
J-30	92.53	3	63	146.41
J-31	94.23	4	63	144.68
J-32	96.60	3	61	141.88
J-33	94.28	0	63	144.62
J-34	92.15	2	64	146.97
J-35	91.27	0	64	148.02
J-36	90.05	5	65	149.28
J-37	89.57	4	65	149.83
J-38	91.06	5	64	148.67
J-39	92.84	0	63	146.64
J-40	92.89	4	63	146.55
J-41	93.94	0	63	145.54
J-42	94.00	3	63	145.48

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
P-1	1,767	R-1	J-1	12.0	PVC	150.0	0.000	1,066	3.02	0.002
P-2	57	J-1	J-2	12.0	PVC	150.0	0.000	1,064	3.02	0.004
P-3	298	J-2	J-3	12.0	PVC	150.0	0.000	887	2.52	0.002
P-4	136	J-3	J-4	12.0	PVC	150.0	0.000	789	2.24	0.002
P-5	166	J-4	J-5	12.0	PVC	150.0	0.000	788	2.23	0.002
P-6	238	J-5	J-6	12.0	PVC	150.0	0.000	730	2.07	0.001
P-7	62	J-6	J-7	12.0	PVC	150.0	0.000	728	2.06	0.002
P-8	384	J-7	J-8	12.0	PVC	150.0	0.000	610	1.73	0.001
P-9	409	J-8	J-9	12.0	PVC	150.0	0.000	610	1.73	0.001
P-10	42	J-9	J-10	12.0	PVC	150.0	0.000	686	1.95	0.002
P-11	251	J-10	J-11	12.0	PVC	150.0	0.000	683	1.94	0.001
P-12	190	J-11	J-12	12.0	PVC	150.0	0.000	108	0.31	0.000
P-13	23	J-12	J-13	12.0	PVC	150.0	0.000	0	0.00	0.000
P-14	411	J-13	J-14	12.0	PVC	150.0	0.000	0	0.00	0.000
P-15	244	J-14	J-15	12.0	PVC	150.0	0.000	0	0.00	0.000
P-16	436	J-12	J-16	8.0	PVC	150.0	0.000	108	0.69	0.000
P-17	291	J-16	J-17	8.0	PVC	150.0	0.000	108	0.69	0.000
P-18	146	J-18	J-17	8.0	PVC	150.0	0.000	0	0.00	0.000
P-19	172	J-17	J-19	8.0	PVC	150.0	0.000	108	0.69	0.000
P-20	24	J-19	J-20	8.0	PVC	150.0	0.000	106	0.67	0.000
P-21	416	J-20	J-21	8.0	PVC	150.0	0.000	430	2.74	0.003
P-22	262	J-21	J-11	8.0	PVC	150.0	0.000	-575	3.67	0.006
P-23	300	J-20	J-23	8.0	PVC	150.0	0.000	-324	2.07	0.002
P-23	409	J-22	J-9	8.0	PVC	150.0	0.000	76	0.49	0.000
P-24	300	J-22	J-23	8.0	PVC	150.0	0.000	106	0.67	0.000
P-25	153	J-23	J-24	8.0	PVC	150.0	0.000	-218	1.39	0.001
P-26	445	J-24	J-25	8.0	PVC	150.0	0.000	-223	1.42	0.001
P-27	241	J-26	J-25	8.0	PVC	150.0	0.000	-77	0.49	0.000
P-28	43	J-26	J-27	8.0	PVC	150.0	0.000	191	1.22	0.002
P-29	457	J-27	J-28	8.0	PVC	150.0	0.000	186	1.19	0.001
P-30	49	J-28	J-22	8.0	PVC	150.0	0.000	182	1.16	0.001
P-31	380	J-29	J-26	8.0	PVC	150.0	0.000	114	0.73	0.000
P-32	258	J-7	J-29	8.0	PVC	150.0	0.000	118	0.75	0.000
P-33	290	J-30	J-5	8.0	PVC	150.0	0.000	-58	0.37	0.000
P-34	345	J-31	J-30	8.0	PVC	150.0	0.000	-54	0.35	0.000
P-35	160	J-33	J-31	8.0	PVC	150.0	0.000	-51	0.32	0.000
P-36	33	J-25	J-32	8.0	PVC	150.0	0.000	-300	1.91	0.003
P-37	247	J-32	J-33	8.0	PVC	150.0	0.000	-303	1.93	0.002
P-38	168	J-33	J-34	8.0	PVC	150.0	0.000	-252	1.61	0.001
P-39	127	J-34	J-35	8.0	PVC	150.0	0.000	-254	1.62	0.001
P-40	232	J-36	J-35	8.0	PVC	150.0	0.000	89	0.57	0.000
P-41	365	J-37	J-36	8.0	PVC	150.0	0.000	94	0.60	0.000
P-42	240	J-3	J-37	8.0	PVC	150.0	0.000	98	0.63	0.000
P-43	462	J-38	J-2	8.0	PVC	150.0	0.000	-177	1.13	0.001
P-44	446	J-39	J-38	8.0	PVC	150.0	0.000	-172	1.10	0.001
P-45	27	J-40	J-39	8.0	PVC	150.0	0.000	-169	1.08	0.002
P-46	273	J-35	J-40	8.0	PVC	150.0	0.000	-165	1.05	0.001
P-47	216	J-39	J-41	8.0	PVC	150.0	0.000	2	0.02	0.000
P-48	179	J-41	J-42	8.0	PVC	150.0	0.000	5	0.03	0.000
P-49	132	J-42	J-41	8.0	PVC	150.0	0.000	2	0.01	0.000

FlexTable: Reservoir Table

FlexTable: Reservoir Table

ID	Label	Elevation (ft)	Zone	Flow (Out net) (gpm)	Hydraulic Grade (ft)
189	R-1	244.45	<None>	1,066	244.45

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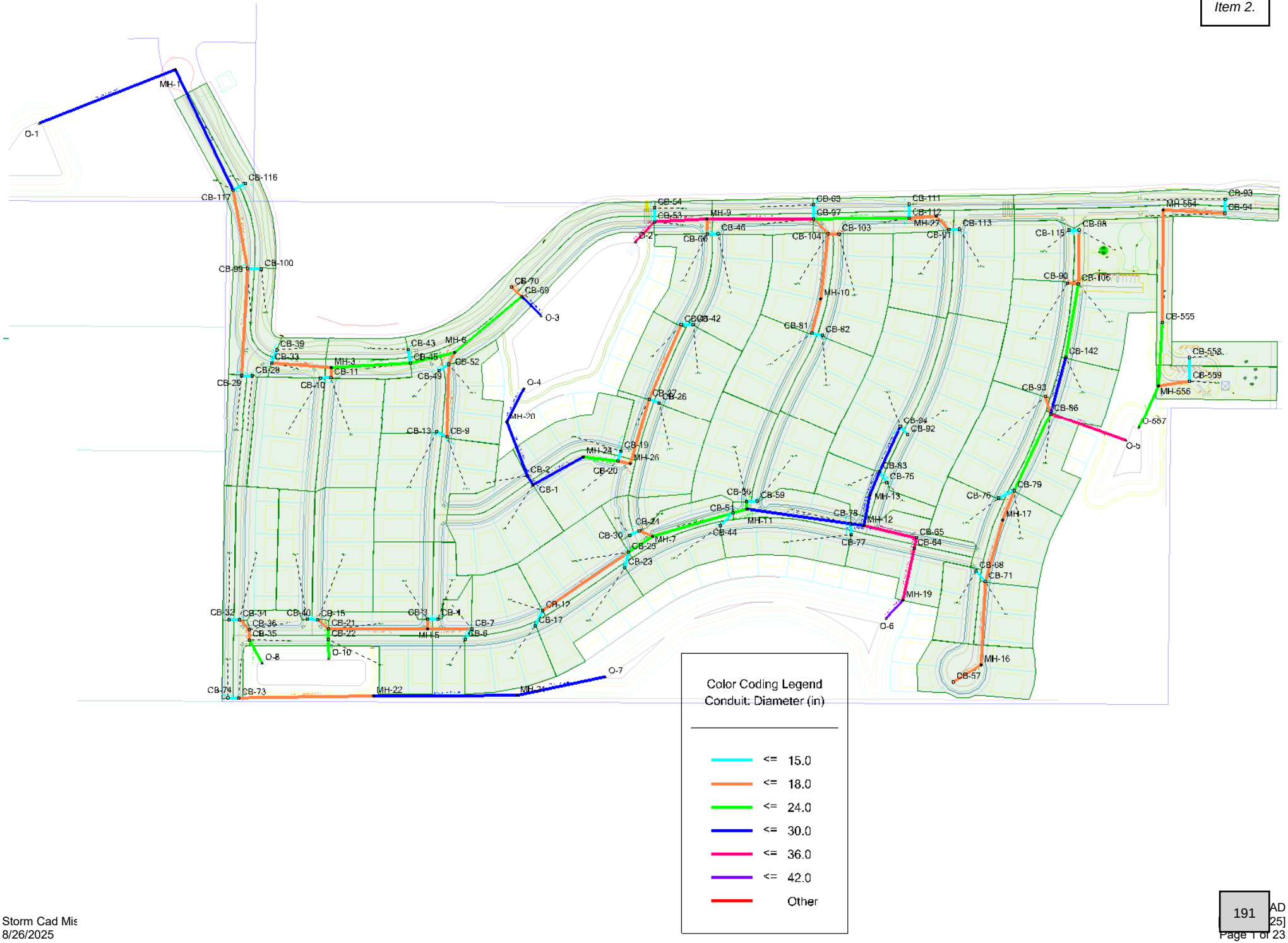
StormCAD Report

Secondary Drainage Report



Secondary Drainage Report

Scenario - 10 year

Catch Basin Table - Time: 0.00 hours

Label	Elevation (Ground) (ft)	Elevation (Invert) (ft)	Capture Efficiency (Calculated) (%)	Flow (Captured) (cfs)	Elevation (Rim) (ft)	Is Overflowing?	Hydraulic Grade Line (In) (ft)	Notes	Manning's n (Inlet)	Inlet Location	Freeboard 0.5ft (ft)
CB-558	88.50	82.16	100.0	1.37	88.50	False	88.02	TYPE C FDOT INLET	0.013	In Sag	0.5
CB-559	88.50	81.98	100.0	2.13	88.50	False	87.99	TYPE C FDOT INLET	0.013	In Sag	0.5
CB-555	88.50	82.24	100.0	1.45	88.50	False	87.99	TYPE C FDOT INLET	0.013	In Sag	0.5
CB-92	91.27	84.10	100.0	7.38	91.27	False	90.60	TYPE "6" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	0.7
CB-36	94.84	90.34	87.8	2.83	94.84	False	94.14	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	0.7
CB-35	94.83	90.23	100.0	0.60	94.83	False	93.89	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	0.9
CB-94	91.20	83.50	100.0	6.29	91.20	False	90.24	TYPE "6" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	1.0
CB-116	88.55	83.66	100.0	2.56	88.55	False	87.35	TYPE "6" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	1.2
CB-90	90.70	86.45	100.0	4.57	90.70	False	89.49	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	1.2
CB-117	88.55	81.16	100.0	2.07	88.55	False	87.29	TYPE "6" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	1.3
CB-93	90.20	83.68	100.0	2.45	90.20	False	88.92	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	1.3
CB-94	90.20	83.54	100.0	2.04	90.20	False	88.87	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	1.3
CB-32	95.60	91.10	100.0	1.01	95.60	False	94.23	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	1.4
CB-106	90.82	84.84	100.0	4.00	90.82	False	89.44	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	1.4
CB-34	95.60	90.99	80.1	2.76	95.60	False	94.22	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	1.4
CB-113	92.74	87.34	92.3	3.85	92.74	False	91.18	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	1.6

Secondary Drainage Report

Scenario - 10 year

Catch Basin Table - Time: 0.00 hours

Label	Elevation (Ground) (ft)	Elevation (Invert) (ft)	Capture Efficiency (Calculated) (%)	Flow (Captured) (cfs)	Elevation (Rim) (ft)	Is Overflowing?	Hydraulic Grade Line (In) (ft)	Notes	Manning's n (Inlet)	Inlet Location	Freeboard 0.5ft (ft)
CB-42	96.10	91.80	96.8	3.18	96.10	False	94.53	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	1.6
CB-91	92.75	86.01	98.3	3.06	92.75	False	91.09	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	1.7
CB-83	91.71	83.13	100.0	1.66	91.71	False	90.03	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	1.7
CB-41	96.17	91.68	100.0	1.92	96.17	False	94.46	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	1.7
CB-75	91.93	84.25	100.0	0.79	91.93	False	90.03	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	1.9
CB-111	92.43	85.64	100.0	1.82	92.43	False	90.49	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	1.9
CB-112	92.43	84.58	100.0	3.19	92.43	False	90.46	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	2.0
CB-115	91.90	86.11	100.0	2.24	91.90	False	89.80	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	2.1
CB-70	90.86	86.36	100.0	3.50	90.86	False	88.73	TYPE "6" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	2.1
CB-98	91.90	85.26	100.0	2.42	91.90	False	89.77	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	2.1
CB-69	90.91	85.87	100.0	4.88	90.91	False	88.69	TYPE "6" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	2.2
CB-103	93.41	87.62	87.1	3.93	93.41	False	91.19	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	2.2
CB-104	93.41	86.12	91.9	3.47	93.41	False	91.15	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	2.3
CB-82	94.65	89.56	95.2	3.14	94.65	False	92.31	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	2.3

Secondary Drainage Report

Scenario - 10 year

Catch Basin Table - Time: 0.00 hours

Label	Elevation (Ground) (ft)	Elevation (Invert) (ft)	Capture Efficiency (Calculated) (%)	Flow (Captured) (cfs)	Elevation (Rim) (ft)	Is Overflowing?	Hydraulic Grade Line (In) (ft)	Notes	Manning's n (Inlet)	Inlet Location	Freeboard 0.5ft (ft)
CB-49	94.27	90.02	72.9	2.77	94.27	False	91.91	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	2.4
CB-81	94.68	88.38	95.1	3.14	94.68	False	92.25	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	2.4
CB-52	94.38	88.63	80.3	2.39	94.38	False	91.86	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	2.5
CB-100	90.38	86.00	100.0	1.17	90.38	False	87.79	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	2.6
CB-51	94.35	86.69	80.6	1.66	94.35	False	91.75	TYPE "V" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	2.6
CB-99	90.39	84.89	99.1	1.84	90.39	False	87.78	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	2.6
CB-40	97.50	92.99	82.4	2.33	97.50	False	94.85	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	2.7
CB-15	97.50	92.88	66.6	3.21	97.50	False	94.81	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	2.7
CB-77	92.91	85.04	98.9	2.96	92.91	False	90.19	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	2.7
CB-78	92.89	84.96	100.0	2.53	92.89	False	90.14	TYPE "V" GUTTER INLET\PPER FDOT INDEX #425-041	0.013	On Grade	2.8
CB-25	95.85	88.42	93.1	3.76	95.85	False	93.07	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	2.8
CB-59	94.09	86.56	99.2	2.89	94.09	False	91.31	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	2.8
CB-44	94.60	86.82	100.0	2.43	94.60	False	91.82	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	2.8
CB-56	94.07	86.48	93.7	3.69	94.07	False	91.26	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	2.8

Secondary Drainage Report

Scenario - 10 year

Catch Basin Table - Time: 0.00 hours

Label	Elevation (Ground) (ft)	Elevation (Invert) (ft)	Capture Efficiency (Calculated) (%)	Flow (Captured) (cfs)	Elevation (Rim) (ft)	Is Overflowing?	Hydraulic Grade Line (In) (ft)	Notes	Manning's n (Inlet)	Inlet Location	Freeboard 0.5ft (ft)
CB-23	96.03	88.54	97.4	3.22	96.03	False	93.17	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	2.9
CB-142	91.51	83.80	100.0	2.17	91.51	False	88.65	TYPE "V" GUTTER INLET\PPER FDOT INDEX #425-041	0.013	On Grade	2.9
CB-21	97.77	92.78	99.4	1.86	97.77	False	94.63	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	3.1
CB-26	97.30	93.05	96.2	3.26	97.30	False	93.99	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	3.3
CB-27	97.27	91.08	100.0	1.12	97.27	False	93.91	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	3.4
CB-45	95.00	88.34	97.9	2.39	95.00	False	91.62	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	3.4
CB-33	95.50	90.97	96.9	2.40	95.50	False	92.12	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	3.4
CB-43	95.02	90.89	100.0	1.06	95.02	False	91.63	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	3.4
CB-39	95.57	91.07	100.0	0.65	95.57	False	92.12	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	3.5
CB-30	96.28	89.78	97.0	1.64	96.28	False	92.78	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	3.5
CB-24	96.31	89.70	100.0	0.80	96.31	False	92.77	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	3.5
CB-13	99.48	95.23	69.9	2.94	99.48	False	95.92	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	3.6
CB-65	92.23	82.13	100.0	1.63	92.23	False	88.66	TYPE "6" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	3.6
CB-7	100.50	96.13	100.0	0.89	100.50	False	96.91	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	3.6

Secondary Drainage Report

Scenario - 10 year

Catch Basin Table - Time: 0.00 hours

Label	Elevation (Ground) (ft)	Elevation (Invert) (ft)	Capture Efficiency (Calculated) (%)	Flow (Captured) (cfs)	Elevation (Rim) (ft)	Is Overflowing?	Hydraulic Grade Line (In) (ft)	Notes	Manning's n (Inlet)	Inlet Location	Freeboard 0.5ft (ft)
CB-93	92.06	84.30	91.9	3.89	92.06	False	88.44	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	3.6
CB-22	97.77	92.70	95.9	2.24	97.77	False	94.07	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	3.7
CB-68	94.37	86.37	100.0	1.91	94.37	False	90.61	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	3.8
CB-6	100.73	96.26	100.0	1.19	100.73	False	96.92	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	3.8
CB-28	95.52	91.28	100.0	0.73	95.52	False	91.64	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	3.9
CB-74	90.76	86.23	100.0	0.54	90.76	False	86.86	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	3.9
CB-86	92.29	82.34	99.8	2.73	92.29	False	88.38	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	3.9
CB-57	94.89	89.09	100.0	3.74	94.89	False	90.97	TYPE "6" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	3.9
CB-4	101.58	97.09	100.0	1.10	101.58	False	97.65	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	3.9
CB-73	90.80	86.12	98.3	1.65	90.80	False	86.86	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	3.9
CB-71	94.55	86.27	100.0	2.32	94.55	False	90.58	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	4.0
CB-63	93.71	85.00	100.0	0.94	93.71	False	89.67	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	4.0
CB-97	93.71	84.23	99.0	2.95	93.71	False	89.66	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	4.1
CB-64	92.23	82.00	100.0	3.02	92.23	False	88.10	TYPE "6" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	4.1

Secondary Drainage Report

Scenario - 10 year

Catch Basin Table - Time: 0.00 hours

Label	Elevation (Ground) (ft)	Elevation (Invert) (ft)	Capture Efficiency (Calculated) (%)	Flow (Captured) (cfs)	Elevation (Rim) (ft)	Is Overflowing?	Hydraulic Grade Line (In) (ft)	Notes	Manning's n (Inlet)	Inlet Location	Freeboard 0.5ft (ft)
CB-79	93.33	85.01	97.7	3.17	93.33	False	89.19	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	4.1
CB-9	99.86	94.54	86.9	2.06	99.86	False	95.61	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	4.2
CB-12	98.00	90.36	96.6	2.30	98.00	False	93.74	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	4.3
CB-76	93.50	85.28	100.0	2.24	93.50	False	89.24	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	4.3
CB-3	101.59	96.61	85.8	2.36	101.59	False	97.32	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	4.3
CB-46	94.85	89.71	67.2	2.83	94.85	False	90.47	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	4.4
CB-60	94.85	89.13	85.9	1.93	94.85	False	90.25	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	4.6
CB-17	98.45	90.49	90.7	2.77	98.45	False	93.82	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	4.6
CB-29	95.53	90.20	100.0	1.12	95.53	False	90.82	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	4.7
CB-10	99.55	92.58	63.2	3.10	99.55	False	93.82	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	5.7
CB-54	94.20	86.10	100.0	0.53	94.20	False	88.42	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	5.8
CB-11	99.55	92.50	67.4	2.86	99.55	False	93.76	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	5.8
CB-53	94.39	83.60	100.0	0.69	94.39	False	88.42	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	6.0
CB-19	98.29	89.79	88.8	2.74	98.29	False	91.86	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	6.4

Secondary Drainage Report

Scenario - 10 year

Catch Basin Table - Time: 0.00 hours

Label	Elevation (Ground) (ft)	Elevation (Invert) (ft)	Capture Efficiency (Calculated) (%)	Flow (Captured) (cfs)	Elevation (Rim) (ft)	Is Overflowing?	Hydraulic Grade Line (In) (ft)	Notes	Manning's n (Inlet)	Inlet Location	Freeboard 0.5ft (ft)
CB-20	98.26	89.57	70.6	2.80	98.26	False	91.81	TYPE "V" GUTTER INLET\PPER FDOT INDEX #425-041	0.013	On Grade	6.4
CB-1	102.09	88.92	81.2	3.26	102.09	False	90.95	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	11.1
CB-2	102.07	88.86	100.0	1.36	102.07	False	90.65	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	11.4

Secondary Drainage Report

Scenario - 10 year

Conduit Table - Time: 0.00 hours

Start Node	Stop Node	Invert (Start) (ft)	Invert (Stop) (ft)	Length (Scaled) (ft)	Manning's n	Slope (Calculated) (%)	Diameter (in)	Flow (cfs)	Flow / Capacity (Design) (%)
MH-22	MH-21	84.41	83.78	357.4	0.013	2.617	30.0	2.17	3.3
MH-21	O-7	83.78	83.45	225.0	0.013	1.785	30.0	2.17	4.0
CB-73	MH-22	86.12	85.41	336.2	0.013	3.031	18.0	2.18	11.9
CB-74	CB-73	86.23	86.12	26.5	0.013	0.423	15.0	0.54	12.9
CB-29	CB-99	90.20	85.89	266.4	0.013	1.617	18.0	1.84	13.8
CB-54	CB-53	86.10	86.00	34.5	0.013	0.300	15.0	0.53	14.9
CB-28	CB-29	91.28	91.17	26.5	0.013	0.415	15.0	0.73	17.7
CB-24	MH-7	89.70	89.10	36.1	0.013	1.671	18.0	2.42	17.8
CB-44	CB-51	90.00	88.08	44.5	0.013	4.306	15.0	2.43	18.1
CB-39	CB-33	91.07	90.97	35.0	0.013	0.283	15.0	0.65	18.8
CB-75	CB-83	84.25	84.13	32.1	0.013	0.399	15.0	0.79	19.3
CB-23	CB-25	91.53	89.59	39.7	0.013	4.888	15.0	3.22	22.5
MH-556	O-557	81.75	78.80	114.3	0.013	2.579	24.0	8.20	22.6
CB-32	CB-34	91.10	90.99	26.5	0.013	0.400	15.0	1.01	24.6
CB-11	MH-3	92.50	91.25	25.3	0.013	4.934	18.0	5.93	25.4
CB-34	CB-36	90.99	90.34	34.8	0.013	1.867	18.0	3.70	25.8
CB-9	CB-52	94.54	88.63	182.9	0.013	3.232	18.0	4.99	26.4
CB-63	CB-97	85.00	84.90	34.5	0.013	0.300	15.0	0.94	26.5
CB-2	MH-20	88.86	85.32	143.7	0.013	2.464	30.0	17.93	27.9
CB-100	CB-99	86.00	85.86	34.5	0.013	0.412	15.0	1.17	28.3
CB-6	CB-7	96.26	96.13	31.5	0.013	0.412	15.0	1.19	28.7
CB-43	CB-45	90.89	90.79	34.5	0.013	0.301	15.0	1.06	30.0
CB-4	CB-3	97.09	97.01	26.5	0.013	0.302	15.0	1.10	31.0
CB-7	MH-5	96.13	95.69	110.1	0.013	0.400	18.0	2.07	31.2
CB-3	MH-5	96.61	96.34	24.9	0.013	1.069	18.0	3.44	31.6
CB-22	O-10	92.70	91.00	47.2	0.013	3.597	24.0	14.45	33.7
CB-59	CB-56	88.75	88.28	26.6	0.013	1.764	15.0	2.89	33.7
CB-86	O-5	82.34	78.80	200.3	0.013	1.764	36.0	31.25	35.3
MH-1	O-1	79.52	78.43	362.7	0.013	0.299	30.0	8.14	36.3
CB-117	MH-1	81.16	80.02	331.6	0.013	0.344	30.0	8.85	36.8
CB-99	CB-117	84.89	82.16	197.8	0.013	1.380	18.0	4.71	38.2
CB-558	CB-559	82.16	81.98	58.8	0.013	0.298	15.0	1.37	38.7
CB-64	MH-19	82.00	78.42	131.7	0.013	2.717	36.0	44.97	40.9
CB-555	MH-556	82.24	81.75	157.9	0.013	0.312	24.0	5.38	42.6
CB-111	CB-112	87.35	87.21	34.5	0.013	0.400	15.0	1.82	44.4
CB-30	CB-24	89.78	89.70	26.6	0.013	0.300	15.0	1.64	46.4
CB-35	O-8	90.23	90.00	66.0	0.013	0.399	24.0	6.98	48.9
MH-3	CB-45	90.52	89.30	197.4	0.013	0.619	24.0	8.71	49.0
CB-78	MH-12	84.96	84.36	33.6	0.013	1.753	30.0	27.21	50.1

Secondary Drainage Report

Scenario - 10 year

Conduit Table - Time: 0.00 hours

Start Node	Stop Node	Invert (Start) (ft)	Invert (Stop) (ft)	Length (Scaled) (ft)	Manning's n	Slope (Calculated) (%)	Diameter (in)	Flow (cfs)	Flow / Capacity (Design) (%)
MH-16	CB-71	88.85	87.91	207.2	0.013	0.453	18.0	3.66	51.8
CB-33	MH-3	90.97	90.52	149.0	0.013	0.302	18.0	3.02	52.3
CB-56	MH-11	87.53	87.48	18.7	0.013	0.299	24.0	6.53	52.8
CB-79	CB-86	85.01	82.82	212.9	0.013	1.013	24.0	12.12	53.2
MH-5	CB-21	95.65	93.41	247.2	0.013	0.907	18.0	5.41	54.1
CB-13	CB-9	95.23	95.03	28.5	0.013	0.701	15.0	2.94	54.4
CB-68	CB-71	86.38	86.28	35.1	0.013	0.294	15.0	1.91	54.7
CB-45	MH-6	89.30	88.33	112.8	0.013	0.860	24.0	11.83	56.4
CB-40	CB-15	92.99	92.88	26.5	0.013	0.400	15.0	2.33	57.1
CB-82	CB-81	89.56	89.37	26.8	0.013	0.708	15.0	3.14	57.7
CB-559	MH-556	81.98	81.75	78.1	0.013	0.301	18.0	3.39	58.9
CB-93	CB-94	83.68	83.54	35.0	0.013	0.400	15.0	2.45	59.9
CB-70	CB-69	86.36	86.26	34.5	0.013	0.301	18.0	3.50	60.7
CB-94	CB-83	83.50	83.13	124.9	0.013	0.300	30.0	13.63	60.7
CB-69	O-3	85.87	85.00	67.3	0.013	1.294	30.0	28.56	61.2
CB-97	MH-9	85.20	83.97	264.8	0.013	0.464	36.0	27.95	61.5
CB-76	CB-79	85.29	85.16	43.0	0.013	0.300	15.0	2.24	63.4
CB-115	CB-98	86.11	86.03	25.5	0.013	0.299	15.0	2.24	63.5
CB-60	MH-9	89.13	88.95	37.4	0.013	0.501	18.0	4.74	63.8
CB-142	CB-86	83.80	83.36	146.4	0.013	0.300	30.0	14.52	64.7
CB-57	MH-16	89.09	88.85	81.4	0.013	0.294	18.0	3.74	65.6
CB-90	CB-106	86.45	86.34	26.5	0.013	0.422	18.0	4.57	66.9
CB-93	CB-86	84.30	84.17	45.7	0.013	0.300	18.0	3.89	67.6
CB-49	CB-52	90.02	89.91	28.5	0.013	0.400	15.0	2.77	67.8
CB-17	CB-12	90.53	90.36	42.1	0.013	0.399	15.0	2.77	68.0
CB-103	CB-104	87.62	87.54	26.6	0.013	0.301	18.0	3.93	68.3
MH-13	MH-12	82.94	82.71	77.4	0.013	0.300	30.0	15.52	69.1
CB-83	MH-13	83.13	82.94	62.6	0.013	0.300	30.0	15.68	69.8
CB-46	CB-60	89.71	89.61	26.5	0.013	0.388	15.0	2.83	70.4
CB-116	CB-117	83.66	83.56	34.5	0.013	0.301	15.0	2.56	72.3
CB-113	CB-91	87.34	87.16	26.5	0.013	0.678	15.0	3.85	72.4
MH-24	CB-1	89.22	88.92	143.4	0.013	0.206	30.0	13.99	75.1
MH-20	O-4	85.32	85.00	95.7	0.013	0.334	30.0	17.82	75.2
CB-106	CB-142	84.84	83.80	184.7	0.013	0.562	24.0	12.77	75.3
MH-554	CB-555	83.03	82.24	279.6	0.013	0.282	18.0	4.30	77.1
CB-94	MH-554	83.54	83.08	153.6	0.013	0.300	18.0	4.45	77.2
CB-19	CB-20	89.79	89.71	26.3	0.013	0.300	15.0	2.74	77.4
CB-42	CB-41	91.80	91.68	29.9	0.013	0.401	15.0	3.18	77.7
CB-92	CB-94	84.10	83.50	28.3	0.013	2.124	15.0	7.38	78.4

Secondary Drainage Report

Scenario - 10 year

Conduit Table - Time: 0.00 hours

Start Node	Stop Node	Invert (Start) (ft)	Invert (Stop) (ft)	Length (Scaled) (ft)	Manning's n	Slope (Calculated) (%)	Diameter (in)	Flow (cfs)	Flow / Capacity (Design) (%)
CB-98	CB-106	85.26	84.84	133.4	0.013	0.309	18.0	4.63	79.3
CB-104	CB-97	86.12	84.89	52.2	0.013	2.355	18.0	13.09	81.2
MH-10	CB-104	87.94	87.12	162.8	0.013	0.502	18.0	6.16	82.7
CB-77	CB-78	85.04	84.96	27.3	0.013	0.301	15.0	2.96	83.6
MH-19	O-6	78.42	78.25	61.0	0.013	0.278	42.0	44.57	83.9
CB-81	MH-10	88.38	87.94	88.2	0.013	0.499	18.0	6.24	84.1
CB-1	CB-2	88.92	88.86	26.5	0.013	0.226	30.0	16.74	85.8
CB-12	CB-25	90.36	89.59	259.0	0.013	0.300	18.0	5.03	87.3
CB-10	CB-11	92.58	92.50	26.5	0.013	0.300	15.0	3.10	87.6
MH-6	CB-69	88.33	85.87	217.2	0.013	1.133	24.0	21.17	87.9
CB-41	CB-27	91.68	91.08	201.5	0.013	0.300	18.0	5.07	88.1
CB-65	CB-64	82.13	82.00	26.5	0.013	0.490	36.0	42.41	90.8
CB-26	CB-27	93.05	92.97	26.5	0.013	0.298	15.0	3.26	92.3
CB-25	MH-7	88.42	88.21	71.8	0.013	0.293	24.0	11.38	93.0
CB-36	CB-35	90.34	90.23	25.7	0.013	0.418	18.0	6.42	94.6
CB-15	CB-21	92.88	92.78	35.2	0.013	0.301	18.0	5.49	95.4
MH-17	CB-79	85.42	85.01	78.4	0.013	0.523	18.0	7.28	95.8
CB-71	MH-17	86.28	85.42	159.5	0.013	0.538	18.0	7.41	96.3
CB-53	O-2	83.67	83.50	68.7	0.013	0.247	36.0	32.09	96.7
MH-26	CB-20	89.81	89.57	32.0	0.013	0.754	18.0	8.93	97.9
CB-20	MH-24	89.57	89.22	86.4	0.013	0.405	24.0	14.10	97.9
CB-112	CB-97	85.86	85.20	238.2	0.013	0.277	24.0	11.68	98.1
MH-9	CB-53	83.97	83.67	130.4	0.013	0.230	36.0	31.41	98.2
CB-51	MH-11	87.45	87.24	36.0	0.013	0.583	24.0	16.98	98.3
MH-11	CB-78	87.24	86.40	261.0	0.013	0.322	30.0	22.91	98.5
MH-12	CB-65	82.65	82.12	134.6	0.013	0.394	36.0	41.40	98.9
MH-7	CB-51	88.21	87.45	207.7	0.013	0.366	24.0	13.55	99.0
CB-91	MH-27	86.35	86.15	45.6	0.013	0.438	18.0	6.88	99.0
MH-27	CB-112	86.15	85.86	67.1	0.013	0.432	18.0	6.84	99.0
CB-21	CB-22	92.78	92.70	26.5	0.013	0.302	24.0	12.35	99.4
CB-52	MH-6	88.63	88.33	32.6	0.013	0.919	18.0	10.02	99.5
CB-27	MH-26	91.08	89.81	169.4	0.013	0.749	18.0	9.08	99.8

Secondary Drainage Report

Scenario - 10 year

Manhole Table - Time: 0.00 hours

Label	Elevation (Ground) (ft)	Elevation (Rim) (ft)	Elevation (Invert in 1) (ft)	Flow (Total Out) (cfs)	Is Overflowing?	Hydraulic Grade Line (Out) (ft)	Notes
MH-1	88.10	88.10	80.02	8.14	False	87.06	STORM MANHOLE\PPER FDOT INDEX #425-010
MH-3	98.33	98.33	91.25	8.71	False	91.80	STORM MANHOLE\PPER FDOT INDEX #425-010
MH-5	101.34	101.34	95.69	5.41	False	96.55	STORM MANHOLE\PPER FDOT INDEX #425-010
MH-6	93.40	93.40	88.33	21.17	False	90.59	STORM MANHOLE\PPER FDOT INDEX #425-010
MH-7	95.64	95.64	89.10	13.55	False	92.50	STORM MANHOLE\PPER FDOT INDEX #425-010
MH-9	95.08	95.08	83.97	31.41	False	88.70	STORM MANHOLE\PPER FDOT INDEX #425-010
MH-10	94.44	94.44	87.94	6.16	False	91.71	STORM MANHOLE\PPER FDOT INDEX #425-010
MH-11	93.84	93.84	87.24	22.91	False	90.95	STORM MANHOLE\PPER FDOT INDEX #425-010
MH-12	92.70	92.70	84.36	41.40	False	89.18	STORM MANHOLE\PPER FDOT INDEX #425-010
MH-13	92.26	92.26	82.94	15.52	False	89.71	STORM MANHOLE\PPER FDOT INDEX #425-010
MH-16	95.27	95.27	88.85	3.66	False	90.83	STORM MANHOLE\PPER FDOT INDEX #425-010
MH-17	93.92	93.92	85.42	7.28	False	89.57	STORM MANHOLE\PPER FDOT INDEX #425-010
MH-19	88.00	88.00	78.42	44.57	False	86.99	STORM MANHOLE\PPER FDOT INDEX #425-010
MH-20	99.15	99.15	85.32	17.82	False	88.18	STORM MANHOLE\PPER FDOT INDEX #425-010
MH-21	88.43	88.43	83.78	2.17	False	86.87	STORM MANHOLE\PPER FDOT INDEX #425-010
MH-22	91.51	91.51	85.41	2.17	False	86.87	STORM MANHOLE\PPER FDOT INDEX #425-010
MH-24	99.97	99.97	89.22	13.99	False	91.11	STORM MANHOLE\PPER FDOT INDEX #425-010
MH-554	91.25	91.25	83.08	4.30	False	88.46	STORM MANHOLE\PPER FDOT INDEX #425-010
MH-26	98.13	98.13	89.81	8.93	False	92.04	STORM MANHOLE\PPER FDOT INDEX #425-010
MH-27	92.76	92.76	86.15	6.84	False	90.75	STORM MANHOLE\PPER FDOT INDEX #425-010
MH-556	89.50	89.50	81.75	8.20	False	87.79	

Secondary Drainage Report
Scenario - 10 year

Outfall Table - Time: 0.00 hours

Label	Elevation (Invert) (ft)	Boundary Condition Type	Elevation (User Defined Tailwater) (ft)	Flow (Total Out) (cfs)
O-1	78.43	User Defined Tailwater	86.92	7.47
O-2	83.50	User Defined Tailwater	88.00	31.87
O-3	83.37	User Defined Tailwater	88.00	28.47
O-4	85.00	User Defined Tailwater	88.00	17.61
O-5	78.80	User Defined Tailwater	87.64	30.64
O-6	77.46	User Defined Tailwater	86.87	44.32
O-7	83.45	User Defined Tailwater	86.87	2.12
O-8	90.00	User Defined Tailwater	93.80	6.89
O-10	91.00	User Defined Tailwater	93.80	14.42
O-557	78.80	User Defined Tailwater	87.64	8.05

Secondary Drainage Report
Scenario - 10 year

Catchment Table - Time: 0.00 hours

ID	Label	Outflow Element	Runoff Coefficient (Rational)	Time of Concentration (min)	Scaled Area (acres)	Flow (Total Out) (cfs)
498	CM-1	CB-74	0.600	10.000	0.121	0.54
499	CM-2	CB-73	0.600	10.000	0.133	0.60
500	CM-3	CB-35	0.600	10.000	0.113	0.51
501	CM-4	CB-36	0.600	10.000	0.246	1.10
502	CM-5	CB-22	0.600	10.000	0.521	2.34
503	CM-6	CB-21	0.600	10.000	0.330	1.48
504	CM-7	CB-7	0.600	10.000	0.199	0.89
505	CM-8	CB-6	0.600	10.000	0.266	1.19
506	CM-9	CB-17	0.600	10.000	0.682	3.06
507	CM-10	CB-12	0.600	10.000	0.532	2.38
508	CM-11	CB-23	0.600	10.000	0.674	3.02
509	CM-12	CB-25	0.600	10.000	0.884	3.96
510	CM-13	CB-44	0.600	10.000	0.523	2.34
511	CM-14	CB-51	0.600	10.000	0.386	1.73
512	CM-15	CB-77	0.600	10.000	0.669	3.00
513	CM-16	CB-78	0.600	10.000	0.415	1.86
514	CM-17	CB-64	0.600	10.000	0.667	2.99
515	CM-18	CB-65	0.600	10.000	0.363	1.63
516	CM-19	CB-34	0.600	10.000	0.769	3.45
517	CM-20	CB-32	0.600	10.000	0.224	1.01
518	CM-21	CB-40	0.600	10.000	0.631	2.83
519	CM-22	CB-15	0.600	10.000	1.074	4.81
520	CM-23	CB-3	0.600	10.000	0.613	2.75
521	CM-24	CB-4	0.600	10.000	0.245	1.10
522	CM-25	CB-57	0.600	10.000	0.834	3.74
523	CM-26	CB-68	0.600	10.000	0.427	1.91
524	CM-27	CB-71	0.600	10.000	0.517	2.32
525	CM-28	CB-79	0.600	10.000	0.724	3.24
526	CM-29	CB-76	0.600	10.000	0.501	2.24
527	CM-30	CB-86	0.600	10.000	0.593	2.66
528	CM-31	CB-93	0.600	10.000	0.944	4.23
529	CM-32	CB-106	0.600	10.000	0.890	3.99
530	CM-33	CB-90	0.600	10.000	0.943	4.23
531	CM-34	CB-75	0.600	10.000	0.176	0.79
532	CM-35	CB-83	0.600	10.000	0.370	1.66
533	CM-36	CB-92	0.600	10.000	1.647	7.38
534	CM-37	CB-94	0.600	10.000	1.403	6.29
535	CM-38	CB-59	0.600	10.000	0.650	2.91
536	CM-39	CB-56	0.600	10.000	0.877	3.93
537	CM-40	CB-24	0.600	10.000	0.178	0.80

Secondary Drainage Report

Scenario - 10 year

Catchment Table - Time: 0.00 hours

ID	Label	Outflow Element	Runoff Coefficient (Rational)	Time of Concentration (min)	Scaled Area (acres)	Flow (Total Out) (cfs)
538	CM-41	CB-30	0.600	10.000	0.117	0.52
539	CM-42	CB-28	0.600	10.000	0.164	0.73
540	CM-43	CB-29	0.600	10.000	0.250	1.12
541	CM-44	CB-10	0.600	10.000	1.095	4.91
542	CM-45	CB-11	0.600	10.000	0.946	4.24
543	CM-46	CB-99	0.600	10.000	0.397	1.78
544	CM-47	CB-100	0.600	10.000	0.262	1.17
545	CM-48	CB-117	0.600	10.000	0.457	2.05
546	CM-49	CB-116	0.600	10.000	0.571	2.56
547	CM-50	CB-33	0.600	10.000	0.149	0.67
548	CM-51	CB-39	0.600	10.000	0.145	0.65
549	CM-52	CB-45	0.600	10.000	0.235	1.06
550	CM-53	CB-43	0.600	10.000	0.237	1.06
551	CM-54	CB-49	0.600	10.000	0.566	2.54
552	CM-55	CB-52	0.600	10.000	0.595	2.67
553	CM-56	CB-70	0.600	10.000	0.780	3.50
554	CM-57	CB-69	0.600	10.000	0.717	3.21
555	CM-58	CB-13	0.600	10.000	0.938	4.20
556	CM-59	CB-9	0.600	10.000	0.530	2.37
557	CM-60	CB-19	0.600	10.000	0.688	3.08
558	CM-61	CB-2	0.600	10.000	0.303	1.36
559	CM-62	CB-1	0.600	10.000	0.896	4.02
560	CM-63	CB-20	0.600	10.000	0.718	3.22
563	CM-66	CB-26	0.600	10.000	0.756	3.39
564	CM-67	CB-27	0.600	10.000	0.173	0.78
565	CM-68	CB-42	0.600	10.000	0.704	3.16
566	CM-69	CB-41	0.600	10.000	0.429	1.92
567	CM-70	CB-60	0.600	10.000	0.500	2.24
568	CM-71	CB-46	0.600	10.000	0.918	4.11
569	CM-72	CB-54	0.600	10.000	0.118	0.53
570	CM-73	CB-53	0.600	10.000	0.155	0.69
571	CM-74	CB-63	0.600	10.000	0.210	0.94
572	CM-75	CB-97	0.600	10.000	0.286	1.28
573	CM-76	CB-81	0.600	10.000	0.737	3.30
574	CM-77	CB-82	0.600	10.000	0.735	3.29
575	CM-78	CB-104	0.600	10.000	0.807	3.61
576	CM-79	CB-103	0.600	10.000	0.973	4.36
577	CM-80	CB-111	0.600	10.000	0.405	1.82
578	CM-81	CB-112	0.600	10.000	0.422	1.89
579	CM-82	CB-91	0.600	10.000	0.695	3.11

Secondary Drainage Report
Scenario - 10 year

Catchment Table - Time: 0.00 hours

ID	Label	Outflow Element	Runoff Coefficient (Rational)	Time of Concentration (min)	Scaled Area (acres)	Flow (Total Out) (cfs)
580	CM-83	CB-113	0.600	10.000	0.932	4.18
583	CM-86	CB-115	0.600	10.000	0.500	2.24
584	CM-87	CB-98	0.500	10.000	0.649	2.42
585	CM-88	CB-93	0.600	10.000	0.546	2.45
586	CM-89	CB-94	0.600	10.000	0.456	2.04
744	CM-93	CB-555	0.600	10.000	0.324	1.45
745	CM-94	CB-559	0.500	10.000	0.569	2.13
746	CM-95	CB-558	0.500	10.000	0.366	1.37
748	CM-96	CB-142	0.600	10.000	0.484	2.17

Secondary Drainage Report

Scenario - Spread 4in/hr

Catch Basin Table - Time: 0.00 hours

Label	Elevation (Ground) (ft)	Elevation (Invert) (ft)	Capture Efficiency (Calculated) (%)	Flow (Captured) (cfs)	Elevation (Rim) (ft)	Is Overflowing?	Hydraulic Grade Line (In) (ft)	Notes	Manning's n (Inlet)	Inlet Location	Spread / Top Width (ft)
CB-558	88.50	82.16	100.0	0.74	88.50	False	87.77	TYPE C FDOT INLET	0.013	In Sag	6.5
CB-559	88.50	81.98	100.0	1.15	88.50	False	87.77	TYPE C FDOT INLET	0.013	In Sag	8.1
CB-555	88.50	82.24	100.0	0.78	88.50	False	87.77	TYPE C FDOT INLET	0.013	In Sag	6.7
CB-92	91.27	84.10	100.0	3.98	91.27	False	88.18	TYPE "6" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	10.3
CB-36	94.84	90.34	100.0	1.02	94.84	False	93.89	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	6.6
CB-35	94.83	90.23	100.0	0.27	94.83	False	93.83	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	4.0
CB-94	91.20	83.50	100.0	3.39	91.20	False	88.07	TYPE "6" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	9.2
CB-116	88.55	83.66	100.0	1.38	88.55	False	87.07	TYPE "6" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	4.7
CB-90	90.70	86.45	100.0	2.28	90.70	False	88.25	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	7.1
CB-117	88.55	81.16	100.0	1.11	88.55	False	87.05	TYPE "6" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	4.0
CB-93	90.20	83.68	100.0	1.32	90.20	False	88.06	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	4.6
CB-94	90.20	83.54	100.0	1.10	90.20	False	88.04	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	4.0
CB-32	95.60	91.10	100.0	0.54	95.60	False	93.93	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	4.7
CB-106	90.82	84.84	100.0	2.15	90.82	False	88.24	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	11.4
CB-34	95.60	90.99	96.4	1.80	95.60	False	93.93	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	7.5
CB-113	92.74	87.34	100.0	2.25	92.74	False	88.99	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	10.9

Secondary Drainage Report

Scenario - Spread 4in/hr

Catch Basin Table - Time: 0.00 hours

Label	Elevation (Ground) (ft)	Elevation (Invert) (ft)	Capture Efficiency (Calculated) (%)	Flow (Captured) (cfs)	Elevation (Rim) (ft)	Is Overflowing?	Hydraulic Grade Line (In) (ft)	Notes	Manning's n (Inlet)	Inlet Location	Spread / Top Width (ft)
CB-42	96.10	91.80	100.0	1.70	96.10	False	92.54	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	9.6
CB-91	92.75	86.01	100.0	1.68	92.75	False	88.96	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	9.7
CB-83	91.71	83.13	100.0	0.90	91.71	False	88.01	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	7.2
CB-41	96.17	91.68	100.0	1.04	96.17	False	92.52	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	8.0
CB-75	91.93	84.25	100.0	0.42	91.93	False	88.01	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	5.4
CB-111	92.43	85.64	100.0	0.98	92.43	False	88.76	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	3.7
CB-112	92.43	84.58	100.0	1.02	92.43	False	88.75	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	3.8
CB-115	91.90	86.11	100.0	1.21	91.90	False	88.34	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	8.6
CB-70	90.86	86.36	100.0	1.89	90.86	False	88.24	TYPE "6" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	5.8
CB-98	91.90	85.26	100.0	1.31	91.90	False	88.33	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	8.9
CB-69	90.91	85.87	100.0	1.82	90.91	False	88.23	TYPE "6" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	5.6
CB-103	93.41	87.62	100.0	2.35	93.41	False	89.10	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	10.4
CB-104	93.41	86.12	100.0	1.95	93.41	False	89.08	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	9.7
CB-82	94.65	89.56	100.0	1.78	94.65	False	90.09	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	9.4

Secondary Drainage Report

Scenario - Spread 4in/hr

Catch Basin Table - Time: 0.00 hours

Label	Elevation (Ground) (ft)	Elevation (Invert) (ft)	Capture Efficiency (Calculated) (%)	Flow (Captured) (cfs)	Elevation (Rim) (ft)	Is Overflowing?	Hydraulic Grade Line (In) (ft)	Notes	Manning's n (Inlet)	Inlet Location	Spread / Top Width (ft)
CB-49	94.27	90.02	96.2	1.58	94.27	False	90.56	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	6.7
CB-81	94.68	88.38	100.0	1.78	94.68	False	89.44	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	9.4
CB-52	94.38	88.63	98.4	1.42	94.38	False	90.36	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	6.3
CB-100	90.38	86.00	100.0	0.63	90.38	False	87.20	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	4.6
CB-51	94.35	86.69	89.7	0.84	94.35	False	89.10	TYPE "V" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	7.8
CB-99	90.39	84.89	100.0	0.96	90.39	False	87.20	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	5.3
CB-40	97.50	92.99	97.9	1.49	97.50	False	94.27	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	6.6
CB-15	97.50	92.88	84.9	2.21	97.50	False	94.25	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	8.0
CB-77	92.91	85.04	100.0	1.62	92.91	False	88.09	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	9.6
CB-78	92.89	84.96	100.0	1.10	92.89	False	88.07	TYPE "V" GUTTER INLET\PPER FDOT INDEX #425-041	0.013	On Grade	8.3
CB-25	95.85	88.42	100.0	2.14	95.85	False	89.78	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	10.6
CB-59	94.09	86.56	100.0	1.57	94.09	False	89.25	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	9.5
CB-44	94.60	86.82	100.0	1.26	94.60	False	90.44	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	8.7
CB-56	94.07	86.48	100.0	2.12	94.07	False	88.91	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	10.6

Secondary Drainage Report

Scenario - Spread 4in/hr

Catch Basin Table - Time: 0.00 hours

Label	Elevation (Ground) (ft)	Elevation (Invert) (ft)	Capture Efficiency (Calculated) (%)	Flow (Captured) (cfs)	Elevation (Rim) (ft)	Is Overflowing?	Hydraulic Grade Line (In) (ft)	Notes	Manning's n (Inlet)	Inlet Location	Spread / Top Width (ft)
CB-23	96.03	88.54	100.0	1.63	96.03	False	92.04	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	9.6
CB-142	91.51	83.80	100.0	1.17	91.51	False	88.00	TYPE "V" GUTTER INLET\PPER FDOT INDEX #425-041	0.013	On Grade	8.5
CB-21	97.77	92.78	100.0	0.81	97.77	False	94.17	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	6.0
CB-26	97.30	93.05	100.0	1.83	97.30	False	93.67	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	9.9
CB-27	97.27	91.08	100.0	0.42	97.27	False	92.19	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	5.7
CB-45	95.00	88.34	100.0	0.90	95.00	False	90.47	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	5.7
CB-33	95.50	90.97	100.0	0.85	95.50	False	91.61	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	5.5
CB-43	95.02	90.89	100.0	0.57	95.02	False	91.23	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	4.8
CB-39	95.57	91.07	100.0	0.35	95.57	False	91.62	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	3.9
CB-30	96.28	89.78	100.0	0.60	96.28	False	90.18	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	4.7
CB-24	96.31	89.70	100.0	0.43	96.31	False	90.16	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	4.2
CB-13	99.48	95.23	88.2	2.00	99.48	False	95.79	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	7.5
CB-65	92.23	82.13	100.0	0.88	92.23	False	87.54	TYPE "6" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	3.8
CB-7	100.50	96.13	100.0	0.48	100.50	False	96.63	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	5.1

Secondary Drainage Report

Scenario - Spread 4in/hr

Catch Basin Table - Time: 0.00 hours

Label	Elevation (Ground) (ft)	Elevation (Invert) (ft)	Capture Efficiency (Calculated) (%)	Flow (Captured) (cfs)	Elevation (Rim) (ft)	Is Overflowing?	Hydraulic Grade Line (In) (ft)	Notes	Manning's n (Inlet)	Inlet Location	Spread / Top Width (ft)
CB-93	92.06	84.30	100.0	2.28	92.06	False	87.94	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	10.9
CB-22	97.77	92.70	100.0	1.26	97.77	False	93.77	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	7.1
CB-68	94.37	86.37	100.0	1.03	94.37	False	88.69	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	8.1
CB-6	100.73	96.26	100.0	0.64	100.73	False	96.65	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	5.7
CB-28	95.52	91.28	100.0	0.40	95.52	False	91.54	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	4.0
CB-74	90.76	86.23	100.0	0.29	90.76	False	86.87	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	3.7
CB-86	92.29	82.34	100.0	1.43	92.29	False	87.92	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	9.2
CB-57	94.89	89.09	100.0	2.02	94.89	False	89.71	TYPE "6" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	6.5
CB-4	101.58	97.09	100.0	0.59	101.58	False	97.49	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	4.8
CB-73	90.80	86.12	100.0	0.39	90.80	False	86.87	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	4.2
CB-71	94.55	86.27	100.0	1.25	94.55	False	88.68	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	8.7
CB-63	93.71	85.00	100.0	0.51	93.71	False	88.55	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	5.2
CB-97	93.71	84.23	100.0	1.01	93.71	False	88.54	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	6.8
CB-64	92.23	82.00	100.0	1.61	92.23	False	87.33	TYPE "6" CURB INLET\PPER FDOT INDEX #425-021	0.013	In Sag	5.6

Secondary Drainage Report

Scenario - Spread 4in/hr

Catch Basin Table - Time: 0.00 hours

Label	Elevation (Ground) (ft)	Elevation (Invert) (ft)	Capture Efficiency (Calculated) (%)	Flow (Captured) (cfs)	Elevation (Rim) (ft)	Is Overflowing?	Hydraulic Grade Line (In) (ft)	Notes	Manning's n (Inlet)	Inlet Location	Spread / Top Width (ft)
CB-79	93.33	85.01	100.0	1.75	93.33	False	88.21	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	9.9
CB-9	99.86	94.54	99.7	1.28	99.86	False	95.39	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	6.1
CB-12	98.00	90.36	100.0	1.29	98.00	False	91.22	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	7.4
CB-76	93.50	85.28	100.0	1.21	93.50	False	88.22	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	8.6
CB-3	101.59	96.61	99.4	1.47	101.59	False	97.15	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	6.8
CB-46	94.85	89.71	86.2	1.91	94.85	False	90.32	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	7.1
CB-60	94.85	89.13	99.4	1.20	94.85	False	90.01	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	5.7
CB-17	98.45	90.49	100.0	1.65	98.45	False	91.25	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	8.1
CB-29	95.53	90.20	100.0	0.60	95.53	False	90.65	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	4.7
CB-10	99.55	92.58	81.4	2.16	99.55	False	93.55	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	7.7
CB-54	94.20	86.10	100.0	0.29	94.20	False	88.15	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	4.4
CB-11	99.55	92.50	85.7	1.96	99.55	False	93.52	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	7.3
CB-53	94.39	83.60	100.0	0.37	94.39	False	88.15	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	4.9
CB-19	98.29	89.79	100.0	1.67	98.29	False	90.99	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	7.9

Secondary Drainage Report

Scenario - Spread 4in/hr

Catch Basin Table - Time: 0.00 hours

Label	Elevation (Ground) (ft)	Elevation (Invert) (ft)	Capture Efficiency (Calculated) (%)	Flow (Captured) (cfs)	Elevation (Rim) (ft)	Is Overflowing?	Hydraulic Grade Line (In) (ft)	Notes	Manning's n (Inlet)	Inlet Location	Spread / Top Width (ft)
CB-20	98.26	89.57	82.6	1.48	98.26	False	90.97	TYPE "V" GUTTER INLET\PPER FDOT INDEX #425-041	0.013	On Grade	8.1
CB-1	102.09	88.92	97.2	2.11	102.09	False	90.45	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	8.7
CB-2	102.07	88.86	100.0	0.73	102.07	False	90.22	TYPE "5" CURB INLET\PPER FDOT INDEX #425-021	0.013	On Grade	5.8

MISSION RISE

Storm Water Report

Howey in the Hills

Job No. 23000180

Prepared for:

ASF TAP LF I LLC

3565 Piedmont Rd NE Bldg. One, #200

Atlanta, GA 30305

Prepared by:

Atwell, LLC

111 N. Magnolia Ave.

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Orlando, FL 32801

KATLYN ASHLEY CROWELL LICENSE No. PE95331 STATE OF FLORIDA PROFESSIONAL ENGINEER

Digitally signed by Katlyn Crowell
DN: CN=Katlyn Crowell, dnQualifier=A01410D000001947027F0D90283595, O=Unaffiliated, C=US
Reason: I attest to the accuracy and integrity of this document
Date: 2025.08.27 14:28:06-04'00'

August 29, 2025

MISSION RISE

Storm Water Report

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1.0 CONSULTANT'S STORMWATER STAFF REPORT

Project Name:	Mission Rise
Permit No.:	
Application No.:	
Application Type:	Environmental Resource Permit
Location:	Howey in the Hills
Permittee:	Turnstone Group
Operating Entity:	Turnstone Group
Permit Area:	240.56 acres
Project Land Use:	Single-Family Residential
Drainage Basin:	N/A
Special Drainage District:	N/A
Conservation Easement to District:	No
Sovereign Submerged Lands:	No

1.1 PROJECT SUMMARY

This application is for the development of Mission Rise, a single-family residential development, located in Howey in the Hills, Lake County, Florida. The project consists of an overall 405 units. Phase 1 include 157 units; Phase 2 include 79 units and Phase 3 include 169 units.

Mission Rise is designed to be compliant with stormwater quantity and quality criteria set forth by the Howey in the Hills as well as SJRWMD Statewide Environmental Resource Permit (SWERP) Manual, Volume II.

Design Criteria				
Pond to be constructed under Phase 1	**Pond 1**	Wet Pond	SJRWMD	100-year, 24-hour, 25-year, 24 hour & 25-year, 96 hour
	Pond 2	Wet Pond	SJRWMD	100-year, 24-hour, 25-year, 24 hour & 25-year, 96 hour
	Pond 3	Dry Pond	SJRWMD	100-year, 24-hour, 25-year, 24 hour & 25-year, 96 hour
	Pond 4	Dry Pond	SJRWMD	100-year, 24-hour, 25-year, 24 hour & 25-year, 96 hour
	Pond 5	Wet Pond	SJRWMD	100-year, 24-hour, 25-year, 24 hour & 25-year, 96 hour
Pond to be constructed under Phase 2	**Pond 6**	Wet Pond	SJRWMD	100-year, 24-hour, 25-year, 24 hour & 25-year, 96 hour
	Pond 7	Wet Pond	SJRWMD	100-year, 24-hour, 25-year, 24 hour & 25-year, 96 hour
	Pond 8	Wet Pond	SJRWMD	100-year, 24-hour, 25-year, 24 hour & 25-year, 96 hour
	Pond 9	Wet Pond	SJRWMD	100-year, 24-hour, 25-year, 24 hour & 25-year, 96 hour
Pond to be constructed under Phase 3	**Pond 10**	Wet Pond	SJRWMD	100-year, 24-hour, 25-year, 24 hour & 25-year, 96 hour
	Pond 11	Wet Pond	SJRWMD	100-year, 24-hour, 25-year, 24 hour & 25-year, 96 hour
	Pond 12	Wet Pond	SJRWMD	100-year, 24-hour, 25-year, 24 hour & 25-year, 96 hour
Roadway Design			TOWN	10-year, 24-hour, hydraulic gradient line 0.5 feet below the gutter profile Spread 4in/hr Collector/Spine Road 12ft maximum gutter spread (2' gutter + 4' bike line + 1/2 of 12' drive lane Spread 4in/hr Local and subdivision street inlets shall be spaced to prevent the spread of stormwater runoff from exceeding one inch above the crown of the road

1.2 PROJECT SITE EXISTING CONDITIONS

The property is located within the Howey in the Hills, Lake County, Florida. The project site consists of four (4) contiguous parcels. All parcels are owned by ASF TAP FL I LLC.

Northern project boundary is contiguous to Number 2 Rd. and southeast border has access onto ST 19.

Per the Geotechnical Engineering Evaluation Report, the soil test generally encountered very loose to dense fine sand (SP) or fine sand with silt, and clay (SP-SM), (SP-SC), and silty, clayey fine sand (SM) and (SC. The encountered groundwater table ranged from approximately 4 feet to 25 feet. The seasonal high groundwater level at the boring locations will generally form at depth of 0 feet to 23 feet bls depending on the boring locations.

The National Resources Conservation Service (NRCS) identifies candler sand, Myakka-myakka, tavares sand and wetland/water areas. These classifications are soils A and A/D. (please see NRCS Soils Map included on section 2 of this report).

The existing undevelopment project discharge points going to the wetlands in the corners of the project. There is 59.64 ac existing wetland within the property area.

According to the Federal Emergency Management Agency (FEMA) flood Insurance Rate Map (FIRM), the property does lie in Zone A and Zone AE, under panel number 12069C0485E, dated 12/18/2012; the rest of the site lies within Zone X (area of minimal flood hazard). The elevation in Zone AE is 83.6 ft. The flood plain elevation of the Zone A is established by Pre-development ICPR model and wetland stages.

1.3 STORMWATER MANAGEMENT DESIGN PARAMETERS

The project falls within the jurisdiction of the St. John River Florida Water Management District (SJRWMD). The design of the proposed stormwater management system for the proposed site is in the accordance with standards and criteria set forth by all jurisdictions.

- Curve Number and Time of Concentration

The Curve Numbers values were obtained from the Urban Hydrology for Small Watersheds, Technical Release 55 (TR-55), using a general hydrologic classification of the soils encountered in accordance with the USDA Soil Conservation Service. Refer to the Post-Development – Stormwater Analysis Basin Calculations in Section 3 of this report for

calculations.

Time of concentration values were developed from the information and methodologies outlined in the TR-55. Given the size of the site a minimum Time of Concentration of 10 minutes was assumed.

- Required storm events:

Storm Event	Entity	Reason
10-years, 24-hours	CITY	Secondary system storm event /Tailwater Elevation
25-years, 24-hours	SJRWMD	Design Storm/Road elevation
25-years, 96-hours	SJRWMD	Design Storm
Mean	SJRWMD	Design Storm
100-years, 24-hours	SJRWMD	Attenuation/ FF elevation

- Rainfall Information

The post development ICPR model considers the SCS Unit Hydrograph method with the 3FLMOD rainfall distributions. The following design storms and rainfall amounts (obtained from the SWWMD Rainfall charts) were used in the analysis:

Storm Event	Rainfall Amount
10-years, 24-hours	6.04 inches
25-years, 24-hours	7.56 inches
25-years, 96-hours	10.6 inches
Mean	4.18 inches
100-years, 24-hours	14 inches

- Treatment Volume

Treatment volume is required for both type of ponds, dry and wet pond. Referring to SJRWMD Applicants Handbook Vol. II Section 5.2:

Dry Pond: According on SJRWMD, the pollution abatement volume criteria is 1.25 inches times impervious area in addition to 0.5 inches over the total area.

Wet Pond: The pollution abatement volume criteria is 2.5” over the impervious areas or 1” over the entire area, whichever is greater.

- Attenuation & Recovery

Volume will be provided to hold the 100-year, 24-hour storm under the top of bank of the proposed ponds. The post development volume of direct runoff must not exceed the pre-development volume of direct runoff of the 25-year frequency, 96-hour duration storm for systems discharging to landlocked lakes which are adjacent to properties of more than one ownership. The post development maximum rate of discharge cannot exceed the predevelopment maximum rate for the 25 year/24 storm event and Mean/24 hr storm event. BMP trains will be provided to revise the nitrogen and phosphorus target removal.

- Minimum Road and Finish Floor Elevations

Per the Howey in the Hills
Finished floor elevations will be set above the calculated 100-year, 24-hour storm flood elevation for each retention pond basin.

Minimum road elevations have been set above the calculated 25-year, 24-hour design storm flood elevation.

- Secondary Storm System Design parameters

Conveyance systems will be sized to accommodate the 10-year, 24-hour design storm event. Rainfall intensity was obtained from the FDOT Drainage Manual “Zone 7” for a 10-year event. A Manning’s “n” Value of 0.013 listed for “Concrete gutter with asphalt pavement” per Table B-2 of the FDOT Drainage Design Guide (January 2019), will be used during calculations.

1.4 PROPOSED POST-DEVELOPMENT DESIGN

Mission Rise project will be divided into twelve (12) major basins (See Post-Development Exhibit in Section 2), each served by a wet pond or dry pond. The project site is designed as an open basin, with off-site discharge. Phase 1 major basins will discharge to five (5) ponds and then to the existing wetlands. The only two ponds connecting are the Pond 2 and Pond 3. Pond 3 is discharging to Pond 2 and then eventually to the wetland 4. There are four (4) wetland associate to Phase 1. Phase 2 major basins will discharge to (5) ponds and then to the existing wetlands. Pond 5 will receive discharge from Phase 1 and Phase 2. Phase 3 major basins will discharge to three (3) ponds and then to the existing wetlands.

Calculations will demonstrate that the ponds will meet all jurisdictions requirements. The Pre and Post models include offsite area discharging to Pond 5. The offsite areas will be not modified.

1.5 HYDROLOGIC ANALYSIS

Hydrologic analyses were performed with Advanced ICPR by Streamline Technologies. Runoff hydrographs were developed using the FLMOD hydrograph methodology for the 10-year, 24-hour, the 25-year, 24-hour. 25 year, 96 hours and the 100-year, 24-hour storm events.

1.6 PROPOSED POST DEVELOPMENT BASIN AREA SUMMARY

Basin	Node	Off Site Area (Ac.)	On Site Area (Ac.)
Post 1	Pond 1	0	12.87
Post 2	Pond 2	0	15.99
Post 3	Pond 3	0	6.74
Post 4	Pond 4	0	23.62
Post 5	Pond 5	0	9.43
Post 6	Pond 6	0	7.25
Post 7	Pond 7	0	7.73
Post 8	Pond 8	1.06	12.63
Post 9	Pond 9	0	11.62
Post 10	Pond 10	0	8.01
Post 11	Pond 11	0	33.76
Post 12	Pond 12	0	26.27
Wetland 1A	Wetland 1A	0	7.66
Wetland 1B	Wetland 1B	0	18.39
Wetland 1C	Wetland 1C	0	6.51
Wetland 2	Wetland 2	0	24.94
Wetland 3	Wet-08-PST	0	3.41
Wetland 4	Wetland 4	0	1.71
Wetland 5	Wetland 5	0	3.54
Total		1.06	242.08

1.7 RESULTS

Pre/Post Volumetric Difference:

Node	25 yr-96 hr Volume	
Outfall - Wetland 1A	**Pre (ac-ft)**	**Post (ac-ft)**
Basin		
Pre 12	6.88	
Pre 11A	2.48	
Pre 11B	1.57	
Outfall - Wetland 1B/1C		
Pre-10	4.15	
Pre-9A	4.03	
Pre-9B	9.77	
Pre 7	0.45	
Total=	**29.33**	
Outfall- Wetland 1A		
Pond 12		9.95
Outfall - Wetland 1B		
Pond 11		7.32
Pond 9		3.19
Pond 8		5.32
Outfall - Wetland 1C		
Pond 10		3.31
Total=		**29.09**
Outfall - Wetland 2	**Pre (ac-ft)** Vol (ac-ft)	**Post (ac-ft)**
Basin		
Pre 8	7.00	
Offsite 8	0.41	
Total=	**7.41**	
Pond 7		2.06
Pond 6		1.94
Pond 5		2.98
Offsite 8		0.41
Total=		**7.39**

Node	25yr-96 hr Volume	
Outfall - WET-08-PST	**Pre (ac-ft)**	**Post (ac-ft)**
Basin		
Pre 6	7.49	
Pre 5	7.52	
Offsite 6	1.56	
Total=	**16.57**	
Post 4		11.82
Offsite 6		1.56
Total=		**13.38**
Outfall - Wetland 4	**Pre (ac-ft)**	**Post (ac-ft)**
Basin		
Pre 3	4.96	
Pre 2	3.12	
Total=	**8.08**	
Post 2		8.00
Total=		**8.00**
Outfall - Wetland 5	**Pre (ac-ft)**	**Post (ac-ft)**
Basin		
Pre 4	3.90	
Pre 1	0.57	
Total=	**4.47**	
Post 1		4.35
Total=		**4.35**

Wet/Dry Retention Systems Peak Stage Summary:

Basin	Pond	Mean Annual Stage (ft)	10YR-24HR Stage (ft)	25YR-24HR Stage (ft)	25YR-96HR Stage (ft)	100YR-24HR Stage (ft)	Top Elevation
Post 1	Pond 1	86.12	87.68	88.28	88.45	88.84	89
Post 2	Pond 2	85.94	86.87	87.04	87.23	87.57	89
Post 3	Pond 3	93.66	93.8	94.01	94.03	94.36	96
Post 4	Pond 4	86.75	87.1	87.34	87	87.85	90
Post 5	Pond 5	86.21	86.92	87.56	87.94	88.84	90
Post 6	Pond 6	86.79	87.61	88.32	88.67	89.11	90
Post 7	Pond 7	86.38	87.14	87.8	88.14	88.35	90
Post 8	Pond 8	86.18	86.7	87.14	87.12	87.83	89
Post 9	Pond 9	85.13	85.8	86.43	86.78	87.16	89
Post 10	Pond 10	85.15	85.52	85.8	85.9	86.26	89
Post 11	Pond 11	89.83	90.83	91.72	92.37	92.74	94
Post 12	Pond 12	85.97	86.81	87.06	87.24	87.85	89

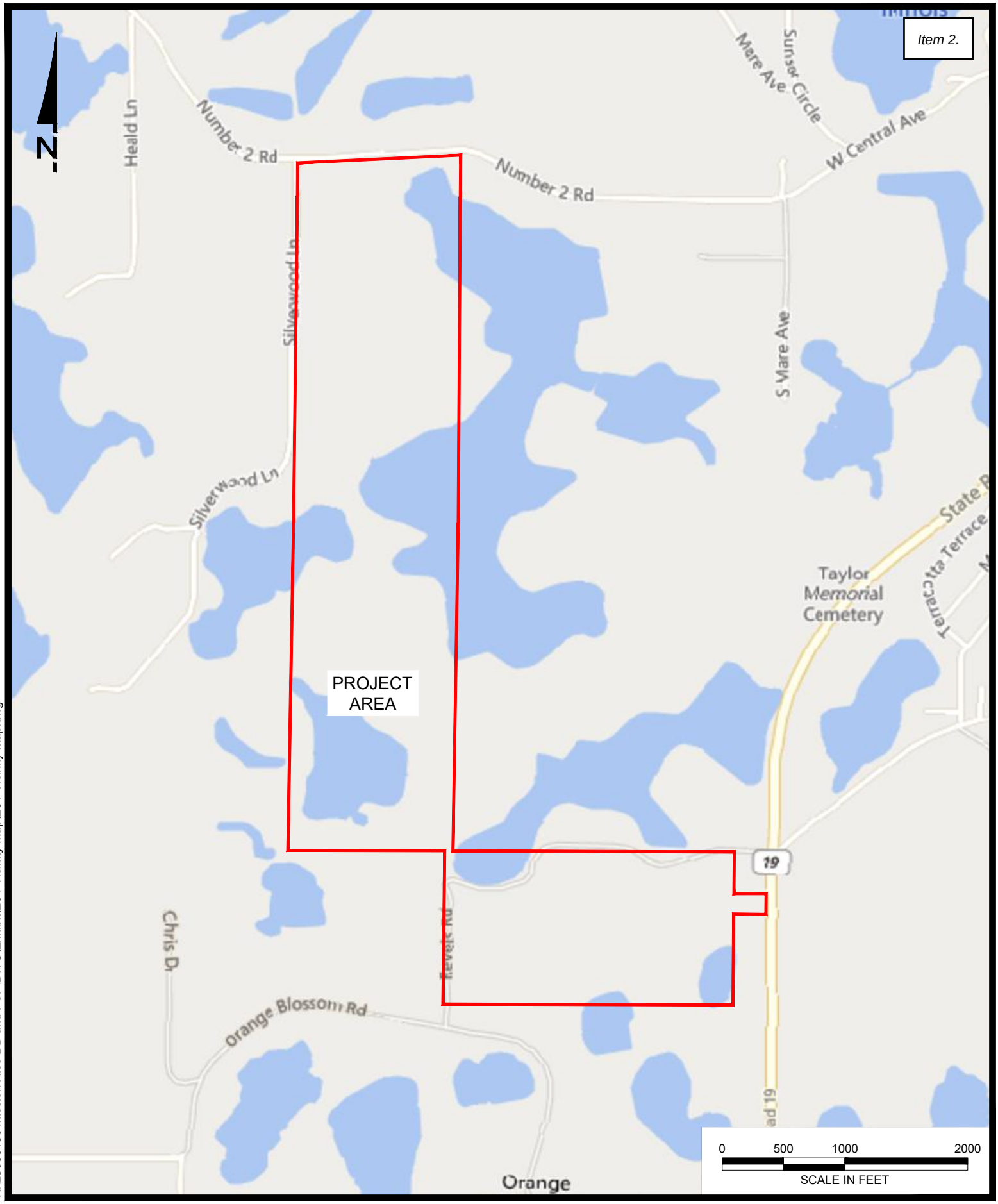
2.0 MAP & EXHIBITS

2.1 LOCATION MAP

2.2 AERIAL MAP

2.3 NRCS SOILS MAP

2.4 FEMA MAP



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ATWELL
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111 N. MAGNOLIA AVE, SUITE 1350
ORLANDO, FL 32801
407.743.3524

LOCATION MAP

MISSION RISE



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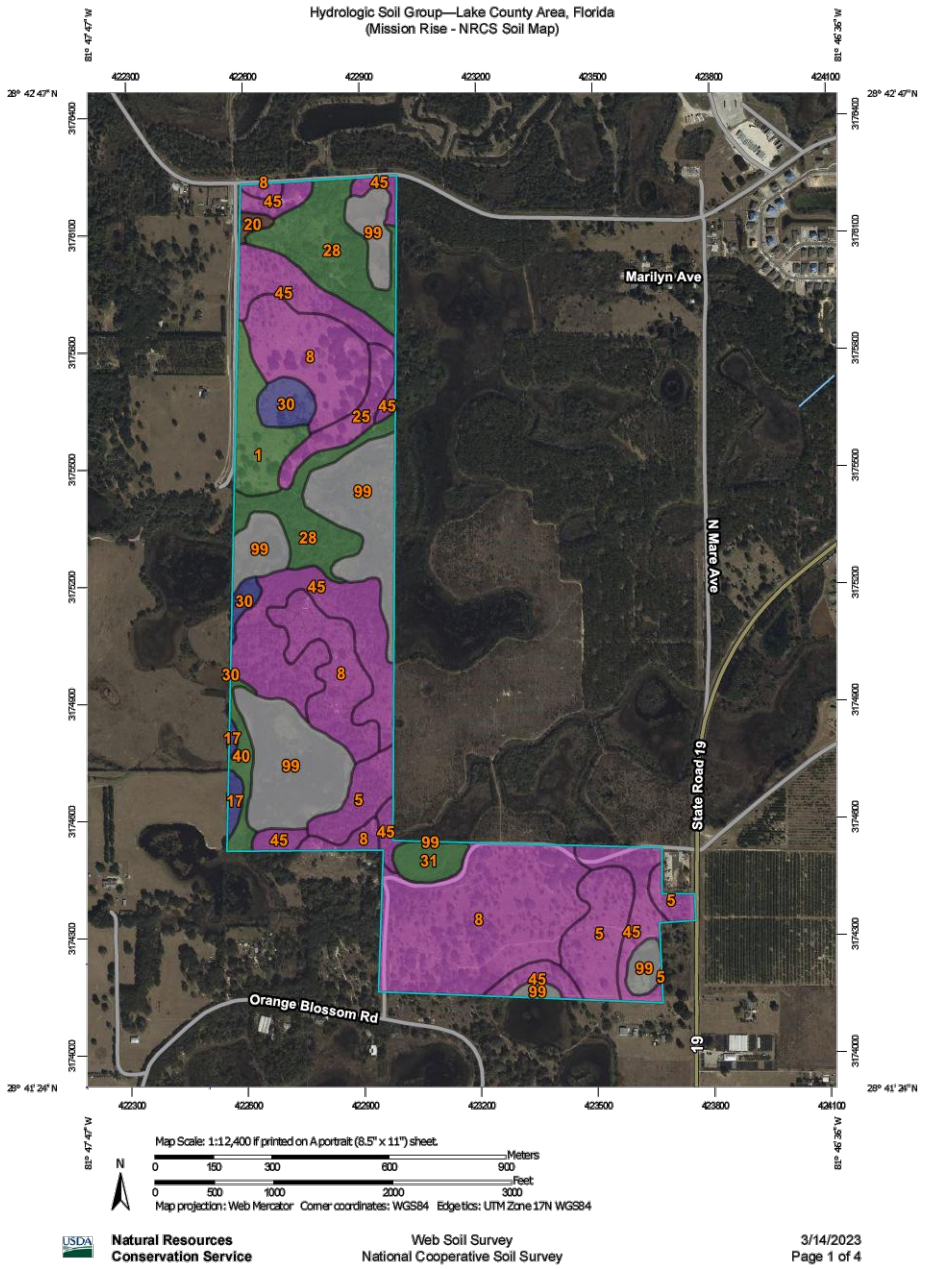
ATWELL
866.850.4200 www.atwell-group.com
111 N. MAGNOLIA AVE, SUITE 1350
ORLANDO, FL 32801
407.743.3524

AERIAL MAP

MISS[illegible]E



Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Sparr sand, 0 to 5 percent slopes	A/D	8.4	3.8%
5	Apopka sand, 0 to 5 percent slopes	A	18.6	7.9%
8	Candler sand, 0 to 5 percent slopes	A	72.3	29.1%
17	Arents	B	1.7	0.7%
20	Immokalee sand	B/D	1.0	0.4%
25	Kendrick sand, 5 to 8 percent slopes	A	6.2	2.5%
28	Myakka-Myakka, wet, sands, 0 to 2 percent slopes	A/D	26.7	10.8%
30	Lochloosa sand	B	5.4	2.2%
31	Ocoee mucky peat	A/D	4.1	1.7%
40	Placid and Myakka sands, depressional	A/D	3.8	1.5%
45	Tavares sand, 0 to 5 percent slopes	A	50.6	20.4%
99	Water		47.4	19.1%
Totals for Area of Interest			248.2	100.0%

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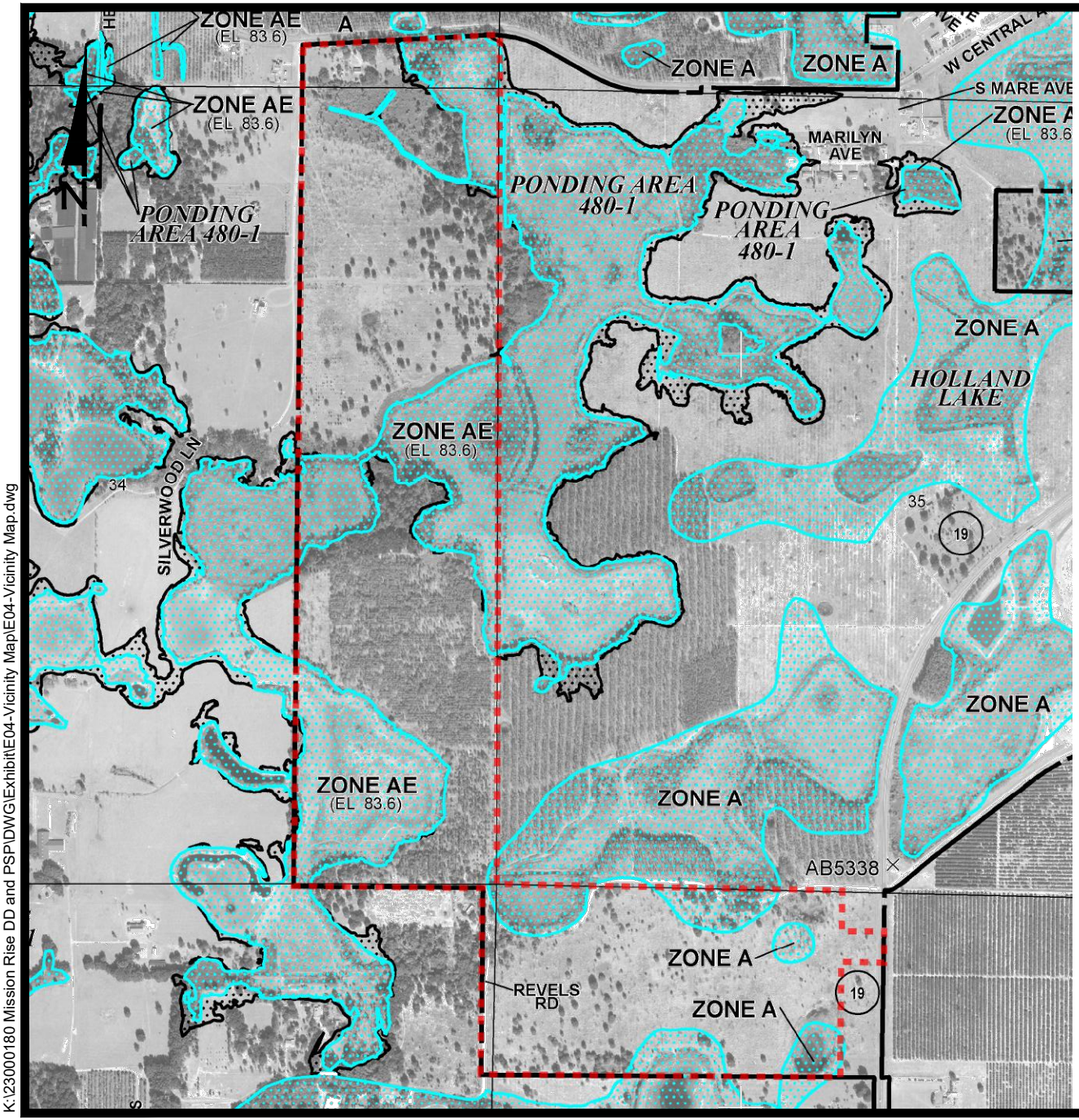

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0485E

FIRM

FLOOD INSURANCE RATE MAP

LAKE COUNTY, FLORIDA

AND INCORPORATED AREAS

PANEL 485 OF 750

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ASTATULA, TOWN OF	120581	0485	E
HOWEY IN THE HILLS, TOWN OF	120585	0485	E
LAKE COUNTY	120421	0485	E
TAVARES, CITY OF	120138	0485	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
12069C0485E

MAP REVISED
DECEMBER 18, 2012

Federal Emergency Management Agency

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3.0 PRE-DEVELOPMENT ANALYSIS AND CALCULATIONS

3.1 PRE-DEVELOPMENT BASIN MAP

3.2 PRE-DEVELOPMENT BASIN CALCS

3.3 PRE-DEVELOPMENT ICPR



NORTH AMERICAN DATUM OF 1983
FLORIDA STATE PLANE, EAST ZONE

0 125 250 500
GRAPHIC SCALE
1" = 250'

811
Know what's **below.**
Call before you dig.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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SEC 27,34 TWP 20 S RGE 25 E

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HOWEY-IN-THE-HILLS

LAKE COUNTY , FLORIDA

MISSION RISE

TURNSTONE GROUP

PRELIMINARY SUBDIVISION PLAT

DATE 02/27/2025

REVISIONS

KATLYN ASHLEY CROWELL
LICENSE
No. PE95331
STATE OF FLORIDA
PROFESSIONAL ENGINEER

CAD FILE:

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO.

PSPXX-XXXX

Mission Rise
Howey-In-The-Hills, FL
Stormwater Treatment Volume Calculations
Pre-Development

Basin:	**Pre Basin 1**	
Pond:	**N/A**	
Basin Area:	23.37	acres
Pond Area @ Bot:	N/A	acres
Pond Bottom Elev.:	N/A	ft
Time of Concentration:	10	min

Land Use:	Total Area (ac)	CN	
Impervious	0.09	98	8.82
Pasture, Grassland (Fair)- A/D	6.52	49	319.48
Pasture , Grassland (Fair) - B/D	1.23	69	84.87
Pasture, Grassland (Good) - A	15.53	39	605.67
Totals	23.37		1018.84
		Weighted Curve Number (CN) =	**44.0**

Time of Concentration: (ref. SCS TR-55, Second Ed., June 1986)

Sheet flow	n=	0.130	P2=	4.18	in
	L=	100 ft	s =	0.006	ft/ft
	Start Elev=	102.3	T=	0.21	hrs
	End Elev=	101.7			
Shallow concentrated flow (Fig. 3-1):					
Unpaved			Paved		
	L=	755 ft	L=	0	ft
	Start Elev=	101.7	s =	0.001	ft/ft
	End Elev=	81	T=	0.000	hrs
	s =	0.027 ft/ft	v=	2.00	ft/sec
	v=	2.600 ft/sec			(assumed)
	T=	0.081 hrs			
Pipe flow:	L=	0.00 ft			
	T=	0.00 hrs			
	T.C. =	0.29 hrs			
	=	**17 min**			

ATWELL

Mission Rise
Howey-In-The-Hills, FL
Stormwater Treatment Volume Calculations
Pre-Development

Basin:	**Pre Basin 2A/AB**	
Pond:	**N/A**	
Basin Area:	13.29	acres
Pond Area @ Bot:	N/A	acres
Pond Bottom Elev.:	N/A	ft
Time of Concentration:	10	min

Land Use:	Total Area (ac)	CN	
Wood-Grass Combination (Fair) - A/D	5.76	49	282.24
Wood-Grass Combination (Fair) - B/D	7.53	69	519.57
Totals	13.29		801.81
	Weighted Curve Number (CN) =		**60.0**

Time of Concentration: (ref. SCS TR-55, Second Ed., June 1986)

Sheet flow	n=	0.130	P2=	4.18	in
	L=	100 ft	s =	0.022	ft/ft
	Start Elev=	93	T=	0.12	hrs
	End Elev=	90.8			

Shallow concentrated flow (Fig. 3-1):

Unpaved			Paved		
	L=	662 ft	L=	0	ft
	Start Elev=	90.8	s =	0.001	ft/ft
	End Elev=	80	T=	0.000	hrs
	s =	0.016 ft/ft	v=	2.00	ft/sec
	v=	2.000 ft/sec			(assumed)
	T=	0.092 hrs			

Pipe flow:	L=	0.00	ft
	T=	0.00	hrs
	T.C. =	0.21	hrs
	=	**13**	**min**

ATWELL

Mission Rise
Howey-In-The-Hills, FL
Stormwater Treatment Volume Calculations
Pre-Development

Basin:	**Pre Basin 2A/AB**	
Pond:	**N/A**	
Basin Area:	13.29	acres
Pond Area @ Bot:	N/A	acres
Pond Bottom Elev.:	N/A	ft
Time of Concentration:	10	min

Land Use:	Total Area (ac)	CN	
Wood-Grass Combination (Fair) - A/D	5.76	49	282.24
Wood-Grass Combination (Fair) - B/D	7.53	69	519.57
Totals	13.29		801.81
	Weighted Curve Number (CN) =		**60.0**

Time of Concentration: (ref. SCS TR-55, Second Ed., June 1986)

Sheet flow	n=	0.130		P2=	4.18 in
	L=	100	ft	s =	0.006 ft/ft
	Start Elev=	99		T=	0.21 hrs
	End Elev=	98.4			
Shallow concentrated flow (Fig. 3-1):					
Unpaved				Paved	
	L=	525	ft	L=	0 ft
	Start Elev=	98.4		s =	0.001 ft/ft
	End Elev=	83		T=	0.000 hrs
	s =	0.029	ft/ft	v=	2.00 ft/sec
	v=	2.800	ft/sec		(assumed)
	T=	0.052	hrs		
Pipe flow:	L=	0.00	ft		
	T=	0.00	hrs		
	T.C. =	0.26	hrs		
	=	**16**	**min**		

ATWELL

Mission Rise
Howey-In-The-Hills, FL
Stormwater Treatment Volume Calculations
Pre-Development

Basin:	**Pre Basin 3**	
Pond:	**N/A**	
Basin Area:	15.19	acres
Pond Area @ Bot:	N/A	acres
Pond Bottom Elev.:	N/A	ft
Time of Concentration:	10	min

Land Use:	Total Area (ac)	CN	
Pasture, Grassland (Good) - B	3.92	61	239.12
Pasture, Grassland (Good) - A	3.84	39	149.76
Pasture, Grassland (Fair) - A/D	7.43	49	364.07
Total	15.19		752.95
		Weighted Curve Number (CN) =	**50.0**

Time of Concentration: (ref. SCS TR-55, Second Ed., June 1986)

Sheet flow	n=	0.130	P2=	4.18	in
	L=	100 ft	s =	0.004	ft/ft
	Start Elev=	102.3	T=	0.24	hrs
	End Elev=	101.9			
Shallow concentrated flow (Fig. 3-1):					
Unpaved			Paved		
	L=	588 ft	L=	0	ft
	Start Elev=	101.9	s =	0.001	ft/ft
	End Elev=	81.7	T=	0.000	hrs
	s =	0.034 ft/ft	v=	2.00	ft/sec
	v=	3.000 ft/sec			(assumed)
	T=	0.054 hrs			
Pipe flow:	L=	0.00 ft			
	T=	0.00 hrs			
	T.C. =	0.30 hrs			
	=	**18 min**			

ATWELL

Mission Rise
Howey-In-The-Hills, FL
Stormwater Treatment Volume Calculations
Pre-Development

Basin:	**Pre Basin 4A/4B**	
Pond:	**N/A**	
Basin Area:	41.00	acres
Pond Area @ Bot:	N/A	acres
Pond Bottom Elev.:	N/A	ft
Time of Concentration:	10	min

Land Use:	Total Area (ac)	CN	
Pasture, Grassland (Good) - A	23.12	39	901.68
Fallow (CR) (Good) - A	7.81	74	577.94
Pasture, Grassland (Fair) - A/D	3.73	49	182.77
Fallow (CR) (Poor) - A/D	5.11	76	388.36
Pasture, Grassland (Good) - B	1.23	61	75.03
Total	41.00		2125.78
		Weighted Curve Number (CN) =	**52.0**

Time of Concentration: (ref. SCS TR-55, Second Ed., June 1986)

Sheet flow	n=	0.130	P2=	4.18	in
	L=	100 ft	s =	0.050	ft/ft
	Start Elev=	99	T=	0.09	hrs
	End Elev=	94			

Shallow concentrated flow (Fig. 3-1):

	Unpaved			Paved	
	L=	640 ft	L=	0	ft
	Start Elev=	94	s =	0.001	ft/ft
	End Elev=	84	T=	0.000	hrs
	s =	0.016 ft/ft	v=	2.00	ft/sec
	v=	2.000 ft/sec			(assumed)
	T=	0.089 hrs			

Pipe flow:	L=	0.00 ft
	T=	0.00 hrs
	T.C. =	0.18 hrs
	=	**11 min**

ATWELL

Mission Rise
Howey-In-The-Hills, FL
Stormwater Treatment Volume Calculations
Pre-Development

Basin:	**Pre Basin 4A/4B**	
Pond:	**N/A**	
Basin Area:	41.00	acres
Pond Area @ Bot:	N/A	acres
Pond Bottom Elev.:	N/A	ft
Time of Concentration:	10	min

Land Use:	Total Area (ac)	CN	
Pasture, Grassland (Good) - A	23.12	39	901.68
Fallow (CR) (Good) - A	7.81	74	577.94
Pasture, Grassland (Fair) - A/D	3.73	49	182.77
Fallow (CR) (Poor) - A/D	5.11	76	388.36
Pasture, Grassland (Good) - B	1.23	61	75.03
Total	41.00		2125.78
		Weighted Curve Number (CN) =	**52.0**

Time of Concentration: (ref. SCS TR-55, Second Ed., June 1986)

Sheet flow	n=	0.130	P2=	4.18	in
	L=	100 ft	s =	0.010	ft/ft
	Start Elev=	99.2	T=	0.17	hrs
	End Elev=	98.2			

Shallow concentrated flow (Fig. 3-1):

	Unpaved			Paved		
	L=	640	ft	L=	0	ft
	Start Elev=	98.2		s =	0.001	ft/ft
	End Elev=	80		T=	0.000	hrs
	s =	0.028	ft/ft	v=	2.00	ft/sec
	v=	2.700	ft/sec			(assumed)
	T=	0.066	hrs			

Pipe flow:	L=	0.00	ft
	T=	0.00	hrs
	T.C. =	0.23	hrs
	=	**14**	**min**

ATWELL

Mission Rise
Howey-In-The-Hills, FL
Stormwater Treatment Volume Calculations
Pre-Development

Basin:	**Pre Basin 5**	
Pond:	**N/A**	
Basin Area:	17.40	acres
Pond Area @ Bot:	N/A	acres
Pond Bottom Elev.:	N/A	ft
Time of Concentration:	10	min

Land Use:	Total Area (ac)	CN	
Pasture, Grassland (Good) - A	17.40	39	678.60
Total	17.40		678.60
		Weighted Curve Number (CN) =	**39.0**

Time of Concentration: (ref. SCS TR-55, Second Ed., June 1986)

Sheet flow	n=	0.130	P2=	4.18	in
	L=	100 ft	s =	0.016	ft/ft
	Start Elev=	99.2	T=	0.14	hrs
	End Elev=	97.6			
Shallow concentrated flow (Fig. 3-1):					
Unpaved			Paved		
	L=	626 ft	L=	0	ft
	Start Elev=	97.6	s =	0.001	ft/ft
	End Elev=	85	T=	0.000	hrs
	s =	0.020 ft/ft	v=	2.00	ft/sec
	v=	2.300 ft/sec			(assumed)
	T=	0.076 hrs			
Pipe flow:	L=	0.00 ft			
	T=	0.00 hrs			
	T.C. =	0.21 hrs			
	=	**13 min**			

ATWELL

Mission Rise
Howey-In-The-Hills, FL
Stormwater Treatment Volume Calculations
Pre-Development

Basin:	**Pre Basin 6**	
Pond:	**N/A**	
Basin Area:	1.13	acres
Pond Area @ Bot:	N/A	acres
Pond Bottom Elev.:	N/A	ft
Time of Concentration:	10	min

Land Use:	Total Area (ac)	CN	
Pasture, Grassland (Good) - A	1.13	39	44.07
Total	1.13		44.07
		Weighted Curve Number (CN) =	**39.0**

Time of Concentration: (ref. SCS TR-55, Second Ed., June 1986)

Sheet flow	n=	0.130	P2=	4.18	in
	L=	100 ft	s =	0.027	ft/ft
	Start Elev=	92.5	T=	0.11	hrs
	End Elev=	89.8			
Shallow concentrated flow (Fig. 3-1):					
Unpaved			Paved		
	L=	214 ft	L=	0	ft
	Start Elev=	89.8	s =	0.001	ft/ft
	End Elev=	80	T=	0.000	hrs
	s =	0.046 ft/ft	v=	2.00	ft/sec
	v=	3.400 ft/sec			(assumed)
	T=	0.017 hrs			
Pipe flow:	L=	0.00 ft			
	T=	0.00 hrs			
	T.C. =	0.13 hrs			
	=	**8 min**	**Less of 10 min ---> use 10 min**		

ATWELL

Mission Rise
Howey-In-The-Hills, FL
Stormwater Treatment Volume Calculations
Pre-Development

Basin:	**Pre Basin 7**	
Pond:	**N/A**	
Basin Area:	16.30	acres
Pond Area @ Bot:	N/A	acres
Pond Bottom Elev.:	N/A	ft
Time of Concentration:	10	min

Land Use:	Total Area (ac)	CN	
Pasture, Grassland (Good) - A	15.77	39	615.03
Impervious Area, Dirt Road - A	0.53	72	38.16
Total	16.30		653.19
		Weighted Curve Number (CN) =	**40.0**

Time of Concentration: (ref. SCS TR-55, Second Ed., June 1986)

Sheet flow	n=	0.130	P2=	4.18	in
	L=	100 ft	s =	0.021	ft/ft
	Start Elev=	106.4	T=	0.12	hrs
	End Elev=	104.3			

Shallow concentrated flow (Fig. 3-1):

Unpaved			Paved		
	L=	626 ft	L=	0	ft
	Start Elev=	104.3	s =	0.001	ft/ft
	End Elev=	80	T=	0.000	hrs
	s =	0.039 ft/ft	v=	2.00	ft/sec
	v=	3.200 ft/sec			(assumed)
	T=	0.054 hrs			

Pipe flow:	L=	0.00	ft
	T=	0.00	hrs
	T.C. =	0.18	hrs
	=	**11**	**min**

ATWELL

Mission Rise
Howey-In-The-Hills, FL
Stormwater Treatment Volume Calculations
Pre-Development

Basin:	**Pre Basin 8**	
Pond:	**N/A**	
Basin Area:	17.27	acres
Pond Area @ Bot:	N/A	acres
Pond Bottom Elev.:	N/A	ft
Time of Concentration:	10	min

Land Use:	Total Area (ac)	CN	
Impervious, Dirt Road - A	0.35	72	25.20
Pasture, Grassland (Good) - A	16.92	39	659.88
Total	17.27		685.08
		Weighted Curve Number (CN) =	**40.0**

Time of Concentration: (ref. SCS TR-55, Second Ed., June 1986)

Sheet flow	n=	0.130	P2=	4.18	in
	L=	100 ft	s =	0.019	ft/ft
	Start Elev=	106.4	T=	0.13	hrs
	End Elev=	104.5			

Shallow concentrated flow (Fig. 3-1):

	Unpaved			Paved		
	L=	1554	ft	L=	0	ft
	Start Elev=	104.5		s =	0.001	ft/ft
	End Elev=	80		T=	0.000	hrs
	s =	0.016	ft/ft	v=	2.00	ft/sec
	v=	2.100	ft/sec			(assumed)
	T=	0.206	hrs			

Pipe flow:	L=	0.00	ft
	T=	0.00	hrs
	T.C. =	0.34	hrs
	=	**20**	**min**

ATWELL

Mission Rise
Howey-In-The-Hills, FL
Stormwater Treatment Volume Calculations
Pre-Development

Basin:	**Pre Basin 9**	
Pond:	**N/A**	
Basin Area:	9.98	acres
Pond Area @ Bot:	N/A	acres
Pond Bottom Elev.:	N/A	ft
Time of Concentration:	10	min

Land Use:	Total Area (ac)	CN	
Pasture, Grassland (Good) - A	9.98	39	389.22
Total	9.98		389.22
		Weighted Curve Number (CN) =	**39.0**

Time of Concentration: (ref. SCS TR-55, Second Ed., June 1986)

Sheet flow	n=	0.130	P2=	4.18	in
	L=	100 ft	s =	0.011	ft/ft
	Start Elev=	94.6	T=	0.16	hrs
	End Elev=	93.5			

Shallow concentrated flow (Fig. 3-1):

Unpaved			Paved		
	L=	426 ft	L=	0	ft
	Start Elev=	93.5	s =	0.001	ft/ft
	End Elev=	80	T=	0.000	hrs
	s =	0.032 ft/ft	v=	2.00	ft/sec
	v=	2.900 ft/sec			(assumed)
	T=	0.041 hrs			

Pipe flow:	L=	0.00	ft
	T=	0.00	hrs
	T.C. =	0.20	hrs
	=	**12**	**min**

ATWELL

Mission Rise
Howey-In-The-Hills, FL
Stormwater Treatment Volume Calculations
Pre-Development

Basin:	**Pre Basin 10**	
Pond:	**N/A**	
Basin Area:	11.33	acres
Pond Area @ Bot:	N/A	acres
Pond Bottom Elev.:	N/A	ft
Time of Concentration:	10	min

Land Use:	Total Area (ac)	CN	
Pasture, Grassland (Good) - A	11.33	39	441.87
Totals	11.33		441.87
		Weighted Curve Number (CN) =	**39.0**

Time of Concentration: (ref. SCS TR-55, Second Ed., June 1986)

Sheet flow	n=	0.130	P2=	4.18	in
	L=	100 ft	s =	0.022	ft/ft
	Start Elev=	106.4	T=	0.12	hrs
	End Elev=	104.2			
Shallow concentrated flow (Fig. 3-1):					
Unpaved			Paved		
	L=	427 ft	L=	0	ft
	Start Elev=	104.2	s =	0.001	ft/ft
	End Elev=	83	T=	0.000	hrs
	s =	0.050 ft/ft	v=	2.00	ft/sec
	v=	3.600 ft/sec			(assumed)
	T=	0.033 hrs			
Pipe flow:	L=	0.00 ft			
	T=	0.00 hrs			
	T.C. =	0.16 hrs			
	=	**9 min**	**Less of 10 min ---> use 10 min**		

Mission Rise
Howey-In-The-Hills, FL
Stormwater Treatment Volume Calculations
Pre-Development

Basin:	**Pre Basin 11**	
Pond:	**N/A**	
Basin Area:	6.75	acres
Pond Area @ Bot:	N/A	acres
Pond Bottom Elev.:	N/A	ft
Time of Concentration:	10	min

Land Use:	Total Area (ac)	CN	
Impervious Area, Dirt Road	0.25	72	18.00
Pasture, Grassland (Good) - A	6.50	39	253.50
Totals	6.75		271.50
		Weighted Curve Number (CN) =	**40.0**

Time of Concentration: (ref. SCS TR-55, Second Ed., June 1986)

Sheet flow	n=	0.130		P2=	4.18	in
	L=	100	ft	s =	0.022	ft/ft
	Start Elev=	109.2		T=	0.12	hrs
	End Elev=	107				
Shallow concentrated flow (Fig. 3-1):						
Unpaved				Paved		
	L=	500	ft	L=	0	ft
	Start Elev=	107				
	End Elev=	91				
	s =	0.032	ft/ft	s =	0.001	ft/ft
	v=	2.900	ft/sec			
	T=	0.048	hrs	T=	0.000	hrs
Pipe flow:	L=	0.00	ft	v=	2.00	ft/sec
	T=	0.00	hrs			(assumed)
	T.C. =	0.17	hrs			
	=	**10**	**min**			

ATWELL

Mission Rise
Howey-In-The-Hills, FL
Stormwater Treatment Volume Calculations
Pre-Development

Basin:	**Pre Basin 12**	
Pond:	**N/A**	
Basin Area:	1.45	acres
Pond Area @ Bot:	N/A	acres
Pond Bottom Elev.:	N/A	ft
Time of Concentration:	10	min

Land Use:	Total Area (ac)	CN	
Wetlands	0.18	100	18.00
Pasture, Grassland (Good) - A	1.27	39	49.53
Total	1.45		67.53
		Weighted Curve Number (CN) =	**47.0**

Time of Concentration: (ref. SCS TR-55, Second Ed., June 1986)

Sheet flow	n=	0.130	P2=	4.18	in
	L=	100 ft	s =	0.035	ft/ft
	Start Elev=	99	T=	0.10	hrs
	End Elev=	95.5			

Shallow concentrated flow (Fig. 3-1):

	Unpaved		Paved		
	L=	384 ft	L=	0	ft
	Start Elev=	95.5	s =	0.001	ft/ft
	End Elev=	80	T=	0.000	hrs
	s =	0.040 ft/ft	v=	2.00	ft/sec
	v=	3.200 ft/sec			(assumed)
	T=	0.033 hrs			

Pipe flow:	L=	0.00 ft	
	T=	0.00 hrs	
	T.C. =	0.14 hrs	
	=	**8 min**	**Less of 10 min ---> use 10 min**

ATWELL

Mission Rise
Howey-In-The-Hills, FL
Stormwater Treatment Volume Calculations
Pre-Development

Basin:	**OFFSITE-5**	
Pond:	**N/A**	
Basin Area:	1.06	acres
Pond Area @ Bot:	N/A	acres
Pond Bottom Elev.:	N/A	ft
Time of Concentration:	10	min

Land Use:	Total Area (ac)	CN	
Pasture, Grassland (Good) - A	0.35	39	13.65
Pasture, Grassland (Fair) - A/D	0.15	49	7.20
Pasture, Grassland (Good) - B	0.56	61	34.34
Total	1.06		55.20
		Weighted Curve Number (CN) =	**52.0**

Time of Concentration: (ref. SCS TR-55, Second Ed., June 1986)

Sheet flow	n=	0.130	P2=	4.5	in
	L=	100 ft	s =	0.012	ft/ft
	Start Elev=	90.8	T=	0.15	hrs
	End Elev=	89.6			
Shallow concentrated flow (Fig. 3-1):					
Unpaved			Paved		
	L=	352 ft	L=	0	ft
	Start Elev=	89.6	s =	0.001	ft/ft
	End Elev=	81.5	T=	0.000	hrs
	s =	0.023 ft/ft	v=	2.00	ft/sec
	v=	2.400 ft/sec			(assumed)
	T=	0.041 hrs			
Pipe flow:	L=	0.00 ft			
	T=	0.00 hrs			
	T.C. =	0.19 hrs			
	=	**11 min**			

ATWELL

Mission Rise
Howey-In-The-Hills, FL
Stormwater Treatment Volume Calculations
Pre-Development

Basin:	**OFFSITE-7**	
Pond:	**N/A**	
Basin Area:	2.78	acres
Pond Area @ Bot:	N/A	acres
Pond Bottom Elev.:	N/A	ft
Time of Concentration:	10	min

Land Use:	Total Area (ac)	CN	
Pasture, Grassland (Good) - A	0.03	39	1.17
Pasture, Grassland (Good) - B	2.75	61	167.75
Total	2.78		168.92
		Weighted Curve Number (CN) =	**61.0**

Time of Concentration: (ref. SCS TR-55, Second Ed., June 1986)

Sheet flow	n=	0.130	P2=	4.5	in
	L=	100 ft	s =	0.002	ft/ft
	Start Elev=	94	T=	0.31	hrs
	End Elev=	93.8			
Shallow concentrated flow (Fig. 3-1):					
Unpaved			Paved		
	L=	330 ft	L=	0	ft
	Start Elev=	93.8	s =	0.001	ft/ft
	End Elev=	85	T=	0.000	hrs
	s =	0.027 ft/ft	v=	2.00	ft/sec
	v=	2.600 ft/sec			(assumed)
	T=	0.035 hrs			
Pipe flow:	L=	0.00 ft			
	T=	0.00 hrs			
	T.C. =	0.34 hrs			
	=	**21 min**			

ATWELL

Manual Basin: OFFSITE-6

Scenario: Pre-development
Node: WET-08-PST
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 21.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 2.7808 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
1.5437	1100: Residential, low density - less than 2 dwelling units/acre	B			
1.1557	2120: Unimproved pastures	B			
0.0557	4340: Upland mixed coniferous/hardwood	B			
0.0224	1100: Residential, low density - less than 2 dwelling units/acre	A			
0.0034	2120: Unimproved pastures	A			

Comment:

Manual Basin: OFFSITE-8

Scenario: Pre-development
Node: Wetland 2
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 11.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 1.0629 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
0.5314	2120: Unimproved pastures	B			

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
0.0449	4340: Upland mixed coniferous/hardwood	A/D			
0.3486	4340: Upland mixed coniferous/hardwood	A			
0.0454	4340: Upland mixed coniferous/hardwood	B			
0.0481	6460: Mixed scrub-shrub wetland	A/D			
0.0445	6410: Freshwater marshes	A/D			

Comment:

Manual Basin: PRE-1

Scenario: Pre-development
Node: Wetland 6
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 1.4584 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
1.4584	2120: Unimproved pastures	A			

Comment:

Manual Basin: PRE-10

Scenario: Pre-development
Node: Pre 10
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number

Time of Concentration: 17.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 15.1998 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
3.7362	2130: Woodland pastures	A/D			
0.1211	2110: Improved pastures (monocult, planted forage crops)	A/D			
11.3425	2130: Woodland pastures	B			

Comment:

Manual Basin: PRE-11A

Scenario: Pre-development
Node: Wetland 1A
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 13.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 7.1189 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
1.5321	6460: Mixed scrub-shrub wetland	A/D			
1.5710	6300: Wetland forested mixed	A/D			
0.4144	1180: Rural residential	A/D			
1.8075	4340: Upland mixed coniferous/hardwood	A/D			
0.0038	6440: Emergent aquatic vegetation	A/D			
0.4393	1180: Rural residential	A			

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
1.1084	4340: Upland mixed coniferous/hardwood	A			
0.1497	1180: Rural residential	B			
0.0011	6440: Emergent aquatic vegetation	A			
0.0482	4340: Upland mixed coniferous/hardwood	B			
0.0435	4410: Pine plantation	A			

Comment:

Manual Basin: PRE-11B

Scenario: Pre-development
Node: Wetland 1A
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 15.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 6.1919 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
2.9343	2130: Woodland pastures	A			
1.9822	2130: Woodland pastures	B			
0.7784	2130: Woodland pastures	A/D			
0.4970	6460: Mixed scrub-shrub wetland	A/D			
0.0001	6440: Emergent aquatic vegetation	A/D			

Comment:

Manual Basin: PRE-12

Scenario: Pre-development
Node: Pre 12
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 17.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 23.3911 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
5.5488	2130: Woodland pastures	B			
1.8003	2130: Woodland pastures	A/D			
0.0323	2110: Improved pastures (monocult, planted forage crops)	A/D			
7.7391	2130: Woodland pastures	A			
0.1956	2110: Improved pastures (monocult, planted forage crops)	A			
3.5759	6460: Mixed scrub-shrub wetland	A/D			
0.8898	6300: Wetland forested mixed	A/D			
0.0316	6460: Mixed scrub-shrub wetland	A			
0.0292	2110: Improved pastures (monocult, planted forage crops)	B/D			
0.7989	2130: Woodland pastures	B/D			
0.1069	6460: Mixed scrub-shrub wetland	B/D			
0.2905	1180: Rural residential	B/D			
0.2054	1180: Rural residential	A/D			
1.4408	1180: Rural residential	A			

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
0.7059	1180: Rural residential	B			

Comment:

Manual Basin: PRE-2

Scenario: Pre-development
Node: Wetland 4
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 6.7636 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
6.7636	2120: Unimproved pastures	B			

Comment:

Manual Basin: PRE-3

Scenario: Pre-development
Node: Wetland 4
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 11.3398 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
0.0523	1180: Rural residential	A			
7.4313	2120: Unimproved pastures	B			
3.8562	2120: Unimproved pastures	A			

Comment:

Manual Basin: PRE-4

Scenario: Pre-development
Node: Wetland 5
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 12.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 9.9857 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
0.0631	1180: Rural residential	A			
9.9225	2120: Unimproved pastures	A			

Comment:

Manual Basin: PRE-5

Scenario: Pre-development
Node: WET-08-PST
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 20.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 17.2870 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
11.4958	2120: Unimproved pastures	B			
4.8506	2120: Unimproved pastures	A			
0.8124	6460: Mixed scrub-shrub wetland	A			
0.1193	6460: Mixed scrub-shrub wetland	B			

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
0.0090	4430: Forest regeneration	B			

Comment:

Manual Basin: PRE-6

Scenario: Pre-development
Node: WET-08-PST
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 16.3073 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
13.8236	2120: Unimproved pastures	B			
0.4497	1100: Residential, low density - less than 2 dwelling units/acre	B			
0.1644	6460: Mixed scrub-shrub wetland	B			
0.1677	6460: Mixed scrub-shrub wetland	A/D			
0.2442	6460: Mixed scrub-shrub wetland	A			
0.0139	2120: Unimproved pastures	A/D			
0.1538	1100: Residential, low density - less than 2 dwelling units/acre	A			
1.2901	2120: Unimproved pastures	A			

Comment:

Manual Basin: PRE-7

Scenario: Pre-development
Node: N-7
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 1.1360 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
1.0687	2120: Unimproved pastures	A			
0.0673	2120: Unimproved pastures	B			

Comment:

Manual Basin: PRE-8

Scenario: Pre-development
Node: Wetland 2
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 13.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 17.4043 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
5.3219	2120: Unimproved pastures	B			
1.1420	4340: Upland mixed coniferous/hardwood	A			
0.0774	4340: Upland mixed coniferous/hardwood	B			
0.0138	4340: Upland mixed coniferous/hardwood	A/D			

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
10.8423	2120: Unimproved pastures	A			
0.0000	2120: Unimproved pastures	Water			
0.0067	2110: Improved pastures (monocult, planted forage crops)	A			

Comment:

Manual Basin: PRE-9A

Scenario: Pre-development
Node: Wetland 1B/1C
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 15.3968 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
1.1844	6460: Mixed scrub-shrub wetland	A/D			
7.3172	2130: Woodland pastures	A/D			
0.0005	6430: Wet prairies	A/D			
5.2421	2130: Woodland pastures	A			
0.0493	2110: Improved pastures (monocult, planted forage crops)	A/D			
1.5255	2130: Woodland pastures	B			
0.0000	6440: Emergent aquatic vegetation	A/D			
0.0444	4340: Upland mixed coniferous/hardwood	A/D			
0.0334	4340: Upland	A			

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
	mixed coniferous/hardwood				

Comment:

Manual Basin: PRE-9B

Scenario: Pre-development
Node: Wetland 1B/1C
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 14.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 25.6273 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
10.1214	2120: Unimproved pastures	A			
8.5804	2120: Unimproved pastures	B			
0.6815	6460: Mixed scrub-shrub wetland	A			
0.4179	4340: Upland mixed coniferous/hardwood	B			
2.0427	4340: Upland mixed coniferous/hardwood	A			
0.0008	6460: Mixed scrub-shrub wetland	A/D			
3.7573	4340: Upland mixed coniferous/hardwood	A/D			
0.0253	4340: Upland mixed coniferous/hardwood	Water			

Comment:

Manual Basin: WETLAND 1A

Scenario: Pre-development
Node: Wetland 1A
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 7.6627 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
0.4074	6460: Mixed scrub-shrub wetland	A/D			
0.7947	6440: Emergent aquatic vegetation	A/D			
0.0454	2130: Woodland pastures	A/D			
4.7817	6440: Emergent aquatic vegetation	Water			
0.0116	6460: Mixed scrub-shrub wetland	Water			
0.6275	6300: Wetland forested mixed	A/D			
0.0139	6300: Wetland forested mixed	Water			
0.5476	6440: Emergent aquatic vegetation	A			
0.0497	4410: Pine plantation	A			
0.3018	4340: Upland mixed coniferous/hardwood	A/D			
0.0813	4340: Upland mixed coniferous/hardwood	A			

Comment:

Manual Basin: WETLAND 1B/1C

Scenario: Pre-development
Node: Wetland 1B/1C
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 25.8459 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
0.0772	2120: Unimproved pastures	A			
1.1166	6460: Mixed scrub-shrub wetland	A			
2.9344	6460: Mixed scrub-shrub wetland	Water			
10.9300	6440: Emergent aquatic vegetation	Water			
0.0977	6440: Emergent aquatic vegetation	A			
0.0186	2120: Unimproved pastures	B			
0.0397	6410: Freshwater marshes	B			
0.2489	4340: Upland mixed coniferous/hardwood	B			
4.5685	6410: Freshwater marshes	Water			
0.9278	4340: Upland mixed coniferous/hardwood	Water			
1.9264	6460: Mixed scrub-shrub wetland	A/D			
0.1515	4340: Upland mixed coniferous/hardwood	A			
0.0566	6440: Emergent aquatic vegetation	A/D			
2.0470	4340: Upland mixed	A/D			

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
	coniferous/hardwood				
0.1415	6410: Freshwater marshes	A/D			
0.5611	6300: Wetland forested mixed	Water			
0.0023	2130: Woodland pastures	A/D			

Comment:

Manual Basin: WETLAND 2

Scenario: Pre-development
Node: Wetland 2
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 24.9397 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
1.9637	6410: Freshwater marshes	A/D			
0.7348	6460: Mixed scrub-shrub wetland	A/D			
0.0526	4340: Upland mixed coniferous/hardwood	A/D			
0.2665	4340: Upland mixed coniferous/hardwood	A			
0.0542	6460: Mixed scrub-shrub wetland	A			
1.5266	2120: Unimproved pastures	A			
0.3085	6410: Freshwater marshes	B			
0.2711	6460: Mixed	Water			

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
	scrub-shrub wetland				
0.5147	6410: Freshwater marshes	Water			
0.0699	5200: Lakes	A			
16.7506	5200: Lakes	Water			
0.4623	2120: Unimproved pastures	Water			
0.5305	5200: Lakes	A/D			
0.8435	6460: Mixed scrub-shrub wetland	B			
0.0364	5200: Lakes	B			
0.4523	2120: Unimproved pastures	B			
0.0081	2110: Improved pastures (monocult, planted forage crops)	A/D			
0.0861	2120: Unimproved pastures	A/D			
0.0073	2110: Improved pastures (monocult, planted forage crops)	A			

Comment:

Manual Basin: WETLAND 3

Scenario: Pre-development
Node: WET-08-PST
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 3.4211 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
0.0656	2120: Unimproved pastures	B			
0.0582	6460: Mixed scrub-shrub	B			

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
	wetland				
0.0075	2120: Unimproved pastures	A/D			
1.0518	6460: Mixed scrub-shrub wetland	A/D			
2.2267	6410: Freshwater marshes	A/D			
0.0112	6460: Mixed scrub-shrub wetland	A			

Comment:

Manual Basin: WETLAND 4

Scenario: Pre-development
Node: Wetland 4
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 1.7056 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
0.8307	5200: Lakes	Water			
0.0070	6410: Freshwater marshes	Water			
0.0222	6410: Freshwater marshes	A			
0.0064	1180: Rural residential	A			
0.5034	2120: Unimproved pastures	A			
0.3359	5200: Lakes	A			

Comment:

Manual Basin: WETLAND 5

Scenario: Pre-development
Node: Wetland 5

Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 3.5379 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
0.0321	1180: Rural residential	A			
0.9312	2120: Unimproved pastures	A			
0.0347	6440: Emergent aquatic vegetation	A			
2.2436	6440: Emergent aquatic vegetation	Water			
0.2963	2120: Unimproved pastures	Water			

Comment:

Node: N-7

Scenario: Pre-development
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 85.10 ft
Warning Stage: 86.80 ft
Alert Stage: 0.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	85.10
0	0	0	12.0000	85.10
0	0	0	24.0000	85.10
0	0	0	36.0000	85.10

Comment:

Node: Pre 10

Scenario: Pre-development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 82.00 ft

Warning Stage: 89.00 ft
Alert Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
82.00	0.1000	4356
83.00	0.1400	6098
84.00	0.1700	7405
85.00	0.1900	8276
86.00	0.2100	9148
87.00	0.2300	10019
88.00	0.2700	11761
89.00	0.4900	21344

Comment:

Node: Pre 12

Scenario: Pre-development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 80.00 ft
Warning Stage: 84.00 ft
Alert Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
80.00	0.0700	3049
81.00	0.4300	18731
82.00	0.5500	23958
83.00	0.6700	29185
84.00	0.8500	37026

Comment:

Node: WET-08-PST

Scenario: Pre-development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 78.70 ft
Warning Stage: 0.00 ft
Alert Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
78.50	3.6000	156816
79.00	3.7000	161172
80.00	4.4000	191664
81.00	5.6000	243936

Stage [ft]	Area [ac]	Area [ft2]
82.00	5.9000	257004
83.00	6.1000	265716
84.00	6.4000	278784

Comment: Data from Hillside Groves input report plus the section of Wetland that is inside of the property line

Node: Wetland 1A

Scenario: Pre-development
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 83.60 ft
Warning Stage: 84.60 ft
Alert Stage: 0.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	83.60
0	0	0	12.0000	83.60
0	0	0	24.0000	83.60
0	0	0	36.0000	83.60

Comment: Zone AE

Node: Wetland 1B/1C

Scenario: Pre-development
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 83.60 ft
Warning Stage: 84.60 ft
Alert Stage: 0.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	83.60
0	0	0	12.0000	83.60
0	0	0	24.0000	83.60
0	0	0	36.0000	83.60

Comment: Zone AE

Node: Wetland 2

Scenario: Pre-development
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 83.60 ft
Warning Stage: 84.60 ft
Alert Stage: 0.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	83.60
0	0	0	12.0000	83.60
0	0	0	24.0000	83.60
0	0	0	36.0000	83.60

Comment: Zone A

Node: Wetland 4

Scenario: Pre-development
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 79.63 ft
Warning Stage: 80.63 ft
Alert Stage: 0.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	79.63
0	0	0	12.0000	79.63
0	0	0	24.0000	79.63
0	0	0	36.0000	79.63

Comment: Zone A

Node: Wetland 5

Scenario: Pre-development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 80.00 ft
Warning Stage: 87.00 ft
Alert Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
80.00	2.4700	107593
81.00	2.5400	110642
82.00	2.6300	114563

Stage [ft]	Area [ac]	Area [ft2]
83.00	2.7700	120661
84.00	3.2600	142006
85.00	4.7100	205168
86.00	5.8900	256568
87.00	7.4900	326264

Comment: Zone A

Node: Wetland 6

Scenario: Pre-development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 80.00 ft
Warning Stage: 87.00 ft
Alert Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
80.00	0.1200	5227
81.00	0.1300	5663
82.00	0.1500	6534
83.00	0.1700	7405
84.00	0.1900	8276
85.00	0.2000	8712
86.00	0.2200	9583
87.00	0.2800	12197

Comment:

Weir Link: BCW-1

Scenario: Pre-development
From Node: Wetland 6
To Node: Wetland 5
Link Count: 1
Flow Direction: Both
Damping: 0.0000 ft
Weir Type: Broad Crested Vertical
Geometry Type: Trapezoidal
Invert: 87.00 ft
Control Elevation: 87.00 ft
Max Depth: 9999.00 ft
Extrapolation Method: Normal Projection
Bottom Width: 10.00 ft
Left Slope: 10.000 (h:v)
Right Slope: 10.000 (h:v)

Bottom Clip

Default: 0.00 ft
Op Table:
Ref Node:

Top Clip

Default: 0.00 ft
Op Table:
Ref Node:

Discharge Coefficients

Weir Default: 2.800
Weir Table:
Orifice Default: 0.600
Orifice Table:

Comment:

Weir Link: BCW-2			
Scenario:	Pre-development	Bottom Clip	
From Node:	N-7	Default:	0.00 ft
To Node:	Wetland 1B/1C	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:	
Geometry Type:	Trapezoidal	Ref Node:	
Invert:	86.60 ft	Discharge Coefficients	
Control Elevation:	86.60 ft	Weir Default:	2.800
Max Depth:	9999.00 ft	Weir Table:	
Extrapolation Method:	Normal Projection	Orifice Default:	0.600
Bottom Width:	75.00 ft	Orifice Table:	
Left Slope:	64.000 (h:v)		
Right Slope:	25.000 (h:v)		

Comment:

Weir Link: BCW-3			
Scenario:	Pre-development	Bottom Clip	
From Node:	Pre 12	Default:	0.00 ft
To Node:	Wetland 1A	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:	
Geometry Type:	Trapezoidal	Ref Node:	
Invert:	83.80 ft	Discharge Coefficients	
Control Elevation:	83.80 ft	Weir Default:	2.800
Max Depth:	9999.00 ft	Weir Table:	
Extrapolation Method:	Normal Projection	Orifice Default:	0.600
Bottom Width:	20.00 ft	Orifice Table:	
Left Slope:	10.000 (h:v)		
Right Slope:	10.000 (h:v)		

Comment:

Channel Link: Channel-1		Upstream		Downstream	
Scenario:	Pre-development	Invert:	89.00 ft	Invert:	85.00 ft
From Node:	Pre 10	Manning's N:	0.1300	Manning's N:	0.1300
To Node:	Wetland 1B/1C	Geometry: Trapezoidal		Geometry: Trapezoidal	

Link Count:	1	Max Depth:	9999.00 ft	Max Depth:	9999.00 ft
Flow Direction:	Both	Extrapolation:	Normal	Extrapolation:	Normal
Damping:	0.0000 ft	Bottom Width:	13.00 ft	Bottom Width:	6.00 ft
Length:	400.00 ft	Left Slope:	4.000 (h:v)	Left Slope:	3.000 (h:v)
Contraction Coef:	0.00	Right Slope:	4.000 (h:v)	Right Slope:	4.000 (h:v)
Expansion Coef:	0.00	Bottom Clip			
Entr Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Exit Loss Coef:	0.00	Op Table:		Op Table:	
Bend Loss Coef:	0.00	Ref Node:		Ref Node:	
Bend Location:	0.00 dec	Manning's N:	0.0000	Manning's N:	0.0000
Energy Switch:	Energy	Top Clip			
		Default:	0.00 ft	Default:	0.00 ft
		Op Table:		Op Table:	
		Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Simulation: 100yr-24hr

Scenario: Pre-development
Run Date/Time: 8/14/2025 11:48:50 AM
Program Version: StormWise 4.08.03

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: CURVE NUMBER
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: IMPERVIOUS
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.0000 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic
Dflt Damping (2D): 0.0050 ft
Min Node Srf Area (2D): 100 ft2
Energy Switch (2D): Energy

IA Recovery Time: 24.0000 hr
ET for Manual Basins: False
Ia/S: 0.20 dec
Smp/Man Basin Rain Opt: Global
OF Region Rain Opt: Global
Rainfall Name: ~FLMOD
Rainfall Amount: 10.40 in
Storm Duration: 24.0000 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 100 ft2
Energy Switch (1D): Energy

Comment:

Simulation: 100yr-72hr

Scenario: Pre-development
Run Date/Time: 8/14/2025 11:52:13 AM
Program Version: StormWise 4.08.03

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	78.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: CURVE NUMBER
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: IMPERVIOUS
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec	Ia/S:	0.20 dec
dZ Tolerance:	0.0010 ft		
Max dZ:	1.0000 ft	Smp/Man Basin Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	OF Region Rain Opt:	Global
		Rainfall Name:	~FLMOD
Edge Length Option:	Automatic	Rainfall Amount:	14.00 in
		Storm Duration:	72.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Simulation: 10yr-24hr

Scenario: Pre-development
Run Date/Time: 8/14/2025 12:01:17 PM
Program Version: StormWise 4.08.03

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: CURVE NUMBER
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: IMPERVIOUS
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.0000 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic
Dflt Damping (2D): 0.0050 ft
Min Node Srf Area (2D): 100 ft2
Energy Switch (2D): Energy

IA Recovery Time: 24.0000 hr
ET for Manual Basins: False
Ia/S: 0.20 dec
Smp/Man Basin Rain Opt: Global
OF Region Rain Opt: Global
Rainfall Name: ~FLMOD
Rainfall Amount: 6.03 in
Storm Duration: 24.0000 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 100 ft2
Energy Switch (1D): Energy

Comment:

Simulation: 25yr-24hr

Scenario: Pre-development

Run Date/Time: 8/14/2025 12:04:59 PM
Program Version: StormWise 4.08.03

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: CURVE NUMBER
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: IMPERVIOUS
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec	Ia/S:	0.20 dec
dZ Tolerance:	0.0010 ft		
Max dZ:	1.0000 ft	Smp/Man Basin Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	OF Region Rain Opt:	Global
		Rainfall Name:	~FLMOD
Edge Length Option:	Automatic	Rainfall Amount:	7.54 in
		Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Simulation: 25yr-96hr

Scenario:	Pre-development
Run Date/Time:	8/14/2025 12:08:43 PM
Program Version:	StormWise 4.08.03

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	100.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: CURVE NUMBER
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: IMPERVIOUS
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.0000 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic
Dflt Damping (2D): 0.0050 ft
Min Node Srf Area (2D): 100 ft2
Energy Switch (2D): Energy

IA Recovery Time: 24.0000 hr
ET for Manual Basins: False
Ia/S: 0.20 dec
Smp/Man Basin Rain Opt: Global
OF Region Rain Opt: Global
Rainfall Name: ~FLMOD
Rainfall Amount: 10.60 in
Storm Duration: 96.0000 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 100 ft2
Energy Switch (1D): Energy

Comment:

Simulation: Mean

Scenario: Pre-development
Run Date/Time: 8/14/2025 12:20:54 PM
Program Version: StormWise 4.08.03

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: CURVE NUMBER
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: IMPERVIOUS
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:

Conductivity Set:	
Leakage Set:	

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec	Ia/S:	0.20 dec
dZ Tolerance:	0.0010 ft		
Max dZ:	1.0000 ft	Smp/Man Basin Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	OF Region Rain Opt:	Global
		Rainfall Name:	~FLMOD
Edge Length Option:	Automatic	Rainfall Amount:	4.18 in
		Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Node Max Conditions : Multi Item | (sim, name) [Pre-development]

Sim Name	Node Name	Warning Stage [ft]	Alert Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
100yr-24hr	N-7	86.80	0.00	85.10	0.0000	4.70	0.00	0
100yr-24hr	Pre 10	89.00	0.00	89.62	0.0010	35.98	5.32	26508
100yr-24hr	Pre 12	84.00	0.00	84.35	0.0010	60.17	27.70	37026
100yr-24hr	WET-08-PST	0.00	0.00	82.41	0.0009	172.33	0.00	260580
100yr-24hr	Wetland 1A	84.60	0.00	83.60	0.0000	87.60	0.00	0
100yr-24hr	Wetland 1B/1C	84.60	0.00	83.60	0.0000	298.44	0.00	0
100yr-24hr	Wetland 2	84.60	0.00	83.60	0.0000	246.55	0.00	0
100yr-24hr	Wetland 4	80.63	0.00	79.63	0.0000	95.77	0.00	0
100yr-24hr	Wetland 5	87.00	0.00	82.38	0.0006	61.92	0.00	116905
100yr-24hr	Wetland 6	87.00	0.00	83.72	0.0010	5.97	0.00	8030
100yr-72hr	N-7	86.80	0.00	85.10	0.0000	2.76	0.00	0
100yr-72hr	Pre 10	89.00	0.00	90.15	0.0010	27.52	16.11	27721
100yr-72hr	Pre 12	84.00	0.00	84.51	0.0010	44.30	42.79	37026
100yr-72hr	WET-08-PST	0.00	0.00	84.08	0.0010	105.72	0.00	278784
100yr-72hr	Wetland 1A	84.60	0.00	83.60	0.0000	92.42	0.00	0
100yr-72hr	Wetland 1B/1C	84.60	0.00	83.60	0.0000	176.79	0.00	0
100yr-72hr	Wetland 2	84.60	0.00	83.60	0.0000	127.89	0.00	0
100yr-72hr	Wetland 4	80.63	0.00	79.63	0.0000	53.12	0.00	0
100yr-72hr	Wetland 5	87.00	0.00	83.60	0.0007	35.20	0.00	133432
100yr-72hr	Wetland 6	87.00	0.00	85.52	0.0010	3.52	0.00	9164
10yr-24hr	N-7	86.80	0.00	85.10	0.0000	1.52	0.00	0
10yr-24hr	Pre 10	89.00	0.00	87.66	0.0010	6.59	0.00	11167
10yr-24hr	Pre 12	84.00	0.00	83.72	0.0010	13.22	0.00	34867
10yr-24hr	WET-08-PST	0.00	0.00	80.44	0.0008	65.03	0.00	214917
10yr-24hr	Wetland 1A	84.60	0.00	83.60	0.0000	34.67	0.00	0
10yr-24hr	Wetland 1B/1C	84.60	0.00	83.60	0.0000	120.75	0.00	0
10yr-24hr	Wetland 2	84.60	0.00	83.60	0.0000	119.25	0.00	0
10yr-24hr	Wetland 4	80.63	0.00	79.63	0.0000	36.46	0.00	0
10yr-24hr	Wetland 5	87.00	0.00	80.98	0.0005	23.84	0.00	110575
10yr-24hr	Wetland 6	87.00	0.00	81.46	0.0005	1.90	0.00	6064
25yr-24hr	N-7	86.80	0.00	85.10	0.0000	2.53	0.00	0
25yr-24hr	Pre 10	89.00	0.00	89.20	0.0010	15.15	0.77	25583
25yr-24hr	Pre 12	84.00	0.00	83.92	0.0010	27.09	2.43	36396
25yr-24hr	WET-08-PST	0.00	0.00	81.12	0.0006	99.98	0.00	245465
25yr-24hr	Wetland 1A	84.60	0.00	83.60	0.0000	51.50	0.00	0
25yr-24hr	Wetland 1B/1C	84.60	0.00	83.60	0.0000	178.03	0.00	0
25yr-24hr	Wetland 2	84.60	0.00	83.60	0.0000	161.58	0.00	0
25yr-24hr	Wetland 4	80.63	0.00	79.63	0.0000	55.83	0.00	0

Sim Name	Node Name	Warning Stage [ft]	Alert Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
25yr-24hr	Wetland 5	87.00	0.00	81.44	0.0004	36.15	0.00	112357
25yr-24hr	Wetland 6	87.00	0.00	82.24	0.0006	3.19	0.00	6742
25yr-96hr	N-7	86.80	0.00	85.10	0.0000	1.35	0.00	0
25yr-96hr	Pre 10	89.00	0.00	89.41	0.0010	12.21	2.54	26030
25yr-96hr	Pre 12	84.00	0.00	84.09	0.0010	20.10	9.61	37026
25yr-96hr	WET-08-PST	0.00	0.00	82.50	0.0009	53.80	0.00	261384
25yr-96hr	Wetland 1A	84.60	0.00	83.60	0.0000	25.60	0.00	0
25yr-96hr	Wetland 1B/1C	84.60	0.00	83.60	0.0000	85.66	0.00	0
25yr-96hr	Wetland 2	84.60	0.00	83.60	0.0000	68.27	0.00	0
25yr-96hr	Wetland 4	80.63	0.00	79.63	0.0000	26.89	0.00	0
25yr-96hr	Wetland 5	87.00	0.00	82.45	0.0006	17.78	0.00	117321
25yr-96hr	Wetland 6	87.00	0.00	83.82	0.0010	1.71	0.00	8119
Mean	N-7	86.80	0.00	85.10	0.0000	0.49	0.00	0
Mean	Pre 10	89.00	0.00	84.00	0.0010	0.76	0.00	7407
Mean	Pre 12	84.00	0.00	81.74	0.0010	2.85	0.00	22623
Mean	WET-08-PST	0.00	0.00	79.60	0.0010	28.00	0.00	179508
Mean	Wetland 1A	84.60	0.00	83.60	0.0000	18.57	0.00	0
Mean	Wetland 1B/1C	84.60	0.00	83.60	0.0000	63.49	0.00	0
Mean	Wetland 2	84.60	0.00	83.60	0.0000	71.89	0.00	0
Mean	Wetland 4	80.63	0.00	79.63	0.0000	15.85	0.00	0
Mean	Wetland 5	87.00	0.00	80.49	0.0009	10.74	0.00	109083
Mean	Wetland 6	87.00	0.00	80.60	0.0003	0.60	0.00	5487

Manual Basin Mass Balance Summary [Pre-development]

Basin Name	Sim Name	Total Rainfall	Total Irrigation	Total Runoff	Total ET	Total Initial Abst	Total Recharge	Change Soil Storage
OFFSITE-6 [in]	25yr-96hr	10.60	0.00	6.71	0.00	0.00	0.00	3.89
OFFSITE-6 [ft3]	25yr-96hr	107001	0	67772	0	0	0	39229
OFFSITE-6 [ac-ft]	25yr-96hr	2.46	0.00	1.56	0.00	0.00	0.00	0.90

Manual Basin Mass Balance Summary [Pre-development]

Basin Name	Sim Name	Total Rainfall	Total Irrigation	Total Runoff	Total ET	Total Initial Abst	Total Recharge	Change Soil Storage
OFFSITE-8 [in]	25yr-96hr	10.60	0.00	4.61	0.00	0.00	0.00	5.99
OFFSITE-8 [ft3]	25yr-96hr	40898	0	17774	0	0	0	23124
OFFSITE-8 [ac-ft]	25yr-96hr	0.94	0.00	0.41	0.00	0.00	0.00	0.53

Manual Basin Mass Balance Summary [Pre-development]

Basin Name	Sim Name	Total Rainfall	Total Irrigation	Total Runoff	Total ET	Total Initial Abst	Total Recharge	Change Soil Storage
PRE-1 [in]	25yr-96hr	10.60	0.00	4.70	0.00	0.00	0.00	5.90
PRE-1 [ft3]	25yr-96hr	56115	0	24868	0	0	0	31246
PRE-1 [ac-ft]	25yr-96hr	1.29	0.00	0.57	0.00	0.00	0.00	0.72

Manual Basin Mass Balance Summary [Pre-development]

Basin Name	Sim Name	Total Rainfall	Total Irrigation	Total Runoff	Total ET	Total Initial Abst	Total Recharge	Change Soil Storage
PRE-10 [in]	25yr-96hr	10.60	0.00	3.28	0.00	0.00	0.00	7.32
PRE-10 [ft3]	25yr-96hr	584859	0	180756	0	0	0	404103
PRE-10 [ac-ft]	25yr-96hr	13.43	0.00	4.15	0.00	0.00	0.00	9.28

Manual Basin Mass Balance Summary [Pre-development]

Basin Name	Sim Name	Total Rainfall	Total Irrigation	Total Runoff	Total ET	Total Initial Abst	Total Recharge	Change Soil Storage
PRE-11A [in]	25yr-96hr	10.60	0.00	4.18	0.00	0.00	0.00	6.42
PRE-11A [ft3]	25yr-96hr	273922	0	107906	0	0	0	166015
PRE-11A [ac-ft]	25yr-96hr	6.29	0.00	2.48	0.00	0.00	0.00	3.81

Manual Basin Mass Balance Summary [Pre-development]

Basin Name	Sim Name	Total Rainfall	Total Irrigation	Total Runoff	Total ET	Total Initial Abst	Total Recharge	Change Soil Storage
PRE-11B [in]	25yr-96hr	10.60	0.00	3.05	0.00	0.00	0.00	7.55
PRE-11B [ft3]	25yr-96hr	238252	0	68521	0	0	0	169731
PRE-11B [ac-ft]	25yr-96hr	5.47	0.00	1.57	0.00	0.00	0.00	3.90

Manual Basin Mass Balance Summary [Pre-development]

Basin Name	Sim Name	Total Rainfall	Total Irrigation	Total Runoff	Total ET	Total Initial Abst	Total Recharge	Change Soil Storage
PRE-12 [in]	25yr-96hr	10.60	0.00	3.53	0.00	0.00	0.00	7.07
PRE-12 [ft3]	25yr-96hr	900042	0	299599	0	0	0	600443
PRE-12 [ac-ft]	25yr-96hr	20.66	0.00	6.88	0.00	0.00	0.00	13.78

Manual Basin Mass Balance Summary [Pre-development]

Basin Name	Sim Name	Total Rainfall	Total Irrigation	Total Runoff	Total ET	Total Initial Abst	Total Recharge	Change Soil Storage
PRE-2 [in]	25yr-96hr	10.60	0.00	5.54	0.00	0.00	0.00	5.06
PRE-2 [ft3]	25yr-96hr	260250	0	136078	0	0	0	124172
PRE-2 [ac-ft]	25yr-96hr	5.97	0.00	3.12	0.00	0.00	0.00	2.85

Manual Basin Mass Balance Summary [Pre-development]

Basin Name	Sim Name	Total Rainfall	Total Irrigation	Total Runoff	Total ET	Total Initial Abst	Total Recharge	Change Soil Storage
PRE-3 [in]	25yr-96hr	10.60	0.00	5.25	0.00	0.00	0.00	5.35

Basin Name	Sim Name	Total Rainfall	Total Irrigation	Total Runoff	Total ET	Total Initial Abst	Total Recharge	Change Soil Storage
PRE-3 [ft3]	25yr-96hr	436333	0	216026	0	0	0	220308
PRE-3 [ac-ft]	25yr-96hr	10.02	0.00	4.96	0.00	0.00	0.00	5.06

Manual Basin Mass Balance Summary [Pre-development]

Basin Name	Sim Name	Total Rainfall	Total Irrigation	Total Runoff	Total ET	Total Initial Abst	Total Recharge	Change Soil Storage
PRE-4 [in]	25yr-96hr	10.60	0.00	4.69	0.00	0.00	0.00	5.91
PRE-4 [ft3]	25yr-96hr	384228	0	169960	0	0	0	214268
PRE-4 [ac-ft]	25yr-96hr	8.82	0.00	3.90	0.00	0.00	0.00	4.92

Manual Basin Mass Balance Summary [Pre-development]

Basin Name	Sim Name	Total Rainfall	Total Irrigation	Total Runoff	Total ET	Total Initial Abst	Total Recharge	Change Soil Storage
PRE-5 [in]	25yr-96hr	10.60	0.00	5.22	0.00	0.00	0.00	5.38
PRE-5 [ft3]	25yr-96hr	665169	0	327640	0	0	0	337530
PRE-5 [ac-ft]	25yr-96hr	15.27	0.00	7.52	0.00	0.00	0.00	7.75

Manual Basin Mass Balance Summary [Pre-development]

Basin Name	Sim Name	Total Rainfall	Total Irrigation	Total Runoff	Total ET	Total Initial Abst	Total Recharge	Change Soil Storage
PRE-6 [in]	25yr-96hr	10.60	0.00	5.51	0.00	0.00	0.00	5.09
PRE-6 [ft3]	25yr-96hr	627473	0	326092	0	0	0	301381
PRE-6 [ac-ft]	25yr-96hr	14.40	0.00	7.49	0.00	0.00	0.00	6.92

Manual Basin Mass Balance Summary [Pre-development]

Basin Name	Sim Name	Total Rainfall	Total Irrigation	Total Runoff	Total ET	Total Initial Abst	Total Recharge	Change Soil Storage
PRE-7 [in]	25yr-96hr	10.60	0.00	4.75	0.00	0.00	0.00	5.85
PRE-7 [ft3]	25yr-96hr	43710	0	19577	0	0	0	24133
PRE-7 [ac-ft]	25yr-96hr	1.00	0.00	0.45	0.00	0.00	0.00	0.55

Manual Basin Mass Balance Summary [Pre-development]

Basin Name	Sim Name	Total Rainfall	Total Irrigation	Total Runoff	Total ET	Total Initial Abst	Total Recharge	Change Soil Storage
PRE-8 [in]	25yr-96hr	10.60	0.00	4.83	0.00	0.00	0.00	5.77
PRE-8 [ft3]	25yr-96hr	669681	0	304904	0	0	0	364777
PRE-8 [ac-ft]	25yr-96hr	15.37	0.00	7.00	0.00	0.00	0.00	8.37

Manual Basin Mass Balance Summary [Pre-development]

Basin Name	Sim Name	Total Rainfall	Total Irrigation	Total Runoff	Total ET	Total Initial Abst	Total Recharge	Change Soil Storage
PRE-9A [in]	25yr-96hr	10.60	0.00	3.14	0.00	0.00	0.00	7.46
PRE-9A [ft3]	25yr-96hr	592437	0	175552	0	0	0	416884
PRE-9A [ac-ft]	25yr-96hr	13.60	0.00	4.03	0.00	0.00	0.00	9.57

Manual Basin Mass Balance Summary [Pre-development]

Basin Name	Sim Name	Total Rainfall	Total Irrigation	Total Runoff	Total ET	Total Initial Abst	Total Recharge	Change Soil Storage
PRE-9B [in]	25yr-96hr	10.60	0.00	4.58	0.00	0.00	0.00	6.02
PRE-9B [ft3]	25yr-96hr	986088	0	425742	0	0	0	560346
PRE-9B [ac-ft]	25yr-96hr	22.64	0.00	9.77	0.00	0.00	0.00	12.86

Manual Basin Mass Balance Summary [Pre-development]

Basin Name	Sim Name	Total Rainfall	Total Irrigation	Total Runoff	Total ET	Total Initial Abst	Total Recharge	Change Soil Storage
WETLAND 1A [in]	25yr-96hr	10.60	0.00	8.38	0.00	0.00	0.00	2.22
WETLAND 1A [ft3]	25yr-96hr	294847	0	233007	0	0	0	61840
WETLAND 1A [ac-ft]	25yr-96hr	6.77	0.00	5.35	0.00	0.00	0.00	1.42

Manual Basin Mass Balance Summary [Pre-development]

Basin Name	Sim Name	Total Rainfall	Total Irrigation	Total Runoff	Total ET	Total Initial Abst	Total Recharge	Change Soil Storage
WETLAND	25yr-96hr	10.60	0.00	8.24	0.00	0.00	0.00	2.36

Basin Name	Sim Name	Total Rainfall	Total Irrigation	Total Runoff	Total ET	Total Initial Abst	Total Recharge	Change Soil Storage
1B/1C [in]								
WETLAND 1B/1C [ft3]	25yr-96hr	994499	0	773299	0	0	0	221201
WETLAND 1B/1C [ac-ft]	25yr-96hr	22.83	0.00	17.75	0.00	0.00	0.00	5.08

Manual Basin Mass Balance Summary [Pre-development]

Basin Name	Sim Name	Total Rainfall	Total Irrigation	Total Runoff	Total ET	Total Initial Abst	Total Recharge	Change Soil Storage
WETLAND 2 [in]	25yr-96hr	10.60	0.00	9.52	0.00	0.00	0.00	1.08
WETLAND 2 [ft3]	25yr-96hr	959630	0	862002	0	0	0	97628
WETLAND 2 [ac-ft]	25yr-96hr	22.03	0.00	19.79	0.00	0.00	0.00	2.24

Manual Basin Mass Balance Summary [Pre-development]

Basin Name	Sim Name	Total Rainfall	Total Irrigation	Total Runoff	Total ET	Total Initial Abst	Total Recharge	Change Soil Storage
WETLAND 3 [in]	25yr-96hr	10.60	0.00	8.17	0.00	0.00	0.00	2.43
WETLAND 3 [ft3]	25yr-96hr	131636	0	101439	0	0	0	30198
WETLAND 3 [ac-ft]	25yr-96hr	3.02	0.00	2.33	0.00	0.00	0.00	0.69

Manual Basin Mass Balance Summary [Pre-development]

Basin Name	Sim Name	Total Rainfall	Total Irrigation	Total Runoff	Total ET	Total Initial Abst	Total Recharge	Change Soil Storage
WETLAND 4 [in]	25yr-96hr	10.60	0.00	8.80	0.00	0.00	0.00	1.80
WETLAND 4 [ft3]	25yr-96hr	65627	0	54481	0	0	0	11147
WETLAND 4 [ac-ft]	25yr-96hr	1.51	0.00	1.25	0.00	0.00	0.00	0.26

Manual Basin Mass Balance Summary [Pre-development]

Basin Name	Sim Name	Total Rainfall	Total Irrigation	Total Runoff	Total ET	Total Initial Abst	Total Recharge	Change Soil Storage
WETLAND 5 [in]	25yr-96hr	10.60	0.00	8.11	0.00	0.00	0.00	2.49
WETLAND 5 [ft3]	25yr-96hr	136131	0	104197	0	0	0	31934
WETLAND 5 [ac-ft]	25yr-96hr	3.13	0.00	2.39	0.00	0.00	0.00	0.73

4.0 POST-DEVELOPMENT ANALYSIS AND CALCULATIONS

4.1 POST-DEVELOPMENT BASIN MAP

4.2 POST-DEVELOPMENT BASIN CALCS

4.3 POST-DEVELOPMENT ICPR

4.4 BMP TRAINS

NORTH AMERICAN DATUM OF 1983
FLORIDA STATE PLANE, EAST ZONE

0 125 250 500
GRAPHIC SCALE
1" = 250'

PSPXX-XXXX

811
Know what's **below.**
Call before you dig.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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SEC 27,34 TWP 20 S RGE 25 E
--
HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PRELIMINARY SUBDIVISION PLAT

DATE 02/27/2025

REVISIONS

MARILYN ASHLEY CROMER
LICENSE
No. PE95331
STATE OF FLORIDA
PROFESSIONAL ENGINEER

CAD FILE:

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO.

Mission Rise
Howey-In-The-Hills, FL
Stormwater Treatment Volume Calculations
Post-Development

Basin:	**Post Basin 1**	
Pond:	**Pond 1**	
Basin Area:	12.87	acres
Pond Area @ Bot:	0.42	acres
Pond Bottom Elev.:	83.00	ft
Time of Concentration:	10.00	min

Curve Number: (Using the SCS TR-55, Second Ed., June 1986, Table 2-2a)

Cover Description		Curve Numbers for Soil Group			
Cover Type	Condition	A	B	C	D
Open Space	Good (grass cover > 75%)	39	61	74	80
Impervious Area	Pavement, Buildings, etc.	98	98	98	98
Percentage of each soil type within the Basin		100%	0%	0%	0%

Composite Pervious Curve Number (CN) = 39
Impervious Curve Number (CN) = 98

Land Use:	Total Area (ac)	% Imperv.	Imperv. Area (ac)	Imperv. CN	Pervious Area (ac)	Pervious CN	% Roof Area	Roof Area (ac)
Building	3.04	100%	3.04		0.00		N/A	N/A
Pavement	1.21	100%	1.21		0.00		N/A	N/A
Sidewalk/Trail	0.49	100%	0.49		0.00		N/A	N/A
Water Surface	0.42	100%	0.42		0.00		N/A	N/A
Future Amenity	2.24	43%	0.96		1.28		N/A	N/A
Open Space	5.47	0%	0.00		5.47		N/A	N/A
Totals	12.87	47.6%	6.12	98	6.75	39		N/A

Weighted Curve Number (CN) = **67.0**

Treatment Volume Required:

DCIA % = (DCIA Area) / (Total Area) =	9.4%		
Non DCIA CN =	64.0		
1" of runoff = 1 x Total Area x 1/12 =	1.073	acre-feet	Greater of WQ TV
2.5" over impervious = Total impervious x 2.5/12 =	1.275	acre-feet	
WQ Volume	1.275	acre-feet	<<=====

Permanent Pool Volume:

DA:	12.87	Ac.	, where DA = drainage area
C:	0.56		, where C = runoff coefficient
R:	50.00	inches	, where R = wet season rainfall depth
WS:	153.00	days	, where WS = length of wet season
RT:	14.00	days	, where RT = residence time

PPV Calculated =	2.73	**Ac-ft**	$PPV = \frac{DA \times C \times R \times RT}{WS \times \frac{12in.}{ft}}$
Add 50% PPV for OFW =	0	**Ac-ft**	
Add 50% PPV for Littoral Zone Alternative	0.00	**Ac-ft**	
PPV Required =	2.73	**Ac-ft**	
PPV Provided =	**2.79**	**Ac-ft**	*Adequate Storage Provided*

Pond: Wet Pond **Stage Storage:**	Stage (ft)	Area (ac)	Treat. Vol. (ac-ft)	
Pond Bottom =	71.00	0.115	0.000	
	81.00	0.313	2.059	
NWL	83.00	0.416	2.786	
1/2 WQ Elevation =	84.44		0.638	
	84.00	0.471	0.443	
	85.00	0.529	0.943	
WQ Elevation =	85.01		1.275	<<===== Water Quality Treatment Volume Required
	86.00	0.588	1.501	
	87.00	0.650	2.120	
	88.00	0.715	2.803	
Top of Bank =	89.00	0.886	3.602	

Treatment Volume Provided:

Calculated Elevation =	85.01	(ft)
Design Elevation =	85.75	(ft)

ATWELL

Mission Rise
Howey-In-The-Hills, FL
Stormwater Treatment Volume Calculations
Post-Development

Basin:	**Post Basin 2**	
Pond:	**Pond 2**	
Basin Area:	15.99	acres
Pond Area @ Bot:	0.31	acres
Pond Bottom Elev.:	84.00	ft
Time of Concentration:	10.00	min

Curve Number: (Using the SCS TR-55, Second Ed., June 1986, Table 2-2a)

Cover Description		Curve Numbers for Soil Group			
Cover Type	Condition	A	B	C	D
Open Space	Good (grass cover > 75%)	39	61	74	80
Impervious Area	Pavement, Buildings, etc.	98	98	98	98
Percentage of each soil type within the Basin		100%	0%	0%	0%

Composite Pervious Curve Number (CN) = 39
Impervious Curve Number (CN) = 98

Land Use:	Total Area (ac)	% Imperv.	Imperv. Area (ac)	Imperv. CN	Pervious Area (ac)	Pervious CN	% Roof Area	Roof Area (ac)
Building	5.25	100%	5.25		0.00		N/A	N/A
Pavement	1.70	100%	1.70		0.00		N/A	N/A
Sidewalk/Trail	0.61	100%	0.61		0.00		N/A	N/A
Water Surface	1.06	100%	1.06		0.00		N/A	N/A
Open Space	7.37	0%	0.00		7.37		N/A	N/A
Totals	15.99	53.9%	8.62	98	7.37	39		N/A

Weighted Curve Number (CN) = **71.0**

Treatment Volume Required:

DCIA % = (DCIA Area) / (Total Area) =	10.6%		
Non DCIA CN =	68.0		
1" of runoff = 1 x Total Area x 1/12 =	0.666	acre-feet	Greater of
2.5" over impervious = Total impervious x 2.5/12 =	0.898	acre-feet	
WQ Volume	0.898	acre-feet	<<==== WQ TV

Permanent Pool Volume:

DA:	15.99	Ac.	, where DA = drainage area
C:	0.60		, where C = runoff coefficient
R:	50.00	inches	, where R = wet season rainfall depth
WS:	153.00	days	, where WS = length of wet season
RT:	14.00	days	, where RT = residence time

$$PPV = \frac{DA \times C \times R \times RT}{WS \times \frac{12in.}{ft}}.$$

PPV Calculated =	3.68	**Ac-ft**
Add 50% PPV for OFW =	0	**Ac-ft**
Add 50% PPV for Littoral Zone Alternative	0.00	**Ac-ft**
PPV Required =	3.68	**Ac-ft**
PPV Provided =	*3.92*	**Ac-ft** *Adequate Storage Provided*

Pond: Wet Pond **Stage Storage:**	Stage (ft)	Area (ac)	Treat. Vol. (ac-ft)	
Pond Bottom =	76.00	0.172	0.000	
	82.00	0.626	2.251	
NWL	84.00	1.061	3.919	
1/2 WQ Elevation =	84.29		0.333	
WQ Elevation =	84.58		0.666	<<==== Water Quality Treatment Volume Required
	85.00	1.239	1.149	
	86.00	1.419	2.477	
	87.00	1.602	3.987	
	88.00	1.787	5.681	
Top of Bank =	89.00	2.259	7.699	

Treatment Volume Provided:

Calculated Elevation =	84.58	(ft)
Design Elevation =	86.45	(ft)

ATWELL

Mission Rise
Howey-In-The-Hills, FL
Stormwater Treatment Volume Calculations
Post-Development

Basin:	**Post Basin 3**	
Pond:	**Pond 3**	
Basin Area:	6.74	acres
Pond Area @ Bot:	0.39	acres
Pond Bottom Elev.:	91.00	ft
Time of Concentration:	10.00	min

Curve Number: (Using the SCS TR-55, Second Ed., June 1986, Table 2-2a)

Cover Description		Curve Numbers for Soil Group			
Cover Type	Condition	A	B	C	D
Open Space	Good (grass cover > 75%)	39	61	74	80
Impervious Area	Pavement, Buildings, etc.	98	98	98	98
Percentage of each soil type within the Basin		100%	0%	0%	0%
Composite Pervious Curve Number (CN) =				39	
Impervious Curve Number (CN) =				98	

Land Use:	Total Area (ac)	% Imperv.	Imperv. Area (ac)	Imperv. CN	Pervious Area (ac)	Pervious CN	% Roof Area	Roof Area (ac)
Building	1.85	100%	1.85		0.00		N/A	N/A
Pavement	1.11	100%	1.11		0.00		N/A	N/A
Sidewalk/Trail	0.40	100%	0.40		0.00		N/A	N/A
Pond Bottom	0.39	100%	0.39		0.00		N/A	N/A
Open Space	2.99	0%	0.00		2.99		N/A	N/A
Totals	6.74	55.6%	3.75	98	2.99	39		N/A

Weighted Curve Number (CN) = **72.0**

Treatment Volume Required:

DCIA % = (DCIA Area) / (Total Area) =	16.5%		
Non DCIA CN =	67.0		
0.5" of runoff = 1/2 x Total Area x 1/12 =	0.281	acre-feet	Greater of
1.25" over impervious = Total impervious x 1.25/12 =	0.390	acre-feet	
WQ Volume	0.390	acre-feet	<<==== WQ TV

Pond: Dry Pond **Stage Storage:**	Stage (ft)	Area (ac)	Treat. Vol. (ac-ft)	
Pond Bottom =	91.00	0.387	0.000	
	92.00	0.447	0.417	
WQ Elevation =	91.94		0.390	<<==== Water Quality Treatment Volume Required
	93.00	0.509	0.895	
	94.00	0.574	1.436	
	95.00	0.641	2.043	
Top of Bank =	96.00	0.819	2.772	

Treatment Volume Provided:

Calculated Elevation =	91.94	(ft)
Design Elevation =	92.20	(ft)

ATWELL

Mission Rise
Howey-In-The-Hills, FL
Stormwater Treatment Volume Calculations
Post-Development

Basin:	**Post Basin 4**	
Pond:	**Pond 4**	
Basin Area:	23.62	acres
Pond Area @ Bot:	1.29	acres
Pond Bottom Elev.:	87.00	ft
Time of Concentration:	10.00	min

Curve Number: (Using the SCS TR-55, Second Ed., June 1986, Table 2-2a)

Cover Description		Curve Numbers for Soil Group			
Cover Type	Condition	A	B	C	D
Open Space	Good (grass cover > 75%)	39	61	74	80
Impervious Area	Pavement, Buildings, etc.	98	98	98	98
Percentage of each soil type within the Basin		100%	0%	0%	0%
Composite Pervious Curve Number (CN) =				39	
Impervious Curve Number (CN) =				98	

Land Use:	Total Area (ac)	% Imperv.	Imperv. Area (ac)	Imperv. CN	Pervious Area (ac)	Pervious CN	% Roof Area	Roof Area (ac)
Building	7.06	100%	7.06		0.00		N/A	N/A
Pavement	3.44	100%	3.44		0.00		N/A	N/A
Sidewalk/Trail	1.41	100%	1.41		0.00		N/A	N/A
Pond Bottom	1.29	100%	1.29		0.00		N/A	N/A
Future Amenity	0.00	60%	0.00		0.00			
Open Space	10.42	0%	0.00		10.42		N/A	N/A
Totals	23.62	55.9%	13.20	98	10.42	39		N/A
Weighted Curve Number (CN) =	**72.0**							

Treatment Volume Required:

DCIA % = (DCIA Area) / (Total Area) =	14.5%		
Non DCIA CN =	68.0		
0.5" of runoff = 1/2 x Total Area x 1/12 =	0.984	acre-feet	Greater of
1.25" over impervious = Total impervious x 1.25/12 =	1.375	acre-feet	
WQ Volume	1.375	acre-feet	<<===== WQ TV

Pond: Dry Pond **Stage Storage:**	Stage (ft)	Area (ac)	Treat. Vol. (ac-ft)	
Pond Bottom =	85.00	1.292	0.000	
	86.00	1.391	1.341	
WQ Elevation =	86.02		1.375	<<===== Water Quality Treatment Volume Required
	87.00	1.491	2.782	
	88.00	1.594	4.324	
	89.00	1.700	5.971	
Top of Bank =	90.00	1.973	7.806	

Treatment Volume Provided:

Calculated Elevation =	86.02	(ft)
Design Elevation =	86.25	(ft)

ATWELL

Mission Rise
Howey-In-The-Hills, FL
Stormwater Treatment Volume Calculations
Post-Development

Basin:	**Post Basin 5**	
Pond:	**Pond 5**	
Basin Area:	9.43	acres
Pond Area @ Bot:	0.39	acres
Pond Bottom Elev.:	85.00	ft
Time of Concentration:	10.00	min

Curve Number: (Using the SCS TR-55, Second Ed., June 1986, Table 2-2a)

Cover Description		Curve Numbers for Soil Group			
Cover Type	Condition	A	B	C	D
Open Space	Good (grass cover > 75%)	39	61	74	80
Impervious Area	Pavement, Buildings, etc.	98	98	98	98
Percentage of each soil type within the Basin		100%	0%	0%	0%

Composite Pervious Curve Number (CN) = 39
Impervious Curve Number (CN) = 98

Land Use:	Total Area (ac)	% Imperv.	Imperv. Area (ac)	Imperv. CN	Pervious Area (ac)	Pervious CN	% Roof Area	Roof Area (ac)
Building	0.00	100%	0.00		0.00		N/A	N/A
Pavement	1.20	100%	1.20		0.00		N/A	N/A
Sidewalk/Trail	0.54	100%	0.54		0.00		N/A	N/A
Water Surface	0.95	100%	0.95		0.00		N/A	N/A
Future Amenity	2.62	70%	1.83		0.79		N/A	N/A
Open Space	4.12	0%	0.00		4.12		N/A	N/A
Totals	9.43	48.0%	4.53	98	4.90	39		N/A

Weighted Curve Number (CN) = **67.0**

Treatment Volume Required:

DCIA % = (DCIA Area) / (Total Area) =	12.7%		
Non DCIA CN =	63.0		
1" of runoff = 1 x Total Area x 1/12 =	0.786	acre-feet	Greater of
2.5" over impervious = Total impervious x 2.5/12 =	0.943	acre-feet	
WQ Volume	0.943	acre-feet	<<===== WQ TV

Permanent Pool Volume:

DA:	9.43	Ac.	, where DA = drainage area
C:	0.56		, where C = runoff coefficient
R:	50.00	inches	, where R = wet season rainfall depth
WS:	153.00	days	, where WS = length of wet season
RT:	14.00	days	, where RT = residence time

$$PPV = \frac{DA \times C \times R \times RT}{WS \times \frac{12in.}{ft}}.$$

PPV Calculated =	2.01	**Ac-ft**
Add 50% PPV for OFW =	0	**Ac-ft**
Add 50% PPV for Littoral Zone Alternative =	0.00	**Ac-ft**
PPV Required =	2.01	**Ac-ft**
PPV Provided =	**3.92**	**Ac-ft**

Adequate Storage Provided

Pond: Wet Pond **Stage Storage:**	Stage (ft)	Area (ac)	Treat. Vol. (ac-ft)	
Pond Bottom =	78.00	0.367	0.000	
	83.00	0.598	2.389	
NWL	85.00	0.949	3.923	
1/2 WQ Elevation =	85.47		0.471	
	86.00	1.071	1.010	
WQ Elevation =	85.94		0.943	<<===== Water Quality Treatment Volume Required
	87.00	1.196	2.143	
	88.00	1.322	3.401	
	89.00	1.451	4.788	
Top of Bank =	90.00	1.784	6.402	

Treatment Volume Provided:

Calculated Elevation =	85.94	(ft)
Design Elevation =	87.00	(ft)

ATWELL

Mission Rise
Howey-In-The-Hills, FL
Stormwater Treatment Volume Calculations
Post-Development

Basin:	**Post Basin 6**	
Pond:	**Pond 6**	
Basin Area:	7.25	acres
Pond Area @ Bot:	0.15	acres
Pond Bottom Elev.:	85.00	ft
Time of Concentration:	10.00	min

Curve Number: (Using the SCS TR-55, Second Ed., June 1986, Table 2-2a)

Cover Description		Curve Numbers for Soil Group			
Cover Type	Condition	A	B	C	D
Open Space	Good (grass cover > 75%)	39	61	74	80
Impervious Area	Pavement, Buildings, etc.	98	98	98	98
Percentage of each soil type within the Basin		100%	0%	0%	0%
Composite Pervious Curve Number (CN) =		39			
Impervious Curve Number (CN) =		98			

Land Use:	Total Area (ac)	% Imperv.	Imperv. Area (ac)	Imperv. CN	Pervious Area (ac)	Pervious CN	% Roof Area	Roof Area (ac)
Future Building	1.74	100%	1.74		0.00		N/A	N/A
Future Pavement	0.91	100%	0.91		0.00		N/A	N/A
Future Sidewalk/Trail	0.38	100%	0.38		0.00		N/A	N/A
Future Water Surface	0.39	100%	0.39		0.00		N/A	N/A
Future Open Space	3.83	0%	0.00		3.83		N/A	N/A
Totals	7.25	47.2%	3.42	98	3.83	39		N/A

Weighted Curve Number (CN) = **67.0**

Treatment Volume Required:

DCIA % = (DCIA Area) / (Total Area) =	12.6%		
Non DCIA CN =	62.0		
1" of runoff = 1 x Total Area x 1/12 =	0.604	acre-feet	Greater of
2.5" over impervious = Total impervious x 2.5/12 =	0.713	acre-feet	
WQ Volume	0.713	acre-feet	<<==== WQ TV

Permanent Pool Volume:

DA:	7.25	Ac.	, where DA = drainage area
C:	0.55		, where C = runoff coefficient
R:	50.00	inches	, where R = wet season rainfall depth
WS:	153.00	days	, where WS = length of wet season
RT:	14.00	days	, where RT = residence time

PPV Calculated =	1.53	**Ac-ft**
Add 50% PPV for OFW =	0	**Ac-ft**
Add 50% PPV for Littoral	0.00	**Ac-ft**

$$PPV = \frac{DA \times C \times R \times RT}{WS \times \frac{12in.}{ft}}.$$

PPV Required = 1.53 **Ac-ft**

Adequate Storage Provided

PPV Provided = ***1.63*** **Ac-ft**

Pond: Wet Pond **Stage Storage:**	Stage (ft)	Area (ac)	Treat. Vol. (ac-ft)	
Pond Bottom =	77.00	0.108	0.000	
	83.00	0.236	1.006	
NWL	85.00	0.393	1.629	
1/2 WQ Elevation =	85.83		0.357	
	86.00	0.463	0.428	
WQ Elevation =	86.50		0.713	<<==== Water Quality Treatment Volume Required
	87.00	0.675	0.993	
	88.00	0.769	1.715	
	89.00	0.866	2.532	
Top of Bank =	90.00	1.122	3.523	

Treatment Volume Provided:

Calculated Elevation =	86.50	(ft)
Design Elevation =	87.35	(ft)

ATWELL

Mission Rise
Howey-In-The-Hills, FL
Stormwater Treatment Volume Calculations
Post-Development

Basin:	**Post Basin 7**	
Pond:	**Pond 7**	
Basin Area:	7.73	acres
Pond Area @ Bot:	0.26	acres
Pond Bottom Elev.:	85.00	ft
Time of Concentration:	10.00	min

Curve Number: (Using the SCS TR-55, Second Ed., June 1986, Table 2-2a)

Cover Description		Curve Numbers for Soil Group			
Cover Type	Condition	A	B	C	D
Open Space	Good (grass cover > 75%)	39	61	74	80
Impervious Area	Pavement, Buildings, etc.	98	98	98	98

Percentage of each soil type within the Basin	100%	0%	0%	0%
Composite Pervious Curve Number (CN) =	39			
Impervious Curve Number (CN) =	98			

Land Use:	Total Area (ac)	% Imperv.	Imperv. Area (ac)	Imperv. CN	Pervious Area (ac)	Pervious CN	% Roof Area	Roof Area (ac)
Future Building	2.23	100%	2.23		0.00		N/A	N/A
Future Pavement	0.66	100%	0.66		0.00		N/A	N/A
Future Sidewalk/Trail	0.24	100%	0.24		0.00		N/A	N/A
Future Water Surface	0.64	100%	0.64		0.00		N/A	N/A
Future Open Space	3.96	0%	0.00		3.96		N/A	N/A
Totals	7.73	48.7%	3.77	98	3.96	39		N/A

Weighted Curve Number (CN) = **68.0**

Treatment Volume Required:

DCIA % = (DCIA Area) / (Total Area) =	8.6%		
Non DCIA CN =	65.0		
1" of runoff = 1 x Total Area x 1/12 =	0.644	acre-feet	Greater of
2.5" over impervious = Total impervious x 2.5/12 =	0.785	acre-feet	
WQ Volume	0.785	acre-feet	<<==== WQ TV

Permanent Pool Volume:

DA:	7.73	Ac.	, where DA = drainage area
C:	0.57		, where C = runoff coefficient
R:	50.00	inches	, where R = wet season rainfall depth
WS:	153.00	days	, where WS = length of wet season
RT:	14.00	days	, where RT = residence time

$$PPV = \frac{DA \times C \times R \times RT}{WS \times \frac{12in.}{ft}}$$

PPV Calculated =	1.67	**Ac-ft**
Add 50% PPV for OFW =	0	**Ac-ft**
Add 50% PPV for Littoral Zone Alternative =	0.00	**Ac-ft**
PPV Required =	1.67	**Ac-ft**
PPV Provided =	**2.37**	**Ac-ft**

Adequate Storage Provided

Pond: Wet Pond **Stage Storage:**	Stage (ft)	Area (ac)	Treat. Vol. (ac-ft)	
Pond Bottom =	78.00	0.188	0.000	
	83.00	0.372	1.374	
NWL	85.00	0.638	2.372	
1/2 WQ Elevation =	85.57		0.392	
	86.00	0.737	0.687	
WQ Elevation =	86.12		0.785	<<==== Water Quality Treatment Volume Required
	87.00	0.841	1.475	
	88.00	0.947	2.369	
	89.00	1.055	3.369	
Top of Bank =	90.00	1.336	4.562	

Treatment Volume Provided:

Calculated Elevation =	86.12	(ft)
Design Elevation =	86.40	(ft)

ATWELL

Mission Rise
Howey-In-The-Hills, FL
Stormwater Treatment Volume Calculations
Post-Development

Basin:	**Post Basin 8**	
Pond:	**Pond 8**	
Basin Area:	12.63	acres
Pond Area @ Bot:	0.24	acres
Pond Bottom Elev.:	84.00	ft
Time of Concentration:	10.00	min

Curve Number: (Using the SCS TR-55, Second Ed., June 1986, Table 2-2a)

Cover Description		Curve Numbers for Soil Group			
Cover Type	Condition	A	B	C	D
Open Space	Good (grass cover > 75%)	39	61	74	80
Impervious Area	Pavement, Buildings, etc.	98	98	98	98
Percentage of each soil type within the Basin		100%	0%	0%	0%

Composite Pervious Curve Number (CN) = 39
Impervious Curve Number (CN) = 98

Land Use:	Total Area (ac)	% Imperv.	Imperv. Area (ac)	Imperv. CN	Pervious Area (ac)	Pervious CN	% Roof Area	Roof Area (ac)
Future Building	2.80	100%	2.80		0.00		N/A	N/A
Future Pavement	1.88	100%	1.88		0.00		N/A	N/A
Future Sidewalk/Trail	0.49	100%	0.49		0.00		N/A	N/A
Future Water Surface	0.49	100%	0.49		0.00		N/A	N/A
Future Open Space	6.98	0%	0.00		6.98		N/A	N/A
Totals	12.63	44.8%	5.65	98	6.98	39		N/A

Weighted Curve Number (CN) = **65.0**

Treatment Volume Required:

DCIA % = (DCIA Area) / (Total Area) =	14.8%		
Non DCIA CN =	60.0		
1" of runoff = 1 x Total Area x 1/12 =	1.053	acre-feet	Greater of
2.5" over impervious = Total impervious x 2.5/12 =	1.178	acre-feet	
WQ Volume	1.178	acre-feet	<<==== WQ TV

Permanent Pool Volume:

DA:	12.63	Ac.	, where DA = drainage area
C:	0.54		, where C = runoff coefficient
R:	50.00	inches	, where R = wet season rainfall depth
WS:	153.00	days	, where WS = length of wet season
RT:	14.00	days	, where RT = residence time

$$PPV = \frac{DA \times C \times R \times RT}{WS \times \frac{12in.}{ft}}$$

PPV Calculated =	2.58	**Ac-ft**
Add 50% PPV for OFW =	0	**Ac-ft**
Add 50% PPV for Littoral Zone Alternative =	0.00	**Ac-ft**
PPV Required =	2.58	**Ac-ft**
PPV Provided =	***2.90***	**Ac-ft**

Adequate Storage Provided

Pond: Wet Pond **Stage Storage:**	Stage (ft)	Area (ac)	Treat. Vol. (ac-ft)	
Pond Bottom =	74.00	0.172	0.000	
	82.00	0.355	2.062	
NWL	84.00	0.486	2.898	
1/2 WQ Elevation =	85.11		0.589	
	85.00	0.573	0.529	
WQ Elevation =	86.05		1.178	<<==== Water Quality Treatment Volume Required
	86.00	0.665	1.147	
	87.00	0.759	1.858	
	88.00	0.855	2.664	
Top of Bank =	89.00	1.105	3.642	

Treatment Volume Provided:

Calculated Elevation =	86.05	(ft)
Design Elevation =	86.00	(ft)

ATWELL

Mission Rise
Howey-In-The-Hills, FL
Stormwater Treatment Volume Calculations
Post-Development

Basin:	**Post Basin 9**	
Pond:	**Pond 9**	
Basin Area:	11.62	acres
Pond Area @ Bot:	0.65	acres
Pond Bottom Elev.:	84.00	ft
Time of Concentration:	10.00	min

Curve Number: (Using the SCS TR-55, Second Ed., June 1986, Table 2-2a)

Cover Description		Curve Numbers for Soil Group			
Cover Type	Condition	A	B	C	D
Open Space	Good (grass cover > 75%)	39	61	74	80
Impervious Area	Pavement, Buildings, etc.	98	98	98	98
Percentage of each soil type within the Basin		100%	0%	0%	0%
Composite Pervious Curve Number (CN) =		39			
Impervious Curve Number (CN) =		98			

Land Use:	Total Area (ac)	% Imperv.	Imperv. Area (ac)	Imperv. CN	Pervious Area (ac)	Pervious CN	% Roof Area	Roof Area (ac)
Future Building	1.98	100%	1.98		0.00		N/A	N/A
Future Pavement	1.28	100%	1.28		0.00		N/A	N/A
Future Sidewalk/Trail	0.54	100%	0.54		0.00		N/A	N/A
Future Water Surface	1.04	100%	1.04		0.00		N/A	N/A
Future Open Space	6.77	0%	0.00		6.77		N/A	N/A
Totals	11.62	41.7%	4.85	98	6.77	39		N/A

Weighted Curve Number (CN) = **64.0**

Treatment Volume Required:

DCIA % = (DCIA Area) / (Total Area) =	11.1%		
Non DCIA CN =	59.0		
1" of runoff = 1 x Total Area x 1/12 =	0.968	acre-feet	Greater of
2.5" over impervious = Total impervious x 2.5/12 =	1.010	acre-feet	
Plus 0.5" x Total Area x 1/12 =	1.010	acre-feet	<<===== WQ TV

Permanent Pool Volume:

DA:	11.62	Ac.	, where DA = drainage area
C:	0.51		, where C = runoff coefficient
R:	50.00	inches	, where R = wet season rainfall depth
WS:	153.00	days	, where WS = length of wet season
RT:	14.00	days	, where RT = residence time

$$PPV = \frac{DA \times C \times R \times RT}{WS \times \frac{12in.}{ft}}$$

PPV Calculated =	2.27	**Ac-ft**
Add 50% PPV for OFW =	0	**Ac-ft**
Add 50% PPV for Littoral Zone Alternative	0.00	**Ac-ft**
PPV Required =	2.27	**Ac-ft**
PPV Provided =	***4.92***	**Ac-ft**

Adequate Storage Provided

Pond: Wet Pond **Stage Storage:**	Stage (ft)	Area (ac)	Treat. Vol. (ac-ft)	
Pond Bottom =	77.00	0.528	0.000	
	82.00	0.739	3.152	
NWL	84.00	1.036	4.919	
1/2 WQ Elevation =	84.46		0.505	
WQ Elevation =	84.93		1.010	<<===== Water Quality Treatment Volume Required
	85.00	1.141	1.088	
	86.00	1.247	2.281	
	87.00	1.357	3.583	
	88.00	1.468	4.995	
Top of Bank =	89.00	1.757	6.605	

Treatment Volume Provided:

Calculated Elevation =	84.93	(ft)
Design Elevation =	85.10	(ft)

ATWELL

Mission Rise
Howey-In-The-Hills, FL
Stormwater Treatment Volume Calculations
Post-Development

Basin:	**Post Basin 10**	
Pond:	**Pond 10**	
Basin Area:	8.01	acres
Pond Area @ Bot:	0.55	acres
Pond Bottom Elev.:	84.00	ft
Time of Concentration:	10.00	min

Curve Number: (Using the SCS TR-55, Second Ed., June 1986, Table 2-2a)

Cover Description		Curve Numbers for Soil Group			
Cover Type	Condition	A	B	C	D
Open Space	Good (grass cover > 75%)	39	61	74	80
Impervious Area	Pavement, Buildings, etc.	98	98	98	98
Percentage of each soil type within the Basin		100%	0%	0%	0%

Composite Pervious Curve Number (CN) = 39
Impervious Curve Number (CN) = 98

Land Use:	Total Area (ac)	% Imperv.	Imperv. Area (ac)	Imperv. CN	Pervious Area (ac)	Pervious CN	% Roof Area	Roof Area (ac)
Future Building	1.77	100%	1.77		0.00		N/A	N/A
Future Pavement	1.21	100%	1.21		0.00		N/A	N/A
Future Sidewalk/Trail	0.52	100%	0.52		0.00		N/A	N/A
Future Water Surface	0.77	100%	0.77		0.00		N/A	N/A
Future Open Space	3.74	0%	0.00		3.74		N/A	N/A
Totals	8.01	53.3%	4.27	98	3.74	39		N/A

Weighted Curve Number (CN) = **70.0**

Treatment Volume Required:

DCIA % = (DCIA Area) / (Total Area) =	15.0%		
Non DCIA CN =	66.0		
1" of runoff = 1 x Total Area x 1/12 =	0.668	acre-feet	Greater of
2.5" over impervious = Total impervious x 2.5/12 =	0.890	acre-feet	
WQ Volume	0.890	acre-feet	<<==== WQ TV

Permanent Pool Volume:

DA:	8.01	Ac.	, where DA = drainage area
C:	0.60		, where C = runoff coefficient
R:	50.00	inches	, where R = wet season rainfall depth
WS:	153.00	days	, where WS = length of wet season
RT:	14.00	days	, where RT = residence time

$$PPV = \frac{DA \times C \times R \times RT}{WS \times \frac{12in.}{ft}}.$$

PPV Calculated =	1.83	**Ac-ft**
Add 50% PPV for OFW =	0	**Ac-ft**
Add 50% PPV for Littoral Zone Alternative =	0.00	**Ac-ft**
PPV Required =	1.83	**Ac-ft**
PPV Provided =	*3.86*	**Ac-ft**

Adequate Storage Provided

Pond: Wet Pond **Stage Storage:**	Stage (ft)	Area (ac)	Treat. Vol. (ac-ft)	
Pond Bottom =	77.00	0.432	0.000	
	82.00	0.576	2.510	
NWL	84.00	0.775	3.855	
1/2 WQ Elevation =	84.55		0.445	
	85.00	0.846	0.810	
WQ Elevation =	85.09	-	0.890	<<==== Water Quality Treatment Volume Required
	86.00	0.920	1.692	
	87.00	0.996	2.650	
	88.00	1.074	3.684	
Top of Bank =	89.00	1.280	4.859	

Treatment Volume Provided:

Calculated Elevation =	85.09	(ft)
Design Elevation =	85.30	(ft)

ATWELL

Mission Rise
Howey-In-The-Hills, FL
Stormwater Treatment Volume Calculations
Post-Development

Basin:	**Post Basin 11**	
Pond:	**Pond 11**	
Basin Area:	33.76	acres
Pond Area @ Bot:	2.58	acres
Pond Bottom Elev.:	90.00	ft
Time of Concentration:	10.00	min

Curve Number: (Using the SCS TR-55, Second Ed., June 1986, Table 2-2a)

Cover Description		Curve Numbers for Soil Group			
Cover Type	Condition	A	B	C	D
Open Space	Good (grass cover > 75%)	39	61	74	80
Impervious Area	Pavement, Buildings, etc.	98	98	98	98
Percentage of each soil type within the Basin		100%	0%	0%	0%

Composite Pervious Curve Number (CN) = 39
Impervious Curve Number (CN) = 98

Land Use:	Total Area (ac)	% Imperv.	Imperv. Area (ac)	Imperv. CN	Pervious Area (ac)	Pervious CN	% Roof Area	Roof Area (ac)
Future Building	9.83	100%	9.83		0.00		N/A	N/A
Future Pavement	3.78	100%	3.78		0.00		N/A	N/A
Future Sidewalk/Trail	1.29	100%	1.29		0.00		N/A	N/A
Future Pond Bottom	2.58	100%	2.58		0.00		N/A	N/A
Future Open Space	16.28	0%	0.00		16.28		N/A	N/A
Totals	33.76	51.8%	17.48	98	16.28	39		N/A

Weighted Curve Number (CN) = **70.0**

Treatment Volume Required:

DCIA % = (DCIA Area) / (Total Area) =	51.8%		
Non DCIA CN =	0.0		
1" of runoff = 1 x Total Area x 1/12 =	2.813	acre-feet	Greater of
2.5" over impervious = Total impervious x 2.5/12 =	3.642	acre-feet	
WQ Volume	3.642	acre-feet	<<===== WQ TV

Permanent Pool Volume:

DA:	33.76	Ac.	, where DA = drainage area
C:	0.59		, where C = runoff coefficient
R:	50.00	inches	, where R = wet season rainfall depth
WS:	153.00	days	, where WS = length of wet season
RT:	14.00	days	, where RT = residence time

$$PPV = \frac{DA \times C \times R \times RT}{WS \times \frac{12in.}{ft}}$$

PPV Calculated =	7.57	**Ac-ft**
Add 50% PPV for OFW =	0	**Ac-ft**
Add 50% PPV for Littoral Zone Alternative =	0.00	**Ac-ft**
PPV Required =	7.57	**Ac-ft**
PPV Provided =	***13.70***	**Ac-ft**

Adequate Storage Provided

Pond: Wet Pond **Stage Storage:**	Stage (ft)	Area (ac)	Treat. Vol. (ac-ft)	
Pond Bottom =	81.00	1.697	0.000	
	86.00	1.971	9.160	
NWL	88.00	2.583	13.700	
1/2 WQ Elevation =	88.69		1.821	
WQ Elevation =	89.36		3.642	<<===== Water Quality Treatment Volume Required
	89.00	2.715	2.649	
	90.00	2.850	5.431	
	91.00	2.986	8.349	
	92.00	3.125	11.404	
	93.00	3.267	14.600	
Top of Bank =	94.00	3.630	18.047	

Treatment Volume Provided:

Calculated Elevation =	89.36	(ft)
Design Elevation =	92.00	(ft)

ATWELL

Mission Rise
Howey-In-The-Hills, FL
Stormwater Treatment Volume Calculations
Post-Development

Basin:	**Post Basin 12**	
Pond:	**Pond 12**	
Basin Area:	26.27	acres
Pond Area @ Bot:	1.58	acres
Pond Bottom Elev.:	84.00	ft
Time of Concentration:	10.00	min

Curve Number: (Using the SCS TR-55, Second Ed., June 1986, Table 2-2a)

Cover Description		Curve Numbers for Soil Group			
Cover Type	Condition	A	B	C	D
Open Space	Good (grass cover > 75%)	39	61	74	80
Impervious Area	Pavement, Buildings, etc.	98	98	98	98
Percentage of each soil type within the Basin		100%	0%	0%	0%

Composite Pervious Curve Number (CN) = 39
Impervious Curve Number (CN) = 98

Land Use:	Total Area (ac)	% Imperv.	Imperv. Area (ac)	Imperv. CN	Pervious Area (ac)	Pervious CN	% Roof Area	Roof Area (ac)
Future Building	6.83	100%	6.83		0.00		N/A	N/A
Future Pavement	2.96	100%	2.96		0.00		N/A	N/A
Future Sidewalk/Trail	1.17	100%	1.17		0.00		N/A	N/A
Future Water Surface	1.58	100%	1.58	100	0.00			
Future Amenity	1.06	75%	0.80		0.27			
Future Open Space	12.66	0%	0.00		12.66		N/A	N/A
Totals	26.27	50.8%	13.35	98	12.92	39		N/A

Weighted Curve Number (CN) = **69.0**

Treatment Volume Required:

DCIA % = (DCIA Area) / (Total Area) =	44.8%		
Non DCIA CN =	67.0		
1" of runoff = 1 x Total Area x 1/12 =	2.189	acre-feet	Greater of
2.5" over impervious = Total impervious x 2.5/12 =	2.781	acre-feet	Greater of
WQ Volume	2.781	acre-feet	<<==== WQ TV

Permanent Pool Volume:

DA:	26.27	Ac.	, where DA = drainage area
C:	0.58		, where C = runoff coefficient
R:	50.00	inches	, where R = wet season rainfall depth
WS:	153.00	days	, where WS = length of wet season
RT:	14.00	days	, where RT = residence time

PPV Calculated =	5.82	**Ac-ft**
Add 50% PPV for OFW =	0	**Ac-ft**
Add 50% PPV for Littoral Zone Alternative =	0.00	**Ac-ft**

$$PPV = \frac{DA \times C \times R \times RT}{WS \times \frac{12in.}{ft}}$$

PPV Required = 5.82 **Ac-ft**

Adequate Storage Provided

PPV Provided = ***7.61*** **Ac-ft**

Pond: Wet Pond **Stage Storage:**	Stage (ft)	Area (ac)	Treat. Vol. (ac-ft)	
Pond Bottom =	77.00	0.831	0.000	
	82.00	1.138	4.903	
NWL	84.00	1.585	7.614	
1/2 WQ Elevation =	84.82		1.391	
	85.00	1.803	1.693	
WQ Elevation =	85.58		2.781	<<==== Water Quality Treatment Volume Required
	86.00	1.975	3.581	
	87.00	2.152	5.644	
	88.00	2.247	7.843	
Top of Bank =	89.00	2.679	10.303	

Treatment Volume Provided:

Calculated Elevation =	85.58	(ft)
Design Elevation =	85.90	(ft)

ATWELL

Manual Basin: OFFSITE-6

Scenario: Post-development
Node: WET-08-PST
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 21.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 2.7808 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
1.5437	1100: Residential, low density - less than 2 dwelling units/acre	B	
1.1557	2120: Unimproved pastures	B	
0.0557	4340: Upland mixed coniferous/hardwood	B	
0.0224	1100: Residential, low density - less than 2 dwelling units/acre	A	
0.0034	2120: Unimproved pastures	A	

Comment:

Manual Basin: OFFSITE-8

Scenario: Post-development
Node: Pond 5
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 11.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 1.0629 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
0.5314	2120: Unimproved pastures	B	
0.0449	4340: Upland mixed coniferous/hardwood	A/D	
0.3486	4340: Upland mixed coniferous/hardwood	A	
0.0454	4340: Upland mixed coniferous/hardwood	B	
0.0481	6460: Mixed scrub-shrub wetland	A/D	
0.0445	6410: Freshwater marshes	A/D	

Comment:

Manual Basin: POST 1

Scenario: Post-development
Node: Pond 1
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 12.8700 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
6.1200	Impervious	A	
6.7500	Open Space	A	

Comment:

Manual Basin: POST 2

Scenario: Post-development
Node: Pond 2
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 15.9900 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
8.6200	Impervious	A	
7.3700	Open Space	A	

Comment:

Manual Basin: POST 3

Scenario: Post-development
Node: Pond 3
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number

Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 6.7400 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
3.7500	Impervious	A	
2.9900	Open Space	A	

Comment:

Manual Basin: POST 4

Scenario: Post-development
Node: Pond 4
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 23.6200 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
13.2000	Impervious	A	
10.4200	Open Space	A	

Comment:

Manual Basin: POST-10

Scenario: Post-development
Node: Pond 10
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 8.0100 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
3.7400	Impervious	A	
4.2700	Open Space	A	

Comment:

Manual Basin: POST-11

Scenario: Post-development
Node: Pond 11
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 33.7600 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
17.4800	Impervious	A	
16.2800	Open Space	A	

Comment:

Manual Basin: POST-12

Scenario: Post-development
Node: Pond 12
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 26.2700 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
13.3500	Impervious	A	
12.9200	Open Space	A	

Comment:

Manual Basin: POST-5

Scenario: Post-development
Node: Pond 5
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 9.4300 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
4.5300	Impervious	A	
4.9000	Open Space	A	

Comment:

Manual Basin: POST-6

Scenario: Post-development
Node: Pond 6
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 7.2500 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
3.4200	Impervious	A	
3.8300	Open Space	A	

Comment:

Manual Basin: POST-7

Scenario: Post-development
Node: Pond 7
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 7.7300 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
3.7700	Impervious	A	
3.9600	Open Space	A	

Comment:

Manual Basin: POST-8

Scenario: Post-development

Node: Pond 8
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 12.6300 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
5.6500	Impervious	A	
6.9800	Open Space	A	

Comment:

Manual Basin: POST-9

Scenario: Post-development
Node: Pond 9
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 11.6200 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
4.8500	Impervious	A	
6.7700	Open Space	A	

Comment:

Manual Basin: WETLAND 1A

Scenario: Post-development
Node: Wetland 1A
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 7.6627 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
0.4074	6460: Mixed scrub-shrub	A/D	

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
	wetland		
0.7947	6440: Emergent aquatic vegetation	A/D	
0.0454	2130: Woodland pastures	A/D	
4.7817	6440: Emergent aquatic vegetation	Water	
0.0116	6460: Mixed scrub-shrub wetland	Water	
0.6275	6300: Wetland forested mixed	A/D	
0.0139	6300: Wetland forested mixed	Water	
0.5476	6440: Emergent aquatic vegetation	A	
0.0497	4410: Pine plantation	A	
0.3018	4340: Upland mixed coniferous/hardwood	A/D	
0.0813	4340: Upland mixed coniferous/hardwood	A	

Comment:

Manual Basin: WETLAND 1B

Scenario: Post-development
Node: Wetland 1B
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 18.3938 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
0.0772	2120: Unimproved pastures	A	
1.1166	6460: Mixed scrub-shrub wetland	A	
2.8182	6460: Mixed scrub-shrub wetland	Water	
10.9300	6440: Emergent aquatic vegetation	Water	
0.0977	6440: Emergent aquatic vegetation	A	
1.1776	6460: Mixed scrub-shrub wetland	A/D	
0.0566	6440: Emergent aquatic vegetation	A/D	
1.0401	4340: Upland mixed	A/D	

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
	coniferous/hardwood		
0.5165	4340: Upland mixed coniferous/hardwood	Water	
0.5611	6300: Wetland forested mixed	Water	
0.0023	2130: Woodland pastures	A/D	

Comment:

Manual Basin: WETLAND 1C

Scenario: Post-development
Node: Wetland 1C
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 6.5093 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
0.0186	2120: Unimproved pastures	B	
0.0397	6410: Freshwater marshes	B	
0.2489	4340: Upland mixed coniferous/hardwood	B	
4.5685	6410: Freshwater marshes	Water	
0.4101	4340: Upland mixed coniferous/hardwood	Water	
0.1515	4340: Upland mixed coniferous/hardwood	A	
0.1719	4340: Upland mixed coniferous/hardwood	A/D	
0.1298	6410: Freshwater marshes	A/D	
0.6540	6460: Mixed scrub-shrub wetland	A/D	
0.1162	6460: Mixed scrub-shrub wetland	Water	

Comment:

Manual Basin: WETLAND 2

Scenario: Post-development
Node: Wetland 2
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number

Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 24.9397 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
1.9637	6410: Freshwater marshes	A/D	
0.7348	6460: Mixed scrub-shrub wetland	A/D	
0.0526	4340: Upland mixed coniferous/hardwood	A/D	
0.2665	4340: Upland mixed coniferous/hardwood	A	
0.0542	6460: Mixed scrub-shrub wetland	A	
1.5266	2120: Unimproved pastures	A	
0.3085	6410: Freshwater marshes	B	
0.2711	6460: Mixed scrub-shrub wetland	Water	
0.5147	6410: Freshwater marshes	Water	
0.0699	5200: Lakes	A	
16.7506	5200: Lakes	Water	
0.4623	2120: Unimproved pastures	Water	
0.5305	5200: Lakes	A/D	
0.8435	6460: Mixed scrub-shrub wetland	B	
0.0364	5200: Lakes	B	
0.4523	2120: Unimproved pastures	B	
0.0081	2110: Improved pastures (monocult, planted forage crops)	A/D	
0.0861	2120: Unimproved pastures	A/D	
0.0073	2110: Improved pastures (monocult, planted forage crops)	A	

Comment:

Manual Basin: WETLAND 3

Scenario: Post-development
Node: WET-08-PST
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr

Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 3.4089 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
0.0590	2120: Unimproved pastures	B	
0.0527	6460: Mixed scrub-shrub wetland	B	
0.0075	2120: Unimproved pastures	A/D	
1.0518	6460: Mixed scrub-shrub wetland	A/D	
2.2267	6410: Freshwater marshes	A/D	
0.0112	6460: Mixed scrub-shrub wetland	A	

Comment:

Manual Basin: WETLAND 4

Scenario: Post-development
Node: Wetland 4
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 1.7056 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
0.8307	5200: Lakes	Water	
0.0070	6410: Freshwater marshes	Water	
0.0222	6410: Freshwater marshes	A	
0.0064	1180: Rural residential	A	
0.5034	2120: Unimproved pastures	A	
0.3359	5200: Lakes	A	

Comment:

Manual Basin: WETLAND 5

Scenario: Post-development
Node: Wetland 5
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr

Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 3.5379 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
0.0321	1180: Rural residential	A	
0.9312	2120: Unimproved pastures	A	
0.0347	6440: Emergent aquatic vegetation	A	
2.2436	6440: Emergent aquatic vegetation	Water	
0.2963	2120: Unimproved pastures	Water	

Comment:

Node: Pond 1

Scenario: Post-development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 83.00 ft
Warning Stage: 89.00 ft
Alert Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
76.00	0.2230	9714
81.00	0.3380	14723
83.00	0.4160	18121
84.00	0.4710	20517
85.00	0.5290	23043
86.00	0.5880	25613
87.00	0.6500	28314
88.00	0.7150	31145
89.00	0.8860	38594

Comment:

Node: Pond 10

Scenario: Post-development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 84.00 ft
Warning Stage: 89.00 ft
Alert Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
77.00	0.4880	21257

Stage [ft]	Area [ac]	Area [ft2]
82.00	0.6390	27835
84.00	0.7750	33759
85.00	0.8460	36852
86.00	0.9200	40075
87.00	0.9960	43386
88.00	1.0740	46783
89.00	1.2800	55757

Comment:

Node: Pond 11

Scenario: Post-development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 88.00 ft
Warning Stage: 94.00 ft
Alert Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
88.00	2.5800	112385
89.00	2.7200	118483
90.00	2.8500	124146
91.00	2.9800	129809
92.00	3.1300	136343
93.00	3.2700	142441
94.00	3.6300	158123

Comment:

Node: Pond 12

Scenario: Post-development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 84.00 ft
Warning Stage: 89.00 ft
Alert Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
84.00	1.5850	69043
85.00	1.8030	78539
86.00	1.9750	86031
87.00	2.1520	93741
88.00	2.2470	97879
89.00	2.6790	116697

Comment:

Node: Pond 2

Scenario: Post-development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 84.00 ft
Warning Stage: 89.00 ft
Alert Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
76.00	0.2390	10411
82.00	0.7140	31102
84.00	1.0610	46217
85.00	1.2390	53971
86.00	1.4190	61812
87.00	1.6020	69783
88.00	1.7870	77842
89.00	2.2590	98402

Comment:

Node: Pond 3

Scenario: Post-development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 91.00 ft
Warning Stage: 96.00 ft
Alert Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
91.00	0.3970	17293
92.00	0.4470	19471
93.00	0.5090	22172
94.00	0.5740	25003
95.00	0.6410	27922
96.00	0.8190	35676

Comment:

Node: Pond 4

Scenario: Post-development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 85.00 ft
Warning Stage: 90.00 ft
Alert Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
85.00	1.2920	56280
86.00	1.3910	60592
87.00	1.4910	64948
88.00	1.5940	69435
89.00	1.7000	74052
90.00	1.9730	85944

Comment:

Node: Pond 5

Scenario: Post-development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 85.00 ft
Warning Stage: 90.00 ft
Alert Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
78.00	0.4510	19646
83.00	0.7120	31015
85.00	0.9490	41338
86.00	1.0710	46653
87.00	1.1960	52098
88.00	1.3220	57586
89.00	1.4510	63206
90.00	1.7840	77711

Comment:

Node: Pond 6

Scenario: Post-development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 85.00 ft
Warning Stage: 90.00 ft
Alert Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
78.00	0.1280	5576
83.00	0.2670	11631
85.00	0.3930	17119
86.00	0.4630	20168
87.00	0.6750	29403
88.00	0.7690	33498
89.00	0.8660	37723
90.00	1.1220	48874

Comment:

Node: Pond 7

Scenario: Post-development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 85.00 ft
Warning Stage: 90.00 ft
Alert Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
78.00	0.2560	11151
83.00	0.4560	19863
85.00	0.6380	27791
86.00	0.7370	32104
87.00	0.8410	36634
88.00	0.9510	41426
89.00	1.0550	45956
90.00	1.3360	58196

Comment:

Node: Pond 8

Scenario: Post-development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 84.00 ft
Warning Stage: 89.00 ft
Alert Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
77.00	0.2330	10149
82.00	0.3550	15464
84.00	0.4860	21170
85.00	0.5700	24829

Stage [ft]	Area [ac]	Area [ft2]
86.00	0.6650	28967
87.00	0.7590	33062
88.00	0.8550	37244
89.00	1.1050	48134

Comment:

Node: Pond 9

Scenario: Post-development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 84.00 ft
Warning Stage: 89.00 ft
Alert Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
77.00	0.6090	26528
82.00	0.8340	36329
84.00	1.0360	45128
85.00	1.1410	49702
86.00	1.2470	54319
87.00	1.3570	59111
88.00	1.4680	63946
89.00	1.7570	76535

Comment:

Node: WET-08-PST

Scenario: Post-development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 78.70 ft
Warning Stage: 0.00 ft
Alert Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
78.50	3.6000	156816
79.00	3.7000	161172
80.00	4.4000	191664
81.00	5.6000	243936
82.00	5.9000	257004
83.00	6.1000	265716
84.00	6.4000	278784

Comment: Data from Hillside Groves input report plus the section of Wetland that is inside of the property line

Node: Wetland 1A

Scenario: Post-development
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 83.60 ft
Warning Stage: 84.60 ft
Alert Stage: 0.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	83.60
0	0	0	12.0000	83.60
0	0	0	24.0000	83.60
0	0	0	36.0000	83.60

Comment: Zone AE

Node: Wetland 1B

Scenario: Post-development
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 83.60 ft
Warning Stage: 84.60 ft
Alert Stage: 0.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	83.60
0	0	0	12.0000	83.60
0	0	0	24.0000	83.60
0	0	0	36.0000	83.60

Comment: Zone AE

Node: Wetland 1C

Scenario: Post-development
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 83.60 ft
Warning Stage: 84.60 ft

Alert Stage: 0.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	83.60
0	0	0	12.0000	83.60
0	0	0	24.0000	83.60
0	0	0	36.0000	83.60

Comment: Zone AE

Node: Wetland 2

Scenario: Post-development
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 83.60 ft
Warning Stage: 84.60 ft
Alert Stage: 0.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	83.60
0	0	0	12.0000	83.60
0	0	0	24.0000	83.60
0	0	0	36.0000	83.60

Comment: Zone A

Node: Wetland 4

Scenario: Post-development
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 79.63 ft
Warning Stage: 80.63 ft
Alert Stage: 0.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	79.63
0	0	0	12.0000	79.63
0	0	0	24.0000	79.63
0	0	0	36.0000	79.63

Comment: Zone A

Node: Wetland 5

Scenario: Post-development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 80.00 ft
Warning Stage: 87.00 ft
Alert Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
80.00	2.4700	107593
81.00	2.5400	110642
82.00	2.6300	114563
83.00	2.7700	120661
84.00	3.2600	142006
85.00	4.7100	205168
86.00	5.8900	256568
87.00	7.4900	326264

Comment: Zone A

Drop Structure Link: Pond 10_Wet 1C

Scenario: Post-development
From Node: Pond 10
To Node: Wetland 1C
Link Count: 1
Pipe Flow Direction: Both
Solution: Combine
Increments: 0
Pipe Count: 1
Damping: 0.0000 ft
Length: 46.00 ft
FHWA Code: 0
Entr Loss Coef: 0.50
Exit Loss Coef: 1.00
Bend Loss Coef: 0.00
Bend Location: 0.00 dec
Energy Switch: Energy

Upstream Pipe

Invert: 82.15 ft
Manning's N: 0.0130

Geometry: Circular

Max Depth: 2.00 ft

Bottom Clip

Default: 0.00 ft
Op Table:
Ref Node:
Manning's N: 0.0000

Top Clip

Default: 0.00 ft
Op Table:
Ref Node:
Manning's N: 0.0000

Downstream Pipe

Invert: 82.00 ft
Manning's N: 0.0130

Geometry: Circular

Max Depth: 2.00 ft

Bottom Clip

Default: 0.00 ft
Op Table:
Ref Node:
Manning's N: 0.0000

Top Clip

Default: 0.00 ft
Op Table:
Ref Node:
Manning's N: 0.0000

Pipe Comment:

Weir Component

Weir: 1
Weir Count: 1
Weir Flow Direction: Both
Damping: 0.0000 ft
Weir Type: Sharp Crested Vertical
Geometry Type: Circular
Invert: 84.00 ft

Bottom Clip

Default: 0.00 ft
Op Table:
Ref Node:

Top Clip

Default: 0.00 ft
Op Table:

Control Elevation:	84.00 ft
Max Depth:	0.29 ft

Ref Node:	
Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment: 1-3.5" Orifice

Weir Component	
Weir:	2
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Rectangular
Invert:	85.30 ft
Control Elevation:	85.30 ft
Max Depth:	999.00 ft
Max Width:	3.00 ft
Fillet:	0.00 ft

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Weir Component	
Weir:	3
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Horizontal
Geometry Type:	Rectangular
Invert:	85.95 ft
Control Elevation:	85.95 ft
Max Depth:	2.33 ft
Max Width:	3.00 ft
Fillet:	0.00 ft

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment: FDOT Type C Inlet

Drop Structure Comment:

Drop Structure Link: Pond 11_Wet 1B		**Upstream Pipe**		**Downstream Pipe**	
Scenario:	Post-development	Invert:	88.15 ft	Invert:	87.00 ft
From Node:	Pond 11	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	Wetland 1B	**Geometry: Circular**		**Geometry: Circular**	

Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Pipe Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	405.00 ft	Top Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	1.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component			
Weir:	1	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Horizontal	Top Clip	
Geometry Type:	Rectangular	Default:	0.00 ft
Invert:	92.50 ft	Op Table:	
Control Elevation:	92.50 ft	Ref Node:	
Max Depth:	3.01 ft	Discharge Coefficients	
Max Width:	4.42 ft	Weir Default:	3.200
Fillet:	0.00 ft	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment: FDOT Type D Inlet

Weir Component			
Weir:	2	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Sharp Crested Vertical	Top Clip	
Geometry Type:	Circular	Default:	0.00 ft
Invert:	88.00 ft	Op Table:	
Control Elevation:	88.00 ft	Ref Node:	
Max Depth:	0.46 ft	Discharge Coefficients	
		Weir Default:	3.200
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment: 5.5" Orifice

Drop Structure Comment:

Drop Structure Link: Pond 12_Wet 1A		Upstream Pipe		Downstream Pipe	
Scenario:	Post-development	Invert:	82.20 ft	Invert:	82.00 ft
From Node:	Pond 12	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	Wetland 1A	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Pipe Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	74.00 ft	Top Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	1.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Circular	Op Table:	
Invert:	84.00 ft	Ref Node:	
Control Elevation:	84.00 ft	Discharge Coefficients	
Max Depth:	0.42 ft	Weir Default:	3.200
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment: 1-5" Orifice

Weir Component		Bottom Clip	
Weir:	2	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Horizontal	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	86.70 ft	Ref Node:	
Control Elevation:	86.70 ft	Discharge Coefficients	
Max Depth:	2.33 ft	Weir Default:	3.200
Max Width:	3.00 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Weir Comment: FDOT Type C Inlet

Drop Structure Comment:

Drop Structure Link: Pond 1_Wet 5		Upstream Pipe		Downstream Pipe	
Scenario:	Post-development	Invert:	83.20 ft	Invert:	83.00 ft
From Node:	Pond 1	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	Wetland 5	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Pipe Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	34.00 ft	Top Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	1.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component			
Weir:	1	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Sharp Crested Vertical	Top Clip	
Geometry Type:	Circular	Default:	0.00 ft
Invert:	83.00 ft	Op Table:	
Control Elevation:	83.00 ft	Ref Node:	
Max Depth:	0.27 ft	Discharge Coefficients	
		Weir Default:	3.200
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment: 1- 3.25" Orifice

Weir Component			
Weir:	2	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Horizontal	Top Clip	
Geometry Type:	Rectangular	Default:	0.00 ft
Invert:	88.15 ft	Op Table:	
Control Elevation:	88.15 ft	Ref Node:	

Max Depth:	2.33 ft
Max Width:	3.00 ft
Fillet:	0.00 ft

Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment: FDOT Type C Inlet

Drop Structure Comment:

Drop Structure Link: Pond 2_Wet 4		Upstream Pipe		Downstream Pipe	
Scenario:	Post-development	Invert:	82.13 ft	Invert:	82.00 ft
From Node:	Pond 2	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	Wetland 4	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.50 ft	Max Depth:	2.50 ft
Pipe Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	2	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	41.00 ft	Top Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	1.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Circular	Op Table:	
Invert:	84.00 ft	Ref Node:	
Control Elevation:	84.00 ft	Discharge Coefficients	
Max Depth:	0.29 ft	Weir Default:	3.200
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment: 1-3.5" Orifice

Weir Component		Bottom Clip
Weir:	2	

Weir Count:	1
Weir Flow Direction:	None
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Rectangular
Invert:	84.60 ft
Control Elevation:	84.60 ft
Max Depth:	999.00 ft
Max Width:	13.75 ft
Fillet:	0.00 ft

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Weir Component

Weir:	3
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Horizontal
Geometry Type:	Rectangular
Invert:	86.80 ft
Control Elevation:	86.80 ft
Max Depth:	3.38 ft
Max Width:	8.44 ft
Fillet:	0.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment: FDOT Type H Inlet (4-grate inlet)

Drop Structure Comment:

Drop Structure Link: Pond 3_Pond 2

Scenario:	Post-development
From Node:	Pond 3
To Node:	Pond 2
Link Count:	1
Pipe Flow Direction:	Both
Solution:	Combine
Increments:	0
Pipe Count:	1
Damping:	0.0000 ft
Length:	700.00 ft
FHWA Code:	0
Entr Loss Coef:	0.50
Exit Loss Coef:	1.00

Upstream Pipe

Invert:	84.00 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	2.50 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Downstream Pipe

Invert:	76.00 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	2.50 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	None	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	93.00 ft	Ref Node:	
Control Elevation:	93.00 ft	Discharge Coefficients	
Max Depth:	999.00 ft	Weir Default:	3.200
Max Width:	8.00 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Weir Component		Bottom Clip	
Weir:	2	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Horizontal	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	93.70 ft	Ref Node:	
Control Elevation:	93.70 ft	Discharge Coefficients	
Max Depth:	3.01 ft	Weir Default:	3.200
Max Width:	4.42 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Weir Comment: FDOT Type D Inlet

Drop Structure Comment:

Drop Structure Link: Pond 4_Wet-08-PST		Upstream Pipe		Downstream Pipe	
Scenario:	Post-development	Invert:	82.44 ft	Invert:	82.00 ft
From Node:	Pond 4	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	WET-08-PST	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	4.00 ft	Max Depth:	4.00 ft
Pipe Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	

Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	157.00 ft	Top Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	1.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component			
Weir:	1	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Sharp Crested Vertical	Top Clip	
Geometry Type:	Rectangular	Default:	0.00 ft
Invert:	86.25 ft	Op Table:	
Control Elevation:	86.25 ft	Ref Node:	
Max Depth:	999.00 ft	Discharge Coefficients	
Max Width:	15.00 ft	Weir Default:	3.200
Fillet:	0.00 ft	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Weir Component			
Weir:	2	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Horizontal	Top Clip	
Geometry Type:	Rectangular	Default:	0.00 ft
Invert:	88.00 ft	Op Table:	
Control Elevation:	88.00 ft	Ref Node:	
Max Depth:	3.38 ft	Discharge Coefficients	
Max Width:	8.44 ft	Weir Default:	3.200
Fillet:	0.00 ft	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment: FDOT Type H Inlet (4-grate inlet)

Drop Structure Comment:

Drop Structure Link: Pond 5_Wet 2		Upstream Pipe		Downstream Pipe	
Scenario:	Post-development	Invert:	84.65 ft	Invert:	84.50 ft

From Node:	Pond 5	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	Wetland 2	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Pipe Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	44.00 ft	Top Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	1.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component			
Weir:	1	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Sharp Crested Vertical	Top Clip	
Geometry Type:	Circular	Default:	0.00 ft
Invert:	85.00 ft	Op Table:	
Control Elevation:	85.00 ft	Ref Node:	
Max Depth:	0.29 ft	Discharge Coefficients	
		Weir Default:	3.200
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment: 1- 3.5" Orifice

Weir Component			
Weir:	2	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Horizontal	Top Clip	
Geometry Type:	Rectangular	Default:	0.00 ft
Invert:	89.00 ft	Op Table:	
Control Elevation:	89.00 ft	Ref Node:	
Max Depth:	2.33 ft	Discharge Coefficients	
Max Width:	3.00 ft	Weir Default:	3.200
Fillet:	0.00 ft	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment: FDOT Type C Inlet

Drop Structure Comment:

Drop Structure Link: Pond 6_Wet 2		Upstream Pipe		Downstream Pipe	
Scenario:	Post-development	Invert:	84.70 ft	Invert:	84.50 ft
From Node:	Pond 6	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	Wetland 2	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Pipe Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	40.00 ft	Top Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	1.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component			
Weir:	1	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Sharp Crested Vertical	Top Clip	
Geometry Type:	Circular	Default:	0.00 ft
Invert:	85.00 ft	Op Table:	
Control Elevation:	85.00 ft	Ref Node:	
Max Depth:	0.23 ft	Discharge Coefficients	
		Weir Default:	3.200
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment: 1- 2.75" Orifice

Weir Component			
Weir:	2	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Horizontal	Top Clip	
Geometry Type:	Rectangular	Default:	0.00 ft
Invert:	89.00 ft	Op Table:	
Control Elevation:	89.00 ft	Ref Node:	
Max Depth:	2.33 ft	Discharge Coefficients	
Max Width:	3.00 ft	Weir Default:	3.200
Fillet:	0.00 ft	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment: FDOT Type C Inlet

Drop Structure Comment:

Drop Structure Link: Pond 7_Wet 2		Upstream Pipe		Downstream Pipe	
Scenario:	Post-development	Invert:	84.66 ft	Invert:	84.50 ft
From Node:	Pond 7	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	Wetland 2	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Pipe Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	52.00 ft	Top Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	1.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component			
Weir:	1	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Sharp Crested Vertical	Top Clip	
Geometry Type:	Circular	Default:	0.00 ft
Invert:	85.00 ft	Op Table:	
Control Elevation:	85.00 ft	Ref Node:	
Max Depth:	0.25 ft	Discharge Coefficients	
		Weir Default:	3.200
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment: 1- 3" Orifice

Weir Component			
Weir:	2	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Horizontal	Top Clip	
Geometry Type:	Rectangular	Default:	0.00 ft
Invert:	88.20 ft	Op Table:	
Control Elevation:	88.20 ft	Ref Node:	

Max Depth:	2.33 ft
Max Width:	3.00 ft
Fillet:	0.00 ft

Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment: FDOT Type C Inlet

Drop Structure Comment:

Drop Structure Link: Pond 8_Wet 1B		Upstream Pipe		Downstream Pipe	
Scenario:	Post-development	Invert:	83.15 ft	Invert:	83.00 ft
From Node:	Pond 8	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	Wetland 1B	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Pipe Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	50.00 ft	Top Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	1.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Circular	Op Table:	
Invert:	84.00 ft	Ref Node:	
Control Elevation:	84.00 ft	Discharge Coefficients	
Max Depth:	0.27 ft	Weir Default:	3.200
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment: 1- 3.25" Orifice

Weir Component		Bottom Clip
Weir:	2	

Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Rectangular
Invert:	86.00 ft
Control Elevation:	86.00 ft
Max Depth:	999.00 ft
Max Width:	3.00 ft
Fillet:	0.00 ft

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Weir Component

Weir:	3
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Horizontal
Geometry Type:	Rectangular
Invert:	87.10 ft
Control Elevation:	87.10 ft
Max Depth:	2.33 ft
Max Width:	3.00 ft
Fillet:	0.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment: FDOT Type C Inlet

Drop Structure Comment:

Drop Structure Link: Pond 9_Wet 1B

Scenario:	Post-development
From Node:	Pond 9
To Node:	Wetland 1B
Link Count:	1
Pipe Flow Direction:	Both
Solution:	Combine
Increments:	0
Pipe Count:	1
Damping:	0.0000 ft
Length:	54.00 ft
FHWA Code:	0
Entr Loss Coef:	0.50
Exit Loss Coef:	1.00

Upstream Pipe

Invert:	82.16 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	2.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Downstream Pipe

Invert:	82.00 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	2.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component

Weir:	1
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Circular
Invert:	84.00 ft
Control Elevation:	84.00 ft
Max Depth:	0.33 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment: 1- 4" Orifice

Weir Component

Weir:	2
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Horizontal
Geometry Type:	Rectangular
Invert:	87.00 ft
Control Elevation:	87.00 ft
Max Depth:	2.33 ft
Max Width:	3.00 ft
Fillet:	0.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment: FDOT Type C Inlet

Drop Structure Comment:

Simulation: 100yr-24hr

Scenario:	Post-development
Run Date/Time:	8/27/2025 9:27:13 AM
Program Version:	StormWise 4.08.03

General

Run Mode:	Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		30.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: CURVE NUMBER
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: IMPERVIOUS

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.0000 ft

Link Optimizer Tol: 0.0001 ft

IA Recovery Time: 24.0000 hr

Ia/S: 0.20 dec

Smp/Man Basin Rain Opt: Global

Rainfall Name: ~FLMOD
Rainfall Amount: 10.50 in
Storm Duration: 24.0000 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area 100 ft2

(1D):
Energy Switch (1D): Energy

Comment:

Simulation: 100yr-72hr

Scenario: Post-development
Run Date/Time: 8/27/2025 9:31:10 AM
Program Version: StormWise 4.08.03

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	78.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		30.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: CURVE NUMBER

Green-Ampt Set:
Vertical Layers Set:
Impervious Set: IMPERVIOUS

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6		
Over-Relax Weight Fact:	0.5 dec	Ia/S:	0.20 dec
dZ Tolerance:	0.0010 ft		
Max dZ:	1.0000 ft	Smp/Man Basin Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft		
		Rainfall Name:	~FLMOD
		Rainfall Amount:	14.00 in
		Storm Duration:	72.0000 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: 10yr-24hr

Scenario:	Post-development
Run Date/Time:	8/27/2025 9:35:12 AM
Program Version:	StormWise 4.08.03

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		30.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: CURVE NUMBER
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: IMPERVIOUS

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.0000 ft
Link Optimizer Tol: 0.0001 ft

IA Recovery Time: 24.0000 hr
Ia/S: 0.20 dec
Smp/Man Basin Rain Opt: Global
Rainfall Name: ~FLMOD
Rainfall Amount: 6.04 in
Storm Duration: 24.0000 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 100 ft2
Energy Switch (1D): Energy

Comment:

Simulation: 25yr-24hr

Scenario: Post-development
Run Date/Time: 8/27/2025 9:36:28 AM
Program Version: StormWise 4.08.03

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000

End Time:	0	0	0	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		30.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:

Extern Hydrograph Set:

Curve Number Set: CURVE NUMBER

Green-Ampt Set:

Vertical Layers Set:

Impervious Set: IMPERVIOUS

Tolerances & Options

Time Marching: SAOR

Max Iterations: 6

Over-Relax Weight Fact: 0.5 dec

dZ Tolerance: 0.0010 ft

Max dZ: 1.0000 ft

Link Optimizer Tol: 0.0001 ft

IA Recovery Time: 24.0000 hr

Ia/S: 0.20 dec

Smp/Man Basin Rain Opt: Global

Rainfall Name: ~FLMOD

Rainfall Amount: 7.56 in

Storm Duration: 24.0000 hr

Dflt Damping (1D): 0.0050 ft

Min Node Srf Area (1D): 100 ft2

Energy Switch (1D): Energy

Comment:

Simulation: 25yr-96hr

Scenario: Post-development
Run Date/Time: 8/27/2025 9:37:38 AM
Program Version: StormWise 4.08.03

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	100.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		30.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: CURVE NUMBER
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: IMPERVIOUS

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6		
Over-Relax Weight Fact:	0.5 dec	Ia/S:	0.20 dec
dZ Tolerance:	0.0010 ft		
Max dZ:	1.0000 ft	Smp/Man Basin Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft		
		Rainfall Name:	~FLMOD
		Rainfall Amount:	10.60 in
		Storm Duration:	96.0000 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: Mean

Scenario: Post-development
Run Date/Time: 8/27/2025 9:42:11 AM
Program Version: StormWise 4.08.03

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		30.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: CURVE NUMBER
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: IMPERVIOUS

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.0000 ft
Link Optimizer Tol: 0.0001 ft

IA Recovery Time: 24.0000 hr
Ia/S: 0.20 dec
Smp/Man Basin Rain Opt: Global
Rainfall Name: ~FLMOD
Rainfall Amount: 4.18 in
Storm Duration: 24.0000 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 100 ft2
Energy Switch (1D): Energy

Comment:

Node Max Conditions : Multi Item | (sim, name) [Post-development]

Sim Name	Node Name	Warning Stage [ft]	Alert Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
100yr-24hr	Pond 1	89.00	0.00	88.84	0.0010	59.86	19.97	37398
100yr-24hr	Pond 10	89.00	0.00	86.26	-0.0007	36.86	15.29	40934
100yr-24hr	Pond 11	94.00	0.00	92.74	0.0010	165.24	6.91	140837
100yr-24hr	Pond 12	89.00	0.00	87.85	-0.0010	127.11	28.90	97262
100yr-24hr	Pond 2	89.00	0.00	87.57	0.0007	101.57	51.68	74386
100yr-24hr	Pond 3	96.00	0.00	94.36	0.0008	34.51	25.78	26068
100yr-24hr	Pond 4	90.00	0.00	87.85	-0.0010	121.27	75.81	68773
100yr-24hr	Pond 5	90.00	0.00	88.84	0.0008	48.26	0.61	62279
100yr-24hr	Pond 6	90.00	0.00	89.11	0.0008	33.56	1.68	38977
100yr-24hr	Pond 7	90.00	0.00	88.35	0.0007	36.49	2.46	43030
100yr-24hr	Pond 8	89.00	0.00	87.83	-0.0010	56.71	27.76	36517
100yr-24hr	Pond 9	89.00	0.00	87.16	0.0007	50.18	2.80	59863
100yr-24hr	WET-08-PST	0.00	0.00	81.93	0.0009	106.11	0.00	256108
100yr-24hr	Wetland 1A	84.60	0.00	83.60	0.0000	64.87	0.00	0
100yr-24hr	Wetland 1B	84.60	0.00	83.60	0.0000	146.56	0.00	0
100yr-24hr	Wetland 1C	84.60	0.00	83.60	0.0000	49.60	0.00	0
100yr-24hr	Wetland 2	84.60	0.00	83.60	0.0000	178.10	0.00	0
100yr-24hr	Wetland 4	80.63	0.00	79.63	0.0000	56.30	0.00	0
100yr-24hr	Wetland 5	87.00	0.00	82.45	0.0010	28.84	0.00	117280
100yr-72hr	Pond 1	89.00	0.00	88.98	0.0010	31.60	26.27	38461
100yr-72hr	Pond 10	89.00	0.00	86.29	-0.0008	19.52	16.48	41026
100yr-72hr	Pond 11	94.00	0.00	93.01	0.0010	85.80	17.72	142540
100yr-72hr	Pond 12	89.00	0.00	88.10	-0.0010	66.25	29.84	99758
100yr-72hr	Pond 2	89.00	0.00	87.60	0.0008	58.57	54.53	74616
100yr-72hr	Pond 3	96.00	0.00	94.21	0.0009	17.66	17.31	25616
100yr-72hr	Pond 4	90.00	0.00	87.39	-0.0010	62.02	57.92	66706
100yr-72hr	Pond 5	90.00	0.00	89.09	0.0010	25.69	1.59	64556
100yr-72hr	Pond 6	90.00	0.00	89.25	0.0008	17.74	4.69	40539
100yr-72hr	Pond 7	90.00	0.00	88.53	0.0007	19.17	6.76	43817
100yr-72hr	Pond 8	89.00	0.00	87.63	-0.0010	30.28	25.76	35714
100yr-72hr	Pond 9	89.00	0.00	87.35	0.0007	27.15	7.67	60783
100yr-72hr	WET-08-PST	0.00	0.00	83.16	0.0009	76.44	0.00	267748
100yr-72hr	Wetland 1A	84.60	0.00	83.60	0.0000	54.05	0.00	0
100yr-72hr	Wetland 1B	84.60	0.00	83.60	0.0000	86.32	0.00	0
100yr-72hr	Wetland 1C	84.60	0.00	83.60	0.0000	36.94	0.00	0
100yr-72hr	Wetland 2	84.60	0.00	83.60	0.0000	84.53	0.00	0
100yr-72hr	Wetland 4	80.63	0.00	79.63	0.0000	59.62	0.00	0
100yr-72hr	Wetland 5	87.00	0.00	83.83	0.0010	36.64	0.00	138333
10yr-24hr	Pond 1	89.00	0.00	87.68	0.0010	27.55	0.56	30239
10yr-24hr	Pond 10	89.00	0.00	85.52	0.0004	16.84	1.38	38537
10yr-24hr	Pond 11	94.00	0.00	90.83	0.0007	78.46	1.18	128872
10yr-24hr	Pond 12	89.00	0.00	86.81	0.0007	59.96	2.26	92252
10yr-24hr	Pond 2	89.00	0.00	86.87	0.0010	38.65	2.03	68774
10yr-24hr	Pond 3	96.00	0.00	93.80	0.0008	16.80	1.62	24451

Sim Name	Node Name	Warning Stage [ft]	Alert Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
10yr-24hr	Pond 4	90.00	0.00	87.10	-0.0010	59.12	37.89	65415
10yr-24hr	Pond 5	90.00	0.00	86.92	0.0005	21.66	0.42	51688
10yr-24hr	Pond 6	90.00	0.00	87.61	0.0006	15.40	0.32	31914
10yr-24hr	Pond 7	90.00	0.00	87.14	0.0005	16.95	0.34	37306
10yr-24hr	Pond 8	89.00	0.00	86.70	-0.0009	25.48	6.00	31827
10yr-24hr	Pond 9	89.00	0.00	85.80	0.0004	21.93	0.53	53390
10yr-24hr	WET-08-PST	0.00	0.00	80.38	0.0009	51.79	0.00	211634
10yr-24hr	Wetland 1A	84.60	0.00	83.60	0.0000	27.57	0.00	0
10yr-24hr	Wetland 1B	84.60	0.00	83.60	0.0000	64.91	0.00	0
10yr-24hr	Wetland 1C	84.60	0.00	83.60	0.0000	24.19	0.00	0
10yr-24hr	Wetland 2	84.60	0.00	83.60	0.0000	97.79	0.00	0
10yr-24hr	Wetland 4	80.63	0.00	79.63	0.0000	6.34	0.00	0
10yr-24hr	Wetland 5	87.00	0.00	80.84	0.0003	12.19	0.00	110143
25yr-24hr	Pond 1	89.00	0.00	88.28	0.0010	37.59	2.18	33232
25yr-24hr	Pond 10	89.00	0.00	85.80	-0.0006	23.06	3.78	39423
25yr-24hr	Pond 11	94.00	0.00	91.72	0.0010	105.63	1.39	134528
25yr-24hr	Pond 12	89.00	0.00	87.06	0.0007	80.95	8.41	93978
25yr-24hr	Pond 2	89.00	0.00	87.04	0.0009	51.74	9.33	70091
25yr-24hr	Pond 3	96.00	0.00	94.01	0.0008	22.39	8.29	25038
25yr-24hr	Pond 4	90.00	0.00	87.34	-0.0010	78.76	54.72	66479
25yr-24hr	Pond 5	90.00	0.00	87.56	0.0007	29.96	0.49	55186
25yr-24hr	Pond 6	90.00	0.00	88.32	0.0007	21.04	0.36	34866
25yr-24hr	Pond 7	90.00	0.00	87.80	0.0007	23.04	0.39	40453
25yr-24hr	Pond 8	89.00	0.00	87.14	-0.0010	35.14	12.38	33658
25yr-24hr	Pond 9	89.00	0.00	86.43	0.0006	30.61	0.62	56378
25yr-24hr	WET-08-PST	0.00	0.00	80.92	0.0008	74.33	0.00	239763
25yr-24hr	Wetland 1A	84.60	0.00	83.60	0.0000	36.12	0.00	0
25yr-24hr	Wetland 1B	84.60	0.00	83.60	0.0000	89.70	0.00	0
25yr-24hr	Wetland 1C	84.60	0.00	83.60	0.0000	31.17	0.00	0
25yr-24hr	Wetland 2	84.60	0.00	83.60	0.0000	124.85	0.00	0
25yr-24hr	Wetland 4	80.63	0.00	79.63	0.0000	10.15	0.00	0
25yr-24hr	Wetland 5	87.00	0.00	81.28	0.0008	16.09	0.00	111732
25yr-96hr	Pond 1	89.00	0.00	88.45	0.0010	16.30	6.21	34509
25yr-96hr	Pond 10	89.00	0.00	85.90	-0.0007	10.05	4.85	39743
25yr-96hr	Pond 11	94.00	0.00	92.37	0.0010	44.76	1.52	138576
25yr-96hr	Pond 12	89.00	0.00	87.24	-0.0007	34.47	14.57	94731
25yr-96hr	Pond 2	89.00	0.00	87.23	0.0008	30.75	21.52	71598
25yr-96hr	Pond 3	96.00	0.00	94.03	0.0009	9.30	9.11	25098
25yr-96hr	Pond 4	90.00	0.00	87.00	-0.0009	32.68	31.12	64944
25yr-96hr	Pond 5	90.00	0.00	87.94	0.0007	13.19	0.53	57279
25yr-96hr	Pond 6	90.00	0.00	88.67	0.0008	9.14	0.38	36321
25yr-96hr	Pond 7	90.00	0.00	88.14	0.0007	9.92	0.41	42080
25yr-96hr	Pond 8	89.00	0.00	87.12	-0.0010	15.50	11.93	33581
25yr-96hr	Pond 9	89.00	0.00	86.78	0.0007	13.77	0.67	58066
25yr-96hr	WET-08-PS	0.00	0.00	81.97	0.0009	41.12	0.00	256555

Sim Name	Node Name	Warning Stage [ft]	Alert Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
	T							
25yr-96hr	Wetland 1A	84.60	0.00	83.60	0.0000	24.69	0.00	0
25yr-96hr	Wetland 1B	84.60	0.00	83.60	0.0000	45.35	0.00	0
25yr-96hr	Wetland 1C	84.60	0.00	83.60	0.0000	15.94	0.00	0
25yr-96hr	Wetland 2	84.60	0.00	83.60	0.0000	47.52	0.00	0
25yr-96hr	Wetland 4	80.63	0.00	79.63	0.0000	23.50	0.00	0
25yr-96hr	Wetland 5	87.00	0.00	82.62	0.0008	8.69	0.00	118328
Mean	Pond 1	89.00	0.00	86.12	0.0010	18.66	0.45	25941
Mean	Pond 10	89.00	0.00	85.15	0.0004	11.40	0.32	37338
Mean	Pond 11	94.00	0.00	89.83	0.0006	53.30	0.89	123169
Mean	Pond 12	89.00	0.00	85.97	0.0007	40.70	0.88	85782
Mean	Pond 2	89.00	0.00	85.94	0.0006	26.28	0.43	61369
Mean	Pond 3	96.00	0.00	93.66	0.0010	11.43	0.00	24052
Mean	Pond 4	90.00	0.00	86.75	-0.0010	40.25	16.74	63839
Mean	Pond 5	90.00	0.00	86.21	0.0004	14.32	0.33	47779
Mean	Pond 6	90.00	0.00	86.79	0.0006	10.43	0.26	27507
Mean	Pond 7	90.00	0.00	86.38	0.0005	11.49	0.27	33846
Mean	Pond 8	89.00	0.00	86.18	0.0008	17.23	1.10	29687
Mean	Pond 9	89.00	0.00	85.13	0.0004	14.79	0.40	50284
Mean	WET-08-PST	0.00	0.00	79.68	0.0009	22.64	0.00	181924
Mean	Wetland 1A	84.60	0.00	83.60	0.0000	17.37	0.00	0
Mean	Wetland 1B	84.60	0.00	83.60	0.0000	40.09	0.00	0
Mean	Wetland 1C	84.60	0.00	83.60	0.0000	16.04	0.00	0
Mean	Wetland 2	84.60	0.00	83.60	0.0000	65.46	0.00	0
Mean	Wetland 4	80.63	0.00	79.63	0.0000	4.17	0.00	0
Mean	Wetland 5	87.00	0.00	80.57	0.0003	7.56	0.00	109339

Node Mass Balance Detailed [Post-development]

Node Name	Sim Name	Total Base [ft3]	Total Basin [ft3]	Total External [ft3]	Total Seepage [ft3]	Total Irrigation [ft3]	Total Link [ft3]	Stored (Flow Based) [ft3]	Stored (Geo Based) [ft3]	% Error Inflow
Pond 1 : In	25yr-96hr	0	290020	0	0	0	0	100618	100608	0.00
Pond 1 : Out		0	0	0	0	0	189402			

Node Mass Balance Detailed [Post-development]

Node Name	Sim Name	Total Base [ft3]	Total Basin [ft3]	Total External [ft3]	Total Seepage [ft3]	Total Irrigation [ft3]	Total Link [ft3]	Stored (Flow Based) [ft3]	Stored (Geo Based) [ft3]	% Error Inflow
Pond 10 : In	25yr-96hr	0	178509	0	0	0	0	34260	34242	0.01
Pond 10 : Out		0	0	0	0	0	144249			

Node Mass Balance Detailed [Post-development]

Node Name	Sim Name	Total Base [ft3]	Total Basin [ft3]	Total External [ft3]	Total Seepage [ft3]	Total Irrigation [ft3]	Total Link [ft3]	Stored (Flow Based) [ft3]	Stored (Geo Based) [ft3]	% Error Inflow
Pond 11 : In	25yr-96hr	0	801996	0	0	0	0	483266	483275	0.00
Pond 11 : Out		0	0	0	0	0	318730			

Node Mass Balance Detailed [Post-development]

Node Name	Sim Name	Total Base [ft3]	Total Basin [ft3]	Total External [ft3]	Total Seepage [ft3]	Total Irrigation [ft3]	Total Link [ft3]	Stored (Flow Based) [ft3]	Stored (Geo Based) [ft3]	% Error Inflow
Pond 12 : In	25yr-96hr	0	616784	0	0	0	0	183356	183306	0.01
Pond 12 : Out		0	0	0	0	0	433428			

Node Mass Balance Detailed [Post-development]

Node Name	Sim Name	Total Base [ft3]	Total Basin [ft3]	Total External [ft3]	Total Seepage [ft3]	Total Irrigation [ft3]	Total Link [ft3]	Stored (Flow Based) [ft3]	Stored (Geo Based) [ft3]	% Error Inflow
Pond 2 : In	25yr-96hr	0	389707	0	0	0	112145	153365	153331	0.01
Pond 2 : Out		0	0	0	0	0	348486			

Node Mass Balance Detailed [Post-development]

Node Name	Sim Name	Total Base [ft3]	Total Basin [ft3]	Total External [ft3]	Total Seepage [ft3]	Total Irrigation [ft3]	Total Link [ft3]	Stored (Flow Based) [ft3]	Stored (Geo Based) [ft3]	% Error Inflow
Pond 3 : In	25yr-96hr	0	167636	0	0	0	0	55491	55474	0.01
Pond 3 : Out		0	0	0	0	0	112145			

Node Mass Balance Detailed [Post-development]

Node Name	Sim Name	Total Base [ft3]	Total Basin [ft3]	Total External [ft3]	Total Seepage [ft3]	Total Irrigation [ft3]	Total Link [ft3]	Stored (Flow Based) [ft3]	Stored (Geo Based) [ft3]	% Error Inflow
Pond 4 : In	25yr-96hr	0	589156	0	0	0	0	74379	74335	0.01
Pond 4 : Out		0	0	0	0	0	514777			

Node Mass Balance Detailed [Post-development]

Node Name	Sim Name	Total Base [ft3]	Total Basin [ft3]	Total External [ft3]	Total Seepage [ft3]	Total Irrigation [ft3]	Total Link [ft3]	Stored (Flow Based) [ft3]	Stored (Geo Based) [ft3]	% Error Inflow
Pond 5 : In	25yr-96hr	0	231599	0	0	0	0	117672	117675	0.00
Pond 5 : Out		0	0	0	0	0	113928			

Node Mass Balance Detailed [Post-development]

Node Name	Sim Name	Total Base [ft3]	Total Basin [ft3]	Total External [ft3]	Total Seepage [ft3]	Total Irrigation [ft3]	Total Link [ft3]	Stored (Flow Based) [ft3]	Stored (Geo Based) [ft3]	% Error Inflow
Pond 6 : In	25yr-96hr	0	162579	0	0	0	0	77936	77939	0.00
Pond 6 : Out		0	0	0	0	0	84644			

Node Mass Balance Detailed [Post-development]

Node Name	Sim Name	Total Base [ft3]	Total Basin [ft3]	Total External [ft3]	Total Seepage [ft3]	Total Irrigation [ft3]	Total Link [ft3]	Stored (Flow Based) [ft3]	Stored (Geo Based) [ft3]	% Error Inflow
Pond 7 : In	25yr-96hr	0	176915	0	0	0	0	87163	87166	0.00
Pond 7 : Out		0	0	0	0	0	89753			

Node Mass Balance Detailed [Post-development]

Node Name	Sim Name	Total Base [ft3]	Total Basin [ft3]	Total External [ft3]	Total Seepage [ft3]	Total Irrigation [ft3]	Total Link [ft3]	Stored (Flow Based) [ft3]	Stored (Geo Based) [ft3]	% Error Inflow
Pond 8 : In	25yr-96hr	0	274325	0	0	0	0	42629	42600	0.01
Pond 8 : Out		0	0	0	0	0	231697			

Node Mass Balance Detailed [Post-development]

Node Name	Sim Name	Total Base [ft3]	Total Basin [ft3]	Total External [ft3]	Total Seepage [ft3]	Total Irrigation [ft3]	Total Link [ft3]	Stored (Flow Based) [ft3]	Stored (Geo Based) [ft3]	% Error Inflow
Pond 9 : In	25yr-96hr	0	242324	0	0	0	0	103312	103315	0.00
Pond 9 : Out		0	0	0	0	0	139012			

Complete Report (not including cost) Ver 4.3.5

Project: Mission Rise - Post
Date: 8/18/2025 9:30:39 AM

Site and Catchment Information

Analysis: Specified Removal Efficiency

Catchment Name	Post 12	Post 11	Post 10	Post 9	Post 8	Post 7	Post 6	Post 5	Post 4	Post 3	Post 2	Post 1
Rainfall Zone	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2
Annual Mean Rainfall	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00

Pre-Condition Landuse Information

Landuse												
Area (acres)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rational Coefficient (0-1)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Non DCIA Curve Number	29.90	29.90	29.90	29.90	29.90	29.90	29.90	29.90	29.90	29.90	29.90	29.90
DCIA Percent (0-100)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen EMC (mg/l)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Phosphorus EMC (mg/l)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Runoff Volume (ac-ft/yr)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Groundwater N (kg/yr)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Groundwater P (kg/yr)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nitrogen Loading (kg/yr)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Phosphorus Loading (kg/yr)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Post-Condition Landuse Information

Landuse	User Defined Values	User Defined Values	User Defined Values	User Defined Values	User Defined Values	User Defined Values	User Defined Values	User Defined Values	User Defined Values	User Defined Values	User Defined Values	User Defined Values
Area (acres)	26.27	33.76	8.01	11.62	12.63	7.73	7.25	9.43	23.62	6.74	15.99	12.87
Rational Coefficient (0-1)	0.27	0.26	0.28	0.21	0.25	0.23	0.26	0.28	0.30	0.31	0.27	0.29
Non DCIA Curve Number	56.90	57.60	57.10	52.60	51.60	57.10	53.60	59.90	57.70	57.00	58.70	57.20
DCIA Percent (0-100)	30.70	29.60	32.60	24.40	29.80	26.10	29.80	32.30	35.50	36.10	30.90	33.70
Wet Pond Area (ac)	1.58	3.10	0.77	1.04	0.49	0.64	0.39	0.95	0.00	0.00	1.06	0.42
Nitrogen EMC (mg/l)	1.770	1.770	1.770	1.770	1.770	1.770	1.770	1.770	1.770	1.770	1.770	1.770

Phosphorus EMC (mg/l)	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327
Runoff Volume (ac-ft/yr)	27.347	32.960	8.480	9.337	12.833	6.798	7.298	9.958	29.978	8.666	16.766	15.039
Groundwater N (kg/yr)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Groundwater P (kg/yr)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nitrogen Loading (kg/yr)	59.682	71.931	18.507	20.377	28.006	14.835	15.926	21.732	65.424	18.913	36.589	32.822
Phosphorus Loading (kg/yr)	11.026	13.289	3.419	3.765	5.174	2.741	2.942	4.015	12.087	3.494	6.760	6.064

Catchment Number: 1 Name: Post 12

Project: Mission Rise - Post
Date: 8/18/2025

Wet Detention with Littoral Shelf Design

Permanent Pool Volume (ac-ft)	7.610
Permanent Pool Volume (ac-ft) for 31 days residence	2.323
Annual Residence Time (days)	102
Littoral Zone Efficiency Credit	28
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	26.27
Contributing Area (acres)	24.690
Non-DCIA Curve Number	56.90
DCIA Percent	30.70
Rainfall Zone	Florida Zone 2
Rainfall (in)	50.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	55
Provided TN Treatment Efficiency (%)	58
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	81

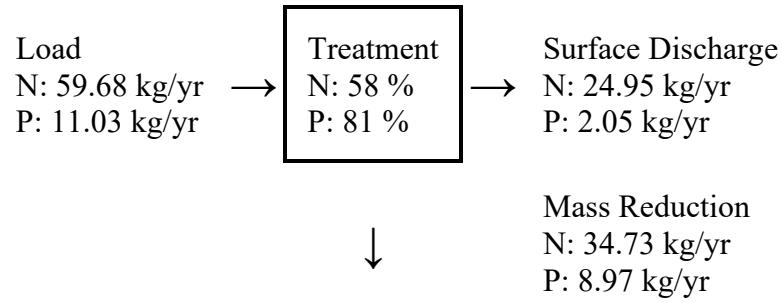
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

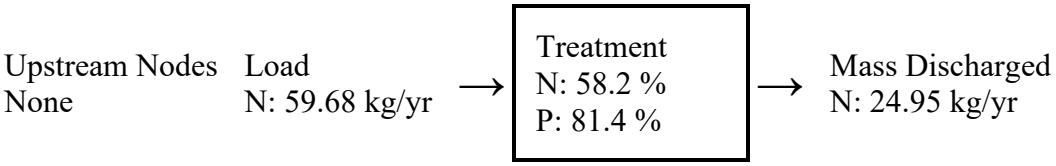
Groundwater Discharge (Stand-Alone)

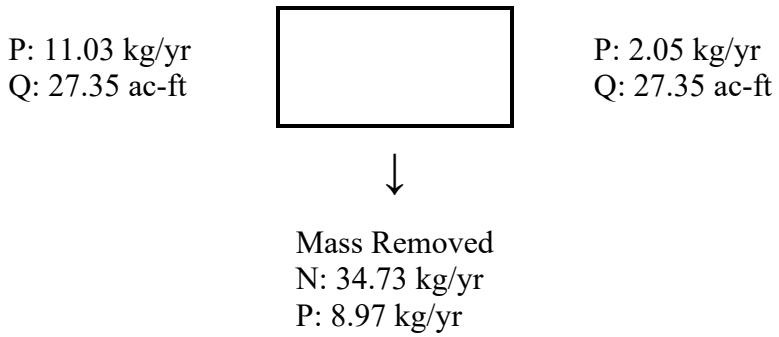
Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention with Littoral Shelf (stand-alone)



Load Diagram for Wet Detention (As Used In Routing)





Catchment Number: 2 Name: Post 11

Project: Mission Rise - Post
Date: 8/18/2025

Wet Detention with Littoral Shelf Design

Permanent Pool Volume (ac-ft)	13.700
Permanent Pool Volume (ac-ft) for 31 days residence	2.799
Annual Residence Time (days)	152
Littoral Zone Efficiency Credit	24
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	33.76
Contributing Area (acres)	30.660
Non-DCIA Curve Number	57.60
DCIA Percent	29.60
Rainfall Zone	Florida Zone 2
Rainfall (in)	50.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	55
Provided TN Treatment Efficiency (%)	56
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	83

Media Mix Information

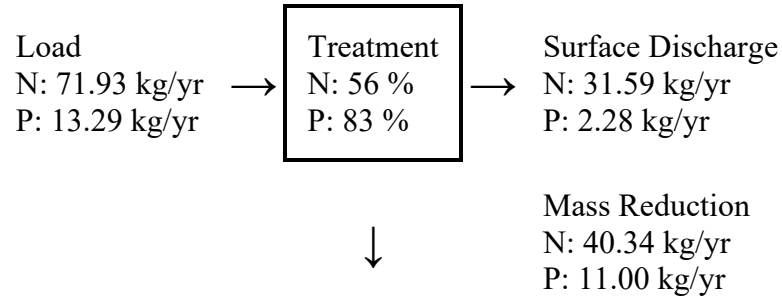
Type of Media Mix	Not Specified
Media N Reduction (%)	

Media P Reduction (%)

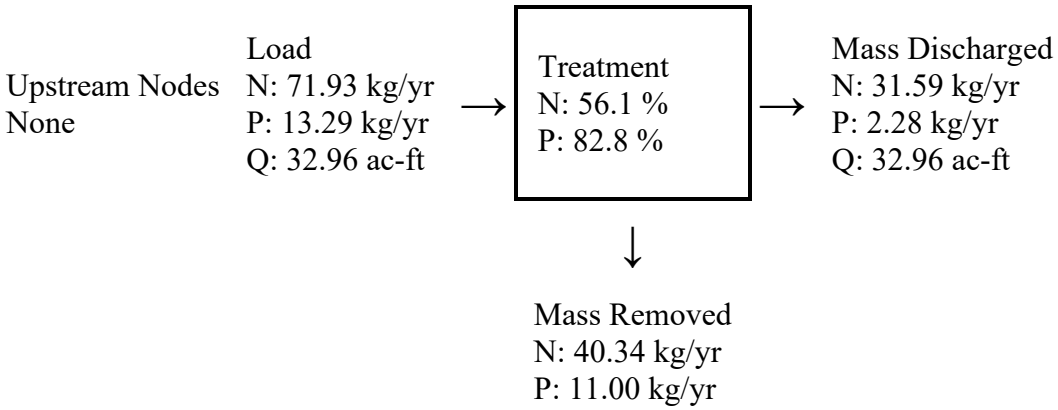
Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention with Littoral Shelf (stand-alone)



Load Diagram for Wet Detention (As Used In Routing)



Catchment Number: 3 Name: Post 10

Project: Mission Rise - Post
Date: 8/18/2025

Wet Detention with Littoral Shelf Design

Permanent Pool Volume (ac-ft)	3.860
Permanent Pool Volume (ac-ft) for 31 days residence	0.720
Annual Residence Time (days)	166
Littoral Zone Efficiency Credit	26
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	8.01
Contributing Area (acres)	7.240
Non-DCIA Curve Number	57.10
DCIA Percent	32.60
Rainfall Zone	Florida Zone 2
Rainfall (in)	50.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	55
Provided TN Treatment Efficiency (%)	58
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	84

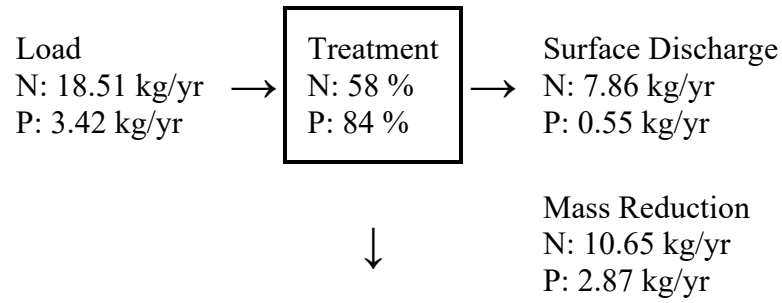
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

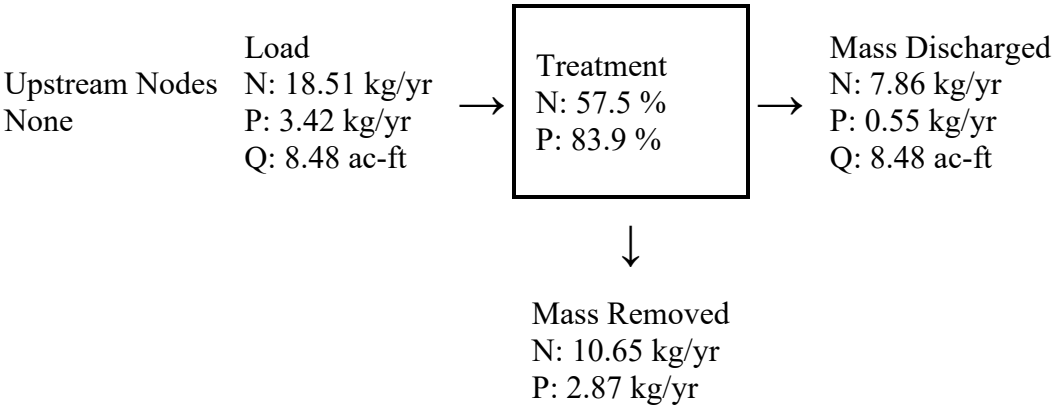
Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention with Littoral Shelf (stand-alone)



Load Diagram for Wet Detention (As Used In Routing)



Catchment Number: 4 Name: Post 9

Project: Mission Rise - Post
Date: 8/18/2025

Wet Detention with Littoral Shelf Design

Permanent Pool Volume (ac-ft)	4.920
Permanent Pool Volume (ac-ft) for 31 days residence	0.793
Annual Residence Time (days)	192
Littoral Zone Efficiency Credit	29
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	11.62
Contributing Area (acres)	10.580
Non-DCIA Curve Number	52.60
DCIA Percent	24.40
Rainfall Zone	Florida Zone 2
Rainfall (in)	50.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	55
Provided TN Treatment Efficiency (%)	59
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	85

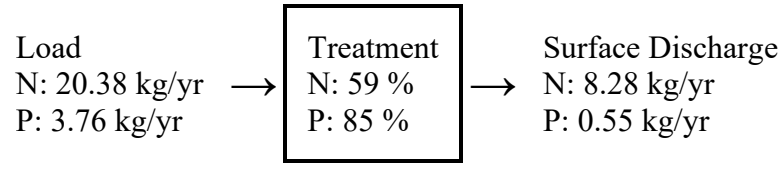
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

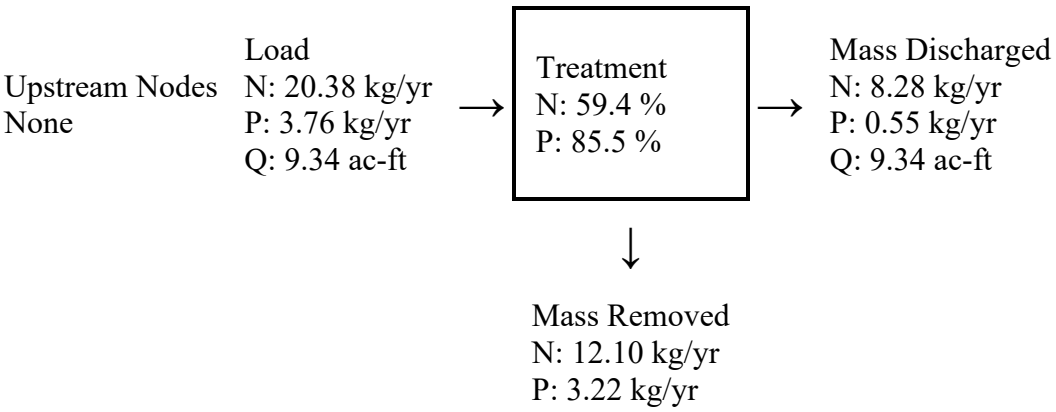
Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention with Littoral Shelf (stand-alone)



↓ Mass Reduction
N: 12.10 kg/yr
P: 3.22 kg/yr

Load Diagram for Wet Detention (As Used In Routing)



Catchment Number: 5 Name: Post 8

Project: Mission Rise - Post
Date: 8/18/2025

Wet Detention Design

Permanent Pool Volume (ac-ft)	2.900
Permanent Pool Volume (ac-ft) for 31 days residence	1.090
Annual Residence Time (days)	82
Littoral Zone Efficiency Credit	
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	12.63
Contributing Area (acres)	12.140
Non-DCIA Curve Number	51.60
DCIA Percent	29.80
Rainfall Zone	Florida Zone 2
Rainfall (in)	50.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	55
Provided TN Treatment Efficiency (%)	42
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	72

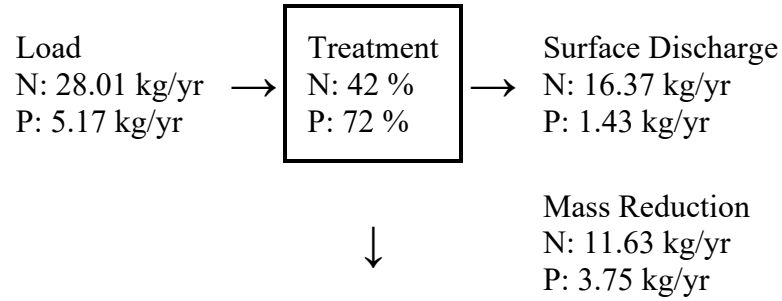
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

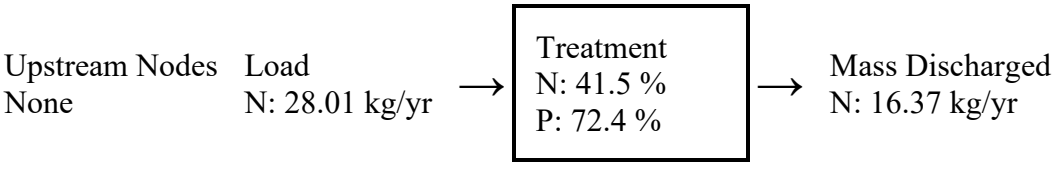
Groundwater Discharge (Stand-Alone)

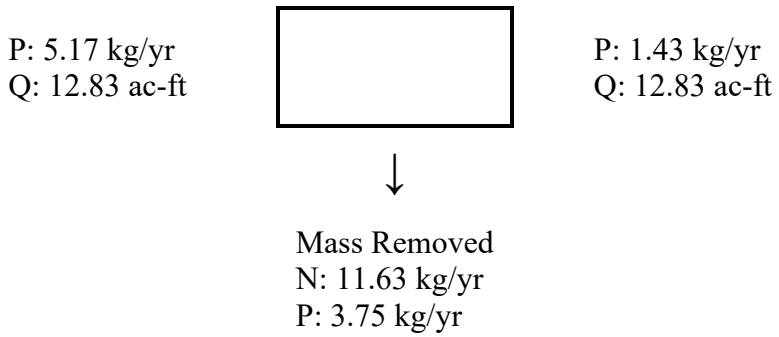
Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention (stand-alone)



Load Diagram for Wet Detention (As Used In Routing)





Catchment Number: 6 Name: Post 7

Project: Mission Rise - Post
Date: 8/18/2025

Wet Detention with Littoral Shelf Design

Permanent Pool Volume (ac-ft)	2.370
Permanent Pool Volume (ac-ft) for 31 days residence	0.577
Annual Residence Time (days)	127
Littoral Zone Efficiency Credit	42
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	7.73
Contributing Area (acres)	7.090
Non-DCIA Curve Number	57.10
DCIA Percent	26.10
Rainfall Zone	Florida Zone 2
Rainfall (in)	50.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	55
Provided TN Treatment Efficiency (%)	67
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	86

Media Mix Information

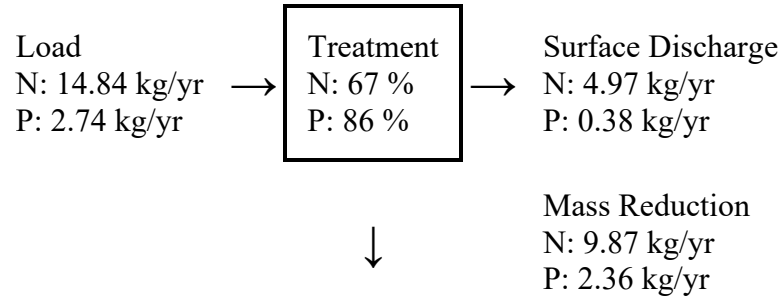
Type of Media Mix	Not Specified
Media N Reduction (%)	

Media P Reduction (%)

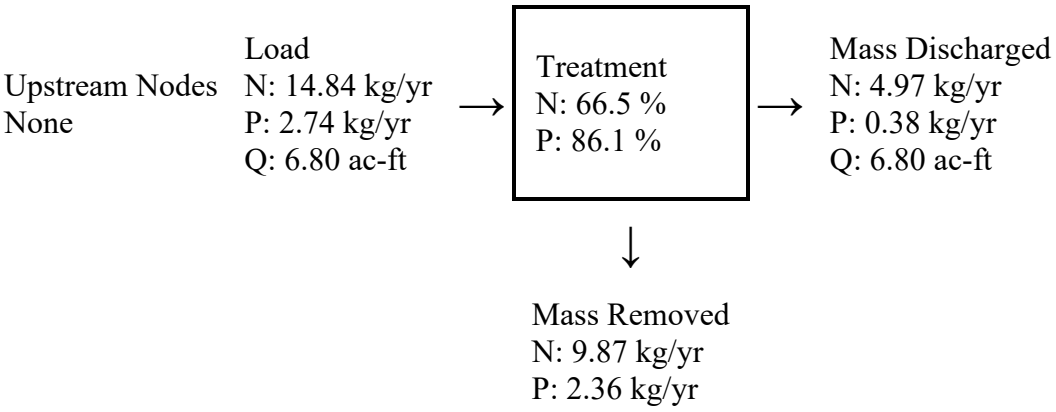
Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention with Littoral Shelf (stand-alone)



Load Diagram for Wet Detention (As Used In Routing)



Catchment Number: 7 Name: Post 6

Project: Mission Rise - Post
Date: 8/18/2025

Wet Detention with Littoral Shelf Design

Permanent Pool Volume (ac-ft)	1.630
Permanent Pool Volume (ac-ft) for 31 days residence	0.620
Annual Residence Time (days)	82
Littoral Zone Efficiency Credit	28
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	7.25
Contributing Area (acres)	6.860
Non-DCIA Curve Number	53.60
DCIA Percent	29.80
Rainfall Zone	Florida Zone 2
Rainfall (in)	50.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	55
Provided TN Treatment Efficiency (%)	58
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	80

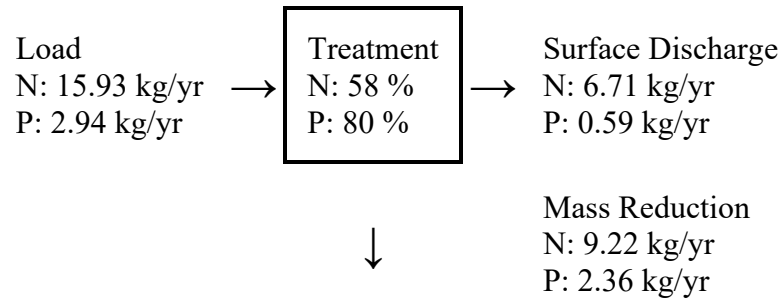
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

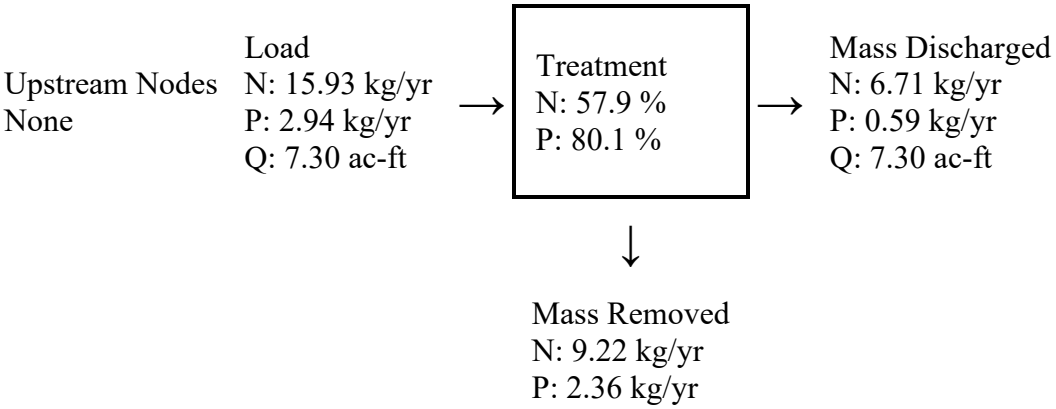
Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention with Littoral Shelf (stand-alone)



Load Diagram for Wet Detention (As Used In Routing)



Catchment Number: 8 Name: Post 5

Project: Mission Rise - Post
Date: 8/18/2025

Wet Detention with Littoral Shelf Design

Permanent Pool Volume (ac-ft)	3.920
Permanent Pool Volume (ac-ft) for 31 days residence	0.846
Annual Residence Time (days)	144
Littoral Zone Efficiency Credit	37
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	9.43
Contributing Area (acres)	8.480
Non-DCIA Curve Number	59.90
DCIA Percent	32.30
Rainfall Zone	Florida Zone 2
Rainfall (in)	50.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	55
Provided TN Treatment Efficiency (%)	64
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	86

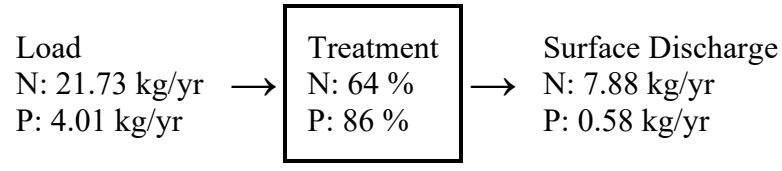
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

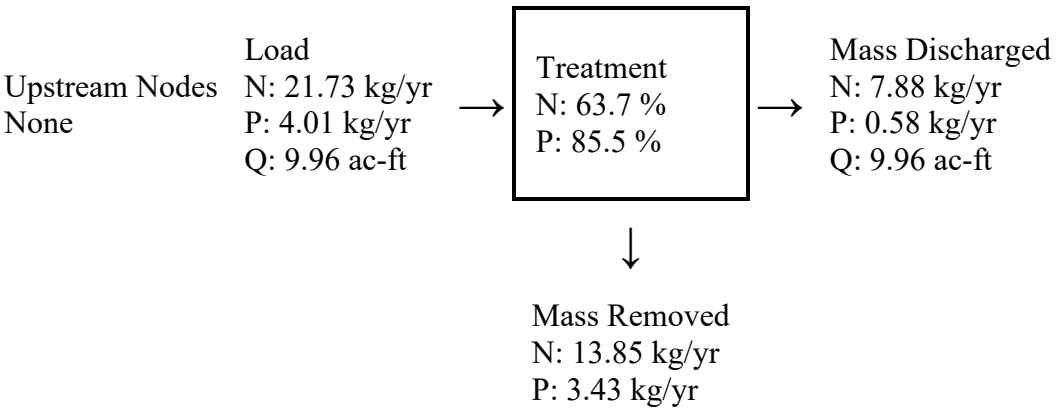
Load Diagram for Wet Detention with Littoral Shelf (stand-alone)



↓

Mass Reduction
N: 13.85 kg/yr
P: 3.43 kg/yr

Load Diagram for Wet Detention (As Used In Routing)



Catchment Number: 9 Name: Post 4

Project: Mission Rise - Post
Date: 8/18/2025

Retention Design

Retention Depth (in)	0.750
Retention Volume (ac-ft)	1.476

Watershed Characteristics

Catchment Area (acres)	23.62
Contributing Area (acres)	23.620
Non-DCIA Curve Number	57.70
DCIA Percent	35.50
Rainfall Zone	Florida Zone 2
Rainfall (in)	50.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	55
Provided TN Treatment Efficiency (%)	85

Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	85

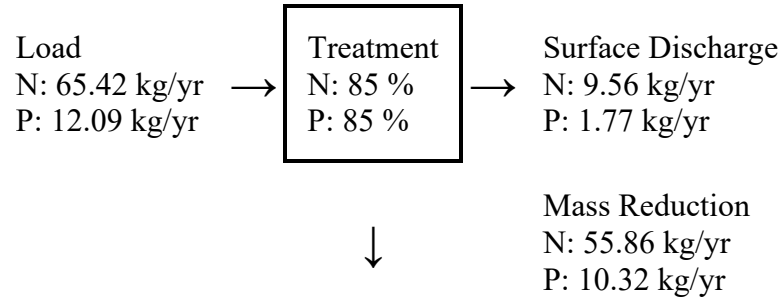
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

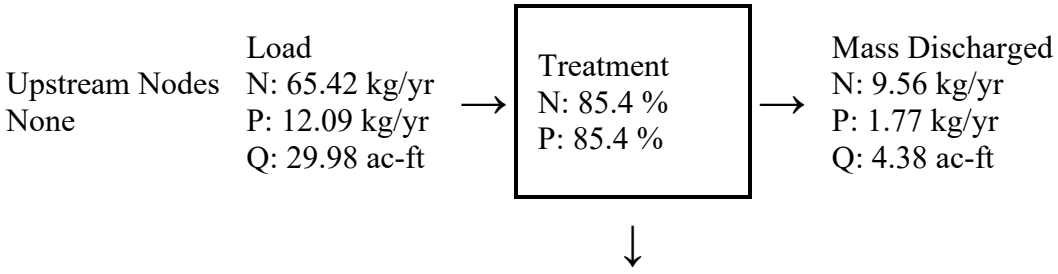
Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	55.864
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	10.321
TP Concentration (mg/L)	0.000

Load Diagram for Retention (stand-alone)



Load Diagram for Retention (As Used In Routing)



Mass Removed
N: 55.86 kg/yr
P: 10.32 kg/yr

Catchment Number: 10 Name: Post 3

Project: Mission Rise - Post
Date: 8/18/2025

Retention Design

Retention Depth (in)	1.000
Retention Volume (ac-ft)	0.562

Watershed Characteristics

Catchment Area (acres)	6.74
Contributing Area (acres)	6.740
Non-DCIA Curve Number	57.00
DCIA Percent	36.10
Rainfall Zone	Florida Zone 2
Rainfall (in)	50.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	55
Provided TN Treatment Efficiency (%)	90
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	90

Media Mix Information

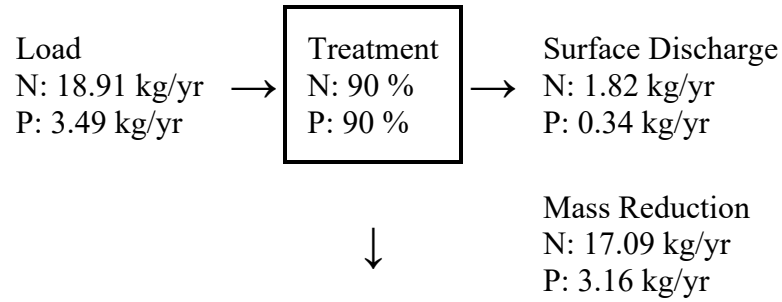
Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

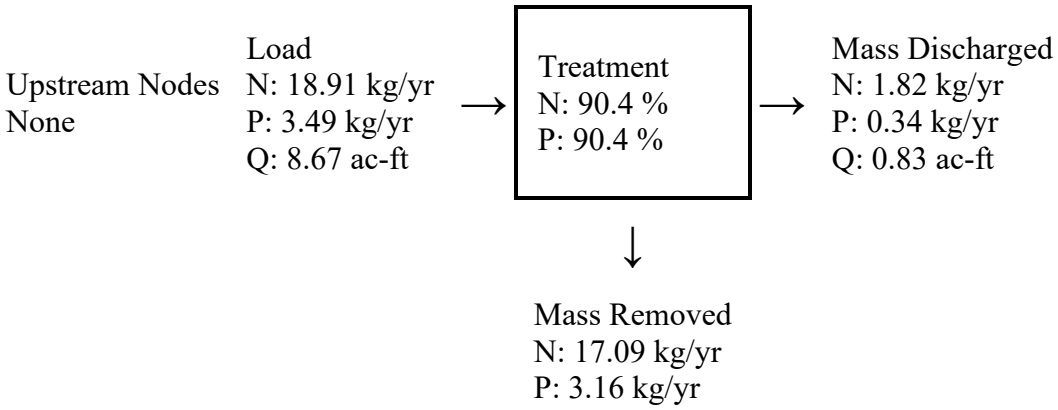
Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	17.094
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	3.158

TP Concentration (mg/L) 0.000

Load Diagram for Retention (stand-alone)



Load Diagram for Retention (As Used In Routing)



Catchment Number: 11 Name: Post 2

Project: Mission Rise - Post
Date: 8/18/2025

Wet Detention with Littoral Shelf Design

Permanent Pool Volume (ac-ft)	3.920
Permanent Pool Volume (ac-ft) for 31 days residence	1.424
Annual Residence Time (days)	85
Littoral Zone Efficiency Credit	41

Wetland Efficiency Credit

Watershed Characteristics

Catchment Area (acres)	15.99
Contributing Area (acres)	14.930
Non-DCIA Curve Number	58.70
DCIA Percent	30.90
Rainfall Zone	Florida Zone 2
Rainfall (in)	50.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	55
Provided TN Treatment Efficiency (%)	65
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	83

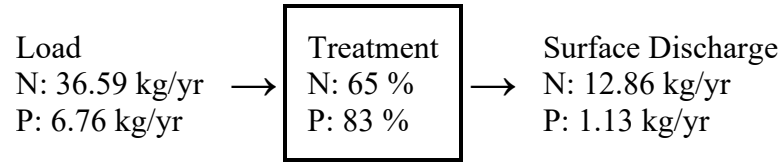
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

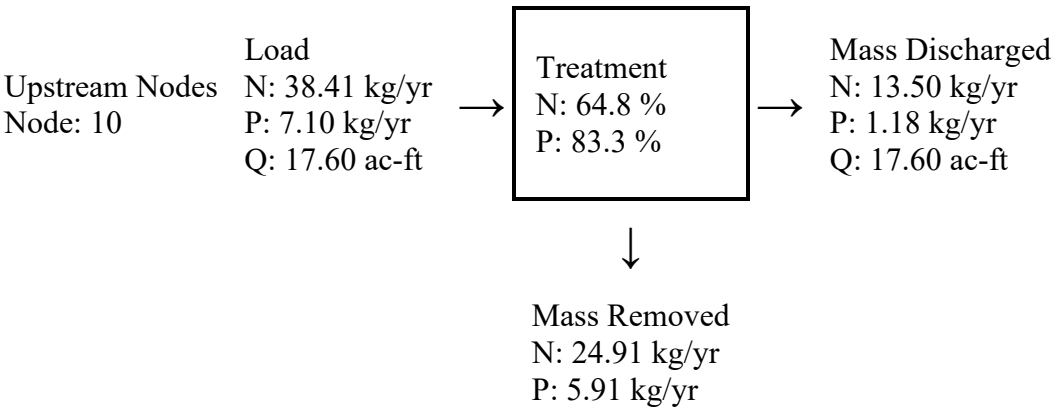
Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention with Littoral Shelf (stand-alone)



↓ Mass Reduction
N: 23.73 kg/yr
P: 5.63 kg/yr

Load Diagram for Wet Detention (As Used In Routing)



Catchment Number: 12 Name: Post 1

Project: Mission Rise - Post
Date: 8/18/2025

Wet Detention Design

Permanent Pool Volume (ac-ft)	2.790
Permanent Pool Volume (ac-ft) for 31 days residence	1.277
Annual Residence Time (days)	68
Littoral Zone Efficiency Credit	
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	12.87
Contributing Area (acres)	12.450
Non-DCIA Curve Number	57.20
DCIA Percent	33.70
Rainfall Zone	Florida Zone 2
Rainfall (in)	50.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	55
Provided TN Treatment Efficiency (%)	41
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	71

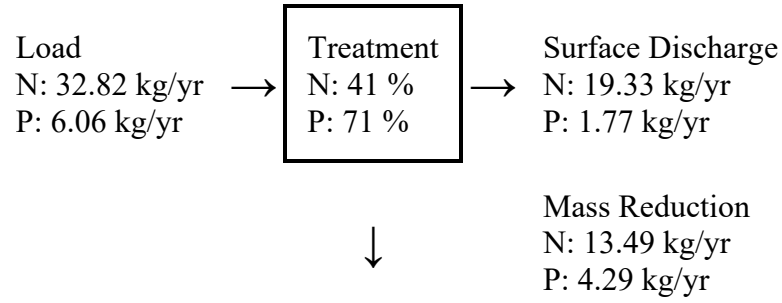
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

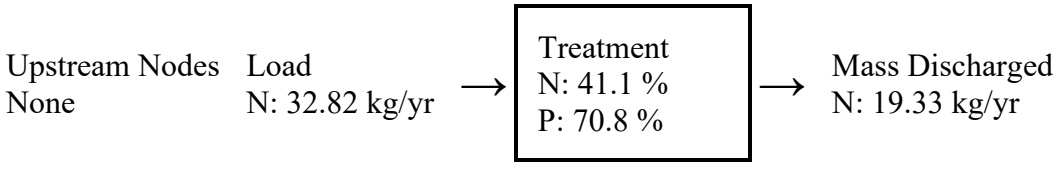
Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention (stand-alone)



Load Diagram for Wet Detention (As Used In Routing)



P: 6.06 kg/yr
Q: 15.04 ac-ft



P: 1.77 kg/yr
Q: 15.04 ac-ft

↓

Mass Removed
N: 13.49 kg/yr
P: 4.29 kg/yr

Summary Treatment Report Version: 4.3.5

Project: Mission Rise - Post

Analysis Type: Specified Removal Efficiency
BMP Types:
Catchment 1 - (Post 12) Wet Detention with Littoral Shelf
Catchment 2 - (Post 11) Wet Detention with Littoral Shelf
Catchment 3 - (Post 10) Wet Detention with Littoral Shelf
Catchment 4 - (Post 9) Wet Detention with Littoral Shelf
Catchment 5 - (Post 8) Wet Detention
Catchment 6 - (Post 7) Wet Detention with Littoral Shelf
Catchment 7 - (Post 6) Wet Detention with Littoral Shelf
Catchment 8 - (Post 5) Wet Detention with Littoral Shelf
Catchment 9 - (Post 4) Retention

Date:8/18/2025

Routing Summary
Catchment 1 Routed to Outlet
Catchment 2 Routed to Outlet
Catchment 3 Routed to Outlet
Catchment 4 Routed to Outlet
Catchment 5 Routed to Outlet
Catchment 6 Routed to Outlet
Catchment 7 Routed to Outlet
Catchment 8 Routed to Outlet
Catchment 9 Routed to Outlet
Catchment 10 Routed to Catchment 11
Catchment 11 Routed to Outlet
Catchment 12 Routed to Outlet

Catchment 10 - (Post 3)
Retention
Catchment 11 - (Post 2)
Wet Detention with Littoral Shelf
Catchment 12 - (Post 1)
Wet Detention
Based on % removal values to the nearest percent

Total nitrogen target removal met? **Yes**
Total phosphorus target removal met? **Yes**

Summary Report

Nitrogen

Surface Water Discharge

Total N pre load	kg/yr	
Total N post load	404.74 kg/yr	
Target N load reduction	55 %	
Target N discharge load	182.13 kg/yr	
Percent N load reduction	63 %	
Provided N discharge load	150.99 kg/yr	332.93 lb/yr
Provided N load removed	253.76 kg/yr	559.53 lb/yr

Phosphorus

Surface Water Discharge

Total P pre load	kg/yr	
Total P post load	74.775 kg/yr	
Target P load reduction	80 %	
Target P discharge load	14.955 kg/yr	
Percent P load reduction	82 %	
Provided P discharge load	13.133 kg/yr	28.96 lb/yr
Provided P load removed	61.642 kg/yr	135.921 lb/yr

GEOTECHNICAL EXPLORATION

MISSION RISE SUBDIVISION
REVELS, SOUTH PALM, NUMBER 2, AND SILVERWOOD ROAD
HOWEY-IN-THE-HILLS, LAKE COUNTY, FLORIDA

UES PROJECT NO. 0130.2400259.0000
UES REPORT NO. 2109185v2

PREPARED FOR:

Turnstone Group DBA Highland Homes
1170 Peachtree Street, Suite 1150
Atlanta, Georgia 30309

Attention: Mr. Jason Humm, Project Manager

PREPARED BY:

UES
3532 Maggie Boulevard
Orlando, Florida 32811
(407) 423-0504

Revised: January 21, 2025

Materials Testing
Geotechnical Engineering
Environmental
Building Sciences & Safety
Inspections & Code Compliance
Virtual Design Consulting

November 18, 2024
Revised: January 21, 2025

Turnstone Group
1170 Peachtree Street, Suite 1150
Atlanta, Georgia 30309
P: 630-816-7002

Attention: Mr. Jason Humm, Project Manager
Jhumm@turnstonegroup.com

Reference: **Geotechnical Exploration**
Mission Rise Subdivision
Revels, South Palm, Number 2, and Silverwood Road
Howey-in-the-Hills, Lake County, Florida
UES Project No. 0130.2400259.0000
UES Report No. 2109185v2

Dear Mr. Humm:

UES Professional Solutions, LLC d/b/a UES, has completed the Geotechnical Exploration at the above referenced site in Howey-in-the-Hills, Florida. The scope of our exploration was planned in conjunction with and authorized by you. This exploration was performed in general accordance with UES Proposal No. 2100943 dated July 29, 2024, and generally accepted soil and foundation engineering practices. No other warranty, express or implied, is made.

The following report presents the results of our field exploration with a geotechnical engineering interpretation of those results with respect to the project characteristics as provided to us. We have included our estimates of the seasonal high groundwater level at the boring locations and geotechnical recommendations for residential lot suitability, pavement design, site preparation, stormwater pond design parameters, and suitability of excavated soils for use as fill. *Generally, the site was found to be suitable for the proposed development following the typical site preparation procedures presented in this report.*

We appreciate the opportunity to have worked with you on this project and look forward to a continued association. Please do not hesitate to contact us if you should have any questions, or if we may further assist you as your plans proceed.

Respectfully Submitted,
UES PROFESSIONAL SOLUTIONS, LLC
Florida Engineering Business Registry No. 549

Erfan Mobarezi, M.S.
Geotechnical Project Manager

RICARDO C. KIRIAKIDIS L. LICENSE No 70602 STATE OF FLORIDA PROFESSIONAL ENGINEER

Ricardo C Kiriakidis L. 2025.01.21 16:35:45 -05'00'

This item has been digitally signed and sealed by Ricardo C. Kiriakidis L. on the date adjacent to the seal.
Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies

Ricardo C. Kiriakidis L., Ph.D., P.E.
Date: 1/21/2025
Geotechnical Department Manager
Florida Registration No. 70602

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1.0 PROJECT DESCRIPTION

UES understands that Turnstone Group is in the design process for a new single-family residential subdivision located in Lake County, Florida. The site is located at Revels, South Palm, Number 2, and Silverwood Road in Howey-in-the-Hills, Florida encompassing parcels identified with 27-20-25-0004-000-01200, 34-20-25-0001-000-00100, 34-20-25-0004-000-01003, 02-21-25-0002-000-04800 by the Lake County Property Appraiser. UES was provided with a conceptual plan showing the property and the proposed improvements. The site plan indicated individual residential lots and paved access roadways and stormwater ponds.

Should any of the above information or assumptions made by UES be inconsistent with the planned development and construction, we request that you contact us immediately to allow us the opportunity to review the new information in conjunction with our report and revise or modify our engineering recommendations accordingly, as needed.

No site or project facilities/improvements, other than those described herein, should be designed using the soil information presented in this report. Moreover, UES will not be responsible for the performance of any site improvement so designed and constructed.

2.0 PURPOSE

The purposes of this exploration were:

- to explore and evaluate the subsurface conditions at the site with special attention to potential problems that may impact the proposed development,
- to provide our estimates of the seasonal high groundwater level at the boring locations and
- to provide geotechnical engineering recommendations for residential lot suitability, pavement design, site preparation, stormwater pond design parameters, and suitability of excavated soils for use as fill.

This report presents an evaluation of site conditions on the basis of geotechnical procedures for site characterization. The recovered samples were not examined, either visually or analytically, for chemical composition or environmental hazards. We would be glad to provide you with a proposal for these services at your request.

Our exploration was not designed to specifically address the potential for surface expression of deep geological conditions, such as sinkhole development related to karst activity. This evaluation requires a more extensive range of field services than those performed in this study. We would be pleased to conduct an exploration to evaluate the probable effect of the regional geology upon the proposed construction, if you so desire.

3.0 SITE DESCRIPTION

The subject site is located within Section 2, and 34, Township 20, and 21 South, Range 25 East in Lake County, Florida. More specifically, the site is located at Revels, South Palm, Number 2, and Silverwood Road in Howey-in-the-Hills, Florida and several nearby parcels as shown on the attached Appendix. At the time of our field exploration, the site was observed to be

heavily covered with vegetation and densely wooded. There are several low elevation and wet areas across the site, most of which we understand will be left undeveloped.

3.1 SOIL SURVEY

There are eleven (11) native soil types and Water (#99) mapped within the general vicinity of the site according to the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey of Lake County (FL607). A brief summary of the mapped surficial soil types is presented in Table I. *Please note the native soil type and its associated engineering properties might have been altered during previous and current land use*.

TABLE I
SUMMARY OF PUBLISHED SOIL DATA [1]

Soil Symbol	Soil Type	Hydrologic Group	Drainage Characteristics	Depth to Published Seasonal High GWT (feet)
1	Sparr sand, 0 to 5 percent slopes	A/D	Somewhat poorly drained	2½ to 3½
5	Apopka sand, 0 to 5 percent slopes	A	Well drained	6½ <
8	Candler sand, 0 to 5 percent slopes	A	Excessively drained	6½ <
17	Arents	B	Somewhat poorly drained	2½ to 5
20	Immokalee sand	B/D	Poorly drained	½ to 2½
25	Kendrick sand, 5 to 8 percent slopes	A	Well drained	6½ <
28	Myakka-Myakka, wet, sands, 0 to 2 percent slopes	A/D	Poorly drained	2½ to 3½
30	Lochloosa sand	B	Somewhat poorly drained	2½ to 5
31	***Ocoee mucky peat***	A/D	Very poorly drained	***0***
40	Placid and Myakka sands, ***depressional***	A/D	Very poorly drained	***0***
45	Tavares sand, 0 to 5 percent slopes	A	Moderately well drained	3½ to 6
99	WATER			

[1] Data obtained from the NRCS online webpage, accessed on 9/10/2024
[2] GWT = Groundwater table

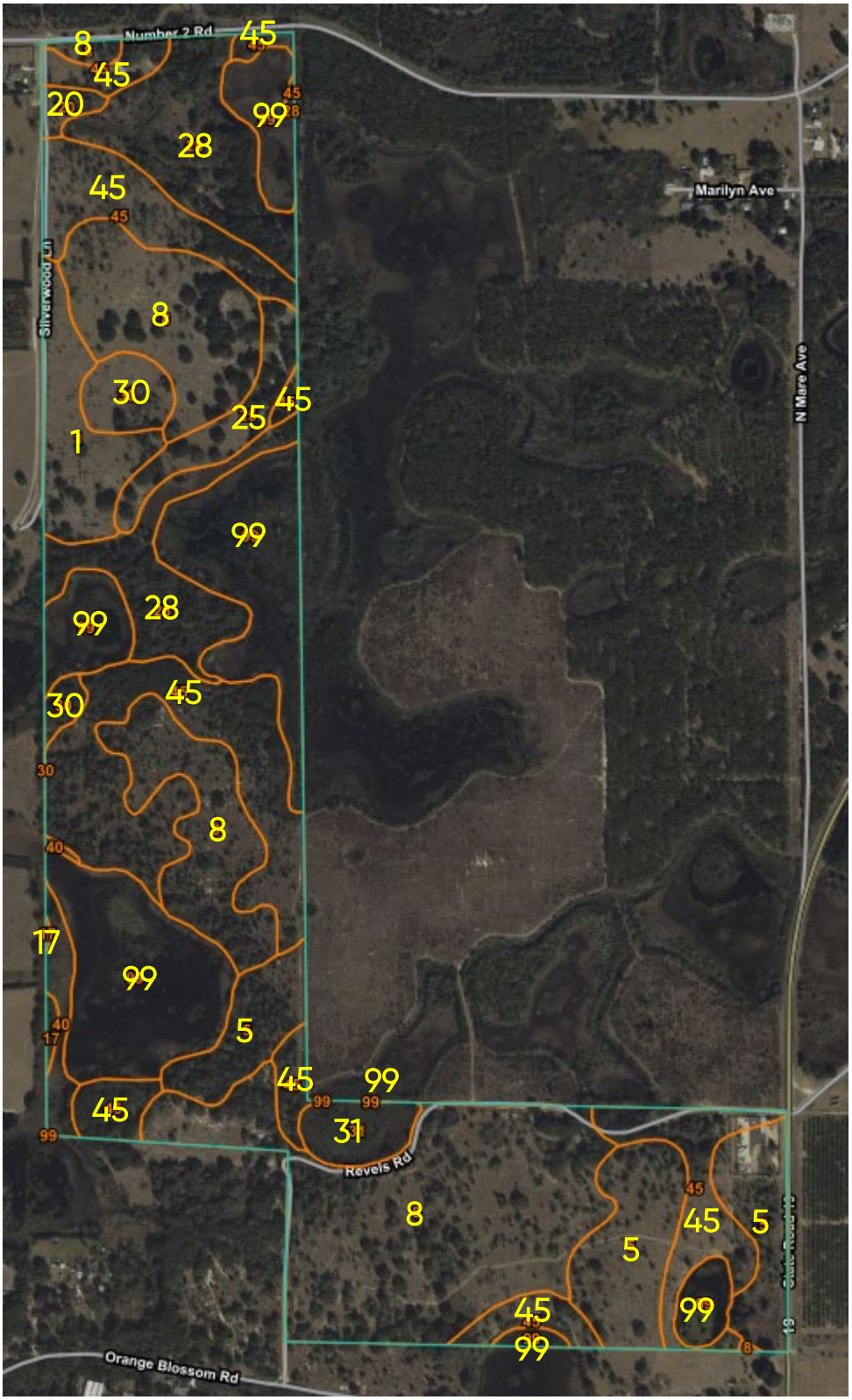


Figure I: Web Soil Survey
(Image obtained from the USDA NRCS Web Soil Survey online webpage, accessed on 9/10/2024)

3.2 TOPOGRAPHY

According to information obtained from the United States Geologic Survey (USGS) "Howey-in-the-Hills, Florida" quadrangle map, the pre-development ground surface elevation across the site area was approximately +85 to +100 feet National Geodetic Vertical Datum (NGVD). The topo plan provided by ATWELL indicates ground elevations across the site vary between XXX and XXX. A copy of a portion of the USGS Map is included in Appendix A.

4.0 SCOPE OF SERVICES

The services conducted by UES during our geotechnical explorations were as follows:

- Forty-five (45) Standard Penetration Test (SPT) borings along the proposed roadway alignments to a depth of 10 feet below existing land surface (bls).
- Nineteen (19) SPT borings within the stormwater pond footprints to a depth of 25 feet bls.
- Secured samples of representative soils encountered in the soil borings for review, laboratory analysis and classification by a Geotechnical Engineer.
- Measured the existing site groundwater levels and provided an estimate of the seasonal high groundwater level at the boring locations.
- Conducted laboratory testing on selected soil samples obtained in the field to determine their engineering properties.
- Assessed the existing soil conditions with respect to the proposed construction.
- Prepared a report which documents the results of our exploration and analysis with geotechnical engineering recommendations.

5.0 FIELD EXPLORATION

The SPT borings were performed with an ATV mounted drilling rig. UES located the test borings using the provided site plan, measurements from existing on-site landmarks shown on an aerial photograph, handheld GPS devices. the borings were surveyed after completion by ATWELL. The boring location plan is based on the data provided by ATWELL..

5.1 STANDARD PENETRATION TEST (SPT) BORINGS

The SPT borings, designated R-01 through R-45, and P-01 through P-21 *(Please note that due to the dense vegetation and wetland areas, our drillers were unable to drill borings P-7 and P-8)*, as shown on the attached Boring Location Plan in Appendix B-1, were performed in general accordance with the procedures of ASTM D 1586 "Standard Method for Penetration Test and Split-Barrel Sampling of Soils". SPT sampling was performed continuously to 10 feet to detect variations in the near surface soil profile and on approximate 5 feet centers thereafter. The soil samples recovered from the test borings were returned to our laboratory and visually classified in general accordance with ASTM D 2487 "Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System – USCS).

6.0 LABORATORY TESTING

The soil samples recovered from the test borings were returned to our laboratory and visually classified in general accordance with ASTM D 2487 "Standard Classification of Soils for Engineering Purposes" (Unified Soil Classification System). We selected representative soil samples from the borings for laboratory testing to aid in classifying the soils and to help to evaluate the general engineering characteristics of the site soils. The results of these tests are shown on the boring logs in Appendix B. A summary of the tests performed is shown in Table II.

TABLE II
LABORATORY METHODOLOGIES

Test Performed	Number Performed	Reference
Grain Size Analysis (#200 wash only)	17	ASTM D 1140 "Amount of Material in Soils Finer than the No. 200 (75 - µm) sieve"
Permeability Test	19	Using the D10 method obtained from ASTM D 422 "Standard Test Method for Particle-Size Analysis of Soils"
Moisture Content	36	ASTM D 2216 "Laboratory Determination of Water (Moisture) Content of Soil by Mass"

7.0 SUBSURFACE CONDITIONS

7.1 GENERALIZED SOIL PROFILE

The results of our field exploration and laboratory analysis, together with pertinent information obtained from the SPT and hand auger borings, such as soil profiles, penetration resistance and groundwater levels are shown on the boring logs included in Appendix B. The Key to Boring Logs, Soil Classification Chart is also included in Appendix B. The soil profiles were prepared from field logs after the recovered soil samples were examined by a Geotechnical Engineer.

The stratification lines shown on the boring logs represent the approximate boundaries between soil types and may not depict exact subsurface soil conditions. The actual soil boundaries may be more transitional than depicted. A generalized profile of the soils encountered at our boring locations is presented in Table III. For detailed soil profiles, please refer to the attached boring logs.

TABLE III
GENERALIZED SOIL PROFILE

Typical Depth (feet, bls)		Soil Description	Range of SPT "N" Values (blows/ft)
From	To		
0	25*	Very loose to dense fine SAND [SP] or fine SAND with silt, and clay [SP-SM], [SP-SC], and silty, clayey fine SAND [SM], [SC]	2 to 45

* Denotes maximum termination depth of boring

7.2 NOTABLE FINDINGS

7.2.1 Very Loose Soils

Very loose soil was observed within the upper 10 feet bls at some boring locations. These soils exhibited "N" blow count values of 2 to 5 blows per foot. It has been our experience that very loose soils with SPT "N" blow counts less than approximately 5 blow count per foot may not provide adequate support for the proposed residential structures and proposed paved areas without some soil improvements.

7.2.2 Shallow Estimated Seasonal High Groundwater (SHGWT) Conditions

Due to the relatively shallow hydraulically restrictive clayey SAND layer [SC] encountered in some of the borings as well as the significant elevation relief across the site, a Shallow estimated SHGWT conditions should be expected, in some areas of the site, during wet seasons, such as near our boring location P-01.

Temporary dewatering program will be required to control the shallow groundwater conditions during excavation and construction of the underground utilities, especially during rainy seasons.

We also note that the estimated shallow estimated SHGWT will also cause soggy ground conditions, thus, landscape underdrain system may be needed to control the water conditions. Underdrain systems should also be utilized if the minimum separation required by the municipality between the estimated SHGWT and the bottom elevation of the base materials are not met.

8.0 GROUNDWATER CONDITIONS

8.1 EXISTING GROUNDWATER LEVEL

We attempted to measure the water levels in the boreholes in August of 2024 during our drilling operations. The encountered groundwater table ranged from approximately **4 feet to 25 feet** below existing grades at the time of our explorations. Please refer to the attached boring logs in Appendix B for boring location specific groundwater levels.

Fluctuations in groundwater levels should be anticipated throughout the year, primarily due to seasonal variations in rainfall, surface runoff, and other factors that may vary from the time the borings were conducted.

8.2 SEASONAL HIGH GROUNDWATER LEVEL

Based on historical data, the rainy season in Central Florida is between June and October of the year. In order to estimate the seasonal high water level at the boring locations, many factors are examined, including the following:

- Measured groundwater level
- Drainage characteristics of existing soil types
- Current & historical rainfall data
- Natural relief points (such as lakes, rivers, wetlands, etc.)
- Man-made drainage systems (ditches, canals, retention basins, etc.)
- On-site types of vegetation
- Review of available data (soil surveys, USGS maps, etc.)
- Redoximorphic features (mottling, stripping, etc.)

Based on the results of our field exploration and the factors listed above, we estimate that the seasonal high groundwater level at the boring locations will generally form **at depth of 0 feet to 23 feet bls** depending on the boring locations. *This large range of groundwater levels is attributed to the topographic relief across the site.* Site grading operations may influence the groundwater levels. The estimated seasonal high groundwater levels at the boring locations are shown on the individual boring logs as attached in Appendix B.

Table IV summarizes the ground and groundwater conditions at the boring locations. The ground elevations (provided by ATWELL) and estimated seasonal high groundwater level is also shown on the individual boring logs in Appendix B.

Table IV
Groundwater Conditions

Borings Name	Ground Elevation** (ft)	Measured GWT Depth (ft)	DATE	Measured GWT Depth (ft)	DATE	Elevation GWT Depth (ft) (ft)	Estimated Depth of SHGWT (ft)	Estimated Elevation of SHGWT (ft)
P-01	83.0	5.8	8/30/2024	-	-	77.2	0.0*	83
P-02	81.8	4.4	8/30/2024	-	-	77.4	3.5	78.3
P-03	84.7	8.5	8/30/2024	-	-	76.2	3.5*	81.2
P-04	91.7	10.9	8/27/2024	11.6	8/30/2024	80.8	3.5*	88.2
P-05	91.5	9.0	8/27/2024	12.6	8/30/2024	82.5	3.5*	88
P-06	86.2	16	8/27/2024	9.2	8/30/2024	77	3.5*	82.7
P-09	85.2	7.5	8/22/2024	7.8	8/24/2024	77.4	6.5*	78.7
P-10	-	14.9	8/21/2024	12.9	8/24/2024	-	6.5*	-
P-11	89.7	6.2	8/21/2024	5.6	8/24/2024	84.1	4.5	85.2
P-12	88.1	10.6	8/20/2024	10.5	8/24/2024	77.6	5.5*	82.6
P-13	87.7	10.6	8/19/2024	11.0	8/24/2024	77.1	8.5	81.2
P-14	-	11.7	8/19/2024	6.2	8/24/2024	-	3.5*	-
P-15	-	17.0	8/14/2024	17.0	8/23/2024	-	15<	-
P-16	93.7	8.0	8/15/2024	9.1	8/23/2024	84.6	7.5	86.2
P-17	87.8	8.6	8/15/2024	9.2	8/23/2024	78.6	7.5	80.3
P-18	86.2	11.4	8/15/2024	11.3	8/23/2024	74.9	3.5*	82.7
P-19	90.8	6.6	8/16/2024	6.8	8/23/2024	84	5.5	85.3
P-20	84.7	24.0	8/17/2024	N. E	8/23/2024	60.7	20<	64.7
P-21	97.9	19.0	8/17/2024	19.8	8/23/2024	78.9	15<	82.9

* Depth to base of surficial aquifer based on the depth to the hydraulically restrictive soils [SM, SC]
** Elevations provided by ATWELL

Please note that the elevations at the boring locations were determined using estimates based on survey control data provided by ATWELL, LLC on November 2024. The survey control information served as the basis for our elevation estimates.

It should be noted that the estimated seasonal high water levels provided should be considered accurate to approximately ±½ foot and do not provide any assurance that groundwater levels will not exceed these estimated levels during any given year in the future. Should the impediments to surface water drainage be present, or should rainfall intensity and duration, or total rainfall quantities, exceed the normally anticipated rainfall quantities, groundwater levels might exceed our seasonal high estimates. Further, it should be understood that changes in the surface hydrology and subsurface drainage from on-site

and/or off-site improvements could have significant effects on the normal and seasonal high groundwater levels.

9.0 RESIDENTIAL LOT SUITABILITY

The following recommendations are made based upon a review of the attached soil test data, our understanding of the proposed construction, and experience with similar projects and subsurface conditions. The applicability of geotechnical recommendations is very dependent upon project characteristics such as improvement locations, and grade alterations. UES must review the final site and grading plans to validate all recommendations rendered herein.

Additionally, the lot areas were not explored and therefore may require additional borings if subsurface conditions are encountered during construction, which were not encountered in the borings, report those conditions immediately to us for observation and recommendations. Note that the shallow clayey SAND [SC] conditions found at some of the borings bay result in perch conditions, which may require excavations, grade changes and or yard drains. During construction or prior to, Lots suspected of having clayey sands [SC] may need to be further evaluated.

General Lot Suitability: Based on the results of the soil borings, the near surface soils appear to be mostly very loose to dense fine SAND with varying fines [SP, SP-SM, SP-SC, SM & SC]**.** It is our opinion that the proposed structure can be supported on properly designed and constructed shallow foundation systems. Provided that the site preparation recommendations outlined in this report are followed, the parameters outlined below may be used for foundation design.

Structural Fill: All structural fill (if any) should consist of clean fine sands [SP] (less than 5 percent fines) placed in maximum 12-inch uniform loose lifts. Fill soils containing between 5 and 10 percent fines [SP-SM or SP-SC] may be also be used, however, strict moisture control may be required. Each lift of structural fill should be densified to at least 95 percent of the Modified Proctor test maximum dry density of the soil (ASTM D 1557) and tested for compaction and approved before the placement of subsequent lifts.

Shallow footing foundations: We assume that the proposed single family homes will consist of 1 to 2-story, typical Florida stucco, block and wood frame construction. We have assumed that the maximum column loads will not exceed 25 kips and that maximum wall loads will not exceed 4 kips per lineal foot for the proposed residential structures.

Provided the lots are properly prepared prior to construction, the proposed residence can be supported upon conventional, shallow footing foundations designed for a ***maximum allowable net soil bearing pressure of 2,000 pounds per square foot (psf)*** in an effort to keep total and differential settlements to tolerable levels (i.e. 1-inch or less total settlement and ½-inch or less of differential settlement). The allowable net soil bearing pressure is that pressure that may be transmitted to the soil in excess of the minimum surrounding overburden pressure. The allowable bearing pressure should include dead load plus sustained live load. Per the Florida Building Code (FLBC), the foundations should be designed for the most unfavorable effects due to the combinations of loads.

The foundations may bear on either the compacted suitable native soils or compacted structural fill. The bearing level soils should be densified to at least 95 percent of the maximum dry density as determined by ASTM D 1557 (Modified Proctor) to a depth of at least **2 feet** below foundation levels.

The minimum width recommended for an isolated column footing is 24 inches. For continuous wall or thickened edge monolithic slab footings, the minimum widths should comply with the current FLBC, but under no circumstances should be less than 12 inches in width. The base of all footings should bear at least 12 inches below finished grade elevation as required under the current FLBC.

10.0 PAVEMENT RECOMMENDATIONS

10.1 GENERAL

We assume that the proposed roadways will consist of a flexible pavement section with typical residential traffic. At the time of this exploration, specific traffic loading information was not provided to us. All streets to be established in a subdivision should be designed in accordance with the Lake County Roadway Design Standards.

10.2 ASPHALTIC PAVEMENTS

10.2.1 Layer Components

We recommend using a three-layer pavement section for the proposed roadways consisting of compacted subgrade (sub-base), base course, and surface course. The Lake County Transportation, Design and Construction Standard has divided the pavement requirements for local roads into categories as a function of average daily traffic (ADT). Table V summarizes the minimum pavement component thicknesses for roadway design.

TABLE V
MINIMUM ASPHALTIC PAVEMENT COMPONENT THICKNESSES

ADT (vpd)	Layer Component (inches)		
	Surface Course	Base Course	Subgrade
<500	1½	6	12
500 to 1,500	2	6	12
1,500 to 4,000	2	8	12

10.2.2 Subgrade

We recommend that the stabilized subgrade materials immediately beneath the base course exhibit a minimum Limerock Bearing Ratio (LBR) of 40 as specified by Florida Department of Transportation (FDOT). The stabilized subgrade should be compacted to at least 98 percent of the Modified Proctor maximum dry density (ASTM D 1557) value.

Stabilized subgrade can be imported materials or a blend of on-site and imported materials. If a blend is proposed, we recommend that the contractor perform a mix design to find the optimum mix proportions.

Compaction testing of the subgrade should be performed to full depth at a frequency of at least one (1) test per 10,000 square feet, or every 300 lineal feet of roadway, whichever is greater.

10.2.3 Base Course

Based on the results of our exploration and our experience in the project area, limerock, soil-cement and recycled crushed concrete are suitable base course materials for this project.

However, local municipality standards may govern the use of recycled crushed concrete use as an alternative base course material. We recommend the civil engineer consult with the local municipalities prior to selecting the base course material for this project.

For a limerock base, the base course should be compacted to a minimum density of 98 percent of the Modified Proctor maximum dry density and exhibit a minimum LBR of 100. The limerock material should comply with the latest edition of the Florida Department of Transportation (FDOT) Road and Bridge Construction specifications.

For a soil-cement base, we recommend the contractor perform a soil-cement design with a minimum seven (7)-day strength of 300 pounds per square inch (psi) on the materials he intends to use. Place soil-cement in maximum 6-inch lifts uniform and compact in place to a minimum density of 95 percent of the maximum dry density according to specifications in ASTM D-558, "Moisture Density Relations of Soil Cement Mixtures".

Place and finish the soil-cement according to Portland Cement Association requirements. Final review of the soil-cement base course should include manual "chaining" and/or "soundings" seven days after placement. Shrinkage cracks will form in the soil-cement mixture and you should expect reflection cracking on the surface course.

Recycled Concrete Aggregate (RCA) may provide a cost-effective alternative material in lieu of limerock or soil cement base courses. Local availability, along with municipality standards, typically governs the use of crushed concrete use as an alternative base course material. The advantages of using crushed concrete as a pavement base course include its high strength (stronger than limerock), resistance to groundwater related distress, and lack of reflection cracking caused by thermal expansion and contraction.

If RCA base is used, the base course material should be sourced from an FDOT approved supplier. The base should be compacted to a minimum density of 98 percent of the Modified Proctor maximum dry density and exhibit a minimum LBR of 150. The base material should comply with the latest edition of the FDOT Road and Bridge Construction Specifications.

Compaction testing of the base course should be performed to full depth at a frequency of at least one (1) test per 10,000 square feet.

10.2.4 Surface Course

For the pavements, we recommend that the surfacing consist of FDOT SuperPave (SP) asphaltic concrete. The surface course should consist of FDOT SP-9.5 fine mix for light-duty areas and FDOT SP-12.5 topped with SP-9.5 fine mix for heavy duty areas. The asphalt concrete should be placed within the allowable lift thicknesses for fine Type SP mixes per the latest edition of FDOT, Standard Specifications for Road and Bridge Construction.

The asphaltic concrete should be compacted to an average field density of 93 percent of the laboratory maximum density determined from specific gravity (G_{mm}) methods, with an individual test tolerance of **+2 percent and -1.2% of the design G_{mm}**. Specific requirements for the SuperPave asphaltic concrete structural course are outlined in the latest edition of FDOT, Standard Specifications for Road and Bridge Construction.

Note: If the Designer (or Contract Documents) limits compaction to the static mode only or lifts are placed one-inch thick, then the average field density should be 92 percent, with an individual test tolerance of + 3 percent, and -1.2% of the design G_{mm}.

After placement and field compaction, the wearing surface should be cored to evaluate material thickness and density. Cores should be obtained at frequencies of at least one (1) core per 10,000 square feet of placed pavement, or a minimum of two (2) cores per day's production.

10.2.5 Effects of Groundwater

One of the most critical influences on the pavement performance in Central Florida is the relationship between the pavement base course and the seasonal high groundwater level. Sufficient separation will need to be maintained between the bottom of base course and the anticipated seasonal high groundwater level. According to Lake County's requirements seasonal high groundwater level should be at least **6-inches below the bottom of the stabilized subgrade.**

The separation should be confirmed by reviewing the final site grading and paving plan. If the separation is not provided by grading, the installation of underdrains will be required.

10.2.6 Landscape Underdrains

In the event that landscape areas adjacent to the pavements include large mounds (>1 foot) of poorly draining organic topsoils or silty/clayey sands, we recommend that landscape drains be provided to protect the roadway against adverse effects from over-irrigation or excess rainfall. Poorly draining silty and clayey material causes the irrigation and rainwater to perch and migrate laterally into the pavement components, which eventually compromises the integrity of the pavement section.

10.3 Concrete "Rigid" Pavements

Concrete pavement is a rigid pavement that transfers much lighter wheel loads to the subgrade soils than a flexible asphalt pavement; therefore, requiring less subgrade preparation. Concrete pavement is recommended in truck court areas, under the dumpster areas, and 10 feet in front of the trash enclosures, at a minimum.

We recommend using the existing surficial sands or approved structural fill densified to at least 98 percent of Modified Proctor test maximum dry density (ASTM D 1557) without additional stabilization under concrete pavement, with the following stipulation:

1. Prior to placement of concrete, the subgrade soils should be prepared as recommended in the Site Preparation section of this report.
2. The surface of the subgrade soils must be smooth, and any disturbances or wheel rutting corrected prior to placement of concrete.
3. The subgrade soils must be moistened prior to placement of concrete.
4. Concrete pavement thickness should be uniform throughout, with exception to the thickened edges (curb or footing).
5. The bottom of the pavement should be separated from the seasonal high groundwater level by at least 12 inches.

Based on the results of the soil borings and review of the FDOT Rigid Pavement Design Manual, we recommend using the minimum design shown in Table VI for concrete pavements.

TABLE VI
MINIMUM CONCRETE PAVEMENT THICKNESSES

`	.	Maximum Control Joint Spacing	Recommended Saw Cut Depth
Light Duty	6 inches	12 feet x 12 feet	2 inches
Heavy Duty	7 inches	14 feet x 14 feet	2⅓ inches

We recommend using concrete with a minimum 28-day compressive strength of at least 4,000 pounds per square inch. Layout of the Saw cut control joints should form square panels, and the depth of Saw cut joints should be ⅓ of the concrete slab thickness. We recommend allowing UES to review and comment on the final concrete pavement design, including section and joint details (type of joints, joint spacing, etc.), prior to the start of construction.

For further details on concrete pavement construction, please reference the "Guide to Jointing of Non-Reinforced Concrete Pavements" published by the Florida Concrete and Products Association, Inc., and "Building Quality Concrete Parking Areas", published by the Portland Cement Association. Specimens to verify the compressive strength of the pavement concrete should be obtained for at least every 50 cubic yards, or at least once for each day's placement, whichever is greater.

11.0 SITE PREPARATION

We recommend normal, good practice site preparation procedures for the new construction areas. These procedures include: stripping/clearing of the site to remove existing vegetation, roots, topsoils, surficial organics, debris, utility lines, etc. Following stripping, the exposed subgrade soils should be proof-rolled, and all subgrade and subsequent fill/backfill soils should be properly densified.

A more detailed description of this work is presented in this section.

1. Prior to construction, existing underground utility lines within the construction areas should be located. It should be noted that if underground pipes are not properly removed or plugged, they may serve as conduits for subsurface erosion which may lead to excessive settlement of overlying structures.

2. Perform any necessary remedial dewatering prior to any earthwork operations. Dewatering should be performed to a depth of at least **2 feet below the bottom of any excavations or compacted surface**.

3. Strip the proposed construction limits of existing vegetation, topsoil, roots, organic soils, debris and other deleterious materials within and 5 feet beyond the perimeter of the new construction areas. Expect clearing and grubbing to depths of 6 to 12 inches. We strongly recommend that the stripped/excavated surfaces be observed and probed by representatives of UES.

4. Proof-roll the exposed subsurface soils under the observation of UES, to locate any soft areas of unsuitable soils, and to increase the density of the shallow loose fine sand soils. If deemed necessary by UES, in areas that continue to "yield", remove any deleterious materials and replace with a clean, compacted sand backfill.

5. After approval of the stripped surface, within the building areas, compact the upper **2 feet of the exposed subgrade soils** (including the 5 feet margin) using a vibratory roller to at least 95 percent of the Modified Proctor test maximum dry density (ASTM D 1557).

6. Place fill/backfill as necessary. All fill should consist of clean sand with less than 11 percent soil fines and be free of organics, debris and other deleterious materials. Fill soils containing between 5 and 11 percent fines may require strict moisture control. Place fill in maximum 12-inch loose, uniform lifts and compact each lift at least 95 percent of the Modified Proctor maximum dry density.

7. Within the pavement areas, the upper 12 inches of subgrade beneath the base course or concrete slabs (sub-base) should be stabilized and compacted to at least 98 percent of the Modified Proctor maximum dry density.

8. Test the subgrade and each lift of fill for compaction at a frequency of not less than one test per 2,500 square feet in the building areas and 10,000 square feet of pavement areas, with a minimum of 4 tests in each area.

9. Prior to the placement of reinforcing steel and concrete, verify compaction within the footing trenches to a depth of 2 feet. We recommend testing every column footing and at least one test every 100 feet of wall footing, with a minimum of 4 tests per building. Re-compaction of the foundation excavation bearing level soils, if loosened by the excavation process, can typically be achieved by making several passes with a walk-behind vibratory sled or jumping jack.

Stability of the compacted soils is essential and independent of compaction and density control. If the near surface soils or the structural fill experience "pumping" conditions, terminate all earthwork activities in that area. Pumping conditions occur when there is too much water present in the soil-water matrix. Earthwork activities are actually attempting to compact the water and not the soil. The disturbed soils should be dried in place by scarification and aeration prior to any additional earthwork activities.

Vibrations produced during vibratory compaction operations at the site may be significantly noticeable within 100 feet and may cause distress to adjacent structures if not properly regulated. Provisions should be made to monitor these vibrations so that any necessary modifications in the compaction operations can be made in the field before potential damage occurs. UES can provide vibration monitoring services to help document and evaluate the effects of the surface compaction operation on existing structures. It is recommended that large vibratory rollers remain a minimum of 50 feet from existing structures. Within this zone, the use of a static roller or small hand guided plate compactors is recommended.

12.0 STORMWATER POND DESIGN CONSIDERATIONS

We understand that the project will include Twelve (12) stormwater ponds within the proposed development. Nineteen (19) SPT borings, P-01 through P-21, were performed in the general vicinity of the ponds. Please note that due to the dense vegetation and wetland areas, our drillers were unable to drill borings P-7 and P-8. Based on the soils encountered, the proposed stormwater ponds are suitable for either "wet" ponds or "dry" ponds depending on the groundwater and or final grades. Our recommended stormwater design parameters for the pond are shown below in Table VII, and Table VIII.

TABLE VII
STORMWATER MANAGMENT DESIGN PARAMETERS

	Estimated Average Values								
Pond	Pond 1			Pond 2		Pond 3	Pond 5	Pond 6	
Relevant Boring Logs	P-01	P-02	P-03	P-04	P-05	P-06	P-09	P-10	P-11
Ground Elevation (Ft)*	83.0	81.8	84.7	91.7	91.5	86.2	85.2	-	89.7
Depth to Base of Surficial Aquifer (bls)(ft) **	0	5.5	4	4	4	4	7	7	18.5
Estimated Fillable Porosity of Surficial in-situ sands (percent)	N/A	20	20	20	20	20	20	20	20
Estimated Seasonal High Groundwater Level (Feet)	0	3.5	3.5	3.5	3.5	3.5	6.5	6.5	4.5
Estimated Weighted Horizontal Saturated Hydraulic Conductivity of Surficial Aquifer (feet per day)	N/A	10	8	16	32	29	26	25	40
Estimated Weighted Vertical Unsaturated Hydraulic Conductivity of Surficial Aquifer (feet per day)	N/A	7	5	11	22	19	17	16	26

* Provided by ATWELL
**Depth to base of surficial aquifer based on the depth to the hydraulically restrictive soils [SM, SC]
N/A = not applicable

TABLE VIII
STORMWATER MANAGMENT DESIGN PARAMETERS

Design Parameter	Estimated Average Values									
Pond	Pond 7	Pond 8		Pond 9	Pond 11			Pond 12	Pond 10	
Relevant Boring Logs	P-12	P-13	P-14	P-15	P-16	P-17	P-18	P-19	P-20	P-21
Elevation (Ft)*	88.1	87.7	-	-	93.7	87.8	86.2	90.8	84.7	97.9
Depth to Base of Surficial Aquifer (bls)(ft) *	6	25+	4	25+	25+	25+	4	7	25+	25+
Estimated Fillable Porosity of Surficial in-situ sands (percent)	20	20	20	25	20	20	20	20	25	25
Estimated Seasonal High Groundwater Level (Feet)	5.5	8.5	3.5	15<	7.5	7.5	3.5	5.5	20<	15<
Estimated Weighted Horizontal Saturated Hydraulic Conductivity of Surficial Aquifer (feet per day)	40	40	40	40	40	40	20	25	40	40
Estimated Weighted Vertical Unsaturated Hydraulic Conductivity of Surficial Aquifer (feet per day)	26	26	26	26	26	26	13	17	26	26

* Provided by ATWELL
**Depth to base of surficial aquifer based on the depth to the hydraulically restrictive soils [SM, SC]
+Depth to base of surficial aquifer based on the termination depth of the boring

Please note that the seasonal high groundwater levels at some of the borings is the result of perching due to shallow hydraulically restrictive soils. Ground elevations at the borings were provided by ATWELL, LLC on November 2024. Appropriate factors of safety should be incorporated into the design process. The stormwater pond bottom, and side slopes should

be stabilized according to applicable Water Management District and local municipality guidelines. **Slope Stability analysis should be performed on all berm slopes once cross-sections are available.**

Also note that groundwater level in some of the ponds will be greatly influenced by the nearby wetlands, therefore prior to final pond design, the water levels in the wetland should be determined.

13.0 SUITABILITY OF ON-SITE MATERIAL FOR USE AS FILL

We understand that the site is intended for fill material at the adjacent development site. Table IX below lists the suitability of materials for use as structural fill based on percent fines content. Please refer to the boring logs in Appendix B for a detailed overview of the fill suitability encountered on site during our geotechnical exploration.

TABLE IX
SUITABILITY OF EXCAVATED MATERIAL FOR USE AS FILL

Designation	USCS Soil Classification	% Fines Passing No. 200 Sieve	Suitability for Use as Structural Fill
Group A	SP	0-5	Favorable, freely draining, "clean" sands
Group B	SP-SC, SP-SM	5-12	Suitable, will require aeration and moisture control
Group C	SM, SC, SC-SM	12-20	Poor, impedes infiltration, limit overall use, extremely sensitive to water, do not use in pavement or pond areas
Group D	SM, SC, SC-SM, CL, ML, CH, MH	>20	Very Poor, not recommended for structural fill, may be used as stabilizing material in pavement subgrade
Group E	PT, OL, SM-OL	Organic	Unsuitable, must be completely removed and replaced with Group A or B soils

Based on the results of our exploration and laboratory testing program, the sandy soils encountered at the boring locations generally consisted of **"Group A", "Group B", "Group C", and "Group D" soils**, within the stormwater pond to the maximum termination depth of 25 feet below existing grade. We note that the actual depth of the soil stratum depicted on our boring logs may vary especially within the unexplored areas. Please refer to the boring logs for a more detailed description of the soil.

Clean sandy soils (Group A) with less than 5 percent soil fines are best suited for fill usage, since they are typically free-draining and require minimal moisture control during placement and compaction. The sands with silt and clay (Group B), with contents of 6 to 12 percent soil fines, will require some extra care during placement and compaction. These soils are less freely-draining and might require aeration and drying prior to usage, during use in the rainy season and when placed near the groundwater table. We recommend that imported fill material meet the Group A and Group B qualifications.

Soils classified as silty or clayey, Group C (greater than 12 percent fines, but less than or equal to 20 percent fines), may impede infiltration and cause a perched water condition, especially when compacted. Although not preferable, these soils may be used by contractors experienced with using these materials as fill. These materials require stringent moisture control during stockpiling, placement and compaction. They will also be problematic during

compaction. These soils dry very slowly and will have to be compacted with no vibration (a sheep foot roller, for example) in smaller, 6 inch compacted lifts. A more common use for these materials is in construction of stabilized subgrade.

Soils classified as silty or clayey, Group D (greater than 20 percent fines), will impede infiltration and cause a perched water condition. We do not recommend using these soils as structural fill material as they will require stringent moisture control during stockpiling, placement and compaction. They will also be problematic during compaction. Group D soils also dry very slowly and will have to be compacted with no vibration (a sheep foot roller, for example) in smaller, 6 inch compacted lifts.

Soils containing organic materials, Group E, may not be used as structural fill. These materials may only be used in non-structural areas such as green areas or landscaping. We do not recommend that these materials are placed directly beneath sodded areas if they contain significant amounts of organic materials. Highly organic soils are typically poor drainage materials, and may cause ponding or wetness for some time following rain events if placed directly beneath sod.

14.0 DEWATERING AND EXCAVATION CONSIDERATIONS

Based on the anticipated groundwater level conditions, dewatering **will likely** be required especially any earthwork located within the northwest quadrant of the subject site. Where excavations will extend only a few feet below the groundwater table, a sump pump may be sufficient to control the groundwater table. Deeper excavations may require well points and/or sock drains to control the groundwater table.

Regardless of any method(s) used, we recommend drawing down the water level at least 2 feet below the bottom of the excavation. The actual method(s) of dewatering should be determined by the contractor. The design and discharge of the dewatering system must be performed in accordance with applicable regulatory criteria (i.e., water management district, etc.) and compliance with such criteria is the sole responsibility of the contractor.

Excavations should be sloped as necessary to prevent slope failure and to allow backfilling. As a minimum, temporary excavations below 4-foot depth should be sloped in accordance with OSHA regulations. Where lateral confinement will not permit slopes to be laid back, the excavation should be shored in accordance with OSHA requirements. During excavation, excavated material should not be stockpiled at the top of the slope within a horizontal distance equal to the excavation depth. Provisions for maintaining workman safety within excavations is the sole responsibility of the contractor.

15.0 CONSTRUCTION RELATED SERVICES

We recommend the owner retain UES to provide inspection services during the site preparation procedures for confirmation of the adequacy of the earthwork operations. Field tests and observations include verification of foundation and pavement subgrades by monitoring earthwork operations and performing quality assurance tests of the placement of compacted structural fill courses.

The geotechnical engineering design does not end with the advertisement of the construction documents. The design is an on-going process throughout construction. Because of our familiarity with the site conditions and the intent of the engineering design, we are most

qualified to address site problems or construction changes, which may arise during construction, in a timely and cost-effective manner.

16.0 LIMITATIONS

This report has been prepared for the exclusive use of ***Turnstone Group*** and other designated members of their design/construction team associated with the proposed construction for the specific project discussed in this report. No other site or project facilities should be designed using the soil information contained in this report. As such, UES will not be responsible for the performance of any other site improvement designed using the data in this report.

This report should not be relied upon for final design recommendations or professional opinions by unauthorized third parties without the expressed written consent of UES. Unauthorized third parties that rely upon the information contained herein without the expressed written consent of UES assume all risk and liability for such reliance.

The recommendations submitted in this report are based upon the data obtained from the soil borings performed at the locations indicated on the Boring Location Plan and from other information as referenced. This report does not reflect any variations which may occur between the boring locations. The nature and extent of such variations may not become evident until the course of construction. If variations become evident, it will then be necessary for a re-evaluation of the recommendations of this report after performing on-site observations during the construction period and noting the characteristics of the variations.

Borings for a typical geotechnical report are widely spaced and generally not sufficient for reliably detecting the presence of isolated, anomalous surface or subsurface conditions, or reliably estimating unsuitable or suitable material quantities. Accordingly, UES does not recommend relying on our boring information for estimation of material quantities unless our contracted services ***specifically*** include sufficient exploration for such purpose(s) and within the report we so state that the level of exploration provided should be sufficient to detect anomalous conditions or estimate such quantities. Therefore, UES will not be responsible for any extrapolation or use of our data by others beyond the purpose(s) for which it is applicable or intended.

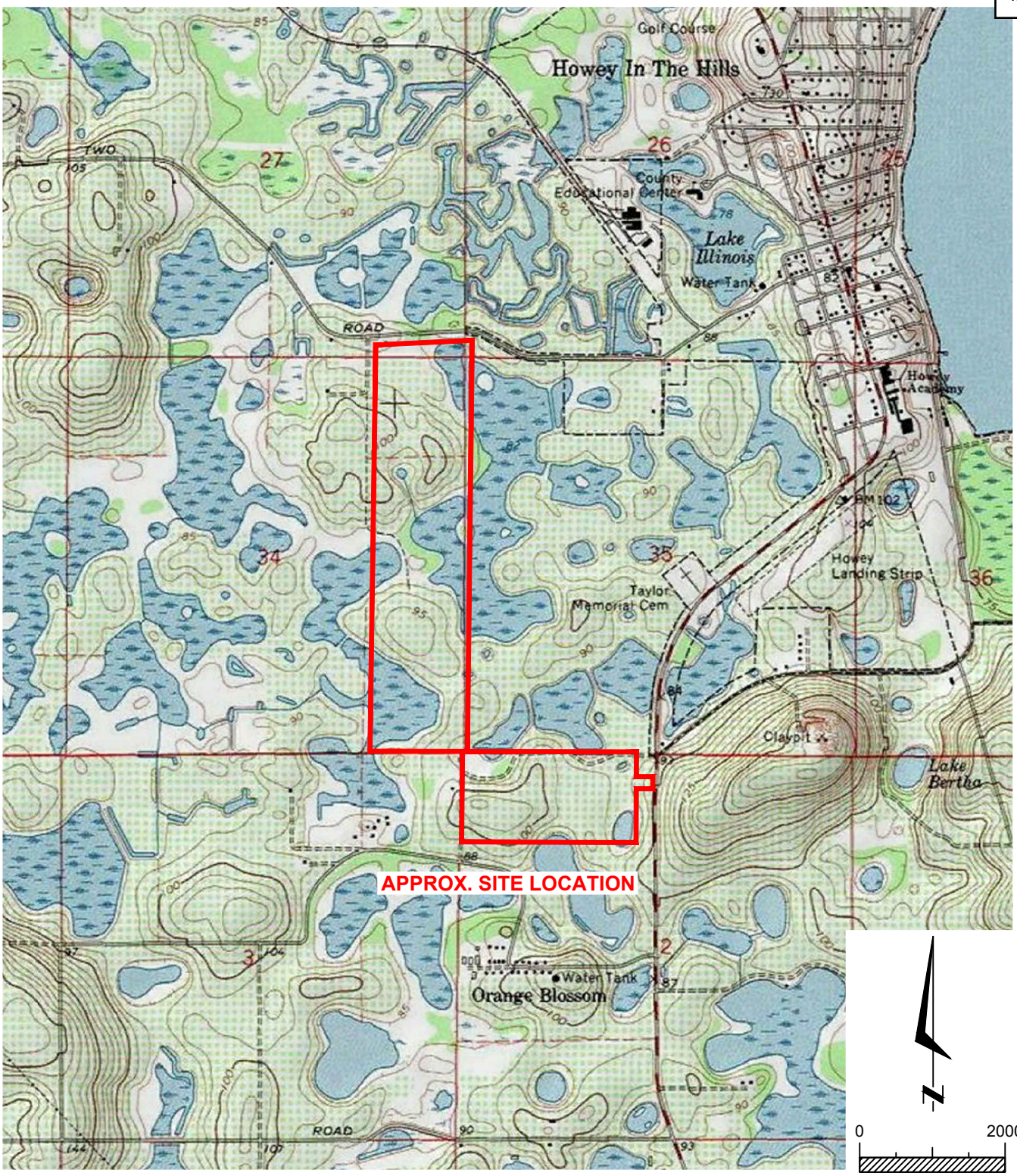
All users of this report are cautioned that there was no requirement for UES to attempt to locate any man-made buried objects or identify any other potentially hazardous conditions that may exist at the site during the course of this exploration. Therefore, no attempt was made by UES to locate or identify such concerns. UES cannot be responsible for any buried man-made objects or environmental hazards which may be subsequently encountered during construction that are not discussed within the text of this report. We can provide this service if requested.

During the early stages of most construction projects, geotechnical issues not addressed in this report may arise. Because of the natural limitations inherent in working with the subsurface, it is not possible for a geotechnical engineer to predict and address all possible problems. A Geotechnical Business Council (GBC) publication, "Important Information About This Geotechnical Engineering Report" appears in Appendix C, and will help explain the nature of geotechnical issues. Further, we present documents in Appendix C: Constraints and Restrictions, to bring to your attention the potential concerns and the basic limitations of a typical geotechnical report.

* * * * * * * * *

APPENDIX A

UES™



SOURCE: USGS QUADRANGLE MAP OF "HOWEY-IN-THE-HILLS, FLORIDA".

UES

DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, LAKE COUNTY, FLORIDA

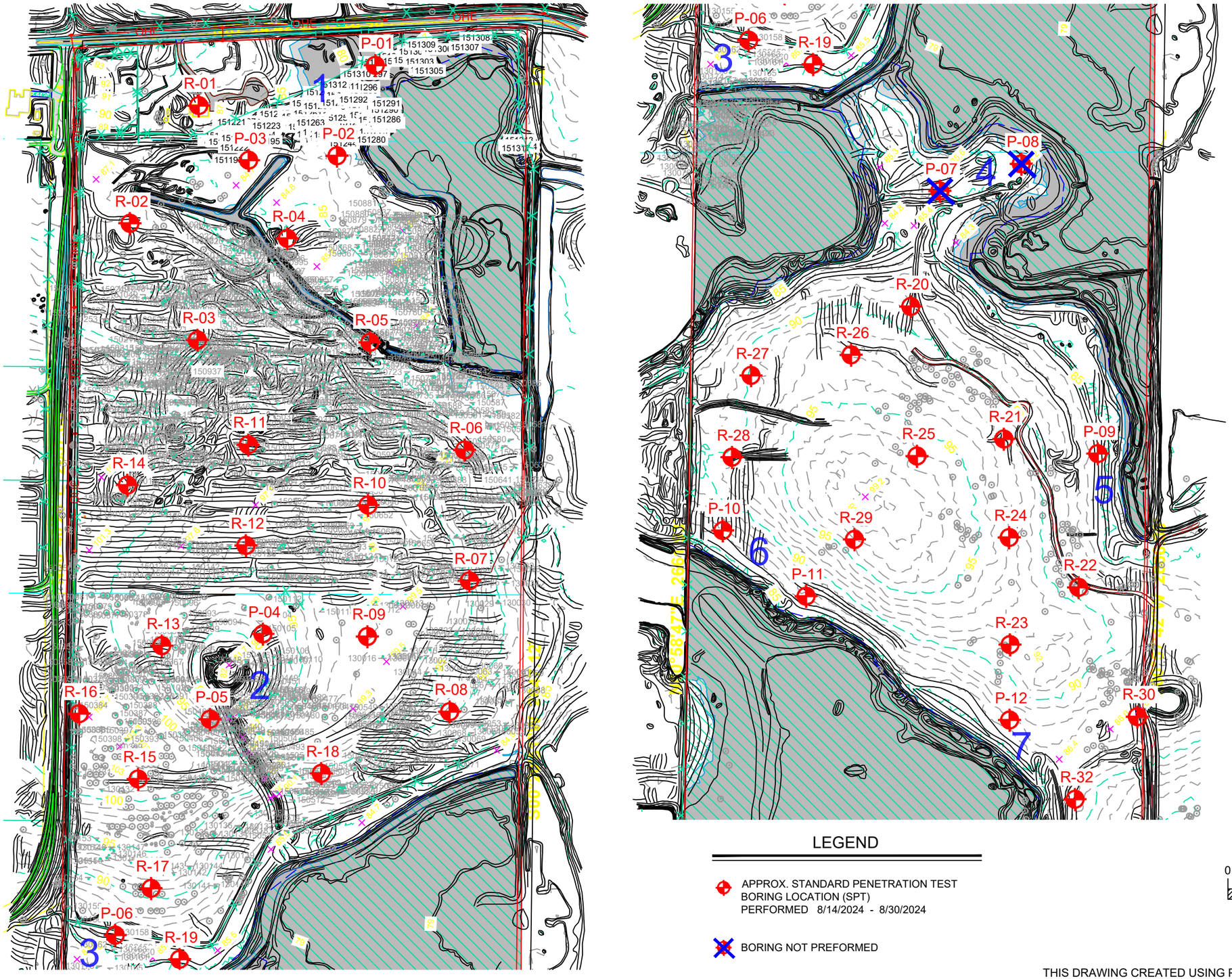
SITE LOCATION MAP

DRAWN BY:	N.F.	**DATE:**	8 - 29 - 2024	**CHECKED BY:**	E.M.	**DATE:**	9 - 11 - 2024
SCALE:	AS SHOWN	**PROJECT NO:**	0130.2400259.0000	**REPORT NO:**	2109185	**PAGE NO:**	A-1

24-0576-01

APPENDIX B

UES™



LEGEND

- APPROX. STANDARD PENETRATION TEST BORING LOCATION (SPT) PERFORMED 8/14/2024 - 8/30/2024
- BORING NOT PREFORMED

THIS DRAWING CREATED USING PLAN PROVIDED BY CLIENT.

24-0576-01

FOR: TURMSTONE GROUP

DRAWN BY: N.F. | DATE: 9 - 11 - 2024

CHECKED BY: E.M. | DATE: 11 - 11 - 2024

REPORT NO: 2109185 | SCALE: AS SHOWN

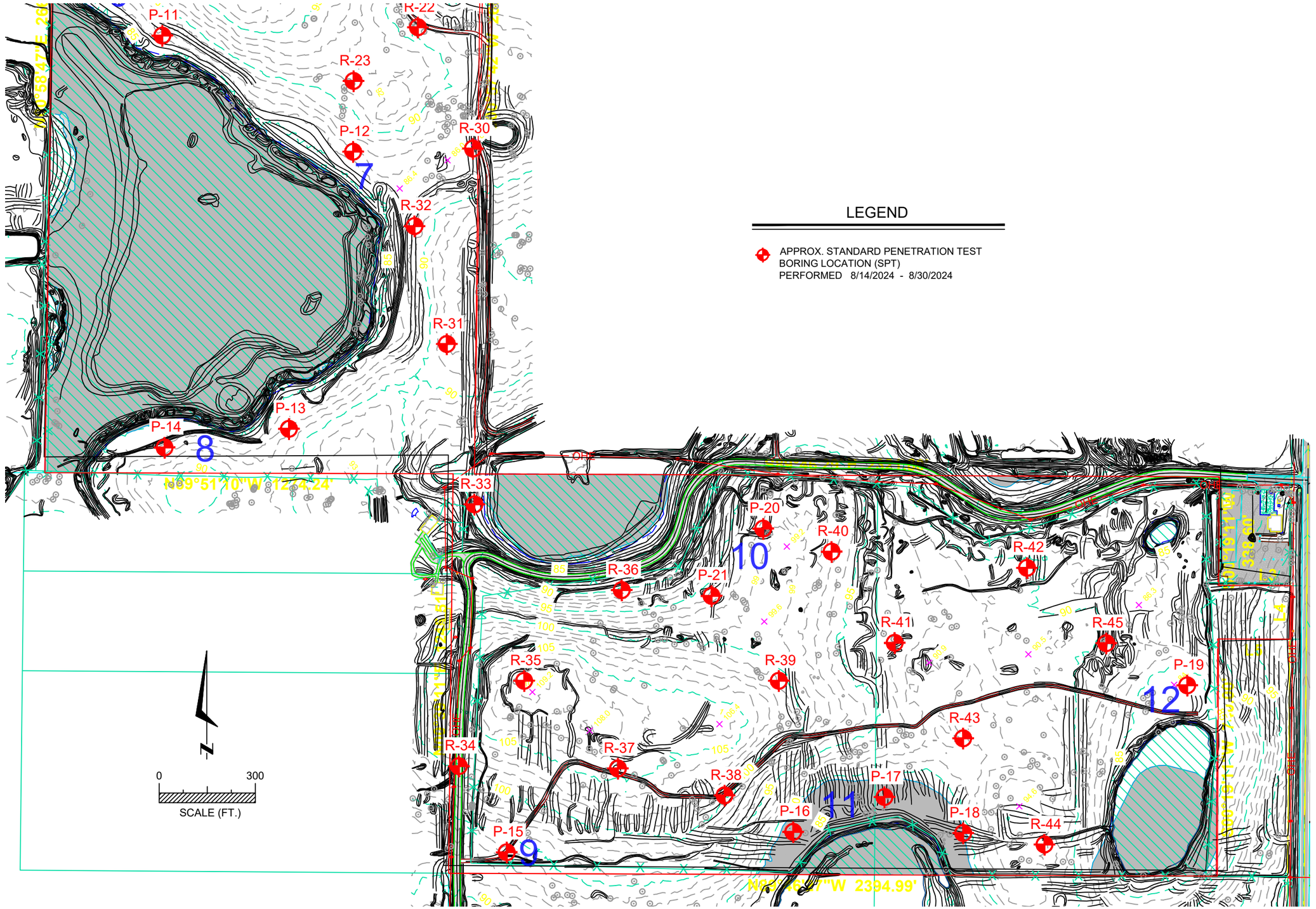
PROJECT NO: 0130.2400259.0000

DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, LAKE COUNTY, FLORIDA

BORING LOCATION PLAN

UES

PAGE NO: B-1.1



LEGEND

APPROX. STANDARD PENETRATION TEST BORING LOCATION (SPT)
PERFORMED 8/14/2024 - 8/30/2024

THIS DRAWING CREATED USING PLAN PROVIDED BY CLIENT.

24-0576-01

FOR: TURMSTONE GROUP

DRAWN BY:	N.F.	DATE:	9 - 11 - 2024
CHECKED BY:	E.M.	DATE:	18 - 11 - 2024
REPORT NO:	2109185	SCALE:	AS SHOWN
PROJECT NO:	0130.2400259.0000		

DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, LAKE COUNTY, FLORIDA

BORING LOCATION PLAN

UES

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UES
BORING LOG

PROJECT NO.:	0130.240
REPORT NO.:	2109185
PAGE:	B-2.1

PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **P-01** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 83.0
WATER TABLE (ft): 5.8
DATE OF READING: 8/30/2024
EST. SHGWT (ft): +0.0

DATE STARTED: 8/30/24
DATE FINISHED: 8/30/24
DRILLED BY: ORL - CM/JP/AI
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0				▽								
						Loose grey clayey fine SAND [SC], [GROUP D]						
		3-5-5	10				26	13			0	
						-- medium dense						
		5-7-10	17									
5		8-10-12	22	▼								
		13-14-15	29									
		12-9-10	19									
						Medium dense gray silty fine SAND [SM], [GROUP C]	14	14				
10		11-13-16	29									
15		8-7-6	13									
20		7-6-6	12									
25		10-13-16	29									
						BORING TERMINATED AT 25.0 FEET						

W-13668.GPJ

UES
BORING LOG

PROJECT NO.:	0130.240
REPORT NO.:	2109185
PAGE:	B-2.2

Item 2.

PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **P-02** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED

G.S. ELEVATION (ft): 81.8
WATER TABLE (ft): 4.4
DATE OF READING: 8/30/2024
EST. SHGWT (ft): 3.5

DATE STARTED: 8/30/24
DATE FINISHED: 8/30/24
DRILLED BY: ORL - CM/JP/AI
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Medium dense grey fine SAND with silt [SP-SM], [GROUP B]						
		4-7-9	16									
		8-9-8	17	▽ ▼			8	11			10	
5		7-9-10	19			Medium dense grey clayey fine SAND [SC], [GROUP D]						
		8-11-14	25				42	14				
		11-13-15	28									
10		9-11-12	23									
						-- dense						
15		12-14-17	31									
						Medium dense grey fine SAND [SP], [GROUP A]						
20		11-13-15	28									
25		10-12-14	26			BORING TERMINATED AT 25.0 FEET						

W-13668.GPJ

UES
BORING LOG

PROJECT NO.:	0130.240
REPORT NO.:	2109185
PAGE:	B-2.3

PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **P-03** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED

G.S. ELEVATION (ft): 84.7
WATER TABLE (ft): 8.5
DATE OF READING: 8/30/2024
EST. SHGWT (ft): 3.5

DATE STARTED: 8/30/24
DATE FINISHED: 8/30/24
DRILLED BY: ORL - CM/JP/AI
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose dark grey fine SAND with silt [SP-SM], [GROUP B]						
		2-3-4	7				9	5			8	
		3-4-5	9	▽			11	12				
						Loose grey clayey fine SAND [SC], [GROUP D]						
5		4-4-6	10			-- medium dense, grey tan						
		6-7-9	16									
		6-7-8	15	▼		-- grey						
10		8-9-8	17									
15		8-9-9	18									
20		6-8-8	16									
25		5-6-7	13			BORING TERMINATED AT 25.0 FEET						

W-13668.GPJ

UES
BORING LOG

PROJECT NO.:	0130.240
REPORT NO.:	2109185
PAGE:	B-2.4

PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **P-04** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED

G.S. ELEVATION (ft): 91.7
WATER TABLE (ft): 10.9
DATE OF READING: 8/30/2024
EST. SHGWT (ft): 3.5

DATE STARTED: 8/27/24
DATE FINISHED: 8/27/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose dark grey fine SAND with silt & roots [SP-SM], [GROUP B]						
		2-2-3	5				7	6			16	
						-- medium dense						
		4-4-7	11	▽								
						Medium dense grey clayey fine SAND [SC], [GROUP D]	31	15				
5		10-12-14	26									
		11-12-15	27									
		10-13-14	27			-- dense						
10		12-15-17	32									
				▼								
						-- medium dense						
15		11-13-14	27									
20		11-12-14	26									
25		10-11-13	24									
						BORING TERMINATED AT 25.0 FEET						

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UES
BORING LOG

PROJECT NO.:	0130.240
REPORT NO.:	2109185
PAGE:	B-2.5

Item 2.

PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **P-05** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED

G.S. ELEVATION (ft): 91.5
WATER TABLE (ft): 9.0
DATE OF READING: 8/30/2024
EST. SHGWT (ft): 3.5

DATE STARTED: 8/27/24
DATE FINISHED: 8/27/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose dark grey fine SAND with roots [SP], [GROUP B]						
		2-2-2	4			-- medium dense						
		3-5-7	12	▽			5	3			32	
						Medium dense grey tan clayey fine SAND [SC], [GROUP D]						
5		5-9-13	22			-- dense						
		14-15-18	33			-- medium dense, grey						
		11-12-11	23	▼		-- grey tan						
10		11-13-15	28									
						-- grey						
15		7-7-9	16									
20		6-5-8	13									
						-- grey tan						
25		5-7-6	13			BORING TERMINATED AT 25.0 FEET						

W-13668.GPJ

UES
BORING LOG

PROJECT NO.:	0130.240
REPORT NO.:	2109185
PAGE:	B-2.6

PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **P-06** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED

G.S. ELEVATION (ft): 86.2
WATER TABLE (ft): 9.2
DATE OF READING: 8/30/2024
EST. SHGWT (ft): 3.5
DATE STARTED: 8/27/24
DATE FINISHED: 8/27/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose dark grey fine SAND [SP], [GROUP A]						
		2-2-3	5			-- medium dense, grey						
		5-7-8	15	▽			5	3			28	
						Medium dense grey claye fine SAND [SC], [GROUP D]						
5		6-7-11	18									
		11-13-17	30			-- grey tan -- dense	58	34				
		13-15-18	33									
		13-15-16	31	▼		-- grey						
10												
						-- medium dense						
15		14-13-13	26									
						-- grey tan						
20		6-7-8	15									
25		6-7-7	14			BORING TERMINATED AT 25.0 FEET						

W-13668.GPJ

UES
BORING LOG

PROJECT NO.:	0130.240
REPORT NO.:	2109185
PAGE:	B-2.7

PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **P-09** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED

G.S. ELEVATION (ft): 85.2
WATER TABLE (ft): 7.8
DATE OF READING: 8/24/2024
EST. SHGWT (ft): 6.5

DATE STARTED: 8/22/24
DATE FINISHED: 8/22/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose mix dark grey fine SAND [SP], [GROUP A]						
		3-4-5	9			-- medium dense						
		6-6-7	13			-- loose, light grey						
5		4-5-5	10			-- medium dense	5	4			26	
		4-5-6	11	▽								
		3-3-3	6	▼		Loose light grey clayey fine SAND [SC], [GROUP D]						
		3-3-3	6			-- grey						
10												
						-- medium dense						
15		7-9-14	23									
20		11-13-15	28									
						-- dense, grey tan						
25		13-17-21	38			BORING TERMINATED AT 25.0 FEET						

W-13668.GPJ

UES
BORING LOG

PROJECT NO.:	0130.240
REPORT NO.:	2109185
PAGE:	B-2.8

PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **P-10** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED

G.S. ELEVATION (ft): N.S.
WATER TABLE (ft): 12.9
DATE OF READING: 8/24/2024
EST. SHGWT (ft): 6.5
DATE STARTED: 8/21/24
DATE FINISHED: 8/21/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Very loose dark grey fine SAND with root [SP], [GROUP A]						
		1-1-1	2			-- grey	4	4			25	
		2-2-1	3			-- loose light grey						
5		2-2-2	4			-- medium dense						
		2-5-7	12	▽								
						Medium dense grey tan pink red clayey fine SAND [SC], [GROUP D]						
		7-9-14	23			-- dense, grey pink						
10		13-16-18	34									
				▼								
						-- grey pink tan						
15		13-16-19	35									
							40	20				
20		13-16-17	33									
25		14-16-20	36			BORING TERMINATED AT 25.0 FEET						

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UES
BORING LOG

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **P-11** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED

G.S. ELEVATION (ft): 89.7
WATER TABLE (ft): 5.6
DATE OF READING: 8/24/2024
EST. SHGWT (ft): 4.5

DATE STARTED: 8/21/24
DATE FINISHED: 8/21/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose dark grey fine SAND with root [SP], [GROUP A]						
		2-2-2	4			-- grey	3	3			40	
		2-3-3	6	▽		-- light grey						
5		3-3-3	6	▼								
		3-3-7	10			-- medium dense						
		4-7-11	18									
		7-9-13	22			Medium dense light grey tan fine SAND with clay [SP-SC], [GROUP B]						
10												
						-- light grey						
15		8-11-11	22									
						-- light grey tan						
20		9-12-14	26									
						Dense grey tan clayey fine SAND [SC], [GROUP D]						
25		13-15-18	33			BORING TERMINATED AT 25.0 FEET						

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UES
BORING LOG

PROJECT NO.:	0130.240
REPORT NO.:	2109185
PAGE:	B-2.10

PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **P-12** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED

G.S. ELEVATION (ft): 88.1
WATER TABLE (ft): 10.5
DATE OF READING: 8/24/2024
EST. SHGWT (ft): 5.5

DATE STARTED: 8/20/24
DATE FINISHED: 8/20/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose grey fine SAND [SP], [GROUP A]						
		1-2-2	4									
		2-2-3	5									
5		2-4-4	8	▽			5	4			40	
		5-8-11	19			Medium dense grey tan clayey fine SAND [SC], [GROUP D]						
		8-11-12	23									
10		11-13-15	28	▼								
15		11-12-13	25									
20		11-12-12	24									
						-- tan						
25		12-13-13	26			BORING TERMINATED AT 25.0 FEET						

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BORING LOG

PROJECT NO.:	0130.240
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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **P-13** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED

G.S. ELEVATION (ft): 87.7
WATER TABLE (ft): 10.6
DATE OF READING: 8/24/2024
EST. SHGWT (ft): 8.5

DATE STARTED: 8/19/24
DATE FINISHED: 8/19/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Very loose dark grey fine SAND with roots [SP], [GROUP A]						
		1-1-1	2									
		1-1-1	2									
5		1-1-1	2			-- loose						
		1-2-2	4				3	6			40	
		2-2-3	5	▽								
10		3-4-5	9	▼								
						Medium dense dark gray fine SAND with silt [SP-SM], [GROUP B]						
15		6-7-9	16									
20		6-8-9	17									
25		9-11-14	25			BORING TERMINATED AT 25.0 FEET						

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BORING LOG

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **P-14** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED

G.S. ELEVATION (ft): N.S.
WATER TABLE (ft): 6.2
DATE OF READING: 8/24/2024
EST. SHGWT (ft): 3.5
DATE STARTED: 8/19/24
DATE FINISHED: 8/19/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Very loose dark grey fine SAND [SP], [GROUP B]						
		1-2-1	3				5	5			43	
				▽		-- medium dense						
		3-6-7	13									
5						Medium dense grey clayey fine SAND [SC], [GROUP D]						
		9-10-10	20									
				▼								
		8-11-14	25			-- grey tan						
		11-13-13	26									
10		9-11-12	23									
15		11-12-13	25									
20		8-13-12	25									
25		11-12-14	26			BORING TERMINATED AT 25.0 FEET						

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **P-15** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED

G.S. ELEVATION (ft): N.S.
WATER TABLE (ft): 17.0
DATE OF READING: 8/23/2024
EST. SHGWT (ft): +15
DATE STARTED: 8/14/24
DATE FINISHED: 8/14/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Very loose grey fine SAND with roots [SP], [GROUP A]						
		2-1-1	2			-- loose, no roots						
		2-2-2	4			-- very loose						
5		1-1-1	2			-- loose						
		1-2-2	4			-- very loose	4	4			40	
		1-1-1	2			-- loose						
10		1-2-2	4									
15		3-3-5	8	▽								
				▼		-- light grey						
20		4-5-5	10									
25		5-4-5	9			BORING TERMINATED AT 25.0 FEET						

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **P-16** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED

G.S. ELEVATION (ft): 93.7
WATER TABLE (ft): 9.1
DATE OF READING: 8/23/2024
EST. SHGWT (ft): 7.5

DATE STARTED: 8/15/24
DATE FINISHED: 8/15/24
DRILLED BY: ORL - CM/CM
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Very loose dark grey fine SAND [SP], [GROUP A]						
		2-2-1	3			-- loose, grey						
		1-2-2	4			-- very loose, light grey						
5		1-1-1	2									
		1-1-1	2	▽			3	2			40	
		1-1-1	2	▼								
		1-0-1	1									
10												
						-- loose						
15		2-4-6	10									
						-- medium dense, dark grey						
20		8-8-9	17									
						-- light grey tan						
25		6-5-6	11			BORING TERMINATED AT 25.0 FEET						

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MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **P-17** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED

G.S. ELEVATION (ft): 87.8
WATER TABLE (ft): 9.2
DATE OF READING: 8/23/2024
EST. SHGWT (ft): 7.5

DATE STARTED: 8/15/24
DATE FINISHED: 8/15/24
DRILLED BY: ORL - CM/CM
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose dark grey fine SAND [SP], [GROUP A]						
		1-2-2	4									
						-- grey	3	3			40	
		2-4-6	10									
						-- light grey						
5		4-5-5	10									
		4-5-4	9									
				▽								
		4-3-3	6									
				▼								
		3-4-4	8			Loose mix grey fine SAND with silt [SP-SM], [GROUP B]						
10												
						-- medium dense, dark grey						
15		4-5-6	11									
20		9-10-8	18									
						Medium dense light grey fine SAND [SP], [GROUP A]						
25		5-6-6	12			BORING TERMINATED AT 25.0 FEET						

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UES
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PROJECT NO.:	0130.240
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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **P-18** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED

G.S. ELEVATION (ft): 86.2
WATER TABLE (ft): 11.3
DATE OF READING: 8/23/2024
EST. SHGWT (ft): 3.5

DATE STARTED: 8/15/24
DATE FINISHED: 8/15/24
DRILLED BY: ORL - CM/CM
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose dark grey fine SAND with silt [SP-SM], [GROUP B]						
		1-2-2	4									
		2-4-5	9	▽			7	5			20	
5		9-12-16	28			Medium dense grey tan clayey fine SAND [SC], [GROUP C]						
		12-13-16	29			-- desne	19	10				
		12-14-18	32									
10		13-16-18	34	▼								
						-- medium dense, light grey						
15		15-14-13	27									
20		9-10-11	21									
25		11-11-11	22			BORING TERMINATED AT 25.0 FEET						

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UES
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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **P-19** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED

G.S. ELEVATION (ft): 90.8
WATER TABLE (ft): 6.8
DATE OF READING: 8/23/2024
EST. SHGWT (ft): 5.5

DATE STARTED: 8/16/24
DATE FINISHED: 8/16/24
DRILLED BY: ORL - CM/CM
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose dark grey fine SAND [SP], [GROUP A]						
		1-2-3	5									
		3-4-6	10			-- medium dense	4	6			25	
5		4-6-7	13	▽		-- grey						
		6-7-9	16	▼		Medium dense grey clayey fine SAND [SC], [GROUP D]						
		5-6-9	15									
		6-6-10	16				31	17				
10												
15		6-7-6	13			Medium dense grey fine SAND with clay [SP-SC], [GROUP B]						
20		4-5-6	11									
25		5-6-7	13			BORING TERMINATED AT 25.0 FEET						

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **P-20** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED

G.S. ELEVATION (ft): 84.7
WATER TABLE (ft): 24.0
DATE OF READING: 8/23/2024
EST. SHGWT (ft): +20

DATE STARTED: 8/17/24
DATE FINISHED: 8/17/24
DRILLED BY: ORL - CM/CM
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Very loose grey tan fine SAND with roots [SP], [GROUP A]						
		1-1-1	2									
		1-1-1	2									
5		1-1-1	2			-- no roots						
		1-1-2	3				2	4			40	
		2-2-3	5			-- loose						
10		3-4-4	8									
						Loose light grey fine SAND with clay [SP-SC], [GROUP B]						
15		3-4-5	9									
						-- medium dense, grey						
20		5-6-7	13	▽			7	12				
				▼		-- dark grey						
25		3-7-9	16			BORING TERMINATED AT 25.0 FEET						

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UES
BORING LOG

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **P-21** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED

G.S. ELEVATION (ft): 97.9
WATER TABLE (ft): 19
DATE OF READING: 8/17/2024
EST. SHGWT (ft): +15

DATE STARTED: 8/17/24
DATE FINISHED: 8/17/24
DRILLED BY: ORL - CM/CM
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Very loose grey tan fine SAND [SP], [GROUP A]						
		1-2-1	3									
		2-1-2	3				2	3			40	
5		2-2-1	3									
		1-1-1	2			-- loose						
		2-2-2	4									
10		2-2-3	5									
						-- medium dense, light grey						
15		5-7-7	14	▽								
				▼								
20		6-7-8	15									
						-- grey						
25		4-6-8	14			BORING TERMINATED AT 25.0 FEET						

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UES
BORING LOG

PROJECT NO.:	0130.240
REPORT NO.:	2109185
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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-01** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 91.2
WATER TABLE (ft): NE
DATE OF READING: 8/29/2024
EST. SHGWT (ft): +10.0

DATE STARTED: 8/29/24
DATE FINISHED: 8/29/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Very loose grey fine SAND [SP]						
		1-2-1	3			-- loose						
		1-2-2	4			-- very loose, light grey tan						
5		1-1-2	3			-- loose, light grey						
		1-2-3	5									
		2-3-3	6									
10		2-3-4	7	▽		-- light grey tan						
						BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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BORING LOG

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Item 2.

PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
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HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-02** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 87.0
WATER TABLE (ft): NE
DATE OF READING: 8/29/2024
EST. SHGWT (ft): +3.5

DATE STARTED: 8/29/24
DATE FINISHED: 8/29/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose grey fine SAND with silt & roots [SP-SM]						
		2-2-2	4									
		3-5-5	10	▽								
5						Medium dense grey tan clayey fine SAND [SC]						
		4-6-8	14									
		9-11-12	23									
		10-13-14	27									
10		11-13-17	30			BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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Item 2.

PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
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HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-03** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 90.6
WATER TABLE (ft): NE
DATE OF READING: 8/29/2024
EST. SHGWT (ft): +3.5

DATE STARTED: 8/29/24
DATE FINISHED: 8/29/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose grey fine SAND [SP]						
		2-2-2	4									
						-- light grey, with roots						
		3-4-5	9	▽								
						Medium dense grey tan clayey fine SAND [SC]						
5		5-6-9	17									
		8-12-15	27									
		11-13-17	30			-- dense						
10		12-15-19	34			BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-04** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 90.6
WATER TABLE (ft): NE
DATE OF READING: 8/29/2024
EST. SHGWT (ft): +3.5

DATE STARTED: 8/29/24
DATE FINISHED: 8/29/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose dark grey fine SAND with silt & roots [SP-SM]						
		3-5-4	9			-- dark grey						
		4-5-5	10	▽		Medium dense grey tan clayey fine SAND [SC]						
5		5-8-18	26									
		11-15-13	28			-- grey tan brown						
						-- brown grey						
		15-12-11	23			-- grey						
10		10-8-7	15			BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-05** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 84.7
WATER TABLE (ft): NE
DATE OF READING: 8/29/2024
EST. SHGWT (ft): +3.5

DATE STARTED: 8/29/24
DATE FINISHED: 8/29/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Medium dense mix grey fine SAND with roots [SP]						
		4-6-6	12									
				▽		Medium dense mix grey brown fine SAND with silt [SP-SM]						
		5-8-10	18			Medium dense grey clayey fine SAND [SC]						
5		8-9-13	22			-- dense, grey tan						
		12-14-17	31									
		11-15-16	31			-- medium dense						
10		10-14-14	28			BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-06** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 85.8
WATER TABLE (ft): NE
DATE OF READING: 8/28/2024
EST. SHGWT (ft): +5.0

DATE STARTED: 8/28/24
DATE FINISHED: 8/28/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose dark grey fine SAND with silt [SP-SM]						
		1-2-3	5									
		2-4-5	9			Medium dense light grey fine SAND [SP]						
5		4-5-7	12	▽		Medium dense grey tan clayey fine SAND [SC]						
		6-6-6	12									
		12-14-15	29			-- dense, grey						
10		13-15-18	33			BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-07** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 91.1
WATER TABLE (ft): NE
DATE OF READING: 8/28/2024
EST. SHGWT (ft): +5.0

DATE STARTED: 8/28/24
DATE FINISHED: 8/28/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose dark gery fine SAND [SP]						
		2-2-2	4									
						-- grey						
		2-2-2	4									
5				▽								
		2-2-6	8			Medium dense grey tan clayey fine SAND [SC]						
		11-13-15	28			-- dense						
		13-17-22	39									
10		14-19-21	40			BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-08** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP

LOCATION: SEE BORING LOCATION PLAN

REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 90.3
WATER TABLE (ft): NE
DATE OF READING: 8/28/2024
EST. SHGWT (ft): +5.0

DATE STARTED: 8/28/24
DATE FINISHED: 8/28/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose dark grey fine SAND with roots [SP]						
		2-2-3	5									
		2-2-2	4			-- very loose, grey						
5		2-1-2	3	▽		Medium dense grey tan clayey fine SAND [SC]						
		9-13-15	28			-- dense						
		12-15-18	33									
		13-16-20	36			-- grey tan pink						
10						BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-09** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP

LOCATION: SEE BORING LOCATION PLAN

REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 98.7
WATER TABLE (ft): NE
DATE OF READING: 8/28/2024
EST. SHGWT (ft): +8.0

DATE STARTED: 8/28/24
DATE FINISHED: 8/28/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Very loose grey fine SAND [SP]						
		1-1-1	2									
		1-1-2	3			-- light grey						
5		1-1-2	3			-- loose						
		2-2-3	5									
		2-3-4	7	▽								
		4-9-14	23			Medium dense light grey tan clayey fine SAND [SC]						
10						BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-10** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP

LOCATION: SEE BORING LOCATION PLAN

REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 97.6
WATER TABLE (ft): NE
DATE OF READING: 8/28/2024
EST. SHGWT (ft): +5.0

DATE STARTED: 8/28/24
DATE FINISHED: 8/28/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose grey fine SAND with roots [SP]						
		2-2-2	4									
		2-2-2	4									
5		2-2-2	4	▽								
						Medium dense grey tan clayey fine SAND [SC]						
		3-8-14	22									
		12-14-14	28			-- dense						
10		13-15-17	32			BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-11** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 93.9
WATER TABLE (ft): NE
DATE OF READING: 8/28/2024
EST. SHGWT (ft): +3.5

DATE STARTED: 8/28/24
DATE FINISHED: 8/28/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Very loose dark grey fine SAND with silt & roots [SP-SM]						
		2-1-2	3									
				▽		-- loose						
		2-2-3	5									
						Medium dense grey tan clayey fine SAND [SC]						
5		3-4-9	13									
		12-14-16	30			-- dense						
		11-16-20	36									
		13-18-23	41									
10						BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-12** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 95.5
WATER TABLE (ft): NE
DATE OF READING: 8/28/2024
EST. SHGWT (ft): +10.0

DATE STARTED: 8/28/24
DATE FINISHED: 8/28/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Very loose gery fine SAND with roots [SP]						
		2-1-2	3			-- loose						
		2-2-2	4			-- very loose, light grey						
5		2-2-1	3			-- loose						
		2-2-3	5									
		1-2-3	5									
10		2-3-5	8	▽		BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-13** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 94.8
WATER TABLE (ft): NE
DATE OF READING: 8/26/2024
EST. SHGWT (ft): +7.5

DATE STARTED: 8/26/24
DATE FINISHED: 8/26/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose grey fine SAND [SP]						
		3-3-4	7			-- light grey						
		2-2-3	5									
5		3-5-5	10									
		4-4-4	8	▽		-- medium dense						
		4-5-8	13			Medium dense light grey clayey fine SAND [SC] -- grey						
10		12-15-19	34			BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-14** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 101.9
WATER TABLE (ft): NE
DATE OF READING: 8/26/2024
EST. SHGWT (ft): +2.5

DATE STARTED: 8/26/24
DATE FINISHED: 8/26/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Very loose grey fine SAND with silt [SP-SM]						
		1-1-1	2	▽								
		1-1-7	8			Loose grey tan clayey fine SAND [SC] -- dense						
5		12-14-18	32									
		17-19-22	41									
		14-17-19	36									
		13-15-18	33									
10						BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-15** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 102.5
WATER TABLE (ft): NE
DATE OF READING: 8/26/2024
EST. SHGWT (ft): +10

DATE STARTED: 8/26/24
DATE FINISHED: 8/26/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose grey fine SAND with silt & roots [SP-SM]						
		2-2-3	5			-- medium dense, grey tan						
		8-11-16	27			-- dense, grey tan pink						
5		16-17-21	38									
		13-18-23	41									
		15-21-24	45									
		13-18-22	40	▽								
10						BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-16** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 102.2
WATER TABLE (ft): NE
DATE OF READING: 8/26/2024
EST. SHGWT (ft): +3.5

DATE STARTED: 8/26/24
DATE FINISHED: 8/26/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose grey fine SAND [SP]						
		2-2-2	4									
		2-2-2	4	▽								
						Loose light grey clayey fine SAND [SC]						
5		2-2-6	8			-- medium dense, grey tan						
		8-13-17	30			-- dense						
		11-16-16	32									
10		13-16-21	37			BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-17** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 90.9
WATER TABLE (ft): NE
DATE OF READING: 8/26/2024
EST. SHGWT (ft): +3.5

DATE STARTED: 8/26/24
DATE FINISHED: 8/26/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Very loose dark grey fine SAND with silt [SP-SM]						
		1-1-1	2									
				▽		-- grey						
		1-1-2	3									
						Medium dense grey tan clayey fine SAND [SC]						
5		3-8-9	17									
		8-10-14	24			-- dense						
		16-18-21	39									
		13-14-20	34									
10						BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-18** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 93.5
WATER TABLE (ft): NE
DATE OF READING: 8/26/2024
EST. SHGWT (ft): +3.5

DATE STARTED: 8/26/24
DATE FINISHED: 8/26/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose grey fine SAND with silt [SP-SM]						
		2-2-2	4			-- medium dense, grey tan						
		11-13-15	28	▽								
						Dense grey tan clayey fine SAND [SC]						
5		13-17-21	38									
		15-18-24	42			-- medium dense						
		9-11-13	24			-- dense						
10		13-17-20	37			BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-19** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 85.3
WATER TABLE (ft): NE
DATE OF READING: 8/27/2024
EST. SHGWT (ft): +10.0

DATE STARTED: 8/27/24
DATE FINISHED: 8/27/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose dark grey fine SAND with silt & roots [SP-SM]						
		2-4-2	6									
		2-2-3	5			-- grey						
5		2-3-6	9			-- medium dense dark grey						
		1-012-14	26									
		6-8-7	15									
		8-11-13	24	▽			7	14				
10						BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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BORING LOG

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-20** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 86.7
WATER TABLE (ft): NE
DATE OF READING: 8/22/2024
EST. SHGWT (ft): +5.0

DATE STARTED: 8/22/24
DATE FINISHED: 8/22/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose grey fine SAND with roots [SP]						
		2-3-3	6									
		3-4-5	9			-- medium dense, light grey						
5		4-5-7	12	▽								
						Medium dense light grey clayey fine SAND [SC]						
		6-8-12	20									
		8-8-8	16			-- grey						
10		8-11-15	26			BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-21** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 90.8
WATER TABLE (ft): NE
DATE OF READING: 8/22/2024
EST. SHGWT (ft): +7.0

DATE STARTED: 8/22/24
DATE FINISHED: 8/22/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Very loose dark grey fine SAND [SP]						
		2-1-1	2			-- grey						
		1-1-1	2			-- light grey						
5		1-1-1	2			-- loose						
		1-2-2	4	▽								
		2-2-3	5			Loose light grey clayey fine SAND [SC]						
						-- grey						
10		2-3-5	8			BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-22** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 95.6
WATER TABLE (ft): NE
DATE OF READING: 8/21/2024
EST. SHGWT (ft): +10.0

DATE STARTED: 8/21/24
DATE FINISHED: 8/21/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose dark grey fine SAND [SP]						
		2-2-2	4			-- grey						
		2-2-2	4			-- loose light grey						
5		2-2-3	5			-- medium dense						
		4-5-7	12									
		5-5-6	11									
10		6-5-9	14	▽		BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-23** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 91.7
WATER TABLE (ft): NE
DATE OF READING: 8/20/2024
EST. SHGWT (ft): +6.5

DATE STARTED: 8/20/24
DATE FINISHED: 8/20/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose grey fine SAND with roots [SP]						
		2-2-3	5			-- no roots						
		3-2-2	4									
5		2-2-4	6			-- grey tan red -- medium dense						
		5-7-9	16	▽								
						Medium dense grey tan red pink clayey fine SAND [SC]						
		8-11-14	25			-- grey tan						
10		10-13-15	28			BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-24** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 91.4
WATER TABLE (ft): NE
DATE OF READING: 8/21/2024
EST. SHGWT (ft): +8.0

DATE STARTED: 8/21/24
DATE FINISHED: 8/21/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose grey fine SAND [SP]						
		2-2-2	4				3	3				
		2-2-2	4			-- very loose light gray						
5		2-1-2	3			-- loose						
		2-2-3	5									
		2-3-3	6	▽								
						Medium dense light grey tan fine SAND with clay [SP-SC]						
10		3-4-7	11			BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-25** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): N.S.
WATER TABLE (ft): NE
DATE OF READING: 8/22/2024
EST. SHGWT (ft): +6.5

DATE STARTED: 8/22/24
DATE FINISHED: 8/22/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Very loose grey fine SAND with roots [SP]						
		1-1-1	2			-- no roots						
		2-1-2	3			-- light grey, with roots						
5		1-1-2	3			-- loose, no roots						
		2-3-2	5	▽								
						Medium dense grey tan red clayey fine SAND [SC]						
		6-8-11	19									
10		10-12-14	26			BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-26** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 92.3
WATER TABLE (ft): NE
DATE OF READING: 8/23/2024
EST. SHGWT (ft): +3.5

DATE STARTED: 8/23/24
DATE FINISHED: 8/23/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose grey fine SAND with silt & roots [SP-SM]						
		2-2-2	4			-- very loose						
		2-1-2	3	▽								
						Medium dense grey tan clayey fine SAND [SC]						
5		1-4-10	14									
		8-10-12	22									
		10-13-14	27			-- dense, grey						
10		12-14-18	32			BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-27** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 90.4
WATER TABLE (ft): NE
DATE OF READING: 8/23/2024
EST. SHGWT (ft): +10

DATE STARTED: 8/23/24
DATE FINISHED: 8/23/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose grey fine SAND with roots [SP]						
		1-2-2	4									
		2-2-2	4			-- very loose, light grey						
5		1-1-2	3			-- loose						
		2-3-4	7									
		4-5-5	10			-- medium dense						
		5-7-9	16	▽								
10						BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-28** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 89.3
WATER TABLE (ft): NE
DATE OF READING: 8/23/2024
EST. SHGWT (ft): +7.0

DATE STARTED: 8/23/24
DATE FINISHED: 8/23/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Very loose dark grey fine SAND with roots [SP]						
		1-1-1	2			-- grey						
		1-1-1	2			-- light grey						
5		1-1-1	2			-- loose						
		1-3-7	10	▽								
		4-5-6	11			Medium dense light grey tan fine SAND with clay [SP-SC]						
10		7-9-12	21			BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-29** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 96.3
WATER TABLE (ft): NE
DATE OF READING: 8/21/2024
EST. SHGWT (ft): +3.5

DATE STARTED: 8/21/24
DATE FINISHED: 8/21/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose grey fine SAND with silt [SP-SM]						
		2-2-2	4									
		2-2-2	4	▽								
						Loose light grey tan clayey fine SAND [SC]						
5		2-3-5	8			-- grey tan						
		11-13-16	29									
		10-14-14	28									
		9-8-8	16									
10						BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-30** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED

G.S. ELEVATION (ft): 87.6
WATER TABLE (ft): 7.4
DATE OF READING: 8/20/2024
EST. SHGWT (ft): 6.0

DATE STARTED: 8/20/24
DATE FINISHED: 8/20/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose dark grey fine SAND with root [SP]						
		2-3-3	6			-- medium dense, grey	5	7				
		4-7-9	16			-- loose, light grey						
5		5-4-4	8	▽								
		4-4-4	8	▼		-- very loose						
		2-1-2	3			-- loose						
10		2-2-2	4			BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-31** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 84.8
WATER TABLE (ft): NE
DATE OF READING: 8/19/2024
EST. SHGWT (ft): +7.0

DATE STARTED: 8/19/24
DATE FINISHED: 8/19/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose mix dark grey fine SAND [SP]						
		2-2-3	5									
		2-3-3	6			-- grey						
5		2-2-2	4			-- medium dense						
		3-5-6	11	▽								
		6-8-12	20			Medium dense grey tan clayey fine SAND [SC]						
		11-12-11	23			-- grey tan red						
10						BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-32** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 89.1
WATER TABLE (ft): NE
DATE OF READING: 8/20/2024
EST. SHGWT (ft): +10.0

DATE STARTED: 8/20/24
DATE FINISHED: 8/20/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose grey fine SAND with roots [SP]						
		1-2-2	4									
		2-2-3	5			-- light grey						
5		2-3-3	6			-- no roots						
		3-4-6	10									
		4-5-5	10			-- medium dense						
		5-6-7	13	▽								
10						BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-33** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED

G.S. ELEVATION (ft): 87.9
WATER TABLE (ft): 5.7
DATE OF READING: 8/19/2024
EST. SHGWT (ft): 4.0

DATE STARTED: 8/19/24
DATE FINISHED: 8/19/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Medium dense dark grey fine SAND with roots [SP]						
		3-4-7	11			-- light grey						
		4-6-5	11	▽		-- loose						
5		3-4-4	8	▼								
		2-3-3	6									
		3-5-5	10									
						Medium dense grey tan clayey fine SAND [SC]						
10		4-7-9	16			BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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UES
BORING LOG

PROJECT NO.:	0130.240
REPORT NO.:	2109185
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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-34** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 84.6
WATER TABLE (ft): NE
DATE OF READING: 8/14/2024
EST. SHGWT (ft): +4.0

DATE STARTED: 8/14/24
DATE FINISHED: 8/14/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Very loose grey fine SAND [SP]						
		1-1-1	2									
		1-1-1	2	▽								
5		1-3-9	12			Medium dense grey red tan clayey fine SAND [SC]						
		11-13-15	28			-- grey tan						
		13-15-15	30			-- dense, tan red						
10		16-18-21	39			BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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UES
BORING LOG

PROJECT NO.:	0130.240
REPORT NO.:	2109185
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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-35** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 103.5
WATER TABLE (ft): NE
DATE OF READING: 8/14/2024
EST. SHGWT (ft): +4.0

DATE STARTED: 8/14/24
DATE FINISHED: 8/14/24
DRILLED BY: ORL - CM/CA
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose grey fine SAND with roots [SP]						
		1-2-2	4			-- very loose						
		1-1-2	3	▽								
5		1-4-9	13			Medium dense grey red clayey fine SAND with roots [SC] -- grey red tan						
		10-12-13	25			-- grey tan						
		12-14-16	30			-- dense, tan red						
10		15-17-19	36			BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-36** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 108.6
WATER TABLE (ft): NE
DATE OF READING: 8/17/2024
EST. SHGWT (ft): +10.0

DATE STARTED: 8/17/24
DATE FINISHED: 8/17/24
DRILLED BY: ORL - CM/CM
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose grey fine SAND [SP]						
		1-2-2	4			-- very loose						
		1-1-2	3			-- light grey						
5		1-1-2	3			-- loose						
		2-4-5	9			-- medium dense						
		3-5-6	11									
10		5-6-7	13	▽		BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-37** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 106.3
WATER TABLE (ft): NE
DATE OF READING: 8/15/2024
EST. SHGWT (ft): +3.5

DATE STARTED: 8/15/24
DATE FINISHED: 8/15/24
DRILLED BY: ORL - CM/CM
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Very loose grey fine SAND with roots [SP]						
		2-1-1	2									
				▽		-- loose, no roots						
		1-2-4	6									
						Medium dense tan red clayey fine SAND [SC]						
5		4-6-6	12				38	17				
						-- tan						
		6-7-7	14									
		6-8-10	18									
		10-9-14	23									
10						BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-38** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 100.3
WATER TABLE (ft): NE
DATE OF READING: 8/15/2024
EST. SHGWT (ft): +5.5

DATE STARTED: 8/15/24
DATE FINISHED: 8/15/24
DRILLED BY: ORL - CM/CM
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Loose grey fine SAND [SP]						
		1-2-2	4			-- very loose, with roots	2	4				
		2-1-1	2			-- loose, light grey						
5		2-2-2	4	▽								
		2-6-13	19			Medium dense tan clayey fine SAND [SC]						
		7-10-11	21									
10		11-10-16	26			BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-39** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 99.7
WATER TABLE (ft): NE
DATE OF READING: 8/15/2024
EST. SHGWT (ft): +8.0

DATE STARTED: 8/15/24
DATE FINISHED: 8/15/24
DRILLED BY: ORL - CM/CM
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Very loose grey fine SAND [SP]						
		1-1-1	2			-- with roots						
		1-1-2	3			-- light grey						
5		1-1-2	3			-- loose						
		2-2-2	4									
		2-3-2	5	▽								
						Loose tan red clayey fine SAND [SC]						
10		2-2-3	5			BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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Item 2.

PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-40** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 96.9
WATER TABLE (ft): NE
DATE OF READING: 8/16/2024
EST. SHGWT (ft): +10.0

DATE STARTED: 8/16/24
DATE FINISHED: 8/16/24
DRILLED BY: ORL - CM/CM
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Very loose grey fine SAND [SP]						
		1-1-1	2									
		1-1-1	2			-- grey tan						
5		1-1-1	2									
		1-1-2	3			-- loose, light grey						
		1-2-2	4									
10		2-2-2	4	▽		BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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Item 2.

PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-41** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 92.8
WATER TABLE (ft): NE
DATE OF READING: 8/16/2024
EST. SHGWT (ft): +10.0

DATE STARTED: 8/16/24
DATE FINISHED: 8/16/24
DRILLED BY: ORL - CM/CM
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Very loose grey fine SAND with roots [SP]						
		1-1-1	2									
		1-1-1	2			-- light grey						
5		1-1-1	2			-- loose						
		1-3-3	6									
		2-3-3	6									
		3-5-5	10	▽								
10						BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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Item 2.

PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-42** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 90.0
WATER TABLE (ft): NE
DATE OF READING: 8/16/2024
EST. SHGWT (ft): +3.5

DATE STARTED: 8/16/24
DATE FINISHED: 8/16/24
DRILLED BY: ORL - CM/CM
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Very loose grey fine SAND [SP]						
		1-1-1	2			-- medium dense						
		1-6-9	15	▽								
						Medium dense grey tan clayey fine SAND [SC]						
5		6-7-11	18									
		11-14-13	27				24	12				
		6-8-10	18									
		9-11-13	24									
10						BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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UES
BORING LOG

PROJECT NO.:	0130.240
REPORT NO.:	2109185
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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-43** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 91.7
WATER TABLE (ft): NE
DATE OF READING: 8/16/2024
EST. SHGWT (ft): +6.5

DATE STARTED: 8/16/24
DATE FINISHED: 8/16/24
DRILLED BY: ORL - CM/CM
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Very loose grey fine SAND [SP]						
		1-1-1	2									
		1-1-2	3			-- loose, grey tan						
5		1-2-2	4				4	8				
		3-7-9	16	▽		-- medium dense						
		15-13-11	24			Medium dense grey tan clayey fine SAND [SC]						
		14-15-13	28			Medium dense grey fine SAND with clay [SP-SC]						
10						BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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UES
BORING LOG

PROJECT NO.:	0130.240
REPORT NO.:	2109185
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PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-44** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 92.9
WATER TABLE (ft): NE
DATE OF READING: 8/16/2024
EST. SHGWT (ft): +10.0

DATE STARTED: 8/16/24
DATE FINISHED: 8/16/24
DRILLED BY: ORL - CM/CM
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Very loose grey tan fine SAND with roots [SP]						
		1-1-1	2									
		2-1-2	3									
5		2-1-2	3			-- loose						
		3-4-3	7									
		2-3-3	6			-- medium dense, light grey						
10		3-6-7	13	▽		BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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UES
BORING LOG

PROJECT NO.:	0130.240
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Item 2.

PROJECT: DESIGN LEVEL GEOTECHNICAL EXPLORATION
MISSION RISE SUBDIVISION
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **R-45** SHEET: **1 of 1**
SECTION: 2 & 34 TOWNSHIP: 21 & 20 S RANGE: 25 E

CLIENT: TURNSTONE GROUP
LOCATION: SEE BORING LOCATION PLAN
REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED, + = PERCHED

G.S. ELEVATION (ft): 88.9
WATER TABLE (ft): NE
DATE OF READING: 8/16/2024
EST. SHGWT (ft): +3.5

DATE STARTED: 8/16/24
DATE FINISHED: 8/16/24
DRILLED BY: ORL - CM/CM
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N BLOWS / FT	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/ DAY)	ORG. CONT. (%)
0						Very loose grey fine SAND [SP]						
		1-1-1	2									
				▽		-- loose						
		1-4-5	9									
						Medium dense grey tan pink clayey fine SAND [SC]						
5		8-11-13	24			-- grey tan						
		11-15-13	28									
		13-16-12	28			-- dense						
		15-18-17	35				50	19				
10						BORING TERMINATED AT 10.0 FEET						
15												
20												
25												

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KEY TO BORING LOGS

SYMBOLS AND ABBREVIATIONS

SYMBOL	DESCRIPTION
N-Value	No. of Blows of a 140-lb. Weight Falling 30 Inches Required to Drive a Standard Spoon 1 Foot
WOR	Weight of Drill Rods
WOH	Weight of Drill Rods and Hammer
	Sample from Auger Cuttings
	Standard Penetration Test Sample
	Thin-wall Shelby Tube Sample (Undisturbed Sampler Used)
RQD	Rock Quality Designation
	Stabilized Groundwater Level
	Seasonal High Groundwater Level (also referred to as the W.S.W.T.)
NE	Not Encountered
GNE	Groundwater Not Encountered
BT	Boring Terminated
-200 (%)	Fines Content or % Passing No. 200 Sieve
MC (%)	Moisture Content
LL	Liquid Limit (Atterberg Limits Test)
PI	Plasticity Index (Atterberg Limits Test)
NP	Non-Plastic (Atterberg Limits Test)
K	Coefficient of Permeability
Org. Cont.	Organic Content
G.S. Elevation	Ground Surface Elevation

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE GRAINED SOILS More than 50% retained on the No. 200 sieve*	GRAVELS 50% or more of coarse fraction retained on No. 4 sieve	CLEAN GRAVELS	GW	Well-graded gravels and gravel-sand mixtures, little or no fines
			GP	Poorly graded gravels and gravel-sand mixtures, little or no fines
		GRAVELS WITH FINES	GM	Silty gravels and gravel-sand-silt mixtures
			GC	Clayey gravels and gravel-sand-clay mixtures
	SANDS More than 50% of coarse fraction passes No. 4 sieve	CLEAN SANDS 5% or less passing No. 200 sieve	SW**	Well-graded sands and gravelly sands, little or no fines
			SP**	Poorly graded sands and gravelly sands, little or no fines
		SANDS with 12% or more passing No. 200 sieve	SM**	Silty sands, sand-silt mixtures
			SC**	Clayey sands, sand-clay mixtures
FINE-GRAINED SIOLS 50% or more passes the No. 200 sieve*	SILTS AND CLAYS Liquid limit 50% or less		ML	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, lean clays
			OL	Organic silts and organic silty clays of low plasticity
	SILTS AND CLAYS Liquid limit greater than 50%		MH	Inorganic silts, micaceous or diamicaceous fine sands or silts, elastic silts
			CH	Inorganic clays or clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity
			PT	Peat, muck and other highly organic soils

*Based on the material passing the 3-inch (75 mm) sieve
** Use dual symbol (such as SP-SM and SP-SC) for soils with more than 5% but less than 12% passing the No. 200 sieve

RELATIVE DENSITY
(Sands and Gravels)
Very loose – Less than 4 Blow/Foot
Loose – 4 to 10 Blows/Foot
Medium Dense – 11 to 30 Blows/Foot
Dense – 31 to 50 Blows/Foot
Very Dense – More than 50 Blows/Foot

CONSISTENCY
(Silts and Clays)
Very Soft – Less than 2 Blows/Foot
Soft – 2 to 4 Blows/Foot
Firm – 5 to 8 Blows/Foot
Stiff – 9 to 15 Blows/Foot
Very Stiff – 16 to 30 Blows/Foot
Hard – More than 30 Blows/Foot

RELATIVE HARDNESS
(Limestone)
Soft – 100 Blows for more than 2 Inches
Hard – 100 Blows for less than 2 Inches

MODIFIERS

These modifiers Provide Our Estimate of the Amount of Minor Constituents (Silt or Clay Size Particles) in the Soil Sample
Trace – 5% or less
With Silt or With Clay – 6% to 11%
Silty or Clayey – 12% to 30%
Very Silty or Very Clayey – 31% to 50%

These Modifiers Provide Our Estimate of the Amount of Organic Components in the Soil Sample
Trace – Less than 3%
Few – 3% to 4%
Some – 5% to 8%
Many – Greater than 8%

These Modifiers Provide Our Estimate of the Amount of Other Components (Shell, Gravel, Etc.) in the Soil Sample
Trace – 5% or less
Few – 6% to 12%
Some – 13% to 30%
Many – 31% to 50%

APPENDIX C

UES™

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a civil engineer may not fulfill the needs of a constructor — a construction contractor — or even another civil engineer. Because each geotechnical- engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. No one except you should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you* — should apply this report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical-engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

Geotechnical Engineers Base Each Report on a Unique Set of Project-Specific Factors

Geotechnical engineers consider many unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk-management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical-engineering report that was:

- not prepared for you;
- not prepared for your project;
- not prepared for the specific site explored; or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical-engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical-engineering report is based on conditions that existed at the time the geotechnical engineer performed the study. *Do not rely on a geotechnical-engineering report whose adequacy may have been affected by*: the passage of time; man-made events, such as construction on or adjacent to the site; or natural events, such as floods, droughts, earthquakes, or groundwater fluctuations. *Contact the geotechnical engineer before applying this report to determine if it is still reliable.* A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ — sometimes significantly — from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide geotechnical-construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are Not Final

Do not overrely on the confirmation-dependent recommendations included in your report. *Confirmation-dependent recommendations are not final,* because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations *only* by observing actual subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's confirmation-dependent recommendations if that engineer does not perform the geotechnical-construction observation required to confirm the recommendations' applicability.*

A Geotechnical-Engineering Report Is Subject to Misinterpretation

Other design-team members' misinterpretation of geotechnical-engineering reports has resulted in costly

problems. Confront that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Constructors can also misinterpret a geotechnical-engineering report. Confront that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing geotechnical construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical-engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make constructors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give constructors the complete geotechnical-engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise constructors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure constructors have sufficient time* to perform additional study. Only then might you be in a position to give constructors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and constructors fail to recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Environmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform an *environmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold-prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, many mold- prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical- engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; *none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.*

Rely, on Your GBC-Member Geotechnical Engineer for Additional Assistance

Membership in the Geotechnical Business Council of the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you GBC-Member geotechnical engineer for more information.

GEOTECHNICAL BUSINESS COUNCIL
of the Geoprofessional Business Association

8811 Colesville Road/Suite G106, Silver Spring, MD 20910
Telephone: 301/565-2733 Facsimile: 301/589-2017
e-mail: info@geoprofessional.org www.geoprofessional.org

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CONSTRAINTS & RESTRICTIONS

The intent of this document is to bring to your attention the potential concerns and the basic limitations of a typical geotechnical report.

WARRANTY

Universal Engineering Sciences has prepared this report for our client for his exclusive use, in accordance with generally accepted soil and foundation engineering practices, and makes no other warranty either expressed or implied as to the professional advice provided in the report.

UNANTICIPATED SOIL CONDITIONS

The analysis and recommendations submitted in this report are based upon the data obtained from soil borings performed at the locations indicated on the Boring Location Plan. This report does not reflect any variations which may occur between these borings.

The nature and extent of variations between borings may not become known until excavation begins. If variations appear, we may have to re-evaluate our recommendations after performing on-site observations and noting the characteristics of any variations.

CHANGED CONDITIONS

We recommend that the specifications for the project require that the contractor immediately notify Universal Engineering Sciences, as well as the owner, when subsurface conditions are encountered that are different from those present in this report.

No claim by the contractor for any conditions differing from those anticipated in the plans, specifications, and those found in this report, should be allowed unless the contractor notifies the owner and Universal Engineering Sciences of such changed conditions. Further, we recommend that all foundation work and site improvements be observed by a representative of Universal Engineering Sciences to monitor field conditions and changes, to verify design assumptions and to evaluate and recommend any appropriate modifications to this report.

MISINTERPRETATION OF SOIL ENGINEERING REPORT

Universal Engineering Sciences is responsible for the conclusions and opinions contained within this report based upon the data relating only to the specific project and location discussed herein. If the conclusions or recommendations based upon the data presented are made by others, those conclusions or recommendations are not the responsibility of Universal Engineering Sciences.

CHANGED STRUCTURE OR LOCATION

This report was prepared in order to aid in the evaluation of this project and to assist the architect or engineer in the design of this project. If any changes in the design or location of the structure as outlined in this report are planned, or if any structures are included or added that are not discussed in the report, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and the conclusions modified or approved by Universal Engineering Sciences.

USE OF REPORT BY BIDDERS

Bidders who are examining the report prior to submission of a bid are cautioned that this report was prepared as an aid to the designers of the project and it may affect actual construction operations.

Bidders are urged to make their own soil borings, test pits, test caissons or other investigations to determine those conditions that may affect construction operations. Universal Engineering Sciences cannot be responsible for any interpretations made from this report or the attached boring logs with regard to their adequacy in reflecting subsurface conditions which will affect construction operations.

STRATA CHANGES

Strata changes are indicated by a definite line on the boring logs which accompany this report. However, the actual change in the ground may be more gradual. Where changes occur between soil samples, the location of the change must necessarily be estimated using all available information and may not be shown at the exact depth.

OBSERVATIONS DURING DRILLING

Attempts are made to detect and/or identify occurrences during drilling and sampling, such as: water level, boulders, zones of lost circulation, relative ease or resistance to drilling progress, unusual sample recovery, variation of driving resistance, obstructions, etc.; however, lack of mention does not preclude their presence.

WATER LEVELS

Water level readings have been made in the drill holes during drilling and they indicate normally occurring conditions. Water levels may not have been stabilized at the last reading. This data has been reviewed and interpretations made in this report. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall, temperature, tides, and other factors not evident at the time measurements were made and reported. Since the probability of such variations is anticipated, design drawings and specifications should accommodate such possibilities and construction planning should be based upon such assumptions of variations.

LOCATION OF BURIED OBJECTS

All users of this report are cautioned that there was no requirement for Universal Engineering Sciences to attempt to locate any man-made buried objects during the course of this exploration and that no attempt was made by Universal Engineering Sciences to locate any such buried objects. Universal Engineering Sciences cannot be responsible for any buried man-made objects which are subsequently encountered during construction that are not discussed within the text of this report.

TIME

This report reflects the soil conditions at the time of exploration. If the report is not used in a reasonable amount of time, significant changes to the site may occur and additional reviews may be required.

TOWN OF HOWEY-IN-THE-HILLS, FLORIDA

GENERAL LAND DEVELOPMENT APPLICATION

101 N. Palm Avenue, Howey-in-the-Hills, Florida 34737
Phone: (352) 324-2290 • Fax: (352) 324-2126

Date Received: Application ID: Received By:

REQUESTED ACTION

- ☐ Comp Plan Amendment
- ☐ PUD
- ☐ Conditional Use
- ☐ Land Development Code Text
- ☐ Variance
- ☐ Rezoning
- ☐ Subdivision Minor
- ☐ Other
- ☐ Site Plan (check one below)
  - ☐ Preliminary
  - ☐ Final
- ☐ Subdivision (check one below)
  - ☐ Preliminary Subdivision
  - ☒ Final Subdivision
  - ☐ Final Plat

Describe Request: _____

APPLICANT INFORMATION:

Name: ASF TAP FL I LLC c/o Jason Humm E-Mail: jhumm@turnstonegroup.com

Address: 3565 Piedmont Rd NE Bldg. One, #200 Atlanta, GA 30305 Phone: 630.816.7002 Fax: _____

☒ Owner ☐ Agent for Owner ☐ Attorney for Owner

OWNER INFORMATION:

Name: ASF TAP FL I LLC E-Mail: jhumm@turnstonegroup.com

Address: 3565 Piedmont Rd NE Bldg. One, #200 Atlanta, GA 30305 Phone: 630.816.7002

_____ Fax: _____

PROPERTY INFORMATION:

Address: Revels Rd/ Silverwood Ln/ 9842 Number Two Rd Howey-in-the-Hills FL 34737

General Location: Southwest corner of Number Two Rd and Revels Rd

Current Zoning: PUD Planning Unit Development Current Land Use: PUD Planning Unit Development

Parcel Size: 240.56 +/- acres Tax Parcel #: 27-20-25-0004-000-01200, 34-20-25-0001-000-00100, 34-20-25-0004-000-01003, 02-21-25-0002-000-04800

Legal Description Attached [X] Yes [ ] No Survey Attached [X] Yes [ ] No

Pre-Application Meeting Date: _____
(Attach Pre-Application Form)

Application Fee: $ 3,000

Applicant's Signature: _____
(Signature) *(Date)*

Dror Bezalel
(Print)

Owner's Signature: _____
(Provide letter of Authorization) *(Signature)* *(Date)*

Dror Bezalel
(Print)

Applications must be complete to initiate the review process.

MISSION RISE
Project № 23017.1, v1.3
October 2023

TRAFFIC IMPACT ANALYSIS
TOWN OF HOWEY-IN-THE HILLS
FLORIDA

Prepared by:

Traffic & Mobility Consultants
3101 Maguire Boulevard, Suite 265
Orlando, Florida 32803
www.trafficmobility.com
(407) 531-5332

Prepared for:
ASF TAP Florida I, LLC
1170 Peachtree Street Northeast, Suite 1150
Atlanta, Georgia 30309

EXECUTIVE SUMMARY

Project Information

Name: Mission Rise

Location: West of SR 19 (South Palm Avenue), east of Silverwood Lane, and south of Number 2 Road in the Town of Howey-in-the-Hills, Lake County, Florida

Description: 499 Single Family Residential Units

Access Plan: One (1) full access at the intersection of Number 2 Road and Spine Road
One (1) full access at the intersection of SR 19 and Revels Road
One (1) full access at the intersection of Revels Road and Orange Blossom Road (expected to carry limited traffic)

Findings

Trip Generation: 4,428 Daily Trips / 322 AM Peak Hour Trips / 451 PM Peak Hour Trips

Roadway Capacity: The segments of SR 19, from Lane Park Road to Central Avenue and from CR 455 to CR 478 are projected to operate over their capacities at the project buildout.

Intersection Capacity: The intersections of SR 19 and CR 48, SR 19 and Central Avenue, SR 19 and Revels Road, and SR 19 and CR 455 are projected to experience delays in the buildout condition. The project does not have a significant impact on the intersections.

Recommendations

Intersection Improvements: Retime the signal or construct a roundabout at the intersections of SR 19 and CR 48 to maintain LOS standards.

Provide traffic signals on SR 19 at Central Avenue, Revels Road, and CR 455 to maintain LOS standards. A signal warrant analysis is recommended and should be provided in separate reports.

Construct a 430-foot northbound left turn lane and a 405-foot southbound right turn lane at the intersection of SR 19 and Revels Road.

Construct a 655-foot westbound left turn lane and a 420-foot eastbound right turn lane at the intersection of Number 2 Road and Spine Road.

PROFESSIONAL ENGINEERING CERTIFICATION

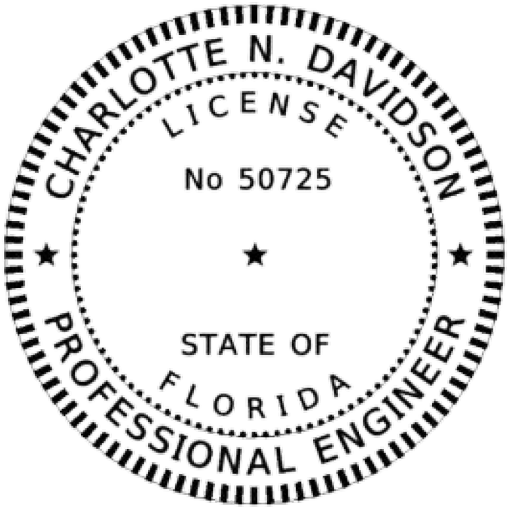
I hereby certify that I am a Professional Engineer properly registered in the State of Florida practicing with Traffic & Mobility Consultants LLC, a corporation authorized to operate as an engineering business, CA-30024, by the State of Florida Department of Professional Regulation, Board of Professional Engineers, and that I have prepared or approved the evaluations, findings, opinions, conclusions, or technical advice attached hereto for:

PROJECT: Mission Rise

LOCATION: Town of Howey-in-the-Hills, Florida

CLIENT: ASF TAP Florida, LLC

I hereby acknowledge that the procedures and references used to develop the results contained in these computations are standard to the professional practice of Transportation Engineering as applied through professional judgment and experience.



THIS ITEM HAS BEN DIGITALLY SIGNED AND SEALED BY
Charlotte N Davidson
Digitally signed by Charlotte N Davidson
Date: 2023.10.18 13:47:46 -04'00'
ON THE DATE ADJACENT TO THE SEAL

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

TRAFFIC & MOBILITY CONSULTANTS LLC
3101 MAGUIRE BOULEVARD, SUITE 265
ORLANDO, FLORIDA 32803
CERTIFICATE OF AUTHORIZATION CA-30024
CHARLOTTE N. DAVIDSON, P.E. NO 50725

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1.0 INTRODUCTION

This Traffic Impact Analysis (TIA) was conducted to assess the impact of the proposed Mission Rise development in the town of Howey-in-the-Hills, Florida. The proposed development consists of 499 single-family units with an anticipated buildout year of 2033. This study conforms to the Tier 2 TIA requirements of the Town of Howey-in-the-Hills and Lake County. The analysis was prepared in accordance with the approved methodology. The study has been updated to incorporate comments received from the Town of Howey-in-the-Hills. The methodology and the response to comments letter are included in **Appendix A**.

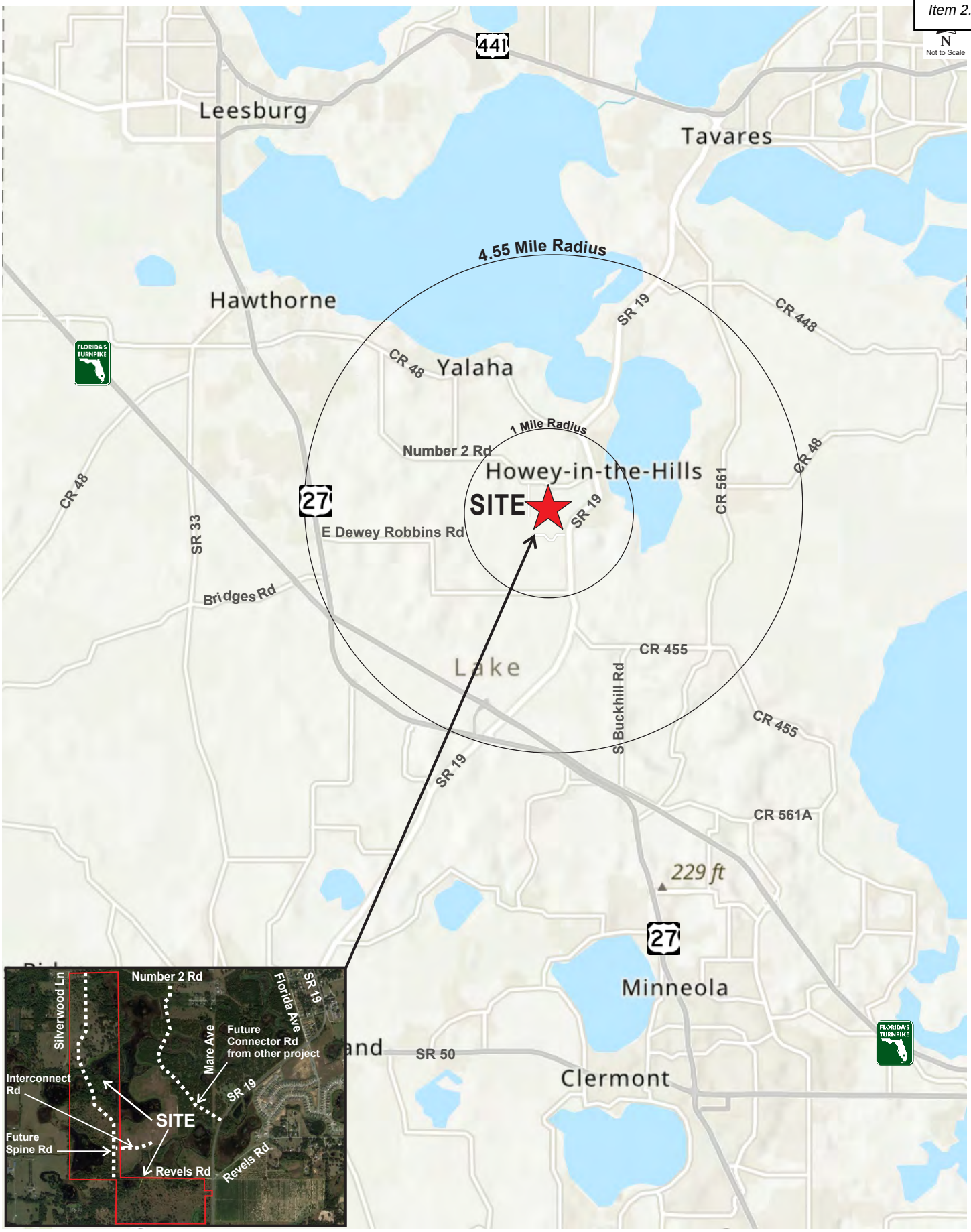
The site is located east of Silverwood Lane, west of SR 19 (South Palm Avenue), and south of Number 2 Road. **Figure 1** depicts the site location and the surrounding transportation network.

The development will be accessed via the intersections of Number 2 Road and Spine Road (future road), SR 19 and Revels Road, and Revels Road and Orange Blossom Road. The preliminary development site plan is provided in **Appendix B**.

Data used in the analysis consisted of site plan/development information provided by the project engineers, AM and PM peak hour intersection traffic counts obtained by Traffic & Mobility Consultants LLC, FDOT's *2023 Multimodal Quality/Level of Service (MQ/LOS) Handbook* and roadway capacities obtained from the *2022 Lake County Congestion Management Process (CMP) Database*.

1.1 Study Area

The project study area was established based on the standard requirements of the Lake Sumter Metropolitan Planning Organization (LSMPO) methodology and the Town of Howey-in-the-Hills *Land Development Code* (*LDC*). In accordance with the requirements of Tier 2 TIA methodology, the impact area includes roadway segments and intersections within a 4.55-mile radius of the site in addition to roadways where the development traffic is expected to consume 5% or more of their adopted Level of Service (LOS) capacities. The roadway segments characteristics were obtained from the *2022 Lake County Congestion Management Process (CMP) Database* and 2023 *FDOT Multimodal Quality/Level of Service (Q/LOS) Handbook Appendix B,* included in **Appendix C**. The project study area determination is provided in **Table 1,** as determined in the approved methodology.



Site Location Map
Mission Rise
23017.1, v1.3

Figure 477

Table 1
Study Area

Roadway Segment	SEG ID	No Lns	Area Type	Median Type	Speed Limit	LOS Std	Pk Dir Cap	Dir	Project Dist	Project Trips	Within 1-Mile? **	% Cap	In Study?
CR 455													
SR 19 to CR 561	950	2	R	Undivided	45	C	740	EB	10%	17	NO	2.3%	NO
								WB		28		3.8%	
CR 561 to CR 561A	960	2	R	Undivided	25	C	410	EB	5%	8	NO	2.0%	NO
								WB		14		3.4%	
CR 48													
US 27 to Lime Ave	1240	2	U	Undivided	40	D	1,080	EB	15%	43	NO	4.0%	NO
								WB		25		2.3%	
Lime Ave to SR 19	1250	2	U	Undivided	40	D	1,080	EB	2%	6	NO	0.6%	NO
								WB		3		0.3%	
CR 561 to Ranch Rd	1260	2	U	Undivided	40	D	840	EB	3%	5	NO	0.6%	NO
								WB		9		1.1%	
Ranch Rd to CR 448A	1270	2	R	Undivided	40	C	410	EB	3%	5	NO	1.2%	NO
								WB		9		2.2%	
CR 561													
CR 448 to CR 48	1410	2	U	Undivided	50	D	1,080	NB	0%	0	NO	0.0%	NO
								SB		0		0.0%	
CR 48 to South Astatula City Limit	1420	2	U	Undivided	40	D	620	NB	3%	9	NO	1.5%	NO
								SB		5		0.8%	
South Astatula City Limit to CR 455	1430	2	U	Undivided	40	D	1,080	NB	3%	9	NO	0.8%	NO
								SB		5		0.5%	
CR 455 to Howey Cross Rd	1440	2	R	Undivided	35	C	470	NB	2%	6	NO	1.3%	NO
								SB		3		0.6%	
Howey CRoss Rd to Turnpike Rd / CR 561A	1450	2	R	Undivided	40	C	640	NB	2%	6	NO	0.9%	NO
								SB		3		0.5%	
SR 19													
Lane Park Rd to CR 48	3040	2	U	Undivided	55	D	920	NB	23%	38	NO	4.1%	**YES**
								SB		65		**7.1%**	
CR 48 to Central Ave	3050	2	U	Undivided	40	D	700	NB	25%	42	NO	**6.0%**	**YES**
								SB		71		**10.1%**	
Central Ave to CR 455	3060	2	U	Undivided	35	D	1,200	NB	50%	142	**YES**	**11.8%**	**YES**
								SB		84		**7.0%**	
CR 455 to US 27 / SR 25	3070	2	R	Undivided	55	C	450	NB	35%	99	NO	**22.0%**	**YES**
								SB		58		**12.9%**	
US 27 / SR 25 to CR 478	3080	2	R	Undivided	55	C	450	NB	20%	57	NO	**12.7%**	**YES**
								SB		33		**7.3%**	
SR 91 (Florida Turnpike)													
US 27/SR 25 to US 27/SR 25/SR 19 Interchange	3566	4	U	Freeway	70	B	2,230	EB	10%	17	NO	0.8%	NO
								WB		28		1.3%	
US 27/SR 25													
SR 19 to CR 561	3830	4	U	Divided	55	D	3,280	EB	15%	25	NO	0.8%	NO
								WB		43		1.3%	
Central Ave													
SR 19 to Mare Ave	N/A	2	U	Undivided	30	D	770 *	EB	10%	17	**YES**	2.2%	**YES**
								WB		28		3.6%	
Number 2 Rd													
Mare Ave to Silverwood Ln	N/A	2	U	Undivided	30	D	730 *	EB	35%	58	**YES**	**7.9%**	**YES**
								WB		99		**13.6%**	
Silverwood Ln to CR 48	N/A	2	U	Undivided	45	D	730 *	EB	15%	25	**YES**	3.4%	**YES**
								WB		43		**5.9%**	

Source: 2022 Lake County CMP Database

** 2023 FDOT Multimodal Quality/Level of Service Handbook, Appendix B: Florida's Generalized Service Volume Tables*

Bold numbers represent capacity equal or higher than 5%.

Based on the study area analysis presented in **Table 1**, the following roadway segments were analyzed for the PM peak hour:

- SR 19
  - Lane Park Road to CR 48
  - CR 48 to Central Avenue
  - Central Avenue to CR 455
  - CR 455 to US 27 / SR 25
  - US 27 / SR 25 to CR 478

- Central Avenue
  - SR 19 to Mare Avenue

- Number 2 Road
  - Mare Avenue to Silverwood Lane
  - Silverwood Lane to CR 48

The following intersections were analyzed for the AM and PM peak hours:

- SR 19 and CR 48 (Signalized)
- SR 19 and Central Avenue (Unsignalized)
- Central Avenue and South Florida Avenue (Unsignalized)
- SR 19 and Revels Road (Unsignalized) (East Project Access)
- SR 19 and CR 455 (Unsignalized)
- Spine Road and Interconnect Road (Proposed)
- Number 2 Road and Spine Road (North Project Access) (Proposed)
- Revels Road and Spine Road (Proposed)
- Revels Road and Orange Blossom Road (South Project Access)

2.0 EXISTING CONDITIONS ANALYSIS

Existing conditions in the vicinity of the site were analyzed to establish a baseline for the traffic conditions prevailing in the vicinity of the proposed development. The analysis included a review of existing roadway segment capacity and analysis of the intersection operations at the study intersections.

2.1 Roadway Segment Capacity

Existing roadway conditions were analyzed by comparing the existing traffic volumes within the study area and the adopted level of service (LOS) standards for the roadway segments. **Table 2** summarizes the roadway segment capacity analysis.

Table 2
Existing Roadway Segment Capacity Analysis

Roadway Segment	Seg ID	No Lns	LOS Std	Pk Dir Cap	Dir	Existing Vol	LOS	V/C	Deficient?
***Central Ave**									
SR 19 to Mare Ave	N/A	2	D	530	EB	57	C	0.11	NO
					WB	59	C	0.11	NO
SR 19									
Lane Park Rd to CR 48	3040	2	D	920	NB	610	C	0.66	NO
					SB	656	C	0.71	NO
CR 48 to Central Ave	3050	2	D	700	NB	433	C	0.62	NO
					SB	372	C	0.53	NO
Central Ave to CR 455	3060	2	D	1,200	NB	433	B	0.36	NO
					SB	372	B	0.31	NO
CR 455 to US 27 / SR 25	3070	2	C	450	NB	507	D	1.13	YES
					SB	435	C	0.97	NO
US 27 / SR 25 to CR 478	3080	2	C	450	NB	466	D	1.04	YES
					SB	519	D	1.15	YES
Number 2 Rd									
Mare Avenue to Silverwood Ln	N/A	2	D	400	EB	57	C	0.14	NO
					WB	59	C	0.15	NO
Silverwood Ln to CR 48	N/A	2	D	400	EB	57	C	0.14	NO
					WB	59	C	0.15	NO

Source: 2022 Lake County CMP Database
** Counts were obtained from PM Peak Turning Movement Counts*
***A reduction of 25% was applied to the Peak Hour Directional Capacity of 530, as Number 2 Road is a substandard road*

The analysis indicates that all study roadway segments currently operate adequately within their capacities except the segments of SR 19 from CR 455 to CR 478 which currently operate over capacity.

2.2 Intersection Capacity

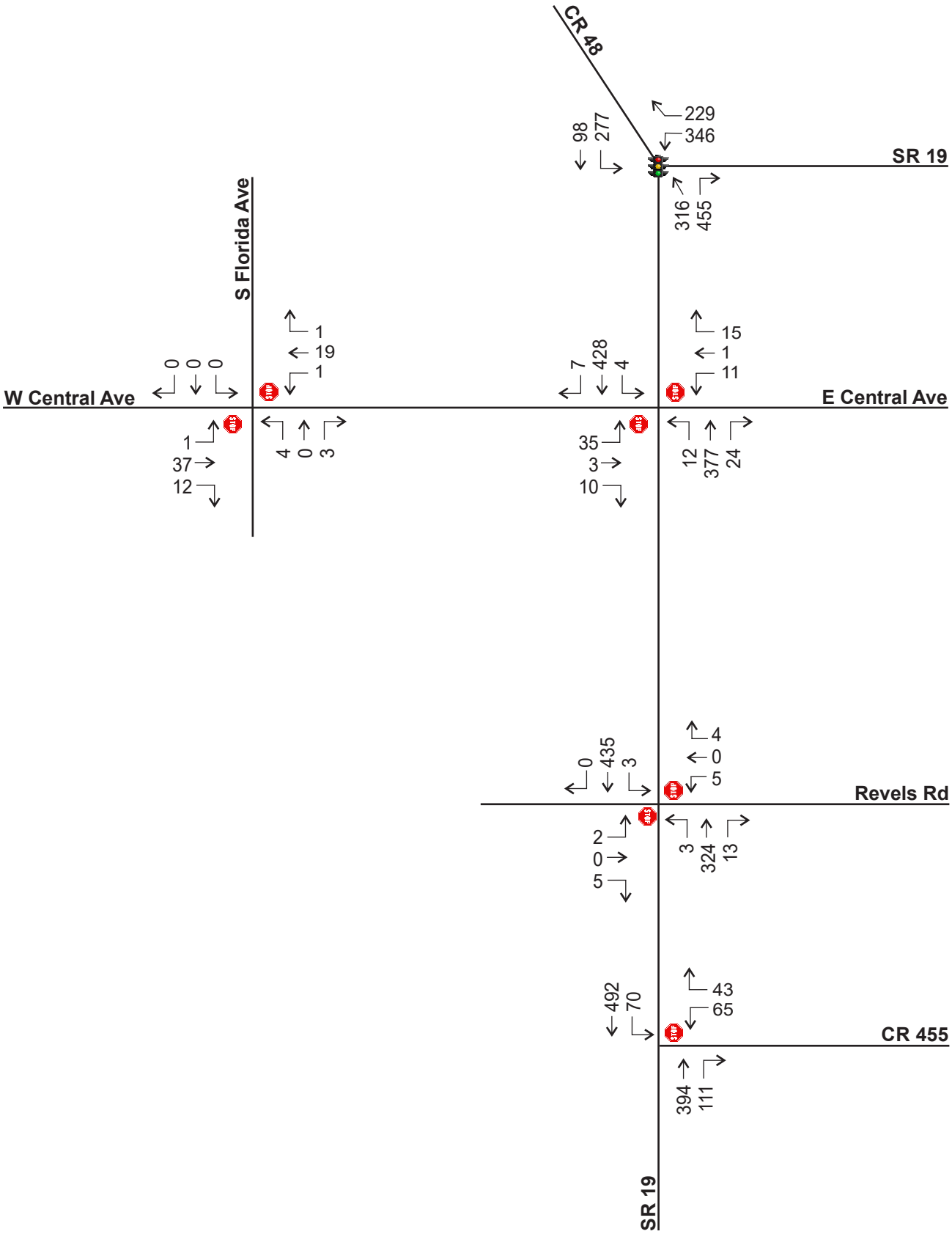
The intersection capacity analysis was performed for the AM and PM peak hour periods. The capacity analysis was performed using *Synchro* and the methods of the *Highway Capacity Manual (HCM)*. Turning movement volumes obtained during the AM and PM peak hour are displayed in **Figure 2** and **Figure 3**, respectively. The counts at SR 19 and CR 455 were collected on January 24, 2023, which coincides with a seasonal factor of 1.0. The remaining intersection turning movement counts were collected on July 19, 2023, during the off-peak season; therefore, a seasonal factor of 1.06 was applied to these counts. The turning movement counts and the seasonal factor report are included in **Appendix D**.

The results of the intersection capacity analysis, summarized in **Table 3,** reveal that all study intersections are currently operating at adequate LOS. Detailed *HCM* analysis worksheets are included in **Appendix E**.

Table 3
Existing Intersection Capacity Analysis

Intersection	Traffic Control	Time Period	EB		WB		NB		SB		Overall	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
SR 19 & CR 48	Signal	AM	--	--	50.7	D	20.3	C	11.2	B	29.5	C
		PM	--	--	87.5	F	17.1	B	10.7	B	55.7	E
SR 19 & Central Ave	TWSC	AM	20.7	C	15.1	C	8.9	A	8.8	A	--	--
		PM	22.6	C	17.9	C	9.0	A	8.8	A	--	--
W Central Ave & S Florida Ave	TWSC	AM	7.3	A	7.3	A	8.8	A	0.0	A	--	--
		PM	0.0	A	7.3	A	8.8	A	9.4	A	--	--
SR 19 & Revels Rd	TWSC	AM	13.3	B	15.0	C	8.3	A	8.0	A	--	--
		PM	14.0	B	16.1	C	8.1	A	8.2	A	--	--
SR 19 & CR 455	TWSC	AM	--	--	25.1	D	--	--	8.9	A	--	--
		PM	--	--	26.7	D	--	--	9.0	A	--	--

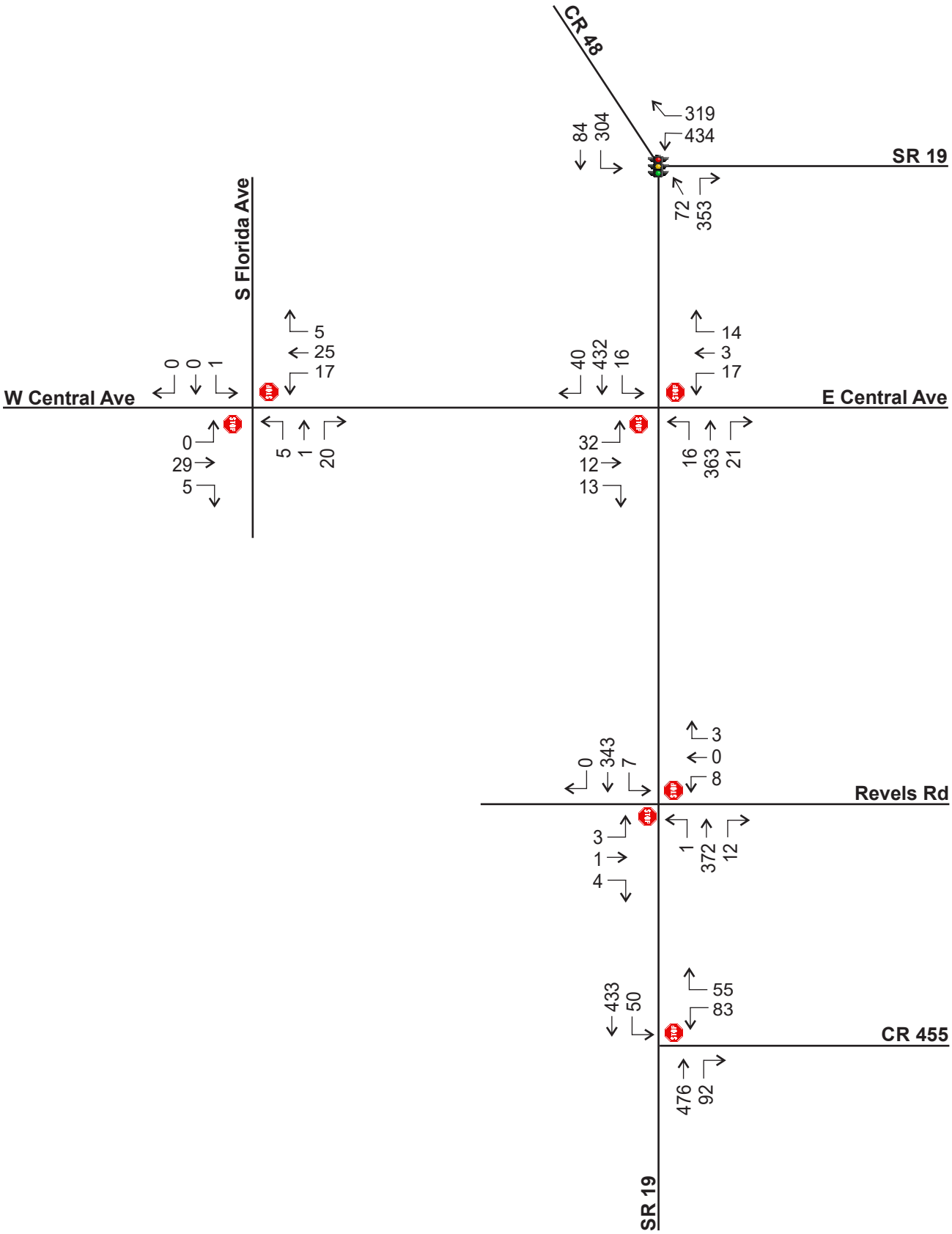
Average delay is in seconds



Existing AM Peak Hour Intersection Volumes

Mission Rise
23017.1, v1.3

Figure 2



Existing PM Peak Intersection Volumes
Mission Rise
23017.1, v1.3

Figure 3

3.0 PROJECT TRAFFIC

3.1 Trip Generation

The Trip Generation Analysis was conducted using the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition*. The ITE Information sheets are included in **Appendix F**. **Table 4** summarizes the resulting trip generation analysis.

Table 4
Trip Generation Analysis

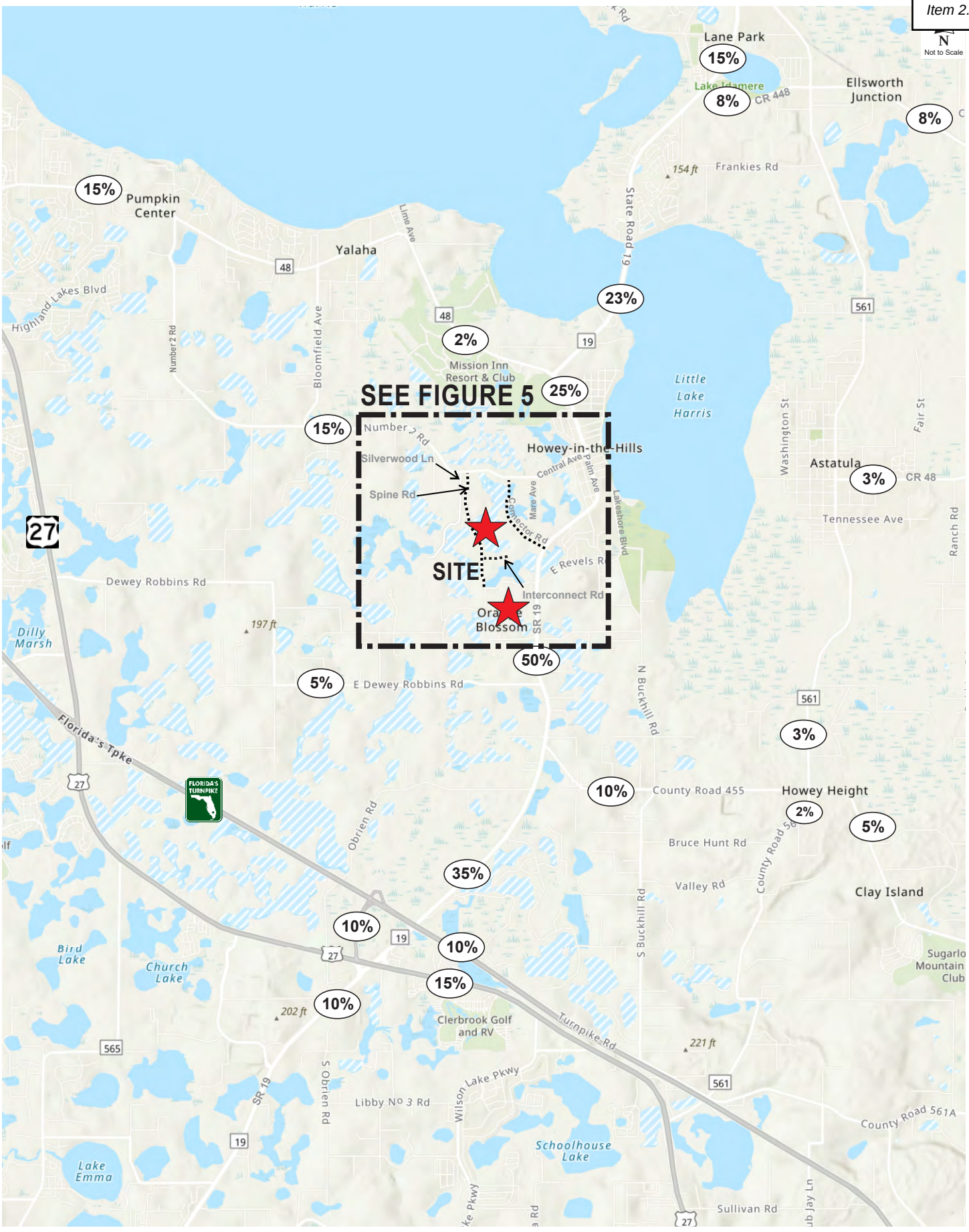
ITE Code	Land Use	Size	Daily		AM Peak Hour				PM Peak Hour			
			Rate	Trips	Rate	Total	Enter	Exit	Rate	Total	Enter	Exit
210	Single Family Residential (Detached)	499 DU	8.87	4,428	0.64	322	81	241	0.90	451	284	167

Trip Generation analysis based on ITE Trip Generation Manual, 11th Edition.

The proposed development is projected to generate 4,428 new daily trips, of which 322 trips occur during the AM peak hour and 451 trips occur during the PM peak hour.

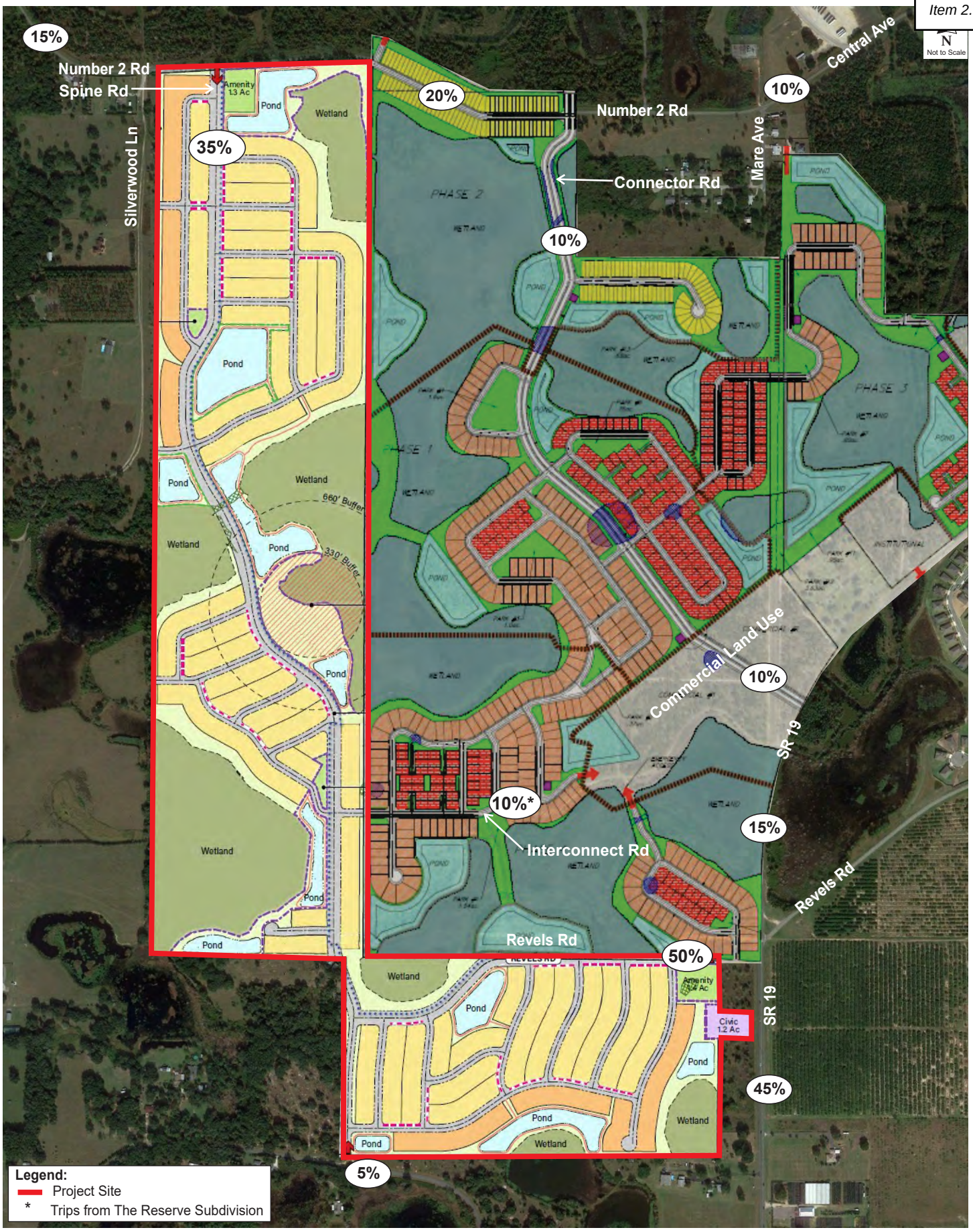
3.2 Trip Distribution

A trip distribution pattern was developed using the *Central Florida Regional Planning Model (CFRPMv7).* The model distribution was slightly adjusted based on local knowledge, professional engineering judgement, and the location of the development with respect to the study area attractions and activity centers to reflect the prevailing travel patterns in the study area and the surrounding transportation network. The raw model plots are provided in **Appendix G**, and the project trip distribution pattern is shown in **Figure 4.** Detailed trip distribution near the project site is shown in **Figure 5.**



Project Trip Distribution
Mission Rise
23017.1, v1.3

Figure 4



TMC Traffic & Mobility Consultants

Project Trip Distribution Near Project Site

Mission Rise
23017.1, v1.3

Figure 5

4.0 PROJECTED CONDITIONS ANALYSIS

An analysis of projected conditions was conducted to determine the impact of the proposed development on the roadway segments capacity, as well as the proposed access connections and intersections to the site. The project buildout year for the analysis is 2033.

4.1 Planned and Programmed Improvements

The *Lake-Sumter Metropolitan Planning Organization (LSMPO) 2023-2027 Transportation Improvement Program (TIP),* as well as *LSMPO 2022 List of Priority Projects (LOPP)* were reviewed to identify any planned or programmed improvements to the transportation facilities in this area. The improvements are listed in **Table 5**. Construction is not planned to be completed within the next three (3) years for either improvement. Excerpts from the *LSMPO TIP* and *LSMPO LOPP* are provided in **Appendix H**.

Table 5
Planned and Programmed Improvements

FM #	Project Name	From	To	Proposed Phase	Proposed Phase FY	Description of Improvement
2383191	SR 19 *	CR 48	CR 561	PDE-PE-ENV	2023	Add Lanes & Reconstruct
238319-1	SR 19 **	Howey Bridge	CR 561	-	-	Road Widening

** LSMPO TIP Fiscal Year 2023-2027*
*** LSMPO 2022 LOPP Tier 2 project*

4.2 Background Traffic Projection

Projected traffic includes background traffic volumes, the project trips, and committed trips. Projected background traffic for the buildout year of 2033 was estimated by applying the growth rates obtained from *2022 Lake County CMP Database* to the existing traffic volumes. A minimum of 2% annual growth rate was applied to existing traffic volumes for which published annual growth rates are below 2%. The committed trips for the following approved developments within the study area are included in **Appendix I**:

- Whispering Hills
- Talichet Phase 1 and Phase 2
- The Reserve at Howey in the Hills
- Lake Hills (Four Seasons). Trips were estimated based on the trip generation analysis and the trip distribution obtained from the methodology.
- Watermark (Simpson)

4.3 Roadway Segment Capacity

Projected roadway conditions were analyzed by comparing the projected traffic volumes on the study segments to their service volumes and adopted LOS standards. The total projected traffic volume is composed of background traffic, vested trips and project trips. **Table 6** summarizes the roadway segment capacity analysis, which reveals the following:

- SR 19 from Lane Park Road to Central Avenue and from CR 455 to CR 478 are projected to operate over their capacities due to background traffic.
- All remaining roadway segments are projected to continue to operate adequately at project buildout.

Roadway Segment Capacity Analysis with Recommended Mitigation

Number 2 Road is a substandard road with reduced capacity. It is projected to operate at an acceptable LOS; however, operational safety is a concern due to its narrow width. Lake County would need to improve it in the future to achieve safety.

SR 19 from CR 48 to CR 561 is programmed in the *TIP* to be widened to four (4) lanes. The roadway segment capacity analysis reveals that the widening of SR 19 to 4-lanes is projected to improve the capacity of the segment from Lane Park Road to CR 48. The segments of SR 19 from CR 48 to Central Avenue and from CR 455 to CR 478 would need to be widened to 4-lanes to achieve acceptable LOS conditions at project buildout, as summarized in **Table 7**.

Table 6
Projected Roadway Segment Capacity Analysis

Roadway Segment	No Lns	LOS Std	PH Dir Capacity	Dir	Exist Vol	Growth Rate	2033 Backg'd	Vested Trips	Total Backg'd Volume	Backg'd LOS	Backg'd V/C	Trip Distr	Proj Dir	Project Volume	Total Volume	Final LOS	Final V/C
***Central Ave**																	
SR 19 to Mare Ave	2	D	530	NB/EB SB/WB	57 59	2.00%	70 72	53 85	123 157	C C	0.23 0.30	10%	OUT IN	17 28	140 185	C C	0.26 0.35
SR 19																	
Lane Park Rd to CR 48	2	D	920	NB/EB SB/WB	610 656	2.00%	744 800	125 264	869 1,064	C F	0.94 1.16	23%	OUT IN	38 65	907 1,129	D F	0.99 1.23
CR 48 to Central Ave	2	D	700	NB/EB SB/WB	433 372	2.00%	528 454	266 355	794 809	F F	1.13 1.16	25%	OUT IN	42 71	836 880	F F	1.19 1.26
Central Ave to CR 455	2	D	1,200	NB/EB SB/WB	433 372	2.00%	528 454	437 272	965 726	D C	0.80 0.61	50%	IN OUT	142 84	1,107 810	D C	0.92 0.68
CR 455 to US 27/ SR 25	2	C	450	NB/EB SB/WB	507 435	2.00%	619 531	286 178	905 709	E D	2.01 1.58	35%	IN OUT	99 58	1,004 767	E E	2.23 1.70
US 27/ SR 25 to CR 478	2	C	450	NB/EB SB/WB	466 519	2.00%	569 633	286 178	855 811	E E	1.90 1.80	10%	IN OUT	28 17	883 828	E E	1.96 1.84
****Number 2 Rd**																	
Mare Ave to Silverwood Ln	2	D	400	NB/EB SB/WB	57 59	2.00%	70 72	53 53	123 125	C C	0.31 0.31	35%	OUT IN	58 99	181 224	C D	0.45 0.56
Silverwood Ln to CR 48	2	D	400	NB/EB SB/WB	57 59	2.00%	70 72	53 53	123 125	C C	0.31 0.31	15%	IN OUT	43 25	166 150	C C	0.42 0.38

Source: 2022 Lake County Annual Traffic Counts
**Exiting Counts were obtained from PM Peak Turning Movement Counts*
***A reduction of 25% was applied to the Peak Hour Directional Capacity of 530, as Number 2 Road is a substandard road*

Table 7
Projected Roadway Segment Capacity Analysis with Mitigation

Roadway Segment	No Lns	LOS Std	PH Dir Capacity	Dir	Exist Vol	Growth Rate	2033 Backg'd	Vested Trips	Total Backg'd Volume	Backg'd LOS	Backg'd V/C	Trip Distr	Proj Dir	Project Volume	Total Volume	Final LOS	Final V/C	Project Responsible ?
SR 19																		
Lane Park Rd to CR 48	4	D	1,480	NB/EB SB/WB	610 656	2.00%	744 800	125 264	869 1,064	C D	0.59 0.72	23%	OUT IN	38 65	907 1,129	D D	0.61 0.76	NO NO
CR 48 to Central Ave	4	D	1,480	NB/EB SB/WB	433 372	2.00%	528 454	266 355	794 809	D D	0.54 0.55	25%	OUT IN	42 71	836 880	D D	0.56 0.59	NO NO
CR 455 to US 27/ SR 25	4	C	1,360	NB/EB SB/WB	507 435	2.00%	619 531	286 178	905 709	C C	0.67 0.52	35%	IN OUT	99 58	1,004 767	C C	0.74 0.56	NO NO
US 27/ SR 25 to CR 478	4	C	1,360	NB/EB SB/WB	466 519	2.00%	569 633	286 178	855 811	C C	0.63 0.60	10%	IN OUT	28 17	883 828	C C	0.65 0.61	NO NO
****Number 2 Rd**																		
Mare Ave to Silverwood Ln	2	D	530	NB/EB SB/WB	57 59	2.00%	70 72	53 53	123 125	C C	0.23 0.24	35%	OUT IN	58 99	181 224	C D	0.34 0.42	NO NO
Silverwood Ln to CR 48	2	D	530	NB/EB SB/WB	57 59	2.00%	70 72	53 53	123 125	C C	0.23 0.24	15%	IN OUT	43 25	166 150	C C	0.31 0.28	NO NO

Source: 2022 Lake County Annual Traffic Counts
**Exiting Counts were obtained from PM Peak Turning Movement Counts*
***A reduction of 25% was applied to the Peak Hour Directional Capacity of 530, as Number 2 Road is a substandard road*

Note: Roadway mitigations are necessitated by background traffic. Number 2 Road is an existing substandard facility.
The development is not responsible for these improvements, per Florida Statutes.

4.4 Intersection Capacity Analysis

The projected volumes for the intersection capacity and operations analysis were calculated by assigning the project trips to the project driveways and adding those volumes to the background volumes and vested trips at the study intersections. Projected background traffic was estimated as discussed in the previous section. Projected background traffic on the proposed Spine Road and Revels Road were estimated based on the *CFRPMv7* model daily volumes. The AADT model plots are included in **Appendix J**.

Intersection Capacity Analysis

The projected AM and PM peak hour volumes are illustrated in **Figure 6** and **Figure 7**, respectively. The analysis includes right and left turn lanes on SR 19, and a right turn lane on Revels Road at the intersection of SR 19 and Revels Road. It also includes right and left turn lanes on Number 2 Road at the intersection of Spine Road and Number 2 Road. The results of the analysis are summarized in **Table 8,** and the analysis worksheets are included in **Appendix K**. The intersection volume projection sheets are included in **Appendix L**.

Table 8
Projected Intersection Capacity Analysis

Intersection	Traffic Control	Time Period	EB		WB		NB		SB		Overall	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
SR 19 & CR 48	Signal	AM	--	--	177.1	**F**	29.7	C	22.1	C	87.2	**F**
		PM	--	--	>300	**F**	21.5	B	12.1	B	234.3	**F**
SR 19 & Central Ave	TWSC	AM	>300	**F**	26.5	D	10.1	B	10.3	B	--	--
		PM	>300	**F**	89.7	**F**	11.4	B	10.3	B	--	--
W Central Ave & S Florida Ave	TWSC	AM	7.3	A	7.4	A	9.2	A	0.0	A	--	--
		PM	0.0	A	7.4	A	9.3	A	10.6	B	--	--
SR 19 & Revels Rd / Project Entrance	TWSC	AM	51.2	**F**	>300	**F**	10.1	B	8.8	A	--	--
		PM	135.1	**F**	>300	**F**	9.9	A	10.7	B	--	--
SR 19 & CR 455	TWSC	AM	--	--	>300	**F**	--	--	10.7	B	--	--
		PM	--	--	>300	**F**	--	--	12.7	B	--	--
Spine Rd & Interconnect Rd / Proposed	TWSC	AM	--	--	8.8	A	--	--	7.4	A	--	--
		PM	--	--	8.8	A	--	--	7.4	A	--	--
Number 2 Rd and Spine Rd / Project Entrance	TWSC	AM	--	--	7.5	A	9.8	A	--	--	--	--
		PM	--	--	7.6	A	9.9	A	--	--	--	--
Spine Rd & Revels Rd	TWSC	AM	--	--	9.1	A	--	--	7.5	A	--	--
		PM	--	--	9.3	A	--	--	7.5	A	--	--
Revels Rd & Orange Blossom Rd / Project Entrance	TWSC	AM	7.2	A	--	--	--	--	8.6	A	--	--
		PM	7.3	A	--	--	--	--	8.6	A	--	--

Average delay is in seconds

N
Not to Scale

Number 2 Rd
Central Ave
S Florida Ave
CR 48
SR 19
Access 1
Connector Rd
Spine Rd
Interconnect Rd
Revels Rd
Orange Blossom Rd
CR 455
SITE
SITE

28+{5}=33
30+(16)=46
59+{3}=62
15+(11)=26
15+(37)=52
30+(48)=78
(24)
(8)
0
0
0
1
44+(24)=68
14+{3}=17
1
23+(8)=31
1+{9}=10
5+{5}=10
0
4+{16}=20
8+{33}+(8)=49
514+{137}+(12)=663
5+{32}=37
42+{78}+(24)=144
4
12
118+{60}+(2)=180
332+{81}=413
275+{59}=334
415+{89}+(18)=522
379+{71}+(5)=455
546+{139}+(55)=740
18+{47}=65
1
13
14
452+{184}+(36)=672
29
25+(17)=42
20+(24)=44
25+(8)=33
(0)
20+(51)=71
{2}+(12)=14
522+{244}+(24)=790
4+{17}=21
5+{48}=53
0
6+{118}=124
2+{3}+(36)=41
0
6+{30}+(84)=120
4+{12}+(28)=44
389+{93}+(8)=490
16+{50}=66
4+(5)=9
74+(68)=142
62+(46)=108
3+(7)=10
4+(2)=6
3+(2)=5
7
(12)
7
(4)
590+{253}+(84)=927
84+{75}+(24)=183
52+{28}+(8)=88
78
473+{95}+(28)=596
133

Legend:
Background + {Vested} + (Project) = Total

N
Not to Scale

Number 2 Rd
Central Ave
S Florida Ave
CR 48
SR 19
Connector Rd
Interconnect Rd
Revels Rd
CR 455
Orange Blossom Rd
Spine Rd
Access 1
SITE
SITE

41+{5}=46
15+(44)=59
36+{3}=39
30+(57)=87
15+(26)=41
30+(34)=64
(17)
(28)
0
0
1
35+(17)=52
6+{5}=11
6
30+(29)=59
20+{16}=36
6+{3}=9
1
24+{9}=33
48+{85}+(29)=162
518+{223}+(43)=784
19+{47}=66
38+{53}+(17)=108
14
16
101+{87}+(6)=194
365+{86}=451
383+{100}=483
521+{164}+(66)=751
86+{75}+(3)=164
424+{125}+(39)=588
17+{32}=49
4
20
19
436+{181}+(25)=642
25
20+(60)=80
25+(17)=42
20+(28)=48
(0)
25+(35)=60
3+(2)=5
62+(72)=134
74+(89)=163
4+(6)=10
3+(6)=9
4+(8)=12
7
(8)
(13)
7
{2}+(43)=45
412+{173}+(17)=602
8+{56}=64
4+{32}=36
0
10+{78}=88
4+{1}+(25)=30
1
5+{21}+(57)=83
1+{35}+(99)=135
446+{270}+(28)=744
14+{132}=146
520+{178}+(58)=756
60+{53}+(17)=130
66+{85}+(28)=179
100
571+{286}+(99)=956
110

Legend:
Background + {Vested} + (Project) = Total

Projected PM Peak Hour Intersection Volumes
Mission Rise
23017, v1.3

Figure 7

The analysis reveals the following:

- The intersection of SR 19 and CR 48 is projected to operate with delay during the AM and the PM peak hour. Further review is needed.
- The intersection of SR 19 and Central Avenue is projected to operate with delay in the eastbound and westbound directions. The westbound movement does not carry any project traffic and it is projected to operate at volume to capacity ratio less than 1.0. Further review is needed.
- The intersection of SR 19 and Revels Road is projected to operate with delay in the eastbound and westbound directions. The westbound movement does not carry any project traffic. Further review is needed.
- The intersection of SR 19 and CR 455 is projected to operate with delay for the westbound left movement. Project trips contribute no traffic to the movement. Further review is needed.

The remaining study intersections are projected to operate adequately at the project buildout.

Intersection Capacity Analysis with Recommended Mitigation

The proposed project does not significantly impact study area intersections. Four (4) intersections have been reviewed further. The intersections are determined to need the following improvements to achieve acceptable LOS conditions at project buildout:

- Retiming the signal is recommended at the intersection of SR 19 and CR 48 OR constructing a 2-lane roundabout at the intersection of SR 19 and CR 48.
- Installing a signal is recommended at the intersection of SR 19 and Central Avenue.
- Installing a signal is recommended at the intersection of SR 19 and Revels Road.
- Installing a signal is recommended at the intersection of SR 19 and CR 455.

The traffic operations for the mitigated intersections are projected to have acceptable LOS, as detailed in **Table 9**. The background conditions and the buildout conditions with the mitigation analysis worksheets are included in **Appendix M**.

Table 9
Projected Intersection Capacity Analysis with Mitigation

Intersection	Traffic Control	Peak Period	Scenario	EB		WB		NB		SB		Overall	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
SR 19 & CR 48	Option 1: Retiming Signal	AM	Background	--	--	161.9	F	29.5	C	21.8	C	80.1	F
			Buildout	--	--	177.1	F	29.7	C	22.1	C	87.2	F
			Mitigation	--	--	59.4	E	72.4	E	54.1	D	60.9	D
		PM	Background	--	--	>300	F	21.5	C	12.1	B	187.5	F
			Buildout	--	--	>300	F	21.5	C	12.1	B	233.7	F
			Mitigation	--	--	48.7	D	56.5	E	58.2	E	52.6	D
SR 19 & CR 48	Option 2: Roundabout	AM	Background	--	--	161.9	F	29.5	C	21.8	C	80.1	F
			Buildout	--	--	177.1	F	29.7	C	22.1	C	87.2	F
			Mitigation	--	--	14.2	B	23.0	C	11.9	B	17.7	C
		PM	Background	--	--	>300	F	21.5	C	12.1	B	187.5	F
			Buildout	--	--	>300	F	21.5	C	12.1	B	233.7	F
			Mitigation	--	--	12.6	B	15.7	C	23.4	C	16.1	C
SR 19 & Central Ave	Signal	AM	Background	>300	F	24.5	C	9.9	A	10.1	A	--	--
			Buildout	>300	F	26.5	D	10.1	B	10.3	B	--	--
			Mitigation	21.0	C	18.3	B	8.2	A	8.2	A	9.9	A
		PM	Background	>300	F	65.2	E	11.0	B	10.2	B	--	--
			Buildout	>300	F	89.7	F	11.4	B	10.3	A	--	--
			Mitigation	13.3	B	12.0	B	6.8	A	24.7	C	16.9	B
SR 19 & Revels Road	Signal	AM	Background	22.5	C	>300	F	9.7	A	8.8	A	--	--
			Buildout	51.2	F	>300	F	10.1	B	8.8	A	--	--
			Mitigation	18.2	B	16.0	B	5.0	A	6.2	A	7.3	A
		PM	Background	30.0	D	>300	F	9.0	A	10.6	B	--	--
			Buildout	135.1	F	>300	F	9.9	A	10.7	B	--	--
			Mitigation	30.0	C	26.7	C	6.5	A	3.8	A	7.3	A
SR 19 & CR 455	Signal	AM	Background	--	--	>300	F	--	--	10.3	B	--	--
			Buildout	--	--	>300	F	--	--	10.7	B	--	--
			Mitigation	--	--	78.2	E	2.3	A	30.8	C	24.3	C
		PM	Background	--	--	>300	F	--	--	11.6	B	--	--
			Buildout	--	--	>300	F	--	--	12.7	B	--	--
			Mitigation	--	--	130.1	F	6.4	A	62.3	E	44.1	D

Average delay is in seconds

The analysis reveals the following:

- The intersection of SR 19 and CR 48 is projected to operate at an acceptable overall LOS by optimizing the signal timing or by constructing a 2-lane roundabout. Since the intersection can operate adequately by retiming the traffic signal; the project is not responsible to add a roundabout.
- The intersection of SR 19 and Central Avenue is projected to operate adequately at buildout with a signal. The westbound movement does not carry any project traffic. Project contribute 5.9% of the total traffic.
- The intersection of SR 19 and Revels Road is projected to operate adequately at buildout with a signal. The westbound movement does not carry any project traffic. Project contributes 13.6% of the total traffic.
- The intersection of SR 19 and CR 455 is projected to operate adequately at buildout with a signal. The westbound movement does not carry any project traffic. Project contribute 9.0% of the total traffic.

In lieu of contributing a proportionate share to the three (3) intersections needing new traffic signals, the developer is recommending to construct the new traffic signal at SR 19 and Revels Road, which serves as the main access to the project.

5.0 ACCESS REVIEW

The development will be accessed via the intersections of Number 2 Road and Spine Road (future road), SR 19 and Revels Road, and Revels Road and Orange Blossom Road. SR 19 is a 2-lane undivided facility with a posted speed limit of 55 miles per hour (mph) near the project entrance. Number 2 Road is a 2-lane undivided facility with a posted speed limit of 30 mph in the east direction and 45 mph in the west direction near the project entrance. Orange Blossom Road is a 2-lane undivided facility with a posted speed limit of 30 mph near the project entrance.

5.1 Turn Lane Review

A review of the need for turn lanes at the project entrance intersections was conducted based on the Lake County *Land Development Code (LDC)* guidelines, which are provided in **Appendix N**. In accordance with the *LDC* guidelines, right and left turn lanes are warranted at the intersections of SR 19 and Revels Road, and at Number 2 Road and Spine Road. The intersection of Orange Blossom Road and Revels Road is expected to carry limited traffic; therefore, exclusive turn lanes are not recommended.

The recommended lengths of the turn lanes on SR 19 were calculated based on the requirements of the *FDOT Design Manual Exhibit 212-1*, provided in **Appendix O**, and the recommended lengths of the turn lanes on Number 2 Road were calculated based on the Lake County *LDC* guidelines. Per Lake County requirement for turn lane widening on Number 2 Road, the length of tapers will need to be twice the standard length. The calculations are provided as follows:

SR 19 and Revels Road

Left Turn Lane Length = Deceleration Distance + Queue Length
Deceleration at 60 mph (design speed) = 405 feet
95th Percentile Queue Length = 1 x 25 = 25 feet
Northbound Left Turn Lane = 405 feet + 25 feet = 430 feet (including a 50-foot taper)

Right Turn Lane Length = Deceleration Distance
Deceleration at 60 mph (design speed) = 405 feet
Southbound Right Turn Lane = 405 feet

Number 2 Road and Spine Road

Left Turn Lane Length = Taper Length + Storage Length
Taper Length at 50 mph (design speed) = 230 feet x 2 = 460 feet
Storage Length at 50 mph (design speed) = 195 feet
Westbound Left Turn Lane = 460 feet + 195 feet = 655 feet

Right Turn Lane Length = Taper Length + Storage Length
Taper Length at 35 mph (design speed) = 170 feet x 2 = 340 feet
Storage Length at 35 mph (design speed) = 80 feet
Eastbound Right Turn Lane = 340 feet + 80 feet = 420 feet

6.0 STUDY CONCLUSIONS

This traffic analysis was conducted to assess the impact of the proposed Mission Rise development in the Town of Howey-in-the-Hills, Florida. The project will include 499 single family residential units. The analysis included a determination of project trip generation, a review of existing and projected roadway and intersection capacity.

The results of the traffic analysis are summarized as follows:

- The proposed development is projected to generate 4,428 trips per day, of which 322 trips occur during the AM peak hour and 451 trips occur during the PM peak hour.

- SR 19 SR 19 from Lane Park Road to Central Avenue and from CR 455 to CR 478 are projected to operate over their capacities due to background traffic. The development is not responsible for mitigating background deficiencies, per Florida's Statutes.

- SR 19 from CR 48 to CR 561 is programmed in the *TIP* to be widened to 4 lanes.

- All remaining roadway segments are projected to continue to operate adequately at project buildout.

- The intersection of SR 19 and CR 48 is projected to operate with delay during the AM and the PM peak hour. It is recommended to retime the signal or implement a 2-lane roundabout to maintain LOS standards. The development is not responsible to implement a roundabout.

- The intersection of SR 19 and Central Avenue is projected to operate with delay in the eastbound and the westbound movement. The westbound movement does not carry any project traffic.

- The intersection of SR 19 and Revels Road is projected to operate with delay in the eastbound and westbound directions. The westbound movement does not carry any project traffic.

- The intersection of SR 19 and CR 455 is projected to operate with delay for the westbound left movement. Project trips contribute no traffic to the movement.

- In lieu of contributing a proportional share to the three (3) intersections where traffic signals are projected to be needed, the developer is recommending to construct the traffic signal at the intersection of SR 19 and Revels Road.

- A traffic signal at SR 19 and Revels Road traffic signal needs to be warranted based on a signal warrant study of the in-field traffic volumes. An Intersection Control Evaluation (ICE) study will also need to be coordinated with FDOT.

- All remaining study intersections are projected to operate adequately at project buildout.

- The turn lane recommendations are as follows:
    - Construct a 430-foot northbound left turn lane and a 405-foot southbound right turn lane at the intersection of SR 19 and Revels Road.
    - Construct a 655-foot westbound left turn lane and a 420-foot eastbound right turn lane at the intersection of Number 2 Road and Spine Road.

APPENDICES

Appendix A
Study Methodology and Response to Comments Letter

MEMORANDUM

May 23, 2023

Re: Mission Rise
Traffic Impact Analysis Methodology, v1.1
Town of Howey-In-The-Hills, Florida
Project № 23017.1

This methodology outlines the proposed Traffic Impact Analysis (TIA) for the above referenced project. This methodology was prepared in accordance with the requirements of the Town of Howey-In-The-Hills and the Lake~Sumter Metropolitan Planning Organization (LSMPO) TIA guidelines for a Tier 2 TIA. This methodology has been revised in accordance with the comments provided by the Town of Howey-In-The-Hills. The comments and response to comments letter are included in the **Attachments**.

Project Description

The ±243.3-acre site is a single-family residential development consisting of 592 dwelling units. The project site consists of parcels 34-20-25-0001-000-00100, 34-20-25-0004-000-01003, 02-21-25-0002-000-04800, and 27-20-25-0004-000-01200. The anticipated buildout year is 2033. A preliminary site plan is included in the **Attachments**.

Project Location

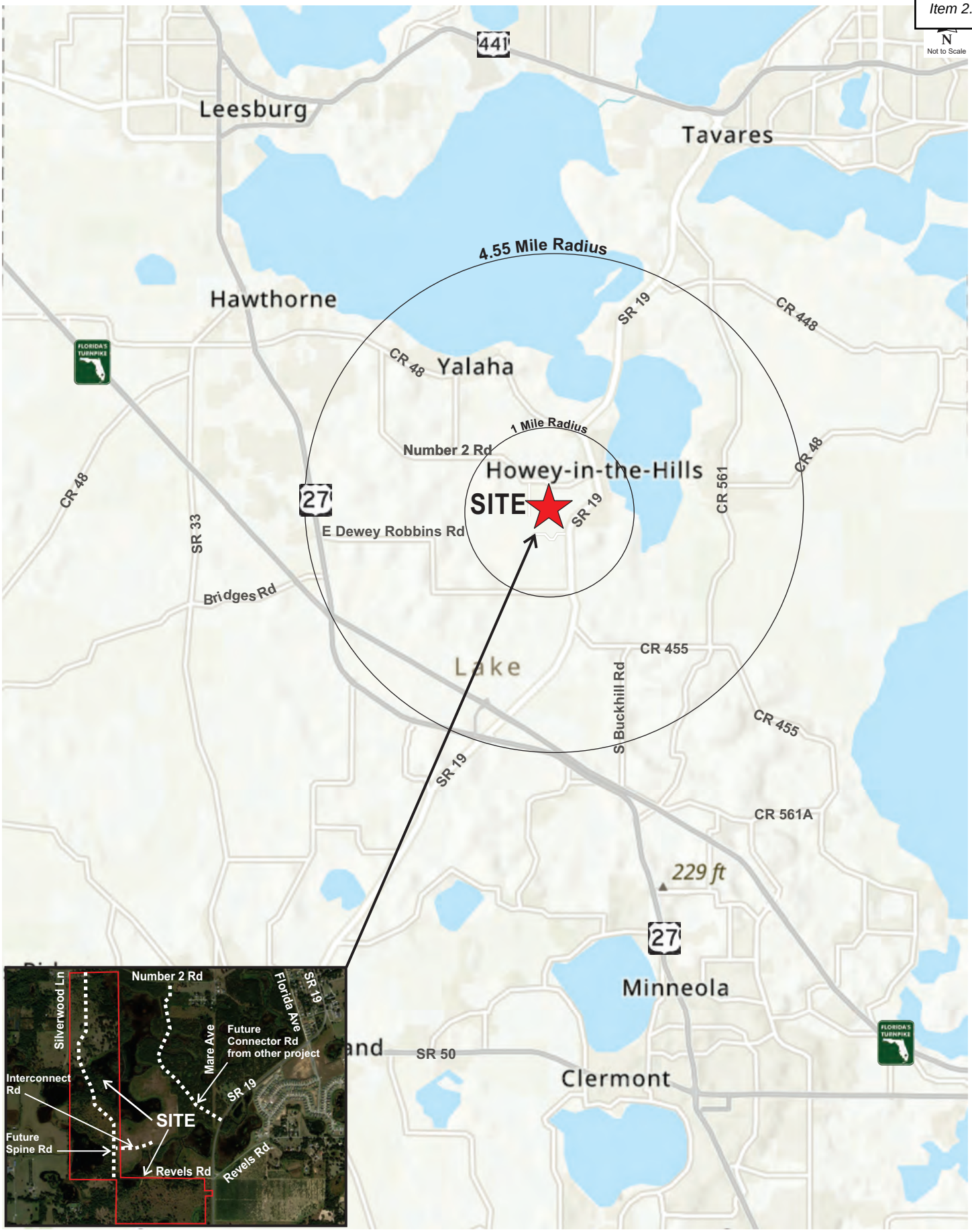
The site is located east of Silverwood Lane, west of SR 19 (South Palm Avenue), and south of Number 2 Road in the Town of Howey-in-the-Hills, Florida. The site will be crossed from north to south by a future two-lane spine road that will connect Number 2 Roadway with Revels Road, as shown in **Figure 1**.

Project Access

The project has access to the external network via one (1) full access driveway on Number 2 Road and one (1) full access driveway on SR 19. In addition, there is an emergency access to the south via Orange Blossom Road. The access configuration is depicted in the preliminary site plan included in the **Attachments**.

Trip Generation

A trip generation analysis was performed for the development using the trip generation information from the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition.* The ITE information sheets are included in the **Attachments**. The trip generation of the proposed development is summarized in **Table 1**.



Site Location Map
Mission Rise v1.1
23017.1

Figure 504

Table 1
Trip Generation Analysis

ITE Code	Land Use	Size	Daily		AM Peak Hour				PM Peak Hour			
			Eqvlt Rate	Trips	Eqvlt Rate	Total	Enter	Exit	Eqvlt Rate	Total	Enter	Exit
210	Single Family Residential (Detached)	592 DU	8.75	5,181	0.63	376	94	282	0.89	529	333	196

Trip Generation analysis based on ITE Trip Generation Manual, 11th Edition.

The proposed development at project buildout is projected to generate 5,181 new daily trips of which 376 trips occur during the AM peak hour, and 529 trips occur during the PM peak hour.

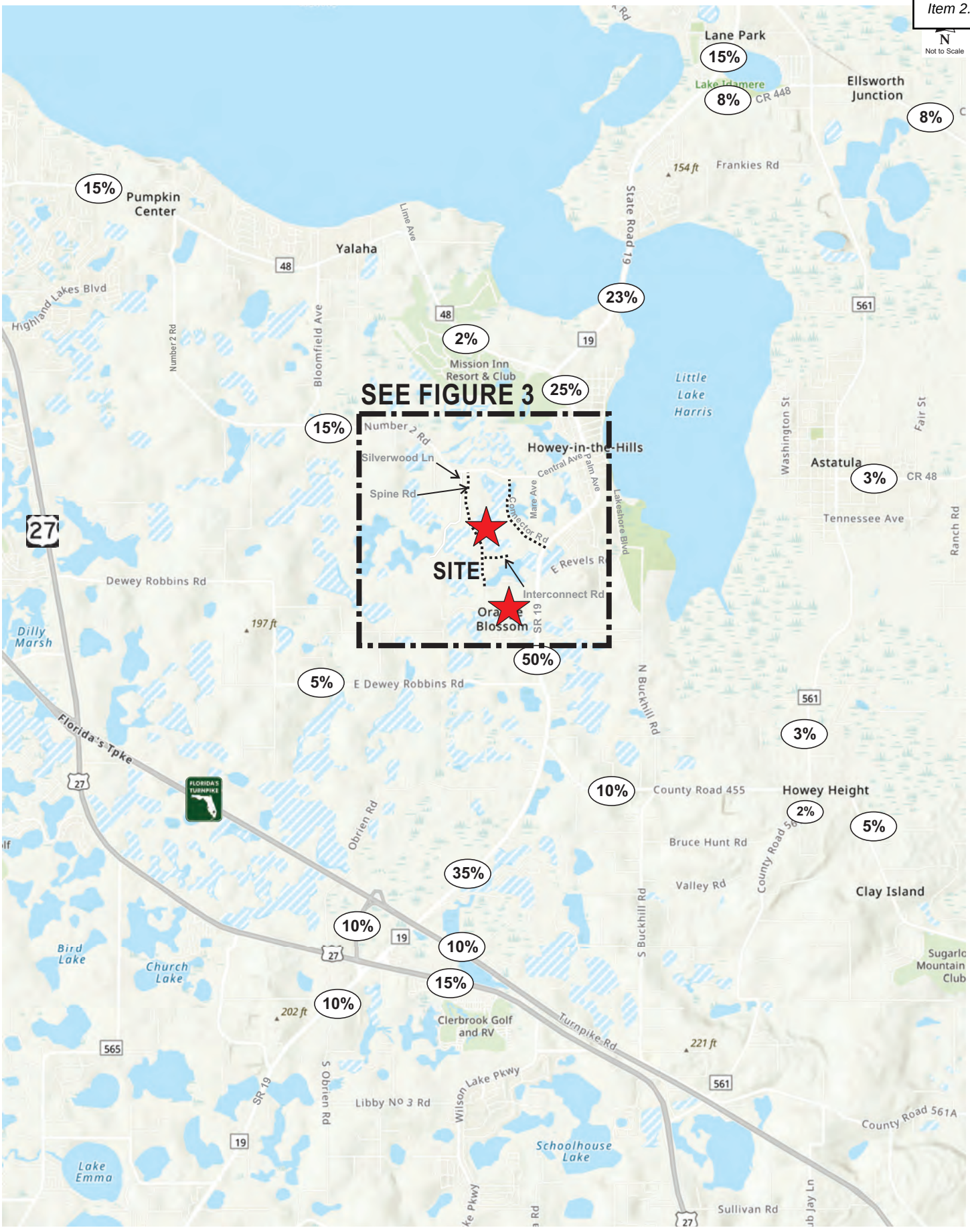
Trip Distribution

A trip distribution pattern in the general vicinity of the project site was initially determined based on the *Central Florida Regional Planning Model (CFRPM v7)*. Two (2) future connections (Spine Road and Connector Road) from SR 19 to Number 2 Road were included in the model for this project. The model distribution was modified to reflect the local network and prevailing traffic patterns. The proposed trip distribution pattern is provided in **Figure 2**. Detailed trip distribution near the project site is shown in **Figure 3**. The model distribution plots are included in the **Attachments**.

Study Area

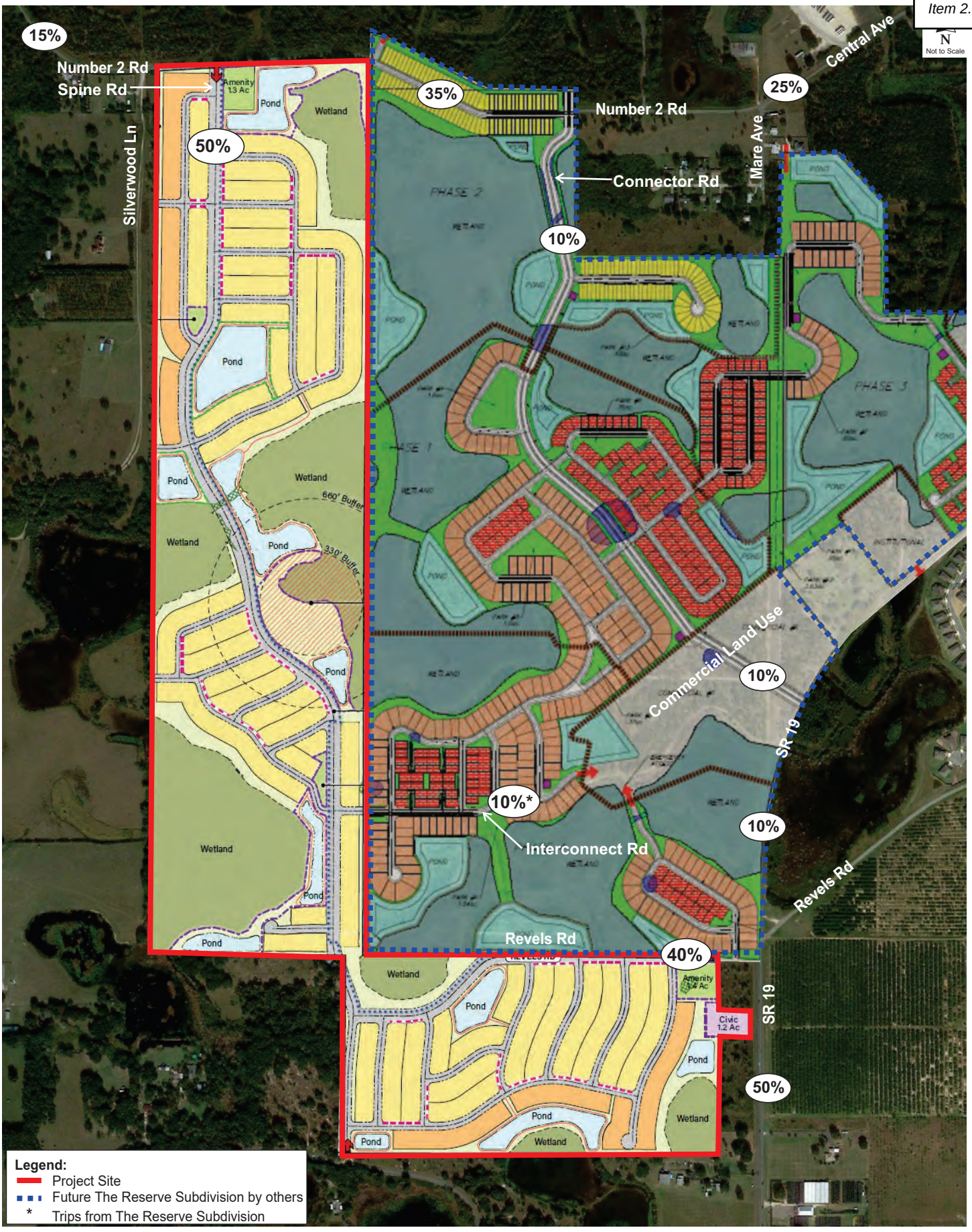
In accordance with the LSMPO requirements for a Tier 2 TIA methodology, the study area will include a minimum 1-mile radius plus all roadway segments within a 4.55-mile radius in addition to roadways where the development is projected to consume 5% or more of their adopted Level of Service (LOS), unless otherwise specified by the City/LSMPO.

The extent of the study impact area shall be determined by the area of influence of the project. The area of influence shall be established as one-half (½) the total trip length associated with the land use of the proposed development, based upon the *2021 Lake County Transportation Impact Fee Update Study Final Report*. The total trip length for single-family is 9.1-miles. Accordingly, the area of influence will encompass all roadway segments within 4.55-mile radius. Excerpts of the *2022 Lake County Congestion Management Process (CMP) Database*, the *2021 Lake County Transportation Impact Fee Update Study Final Report*, and the *2023 FDOT Multimodal Quality/Level of Service (Q/LOS) Handbook Appendix B* are included in the **Attachments**. **Table 2** lists all roadway segments within the area of influence along with their capacities and percentages consumed by the project trips.



Project Trip Distribution
Mission Rise v1.1
23017.1

Figure 2



TMC Traffic & Mobility Consultants

Project Trip Distribution Near the Project Site

Mission Rise v1.1
23017.1

Figure 3

Table 2
Study Area

Roadway Segment	SEG ID	No Lns	Area Type	Median Type	Speed Limit	LOS Std	Pk Dir Cap	Dir	Project Dist	Project Trips	Within 1-Mile? **	% Cap	In Study?
CR 455													
SR 19 to	950	2	R	Undivided	45	C	740	EB	10%	20	NO	2.7%	NO
CR 561								WB		33		4.5%	
CR 561 to	960	2	R	Undivided	25	C	410	EB	5%	10	NO	2.4%	NO
CR 561A								WB		17		4.1%	
CR 48													
US 27 to	1240	2	U	Undivided	40	D	1,080	EB	15%	50	NO	4.6%	NO
Lime Ave								WB		29		2.7%	
Lime Ave to	1250	2	U	Undivided	40	D	1,080	EB	2%	7	NO	0.6%	NO
SR 19								WB		4		0.4%	
CR 561 to	1260	2	U	Undivided	40	D	840	EB	3%	6	NO	0.7%	NO
Ranch Rd								WB		10		1.2%	
Ranch Rd to	1270	2	R	Undivided	40	C	410	EB	3%	6	NO	1.5%	NO
CR 448A								WB		10		2.4%	
CR 561													
CR 448 to	1410	2	U	Undivided	50	D	1,080	NB	0%	0	NO	0.0%	NO
CR 48								SB		0		0.0%	
CR 48 to	1420	2	U	Undivided	40	D	620	NB	3%	10	NO	1.6%	NO
South Astatula City Limit								SB		6		1.0%	
South Astatula City Limit	1430	2	U	Undivided	40	D	1,080	NB	3%	10	NO	0.9%	NO
to CR 455								SB		6		0.6%	
CR 455 to	1440	2	R	Undivided	35	C	470	NB	2%	7	NO	1.5%	NO
Howey Cross Rd								SB		4		0.9%	
Howey CRoss Rd to	1450	2	R	Undivided	40	C	640	NB	2%	7	NO	1.1%	NO
Turnpike Rd / CR 561A								SB		4		0.6%	
SR 19													
Lane Park Rd to	3040	2	U	Undivided	55	D	920	NB	23%	45	NO	4.9%	**YES**
CR 48								SB		77		**8.4%**	
CR 48 to	3050	2	U	Undivided	40	D	700	NB	25%	49	NO	**7.0%**	**YES**
Central Ave								SB		83		**11.9%**	
Central Ave to	3060	2	U	Undivided	35	D	1,200	NB	50%	167	**YES**	**13.9%**	**YES**
CR 455								SB		98		**8.2%**	
CR 455 to	3070	2	R	Undivided	55	C	450	NB	35%	117	NO	**26.0%**	**YES**
US 27 / SR 25								SB		69		**15.3%**	
US 27 / SR 25	3080	2	R	Undivided	55	C	450	NB	20%	67	NO	**14.9%**	**YES**
to CR 478								SB		39		**8.7%**	
SR 91 (Florida Turnpike)													
US 27/SR 25 to	3566	4	U	Freeway	70	B	2,230	EB	10%	20	NO	0.9%	NO
US 27/SR 25/SR 19 Interchange								WB		33		1.5%	
US 27/SR 25													
SR 19 to	3830	4	U	Divided	55	D	3,280	EB	15%	29	NO	0.9%	NO
CR 561								WB		50		1.5%	
Central Ave													
SR 19 to	N/A	2	U	Undivided	30	D	770 *	EB	25%	49	**YES**	**6.4%**	**YES**
Mare Ave								WB		83		**10.8%**	
Number 2 Rd													
Mare Ave to	N/A	2	U	Undivided	30	D	730 *	EB	35%	69	**YES**	**9.5%**	**YES**
Silverwood Ln								WB		117		**16.0%**	
Silverwood Ln to	N/A	2	U	Undivided	45	D	730 *	EB	15%	29	**YES**	4.0%	**YES**
CR 48								WB		50		**6.8%**	

Source: 2022 Lake County CMP Database
** 2023 FDOT Multimodal Quality/Level of Service Handbook, Appendix B: Florida's Generalized Service Volume Tables*
Bold numbers represent capacity equal or higher than 5%.

Based on the study area analysis, the following roadway segments will be analyzed for the PM peak hour:

- SR 19
  - Lane Park Road to CR 48
  - CR 48 to Central Avenue
  - Central Avenue to CR 455
  - CR 455 to US 27 / SR 25
  - US 27 / SR 25 to CR 478

- Central Avenue
  - SR 19 to Mare Avenue

- Number 2 Road
  - Mare Avenue to Silverwood Lane
  - Silverwood Lane to CR 48

The following intersections will be analyzed for the AM and PM peak hours:

- SR 19 and CR 48 (Signalized)
- SR 19 and Central Avenue (Unsignalized)
- SR 19 and South Florida Avenue (Unsignalized)
- SR 19 and Revels Road (Unsignalized)
- SR 19 and CR 455 (Unsignalized)
- Spine Road and Interconnect Road (Proposed)
- Number 2 Road and Spine Road (North Project Access) (Proposed)
- Revels Road and Spine Road (South Project Access) (Proposed)

Projected Traffic

Projected traffic includes background traffic volumes, the project trips, and committed trips. Projected background traffic will be calculated using the historical growth rates obtained from the *Lake County CMP* database and *FDOT Florida Traffic Online* web-based database. A 2%, minimum growth rate will be applied if the calculated growth rates are lower than 2%. The committed trips for the following approved developments within the study area will be added to the background traffic:

- The Reserve (traffic study obtained)
- Talichet Phase 2 (traffic study obtained)
- Whispering Hills (traffic study obtained)
- Lake Hills (City to provide traffic study)
- Watermark (City to provide traffic study)

Planned and Programmed Improvements

The *Lake-Sumter Metropolitan Planning Organization (LSMPO) 2023-2027 Transportation Improvement Program (TIP),* as well as *LSMPO 2022 List of Priority Projects (LOPP)* were reviewed to identify any planned or programmed improvements to the transportation facilities in this area. As shown in **Table 3**, construction is not planned to be completed within the next three (3) years for either improvement. Excerpts from the *LSMPO TIP* and *LSMPO LOPP* are provided in the **Attachments**.

Table 3
Planned and Programmed Improvements

FM #	Project Name	From	To	Proposed Phase	Proposed Phase FY	Description of Improvement
2383191	SR 19 *	CR 48	CR 561	PDE-PE-ENV	2023	Add Lanes & Reconstruct
238319-1	SR 19 **	Howey Bridge	CR 561	-	-	Road Widening

** LSMPO TIP Fiscal Year 2023-2027*
*** LSMPO 2022 LOPP Tier 2 project*

Capacity Analysis

The traffic study will include existing and 2033 buildout conditions for the roadway segment and intersection capacity analyses. A capacity analysis of the study roadway segments will be conducted for the PM peak hour under existing and projected conditions. The capacity analysis will be based on service volumes, capacities, and existing volumes, as documented in *2022 Lake County CMP Database* and the *FDOT's 2023 Multimodal Quality/Level of Service (MQ/LOS) Handbook,* included in the **Attachments***.*

The intersection turning movement counts will be seasonally adjusted, if needed, using the *2022 FDOT Peak Season Factor Category Report* obtained from the *Florida Traffic Online (FTO)* website.

Right and left turn lane warrant reviews will be performed at the Spine Road accesses on Number 2 Road and at SR 19 and Revels Road in accordance with the Lake County requirements for turn lanes.

In cases where projected conditions require mitigation as a result of the proposed development, an analysis including the recommended mitigation will be conducted.

Alternative Mode Analysis

A review of transit, pedestrian, and bicycle facilities will be conducted in accordance with the LSMPO requirements.

Report

A TIA report detailing the methods and findings of the study, including all associated graphics, tables, calculations, and supporting information will be prepared for submittal to the Town of Howey-In-The-Hills.

ATTACHMENTS

Traffic & Mobility Consultants

May 23, 2023

Mr. John Brock
Town Clerk
PO Box 125
Howey-In-The-Hills, Florida 34737
jbrock@howey.org

Re: Mission Rise
Response to Methodology Comments
TMC Project № 23017.1
Town Howey-In-The-Hills, Florida

Dear Mr. Brock,

Please find below our responses to the review comments prepared on behalf of The Town of Howey-In-The-Hills by TMH Consulting Inc dated May 8, 2023, regarding the above referenced Methodology dated April 28, 2023. The comments are listed in **bold** typeface and the TMC responses follow in *italic* typeface. Additionally, a revised Methodology is provided under cover reflecting the changes resulting from these comments.

1. **The Revels Road access to the south cannot be limited to emergency access as this is a public road now. Since we have received comments from residents to the south, it will be very useful to get some type of prediction about how many trips are likely to use this access point as opposed to SR 19 and Number 2 Road.**

   TMC Response: The emergency access on Orange Blossom Road will be restricted to emergency vehicles only; therefore, no trips were assigned to that access.

2. **There is an interconnect between the Mission Rise parcel and The Reserve parcel. Is the model sensitive enough to determine if this interconnect will impact trip assignments? The Reserve has an approved connecting road which is discussed in the TMC methodology. The Reserve also includes a future commercial development area that might be an attractor.**

   TMC Response: Noted. The Reserve Subdivision includes a future commercial development, therefore, 10% of the trips are assumed to originate from The Reserve's commercial development and use the interconnect road to access the project site.

3. **The study needs to include those projects that have some level of approval. TMC has done the traffic studies for several of these and been provided with traffic studies from others. The projects that need to be included are:**

   - **The Reserve**
   - **Watermark**
   - **Talichet Phase 2 (Phase 1 is mostly in the background traffic by now.)**
   - **Whispering Heights**
   - **Lake Hills**

TMC Response: Noted. The vested trips from The Reserve, Watermark, Talichet Phase 2, Whispering Heights [Whispering Hills], and Lake Hills will be included in the traffic study as indicated in the revised methodology (attached).

4. **The study needs to include CFRPM distributions that show the percentages of future background through traffic that will use the new roads in Mission Rise and The Reserve that link No 2 Road to SR 19. Use that data to project future background traffic volumes on those links.**

   TMC Response: Noted. As reflected in Figure 2, the future Spine Road, which transverses the project site from north to south and connects Number 2 Road with Revels Road, and the future Connector Road, which connects SR 19 and Number 2 Road are included in the project trip distribution Figure 2 in the revised methodology (attached).

5. **The project trip distribution map is basically unreadable. They need to provide a graphic that someone can review and understand.**

   TMC Response: Noted. The distribution map has been revised to show an inset with the detail project distribution within the project site. See Figure 2 in the revised methodology (attached).

6. **SR 19 at Central Avenue is listed as signalized, but it is only a flashing light. The analysis cannot assume it is a true signal.**

   TMC Response: Noted. SR 19 at Central Avenue intersection is listed as an unsignalized intersection in the revised methodology (attached).

7. **The ITE land use, code 210, shows traffic generation as 9.43 trips per unit with 0.70% for the AM Peak and 0.94% for the PM Peak. Why did they use 8.75, 0.63 and 0.89 respectively for the project traffic generation?**

   TMC Response: Per the Trip Generation Handbook, 3rd Edition Figure 4.2 (Process for selecting average rate or equation in trip generation manual data) linear curve equations should be used for the weekday, AM, and PM peak period trip generation calculation. The linear curve equations have an R^2 equal to 0.75 or greater, therefore, the fitted curve equations were used instead of average rate.

   The linear curve equations used for the 592 dwelling residential units corresponding to the weekday, AM, and PM trips are as follows:

   Weekday: Ln(T)=0.92 Ln(X)+2.68 which is equivalent to an average rate of 8.75 (5,181/592).
   AM: Ln(T)=0.91 Ln(X)+0.12 which is equivalent to an average rate of 0.63 (376/592).
   PM: Ln(T)=0.94 Ln(X)+0.27 which is equivalent to an average rate of 0.89 (529/592).

END OF COMMENTS

We trust these responses and the revised Methodology adequately address the review comments. We remain available to discuss this matter further or to answer any questions you may have.

Kind regards,

TRAFFIC & MOBILITY CONSULTANTS LLC

Charlotte N. Davidson, PE
Senior Transportation Engineer

Traffic & Mobility Consultants

October 17, 2023

Mr. J. Brock
Town Clerk
Howey-in-the-Hills/Development Review Committee
101 North Palm Avenue
Howey-in-the-Hills, FL 34737
jbrock@howey.prg

Re: Mission Rise
Response to Traffic Impact Analysis Comments
TMC Project № 23017.1
Howey-in-the-Hills, Florida

Dear Mr. Brock,

Please find below our responses to the review comments prepared by Griffey Engineering Inc. on behalf of The Town of Howey-in-the-Hills, dated October 9, 2023, regarding the above referenced Traffic Impact Analysis dated August 2023. The comments are listed in **bold** typeface and the TMC responses follow in *italic* typeface. Additionally, a revised Traffic Impact Analysis is provided under cover reflecting the changes resulting from these comments.

Traffic Study

1. **Figures in the report are missing. They need to be included.**

   TMC Response: Figures have been included in the report.

2. **For the future condition analysis of the intersection of SR 19 & CR 48, evaluate for a roundabout as well as signal timing adjustment.**

   TMC Response: A roundabout at the intersection of SR19 & CR 48 has been evaluated and the results of the analysis have been included in the TIA v1.3 report.

Recommended Improvements

3. **The traffic study identifies three intersections along SR 19 that will need to be signalized in the future (SR 19 & Central Ave., SR 19 & Revels Rd., and SR 19 & CR 455). The Development Agreement has a section that addresses proportionate share payment for off-site impacts. In the study's mitigation analysis it states: "In lieu of contributing a proportionate share to the three (3) intersections needing new traffic signals, the developer is recommending to construct the new traffic signal at SR 19 and Revels Road, which serves as the main access to the project." This is a reasonable mitigation alternative provided that there is a binding commitment for the developer to construct (or fund) the signal when it is deemed warranted by FDOT. This would be in addition to the turn lanes that the development will need to install at the intersection (right & left on SR 19, and right & through/left on EB Revels).**

   TMC Response: Acknowledged.

END OF COMMENTS

We trust these responses and the revised Traffic Impact Analysis adequately address the review comments. We remain available to discuss this matter further or to answer any questions you may have.

Kind regards,

TRAFFIC & MOBILITY CONSULTANTS LLC



Charlotte N. Davidson, PE
Senior Transportation Engineer

Appendix B
Preliminary Development Plan

PRELIMINARY AREA SUMMARY

Total Property Acreage	**+/- 241.3 Ac**
Required Open Space	+/- 60.3 Ac
Additional Wetlands	+/- 31.0 Ac
Developable (Net Land Area)	**+/- 148.0 Ac**

OPEN SPACE ACREAGE

Required (Min 25%)	**+/- 60.3 Ac**
Provided (27.3%)	**+/- 66.0 Ac**
Stormwater (15.4%)	+/- 17.8 Ac
Misc. Open Space	+/- 18.1 Ac
Wetlands (50% Allowed)	+/- 30.1 Ac

DEVELOPMENT SUMMARY

Total Site Parcel Length	**+/- 29,080 LF**
Total Buildable Parcel	+/- 27,626 LF*
Total SFD 55'x120' Parcel	**+/- 23,590 LF**
Total Buildable SFD	+/- 22,410 LF*
Total 55' Units	**407 Lots (86%)**
Total SFD 75'x120' Parcel	**+/- 5,490 LF**
Total Buildable SFD	+/- 5,215 LF*
Total 75' Units	**69 Lots (14%)**
Total SFD Units	**476 Units**
Development Density	**3.2 du/ac**

*Assumes a 5% loss of developable area

NON-RESIDENTIAL ACREAGE

Required (Min 15%)	**+/- 22.2 Ac**
Provided (15%)	**+/- 22.2 Ac**
Civic (5%)	+/- 1.1 Ac
Amenities	+/- 4.2 Ac
Mis. Open Space	+/- 6.6 Ac
Stormwater	+/- 4.7 Ac
Bike Trail	+/- 5.6 Ac

LEGEND

- Non-Residential
- Endcap Parallel Parking
- Pedestrian Path
- Bike Trail

SILVERWOOD LN.
NUMBER 2 RD.
REVELS RD.
S. PALM AVE.
Access
Property Boundary
25' Landscaped Berm / 15' Landscaped Buffer with 6' Wall
Amenity 1.3 Ac
Wetland W3
Wetland W2
Wetland W1
Wetland W6
Wetland W5
Wetland W4
Civic 1.1 Ac
PHASE 1
PHASE 2
PHASE 4
POND
WETLAND
PARK #1 .55ac.
PARK #2 .37ac.
PARK #3 1.0ac.
PARK #4 1.6ac.
PARK #5 .26ac.
PARK #6 .76ac.
PARK #7 .80ac.
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EMERGENCY ACCESS
TO CITY PROPERTY

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www.rviplanning.com

MISSION RISE • **CONCEPTUAL PLAN**

- Town of Howey Hills, FL
- December 22, 2022
- # 22003786
- Turnstone Group

0 300' 600'

SCALE: 1" = 300'

The plan is conceptual in nature. Final densities, layout, development parameters, calculations, and site conditions may change upon further development of the Preliminary and/or Master Site Plan, and upon evaluation of topographic survey, water management and existing historic and specimen trees to remain.

Appendix C
Lake County CMP Database and 2023 FDOT Q/LOS

Lake County CMP Database

SEGMENT ID	COUNTY STATION	FDOT STATION	DATA SOURCE	SPEED LIMIT	SEGMENT LENGTH (MI)	ROAD NAME	FROM	TO	LANES (2022)	LANES (2027)	URBAN / RURAL	DIVIDED / UNDIVIDED	MAINTAINING AGENCY	JURISDICTION	ADOPTED LOS STANDARD	DAILY SERVICE VOLUME	2022 AADT	2022 DAILY V/C	2022 DAILY LOS	PEAK HOUR DIRECTIONAL SERVICE VOLUME	2022 PEAK HOUR NB/EB VOLUME	2022 PEAK HOUR SB/WB VOLUME	2022 PEAK HOUR V/C	2022 PEAK HOUR LOS	GROWTH RATE	DAILY SERVICE VOLUME (2027)	2027 AADT	2027 DAILY V/C	2027 DAILY LOS	PEAK HOUR DIRECTIONAL SERVICE VOLUME (2027)	2027 PEAK HOUR NB/EB VOLUME	2027 PEAK HOUR SB/WB VOLUME	2027 PEAK HOUR V/C	2027 PEAK HOUR LOS
1100	497		County	35	1.75	C.R. 466B	EAGLE NEST ROAD	CR 466A	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	10,360	5,060	0.49	C	530	193	233	0.44	C	1.25%	10,360	5,385	0.52	D	530	205	248	0.47	C
1110	490		County	35	0.55	C.R. 468	CR 466A	PINE RIDGE DAIRY ROAD	2	2	URBAN	UNDIVIDED	COUNTY	FRUITLAND PARK	D	10,360	4,719	0.46	C	530	190	213	0.40	C	1.25%	10,360	5,021	0.48	C	530	202	227	0.43	C
1120	480		County	35	1.80	C.R. 468	PINE RIDGE DAIRY ROAD	GRIFFIN ROAD	2	2	URBAN	UNDIVIDED	COUNTY	FRUITLAND PARK	D	13,320	7,736	0.58	D	680	343	384	0.56	D	3.00%	13,320	8,968	0.67	D	680	398	445	0.65	D
1130	436		County	45	1.13	C.R. 468	GRIFFIN ROAD	SR 44	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	12,390	9,173	0.74	C	620	440	404	0.71	C	1.75%	12,390	10,005	0.81	C	620	480	440	0.77	C
1145	612		County	55	3.65	C.R. 46A REALIGNMENT	SR 44	SR 46	2	2	RURAL	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	C	7,740	16,576	2.14	E	410	663	857	2.09	E	3.50%	7,740	19,687	2.54	E	410	788	1,018	2.48	E
1150	267		County	55	0.94	C.R. 470	SUMTER COUNTY LINE	FLORIDA TURNPIKE	2	4	RURAL	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	13,300	11,303	0.85	D	690	530	376	0.77	D	8.50%	28,880	16,996	0.59	C	1,500	797	566	0.53	C
1155	266		County	55	2.39	C.R. 470	FLORIDA TURNPIKE	BAY AVENUE	2	2	RURAL	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	12,600	8,826	0.70	D	660	436	278	0.66	D	1.00%	12,600	9,276	0.74	D	660	458	292	0.69	D
1160	266		ADJACENT	55	0.54	C.R. 470	BAY AVENUE	CR 33	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	12,390	8,826	0.71	C	620	436	278	0.70	C	1.00%	12,390	9,276	0.75	C	620	458	292	0.74	C
1170	499		County	35	2.99	C.R. 473	CR 44	FOUNTAIN LAKE BOULEVARD	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	14,060	6,957	0.49	D	710	322	242	0.45	C	1.00%	14,060	7,312	0.52	D	710	338	255	0.48	C
1180	443		County	40	1.03	C.R. 473	FOUNTAIN LAKE BOULEVARD	US 441	4	4	URBAN	DIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	35,820	14,713	0.41	C	1,800	811	461	0.45	C	1.00%	35,820	15,464	0.43	C	1,800	852	485	0.47	C
1190	4		County	55	5.21	C.R. 474	SR 33	GREEN SWAMP ROAD	2	2	RURAL	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	C	7,740	5,962	0.77	C	410	151	240	0.59	C	2.50%	7,740	6,745	0.87	C	410	171	272	0.66	C
1200	3		County	55	3.35	C.R. 474	GREEN SWAMP ROAD	US 27	2	2	RURAL	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	C	7,740	5,436	0.70	C	410	173	202	0.49	B	1.00%	7,740	5,713	0.74	C	410	182	212	0.52	B
1210	222		County	45	5.99	C.R. 478	SR 19	JAMARLY ROAD	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF GROVELAND	D	21,780	2,244	0.10	B	1,080	112	93	0.10	B	7.75%	21,780	3,259	0.15	B	1,080	162	135	0.15	B
1220	259		County	55	3.17	C.R. 48	SUMTER COUNTY LINE	CLEARWATER LAKE RD	2	2	RURAL	UNDIVIDED	COUNTY	CITY OF LEESBURG	C	7,740	3,504	0.45	B	410	112	180	0.44	B	4.25%	7,740	4,315	0.56	C	410	138	222	0.54	C
1225	248		County	55	2.41	C.R. 48	CLEARWATER LAKE RD	CR 33	2	2	RURAL	UNDIVIDED	COUNTY	CITY OF LEESBURG	C	7,740	3,327	0.43	B	410	123	206	0.50	B	1.75%	7,740	3,629	0.47	B	410	134	224	0.55	C
1230	263		County	45	0.46	C.R. 48	CR 33	HAYWOOD WORM FARM RD	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	15,930	8,836	0.55	C	790	370	297	0.47	C	2.75%	15,930	10,120	0.64	C	790	424	340	0.54	C
1235	262		County	45	0.68	C.R. 48	HAYWOOD WORM FARM RD	US 27	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	16,820	9,073	0.54	C	840	401	375	0.48	C	1.00%	16,820	9,536	0.57	C	840	421	394	0.50	C
1240	264		County	40	4.89	C.R. 48	US 27	LIME AVENUE	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	21,780	9,821	0.45	B	1,080	420	380	0.39	B	4.00%	21,780	11,949	0.55	C	1,080	511	462	0.47	B
1250	255		County	40	2.04	C.R. 48	LIME AVENUE	SR 19	2	2	URBAN	UNDIVIDED	COUNTY	HOWEY-IN-THE-HILLS	D	21,780	9,982	0.46	B	1,080	429	404	0.40	B	1.50%	21,780	10,754	0.49	C	1,080	462	435	0.43	B
1260	253		County	40	1.14	C.R. 48	CR 561	RANCH ROAD	2	2	URBAN	UNDIVIDED	COUNTY	TOWN OF ASTATULA	D	16,820	6,515	0.39	C	840	310	292	0.37	C	1.00%	16,820	6,847	0.41	C	840	326	307	0.39	C
1270	253		ADJACENT	40	3.17	C.R. 48	RANCH ROAD	CR 448A	2	2	RURAL	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	C	7,740	6,515	0.84	C	410	310	292	0.76	C	1.00%	7,740	6,847	0.88	C	410	326	307	0.80	C
1280	217		County	30	0.71	C.R. 50 (SUNSET AVENUE)	CR 33	SR 50	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF MASCOTTE	D	10,360	1,592	0.15	C	530	66	95	0.18	C	1.75%	10,360	1,736	0.17	C	530	72	104	0.20	C
1290	210		County	45	1.74	C.R. 50	US 27	N HANCOCK ROAD	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF MINNEOLA	D	16,820	6,981	0.42	C	840	285	346	0.41	C	1.00%	16,820	7,337	0.44	C	840	299	363	0.43	C
1300	202		County	45	2.47	C.R. 50	N HANCOCK ROAD	CR 455	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	21,780	6,877	0.32	B	1,080	228	491	0.45	B	2.00%	21,780	7,593	0.35	B	1,080	251	542	0.50	C
1310	42		County	45	1.92	C.R. 50	CR 455	ORANGE COUNTY LINE	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	16,820	6,828	0.41	C	840	195	557	0.66	C	1.00%	16,820	7,176	0.43	C	840	205	585	0.70	C
1320	417		County	35	1.08	C.R. 500A/ OLD 441	SR 19	DORA AVENUE	2	2	URBAN	DIVIDED	COUNTY	CITY OF TAVARES	D	8,390	9,907	1.18	F	870	367	450	0.52	D	1.00%	8,390	10,412	1.24	F	870	386	473	0.54	D
1325	417		County	35	1.08	C.R. 500A/ OLD 441	SR 19	DORA AVENUE	2	2	URBAN	DIVIDED	COUNTY	CITY OF TAVARES	D	8,390	9,907	1.18	F	870	367	450	0.52	D	1.00%	8,390	10,412	1.24	F	870	386	473	0.54	D
1330	413	115084	County	45	1.94	C.R. 500A/OLD 441/ALFRED ST	DORA AVENUE	BAY ROAD	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF TAVARES	D	16,820	9,558	0.57	C	840	489	424	0.58	C	1.00%	16,820	10,045	0.60	C	840	514	446	0.61	C
1340	420		County	35	0.79	C.R. 500A/OLD 441	BAY ROAD	CR 44C / EUDORA AVENUE	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF MOUNT DORA	D	10,360	9,917	0.96	D	530	465	458	0.88	D	2.50%	10,360	11,220	1.08	F	530	526	518	0.99	D
1350	421		County	35	1.06	C.R. 500A/OLD 441	CR 44C / EUDORA DRIVE	LAKESHORE DRIVE	2	2	URBAN	DIVIDED	COUNTY	CITY OF MOUNT DORA	D	14,760	16,591	1.12	F	750	725	761	1.01	E	4.25%	14,760	20,430	1.38	F	750	893	937	1.25	F
1360	415		County	35	0.79	C.R. 500A/OLD 441	LAKESHORE DRIVE	5TH AVENUE	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF MOUNT DORA	D	10,360	11,207	1.08	F	530	469	505	0.95	D	4.25%	10,360	13,800	1.33	F	530	577	621	1.17	F
1370	415		ADJACENT	25	0.63	C.R. 500A/ 5TH AVENUE	OLD 441	N HIGHLAND STREET	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF MOUNT DORA	D	10,360	11,207	1.08	F	530	469	505	0.95	D	4.25%	10,360	13,800	1.33	F	530	577	621	1.17	F
1380	605		ADJACENT	30	0.26	C.R. 500A (HIGHLAND STREET)	5TH AVENUE	SR 46	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF MOUNT DORA	D	13,320	2,792	0.21	C	680	179	127	0.26	C	3.50%	13,320	3,316	0.25	C	680	213	150	0.31	C
1390	602	115004	County	35	0.75	C.R. 500A/ OLD 441	SR 46	ORANGE COUNTY LINE	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF MOUNT DORA	D	10,360	5,849	0.56	D	530	325	244	0.61	D	5.25%	10,360	7,555	0.73	D	530	419	316	0.79	D
1400	401		County	45	1.62	C.R. 561	SR 19	CR 448	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF TAVARES	D	16,820	16,583	0.99	D	840	622	825	0.98	D	4.75%	16,820	20,914	1.24	F	840	784	1,041	1.24	F
1410	257		County	50	3.93	C.R. 561	CR 448	CR 48	2	2	URBAN	UNDIVIDED	COUNTY	ASTATULA/TAVARES	D	21,780	10,160	0.47	B	1,080	507	590	0.55	C	1.00%	21,780	10,678	0.49	C	1,080	533	620	0.57	C
1420	252		County	40	0.63	C.R. 561	CR 48	SOUTH ASTATULA CITY LIMIT	2	2	URBAN	UNDIVIDED	COUNTY	TOWN OF ASTATULA	D	12,390	11,947	0.96	D	620	570	558	0.92	C	1.00%	12,390	12,556	1.01	F	620	599	586	0.97	D
1430	252		ADJACENT	40	2.49	C.R. 561	SOUTH ASTATULA CITY LIMIT	CR 455	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	21,780	11,947	0.55	C	1,080	570	558	0.53	C	1.00%	21,780	12,556	0.58	C	1,080	599	586	0.55	C
1440	242		County	35	1.74	C.R. 561	CR 455	HOWEY CROSS ROAD	2	2	RURAL	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	C	9,030	7,697	0.85	C	470	369	364	0.78	C	1.00%	9,030	8,090	0.90	C	470	387	382	0.82	C
1450	238		County	40	1.77	C.R. 561	HOWEY CROSS ROAD	TURNPIKE ROAD / CR 561A	2	2	RURAL	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	C	12,260	8,115	0.66	C	640	328	385	0.60	C	1.00%	12,260	8,529	0.70	C	640	345	405	0.63	C
1460	235		County	45	0.46	C.R. 561 / C.R. 561A	TURNPIKE ROAD / CR 561A	US 27	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	12,390	9,075	0.73	C	620	403	385	0.65	C	1.00%	12,390	9,538	0.77	C	620	423	405	0.68	C
1470	214		County	30	1.78	EAST AVE/LAKE MINNEOLA DR/MAIN AVE	US 27	EAST AVENUE	2	2	URBAN	UNDIVIDED	COUNTY	CLERMONT/MINNEOLA	D	14,060	2,151	0.15	C	710	108	124	0.17	C	3.50%	14,060	2,555	0.18	C	710	128	147	0.21	C
1480	214		ADJACENT	30	1.05	8TH ST/OSCEOLA ST/4TH ST/CARROL ST/3RD S	EAST AVENUE	W MINNEOLA AVENUE	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF CLERMONT	D	10,360	2,151	0.21	C	530	108	124	0.23	C	3.50%	10,360	2,555	0.25	C	530	128	147	0.28	C
1490	115065	115065	State	-	0.42	C.R. 561 (W MINNEOLA AVENUE)	8TH STREET	C.R. 561A	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF CLERMONT	D	12,390	1,085	0.09	C	620	179	186	0.30	C	1.00%	12,390	1,140	0.09	C	620	188	195	0.31	C
1500	203		ADJACENT	35	0.23	C.R. 561	C.R. 561A	SR 50	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF CLERMONT	D	14,060	5,175	0.37	C	710	278	212	0.39	C	6.50%	14,060	7,090	0.50	D	710	381	290	0.54	D
1510	45		County	25	4.31	C.R. 561	SR 50	LOG HOUSE ROAD	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF CLERMONT	D	14,060	6,597	0.47	C	710	326	276	0.46	C	1.00%	14,060	6,934	0.49	C	710	342	290	0.48	C
1520	10		County	55	1.56	C.R. 561	LOG HOUSE ROAD	FLORIDA BOYS RANCH ROAD	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	16,820	3,767	0.22	C	840	159	156	0.19	C	2.00%	16,820	4,159	0.25	C	840	175	172	0.21	C
1530	6		County	55	5.87	C.R. 561	FLORIDA BOYS RANCH ROAD	SR 33	2	2	RURAL	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	C	7,740	2,228	0.29	B	410	106	100	0.26	B	2.25%	7,740	2,491	0.32	B	410	118	112	0.29	B
1540	237		County	55	1.16	C.R. 561A	TURNPIKE ROAD / CR 561	SCRUB JAY LN	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	12,390	5,274	0.43	C	620	199	308	0.50	C	1.25%	12,390	5,612	0.45	C	620	212	327	0.53	C
1545	234		County	55	0.69	C.R. 561A	SCRUB JAY LN	N HANCOCK ROAD	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	21,780	5,529	0.25	B	1,080	201	307	0.28	B	1.00%	21,780	5,811	0.27	B	1,080	211	322	0.30	B
1546	234		ADJACENT	55	1.37	C.R. 561A	N HANCOCK ROAD	CR 455	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	21,780	5,529	0.25	B	1,080	201	307	0.28	B	1.00%	21,780	5,811	0.27	B	1,080	211	322	0.30	B
1550	203		County	35	1.69	C.R. 561	W MINNEOLA AVE	C.R. 565A	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	13,320	5,175	0.39	C	680	278	212	0.41	C	6.50%	13,320	7,090	0.53	D	680	381	290	0.56	D
1560	213		County	40	1.67	C.R. 561A	CR 565A	JALARMY ROAD	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	16,820	6,485	0.39	C	840	316	258	0.38	C	4.50%	16,820	8,081	0.48	C	840	393	322	0.47	C
1570	223		County	40	1.11	C.R. 561 (LAKE MINNEOLA SHORES)	JALARMY ROAD	US 27	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF MINNEOLA	D	16,820	11,066	0.66	C	840	397	491	0.58	C	3.00%	16,820	12,829	0.76	C	840	460	569	0.68	C
1580	241		County	55	7.01	C.R. 565	US 27	KJELLSTROM LANE	2	2	RURAL	UNDIVIDED	COUNTY	GROVELAND/MASCOTTE	C	14,130	2,347	0.17	B	740	167	70	0.23	B	5.25%	14,130	3,032	0.21	B	740	215	90	0.29	B
1590	208		County	40	0.63	C.R. 565 (VILLA CITY ROAD)	KJELLSTROM LANE	SR 50	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF GROVELAND	D	16,820	5,367	0.32	C	840	247	249	0.30	C	4.25%	16,820	6,608	0.39	C	840	305	307	0.37	C
1600	118063	118063	ADJACENT	45	1.96	C.R. 565	SR 50	SLOANS RIDGE	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF MASCOTTE	D	16,820	865	0.05	C	840	44	42	0.05	C	2.00%	16,820	955	0.06	C	840	49	46	0.06	C
1610	118063	118063	State	45	5.44	C.R. 565	SLOANS RIDGE	LAKE ERIE ROAD	2	2	RURAL	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	C	7,740	865	0.11	B	410	44	42	0.11	B	2.00%	7,740	955	0.12	B	410	49	46	0.12	B
1620	201		County	40	2.78	C.R. 565A	SR 50	CR 561A	2	2	URBAN	UNDIVIDED	COUNTY	CLERMONT/GROVELAND	D	16,820	9,917	0.59	C	840	407	348	0.48	C	2.25%	16,820	11,084	0.66	C	840	454	389	0.54	C
1630	47		County	55	4.60	C.R. 565A	SR 50	CR 565B	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF GROVELAND	D	21,780	2,549	0.12	B	1,080	82	133	0.12	B	3.25%	21,780	2,991	0.14	B	1,080	96	156	0.14	B
1640	18		County	45	3.66	C.R. 565B	SR 33	CR 561	2	2	RURAL	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	C	7,740	2,796	0.36	B	410	135	152	0.37	B	4.00%	7,740	3,401	0.44	B	410	164	185	0.45	B
1650	434		County	25	0.30	CANAL STREET	US 441	MAIN STREET	2	2	URBAN	DIVIDED	CITY OF LEESBURG	CITY OF LEESBURG	D	13,990	3,765	0.27	C	710	201	137	0.28	C	1.00%	13,990	3,957	0.28	C	710	211	144	0.30	C
1660	426		County	25	0.31	CANAL STREET	MAIN STREET	SR 44	2	2	URBAN	UNDIVIDED	CITY OF LEESBURG	CITY OF LEESBURG	D	13,320	3,169	0.24	C	680	144	127	0.21	C	1.00%	13,320	3,331	0.25	C	680	151	134	0.22	C
1670	205		County	35	1.80	CITRUS TOWER BOULEVARD	US 27	OAKLEY SEAVER DRIVE	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF CLERMONT	D	14,060	12,296	0.87	D	710	651	446	0.92	D	1.00%	14,060	12,923	0.92	D	710	684	469	0.96	D
1680	44		County	30	0.47	CITRUS TOWER BOULEVARD	OAKLEY SEAVER DRIVE	SR 50	4	4	URBAN	DIVIDED	COUNTY	CITY OF CLERMONT	D	29,160	16,240	0.56	D	1,470	561	715	0.49	D	1.00%	29,160	17,068	0.59	D	1,470	590	752	0.51	D
1690	28		County	40	0.28	CITRUS TOWER BOULEVARD	SR 50	HOOKS STREET	4	4	URBAN	DIVIDED	COUNTY	CITY OF CLERMONT	D	35,820	21,470	0.60	C	1,800	798	1,065	0.59	C	1.25%	35,820	22,846	0.64	C	1,800	849	1,134	0.63	C
1692	36		County	30	1.16	CITRUS TOWER BOULEVARD	HOOKS STREET	JOHNS LAKE ROAD	4	4	URBAN	DIVIDED	COUNTY	CITY OF CLERMONT	D	30,780	20,251	0.66	D	1,550	740	901	0.58	D	1.00%	30,780	21,284	0.69	D	1,550	778	947	0.61	D
1695	24		County	40	0.60	CITRUS TOWER BOULEVARD	JOHNS LAKE ROAD	US 27	4	4	URBAN	DIVIDED	COUNTY	CITY OF CLERMONT	D	37,810	17,725	0.47	C	1,900	738	629	0.39	C	1.50%	37,810	19,095	0.51	C	1,900	795	678	0.42	C
1700	442		ADJACENT	35	0.95	DAVID WALKER DRIVE	OLD US 441 / CR 500A	CR 19A	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF TAVARES	D	14,060	8,553	0.61	D	710	388	367	0.55	D	1.00%	14,060	8,989	0.64	D	710	408	386	0.57	D
1710	442		County	35	0.44	DAVID WALKER DRIVE	CR 19A	US 441	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	14,060	8,553	0.61	D	710	388	367	0.55	D	1.00%	14,060	8,989	0.64	D	710	408	386	0.57	D
1720	449		County	35	0.53	DAVID WALKER DRIVE	US 441	MOUNT HOMER ROAD	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF EUSTIS	D	14,060	5,694	0.40	C	710	214	265	0.37	C	1.00%	14,060	5,984	0.43	C	710	225	279	0.39	C
1730	471		County	20	0.74	DAVID WALKER DRIVE	MOUNT HOMER ROAD	FLINKS AVE/KURT AVE	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF EUSTIS	D	10,360	6,537	0.63	D	530	334	277	0.63	D	3.50%	10,360	7,763	0.75	D	530	397	329	0.75	D
1740	406	117014	County	35	2.29	DEAD RIVER ROAD	WEST TERMINI	SR 19	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF TAVARES	D	21,780	6,785	0.31	B	1,080	276	355	0.33	B	1.00%	21,780	7,131	0.33	B	1,080	291	373	0.35	B
1750	617		County	35	1.25	DONNELLY STREET	US 441	11TH AVENUE	2	2	URBAN	DIVIDED	CITY OF MT. DORA	CITY OF MOUNT DORA	D	14,760	11,220	0.76	D	750	535	474	0.71	D	1.00%	14,760	11,792	0.80	D	750	563	498	0.75	D
1760	617		ADJACENT	35	0.38	DONNELLY STREET	11TH AVENUE	5TH AVENUE	2	2	URBAN	UNDIVIDED	CITY OF MT. DORA	CITY OF MOUNT DORA	D	10,360	11,220	1.08	F	530	535	474	1.01	E	1.00%	10,360	11,792	1.14	F	530	563	498	1.06	F
1770	258		County	55	0.64	DUDA ROAD	CR 448A	ORANGE COUNTY LINE	2	2	RURAL	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	C	9,030	7,250	0.80	C	470	293	323	0.69	C	1.50%	9,030	7,810	0.86	C	470	316	348	0.74	C
1780	510		County	40	1.43	EAGLES NEST ROAD	US 27	CR 466B	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	12,390	4,271	0.34	C	620	198	133	0.32	C	3.75%	12,390	5,134	0.41	C	620	238	160	0.38	C
1790	46		County	30	0.73	EAST AVENUE	CR 561	SR 50	2	2	URBAN	UNDIVIDED	CITY OF CLERMONT	CITY OF CLERMONT	D	10,360	5,841	0.56	D	530	-	-	-	-	1.00%	10,360	6,139	0.59	D	530	-	-	-	-
1800	454		ADJACENT	25	0.85	EAST CROOKED LAKE ROAD	LAKEVIEW DRIVE	BROADVIEW AVENUE	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF EUSTIS	D	10,360	5,153	0.50	D	530	273	167	0.52	D	1.00%	10,360	5,416	0.52	D	530	287	176	0.54	D
1810	454		County	25	0.78	EAST CROOKED LAKE ROAD	BROADVIEW AVENUE	US 441	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF EUSTIS	D	10,360	5,153	0.50	D	530	273	167	0.52	D	1.00%	10,360	5,416	0.52	D	530	287	176	0.54	D
1820	501		County	35	0.77	EMERALDA AVENUE	EMERALDA ISLAND ROAD	CR 44	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	13,320	4,265	0.32	C	680	266	149	0.39	C	2.50%	13,320	4,826	0.36	C	680	301	168	0.44	C
1830	41		County	40	4.26	EMPIRE CHURCH ROAD	CR 565	ANDERSON ROAD	2	2	RURAL	UNDIVIDED	COUNTY	CITY OF GROVELAND	C	7,740	1,442	0.19	B	410	-	-	-	-	1.00%	7,740	1,516	0.20	B	410	-	-	-	-

Lake County CMP Database

SEGMENT ID	COUNTY STATION	FDOT STATION	DATA SOURCE	SPEED LIMIT	SEGMENT LENGTH (MI)	ROAD NAME	FROM	TO	LANES (2022)	LANES (2027)	URBAN / RURAL	DIVIDED / UNDIVIDED	MAINTAINING AGENCY	JURISDICTION	ADOPTED LOS STANDARD	DAILY SERVICE VOLUME	2022 AADT	2022 DAILY V/C	2022 DAILY LOS	PEAK HOUR DIRECTIONAL SERVICE VOLUME	2022 PEAK HOUR NB/EB VOLUME	2022 PEAK HOUR SB/WB VOLUME	2022 PEAK HOUR V/C	2022 PEAK HOUR LOS	GROWTH RATE	DAILY SERVICE VOLUME (2027)	2027 AADT	2027 DAILY V/C	2027 DAILY LOS	PEAK HOUR DIRECTIONAL SERVICE VOLUME (2027)	2027 PEAK HOUR NB/EB VOLUME	2027 PEAK HOUR SB/WB VOLUME	2027 PEAK HOUR V/C	2027 PEAK HOUR LOS
3020	110049	110049	State	45	1.38	SR 19	CR 452 (MAIN STREET)	CR 561	4	4	URBAN	DIVIDED	STATE	CITY OF TAVARES	D	41,790	45,500	1.09	F	2,100	2,203	1,892	1.05	F	4.50%	41,790	56,701	1.36	F	2,100	2,745	2,358	1.31	F
3030	110049	110049	ADJACENT	45	0.90	SR 19	CR 561	LANE PARK ROAD	2	2	URBAN	UNDIVIDED	STATE	CITY OF TAVARES	D	18,590	45,500	2.45	F	920	2,203	1,892	2.39	F	4.50%	18,590	56,701	3.05	F	920	2,745	2,358	2.98	F
3040	110494	110494	State	55	3.87	SR 19	LANE PARK ROAD	CR 48	2	2	URBAN	UNDIVIDED	STATE	HOWEY-IN-THE-HILLS/TAVARES	D	18,590	15,980	0.86	C	920	610	656	0.71	C	1.00%	18,590	16,795	0.90	C	920	641	689	0.75	C
3050	110495	110495	State	40	0.84	SR 19	CR 48	CENTRAL AVENUE	2	2	URBAN	UNDIVIDED	STATE	HOWEY-IN-THE-HILLS	D	14,160	8,950	0.63	C	700	433	372	0.62	C	1.00%	14,160	9,407	0.66	C	700	455	391	0.65	C
3060	110495	110495	ADJACENT	35	3.09	SR 19	CENTRAL AVENUE	CR 455	2	2	URBAN	UNDIVIDED	STATE	HOWEY-IN-THE-HILLS	D	24,200	8,950	0.37	B	1,200	433	372	0.36	B	1.00%	24,200	9,407	0.39	B	1,200	455	391	0.38	B
3070	110255	110255	State	55	2.72	SR 19	CR 455	US 27 / SR 25	2	2	RURAL	UNDIVIDED	STATE	CITY OF GROVELAND	C	8,600	9,910	1.15	D	450	507	435	1.13	D	1.00%	8,600	10,416	1.21	D	450	533	457	1.18	D
3080	110376	110376	State	55	4.73	SR 19	US 27 / SR 25	CR 478	2	2	RURAL	UNDIVIDED	STATE	CITY OF GROVELAND	C	8,600	9,350	1.09	D	450	466	519	1.15	D	1.00%	8,600	9,827	1.14	D	450	490	545	1.21	D
3090	110376	110376	ADJACENT	55	1.22	SR 19	CR 478	LAKE CATHERINE ROAD	2	2	URBAN	UNDIVIDED	STATE	CITY OF GROVELAND	D	17,700	9,350	0.53	C	880	466	519	0.59	C	1.00%	17,700	9,827	0.56	C	880	490	545	0.62	C
3100	110097	110097	State	45	0.70	SR 19	LAKE CATHERINE ROAD	SR 50/ SR 33	2	2	URBAN	UNDIVIDED	STATE	CITY OF GROVELAND	D	17,700	12,950	0.73	C	880	449	533	0.61	C	1.50%	17,700	13,951	0.79	C	880	484	574	0.65	C
3110	115072	115072	State	40	0.52	SR 33	SR 50/ SR 33	ANDERSON ROAD	2	2	URBAN	UNDIVIDED	STATE	CITY OF GROVELAND	D	18,590	14,760	0.79	C	920	470	667	0.73	C	4.25%	18,590	18,175	0.98	D	920	579	821	0.89	C
3120	110497	110497	State	60	3.16	SR 33	ANDERSON ROAD	CR 565B	2	2	RURAL	UNDIVIDED	STATE	CITY OF GROVELAND	C	8,600	10,428	1.21	D	450	533	458	1.18	D	3.75%	8,600	12,535	1.46	D	450	641	551	1.42	D
3130	111002	111002	State	60	6.76	SR 33	CR 565B	CR 561	2	2	RURAL	UNDIVIDED	STATE	UNINCORPORATED LAKE COUNTY	C	8,600	8,242	0.96	C	450	421	362	0.94	C	1.75%	8,600	8,988	1.05	D	450	459	395	1.02	D
3140	5		County	60	2.33	SR 33	CR 561	CR 474	2	2	RURAL	UNDIVIDED	STATE	UNINCORPORATED LAKE COUNTY	C	8,600	13,084	1.52	D	450	452	415	1.00	D	1.25%	8,600	13,923	1.62	D	450	480	441	1.07	D
3150	2		County	60	1.04	SR 33	CR 474	POLK COUNTY LINE	2	2	RURAL	UNDIVIDED	STATE	UNINCORPORATED LAKE COUNTY	C	10,320	10,821	1.05	D	540	352	544	1.01	D	4.50%	10,320	13,485	1.31	F	540	438	678	1.26	F
3160	808		County	45	4.71	SR 40	MARION COUNTY LINE	CR 445A	2	2	RURAL	UNDIVIDED	STATE	UNINCORPORATED LAKE COUNTY	C	8,600	5,068	0.59	C	450	169	217	0.48	B	2.75%	8,600	5,805	0.68	C	450	193	248	0.55	C
3170	110503	110503	State	55	1.61	SR 40	CR 445A	RIVER ROAD	2	2	RURAL	UNDIVIDED	STATE	UNINCORPORATED LAKE COUNTY	C	10,320	5,370	0.52	C	540	274	236	0.51	C	1.00%	10,320	5,644	0.55	C	540	288	248	0.53	C
3180	110050	110050	State	45	1.43	SR 40	RIVER ROAD	VOLUSIA COUNTY LINE	2	2	RURAL	DIVIDED	STATE	UNINCORPORATED LAKE COUNTY	C	14,220	10,180	0.72	C	740	401	406	0.55	C	4.75%	14,220	12,839	0.90	C	740	506	512	0.69	C
3190	110496	110496	State	55	2.38	SR 44	SUMTER COUNTY LINE	CR 468	4	4	URBAN	DIVIDED	STATE	CITY OF LEESBURG	D	39,800	21,800	0.55	C	2,000	1,071	964	0.54	C	1.00%	39,800	22,912	0.58	C	2,000	1,126	1,013	0.56	C
3200	110487	110487	State	45	1.54	SR 44	CR 468	S LONE OAK DRIVE	4	4	URBAN	DIVIDED	STATE	UNINCORPORATED LAKE COUNTY	D	39,800	16,540	0.42	C	2,000	610	720	0.36	C	1.00%	39,800	17,384	0.44	C	2,000	641	757	0.38	C
3210	115147	115147	State	35	0.76	SR 44	S LONE OAK DRIVE	US 27	4	4	URBAN	DIVIDED	STATE	CITY OF LEESBURG	D	32,400	19,480	0.60	D	1,630	835	769	0.51	D	1.00%	32,400	20,474	0.63	D	1,630	878	808	0.54	D
3220	115179	115179	State	35	0.57	SR 44 (DIXIE AVENUE)	US 27	S 9TH STREET	4	4	URBAN	DIVIDED	STATE	CITY OF LEESBURG	D	32,400	27,300	0.84	D	1,630	1,322	1,135	0.81	D	1.25%	32,400	29,049	0.90	D	1,630	1,407	1,208	0.86	D
3230	115143	115143	ADJACENT	35	0.34	SR 44 (DIXIE AVENUE)	S 9TH STREET	CANAL STREET	4	4	URBAN	DIVIDED	STATE	CITY OF LEESBURG	D	32,400	23,200	0.72	D	1,630	922	928	0.57	D	1.00%	32,400	24,383	0.75	D	1,630	969	975	0.60	D
3240	115143	115143	State	40	0.41	SR 44 (DIXIE AVENUE)	CANAL STREET	S LAKE STREET	4	4	URBAN	DIVIDED	STATE	CITY OF LEESBURG	D	39,800	23,200	0.58	C	2,000	922	928	0.46	C	1.00%	39,800	24,383	0.61	C	2,000	969	975	0.49	C
3250	115142	115142	State	40	0.79	SR 44 (DIXIE AVENUE)	S LAKE STREET	E MAIN STREET	4	4	URBAN	DIVIDED	STATE	CITY OF LEESBURG	D	39,800	18,760	0.47	C	2,000	908	780	0.45	C	1.00%	39,800	19,717	0.50	C	2,000	954	820	0.48	C
3260	115183	115183	State	40	0.11	SR 44 (DIXIE AVENUE)	E MAIN STREET	US 441	4	4	URBAN	DIVIDED	STATE	CITY OF LEESBURG	D	41,790	18,760	0.45	C	2,100	908	780	0.43	C	1.00%	41,790	19,717	0.47	C	2,100	954	820	0.45	C
3262	110005	110005	State	45	0.45	SR 44 (OLD C.R. 44B)	US 441	WAYCROSS AVENUE	2	2	URBAN	DIVIDED	STATE	CITY OF MOUNT DORA	D	19,510	25,500	1.31	F	970	1,235	1,060	1.27	F	1.00%	19,510	26,801	1.37	F	970	1,298	1,114	1.34	F
3268	110006	110006	State	45	1.65	SR 44 (OLD C.R. 44B)	WAYCROSS AVENUE	ORANGE AVENUE	2	2	URBAN	UNDIVIDED	STATE	EUSTIS/MOUNT DORA	D	18,590	17,880	0.96	D	920	907	637	0.99	D	1.00%	18,590	18,792	1.01	F	920	953	669	1.04	F
3270	110500	110500	ADJACENT	55	2.27	SR 44	ABRAMS ROAD	THRILL HILL ROAD	2	2	URBAN	UNDIVIDED	STATE	CITY OF EUSTIS	D	18,590	13,810	0.74	C	920	706	606	0.77	C	1.00%	18,590	14,514	0.78	C	920	742	637	0.81	C
3280	110500	110500	ADJACENT	55	1.14	SR 44	THRILL HILL ROAD	CR 439	2	2	URBAN	UNDIVIDED	STATE	CITY OF MOUNT DORA	D	17,700	13,810	0.78	C	880	706	606	0.80	C	1.00%	17,700	14,514	0.82	C	880	742	637	0.84	C
3290	110500	110500	State	55	3.03	SR 44	CR 439	CR 437	2	2	RURAL	UNDIVIDED	STATE	UNINCORPORATED LAKE COUNTY	C	15,700	13,810	0.88	C	820	706	606	0.86	C	1.00%	15,700	14,514	0.92	C	820	742	637	0.90	C
3300	110500	110500	ADJACENT	55	1.15	SR 44	CR 437	CR 46A	2	2	RURAL	UNDIVIDED	STATE	UNINCORPORATED LAKE COUNTY	C	13,550	13,810	1.02	D	700	706	606	1.01	D	1.00%	13,550	14,514	1.07	D	700	742	637	1.06	D
3310	110010	110010	ADJACENT	55	3.43	SR 44	CR 46A	CR 44A	2	2	RURAL	UNDIVIDED	STATE	UNINCORPORATED LAKE COUNTY	C	8,600	9,383	1.09	D	450	480	412	1.07	D	1.00%	8,600	9,861	1.15	D	450	504	433	1.12	D
3320	110010	110010	ADJACENT	55	5.34	SR 44	CR 44A	OVERLOOK DRIVE	2	2	RURAL	UNDIVIDED	STATE	UNINCORPORATED LAKE COUNTY	C	8,600	9,383	1.09	D	450	480	412	1.07	D	1.00%	8,600	9,861	1.15	D	450	504	433	1.12	D
3330	110010	110010	State	55	5.64	SR 44	OVERLOOK DRIVE	CR 42	2	2	RURAL	UNDIVIDED	STATE	UNINCORPORATED LAKE COUNTY	C	15,700	9,383	0.60	B	820	480	412	0.59	B	1.00%	15,700	9,861	0.63	B	820	504	433	0.61	B
3340	110010	110010	ADJACENT	55	0.26	SR 44	CR 42	VOLUSIA COUNTY LINE	2	2	RURAL	UNDIVIDED	STATE	UNINCORPORATED LAKE COUNTY	C	13,550	9,383	0.69	C	700	480	412	0.69	C	1.00%	13,550	9,861	0.73	C	700	504	433	0.72	C
3344	110200	110200	State	-	1.80	SR 429 (WEKIVA PKWY)	ORANGE C/L	CR 46A (REALIGNED)	4	4	URBAN	DIVIDED	STATE	UNINCORPORATED LAKE COUNTY	D	66,200	6,200	0.09	B	3,280	422	322	0.13	B	4.25%	66,200	7,634	0.12	B	3,280	519	396	0.16	B
3345	610		County	-	5.54	SR 46	CR 46A (REALIGNED)	SEMINOLE C/L	4	4	URBAN	DIVIDED	STATE	UNINCORPORATED LAKE COUNTY	D	66,200	17,646	0.27	B	3,280	657	874	0.27	B	1.00%	66,200	18,547	0.28	B	3,280	691	919	0.28	B
3350	110501	110501	ADJACENT	45	1.08	SR 46	VISTA VIEW	US 441	6	6	URBAN	DIVIDED	STATE	CITY OF MOUNT DORA	D	62,900	13,420	0.21	C	3,170	650	558	0.21	C	3.25%	62,900	15,747	0.25	C	3,170	763	655	0.24	C
3360	110501	110501	State	55	0.94	VISTA VIEW	ROUND LAKE ROAD	CR 437	6	6	URBAN	DIVIDED	STATE	CITY OF MOUNT DORA	D	62,900	13,420	0.21	C	3,170	650	558	0.21	C	3.25%	62,900	15,747	0.25	C	3,170	763	655	0.24	C
3370	110001	110001	ADJACENT	55	2.11	SR 46	ROUND LAKE ROAD	CR 437 SOUTH	2	2	URBAN	UNDIVIDED	STATE	CITY OF MOUNT DORA	D	24,200	14,950	0.62	C	1,200	600	600	0.50	C	1.50%	24,200	16,105	0.67	C	1,200	646	646	0.54	C
3380	110001	110001	State	45	0.51	SR 46	CR 437 SOUTH	CR 437 NORTH	2	2	URBAN	UNDIVIDED	STATE	UNINCORPORATED LAKE COUNTY	D	17,700	14,950	0.84	C	880	600	600	0.68	C	1.50%	17,700	16,105	0.91	C	880	646	646	0.73	C
3390	111019	111019	State	45	1.11	SR 46	CR 437 NORTH	CR 435	2	2	URBAN	UNDIVIDED	STATE	UNINCORPORATED LAKE COUNTY	D	17,700	13,230	0.75	C	880	641	550	0.73	C	1.00%	17,700	13,905	0.79	C	880	674	578	0.77	C
3395	611	118115	County	45	0.87	SR 46	CR 435	CR 46A (REALIGNED)	2	2	URBAN	UNDIVIDED	STATE	UNINCORPORATED LAKE COUNTY	D	17,700	10,963	0.62	C	880	467	480	0.54	C	1.00%	17,700	11,522	0.65	C	880	490	504	0.57	C
3420	110319	110319	State	55	3.64	SR 50	SUMTER COUNTY LINE	CR 565 / BAY LAKE ROAD	2	2	URBAN	UNDIVIDED	STATE	UNINCORPORATED LAKE COUNTY	D	24,200	14,320	0.59	C	1,200	591	649	0.54	C	1.50%	24,200	15,427	0.64	C	1,200	637	699	0.58	C
3430	110319	110319	ADJACENT	35	0.77	SR 50	CR 565 / BAY LAKE ROAD	CR 33	2	2	URBAN	UNDIVIDED	STATE	CITY OF MASCOTTE	D	14,800	14,320	0.97	D	750	591	649	0.87	D	1.50%	14,800	15,427	1.04	E	750	637	699	0.93	D
3440	110241	110241	State	45	0.96	SR 50	CR 33	GROVELAND FARMS ROAD	4	4	URBAN	DIVIDED	STATE	CITY OF MASCOTTE	D	39,800	26,000	0.65	C	2,000	942	1,013	0.51	C	1.00%	39,800	27,326	0.69	C	2,000	990	1,065	0.53	C
3450	110241	110241	ADJACENT	45	0.63	SR 50	GROVELAND FARMS ROAD	SR 50 ONE WAY PAIRS	4	4	URBAN	DIVIDED	STATE	CITY OF GROVELAND	D	41,790	26,000	0.62	C	2,100	942	1,013	0.48	C	1.00%	41,790	27,326	0.65	C	2,100	990	1,065	0.51	C
3460	115182	115182	State	35	0.44	SR 50 (E)	SR 50 ONE WAY PAIRS	SR 19	4	4	URBAN	DIVIDED	STATE	CITY OF GROVELAND	D	19,440	12,350	0.64	D	1,960	1,110	0	0.57	D	1.00%	19,440	12,980	0.67	D	1,960	1,167	0	0.60	D
3470	115077	115077	State	35	0.44	SR 50 (W)	SR 19	SR 50 ONE WAY PAIRS	4	4	URBAN	DIVIDED	STATE	CITY OF GROVELAND	D	19,440	16,800	0.86	D	1,960	0	1,510	0.77	D	1.75%	19,440	18,322	0.94	D	1,960	0	1,647	0.84	D
3481	115181	115181	State	35	0.33	SR 50 (E)	SR 19	SR 33 SOUTH	4	4	URBAN	DIVIDED	STATE	CITY OF GROVELAND	D	19,440	12,750	0.66	D	1,960	1,146	0	0.58	D	1.00%	19,440	13,400	0.69	D	1,960	1,204	0	0.61	D
3491	115076	115076	State	35	0.34	SR 50 (W)	SR 19	SR 33 SOUTH	4	4	URBAN	DIVIDED	STATE	CITY OF GROVELAND	D	19,440	14,700	0.76	D	1,960	0	1,322	0.67	D	1.00%	19,440	15,450	0.79	D	1,960	0	1,389	0.71	D
3500	115134	115134	State	55	1.53	SR 50	SR 33 SOUTH	CR 565A NORTH	4	4	URBAN	DIVIDED	STATE	CITY OF GROVELAND	D	41,790	30,314	0.73	C	2,100	1,468	1,260	0.70	C	1.00%	41,790	31,861	0.76	C	2,100	1,543	1,324	0.73	C
3510	110396	110396	State	55	3.15	SR 50	CR 565A NORTH	CR 561	4	4	URBAN	DIVIDED	STATE	CITY OF GROVELAND	D	41,790	29,500	0.71	C	2,100	1,059	2,242	1.07	F	1.00%	41,790	31,005	0.74	C	2,100	1,113	2,356	1.12	F
3520	115057	115057	State	40	1.19	SR 50	CR 561	EAST AVENUE	4	4	URBAN	DIVIDED	STATE	CITY OF CLERMONT	D	39,800	35,600	0.89	C	2,000	1,724	1,480	0.86	C	1.50%	39,800	38,351	0.96	D	2,000	1,857	1,594	0.93	C
3530	115050	115050	State	40	0.92	SR 50	EAST AVENUE	US 27	4	4	URBAN	DIVIDED	STATE	CITY OF CLERMONT	D	41,790	32,650	0.78	C	2,100	1,581	1,358	0.75	C	1.00%	41,790	34,315	0.82	C	2,100	1,662	1,427	0.79	C
3540	110390	110390	State	55	2.14	SR 50	US 27	HANCOCK ROAD	6	6	URBAN	DIVIDED	STATE	UNINCORPORATED LAKE COUNTY	D	62,900	54,629	0.87	C	3,170	2,645	2,271	0.83	C	1.00%	62,900	57,415	0.91	C	3,170	2,780	2,387	0.88	C
3550	110390	110390	ADJACENT	55	1.49	SR 50	HANCOCK ROAD	CR 455	6	6	URBAN	DIVIDED	STATE	UNINCORPORATED LAKE COUNTY	D	62,900	54,629	0.87	C	3,170	2,645	2,271	0.83	C	1.00%	62,900	57,415	0.91	C	3,170	2,780	2,387	0.88	C
3560	750572	750572	State	50	1.53	SR 50	CR 455	ORANGE COUNTY LINE	6	6	URBAN	DIVIDED	STATE	UNINCORPORATED LAKE COUNTY	D	62,900	53,750	0.85	C	3,170	2,574	2,264	0.81	C	1.00%	62,900	56,492	0.90	C	3,170	2,705	2,379	0.85	C
3562	972200	972200	State	70	1.38	SR 91 (FLORIDA TURNPIKE)	SUMTER COUNTY LINE	CR 470	4	4	URBAN	FREEWAY	STATE	UNINCORPORATED LAKE COUNTY	B	47,600	46,882	0.98	B	2,230	2,648	2,274	1.19	C	1.00%	47,600	49,273	1.04	C	2,230	2,783	2,390	1.25	C
3564	972160	972160	State	70	7.50	SR 91 (FLORIDA TURNPIKE)	CR 470	US 27/SR 25	4	4	URBAN	FREEWAY	STATE	UNINCORPORATED LAKE COUNTY	B	47,600	49,600	1.04	C	2,230	2,661	1,803	1.19	C	1.00%	47,600	52,130	1.10	C	2,230	2,797	1,895	1.25	C
3566	972006	972006	State	70	3.72	SR 91 (FLORIDA TURNPIKE)	US 27/SR 25	US 27/SR 25/SR 19 INTERCHANGE	4	8	URBAN	FREEWAY	STATE	UNINCORPORATED LAKE COUNTY	B	47,600	43,670	0.92	B	2,230	2,733	1,852	1.23	C	1.00%	92,200	45,898	0.50	B	4,310	2,872	1,946	0.67	B
3568	972005	972005	State	70	10.82	SR 91 (FLORIDA TURNPIKE)	US 27/SR 25/SR 19 INTERCHANGE	ORANGE COUNTY LINE	4	8	URBAN	FREEWAY	STATE	UNINCORPORATED LAKE COUNTY	C	66,400	66,200	1.00	C	3,100	3,551	2,407	1.15	D	1.00%	128,900	69,577	0.54	B	6,030	3,732	2,530	0.62	B
3569	29		County	30	0.84	STEVES ROAD	US 27	CITRUS TOWER BOULEVARD	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF CLERMONT	D	14,060	7,625	0.54	D	710	335	441	0.62	D	2.00%	14,060	8,418	0.60	D	710	370	487	0.69	D
3570	429		County	20	1.46	SUNNYSIDE DRIVE	MAIN STREET/DR NICHOLS DRIVE	SLEEPY HOLLOW ROAD	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF LEESBURG	D	14,060	4,411	0.31	C	710	163	254	0.36	C	2.50%	14,060	4,990	0.35	C	710	184	288	0.41	C
3580	423	117012	County	35	3.31	SUNNYSIDE DRIVE	SLEEPY HOLLOW ROAD	BRIDGEWATER COURT	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF LEESBURG	D	21,780	2,640	0.12	B	1,080	182	98	0.17	B	2.00%	21,780	2,915	0.13	B	1,080	201	108	0.19	B
3590	414	117013	County	35	1.14	SUNNYSIDE DRIVE	BRIDGEWATER COURT	SUNNYSIDE DRIVE	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	10,360	1,523	0.15	C	530	53	70	0.13	C	1.00%	10,360	1,601	0.15	C	530	56	74	0.14	C
3600	466		County	35	0.79	THOMAS AVENUE	CR 460	CR 44A	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF LEESBURG	D	10,360	9,755	0.94	D	530	405	529	1.00	D	1.00%	10,360	10,253	0.99	D	530	426	556	1.05	E
3610	457		County	35	1.07	THOMAS AVENUE	GRIFFIN ROAD (CR 44A)	MAIN STREET	2	2	URBAN	UNDIVIDED	CITY OF LEESBURG	CITY OF LEESBURG	D	10,360	7,696	0.74	D	530	393	340	0.74	D	1.00%	10,360	8,089	0.78	D	530	413	358	0.78	D
3620	211		County	30	0.32	TURKEY FARM ROAD	OLD HWY 50	BRIMMING LAKE ROAD	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF MINNEOLA	D	10,360	209	0.02	C	530	11	13	0.02	C	1.00%	10,360	220	0.02	C	530	11	13	0.02	C
3630	0		NO COUNT	35	4.19	TUSCANOOGA ROAD	SUMTER COUNTY LINE	EGG ROAD	2	2	RURAL	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	C	7,740	-	-	-	410	-	-	-	-	N/A	7,740	-	-	-	410	-	-	-	-
3640	216		County	40	0.54	TUSCANOOGA ROAD	EGG ROAD	SR 50	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF MASCOTTE	C	15,960	2,543	0.16	C	790	157	101	0.20	C	2.00%	15,960	2,807	0.18	C	790	174	111	0.22	C
3650	219		County	40	0.31	UNDERPASS ROAD	CR 33	AMERICAN LEGION ROAD	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF MASCOTTE	D	16,820	1,080	0.06	C	840	61	60	0.07	C	2.00%	16,820	1,193	0.07	C	840	68	67	0.08	C
3660	110470	110470	State	55	1.01	US 192	US 27	ORANGE COUNTY LINE	6	6	URBAN	DIVIDED	STATE	UNINCORPORATED LAKE COUNTY	D	62,900	47,750	0.76	C	3,170	2,312	1,985	0.73	C	1.00%	62,900	50,186	0.80	C	3,170	2,430	2,086	0.77	C
3670	538		County	45	1.11	US 27/US441	SUMTER COUNTY LINE	GRIFFIN AVENUE	6	6	URBAN	DIVIDED	STATE	TOWN OF LADY LAKE	D	59,900	35,295	0.59	C	3,020	1,446	1,484	0.49	C	1.00%	59,900	37,095	0.62	C	3,020	1,519	1,560	0.52	C
3680	111012	111012	State	45	1.12	US 27/US441	GRIFFIN AVENUE	ALT US 441 / ALT US 27	4	8	URBAN	DIVIDED	STATE	TOWN OF LADY LAKE	D	41,790	30,300	0.73	C	2,100	1,467	1,260	0.70	C	1.50%	84,110	32,642	0.39	C	4,240	1,580	1,357	0.37	C
3690	111012	111012	ADJACENT	40	0.79	US 27/US441	ALT US 441 / ALT US 27	CR 466	4	6	URBAN	DIVIDED	STATE	TOWN OF LADY LAKE	D	41,790	30,300	0.73	C	2,100	1,467	1,260	0.70	C	1.50%	62,900	32,642	0.52	C	3,170	1,580	1,357	0.50	C
3700	111021	111021	State	55	2.27	US 27/US441	CR 466	LAKE ELLA ROAD	4	6	URBAN	DIVIDED	STATE	TOWN OF LADY LAKE	D	41,790	29,800	0.71	C	2,100	1,400	1,200	0.67	C	1.00%	62,900	31,320	0.50	C	3,170	1,471	1,261	0.46	C
3710	110430	110430	State	55	1.89	US 27/US441	LAKE ELLA ROAD	CR 466A / MILLER BOULEVARD	6	6	URBAN	DIVIDED	STATE	FRUITLAND PARK	D	59,900	29,350	0.49	C	3,020	1,421	1,220	0.47	C	1.00%	59,900	30,847	0.51	C	3,020	1,493	1,282	0.49	C
3720	110431	110431	State	45	1.35	US 27/US441	CR 466A / MILLER BOULEVARD	CR 460 (MARTIN LUTHER KING BLVD)	6	6	URBAN	DIVIDED	STATE	FRUITLAND PARK	D	59,900	37,800	0.63	C	3,020	1,830	1,572	0.61	C	1.00%	59,900	39,728	0.66	C	3,020	1,923	1,652	0.64	C
3730	110109	110109	ADJACENT	45	0.51	US 27/US441	CR 460 (MARTIN LUTHER KING BLVD)	CR 466A (LEE ROAD)	6	6	URBAN	DIVIDED	STATE	CITY OF LEESBURG	D	59,900	41,600	0.69	C	3,020	2,014	1,730	0.67	C	1.00%	59,900	43,722	0.73	C	3,020	2,117	1,818	0.70	C
3740	110109	110109	State	45	0.67	US 27/US441	CR 466A (LEE ROA

C3C & C3R

Motor Vehicle Arterial Generalized Service Volume Tables



(C3C-Suburban Commercial)

Peak Hour Directional

	B	C	D	E
1 Lane	*	760	1,070	**
2 Lane	*	1,520	1,810	**
3 Lane	*	2,360	2,680	**
4 Lane	*	3,170	3,180	**

Peak Hour Two-Way

	B	C	D	E
2 Lane	*	1,380	1,950	**
4 Lane	*	2,760	3,290	**
6 Lane	*	4,290	4,870	**
8 Lane	*	5,760	5,780	**

AADT

	B	C	D	E
2 Lane	*	15,300	21,700	**
4 Lane	*	30,700	36,600	**
6 Lane	*	47,700	54,100	**
8 Lane	*	64,000	64,200	**



(C3R-Suburban Residential)

	B	C	D	E
1 Lane	*	970	1,110	**
2 Lane	*	1,700	1,850	**
3 Lane	*	2,620	2,730	**

	B	C	D	E
2 Lane	*	1,760	2,020	**
4 Lane	*	3,090	3,360	**
6 Lane	*	4,760	4,960	**

	B	C	D	E
2 Lane	*	19,600	22,400	**
4 Lane	*	34,300	37,300	**
6 Lane	*	52,900	55,100	**

Adjustment Factors

The peak hour directional service volumes should be adjust by multiplying by 1.2 for one-way facilities
The AADT service volumes should be adjusted by multiplying 0.6 for one way facilities 2 Lane Divided Roadway with an Exclusive Left Turn Lane(s): Multiply by 1.05
2 lane Undivided Roadway with No Exclusive Left Turn Lane(s): Multiply by 0.80

Exclusive right turn lane(s): Multiply by 1.05
Multilane Undivided Roadway with an Exclusive Left Turn Lane(s): Multiply by 0.95
Multilane Roadway with No Exclusive Left Turn Lane(s): Multiply by 0.75
Non-State Signalized Roadway: Multiply by 0.90

This table does not constitute a standard and should be used only for general planning applications. The table should not be used for corridor or intersection design, where more refined techniques exist.
* Cannot be achieved using table input value defaults.
** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached.

C1 & C2

Motor Vehicle Highway Generalized Service Volume Tables



(C1-Natural & C2-Rural)

Peak Hour Directional

	B	C	D	E
1 Lane	240	430	730	1,490
2 Lane	1,670	2,390	2,910	3,340
3 Lane	2,510	3,570	4,370	5,010

Peak Hour Two-Way

	B	C	D	E
2 Lane	440	780	1,330	2,710
4 Lane	3,040	4,350	5,290	6,070
6 Lane	4,560	6,490	7,950	9,110

AADT

	B	C	D	E
2 Lane	4,600	8,200	14,000	28,500
4 Lane	32,000	45,800	55,700	63,900
6 Lane	48,000	68,300	83,700	95,900

Adjustment Factors

2 Lane Divided Roadway with Exclusive Left Turn Adjustment: Multiply by 1.05
Multilane Undivided Highway with Exclusive Left Turn Adjustment: Multiply by 0.95
Multilane Undivided Highway without Exclusive Left Turn Adjustment:: Multiply by 0.75

This table does not constitute a standard and should be used only for general planning applications. The table should not be used for corridor or intersection design, where more refined techniques exist.

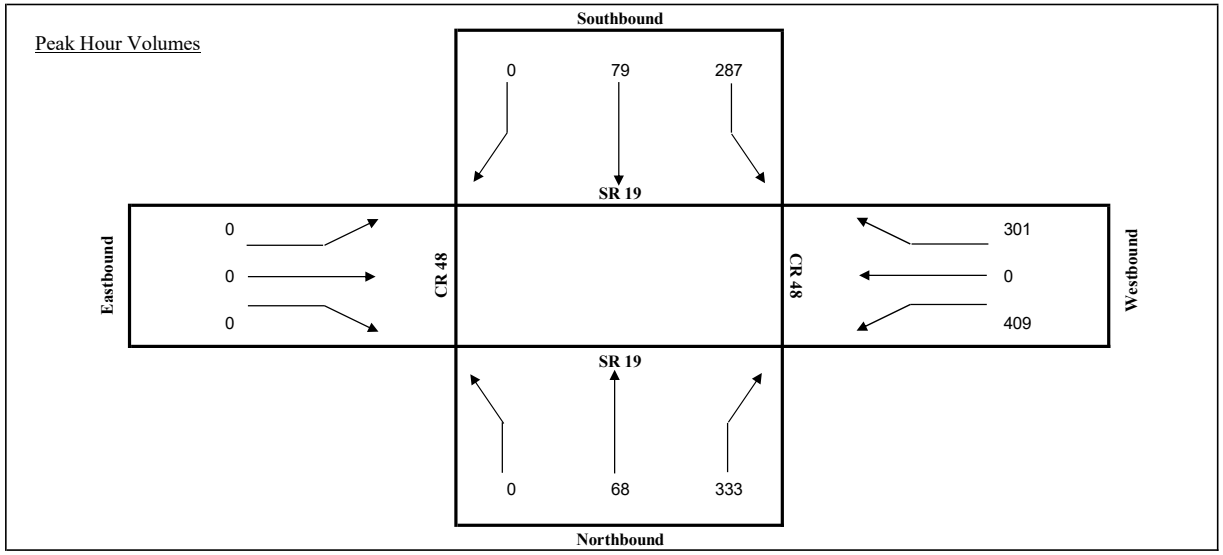
Appendix D
Turning Movement Counts and Seasonal Factor Data

TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

Intersection (N/S): SR 19
Intersection (E/W): CR 48
Date: 7/19/2023

		SR 19 NB			SR 19 SB			CR 48 EB			CR 48 WB			
Start	End	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
4:00 PM	4:15 PM	0	19	82	68	13	0	0	0	0	84	0	65	331
4:15 PM	4:30 PM	0	24	91	71	13	0	0	0	0	83	0	79	361
4:30 PM	4:45 PM	0	18	72	68	17	0	0	0	0	93	0	76	344
4:45 PM	5:00 PM	0	23	90	85	15	0	0	0	0	92	0	61	366
5:00 PM	5:15 PM	0	18	71	73	23	0	0	0	0	88	0	73	346
5:15 PM	5:30 PM	0	15	80	71	19	0	0	0	0	114	0	80	379
5:30 PM	5:45 PM	0	12	92	58	22	0	0	0	0	115	0	87	386
5:45 PM	6:00 PM	0	16	70	54	14	0	0	0	0	94	0	72	320
Total for:	4:00 PM	5:00 PM	0	84	335	292	58	0	0	0	0	352	0	281	1402
Total for:	5:00 PM	6:00 PM	0	61	313	256	78	0	0	0	0	411	0	312	1431
Tota Peak Hour:	4:45 PM	5:45 PM	0	68	333	287	79	0	0	0	0	409	0	301	1477
Overall PHF:	0.96														

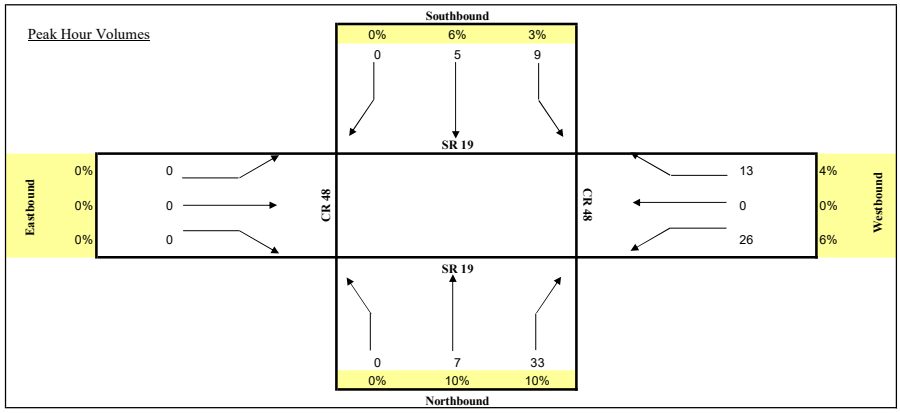


TURNING MOVEMENT COUNT ANALYSIS

TRUCKS

Intersection (N/S): SR 19
Intersection (E/W): CR 48
Date: 7/19/2023

		SR 19 NB			SR 19 SB			CR 48 EB			CR 48 WB			
Start	End	R	T	L	R	T	L	R	T	L	R	T	L	TOTAL
4:00 PM	4:15 PM	0	3	10	5	0	0	0	0	0	4	0	6	28
4:15 PM	4:30 PM	0	4	11	1	3	0	0	0	0	8	0	2	29
4:30 PM	4:45 PM	0	0	8	2	1	0	0	0	0	7	0	4	22
4:45 PM	5:00 PM	0	0	4	1	1	0	0	0	0	7	0	1	14
5:00 PM	5:15 PM	0	1	7	2	2	0	0	0	0	6	0	0	18
5:15 PM	5:30 PM	0	0	7	2	0	0	0	0	0	6	0	0	15
5:30 PM	5:45 PM	0	0	2	0	0	0	0	0	0	2	0	1	5
5:45 PM	6:00 PM	0	2	4	2	1	0	0	0	0	5	0	1	15
Total for:	4:00 PM	5:00 PM	0	7	33	9	5	0	0	0	0	26	0	13	93
Total for:	5:00 PM	6:00 PM	0	3	20	6	3	0	0	0	0	19	0	2	53
Tota Peak Hour:	4:00 PM	5:00 PM	0	7	33	9	5	0	0	0	0	26	0	13	93
Overall PHF:	0.80														

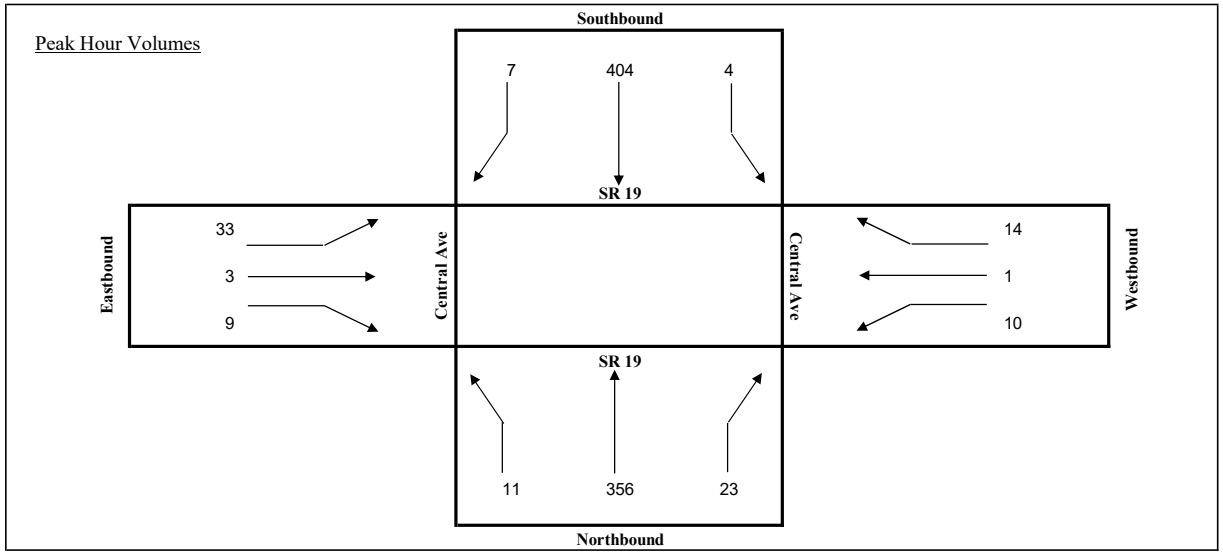


TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

Intersection (N/S): SR 19
Intersection (E/W): Central Ave
Date: 7/19/2023

			SR 19 NB			SR 19 SB			Central Ave EB			Central Ave WB			
Start	End	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
7:00 AM	7:15 AM	7	76	6	1	88	3	5	0	4	3	1	3	197
7:15 AM	7:30 AM	3	92	4	1	101	0	15	1	1	1	0	2	221
7:30 AM	7:45 AM	1	96	4	1	106	2	9	0	1	2	0	4	226
7:45 AM	8:00 AM	5	85	4	2	93	2	4	1	4	4	0	3	207
8:00 AM	8:15 AM	2	83	11	0	104	3	5	1	3	3	1	5	221
8:15 AM	8:30 AM	8	70	1	1	91	5	7	2	0	0	0	4	189
8:30 AM	8:45 AM	3	96	5	1	101	5	5	2	6	2	0	1	227
8:45 AM	9:00 AM	3	77	10	4	68	2	13	0	1	2	0	4	184
Total for:	7:00 AM	8:00 AM	16	349	18	5	388	7	33	2	10	10	1	12	851
Total for:	8:00 AM	9:00 AM	16	326	27	6	364	15	30	5	10	7	1	14	821
Tota Peak Hour:	7:15 AM	8:15 AM	11	356	23	4	404	7	33	3	9	10	1	14	875
Overall PHF:	0.97														

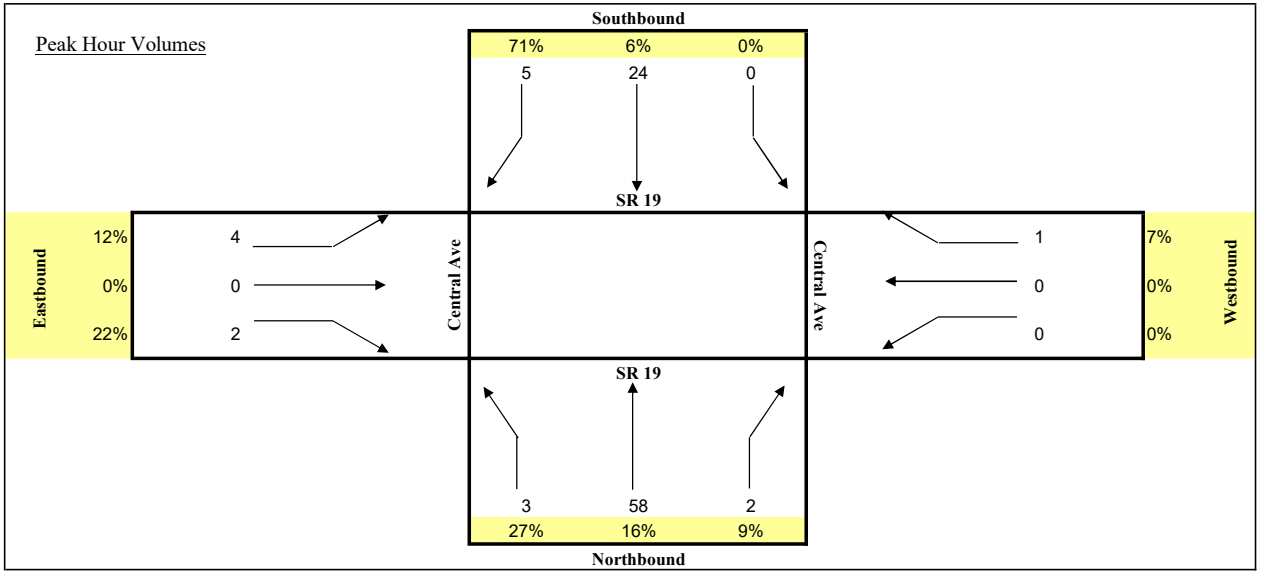


TURNING MOVEMENT COUNT ANALYSIS

TRUCKS

Intersection (N/S): SR 19
Intersection (E/W): Central Ave
Date: 7/19/2023

			SR 19 NB			SR 19 SB			Central Ave EB			Central Ave WB			
Start	End		R	T	L	R	T	L	R	T	L	R	T	L	TOTAL
7:00 AM	7:15 AM		1	13	0	0	10	0	1	0	0	0	0	0	25
7:15 AM	7:30 AM		1	15	1	1	13	0	1	0	0	0	0	0	32
7:30 AM	7:45 AM		0	9	0	0	7	0	0	0	0	0	0	2	18
7:45 AM	8:00 AM		1	12	1	0	2	0	0	0	0	1	0	0	17
8:00 AM	8:15 AM		0	14	1	0	5	0	0	0	0	0	0	1	21
8:15 AM	8:30 AM		2	7	1	0	8	1	2	0	0	0	0	0	21
8:30 AM	8:45 AM		1	19	0	0	6	2	0	0	2	0	0	0	30
8:45 AM	9:00 AM		0	18	0	0	5	2	2	0	0	0	0	0	27
Total for:	7:00 AM	8:00 AM	3	49	2	1	32	0	2	0	0	1	0	2	92
Total for:	8:00 AM	9:00 AM	3	58	2	0	24	5	4	0	2	0	0	1	99
Tota Peak Hour:	8:00 AM	9:00 AM	3	58	2	0	24	5	4	0	2	0	0	1	99
Overall PHF:	0.83														

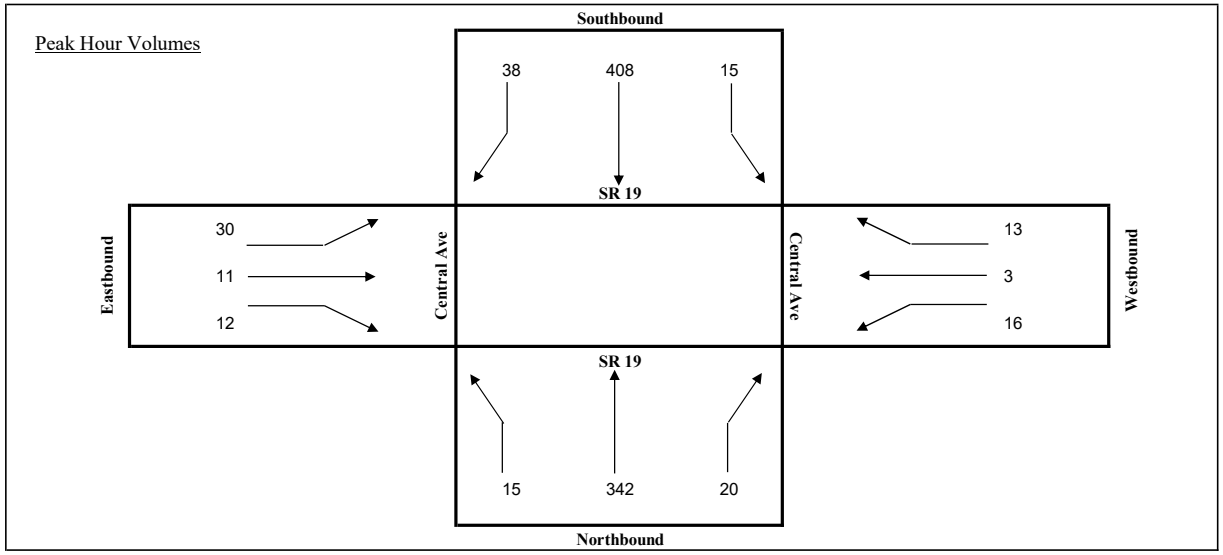


TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

Intersection (N/S): SR 19
Intersection (E/W): Central Ave
Date: 7/19/2023

			SR 19 NB			SR 19 SB			Central Ave EB			Central Ave WB			
Start	End	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
4:00 PM	4:15 PM	2	88	5	3	81	10	7	1	2	1	0	4	204
4:15 PM	4:30 PM	2	98	3	1	79	9	12	0	4	1	3	3	215
4:30 PM	4:45 PM	2	75	7	6	89	10	11	3	4	4	1	1	213
4:45 PM	5:00 PM	2	102	7	4	90	6	6	1	3	1	0	2	224
5:00 PM	5:15 PM	5	66	5	0	96	10	12	5	5	5	0	6	215
5:15 PM	5:30 PM	4	84	4	3	113	8	5	1	1	6	3	2	234
5:30 PM	5:45 PM	4	90	4	8	109	14	7	4	3	4	0	3	250
5:45 PM	6:00 PM	1	71	6	1	86	9	7	1	1	0	2	3	188
Total for:	4:00 PM	5:00 PM	8	363	22	14	339	35	36	5	13	7	4	10	856
Total for:	5:00 PM	6:00 PM	14	311	19	12	404	41	31	11	10	15	5	14	887
Tota Peak Hour:	4:45 PM	5:45 PM	15	342	20	15	408	38	30	11	12	16	3	13	923
Overall PHF:	0.92														

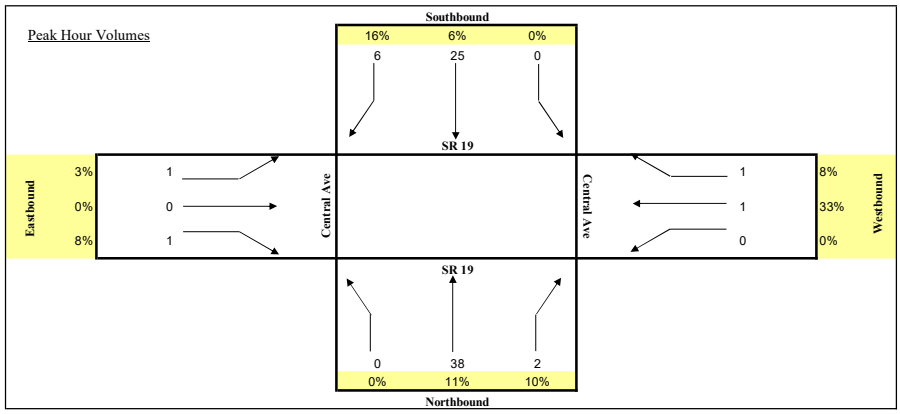


TURNING MOVEMENT COUNT ANALYSIS

TRUCKS

Intersection (N/S): SR 19
Intersection (E/W): Central Ave
Date: 7/19/2023

		SR 19 NB			SR 19 SB			Central Ave EB			Central Ave WB			
Start	End	R	T	L	R	T	L	R	T	L	R	T	L	TOTAL
4:00 PM	4:15 PM	0	13	2	0	2	2	0	0	0	0	0	0	19
4:15 PM	4:30 PM	0	14	0	0	9	2	0	0	0	0	1	1	27
4:30 PM	4:45 PM	0	8	0	0	8	0	0	0	0	0	0	0	16
4:45 PM	5:00 PM	0	3	0	0	6	2	1	0	1	0	0	0	13
5:00 PM	5:15 PM	1	7	0	0	8	0	1	0	0	0	0	0	17
5:15 PM	5:30 PM	0	7	0	0	6	0	0	0	1	0	0	0	14
5:30 PM	5:45 PM	1	2	0	1	0	1	0	0	1	1	0	0	7
5:45 PM	6:00 PM	0	6	0	0	6	0	0	0	0	0	1	0	13
Total for:	4:00 PM	5:00 PM	0	38	2	0	25	6	1	0	1	0	1	1	75
Total for:	5:00 PM	6:00 PM	2	22	0	1	20	1	1	0	2	1	1	0	51
Tota Peak Hour:	4:00 PM	5:00 PM	0	38	2	0	25	6	1	0	1	0	1	1	75
Overall PHF:	0.69														

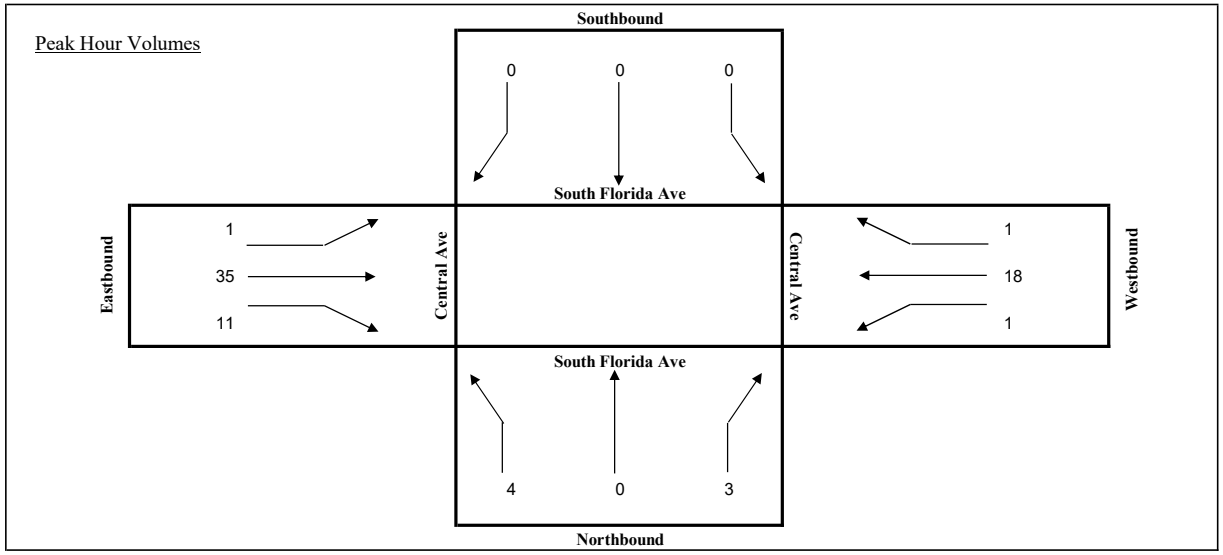


TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

Intersection (N/S): South Florida Ave
Intersection (E/W): Central Ave
Date: 7/19/2023

			South Florida Ave			South Florida Ave			Central Ave			Central Ave			
			NB			SB			EB			WB			
Start	End		L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
7:00 AM	7:15 AM		0	0	0	0	0	0	0	6	4	0	8	1	19
7:15 AM	7:30 AM		2	0	1	0	0	0	1	13	2	0	4	0	23
7:30 AM	7:45 AM		2	0	1	0	0	0	0	9	4	1	1	0	18
7:45 AM	8:00 AM		0	0	1	0	0	0	0	7	1	0	5	0	14
8:00 AM	8:15 AM		0	0	2	0	0	0	0	5	0	2	5	0	14
8:15 AM	8:30 AM		0	0	3	0	0	0	0	8	2	1	3	2	19
8:30 AM	8:45 AM		0	0	1	1	0	1	0	3	1	3	7	0	17
8:45 AM	9:00 AM		1	0	2	0	0	0	0	7	2	1	6	1	20
Total for:	7:00 AM	8:00 AM	4	0	3	0	0	0	1	35	11	1	18	1	74
Total for:	8:00 AM	9:00 AM	1	0	8	1	0	1	0	23	5	7	21	3	70
Tota Peak Hour:	7:00 AM	8:00 AM	4	0	3	0	0	0	1	35	11	1	18	1	74
Overall PHF:	0.80														

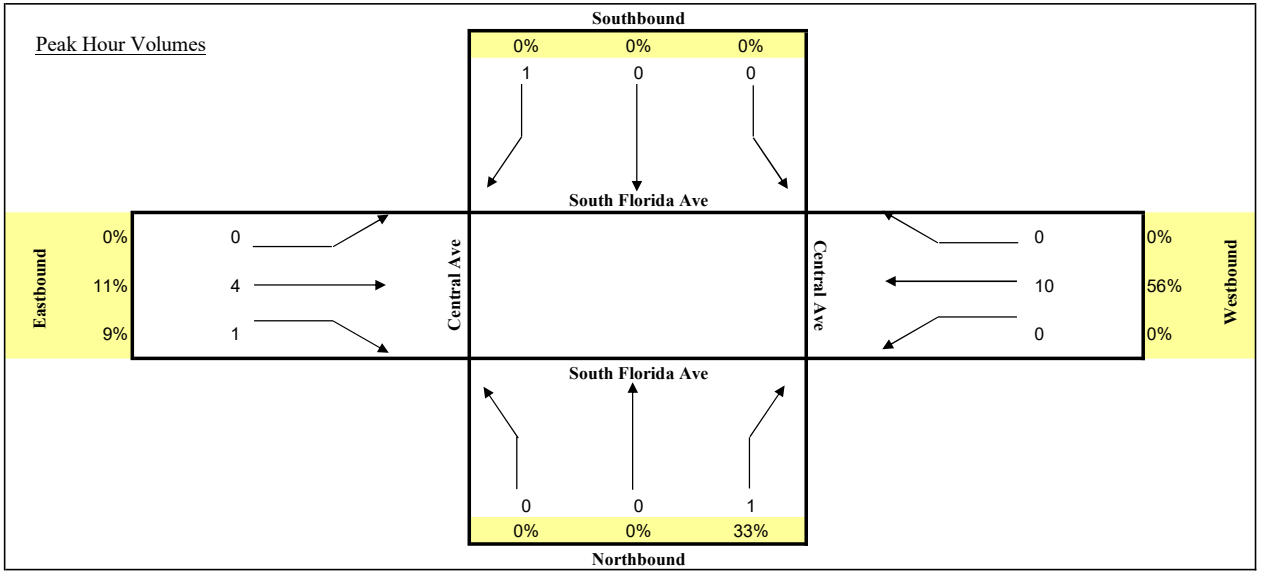


TURNING MOVEMENT COUNT ANALYSIS

TRUCKS

Intersection (N/S): South Florida Ave
Intersection (E/W): Central Ave
Date: 7/19/2023

		South Florida Ave			South Florida Ave			Central Ave			Central Ave			
		NB			SB			EB			WB			
Start	End	R	T	L	R	T	L	R	T	L	R	T	L	TOTAL
7:00 AM	7:15 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
7:15 AM	7:30 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
7:30 AM	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	8:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
8:00 AM	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	8:30 AM	0	0	1	0	0	0	0	2	0	0	2	0	5
8:30 AM	8:45 AM	0	0	0	0	0	1	0	1	0	0	3	0	5
8:45 AM	9:00 AM	0	0	0	0	0	0	0	1	1	0	5	0	7
Total for:	7:00 AM	8:00 AM	0	0	0	0	0	0	0	2	0	0	3	0	5
Total for:	8:00 AM	9:00 AM	0	0	1	0	0	1	0	4	1	0	10	0	17
Tota Peak Hour:	8:00 AM	9:00 AM	0	0	1	0	0	1	0	4	1	0	10	0	17
Overall PHF:	0.61														

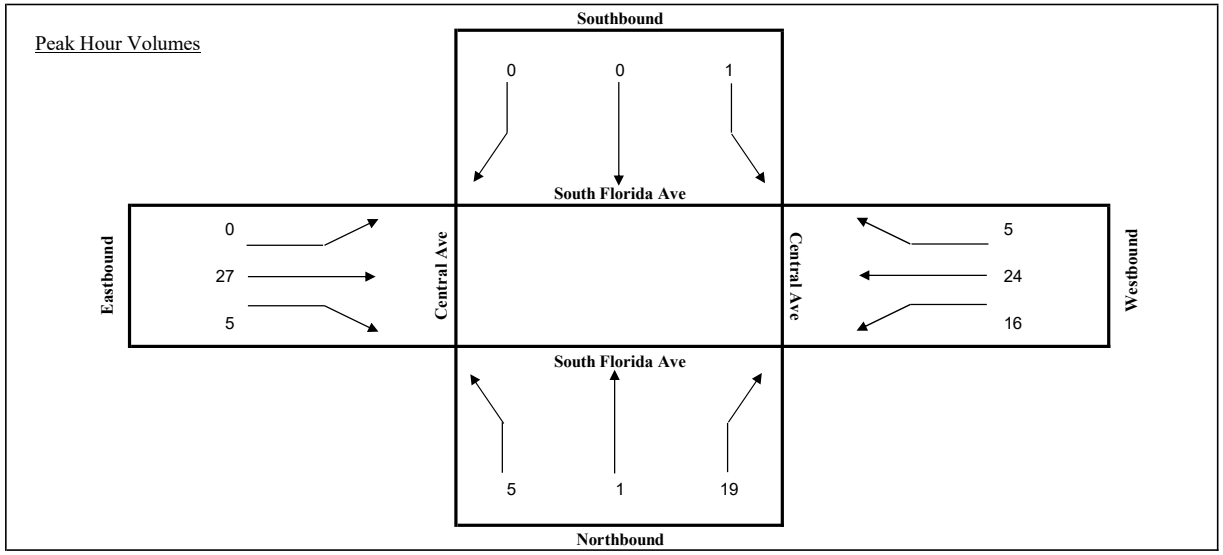


TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

Intersection (N/S): South Florida Ave
Intersection (E/W): Central Ave
Date: 7/19/2023

		South Florida Ave			South Florida Ave			Central Ave			Central Ave			
		NB			SB			EB			WB			
Start	End	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
4:00 PM	4:15 PM	3	0	3	0	0	0	0	3	0	4	5	0	18
4:15 PM	4:30 PM	3	0	5	0	0	0	0	6	2	4	8	0	28
4:30 PM	4:45 PM	2	0	6	0	0	0	0	2	3	3	7	0	23
4:45 PM	5:00 PM	1	0	4	0	0	0	0	5	1	1	4	0	16
5:00 PM	5:15 PM	1	1	7	0	0	0	0	10	2	5	6	0	32
5:15 PM	5:30 PM	1	0	4	0	0	0	0	5	1	0	4	4	19
5:30 PM	5:45 PM	1	0	4	1	0	0	0	6	2	5	9	0	28
5:45 PM	6:00 PM	2	0	4	0	0	0	0	6	0	6	5	1	24
Total for:	4:00 PM	5:00 PM	9	0	18	0	0	0	0	16	6	12	24	0	85
Total for:	5:00 PM	6:00 PM	5	1	19	1	0	0	0	27	5	16	24	5	103
Tota Peak Hour:	5:00 PM	6:00 PM	5	1	19	1	0	0	0	27	5	16	24	5	103
Overall PHF:	0.80														

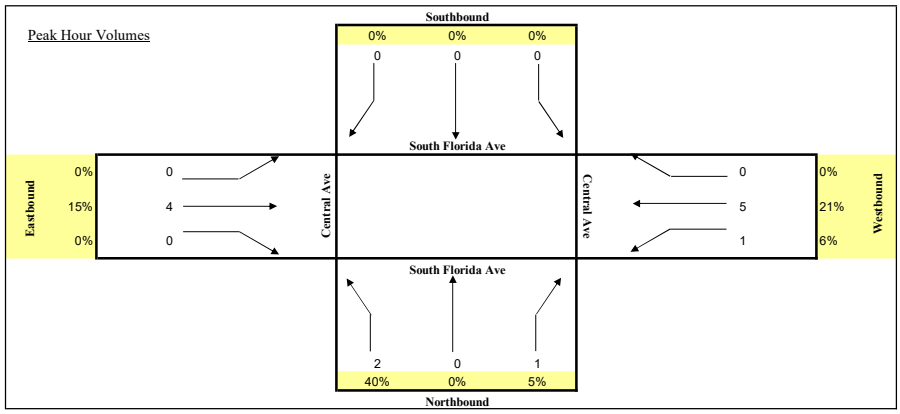


TURNING MOVEMENT COUNT ANALYSIS

TRUCKS

Intersection (N/S): South Florida Ave
Intersection (E/W): Central Ave
Date: 7/19/2023

		South Florida Ave			South Florida Ave			Central Ave			Central Ave			
		NB			SB			EB			WB			
Start	End	R	T	L	R	T	L	R	T	L	R	T	L	TOTAL
4:00 PM	4:15 PM	0	0	0	0	0	0	0	0	0	1	1	0	2
4:15 PM	4:30 PM	1	0	0	0	0	0	0	0	0	1	2	0	4
4:30 PM	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	5:00 PM	1	0	0	0	0	0	0	2	0	1	1	0	5
5:00 PM	5:15 PM	0	0	1	0	0	0	0	0	0	0	1	0	2
5:15 PM	5:30 PM	1	0	0	0	0	0	0	2	0	0	1	0	4
5:30 PM	5:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
5:45 PM	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total for:	4:00 PM	5:00 PM	2	0	0	0	0	0	0	2	0	3	4	0	11
Total for:	5:00 PM	6:00 PM	1	0	1	0	0	0	0	2	0	0	4	0	8
Tota Peak Hour:	4:45 PM	5:45 PM	2	0	1	0	0	0	0	4	0	1	5	0	13
Overall PHF:	0.65														

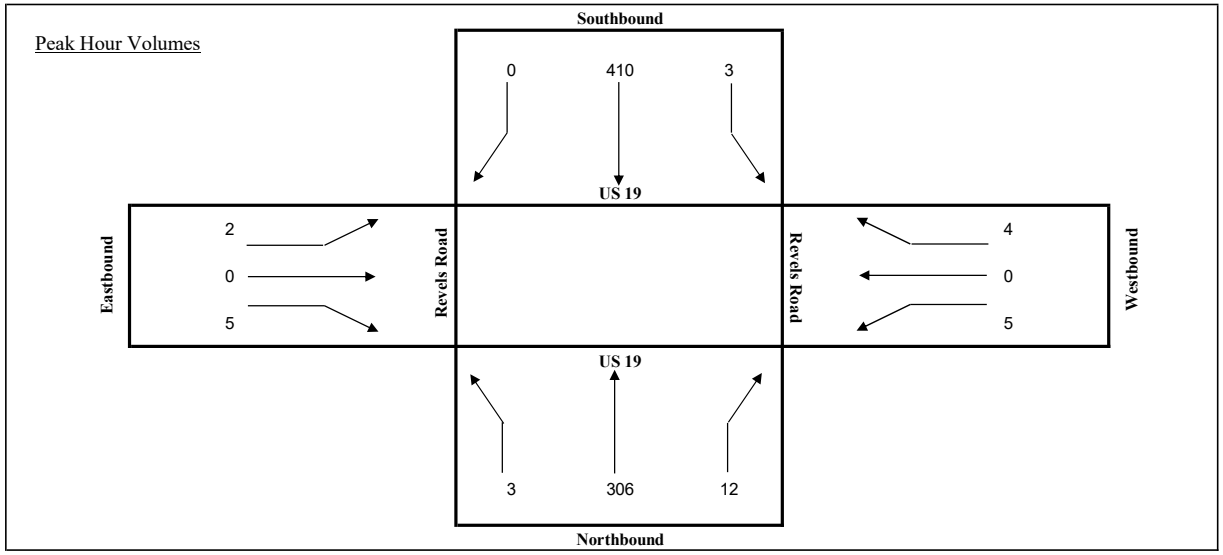


TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

Intersection (N/S): US 19
Intersection (E/W): Revels Road
Date: 7/19/2023

			US 19 NB			US 19 SB			Revels Road EB			Revels Road WB			
Start	End	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
7:00 AM	7:15 AM	3	80	1	0	74	2	0	0	0	3	0	2	165
7:15 AM	7:30 AM	2	60	1	1	94	1	1	0	0	0	1	0	161
7:30 AM	7:45 AM	1	72	0	1	107	0	0	0	2	1	0	1	185
7:45 AM	8:00 AM	1	97	5	0	100	0	0	0	2	2	0	1	208
8:00 AM	8:15 AM	0	71	2	2	110	0	2	0	0	2	0	2	191
8:15 AM	8:30 AM	1	66	5	0	93	0	0	0	1	0	0	0	166
8:30 AM	8:45 AM	0	58	1	0	60	1	1	0	2	4	0	2	129
8:45 AM	9:00 AM	0	57	3	1	63	2	0	0	1	1	0	2	130
Total for:	7:00 AM	8:00 AM	7	309	7	2	375	3	1	0	4	6	1	4	719
Total for:	8:00 AM	9:00 AM	1	252	11	3	326	3	3	0	4	7	0	6	616
Tota Peak Hour:	7:30 AM	8:30 AM	3	306	12	3	410	0	2	0	5	5	0	4	750
Overall PHF:	0.90														

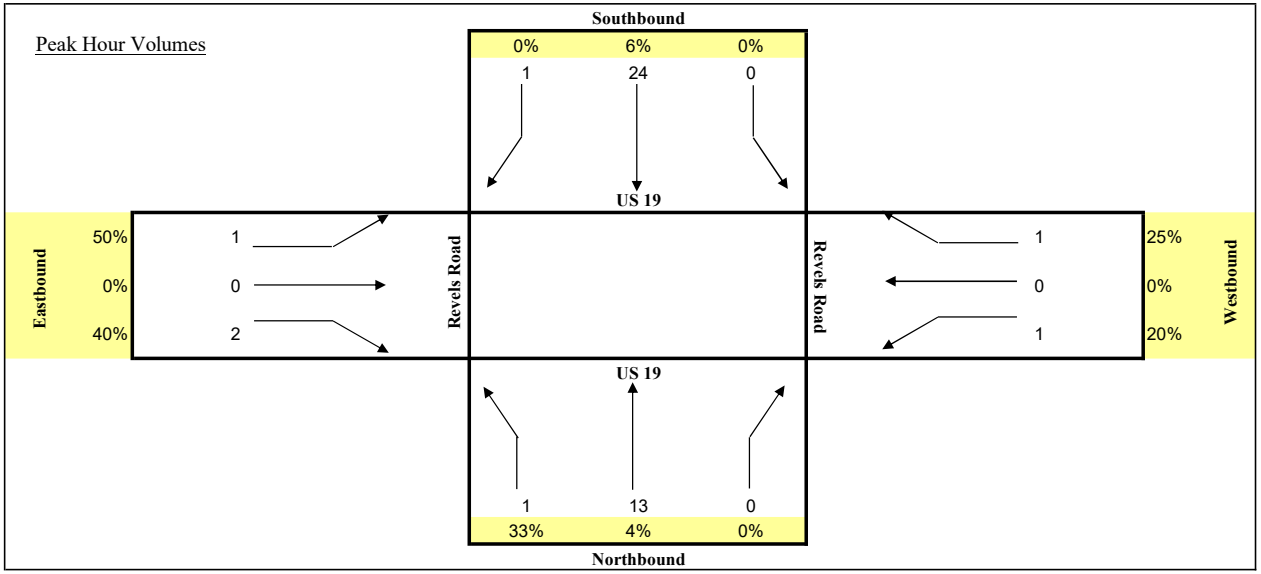


TURNING MOVEMENT COUNT ANALYSIS

TRUCKS

Intersection (N/S): US 19
Intersection (E/W): Revels Road
Date: 7/19/2023

		US 19 NB			US 19 SB			Revels Road EB			Revels Road WB			
Start	End	R	T	L	R	T	L	R	T	L	R	T	L	TOTAL
7:00 AM	7:15 AM	1	3	0	0	5	0	0	0	0	0	0	0	9
7:15 AM	7:30 AM	0	1	0	0	6	0	0	0	0	0	0	0	7
7:30 AM	7:45 AM	0	2	0	0	5	0	0	0	0	0	0	0	7
7:45 AM	8:00 AM	1	6	0	0	3	0	0	0	0	0	0	1	11
8:00 AM	8:15 AM	0	1	0	0	8	0	0	0	0	0	0	0	9
8:15 AM	8:30 AM	0	3	0	0	6	0	0	0	1	0	0	0	10
8:30 AM	8:45 AM	0	3	0	0	7	1	1	0	1	1	0	0	14
8:45 AM	9:00 AM	0	1	0	0	3	1	0	0	0	0	0	0	5
Total for:	7:00 AM	8:00 AM	2	12	0	0	19	0	0	0	0	0	0	1	34
Total for:	8:00 AM	9:00 AM	0	8	0	0	24	2	1	0	2	1	0	0	38
Tota Peak Hour:	7:45 AM	8:45 AM	1	13	0	0	24	1	1	0	2	1	0	1	44
Overall PHF:	0.79														

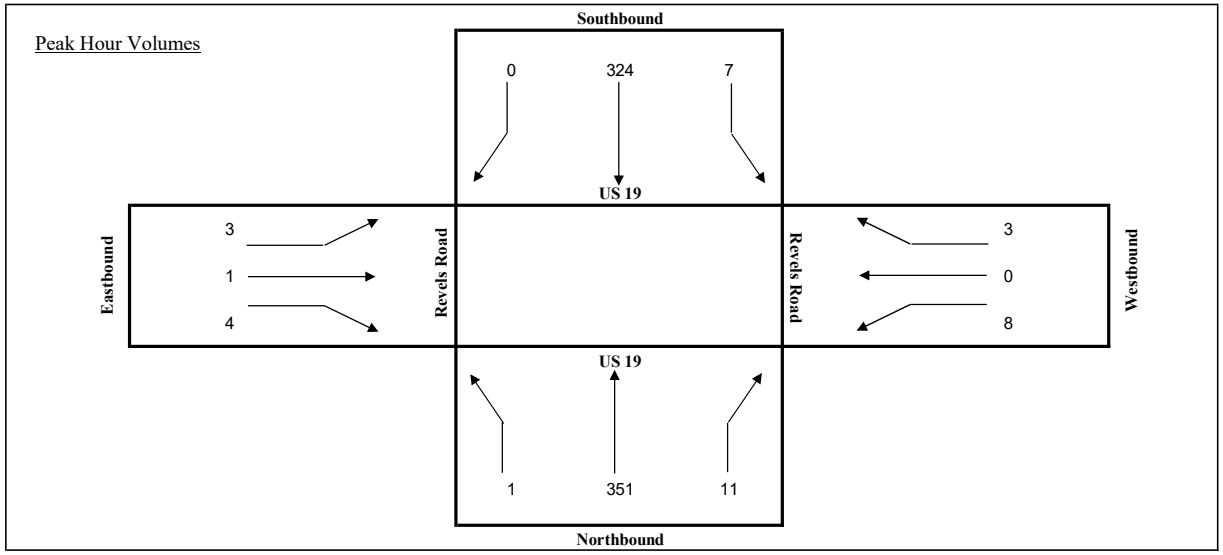


TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

Intersection (N/S): US 19
Intersection (E/W): Revels Road
Date: 7/19/2023

			US 19 NB			US 19 SB			Revels Road EB			Revels Road WB			
Start	End		L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
4:00 PM	4:15 PM		2	89	6	5	61	3	1	0	0	1	1	2	171
4:15 PM	4:30 PM		0	76	3	0	74	1	1	0	1	3	0	1	160
4:30 PM	4:45 PM		1	78	1	2	88	0	0	0	1	2	0	0	173
4:45 PM	5:00 PM		0	93	6	1	91	0	0	0	0	2	0	2	195
5:00 PM	5:15 PM		0	88	3	2	70	0	1	0	2	2	0	0	168
5:15 PM	5:30 PM		0	92	1	2	75	0	2	1	1	2	0	1	177
5:30 PM	5:45 PM		0	92	2	1	70	0	0	0	1	0	0	0	166
5:45 PM	6:00 PM		0	86	3	0	72	0	1	0	0	2	0	1	165
Total for:	4:00 PM	5:00 PM	3	336	16	8	314	4	2	0	2	8	1	5	699
Total for:	5:00 PM	6:00 PM	0	358	9	5	287	0	4	1	4	6	0	2	676
Tota Peak Hour:	4:30 PM	5:30 PM	1	351	11	7	324	0	3	1	4	8	0	3	713
Overall PHF:	0.91														

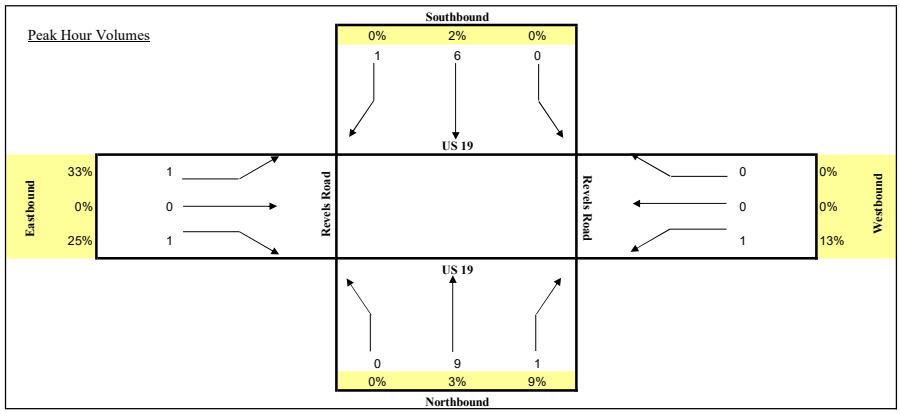


TURNING MOVEMENT COUNT ANALYSIS

TRUCKS

Intersection (N/S): US 19
Intersection (E/W): Revels Road
Date: 7/19/2023

		US 19 NB			US 19 SB			Revels Road EB			Revels Road WB			
Start	End	R	T	L	R	T	L	R	T	L	R	T	L	TOTAL
4:00 PM	4:15 PM	0	1	0	0	1	1	0	0	0	0	0	0	3
4:15 PM	4:30 PM	0	4	1	0	2	0	1	0	0	0	0	0	8
4:30 PM	4:45 PM	0	1	0	0	0	0	0	0	1	1	0	0	3
4:45 PM	5:00 PM	0	3	0	0	3	0	0	0	0	0	0	0	6
5:00 PM	5:15 PM	0	2	0	0	1	0	0	0	0	0	0	0	3
5:15 PM	5:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
5:30 PM	5:45 PM	0	5	0	0	2	0	0	0	0	0	0	0	7
5:45 PM	6:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
Total for:	4:00 PM	5:00 PM	0	9	1	0	6	1	1	0	1	1	0	0	20
Total for:	5:00 PM	6:00 PM	0	9	0	0	4	0	0	0	0	0	0	0	13
Tota Peak Hour:	4:00 PM	5:00 PM	0	9	1	0	6	1	1	0	1	1	0	0	20
Overall PHF:	0.63														

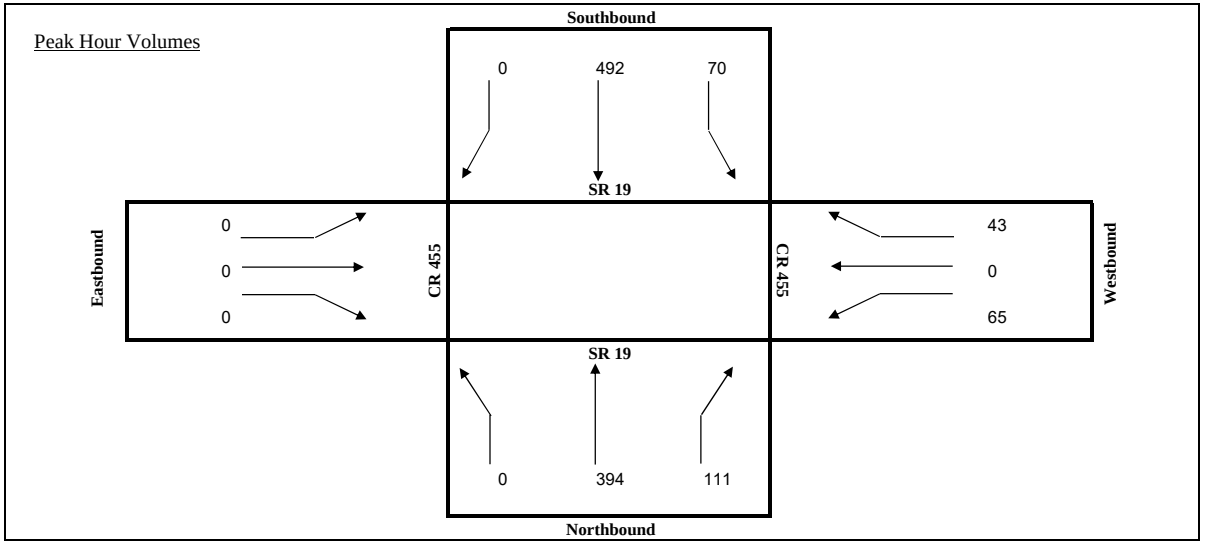


TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

Intersection (N/S): SR 19
Intersection (E/W): CR 455
Date: 1/24/2023

			SR 19 NB			SR 19 SB			CR 455 EB			CR 455 WB			
Start	End	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
7:00 AM	7:15 AM	0	92	15	11	131	0	0	0	0	7	0	4	260
7:15 AM	7:30 AM	0	93	23	16	144	0	0	0	0	9	0	6	291
7:30 AM	7:45 AM	0	111	27	21	105	0	0	0	0	13	0	11	288
7:45 AM	8:00 AM	0	91	26	20	124	0	0	0	0	17	0	12	290
8:00 AM	8:15 AM	0	99	35	13	119	0	0	0	0	26	0	14	306
8:15 AM	8:30 AM	0	93	29	18	98	0	0	0	0	22	0	11	271
8:30 AM	8:45 AM	0	74	27	11	94	0	0	0	0	22	0	12	240
8:45 AM	9:00 AM	0	81	22	9	94	0	0	0	0	17	0	9	232
Total for:	7:00 AM	8:00 AM	0	387	91	68	504	0	0	0	0	46	0	33	1129
Total for:	8:00 AM	9:00 AM	0	347	113	51	405	0	0	0	0	87	0	46	1049
Tota Peak Hour:	7:15 AM	8:15 AM	0	394	111	70	492	0	0	0	0	65	0	43	1175
Overall PHF:	0.96														

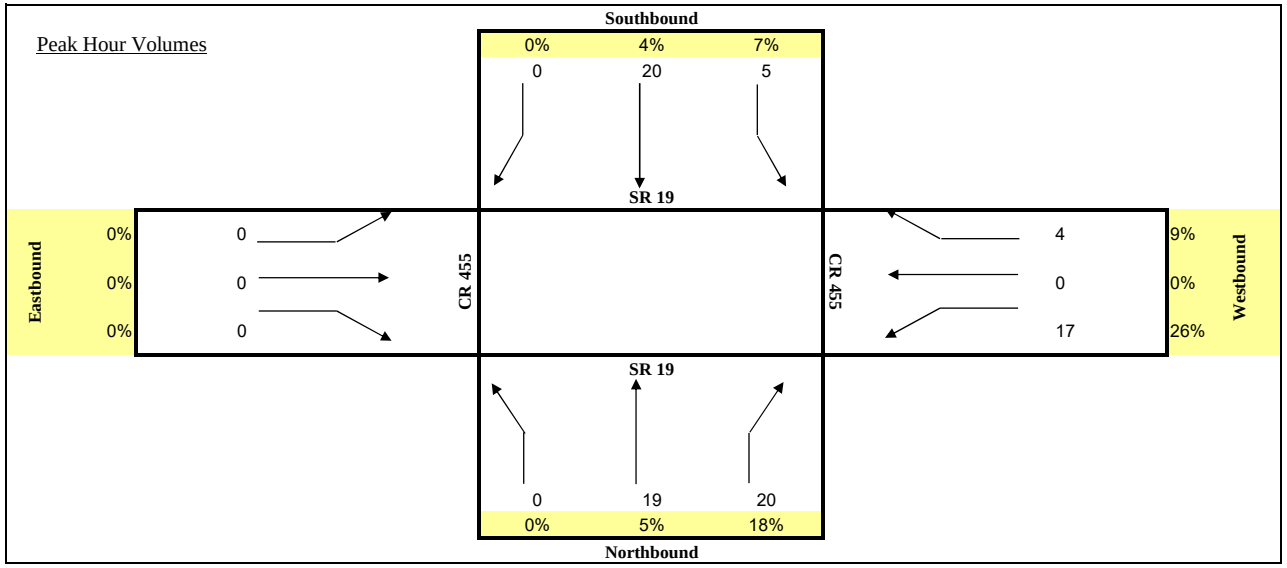


TURNING MOVEMENT COUNT ANALYSIS

TRUCKS

Intersection (N/S): SR 19
Intersection (E/W): CR 455
Date: 1/24/2023

		SR 19 NB			SR 19 SB			CR 455 EB			CR 455 WB			
Start	End	R	T	L	R	T	L	R	T	L	R	T	L	TOTAL
7:00 AM	7:15 AM	0	3	3	0	7	0	0	0	0	2	0	1	16
7:15 AM	7:30 AM	0	6	1	1	8	0	0	0	0	2	0	0	18
7:30 AM	7:45 AM	0	7	7	3	5	0	0	0	0	3	0	2	27
7:45 AM	8:00 AM	0	3	2	1	3	0	0	0	0	1	0	0	10
8:00 AM	8:15 AM	0	6	5	0	5	0	0	0	0	5	0	1	22
8:15 AM	8:30 AM	0	3	6	3	6	0	0	0	0	3	0	2	23
8:30 AM	8:45 AM	0	3	6	1	5	0	0	0	0	6	0	0	21
8:45 AM	9:00 AM	0	7	3	1	4	0	0	0	0	3	0	1	19
Total for:	7:00 AM	8:00 AM	0	19	13	5	23	0	0	0	0	8	0	3	71
Total for:	8:00 AM	9:00 AM	0	19	20	5	20	0	0	0	0	17	0	4	85
Tota Peak Hour:	8:00 AM	9:00 AM	0	19	20	5	20	0	0	0	0	17	0	4	85
Overall PHF:	0.92														

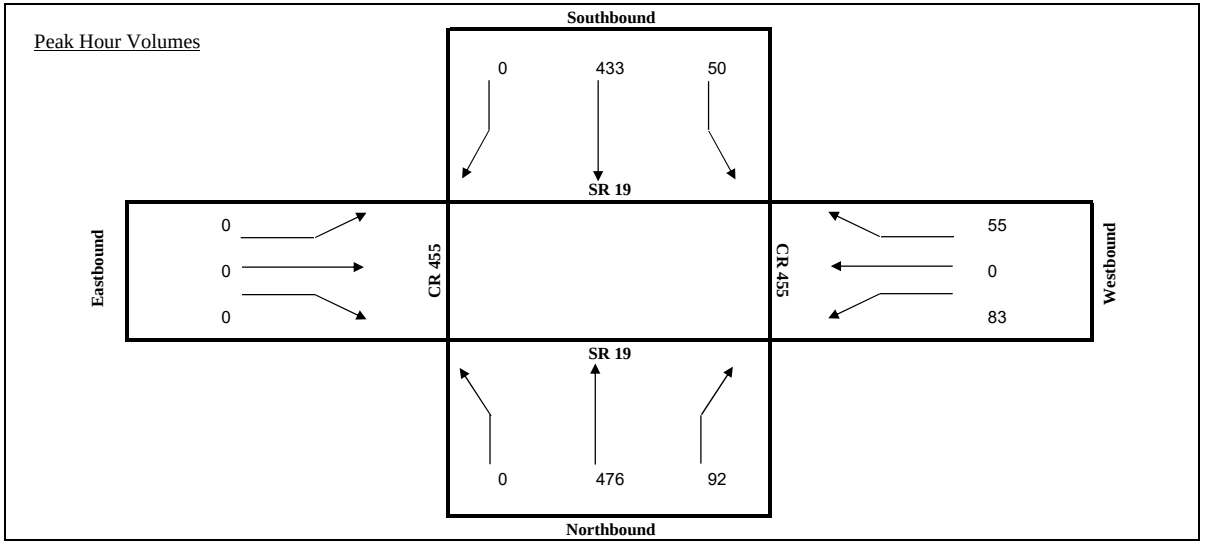


TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

Intersection (N/S): SR 19
Intersection (E/W): CR 455
Date: 1/24/2023

			SR 19 NB			SR 19 SB			CR 455 EB			CR 455 WB			
Start	End	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
4:00 PM	4:15 PM	0	97	20	6	117	0	0	0	0	18	0	14	272
4:15 PM	4:30 PM	0	111	22	9	109	0	0	0	0	22	0	11	284
4:30 PM	4:45 PM	0	114	25	13	108	0	0	0	0	19	0	16	295
4:45 PM	5:00 PM	0	118	22	9	108	0	0	0	0	25	0	13	295
5:00 PM	5:15 PM	0	131	21	14	104	0	0	0	0	18	0	10	298
5:15 PM	5:30 PM	0	113	24	14	113	0	0	0	0	21	0	16	301
5:30 PM	5:45 PM	0	96	28	17	94	0	0	0	0	17	0	19	271
5:45 PM	6:00 PM	0	87	21	10	102	0	0	0	0	21	0	12	253
Total for:	4:00 PM	5:00 PM	0	440	89	37	442	0	0	0	0	84	0	54	1146
Total for:	5:00 PM	6:00 PM	0	427	94	55	413	0	0	0	0	77	0	57	1123
Tota Peak Hour:	4:30 PM	5:30 PM	0	476	92	50	433	0	0	0	0	83	0	55	1189
Overall PHF:	0.99														

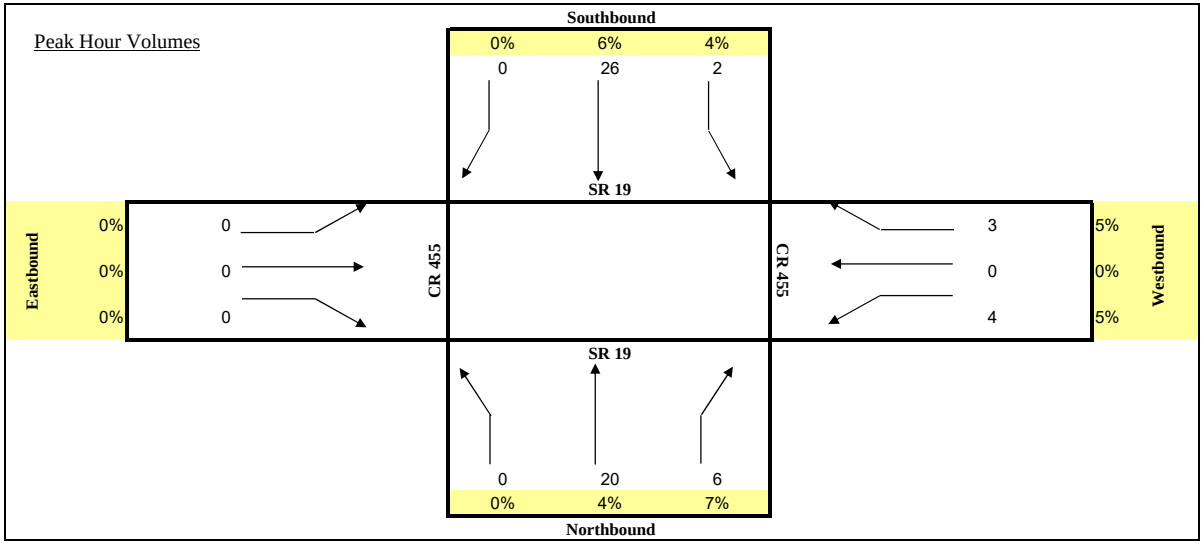


TURNING MOVEMENT COUNT ANALYSIS

TRUCKS

Intersection (N/S): SR 19
Intersection (E/W): CR 455
Date: 1/24/2023

		SR 19 NB			SR 19 SB			CR 455 EB			CR 455 WB			
Start	End	R	T	L	R	T	L	R	T	L	R	T	L	TOTAL
4:00 PM	4:15 PM	0	6	3	0	7	0	0	0	0	1	0	1	18
4:15 PM	4:30 PM	0	5	0	1	7	0	0	0	0	1	0	1	15
4:30 PM	4:45 PM	0	7	2	1	4	0	0	0	0	0	0	0	14
4:45 PM	5:00 PM	0	2	1	0	8	0	0	0	0	2	0	1	14
5:00 PM	5:15 PM	0	4	3	1	2	0	0	0	0	0	0	0	10
5:15 PM	5:30 PM	0	3	1	0	7	0	0	0	0	1	0	0	12
5:30 PM	5:45 PM	0	0	4	1	1	0	0	0	0	0	0	2	8
5:45 PM	6:00 PM	0	0	1	0	5	0	0	0	0	1	0	1	8
Total for:	4:00 PM	5:00 PM	0	20	6	2	26	0	0	0	0	4	0	3	61
Total for:	5:00 PM	6:00 PM	0	7	9	2	15	0	0	0	0	2	0	3	38
Tota Peak Hour:	4:00 PM	5:00 PM	0	20	6	2	26	0	0	0	0	4	0	3	61
Overall PHF:	0.85														



2022 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
CATEGORY: 1100 LAKE COUNTYWIDE

MOCF: 0.95

WEEK	DATES	SF	PSCF
1	01/01/2022 - 01/01/2022	0.99	1.04
2	01/02/2022 - 01/08/2022	1.01	1.06
3	01/09/2022 - 01/15/2022	1.03	1.08
4	01/16/2022 - 01/22/2022	1.02	1.07
5	01/23/2022 - 01/29/2022	1.00	1.05
* 6	01/30/2022 - 02/05/2022	0.98	1.03
* 7	02/06/2022 - 02/12/2022	0.97	1.02
* 8	02/13/2022 - 02/19/2022	0.95	1.00
* 9	02/20/2022 - 02/26/2022	0.95	1.00
*10	02/27/2022 - 03/05/2022	0.94	0.99
*11	03/06/2022 - 03/12/2022	0.94	0.99
*12	03/13/2022 - 03/19/2022	0.93	0.98
*13	03/20/2022 - 03/26/2022	0.94	0.99
*14	03/27/2022 - 04/02/2022	0.95	1.00
*15	04/03/2022 - 04/09/2022	0.95	1.00
*16	04/10/2022 - 04/16/2022	0.96	1.01
*17	04/17/2022 - 04/23/2022	0.97	1.02
*18	04/24/2022 - 04/30/2022	0.98	1.03
19	05/01/2022 - 05/07/2022	0.99	1.04
20	05/08/2022 - 05/14/2022	0.99	1.04
21	05/15/2022 - 05/21/2022	1.00	1.05
22	05/22/2022 - 05/28/2022	1.01	1.06
23	05/29/2022 - 06/04/2022	1.02	1.07
24	06/05/2022 - 06/11/2022	1.03	1.08
25	06/12/2022 - 06/18/2022	1.04	1.09
26	06/19/2022 - 06/25/2022	1.05	1.11
27	06/26/2022 - 07/02/2022	1.05	1.11
28	07/03/2022 - 07/09/2022	1.06	1.12
29	07/10/2022 - 07/16/2022	1.06	1.12
30	07/17/2022 - 07/23/2022	1.06	1.12
31	07/24/2022 - 07/30/2022	1.05	1.11
32	07/31/2022 - 08/06/2022	1.05	1.11
33	08/07/2022 - 08/13/2022	1.04	1.09
34	08/14/2022 - 08/20/2022	1.04	1.09
35	08/21/2022 - 08/27/2022	1.05	1.11
36	08/28/2022 - 09/03/2022	1.06	1.12
37	09/04/2022 - 09/10/2022	1.07	1.13
38	09/11/2022 - 09/17/2022	1.08	1.14
39	09/18/2022 - 09/24/2022	1.05	1.11
40	09/25/2022 - 10/01/2022	1.02	1.07
41	10/02/2022 - 10/08/2022	1.00	1.05
42	10/09/2022 - 10/15/2022	0.97	1.02
43	10/16/2022 - 10/22/2022	0.98	1.03
44	10/23/2022 - 10/29/2022	0.99	1.04
45	10/30/2022 - 11/05/2022	0.99	1.04
46	11/06/2022 - 11/12/2022	1.00	1.05
47	11/13/2022 - 11/19/2022	1.01	1.06
48	11/20/2022 - 11/26/2022	1.00	1.05
49	11/27/2022 - 12/03/2022	1.00	1.05
50	12/04/2022 - 12/10/2022	0.99	1.04
51	12/11/2022 - 12/17/2022	0.99	1.04
52	12/18/2022 - 12/24/2022	1.01	1.06
53	12/25/2022 - 12/31/2022	1.03	1.08

* PEAK SEASON

23-FEB-2023 09:11:22 830UPD 5_1100_PKSEASON.TXT

Appendix E
HCM Analysis Worksheets - Existing Conditions

HCM 6th Signalized Intersection Summary
1: SR 19 & CR 48



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	346	229	316	455	277	98
Future Volume (veh/h)	346	229	316	455	277	98
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1752	1589	1767	1811	1737	1811
Adj Flow Rate, veh/h	357	117	326	0	286	101
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	21	9	6	11	6
Cap, veh/h	390	315	751		564	1114
Arrive On Green	0.23	0.23	0.42	0.00	0.12	0.62
Sat Flow, veh/h	1668	1346	1767	1535	1654	1811
Grp Volume(v), veh/h	357	117	326	0	286	101
Grp Sat Flow(s),veh/h/ln	1668	1346	1767	1535	1654	1811
Q Serve(g_s), s	18.9	6.6	11.8	0.0	8.2	2.1
Cycle Q Clear(g_c), s	18.9	6.6	11.8	0.0	8.2	2.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	390	315	751		564	1114
V/C Ratio(X)	0.91	0.37	0.43		0.51	0.09
Avail Cap(c_a), veh/h	417	336	751		705	1114
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	33.9	29.2	18.4	0.0	11.8	7.1
Incr Delay (d2), s/veh	23.6	0.7	1.8	0.0	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	14.8	3.7	8.6	0.0	5.1	1.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	57.5	29.9	20.3	0.0	12.6	7.3
LnGrp LOS	E	C	C		B	A
Approach Vol, veh/h	474		326	A		387
Approach Delay, s/veh	50.7		20.3			11.2
Approach LOS	D		C			B

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	17.3	45.0		28.6		62.3
Change Period (Y+Rc), s	6.5	6.4		7.3		6.4
Max Green Setting (Gmax), s	18.5	38.6		22.7		38.6
Max Q Clear Time (g_c+I1), s	10.2	13.8		20.9		4.1
Green Ext Time (p_c), s	0.5	1.9		0.3		0.5

Intersection Summary	
HCM 6th Ctrl Delay	29.5
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
1: SR 19 & CR 48



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	434	319	72	353	304	84
Future Volume (veh/h)	434	319	72	353	304	84
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1752	1589	1767	1811	1737	1811
Adj Flow Rate, veh/h	447	210	74	0	313	87
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	21	9	6	11	6
Cap, veh/h	405	327	729		767	1107
Arrive On Green	0.24	0.24	0.41	0.00	0.13	0.61
Sat Flow, veh/h	1668	1346	1767	1535	1654	1811
Grp Volume(v), veh/h	447	210	74	0	313	87
Grp Sat Flow(s),veh/h/ln	1668	1346	1767	1535	1654	1811
Q Serve(g_s), s	22.7	13.1	2.4	0.0	9.5	1.8
Cycle Q Clear(g_c), s	22.7	13.1	2.4	0.0	9.5	1.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	405	327	729		767	1107
V/C Ratio(X)	1.10	0.64	0.10		0.41	0.08
Avail Cap(c_a), veh/h	405	327	729		880	1107
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	35.4	31.8	16.9	0.0	11.2	7.4
Incr Delay (d2), s/veh	76.1	4.3	0.3	0.0	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	25.4	7.8	1.8	0.0	5.8	1.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	111.6	36.1	17.1	0.0	11.5	7.6
LnGrp LOS	F	D	B		B	A
Approach Vol, veh/h	657		74	A		400
Approach Delay, s/veh	87.5		17.1			10.7
Approach LOS	F		B			B

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	18.6	45.0		30.0		63.6
Change Period (Y+Rc), s	6.5	6.4		7.3		6.4
Max Green Setting (Gmax), s	18.5	38.6		22.7		38.6
Max Q Clear Time (g_c+I1), s	11.5	4.4		24.7		3.8
Green Ext Time (p_c), s	0.6	0.4		0.0		0.4

Intersection Summary	
HCM 6th Ctrl Delay	55.7
HCM 6th LOS	E

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	35	3	10	11	1	15	12	377	24	4	428	7
Future Vol, veh/h	35	3	10	11	1	15	12	377	24	4	428	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	12	33	2	2	2	2	38	10	2	42	2	11
Mvmt Flow	36	3	10	11	1	15	12	389	25	4	441	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	887	891	445	885	882	402	448	0	0	414	0	0
Stage 1	453	453	-	426	426	-	-	-	-	-	-	-
Stage 2	434	438	-	459	456	-	-	-	-	-	-	-
Critical Hdwy	7.22	6.83	6.22	7.12	6.52	6.22	4.48	-	-	4.52	-	-
Critical Hdwy Stg 1	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.608	4.297	3.318	3.518	4.018	3.318	2.542	-	-	2.578	-	-
Pot Cap-1 Maneuver	254	251	613	266	285	648	946	-	-	960	-	-
Stage 1	568	521	-	606	586	-	-	-	-	-	-	-
Stage 2	581	529	-	582	568	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	243	245	613	255	278	648	946	-	-	960	-	-
Mov Cap-2 Maneuver	243	245	-	255	278	-	-	-	-	-	-	-
Stage 1	558	518	-	596	576	-	-	-	-	-	-	-
Stage 2	556	520	-	565	565	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.7	15.1	0.3	0.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	946	-	-	278	386	960	-	-
HCM Lane V/C Ratio	0.013	-	-	0.178	0.072	0.004	-	-
HCM Control Delay (s)	8.9	0	-	20.7	15.1	8.8	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0.2	0	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	32	12	13	17	3	14	16	363	21	16	432	40
Future Vol, veh/h	32	12	13	17	3	14	16	363	21	16	432	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	12	33	2	2	2	2	38	10	2	42	2	11
Mvmt Flow	33	12	13	18	3	14	16	374	22	16	445	41

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	924	926	466	927	935	385	486	0	0	396	0	0
Stage 1	498	498	-	417	417	-	-	-	-	-	-	-
Stage 2	426	428	-	510	518	-	-	-	-	-	-	-
Critical Hdwy	7.22	6.83	6.22	7.12	6.52	6.22	4.48	-	-	4.52	-	-
Critical Hdwy Stg 1	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.608	4.297	3.318	3.518	4.018	3.318	2.542	-	-	2.578	-	-
Pot Cap-1 Maneuver	240	239	597	249	265	663	914	-	-	975	-	-
Stage 1	536	496	-	613	591	-	-	-	-	-	-	-
Stage 2	587	535	-	546	533	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	225	228	597	225	253	663	914	-	-	975	-	-
Mov Cap-2 Maneuver	225	228	-	225	253	-	-	-	-	-	-	-
Stage 1	524	485	-	599	577	-	-	-	-	-	-	-
Stage 2	558	523	-	508	521	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.6	17.9	0.4	0.3
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	914	-	-	263	313	975	-	-
HCM Lane V/C Ratio	0.018	-	-	0.223	0.112	0.017	-	-
HCM Control Delay (s)	9	0	-	22.6	17.9	8.8	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	0.4	0.1	-	-

HCM 6th TWSC
3: S Florida Ave & W Central Ave

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	37	12	1	19	1	4	0	3	0	0	0
Future Vol, veh/h	1	37	12	1	19	1	4	0	3	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	46	15	1	24	1	5	0	4	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	25	0	0	61	0	0	83	83	54	85	90	25
Stage 1	-	-	-	-	-	-	56	56	-	27	27	-
Stage 2	-	-	-	-	-	-	27	27	-	58	63	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1589	-	-	1542	-	-	904	807	1013	901	800	1051
Stage 1	-	-	-	-	-	-	956	848	-	990	873	-
Stage 2	-	-	-	-	-	-	990	873	-	954	842	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1589	-	-	1542	-	-	902	805	1013	896	798	1051
Mov Cap-2 Maneuver	-	-	-	-	-	-	902	805	-	896	798	-
Stage 1	-	-	-	-	-	-	955	847	-	989	872	-
Stage 2	-	-	-	-	-	-	989	872	-	950	841	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.3	8.8	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	946	1589	-	-	1542	-	-	-
HCM Lane V/C Ratio	0.009	0.001	-	-	0.001	-	-	-
HCM Control Delay (s)	8.8	7.3	0	-	7.3	0	-	0
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	29	5	17	25	5	5	1	20	1	0	0
Future Vol, veh/h	0	29	5	17	25	5	5	1	20	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	36	6	21	31	6	6	1	25	1	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	37	0	0	42	0	0	115	118	39	128	118	34
Stage 1	-	-	-	-	-	-	39	39	-	76	76	-
Stage 2	-	-	-	-	-	-	76	79	-	52	42	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1574	-	-	1567	-	-	862	772	1033	845	772	1039
Stage 1	-	-	-	-	-	-	976	862	-	933	832	-
Stage 2	-	-	-	-	-	-	933	829	-	961	860	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1574	-	-	1567	-	-	853	761	1033	815	761	1039
Mov Cap-2 Maneuver	-	-	-	-	-	-	853	761	-	815	761	-
Stage 1	-	-	-	-	-	-	976	862	-	933	820	-
Stage 2	-	-	-	-	-	-	920	817	-	936	860	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	2.7	8.8	9.4
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	980	1574	-	-	1567	-	-	815
HCM Lane V/C Ratio	0.033	-	-	-	0.014	-	-	0.002
HCM Control Delay (s)	8.8	0	-	-	7.3	0	-	9.4
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	5	5	0	4	3	324	13	3	435	0
Future Vol, veh/h	2	0	5	5	0	4	3	324	13	3	435	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	8	12	2	10	2
Mvmt Flow	2	0	6	6	0	4	3	360	14	3	483	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	864	869	483	865	862	367	483	0	0	374	0	0
Stage 1	489	489	-	373	373	-	-	-	-	-	-	-
Stage 2	375	380	-	492	489	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	274	290	584	274	293	678	1080	-	-	1184	-	0
Stage 1	561	549	-	648	618	-	-	-	-	-	-	0
Stage 2	646	614	-	558	549	-	-	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	271	288	584	270	291	678	1080	-	-	1184	-	-
Mov Cap-2 Maneuver	271	288	-	270	291	-	-	-	-	-	-	-
Stage 1	559	547	-	645	616	-	-	-	-	-	-	-
Stage 2	639	612	-	551	547	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.3	15	0.1	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT
Capacity (veh/h)	1080	-	-	439	369	1184	-
HCM Lane V/C Ratio	0.003	-	-	0.018	0.027	0.003	-
HCM Control Delay (s)	8.3	-	-	13.3	15	8	0
HCM Lane LOS	A	-	-	B	C	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1	4	8	0	3	1	372	12	7	343	0
Future Vol, veh/h	3	1	4	8	0	3	1	372	12	7	343	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	8	12	2	10	2
Mvmt Flow	3	1	4	9	0	3	1	413	13	8	381	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	820	825	381	822	819	420	381	0	0	426	0	0
Stage 1	397	397	-	422	422	-	-	-	-	-	-	-
Stage 2	423	428	-	400	397	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	294	308	666	293	310	633	1177	-	-	1133	-	0
Stage 1	629	603	-	609	588	-	-	-	-	-	-	0
Stage 2	609	585	-	626	603	-	-	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	290	305	666	288	307	633	1177	-	-	1133	-	-
Mov Cap-2 Maneuver	290	305	-	288	307	-	-	-	-	-	-	-
Stage 1	628	598	-	608	587	-	-	-	-	-	-	-
Stage 2	605	584	-	615	598	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14	16.1	0	0.2
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT
Capacity (veh/h)	1177	-	-	408	338	1133	-
HCM Lane V/C Ratio	0.001	-	-	0.022	0.036	0.007	-
HCM Control Delay (s)	8.1	-	-	14	16.1	8.2	0
HCM Lane LOS	A	-	-	B	C	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-

Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	65	43	394	111	70	492
Future Vol, veh/h	65	43	394	111	70	492
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	590	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	38	15	8	22	9	5
Mvmt Flow	68	45	410	116	73	513

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1069	410	0	0	526	0
Stage 1	410	-	-	-	-	-
Stage 2	659	-	-	-	-	-
Critical Hdwy	6.78	6.35	-	-	4.19	-
Critical Hdwy Stg 1	5.78	-	-	-	-	-
Critical Hdwy Stg 2	5.78	-	-	-	-	-
Follow-up Hdwy	3.842	3.435	-	-	2.281	-
Pot Cap-1 Maneuver	210	614	-	-	1006	-
Stage 1	599	-	-	-	-	-
Stage 2	453	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	189	614	-	-	1006	-
Mov Cap-2 Maneuver	189	-	-	-	-	-
Stage 1	599	-	-	-	-	-
Stage 2	407	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25.1	0	1.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	189	614	1006	-
HCM Lane V/C Ratio	-	-	0.358	0.073	0.072	-
HCM Control Delay (s)	-	-	34.3	11.3	8.9	0
HCM Lane LOS	-	-	D	B	A	A
HCM 95th %tile Q(veh)	-	-	1.5	0.2	0.2	-

Intersection	
Int Delay, s/veh	3.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	83	55	476	92	50	433
Future Vol, veh/h	83	55	476	92	50	433
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	590	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	38	15	8	22	9	5
Mvmt Flow	86	57	496	96	52	451

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1051	496	0	0	592	0
Stage 1	496	-	-	-	-	-
Stage 2	555	-	-	-	-	-
Critical Hdwy	6.78	6.35	-	-	4.19	-
Critical Hdwy Stg 1	5.78	-	-	-	-	-
Critical Hdwy Stg 2	5.78	-	-	-	-	-
Follow-up Hdwy	3.842	3.435	-	-	2.281	-
Pot Cap-1 Maneuver	215	548	-	-	950	-
Stage 1	544	-	-	-	-	-
Stage 2	509	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	199	548	-	-	950	-
Mov Cap-2 Maneuver	199	-	-	-	-	-
Stage 1	544	-	-	-	-	-
Stage 2	472	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	26.7	0	0.9
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	199	548	950	-
HCM Lane V/C Ratio	-	-	0.434	0.105	0.055	-
HCM Control Delay (s)	-	-	36.3	12.3	9	0
HCM Lane LOS	-	-	E	B	A	A
HCM 95th %tile Q(veh)	-	-	2	0.3	0.2	-

Appendix F
ITE Trip Generation Sheets

Single-Family Detached Housing
(210)

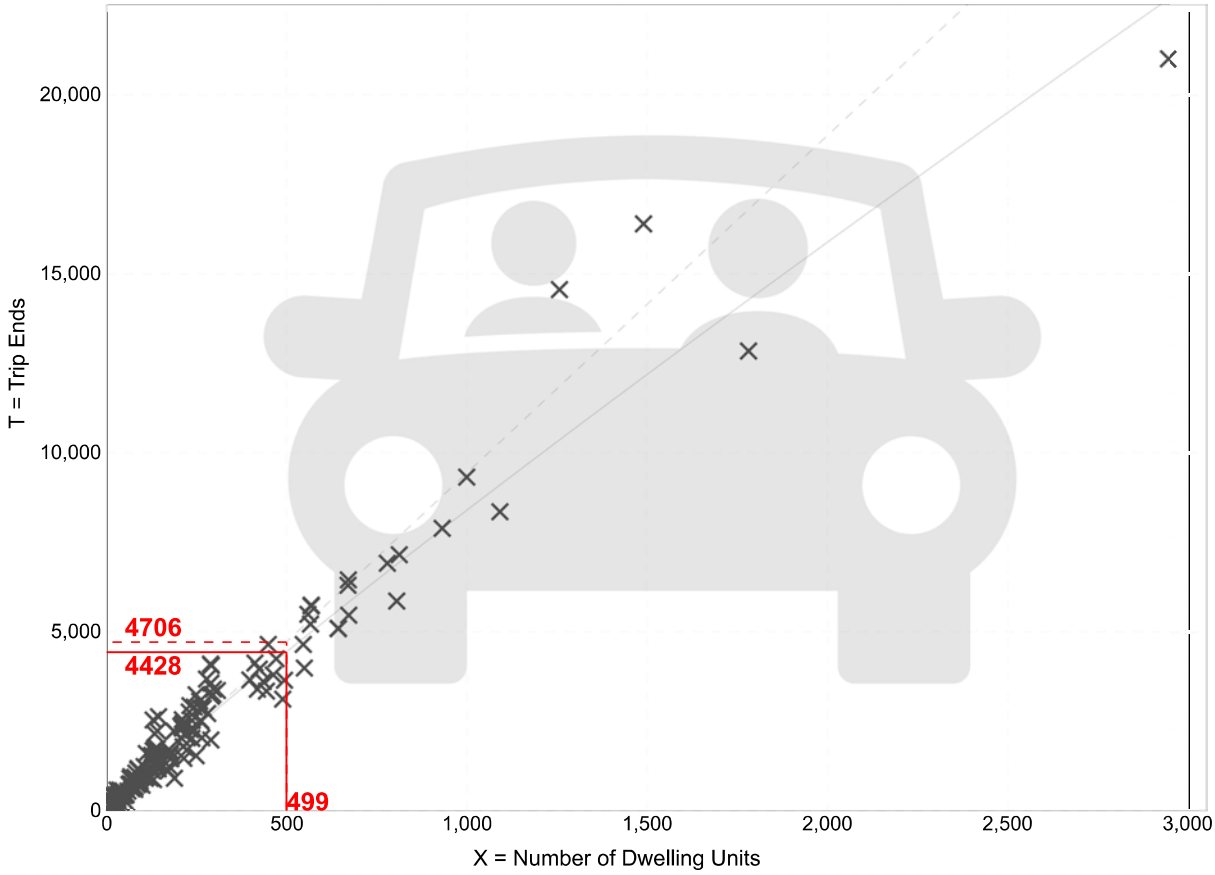
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 174
Avg. Num. of Dwelling Units: 246
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.43	4.45 - 22.61	2.13

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.92 Ln(X) + 2.68 **R^2= 0.95**

Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

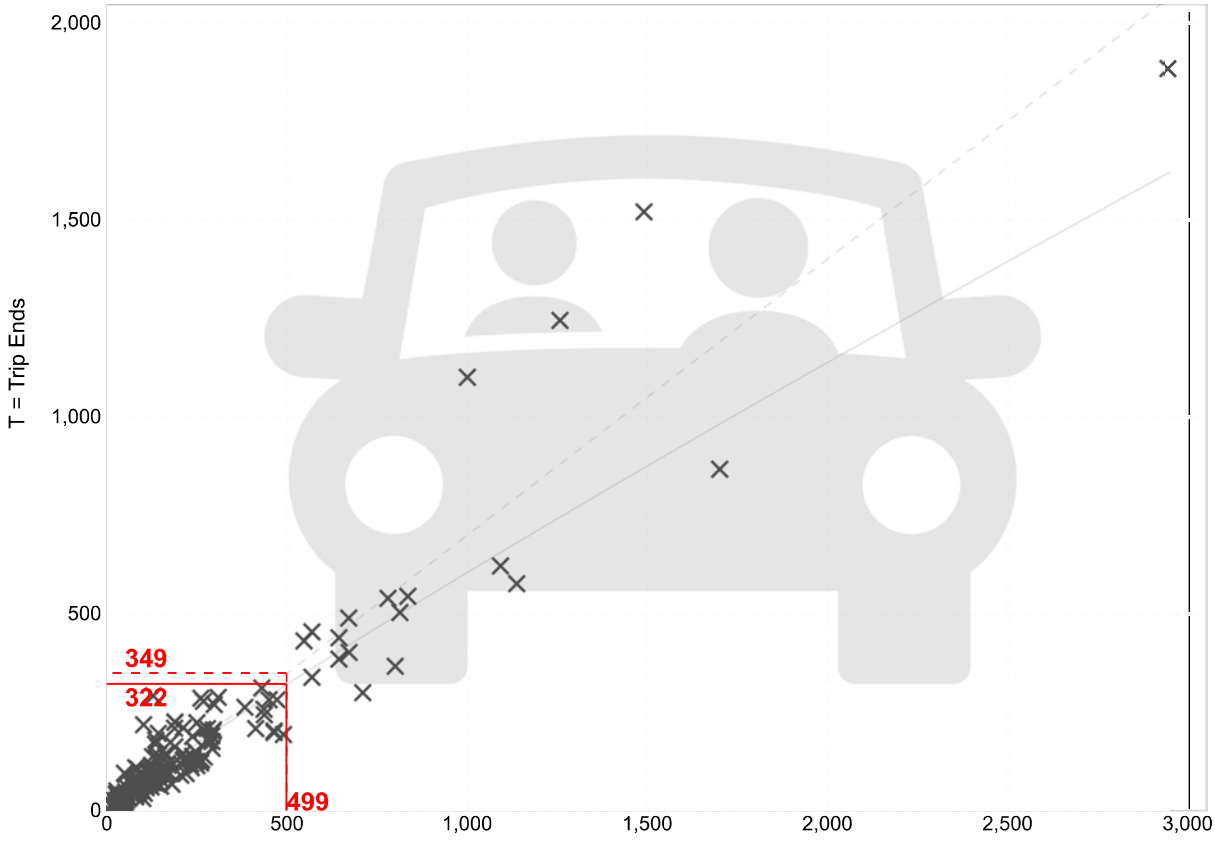
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 192
Avg. Num. of Dwelling Units: 226
Directional Distribution: 25% entering, 75% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.70	0.27 - 2.27	0.24

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.91 Ln(X) + 0.12 **R^2= 0.90**

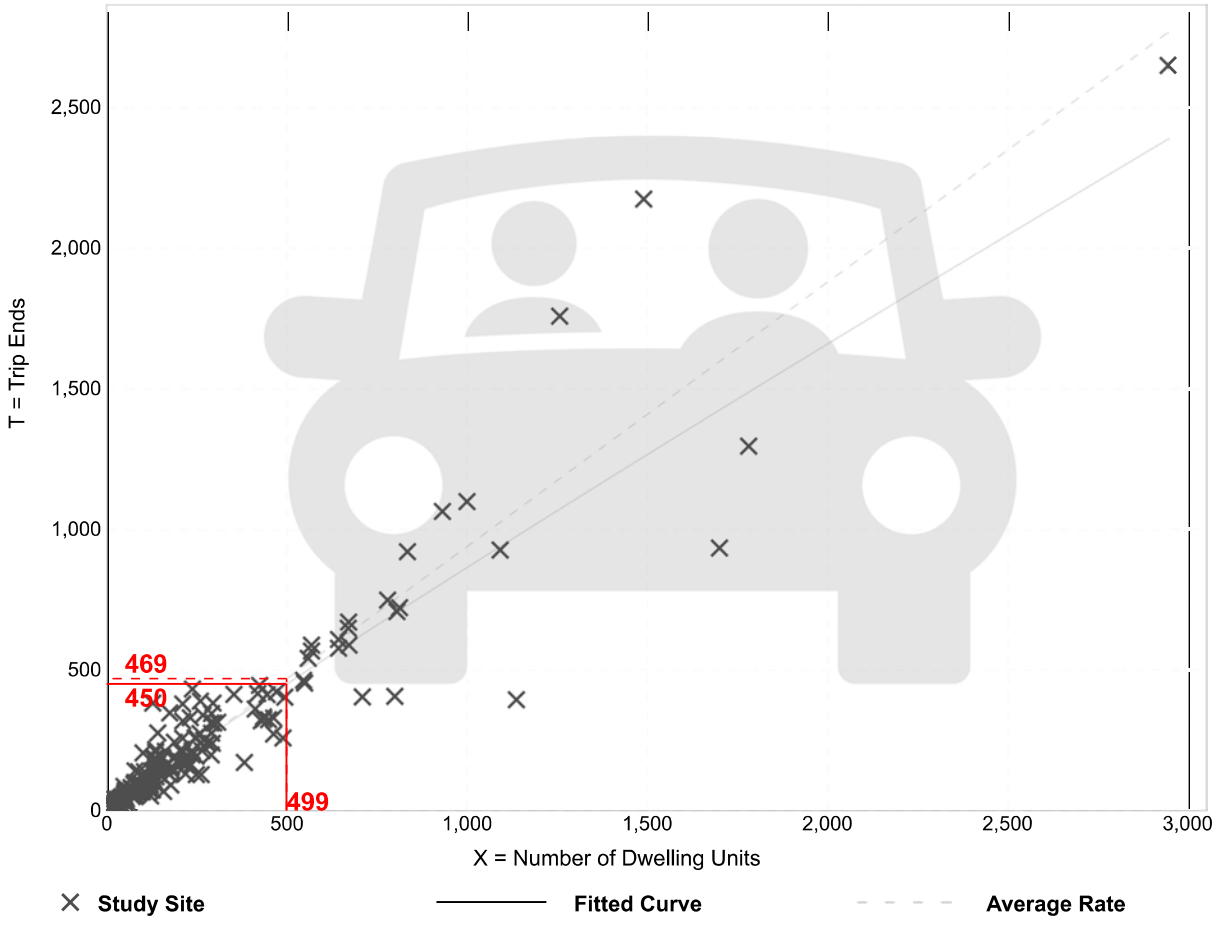
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 208
Avg. Num. of Dwelling Units: 248
Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

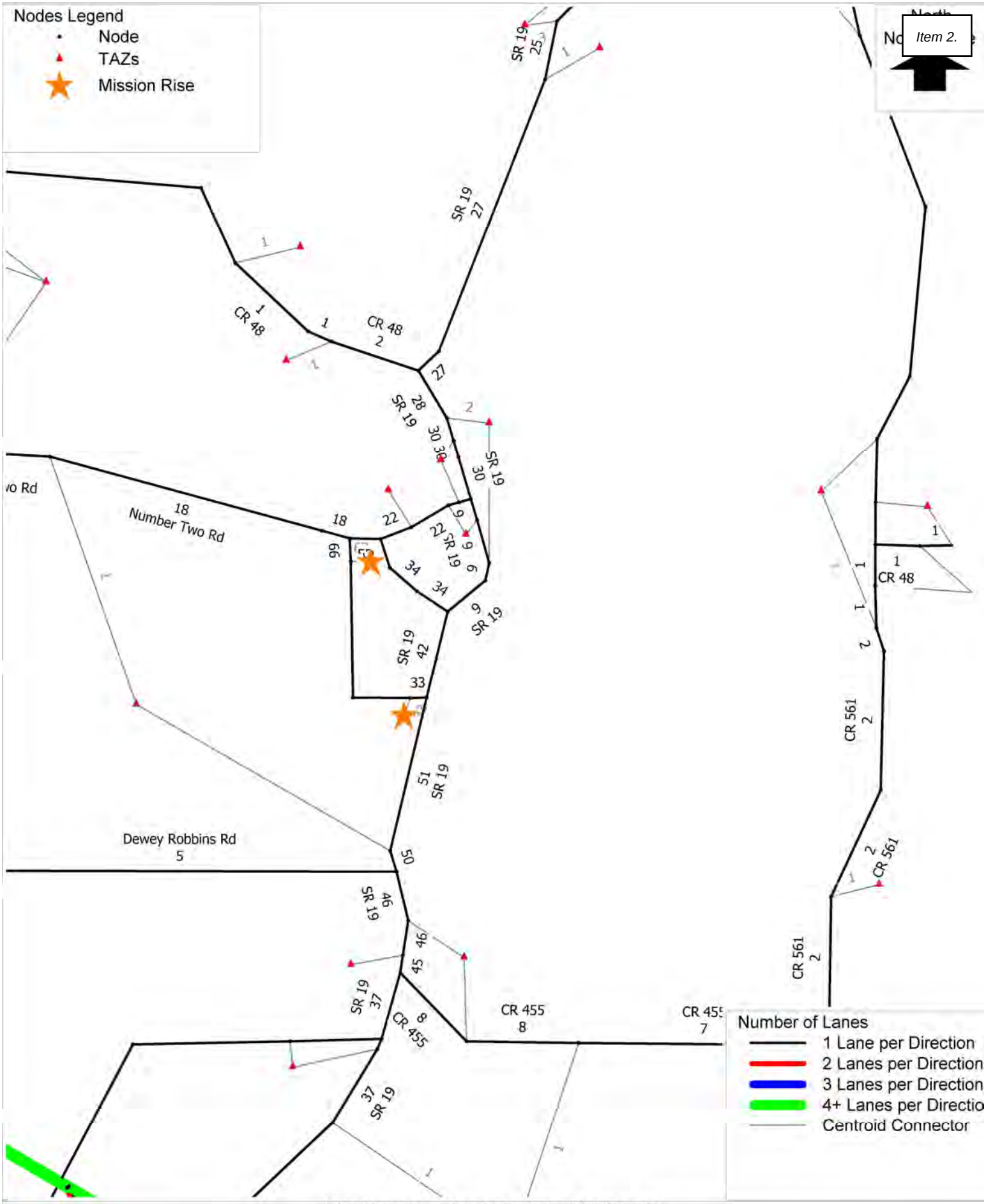
Average Rate	Range of Rates	Standard Deviation
0.94	0.35 - 2.98	0.31

Data Plot and Equation



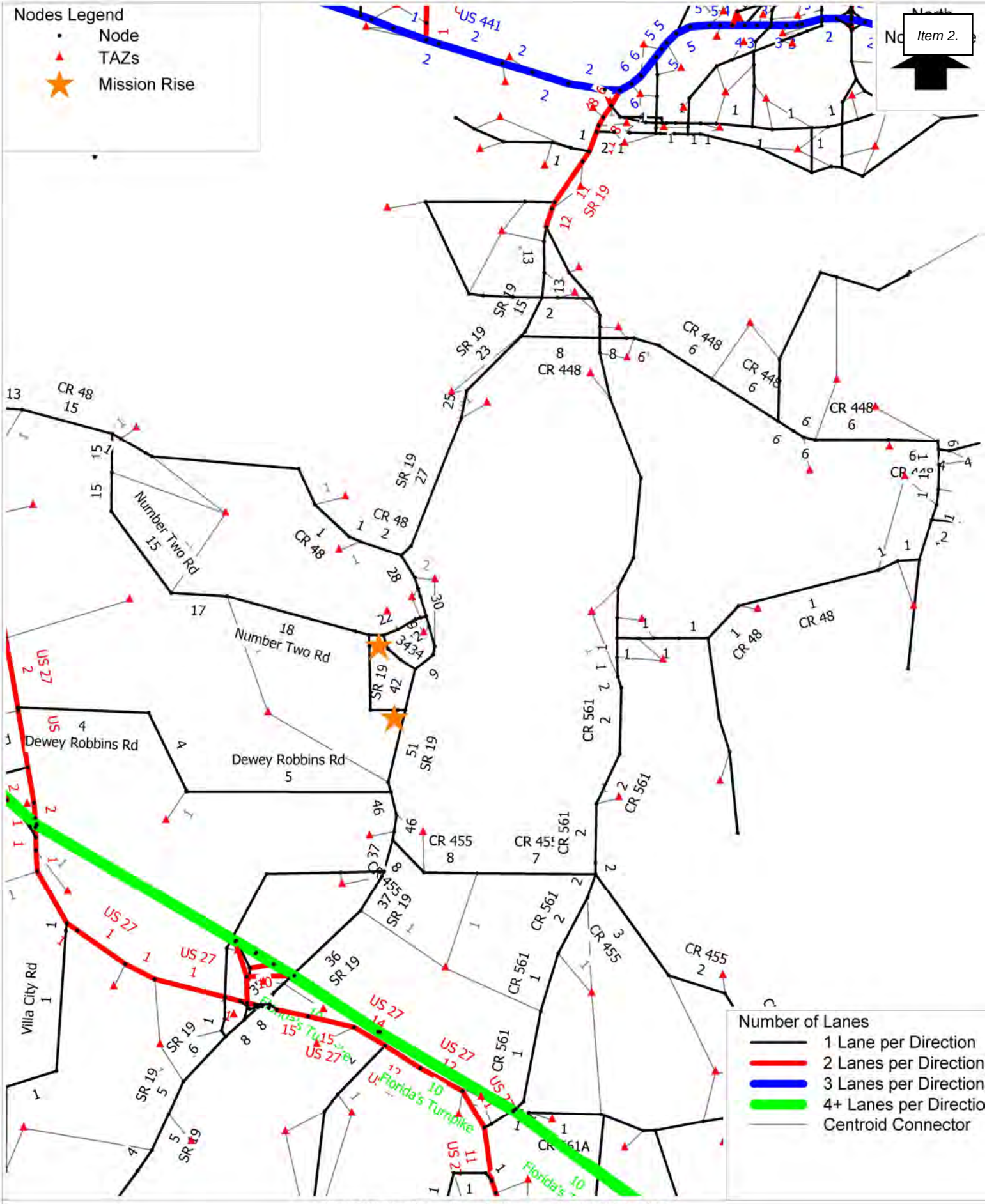
Fitted Curve Equation: Ln(T) = 0.94 Ln(X) + 0.27 **R^2= 0.92**

Appendix G
CFRPM Model Output



23017 Mission Rise - Osceola County, FL TAZ 7676, 7677
Project Distribution
C:\FSUTMS\D5\CFRPM7\Base\CF_2030\P23017\OUTPUT\HWYLOAD_SL_AllDay_A30.NET

cube
(Licensed to Traffic & Mobility Consultants



23017 Mission Rise - Osceola County, FL TAZ 7676, 7677
Project Distribution
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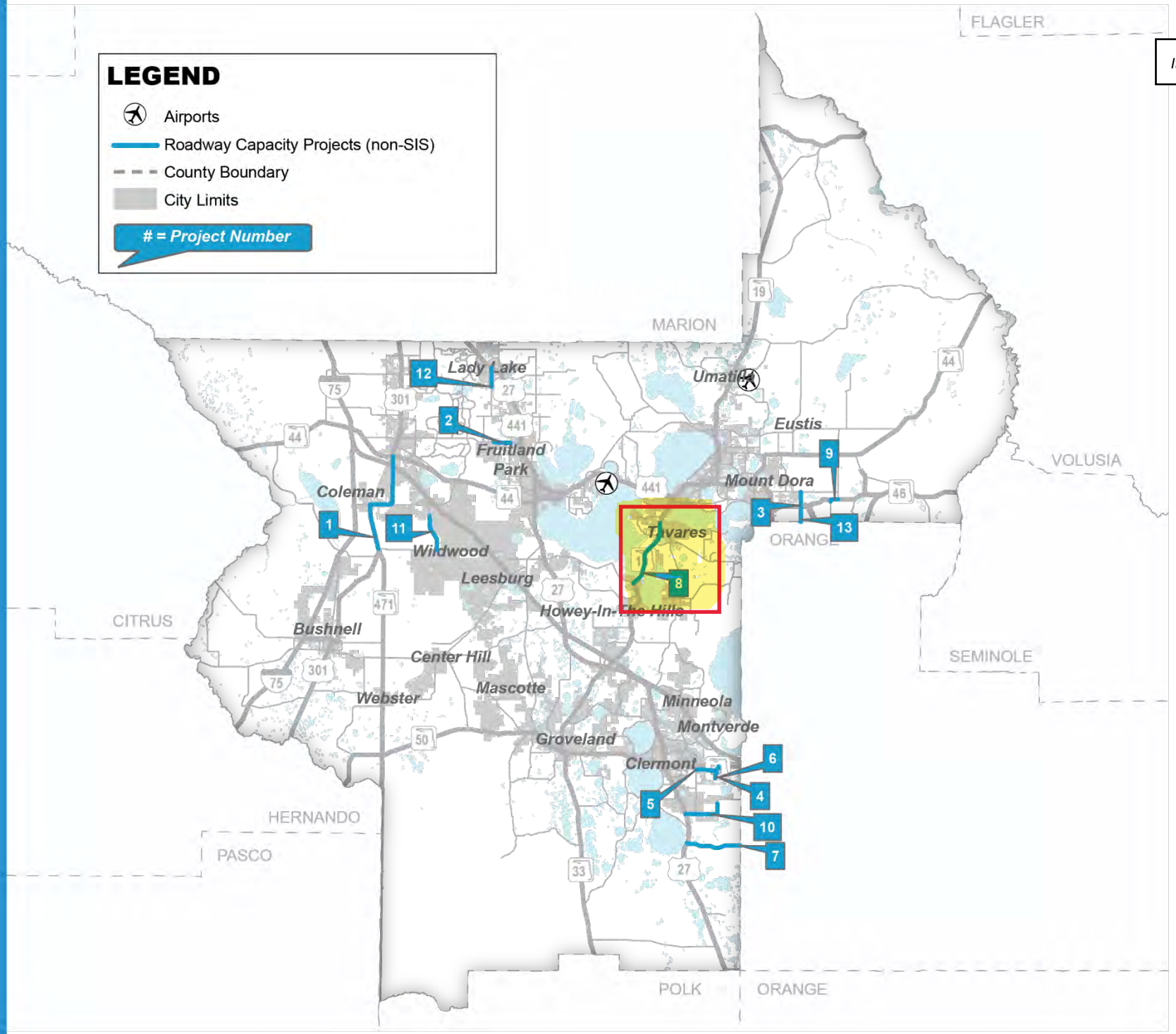
cube
(Licensed to Traffic & Mobility Consultants)

Appendix H
LSMPO TIP and *LSMPO LOPP*

ROADWAY CAPACITY PROJECTS (NON-SIS)



7

Project Description: WELLNESS WAY FROM US-27 TO THE LAKE/ORANGE COUNTY LINE

FM# 4487331

Funding Source(s): Local and State

LRTP Page: PG. 4-12

Work Description: NEW ROAD CONSTRUCTION

Phase	<2023	2023	2024	2025	2026	2027	>2027	Amount Funded
PDE	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
PE	$ -	$ -	$ 3,000,000	$ -	$ -	$ -	$ -	$ 3,000,000
ENV	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
ROW	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
LAR	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
RRU	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CST	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	$ -	$ -	$ 3,000,000	$ -	$ -	$ -	$ -	$ 3,000,000

Responsible Agency: RESPONSIBLE AGENCY NOT AVAILABLE County: LAKE Total Project Cost: $ 3,000,000

8

Project Description: SR 19 FROM CR 48 TO CR 561

FM# 2383191

Funding Source(s): State and Federal

LRTP Page: PG. 4-12

Work Description: ADD LANES & RECONSTRUCT

Phase	<2023	2023	2024	2025	2026	2027	>2027	Amount Funded
PDE	$ 1,161,015	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,161,015
PE	$ 4,141,718	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,141,718
ENV	$ 492,196	$ 200,000	$ -	$ -	$ -	$ -	$ -	$ 692,196
ROW	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
LAR	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
RRU	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CST	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	$ 5,794,929	$ 200,000	$ -	$ -	$ -	$ -	$ -	$ 5,994,929

Responsible Agency: FDOT County: LAKE Total Project Cost: $ 5,994,929

Lake-Sumter MPO
Metropolitan Planning Organization

2022 List of Priority Projects

Lake~Sumter Metropolitan Planning Organization

Adopted June 22, 2022

Table 3 – Roadway Capacity (Non-SIS) Project Priorities

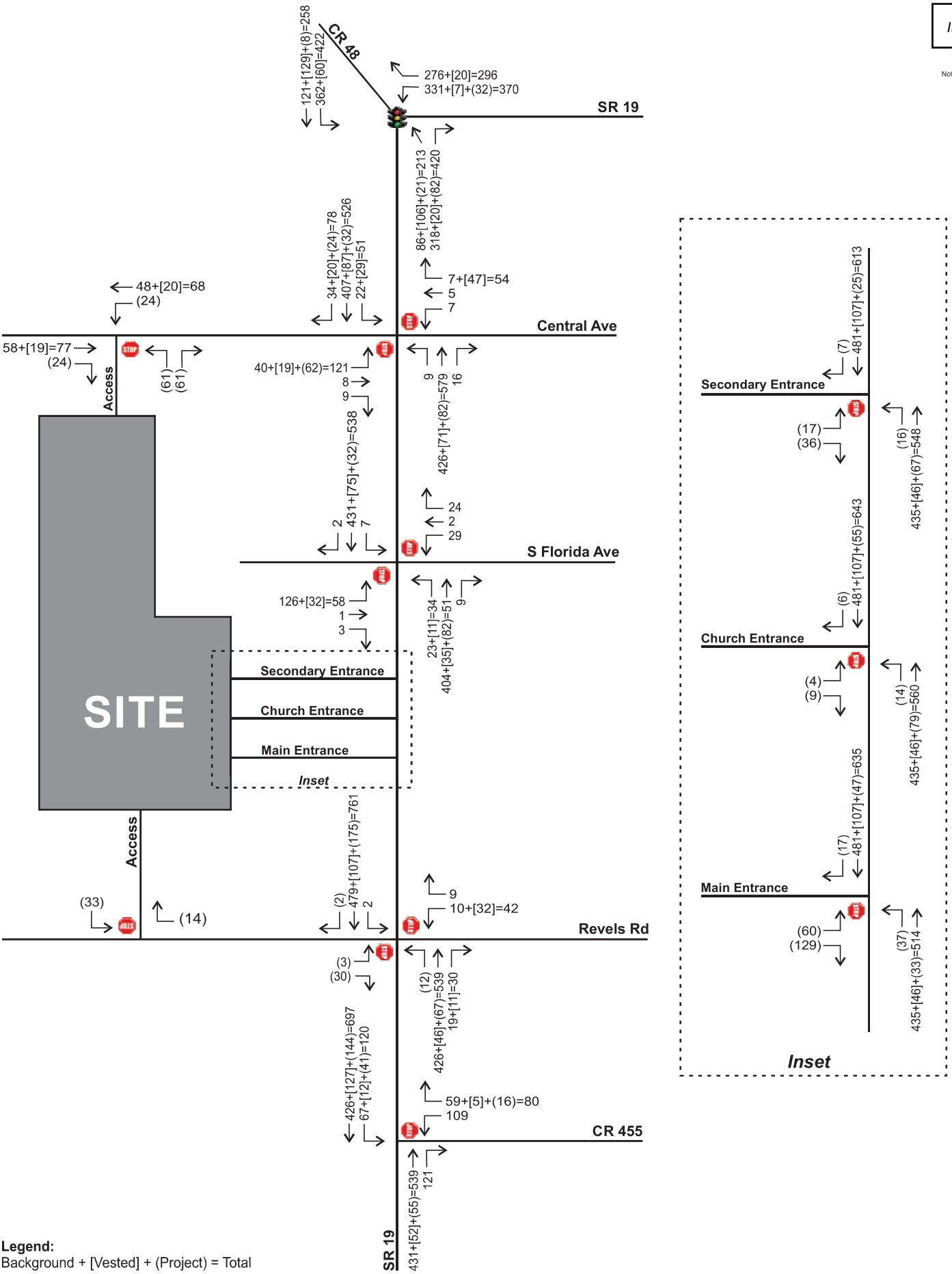
Capacity Rank	Sponsor/ Location	FM #	Project Name	From	To	Description	Performance Measure(s)	Proposed Phase	Proposed Phase FY	Proposed Phase Cost	Programmed Phase(s)	Programmed Phase FY	CMP Congested Corridors 2021 Analysis (for informational purposes)
1	FDOT/ Sumter County	430132-1	SR 35 (US 301)	SR 44	CR 470	Road Widening	System Performance	ROW	2026/27	$27,000,000	Design	2022/23 2025/26	**Extremely Congested (2021)**
2	FDOT/ Lake County	409870-1	SR 44 (CR44B)	US 441	SR44	Road Widening	System Performance; Safety	CST	2024/25	$23,701,500	ROW		**Extremely Congested (2021)**
3	Sumter County	447931-1	Marsh Bend Trail (CR 501)	Corbin Trail	Central Parkway	Roadway Improvements	System Performance	CST	2023/24	$1,275,400	CST	2022/23	**Operating at Acceptable Level of Service**
4	FDOT/ Lake County	238394-3	SR 500 (US 441)	Perkins Street	SR 44	Road Widening	System Performance	CST	2023/24	$13,794,537			**Congested (2026)**
5	FDOT/ Lake County	429356-1	SR 500 (US 441)	SR 44	N of SR 46	Road Widening	System Performance	CST	2023/24	$22,233,040	ROW	2021/22	**Not Congested**
6	Lake County/ Lady Lake	439665-1	Rolling Acres Road	West Lady Lake Ave.	Griffin Ave	Road Widening	System Performance	Design	2026/27	$2,000,000	PD&E	2025/26	**Extremely Congested (2026)**
7	Lake County	441710-1	Round Lake Road	Wolfbranch Rd	North of SR 44	New Roadway/ Alignment	System Performance	CST	2024/25	$30,000,000	Design		**Operating at Acceptable Level of Service**
8	Lake County	441779-1	CR 455 (Hartle Rd)	Lost Lake Rd.	Hartwood Marsh Rd.	Roadway Extension/ Widening	System Performance	CST	2024/25	$19,800,000	ROW	2022/23	**New Roadway, Not on CMP Network**
9	Lake County	-	CR 455 (Hartle Rd)	Hartwood Marsh Rd	CFX Lake-Orange Connector	Road Extension	System Performance	Design	2023/24	$3,000,000	PDE		**New Roadway, Not on CMP Network**

Capacity Rank	Sponsor/ Location	FM #	Project Name	From	To	Description	Performance Measure(s)	Proposed Phase	Proposed Phase FY	Proposed Phase Cost	Programmed Phase(s)	Programmed Phase FY	CMP Congested Corridors 2021 Analysis (for informational purposes)
10	Lake County	-	Citrus Grove Phase II	West of Scrub Jay Lane	Grassy Lake Rd	New Alignment/Widening	System Performance	CST	2024/25	$10,000,000	ROW		**New Roadway, Not on CMP Network**
11	Lake County	-	Citrus Grove Phase V	Turnpike	Blackstill Lake Dr	New Roadway/Alignment	System Performance	CST	2024/25	$5,000,000	Design		**New Roadway, Not on CMP Network**
12	Lake County	441393-1	CR 437 Realignment	Oak Tree Dr	SR 46	New Alignment/Widening	System Performance	CST	2024/25	$4,000,000	Design		**New Roadway, Not on CMP Network**
13	Lake County	-	Hartwood Marsh	Regency Hills Dr	Innovation Lane	Road Widening	System Performance	Design	2023/24	$750,000	PDE		**Approaching Congestion**
14	Lake County	-	CR 455 Paved Shoulder	CR 561	CR 561A	Paved Shoulder	System Performance	Design	2023/24	$700,000			**Operating at Acceptable Level of Service**
15	FDOT/Lake County	-	CR 470/CR 48	Meggison Road at The Villages	US 27	Road Widening	System Performance	Design	2023/24	$4,000,000			**Congested (2026)**
16	Lake County/ Mount Dora	-	Vista Ridge Drive/Wolf Branch Innovation Boulevard	Niles Rd	Round Lake Road	New Roadway	System Performance	Design	2023/24	$1,000,000	Study		**New Roadway, Not on CMP Network**
17	Lake County	-	CR 561A	CR 561	CR 455	Realignment	System Performance; Safety	PDE	2023/24	$750,000	Study		**Operating at Acceptable Level of Service**
18	FDOT/ Lake County	-	SR 44	Orange Ave	CR 46A	Road Widening	System Performance	PDE	2023/24	$TBD			**Congested (2021)**
19	FDOT	-	SR 19	SR 50	CR 455	Road Widening	System Performance	PDE	2023/24	$TBD			**Congested (2021)**

Capacity Rank	Sponsor/ Location	FM #	Project Name	From	To	Description	Performance Measure(s)	Proposed Phase	Proposed Phase FY	Proposed Phase Cost	Programmed Phase(s)	Programmed Phase FY	CMP Congested Corridors 2021 Analysis (for informational purposes)
20	Lake County	-	Woodlea Road	SR 19	End	Road Widening	System Performance	Design Update/ ROW	2023/24	$3,000,000			**Operating at Acceptable Level of Service**
21	FDOT/ Lake County	238319-1	SR 19	Howey Bridge	CR 561	Road Widening	System Performance	CST	2023/24	$35,000,000			**Extremely Congested (2021)**
22	Lake County	-	Hancock Road	Hartwood Marsh Rd	Wellness Way	New Road	System Performance	CST	2025/26	$20,000,000			**New Roadway, Not on CMP Network**
23	Lake County	-	SR 46A	SR 44	SR 46	Road Widening	System Performance	CST	2023/24	$TBD	Design		**Congested (2021)**

Top 20 Project

Appendix I
Vested Trips Data

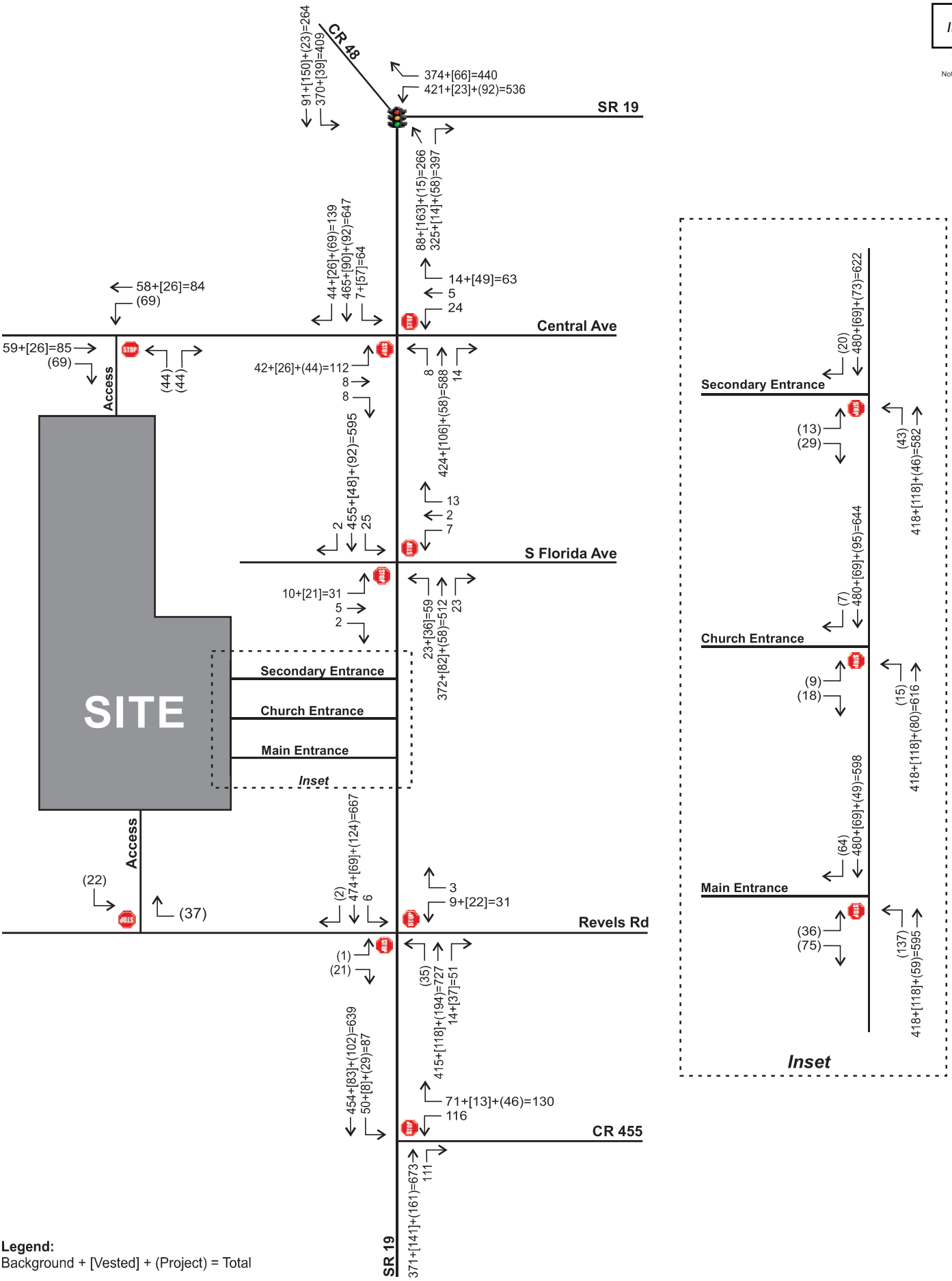


Legend:
Background + [Vested] + (Project) = Total

Projected AM Peak Intersection Volumes

The Reserve at Howey in the Hills
21082

Figure 5

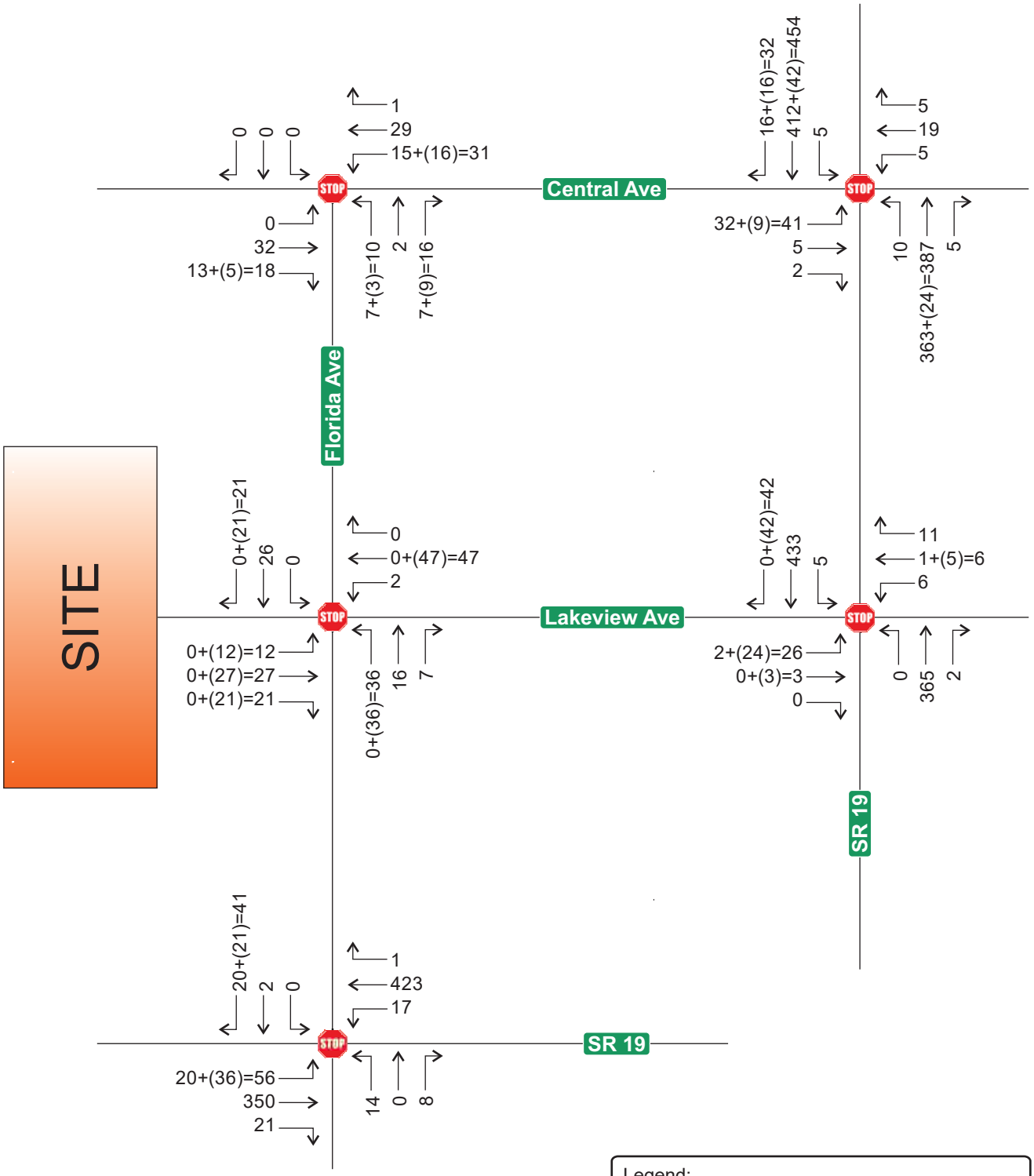


Legend:
Background + [Vested] + (Project) = Total

Projected PM Peak Intersection Volumes

The Reserve at Howey in the Hills
21082

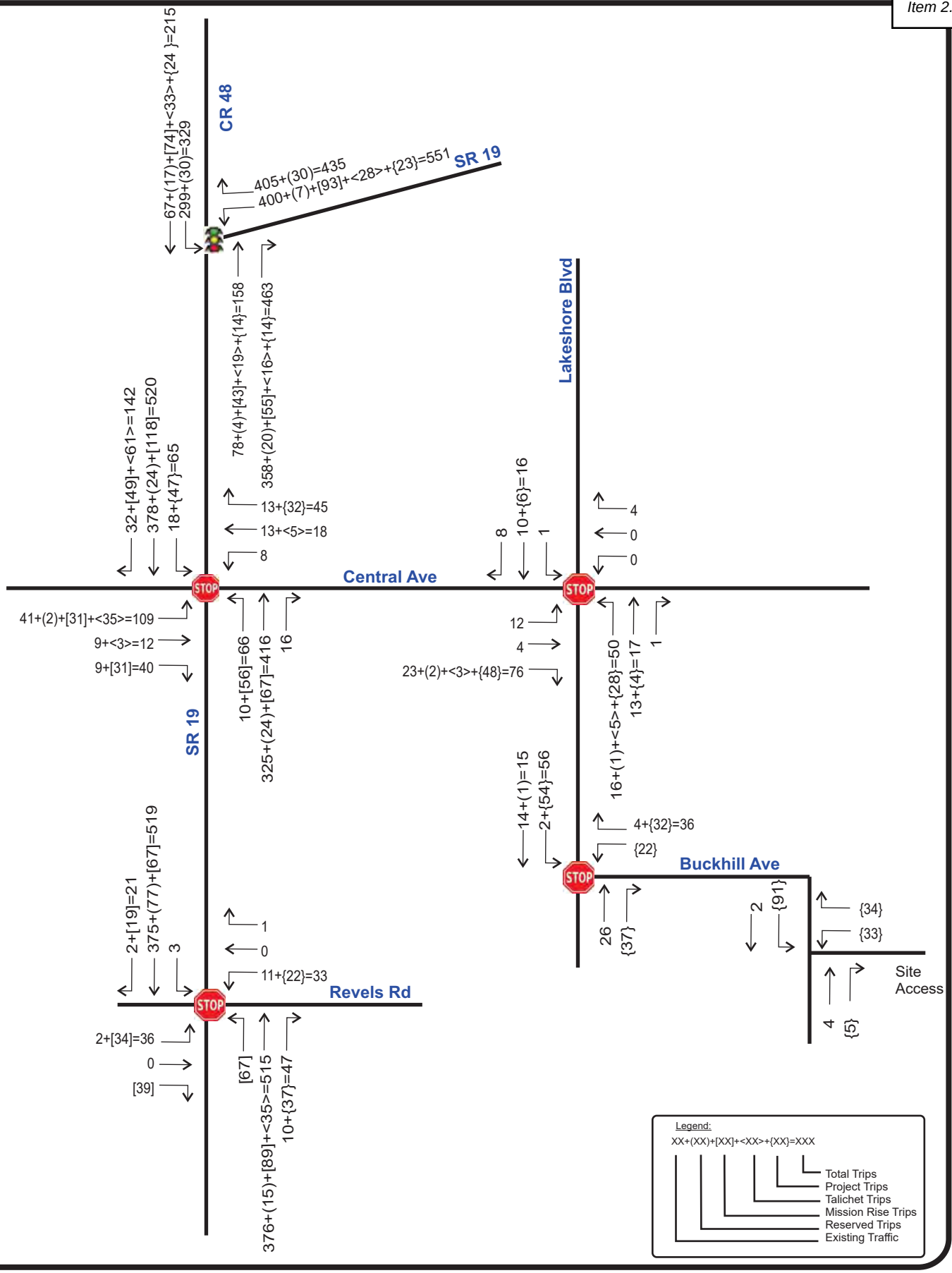
Figure



*Schematic drawing. Not to scale.
** Any +/- 1 project trip discrepancy is due to rounding

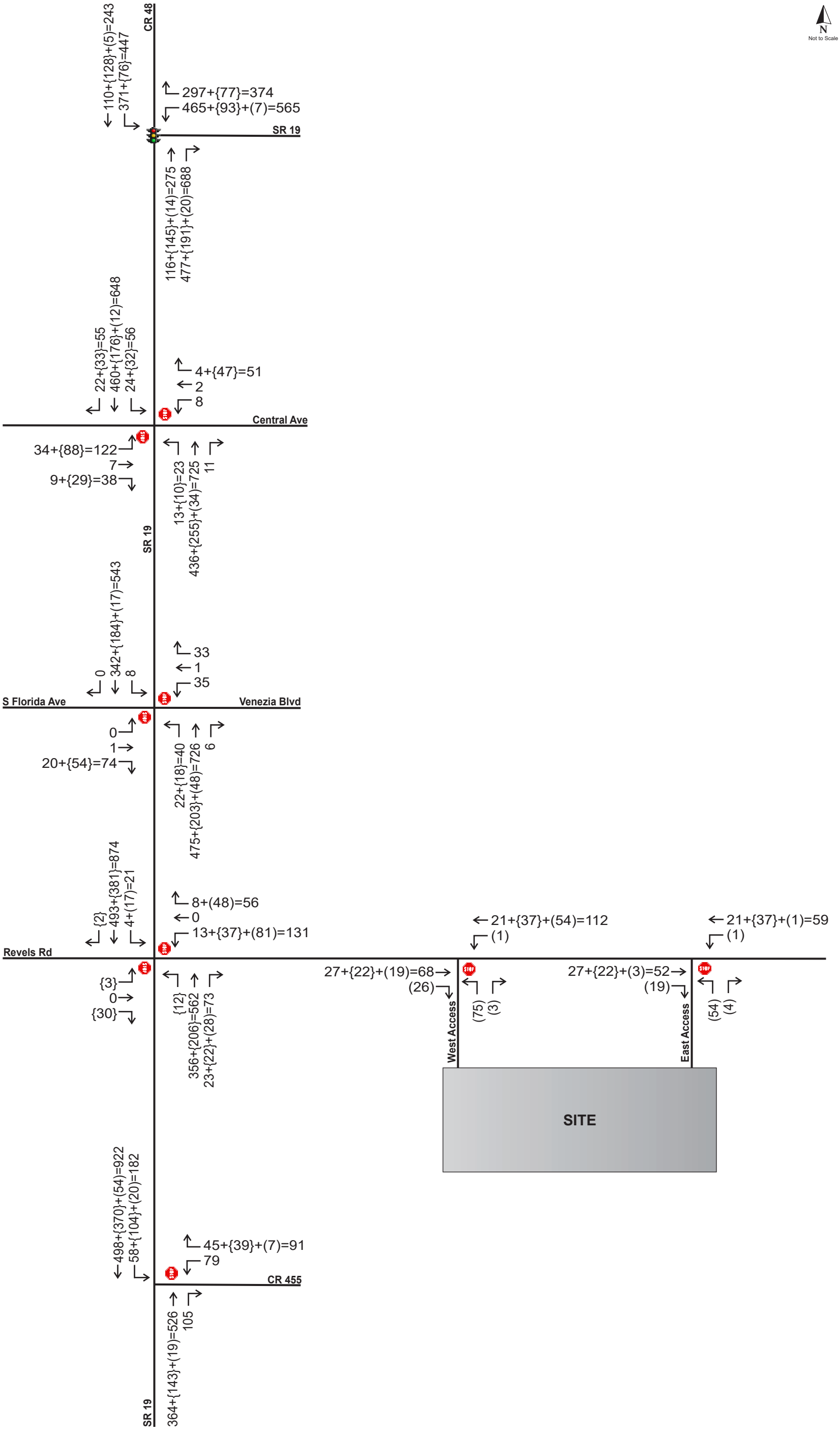
Talichet PUD
Project № 5045
Figure 5

Projected P.M. Peak Hour Traffic Volumes

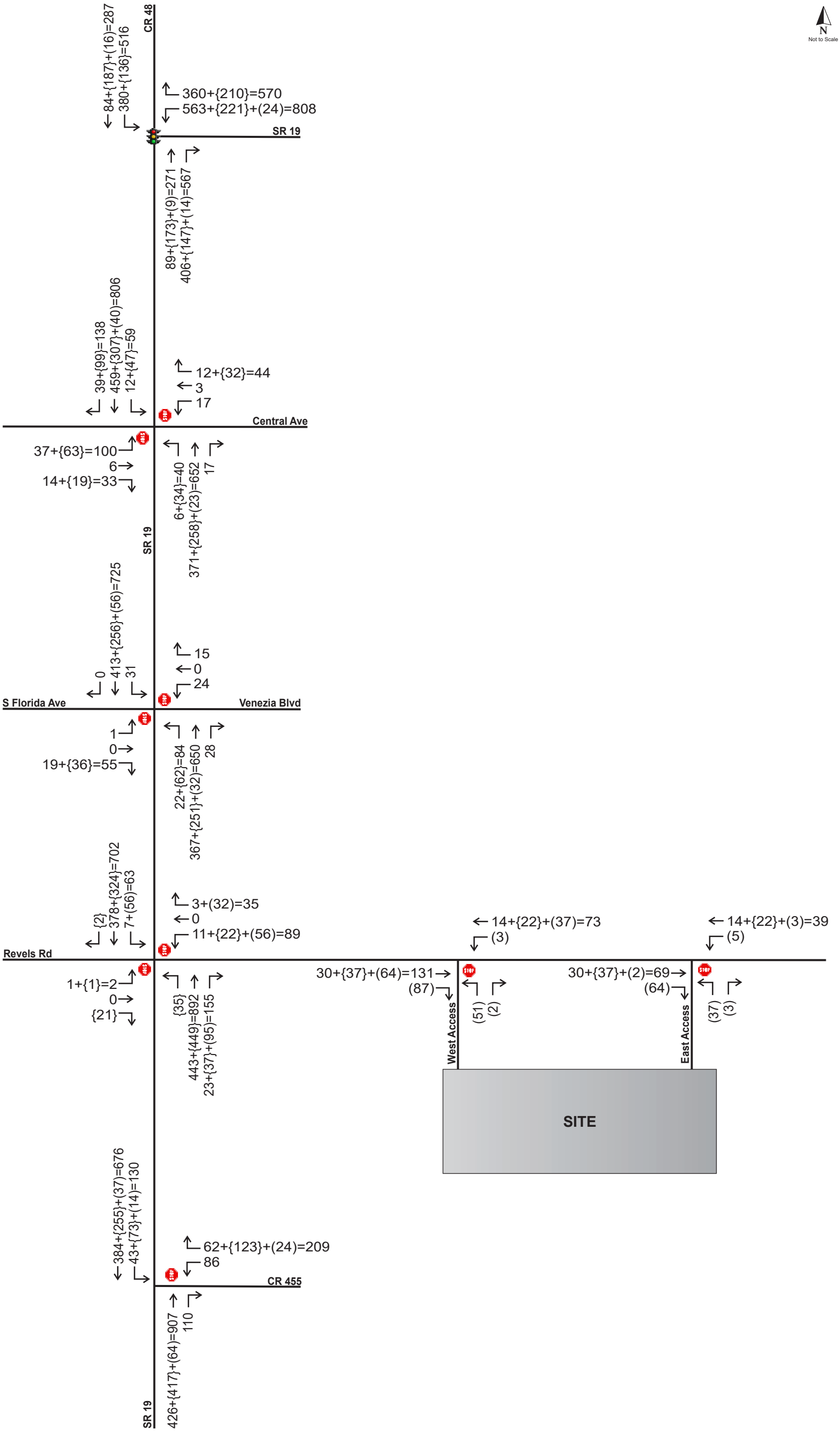


Whispering Hills
Project № 5199
Figure 5

Projected P.M. Peak Hour Intersection Volumes



Legend:
Background + {Committed} + (Project) = Total



Legend:
Background + {Committed} + (Project) = Total

Table 1
Trip Generation Calculations – Phase 1 (2026)

ITE Code	Land Use	Size	Daily		AM Peak Hour				PM Peak Hour			
			Rate	Trips	Rate	Total	Enter	Exit	Rate	Total	Enter	Exit
210	Single-Family Detached	184 DU	9.61	1,768	0.71	131	34	97	0.96	177	112	65
215	Single-Family Attached	146 DU	7.27	1,061	0.48	70	22	48	0.57	83	47	36
Total Trip Generation (Phase 1)				2,829		201	56	145		260	159	101

Source: ITE Trip Generation Manual, 11th Edition
ITE equations were used as R^2 were greater than 0.75 and with more than 20 studies

Phase 1 of the proposed development is projected to generate 2,829 new daily trips of which 201 trips occur during the AM peak hour, and 260 trips occur during the PM peak hour.

Table 2
Trip Generation Calculations – Phase 1 and Phase 2 (2030)

ITE Code	Land Use	Size	Daily		AM Peak Hour				PM Peak Hour			
			Rate	Trips	Rate	Total	Enter	Exit	Rate	Total	Enter	Exit
210	Single-Family Detached	358 DU	9.11	3,261	0.66	236	61	175	0.92	329	207	122
215	Single-Family Attached	292 DU	7.45	2,175	0.50	146	45	101	0.59	172	98	74
Total Trip Generation Buildout (Phase 1 + Phase 2)				5,436		382	106	276		501	305	196

Source: ITE Trip Generation Manual, 11th Edition
ITE equations were used as R^2 were greater than 0.75 and with more than 20 studies

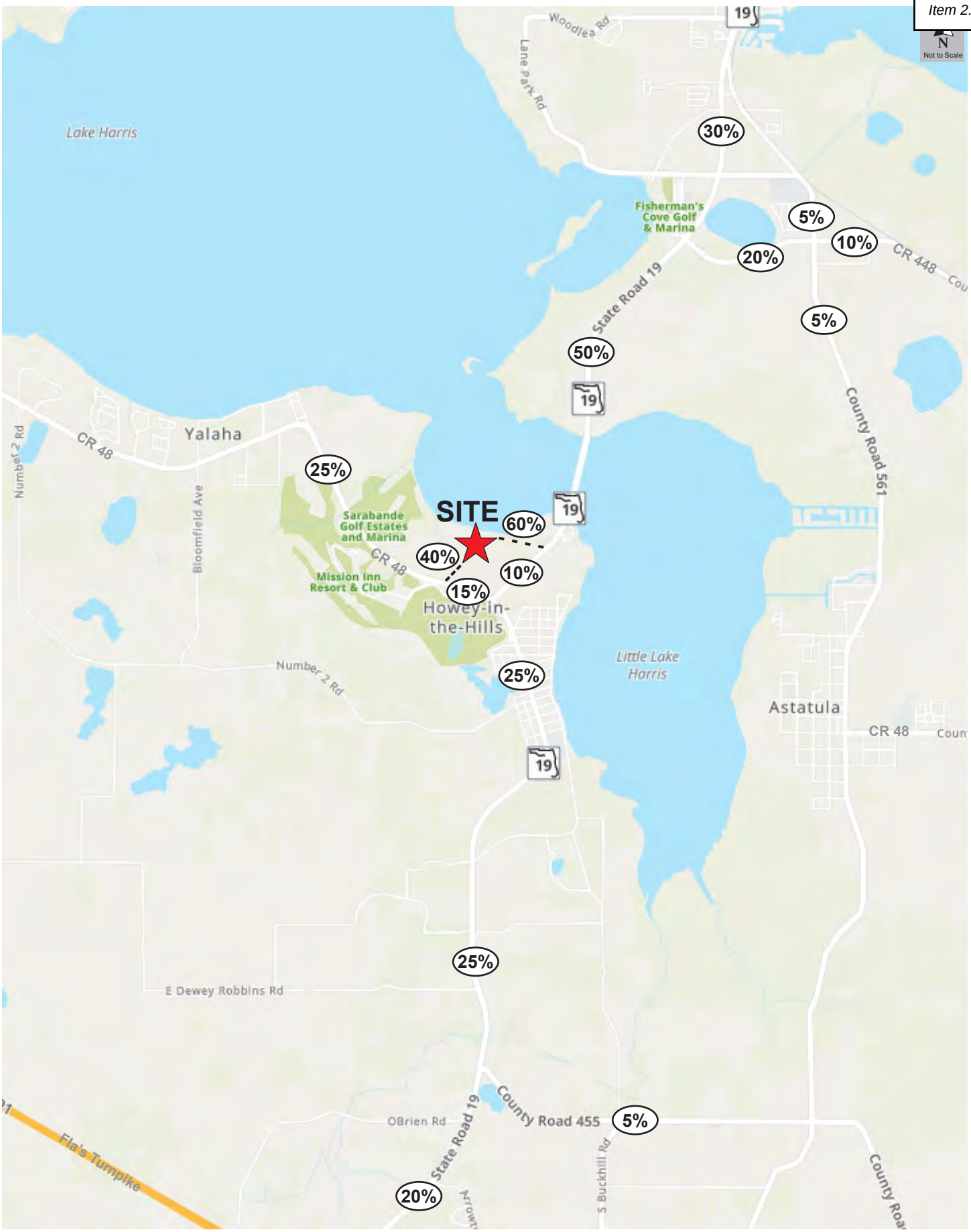
The proposed development at project buildout is projected to generate 5,436 new daily trips of which 382 trips occur during the AM peak hour, and 501 trips occur during the PM peak hour.

Trip Distribution

A trip distribution pattern was estimated using the *Central Florida Regional Planning Model, version 7 (CFRPM V7)*. The model distribution was adjusted based on local knowledge, professional engineering judgement, and the location of the development with respect to the study area attractions and activity centers to reflect prevailing travel patterns in the vicinity of the site and the surrounding transportation network. The raw model plots are provided in the **Attachments**, and the adjusted trip distribution is shown in **Figure 2.**

Study Area

In accordance with the LSMPO requirements for a Tier 2 TIA methodology and the Town of Howey-In-The-Hills Land Development Code, the study area will encompass roadway segments and intersections within a 1-mile radius at minimum. The study will also include segments and intersections within a 4.55-mile radius, (½ the trip length for residential land use), where the project's peak hour trips consume five percent (5%) or more of a roadway's two-way peak hour generalized service volume, based on the adopted LOS and committed number of lanes. The total trip length was obtained from the *Lake County Transportation Impact Fee Schedule Table 9-1* (dated 12/21/2001), included in the **Attachments**. The roadway segments identified by the significance test will be analyzed in the Tier 2 TIA. Excerpts from the *2020 Lake County Congestion Management Plan (CMP) Database* are included in the **Attachments**. The study area significance analysis is summarized in **Table 3**.

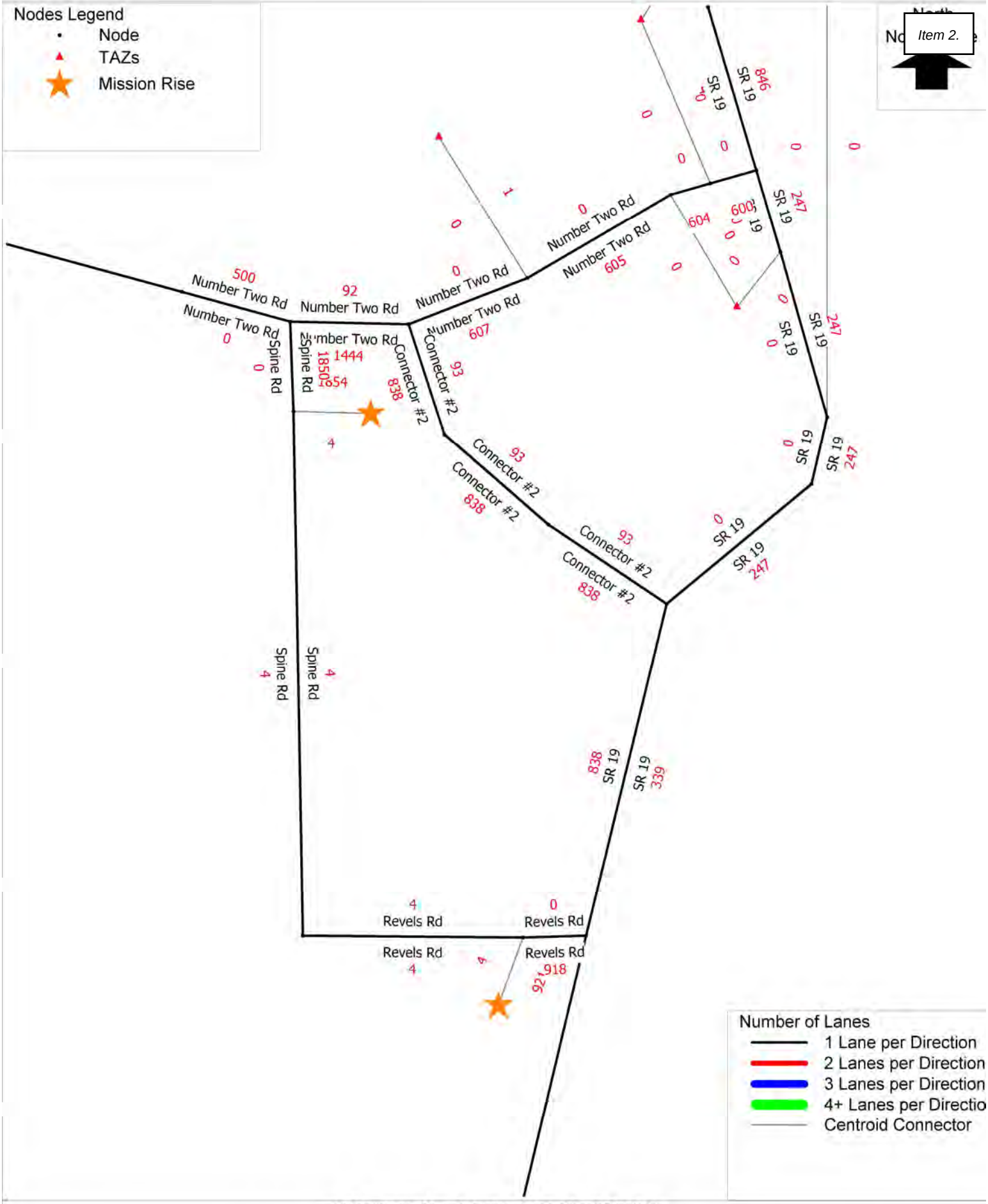


TMC Traffic & Mobility Consultants

Project Trip Distribution
Four Season Lake Harris
21237

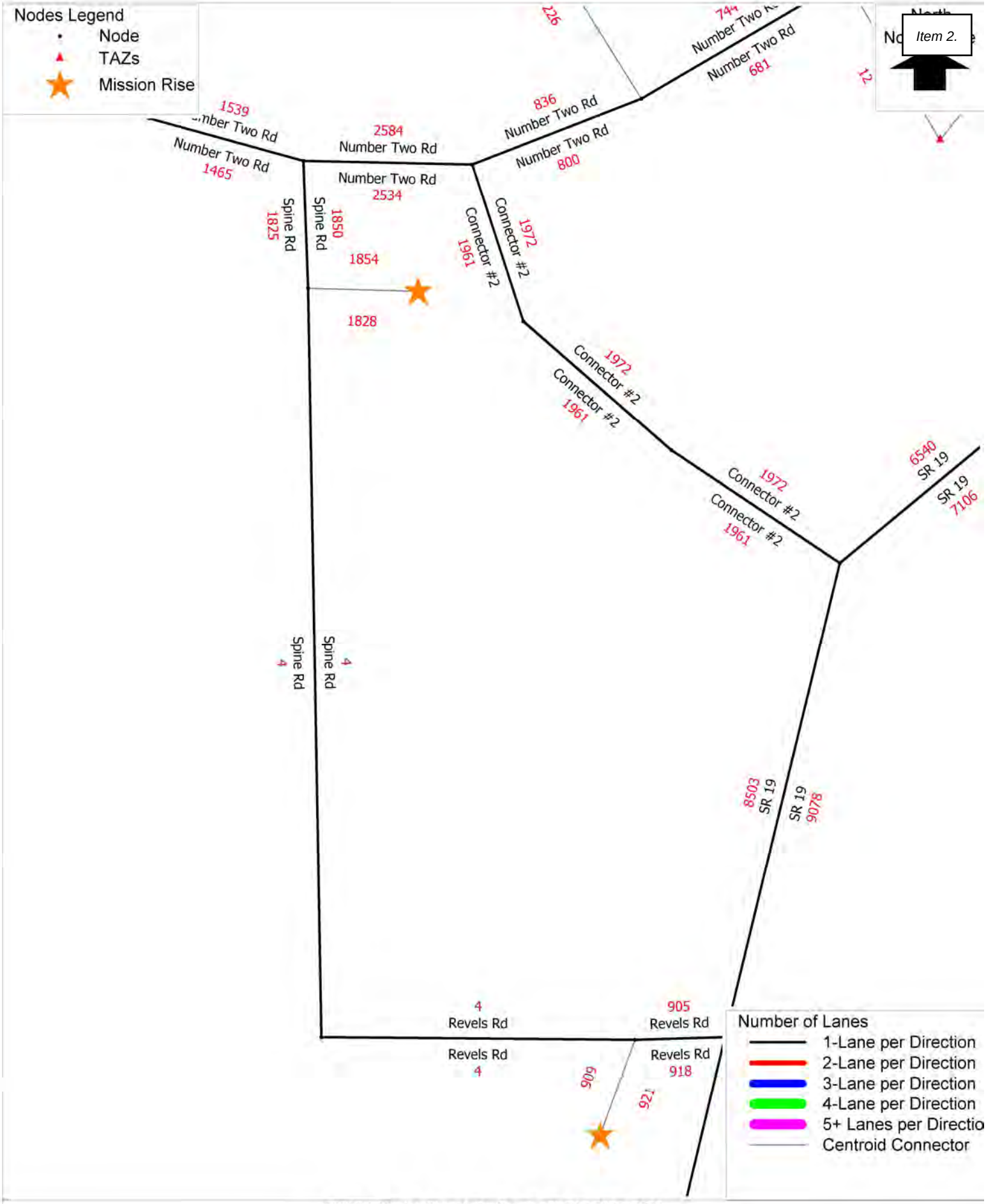
Figure 3

Appendix J
AADT Model Plot



23017 Mission Rise - Lake County, FL TAZ 7676, 7677
Future AADT
C:\FSUTMS\D5\CFRPM7\Base\CF_2030\P23017\OUTPUT\HWYLOAD_SL_AllDay_A30.NET

cube (Licensed to Traffic & Mobility Consultants)



23017.1 Mission Rise - Lake County, FL TAZ 7676, 7677
Future AADT
C:\FSUTMS\D5\CFRPM7

cube (Licensed to Traffic & Mobility Consultants)

Appendix K
HCM Worksheets - Projected Conditions

HCM 6th Signalized Intersection Summary
1: SR 19 & CR 48



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	522	334	455	740	413	180
Future Volume (veh/h)	522	334	455	740	413	180
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1752	1589	1767	1811	1737	1811
Adj Flow Rate, veh/h	538	205	469	0	426	186
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	21	9	6	11	6
Cap, veh/h	386	312	695		502	1139
Arrive On Green	0.23	0.23	0.39	0.00	0.17	0.63
Sat Flow, veh/h	1668	1346	1767	1535	1654	1811
Grp Volume(v), veh/h	538	205	469	0	426	186
Grp Sat Flow(s),veh/h/ln	1668	1346	1767	1535	1654	1811
Q Serve(g_s), s	22.7	13.5	21.5	0.0	14.2	4.2
Cycle Q Clear(g_c), s	22.7	13.5	21.5	0.0	14.2	4.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	386	312	695		502	1139
V/C Ratio(X)	1.39	0.66	0.67		0.85	0.16
Avail Cap(c_a), veh/h	386	312	695		535	1139
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	37.7	34.2	24.5	0.0	16.9	7.5
Incr Delay (d2), s/veh	192.0	5.0	5.2	0.0	11.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	44.9	8.2	14.6	0.0	10.5	2.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	229.7	39.1	29.7	0.0	28.5	7.8
LnGrp LOS	F	D	C		C	A
Approach Vol, veh/h	743		469	A		612
Approach Delay, s/veh	177.1		29.7			22.2
Approach LOS	F		C			C

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	23.0	45.0		30.0		68.0
Change Period (Y+Rc), s	6.5	6.4		7.3		6.4
Max Green Setting (Gmax), s	18.5	38.6		22.7		38.6
Max Q Clear Time (g_c+I1), s	16.2	23.5		24.7		6.2
Green Ext Time (p_c), s	0.4	2.5		0.0		1.0

Intersection Summary	
HCM 6th Ctrl Delay	87.2
HCM 6th LOS	F

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
1: SR 19 & CR 48



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	751	483	164	588	451	194
Future Volume (veh/h)	751	483	164	588	451	194
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1752	1589	1767	1811	1737	1811
Adj Flow Rate, veh/h	774	359	169	0	465	200
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	21	9	6	11	6
Cap, veh/h	380	307	685		737	1149
Arrive On Green	0.23	0.23	0.39	0.00	0.18	0.63
Sat Flow, veh/h	1668	1346	1767	1535	1654	1811
Grp Volume(v), veh/h	774	359	169	0	465	200
Grp Sat Flow(s),veh/h/ln	1668	1346	1767	1535	1654	1811
Q Serve(g_s), s	22.7	22.7	6.5	0.0	16.0	4.5
Cycle Q Clear(g_c), s	22.7	22.7	6.5	0.0	16.0	4.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	380	307	685		737	1149
V/C Ratio(X)	2.04	1.17	0.25		0.63	0.17
Avail Cap(c_a), veh/h	380	307	685		744	1149
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	38.4	38.4	20.7	0.0	12.3	7.5
Incr Delay (d2), s/veh	475.1	105.6	0.9	0.0	1.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	92.9	24.6	4.9	0.0	9.5	3.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	513.5	144.1	21.5	0.0	14.0	7.8
LnGrp LOS	F	F	C		B	A
Approach Vol, veh/h	1133		169	A		665
Approach Delay, s/veh	396.4		21.5			12.1
Approach LOS	F		C			B

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	24.6	45.0		30.0		69.6
Change Period (Y+Rc), s	6.5	6.4		7.3		6.4
Max Green Setting (Gmax), s	18.5	38.6		22.7		38.6
Max Q Clear Time (g_c+I1), s	18.0	8.5		24.7		6.5
Green Ext Time (p_c), s	0.1	0.9		0.0		1.1

Intersection Summary			
HCM 6th Ctrl Delay		234.3	
HCM 6th LOS		F	

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	70.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	144	4	12	13	1	65	14	672	29	37	663	49
Future Vol, veh/h	144	4	12	13	1	65	14	672	29	37	663	49
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	12	33	2	2	2	2	38	10	2	42	2	11
Mvmt Flow	148	4	12	13	1	67	14	693	30	38	684	51

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1556	1537	710	1530	1547	708	735	0	0	723	0	0
Stage 1	786	786	-	736	736	-	-	-	-	-	-	-
Stage 2	770	751	-	794	811	-	-	-	-	-	-	-
Critical Hdwy	7.22	6.83	6.22	7.12	6.52	6.22	4.48	-	-	4.52	-	-
Critical Hdwy Stg 1	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.608	4.297	3.318	3.518	4.018	3.318	2.542	-	-	2.578	-	-
Pot Cap-1 Maneuver	~ 87	99	434	96	114	435	727	-	-	722	-	-
Stage 1	371	362	-	411	425	-	-	-	-	-	-	-
Stage 2	379	376	-	381	393	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 66	87	434	82	100	435	727	-	-	722	-	-
Mov Cap-2 Maneuver	~ 66	87	-	82	100	-	-	-	-	-	-	-
Stage 1	359	329	-	398	411	-	-	-	-	-	-	-
Stage 2	310	364	-	333	358	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 729.8	26.5	0.2	0.5
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	727	-	-	71	248	722	-	-
HCM Lane V/C Ratio	0.02	-	-	2.323	0.328	0.053	-	-
HCM Control Delay (s)	10.1	0	-	$ 729.8	26.5	10.3	0	-
HCM Lane LOS	B	A	-	F	D	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	15.7	1.4	0.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	83.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	108	14	16	20	4	49	19	642	25	66	784	162
Future Vol, veh/h	108	14	16	20	4	49	19	642	25	66	784	162
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	12	33	2	2	2	2	38	10	2	42	2	11
Mvmt Flow	111	14	16	21	4	51	20	662	26	68	808	167

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1771	1756	892	1758	1826	675	975	0	0	688	0	0
Stage 1	1028	1028	-	715	715	-	-	-	-	-	-	-
Stage 2	743	728	-	1043	1111	-	-	-	-	-	-	-
Critical Hdwy	7.22	6.83	6.22	7.12	6.52	6.22	4.48	-	-	4.52	-	-
Critical Hdwy Stg 1	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.608	4.297	3.318	3.518	4.018	3.318	2.542	-	-	2.578	-	-
Pot Cap-1 Maneuver	~ 61	72	341	66	77	454	582	-	-	746	-	-
Stage 1	271	275	-	422	434	-	-	-	-	-	-	-
Stage 2	392	386	-	277	285	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 41	54	341	41	58	454	582	-	-	746	-	-
Mov Cap-2 Maneuver	~ 41	54	-	41	58	-	-	-	-	-	-	-
Stage 1	256	218	-	398	410	-	-	-	-	-	-	-
Stage 2	326	364	-	195	226	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, $	1096.5	89.7	0.3	0.7
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	582	-	-	47	110	746	-	-
HCM Lane V/C Ratio	0.034	-	-	3.027	0.684	0.091	-	-
HCM Control Delay (s)	11.4	0	-	$ 1096.5	89.7	10.3	0	-
HCM Lane LOS	B	A	-	F	F	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	15.4	3.6	0.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	1	68	17	10	31	1	10	0	20	0	0	0
Future Vol, veh/h	1	68	17	10	31	1	10	0	20	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	85	21	13	39	1	13	0	25	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	40	0	0	106	0	0	164	164	96	176	174	40
Stage 1	-	-	-	-	-	-	98	98	-	66	66	-
Stage 2	-	-	-	-	-	-	66	66	-	110	108	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1570	-	-	1485	-	-	801	729	960	786	719	1031
Stage 1	-	-	-	-	-	-	908	814	-	945	840	-
Stage 2	-	-	-	-	-	-	945	840	-	895	806	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1570	-	-	1485	-	-	795	722	960	760	712	1031
Mov Cap-2 Maneuver	-	-	-	-	-	-	795	722	-	760	712	-
Stage 1	-	-	-	-	-	-	907	813	-	944	832	-
Stage 2	-	-	-	-	-	-	936	832	-	871	805	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.8	9.2	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	898	1570	-	-	1485	-	-	-
HCM Lane V/C Ratio	0.042	0.001	-	-	0.008	-	-	-
HCM Control Delay (s)	9.2	7.3	0	-	7.4	0	-	0
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	52	11	36	59	6	9	1	33	1	0	0
Future Vol, veh/h	0	52	11	36	59	6	9	1	33	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	65	14	45	74	8	11	1	41	1	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	82	0	0	79	0	0	240	244	72	261	247	78
Stage 1	-	-	-	-	-	-	72	72	-	168	168	-
Stage 2	-	-	-	-	-	-	168	172	-	93	79	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1515	-	-	1519	-	-	714	658	990	692	655	983
Stage 1	-	-	-	-	-	-	938	835	-	834	759	-
Stage 2	-	-	-	-	-	-	834	756	-	914	829	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1515	-	-	1519	-	-	697	638	990	646	635	983
Mov Cap-2 Maneuver	-	-	-	-	-	-	697	638	-	646	635	-
Stage 1	-	-	-	-	-	-	938	835	-	834	735	-
Stage 2	-	-	-	-	-	-	808	733	-	875	829	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	2.7	9.3	10.6
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	899	1515	-	-	1519	-	-	646
HCM Lane V/C Ratio	0.06	-	-	-	0.03	-	-	0.002
HCM Control Delay (s)	9.3	0	-	-	7.4	0	-	10.6
HCM Lane LOS	A	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0

HCM 6th TWSC
4: SR 19 & Revels Rd/Revels Rd

Intersection	
Int Delay, s/veh	128

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	0	120	124	0	53	44	490	66	21	790	14
Future Vol, veh/h	41	0	120	124	0	53	44	490	66	21	790	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	430	-	-	-	-	405
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	8	12	2	10	2
Mvmt Flow	46	0	133	138	0	59	49	544	73	23	878	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1632	1639	878	1678	1619	581	894	0	0	617	0	0
Stage 1	924	924	-	679	679	-	-	-	-	-	-	-
Stage 2	708	715	-	999	940	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	81	100	347	~ 75	103	514	759	-	-	963	-	-
Stage 1	323	348	-	441	451	-	-	-	-	-	-	-
Stage 2	426	434	-	293	342	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	66	89	347	~ 42	92	514	759	-	-	963	-	-
Mov Cap-2 Maneuver	66	89	-	~ 42	92	-	-	-	-	-	-	-
Stage 1	302	331	-	412	422	-	-	-	-	-	-	-
Stage 2	353	406	-	172	326	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	51.2	$ 1224.7	0.7	0.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	759	-	-	66	347	58	963	-	-
HCM Lane V/C Ratio	0.064	-	-	0.69	0.384	3.391	0.024	-	-
HCM Control Delay (s)	10.1	-	-	137.5	21.3	$ 1224.7	8.8	0	-
HCM Lane LOS	B	-	-	F	C	F	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	3	1.8	20.9	0.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	127.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	1	83	88	0	36	135	744	146	64	602	45
Future Vol, veh/h	30	1	83	88	0	36	135	744	146	64	602	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	430	-	-	-	-	405
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	8	12	2	10	2
Mvmt Flow	33	1	92	98	0	40	150	827	162	71	669	50

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2039	2100	669	2091	2069	908	719	0	0	989	0	0
Stage 1	811	811	-	1208	1208	-	-	-	-	-	-	-
Stage 2	1228	1289	-	883	861	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	42	52	458	~ 38	54	334	882	-	-	699	-	-
Stage 1	373	393	-	224	256	-	-	-	-	-	-	-
Stage 2	218	234	-	340	372	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 28	36	458	~ 22	37	334	882	-	-	699	-	-
Mov Cap-2 Maneuver	~ 28	36	-	~ 22	37	-	-	-	-	-	-	-
Stage 1	310	326	-	186	212	-	-	-	-	-	-	-
Stage 2	159	194	-	224	308	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	135.1	$ 1882.8	1.3	1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	882	-	-	28	458	30	699	-	-
HCM Lane V/C Ratio	0.17	-	-	1.23	0.201	4.593	0.102	-	-
HCM Control Delay (s)	9.9	-	-	$ 457.1	14.8	$ 1882.8	10.7	0	-
HCM Lane LOS	A	-	-	F	B	F	B	A	-
HCM 95th %tile Q(veh)	0.6	-	-	4	0.7	16.6	0.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	48.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	78	88	596	133	183	927
Future Vol, veh/h	78	88	596	133	183	927
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	590	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	38	15	8	22	9	5
Mvmt Flow	81	92	621	139	191	966

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1969	621	0	0	760	0
Stage 1	621	-	-	-	-	-
Stage 2	1348	-	-	-	-	-
Critical Hdwy	6.78	6.35	-	-	4.19	-
Critical Hdwy Stg 1	5.78	-	-	-	-	-
Critical Hdwy Stg 2	5.78	-	-	-	-	-
Follow-up Hdwy	3.842	3.435	-	-	2.281	-
Pot Cap-1 Maneuver	~ 55	465	-	-	821	-
Stage 1	473	-	-	-	-	-
Stage 2	203	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 27	465	-	-	821	-
Mov Cap-2 Maneuver	~ 27	-	-	-	-	-
Stage 1	473	-	-	-	-	-
Stage 2	101	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 576.7	0	1.8
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	27	465	821	-
HCM Lane V/C Ratio	-	-	3.009	0.197	0.232	-
HCM Control Delay (s)	-	-	$ 1210.8	14.6	10.7	0
HCM Lane LOS	-	-	F	B	B	A
HCM 95th %tile Q(veh)	-	-	9.9	0.7	0.9	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	68.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	100	179	956	110	130	756
Future Vol, veh/h	100	179	956	110	130	756
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	590	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	38	15	8	22	9	5
Mvmt Flow	104	186	996	115	135	788

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2054	996	0	0	1111	0
Stage 1	996	-	-	-	-	-
Stage 2	1058	-	-	-	-	-
Critical Hdwy	6.78	6.35	-	-	4.19	-
Critical Hdwy Stg 1	5.78	-	-	-	-	-
Critical Hdwy Stg 2	5.78	-	-	-	-	-
Follow-up Hdwy	3.842	3.435	-	-	2.281	-
Pot Cap-1 Maneuver	~ 48	280	-	-	603	-
Stage 1	307	-	-	-	-	-
Stage 2	286	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 29	280	-	-	603	-
Mov Cap-2 Maneuver	~ 29	-	-	-	-	-
Stage 1	307	-	-	-	-	-
Stage 2	172	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 544.7	0	1.9
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	29	280	603	-
HCM Lane V/C Ratio	-	-	3.592	0.666	0.225	-
HCM Control Delay (s)	-	-	$ 1447.7	40.2	12.7	0
HCM Lane LOS	-	-	F	E	B	A
HCM 95th %tile Q(veh)	-	-	12.5	4.4	0.9	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	33	71	0	44	42
Future Vol, veh/h	0	33	71	0	44	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	36	77	0	48	46

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	219	77	0	0	77	0
Stage 1	77	-	-	-	-	-
Stage 2	142	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	769	984	-	-	1522	-
Stage 1	946	-	-	-	-	-
Stage 2	885	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	744	984	-	-	1522	-
Mov Cap-2 Maneuver	744	-	-	-	-	-
Stage 1	946	-	-	-	-	-
Stage 2	857	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	3.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	984	1522	-
HCM Lane V/C Ratio	-	-	0.036	0.031	-
HCM Control Delay (s)	-	-	8.8	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	48	60	0	42	80
Future Vol, veh/h	0	48	60	0	42	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	52	65	0	46	87

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	244	65	0	0	65	0
Stage 1	65	-	-	-	-	-
Stage 2	179	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	744	999	-	-	1537	-
Stage 1	958	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	721	999	-	-	1537	-
Mov Cap-2 Maneuver	721	-	-	-	-	-
Stage 1	958	-	-	-	-	-
Stage 2	826	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	2.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	999	1537	-
HCM Lane V/C Ratio	-	-	0.052	0.03	-
HCM Control Delay (s)	-	-	8.8	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	62	26	46	33	52	78
Future Vol, veh/h	62	26	46	33	52	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	420	655	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	67	28	50	36	57	85

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	95	0	203	67
Stage 1	-	-	-	-	67	-
Stage 2	-	-	-	-	136	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1499	-	786	997
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	890	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1499	-	760	997
Mov Cap-2 Maneuver	-	-	-	-	760	-
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	861	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.4	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	886	-	-	1499	-
HCM Lane V/C Ratio	0.159	-	-	0.033	-
HCM Control Delay (s)	9.8	-	-	7.5	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-

HCM 6th TWSC
7: Spine Road & Number 2 Road

Intersection	
Int Delay, s/veh	5.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	46	59	87	39	41	64
Future Vol, veh/h	46	59	87	39	41	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	420	655	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	64	95	42	45	70

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	114	0	282	50
Stage 1	-	-	-	-	50	-
Stage 2	-	-	-	-	232	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1475	-	708	1018
Stage 1	-	-	-	-	972	-
Stage 2	-	-	-	-	807	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1475	-	663	1018
Mov Cap-2 Maneuver	-	-	-	-	663	-
Stage 1	-	-	-	-	972	-
Stage 2	-	-	-	-	755	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.3	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	842	-	-	1475	-
HCM Lane V/C Ratio	0.136	-	-	0.064	-
HCM Control Delay (s)	9.9	-	-	7.6	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0.2	-

Intersection	
Int Delay, s/veh	7.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	108	6	5	142	9
Future Vol, veh/h	10	108	6	5	142	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	117	7	5	154	10

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	328	10	0	0	12	0
Stage 1	10	-	-	-	-	-
Stage 2	318	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	666	1071	-	-	1607	-
Stage 1	1013	-	-	-	-	-
Stage 2	738	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	602	1071	-	-	1607	-
Mov Cap-2 Maneuver	602	-	-	-	-	-
Stage 1	1013	-	-	-	-	-
Stage 2	667	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1005	1607	-
HCM Lane V/C Ratio	-	-	0.128	0.096	-
HCM Control Delay (s)	-	-	9.1	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.3	-

HCM 6th TWSC
8: Revels Road & Spine Road

Intersection	
Int Delay, s/veh	7.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	163	9	12	134	5
Future Vol, veh/h	10	163	9	12	134	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	177	10	13	146	5

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	314	17	0	0	23	0
Stage 1	17	-	-	-	-	-
Stage 2	297	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	679	1062	-	-	1592	-
Stage 1	1006	-	-	-	-	-
Stage 2	754	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	617	1062	-	-	1592	-
Mov Cap-2 Maneuver	617	-	-	-	-	-
Stage 1	1006	-	-	-	-	-
Stage 2	685	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	7.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1019	1592	-
HCM Lane V/C Ratio	-	-	0.185	0.091	-
HCM Control Delay (s)	-	-	9.3	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0.3	-

HCM 6th TWSC
9: Orange Blossom Road & Revels Road

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	0	0	4	12	7
Future Vol, veh/h	7	0	0	4	12	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	0	0	4	13	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	4	0	-	0	18	2
Stage 1	-	-	-	-	2	-
Stage 2	-	-	-	-	16	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1618	-	-	-	1000	1082
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	1007	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1618	-	-	-	995	1082
Mov Cap-2 Maneuver	-	-	-	-	995	-
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	1007	-

Approach	EB	WB	SB
HCM Control Delay, s	7.2	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1618	-	-	-	1025
HCM Lane V/C Ratio	0.005	-	-	-	0.02
HCM Control Delay (s)	7.2	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

HCM 6th TWSC
9: Orange Blossom Road & Revels Road

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	0	0	13	8	7
Future Vol, veh/h	7	0	0	13	8	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	0	0	14	9	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	14	0	-	0	23	7
Stage 1	-	-	-	-	7	-
Stage 2	-	-	-	-	16	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1604	-	-	-	993	1075
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	1007	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1604	-	-	-	988	1075
Mov Cap-2 Maneuver	-	-	-	-	988	-
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	1007	-

Approach	EB	WB	SB
HCM Control Delay, s	7.3	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1604	-	-	-	1027
HCM Lane V/C Ratio	0.005	-	-	-	0.016
HCM Control Delay (s)	7.3	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Appendix L
Intersection Volume Projections

Project No. 23017 Mission Rise

Intersection Volumes

Counts on 7/19/2023

Period	Tgen	Enter	Exit		SF	AGR	Years	Legend
AM Peak		81	241		1.06	2.00%	10	Backg'd + {Vested} + (Project) = T

Intersection= SR 19 & CR 48 — **1**

Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
	L	0	1.06	0	1.20		0						0			0	0	
EB	T	0	1.06	0	1.20		0						0			0	0	
	R	0	1.06	0	1.20		0						0			0	0	
	L	326	1.06	346	1.20		415	32	14		36	7	89	23%		18	522	415 + {89} + (18) = 522
WB	T	0	1.06	0	1.20		0						0			0	0	
	R	216	1.06	229	1.20		275				59		59			0	334	275 + {59} = 334
	L	0	1.06	0	1.20		0						0			0	0	
NB	T	298	1.06	316	1.20		379	21	24		12	14	71		2%	5	455	379 + {71} + (5) = 455
	R	429	1.06	455	1.20		546	82	23		14	20	139		23%	55	740	546 + {139} + (55) = 740
	L	261	1.06	277	1.20		332				81		81			0	413	332 + {81} = 413
SB	T	92	1.06	98	1.20		118	8	14		33	5	60	2%		2	180	118 + {60} + (2) = 180
	R	0	1.06	0	1.20		0						0			0	0	

Intersection= SR 19 & Central Ave — **2**

Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
	L	33	1.06	35	1.20		42	62		16			78		10%	24	144	42 + {78} + (24) = 144
EB	T	3	1.06	3	1.20		4						0			0	4	4
	R	9	1.06	10	1.20		12						0			0	12	12
	L	10	1.06	11	1.20		13						0			0	13	13
WB	T	1	1.06	1	1.20		1						0			0	1	1
	R	14	1.06	15	1.20		18		47				47			0	65	18 + {47} = 65
	L	11	1.06	12	1.20		14						0			0	14	14
NB	T	356	1.06	377	1.20		452	82		42	26	34	184		15%	36	672	452 + {184} + (36) = 672
	R	23	1.06	24	1.20		29						0			0	29	29
	L	4	1.06	4	1.20		5		32				32			0	37	5 + {32} = 37
SB	T	404	1.06	428	1.20		514	32		24	69	12	137	15%		12	663	514 + {137} + (12) = 663
	R	7	1.06	7	1.20		8	24		9			33	10%		8	49	8 + {33} + (8) = 49

Intersection= Central Ave & S. Florida Ave — **3**

Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
	L	1	1.06	1	1.20		1						0			0	1	1
EB	T	35	1.06	37	1.20		44						0		10%	24	68	44 + (24) = 68
	R	11	1.06	12	1.20		14			3			3			0	17	14 + {3} = 17
	L	1	1.06	1	1.20		1			9			9			0	10	1 + {9} = 10
WB	T	18	1.06	19	1.20		23						0	10%		8	31	23 + (8) = 31
	R	1	1.06	1	1.20		1						0			0	1	1
	L	4	1.06	4	1.20		5			5			5			0	10	5 + {5} = 10
NB	T	0	1.06	0	1.20		0						0			0	0	
	R	3	1.06	3	1.20		4			16			16			0	20	4 + {16} = 20
	L	0	1.06	0	1.20		0						0			0	0	
SB	T	0	1.06	0	1.20		0						0			0	0	
	R	0	1.06	0	1.20		0						0			0	0	

Intersection= SR 19 & Revels Rd — **4**

Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
	L	2	1.06	2	1.20		2	3					3		15%	36	41	2 + {3} + (36) = 41
EB	T	0	1.06	0	1.20		0						0			0	0	
	R	5	1.06	5	1.20		6	30					30		35%	84	120	6 + {30} + (84) = 120
	L	5	1.06	5	1.20		6		37			81	118			0	124	6 + {118} = 124
WB	T	0	1.06	0	1.20		0						0			0	0	
	R	4	1.06	4	1.20		5					48	48			0	53	5 + {48} = 53
	L	3	1.06	3	1.20		4	12					12	35%		28	44	4 + {12} + (28) = 44
NB	T	306	1.06	324	1.20		389	67			26		93	10%		8	490	389 + {93} + (8) = 490
	R	12	1.06	13	1.20		16		22			28	50			0	66	16 + {50} = 66
	L	3	1.06	3	1.20		4					17	17			0	21	4 + {17} = 21
SB	T	410	1.06	435	1.20		522	175			69		244		10%	24	790	522 + {244} + (24) = 790
	R	0	1.06	0	1.20		0	2					2	15%		12	14	{2} + (12) = 14

Intersection= SR 19 & CR 455 — **5**

Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
	L	0	1.00	0	1.20		0						0			0	0	
EB	T	0	1.00	0	1.20		0						0			0	0	
	R	0	1.00	0	1.20		0						0			0	0	
	L	65	1.00	65	1.20		78						0			0	78	78
WB	T	0	1.00	0	1.20		0						0			0	0	
	R	43	1.00	43	1.20		52	16			5	7	28	10%		8	88	52 + {28} + (8) = 88
	L	0	1.00	0	1.20		0						0			0	0	
NB	T	394	1.00	394	1.20		473	55			21	19	95	35%		28	596	473 + {95} + (28) = 596
	R	111	1.00	111	1.20		133						0			0	133	133
	L	70	1.00	70	1.20		84	41			14	20	75		10%	24	183	84 + {75} + (24) = 183
SB	T	492	1.00	492	1.20		590	144			55	54	253		35%	84	927	590 + {253} + (84) = 927
	R	0	1.00	0	1.20		0						0			0	0	

Counts on 1/24/2023

Intersection=		Interconnect Rd & Spine Rd (Proposed)															6
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
	L						0									0	0	
EB	T						0									0	0	
	R						0									0	0	
	L						0									0	0	
WB	T						0									0	0	
	R						25							10%		8	33	25 + (8) = 33
	L						0									0	0	
NB	T						20									51	71	20 + (51) = 71
	R						0									0	0	
	L						20								10%	24	44	20 + (24) = 44
SB	T						25									16	41	25 + (16) = 41
	R						0									0	0	

Intersection=		Number 2 Rd & Spine Road / North Access															7
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
	L						0									0	0	
EB	T						59						3			0	62	59 + {3} = 62
	R						15							15%		11	26	15 + (11) = 26
	L						30							20%		16	46	30 + (16) = 46
WB	T						28						5			0	33	28 + {5} = 33
	R						0									0	0	
	L						15								15%	37	52	15 + (37) = 52
NB	T						0									0	0	
	R						30								20%	48	78	30 + (48) = 78
	L						0									0	0	
SB	T						0									0	0	
	R						0									0	0	

Intersection=		Revels Rd & Spine Rd / Proposed															8
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
	L						0									0	0	
EB	T						0									0	0	
	R						0									0	0	
	L						3								3%	7	10	3 + (7) = 10
WB	T						0									0	0	
	R						62							25%		46	108	62 + (46) = 108
	L						0									0	0	
NB	T						4							2%		2	6	4 + (2) = 6
	R						3							3%		2	5	3 + (2) = 5
	L						74								25%	68	142	74 + (68) = 142
SB	T						4								2%	5	9	4 + (5) = 9
	R						0									0	0	

Intersection=		Revels Rd & Orange Blossom Rd / South Access															9
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
	L						7									0	7	7
EB	T						0									0	0	
	R						0									0	0	
	L						0									0	0	
WB	T						0									0	0	
	R						0							5%		4	4	(4)
	L						0									0	0	
NB	T						0									0	0	
	R						0									0	0	
	L						0								5%	12	12	(12)
SB	T						0									0	0	
	R						7									0	7	7

Project No. 23017 Mission Rise

Intersection Volumes

Counts on 7/19/2023

Period	Tgen	Enter	Exit		SF	AGR	Years	Legend
PM Peak		284	167		1.06	2.00%	10	Backg'd + {Vested} + (Project) = T

Intersection= SR 19 & CR 48 — **1**

Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
	L	0	1.06	0	1.20		0						0			0	0	
EB	T	0	1.06	0	1.20		0						0			0	0	
	R	0	1.06	0	1.20		0						0			0	0	
	L	409	1.06	434	1.20		521	92	23		25	24	164	23%		66	751	521 + {164} + (66) = 751
WB	T	0	1.06	0	1.20		0						0			0	0	
	R	301	1.06	319	1.20		383				100		100			0	483	383 + {100} = 483
	L	0	1.06	0	1.20		0						0			0	0	
NB	T	68	1.06	72	1.20		86	15	14		37	9	75		2%	3	164	86 + {75} + (3) = 164
	R	333	1.06	353	1.20		424	58	14		39	14	125		23%	39	588	424 + {125} + (39) = 588
	L	287	1.06	304	1.20		365				86		86			0	451	365 + {86} = 451
SB	T	79	1.06	84	1.20		101	23	24		24	16	87	2%		6	194	101 + {87} + (6) = 194
	R	0	1.06	0	1.20		0						0			0	0	

Intersection= SR 19 & Central Ave — **2**

Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
	L	30	1.06	32	1.20		38	44		9			53		10%	17	108	38 + {53} + (17) = 108
EB	T	11	1.06	12	1.20		14						0			0	14	14
	R	12	1.06	13	1.20		16						0			0	16	16
	L	16	1.06	17	1.20		20						0			0	20	20
WB	T	3	1.06	3	1.20		4						0			0	4	4
	R	13	1.06	14	1.20		17		32				32			0	49	17 + {32} = 49
	L	15	1.06	16	1.20		19						0			0	19	19
NB	T	342	1.06	363	1.20		436	58		24	76	23	181		15%	25	642	436 + {181} + (25) = 642
	R	20	1.06	21	1.20		25						0			0	25	25
	L	15	1.06	16	1.20		19		47				47			0	66	19 + {47} = 66
SB	T	408	1.06	432	1.20		518	92		42	49	40	223	15%		43	784	518 + {223} + (43) = 784
	R	38	1.06	40	1.20		48	69		16			85	10%		29	162	48 + {85} + (29) = 162

Intersection= Central Ave & S. Florida Ave — **3**

Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
	L	0	1.06	0	1.20		0						0			0	0	
EB	T	27	1.06	29	1.20		35						0		10%	17	52	35 + (17) = 52
	R	5	1.06	5	1.20		6			5			5			0	11	6 + {5} = 11
	L	16	1.06	17	1.20		20			16			16			0	36	20 + {16} = 36
WB	T	24	1.06	25	1.20		30						0	10%		29	59	30 + (29) = 59
	R	5	1.06	5	1.20		6						0			0	6	6
	L	5	1.06	5	1.20		6			3			3			0	9	6 + {3} = 9
NB	T	1	1.06	1	1.20		1						0			0	1	1
	R	19	1.06	20	1.20		24			9			9			0	33	24 + {9} = 33
	L	1	1.06	1	1.20		1						0			0	1	1
SB	T	0	1.06	0	1.20		0						0			0	0	
	R	0	1.06	0	1.20		0						0			0	0	

Intersection= SR 19 & Revels Rd — **4**

Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
	L	3	1.06	3	1.20		4	1					1		15%	25	30	4 + {1} + (25) = 30
EB	T	1	1.06	1	1.20		1						0			0	1	1
	R	4	1.06	4	1.20		5	21					21		35%	57	83	5 + {21} + (57) = 83
	L	8	1.06	8	1.20		10		22			56	78			0	88	10 + {78} = 88
WB	T	0	1.06	0	1.20		0						0			0	0	
	R	3	1.06	3	1.20		4					32	32			0	36	4 + {32} = 36
	L	1	1.06	1	1.20		1	35					35	35%		99	135	1 + {35} + (99) = 135
NB	T	351	1.06	372	1.20		446	194			76		270	10%		28	744	446 + {270} + (28) = 744
	R	11	1.06	12	1.20		14		37			95	132			0	146	14 + {132} = 146
	L	7	1.06	7	1.20		8					56	56			0	64	8 + {56} = 64
SB	T	324	1.06	343	1.20		412	124			49		173		10%	17	602	412 + {173} + (17) = 602
	R	0	1.06	0	1.20		0	2					2	15%		43	45	{2} + (43) = 45

Intersection= SR 19 & CR 455 — **5**

Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
	L	0	1.00	0	1.20		0						0			0	0	
EB	T	0	1.00	0	1.20		0						0			0	0	
	R	0	1.00	0	1.20		0						0			0	0	
	L	83	1.00	83	1.20		100						0			0	100	100
WB	T	0	1.00	0	1.20		0						0			0	0	
	R	55	1.00	55	1.20		66	46			15	24	85	10%		28	179	66 + {85} + (28) = 179
	L	0	1.00	0	1.20		0						0			0	0	
NB	T	476	1.00	476	1.20		571	161			61	64	286	35%		99	956	571 + {286} + (99) = 956
	R	92	1.00	92	1.20		110						0			0	110	110
	L	50	1.00	50	1.20		60	29			10	14	53		10%	17	130	60 + {53} + (17) = 130
SB	T	433	1.00	433	1.20		520	102			39	37	178		35%	58	756	520 + {178} + (58) = 756
	R	0	1.00	0	1.20		0						0			0	0	

Counts on 1/24/2023

Intersection=		Interconnect Rd & Spine Rd (Proposed)															6
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
	L						0									0	0	
EB	T						0									0	0	
	R						0									0	0	
	L						0									0	0	
WB	T						0									0	0	
	R						20							10%		28	48	20 + (28) = 48
	L						0									0	0	
NB	T						25									36	61	25 + (36) = 61
	R						0									0	0	
	L						25								10%	17	42	25 + (17) = 42
SB	T						20									61	81	20 + (61) = 81
	R						0									0	0	

Intersection=		Number 2 Rd & Spine Road / North Access															7
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
	L						0									0	0	
EB	T						41						5			0	46	41 + {5} = 46
	R						15							15%		44	59	15 + (44) = 59
	L						30							20%		57	87	30 + (57) = 87
WB	T						36						3			0	39	36 + {3} = 39
	R						0									0	0	
	L						15								15%	26	41	15 + (26) = 41
NB	T						0									0	0	
	R						30								20%	34	64	30 + (34) = 64
	L						0									0	0	
SB	T						0									0	0	
	R						0									0	0	

Intersection=		Revels Rd & Spine Rd / Proposed															8
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
	L						0									0	0	
EB	T						0									0	0	
	R						0									0	0	
	L						4								3%	6	10	4 + (6) = 10
WB	T						0									0	0	
	R						74							25%		89	163	74 + (89) = 163
	L						0									0	0	
NB	T						3							2%		6	9	3 + (6) = 9
	R						4							3%		8	12	4 + (8) = 12
	L						62								25%	72	134	62 + (72) = 134
SB	T						3								2%	2	5	3 + (2) = 5
	R						0									0	0	

Intersection=		Revels Rd & Orange Blossom Rd / South Access															9
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
	L						7									0	7	7
EB	T						0									0	0	
	R						0									0	0	
	L						0									0	0	
WB	T						0									0	0	
	R						0							5%		13	13	(13)
	L						0									0	0	
NB	T						0									0	0	
	R						0									0	0	
	L						0								5%	8	8	(8)
SB	T						0									0	0	
	R						7									0	7	7

Appendix M
Background Conditions / Buildout Conditions with Mitigation

HCM 6th Signalized Intersection Summary
1: SR 19 & CR 48



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	504	334	450	685	413	178
Future Volume (veh/h)	504	334	450	685	413	178
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1752	1589	1767	1811	1737	1811
Adj Flow Rate, veh/h	520	203	464	0	426	184
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	21	9	6	11	6
Cap, veh/h	386	312	695		506	1139
Arrive On Green	0.23	0.23	0.39	0.00	0.17	0.63
Sat Flow, veh/h	1668	1346	1767	1535	1654	1811
Grp Volume(v), veh/h	520	203	464	0	426	184
Grp Sat Flow(s),veh/h/ln	1668	1346	1767	1535	1654	1811
Q Serve(g_s), s	22.7	13.4	21.2	0.0	14.2	4.1
Cycle Q Clear(g_c), s	22.7	13.4	21.2	0.0	14.2	4.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	386	312	695		506	1139
V/C Ratio(X)	1.35	0.65	0.67		0.84	0.16
Avail Cap(c_a), veh/h	386	312	695		539	1139
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	37.7	34.1	24.4	0.0	16.8	7.5
Incr Delay (d2), s/veh	172.2	4.7	5.0	0.0	11.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	41.4	8.1	14.4	0.0	10.4	2.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	209.9	38.8	29.5	0.0	27.8	7.8
LnGrp LOS	F	D	C		C	A
Approach Vol, veh/h	723		464	A		610
Approach Delay, s/veh	161.9		29.5			21.8
Approach LOS	F		C			C

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	23.0	45.0		30.0		68.0
Change Period (Y+Rc), s	6.5	6.4		7.3		6.4
Max Green Setting (Gmax), s	18.5	38.6		22.7		38.6
Max Q Clear Time (g_c+I1), s	16.2	23.2		24.7		6.1
Green Ext Time (p_c), s	0.4	2.5		0.0		1.0

Intersection Summary	
HCM 6th Ctrl Delay	80.1
HCM 6th LOS	F

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
1: SR 19 & CR 48



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	685	483	161	549	451	188
Future Volume (veh/h)	685	483	161	549	451	188
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1752	1589	1767	1811	1737	1811
Adj Flow Rate, veh/h	706	302	166	0	465	194
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	21	9	6	11	6
Cap, veh/h	380	307	685		740	1149
Arrive On Green	0.23	0.23	0.39	0.00	0.18	0.63
Sat Flow, veh/h	1668	1346	1767	1535	1654	1811
Grp Volume(v), veh/h	706	302	166	0	465	194
Grp Sat Flow(s),veh/h/ln	1668	1346	1767	1535	1654	1811
Q Serve(g_s), s	22.7	22.2	6.3	0.0	16.0	4.4
Cycle Q Clear(g_c), s	22.7	22.2	6.3	0.0	16.0	4.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	380	307	685		740	1149
V/C Ratio(X)	1.86	0.98	0.24		0.63	0.17
Avail Cap(c_a), veh/h	380	307	685		747	1149
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	38.4	38.3	20.6	0.0	12.3	7.4
Incr Delay (d2), s/veh	395.5	46.9	0.8	0.0	1.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	79.4	16.3	4.8	0.0	9.5	2.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	433.9	85.1	21.5	0.0	13.9	7.8
LnGrp LOS	F	F	C		B	A
Approach Vol, veh/h	1008		166	A		659
Approach Delay, s/veh	329.4		21.5			12.1
Approach LOS	F		C			B

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	24.6	45.0		30.0		69.6
Change Period (Y+Rc), s	6.5	6.4		7.3		6.4
Max Green Setting (Gmax), s	18.5	38.6		22.7		38.6
Max Q Clear Time (g_c+I1), s	18.0	8.3		24.7		6.4
Green Ext Time (p_c), s	0.1	0.9		0.0		1.1

Intersection Summary	
HCM 6th Ctrl Delay	187.5
HCM 6th LOS	F

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th TWSC
2: SR 19 & W Central Ave/E Central Ave

Intersection	
Int Delay, s/veh	41.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	120	4	12	13	1	65	14	636	29	37	651	41
Future Vol, veh/h	120	4	12	13	1	65	14	636	29	37	651	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	12	33	2	2	2	2	38	10	2	42	2	11
Mvmt Flow	124	4	12	13	1	67	14	656	30	38	671	42

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1501	1482	692	1475	1488	671	713	0	0	686	0	0
Stage 1	768	768	-	699	699	-	-	-	-	-	-	-
Stage 2	733	714	-	776	789	-	-	-	-	-	-	-
Critical Hdwy	7.22	6.83	6.22	7.12	6.52	6.22	4.48	-	-	4.52	-	-
Critical Hdwy Stg 1	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.608	4.297	3.318	3.518	4.018	3.318	2.542	-	-	2.578	-	-
Pot Cap-1 Maneuver	~ 95	107	444	104	124	456	742	-	-	747	-	-
Stage 1	380	369	-	430	442	-	-	-	-	-	-	-
Stage 2	397	392	-	390	402	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 74	95	444	89	110	456	742	-	-	747	-	-
Mov Cap-2 Maneuver	~ 74	95	-	89	110	-	-	-	-	-	-	-
Stage 1	368	338	-	417	428	-	-	-	-	-	-	-
Stage 2	327	380	-	343	368	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 472.6	24.5	0.2	0.5
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	742	-	-	80	265	747	-	-
HCM Lane V/C Ratio	0.019	-	-	1.753	0.307	0.051	-	-
HCM Control Delay (s)	9.9	0	-	$ 472.6	24.5	10.1	0	-
HCM Lane LOS	A	A	-	F	C	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	11.9	1.3	0.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

HCM 6th TWSC
2: SR 19 & W Central Ave/E Central Ave

Intersection	
Int Delay, s/veh	50.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	91	14	16	20	4	49	19	617	25	66	741	133
Future Vol, veh/h	91	14	16	20	4	49	19	617	25	66	741	133
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	12	33	2	2	2	2	38	10	2	42	2	11
Mvmt Flow	94	14	16	21	4	51	20	636	26	68	764	137

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1686	1671	833	1673	1726	649	901	0	0	662	0	0
Stage 1	969	969	-	689	689	-	-	-	-	-	-	-
Stage 2	717	702	-	984	1037	-	-	-	-	-	-	-
Critical Hdwy	7.22	6.83	6.22	7.12	6.52	6.22	4.48	-	-	4.52	-	-
Critical Hdwy Stg 1	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.608	4.297	3.318	3.518	4.018	3.318	2.542	-	-	2.578	-	-
Pot Cap-1 Maneuver	~ 70	81	369	76	89	470	624	-	-	764	-	-
Stage 1	292	294	-	436	446	-	-	-	-	-	-	-
Stage 2	405	397	-	299	308	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 49	63	369	50	69	470	624	-	-	764	-	-
Mov Cap-2 Maneuver	~ 49	63	-	50	69	-	-	-	-	-	-	-
Stage 1	277	240	-	414	423	-	-	-	-	-	-	-
Stage 2	340	377	-	219	251	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 701.2	65.2	0.3	0.7
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	624	-	-	57	130	764	-	-
HCM Lane V/C Ratio	0.031	-	-	2.188	0.579	0.089	-	-
HCM Control Delay (s)	11	0	-	$ 701.2	65.2	10.2	0	-
HCM Lane LOS	B	A	-	F	F	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	12.3	2.9	0.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	44	17	10	23	1	10	0	20	0	0	0
Future Vol, veh/h	1	44	17	10	23	1	10	0	20	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	55	21	13	29	1	13	0	25	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	30	0	0	76	0	0	124	124	66	136	134	30
Stage 1	-	-	-	-	-	-	68	68	-	56	56	-
Stage 2	-	-	-	-	-	-	56	56	-	80	78	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1583	-	-	1523	-	-	850	766	998	835	757	1044
Stage 1	-	-	-	-	-	-	942	838	-	956	848	-
Stage 2	-	-	-	-	-	-	956	848	-	929	830	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1583	-	-	1523	-	-	843	758	998	808	749	1044
Mov Cap-2 Maneuver	-	-	-	-	-	-	843	758	-	808	749	-
Stage 1	-	-	-	-	-	-	941	837	-	955	840	-
Stage 2	-	-	-	-	-	-	947	840	-	905	829	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	2.2	9	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	940	1583	-	-	1523	-	-	-
HCM Lane V/C Ratio	0.04	0.001	-	-	0.008	-	-	-
HCM Control Delay (s)	9	7.3	0	-	7.4	0	-	0
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

HCM 6th TWSC
3: S Florida Ave & W Central Ave

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	35	11	36	30	6	9	1	33	1	0	0
Future Vol, veh/h	0	35	11	36	30	6	9	1	33	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	44	14	45	38	8	11	1	41	1	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	46	0	0	58	0	0	183	187	51	204	190	42
Stage 1	-	-	-	-	-	-	51	51	-	132	132	-
Stage 2	-	-	-	-	-	-	132	136	-	72	58	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1562	-	-	1546	-	-	778	708	1017	754	705	1029
Stage 1	-	-	-	-	-	-	962	852	-	871	787	-
Stage 2	-	-	-	-	-	-	871	784	-	938	847	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1562	-	-	1546	-	-	760	687	1017	706	684	1029
Mov Cap-2 Maneuver	-	-	-	-	-	-	760	687	-	706	684	-
Stage 1	-	-	-	-	-	-	962	852	-	871	763	-
Stage 2	-	-	-	-	-	-	845	760	-	899	847	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.7	9.1	10.1
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	940	1562	-	-	1546	-	-	706
HCM Lane V/C Ratio	0.057	-	-	-	0.029	-	-	0.002
HCM Control Delay (s)	9.1	0	-	-	7.4	0	-	10.1
HCM Lane LOS	A	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0

Intersection	
Int Delay, s/veh	54.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	36	124	0	53	16	482	66	21	766	2
Future Vol, veh/h	5	0	36	124	0	53	16	482	66	21	766	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	8	12	2	10	2
Mvmt Flow	6	0	40	138	0	59	18	536	73	23	851	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1536	1543	852	1527	1508	573	853	0	0	609	0	0
Stage 1	898	898	-	609	609	-	-	-	-	-	-	-
Stage 2	638	645	-	918	899	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	95	115	359	~ 96	121	519	786	-	-	970	-	-
Stage 1	334	358	-	482	485	-	-	-	-	-	-	-
Stage 2	465	467	-	326	358	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	79	106	359	~ 80	112	519	786	-	-	970	-	-
Mov Cap-2 Maneuver	79	106	-	~ 80	112	-	-	-	-	-	-	-
Stage 1	322	342	-	465	468	-	-	-	-	-	-	-
Stage 2	398	451	-	277	342	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.5	$ 478.9	0.3	0.2
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	786	-	-	251	107	970	-	-
HCM Lane V/C Ratio	0.023	-	-	0.181	1.838	0.024	-	-
HCM Control Delay (s)	9.7	-	-	22.5	$ 478.9	8.8	0	-
HCM Lane LOS	A	-	-	C	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	15.9	0.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	48.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	1	26	88	0	36	36	716	146	64	585	2
Future Vol, veh/h	5	1	26	88	0	36	36	716	146	64	585	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	8	12	2	10	2
Mvmt Flow	6	1	29	98	0	40	40	796	162	71	650	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1770	1831	651	1765	1751	877	652	0	0	958	0	0
Stage 1	793	793	-	957	957	-	-	-	-	-	-	-
Stage 2	977	1038	-	808	794	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	65	76	469	~ 65	86	348	935	-	-	718	-	-
Stage 1	382	400	-	310	336	-	-	-	-	-	-	-
Stage 2	302	308	-	375	400	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	47	58	469	~ 49	66	348	935	-	-	718	-	-
Mov Cap-2 Maneuver	47	58	-	~ 49	66	-	-	-	-	-	-	-
Stage 1	346	338	-	281	304	-	-	-	-	-	-	-
Stage 2	242	279	-	296	338	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	30	$ 653.3	0.4	1
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	935	-	-	179	65	718	-	-
HCM Lane V/C Ratio	0.043	-	-	0.199	2.12	0.099	-	-
HCM Control Delay (s)	9	-	-	30	$ 653.3	10.6	0	-
HCM Lane LOS	A	-	-	D	F	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.7	13.1	0.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	26.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	78	80	568	133	159	843
Future Vol, veh/h	78	80	568	133	159	843
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	590	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	38	15	8	22	9	5
Mvmt Flow	81	83	592	139	166	878

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1802	592	0	0	731	0
Stage 1	592	-	-	-	-	-
Stage 2	1210	-	-	-	-	-
Critical Hdwy	6.78	6.35	-	-	4.19	-
Critical Hdwy Stg 1	5.78	-	-	-	-	-
Critical Hdwy Stg 2	5.78	-	-	-	-	-
Follow-up Hdwy	3.842	3.435	-	-	2.281	-
Pot Cap-1 Maneuver	~ 71	483	-	-	842	-
Stage 1	489	-	-	-	-	-
Stage 2	239	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 44	483	-	-	842	-
Mov Cap-2 Maneuver	~ 44	-	-	-	-	-
Stage 1	489	-	-	-	-	-
Stage 2	147	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 303.4	0	1.6
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	44	483	842	-
HCM Lane V/C Ratio	-	-	1.847	0.173	0.197	-
HCM Control Delay (s)	-	-	$ 600.2	14	10.3	0
HCM Lane LOS	-	-	F	B	B	A
HCM 95th %tile Q(veh)	-	-	8.3	0.6	0.7	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	40.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	100	151	857	110	113	698
Future Vol, veh/h	100	151	857	110	113	698
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	590	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	38	15	8	22	9	5
Mvmt Flow	104	157	893	115	118	727

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1856	893	0	0	1008	0
Stage 1	893	-	-	-	-	-
Stage 2	963	-	-	-	-	-
Critical Hdwy	6.78	6.35	-	-	4.19	-
Critical Hdwy Stg 1	5.78	-	-	-	-	-
Critical Hdwy Stg 2	5.78	-	-	-	-	-
Follow-up Hdwy	3.842	3.435	-	-	2.281	-
Pot Cap-1 Maneuver	~ 65	322	-	-	661	-
Stage 1	347	-	-	-	-	-
Stage 2	320	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 46	322	-	-	661	-
Mov Cap-2 Maneuver	~ 46	-	-	-	-	-
Stage 1	347	-	-	-	-	-
Stage 2	224	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 322.1	0	1.6
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	46	322	661	-
HCM Lane V/C Ratio	-	-	2.264	0.488	0.178	-
HCM Control Delay (s)	-	-	$ 768.6	26.4	11.6	0
HCM Lane LOS	-	-	F	D	B	A
HCM 95th %tile Q(veh)	-	-	10.9	2.5	0.6	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

HCM 6th Signalized Intersection Summary
1: SR 19 & CR 48



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	522	334	454	740	413	180
Future Volume (veh/h)	522	334	454	740	413	180
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1752	1589	1767	1811	1737	1811
Adj Flow Rate, veh/h	538	205	468	0	426	186
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	21	9	6	11	6
Cap, veh/h	548	442	485		430	991
Arrive On Green	0.33	0.33	0.27	0.00	0.21	0.55
Sat Flow, veh/h	1668	1346	1767	1535	1654	1811
Grp Volume(v), veh/h	538	205	468	0	426	186
Grp Sat Flow(s),veh/h/ln	1668	1346	1767	1535	1654	1811
Q Serve(g_s), s	35.2	13.3	28.8	0.0	23.1	5.7
Cycle Q Clear(g_c), s	35.2	13.3	28.8	0.0	23.1	5.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	548	442	485		430	991
V/C Ratio(X)	0.98	0.46	0.96		0.99	0.19
Avail Cap(c_a), veh/h	548	442	485		430	991
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	36.6	29.3	39.4	0.0	31.2	12.6
Incr Delay (d2), s/veh	33.9	0.8	33.0	0.0	40.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	25.7	7.5	23.3	0.0	22.6	4.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	70.5	30.0	72.4	0.0	72.0	13.0
LnGrp LOS	E	C	E		E	B
Approach Vol, veh/h	743		468	A		612
Approach Delay, s/veh	59.4		72.4			54.1
Approach LOS	E		E			D

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	30.0	36.6		43.4		66.6
Change Period (Y+Rc), s	6.5	6.4		7.3		6.4
Max Green Setting (Gmax), s	23.5	30.2		36.1		60.2
Max Q Clear Time (g_c+I1), s	25.1	30.8		37.2		7.7
Green Ext Time (p_c), s	0.0	0.0		0.0		1.1

Intersection Summary			
HCM 6th Ctrl Delay		60.9	
HCM 6th LOS		E	

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	17.7
Intersection LOS	C

Approach	WB	NB	SB
Entry Lanes	2	2	2
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	882	1231	612
Demand Flow Rate, veh/h	1008	1319	670
Vehicles Circulating, veh/h	510	473	592
Vehicles Exiting, veh/h	1282	789	926
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	14.2	23.0	11.9
Approach LOS	B	C	B

Lane	Left	Right	Left	Right	Left	Right
Designated Moves	L	TR	LT	R	L	TR
Assumed Moves	L	TR	LT	R	L	TR
RT Channelized						
Lane Util	0.587	0.413	0.387	0.613	0.706	0.294
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.535	2.535
Critical Headway, s	4.544	4.544	4.544	4.544	4.544	4.544
Entry Flow, veh/h	592	416	510	809	473	197
Cap Entry Lane, veh/h	893	893	923	923	829	829
Entry HV Adj Factor	0.909	0.827	0.917	0.943	0.901	0.943
Flow Entry, veh/h	538	344	468	763	426	186
Cap Entry, veh/h	811	738	847	871	746	782
V/C Ratio	0.663	0.466	0.552	0.876	0.571	0.238
Control Delay, s/veh	16.0	11.4	12.1	29.7	13.9	7.2
LOS	C	B	B	D	B	A
95th %tile Queue, veh	5	2	3	11	4	1

HCM 6th Signalized Intersection Summary
1: SR 19 & CR 48



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	751	483	164	587	451	194
Future Volume (veh/h)	751	483	164	587	451	194
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1752	1589	1767	1811	1737	1811
Adj Flow Rate, veh/h	774	359	169	0	465	200
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	21	9	6	11	6
Cap, veh/h	777	627	259		467	743
Arrive On Green	0.47	0.47	0.15	0.00	0.20	0.41
Sat Flow, veh/h	1668	1346	1767	1535	1654	1811
Grp Volume(v), veh/h	774	359	169	0	465	200
Grp Sat Flow(s),veh/h/ln	1668	1346	1767	1535	1654	1811
Q Serve(g_s), s	50.9	21.4	9.9	0.0	22.5	8.1
Cycle Q Clear(g_c), s	50.9	21.4	9.9	0.0	22.5	8.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	777	627	259		467	743
V/C Ratio(X)	1.00	0.57	0.65		1.00	0.27
Avail Cap(c_a), veh/h	777	627	259		467	743
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	29.3	21.4	44.3	0.0	33.2	21.5
Incr Delay (d2), s/veh	31.4	1.3	12.2	0.0	40.4	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	33.4	10.6	8.9	0.0	12.2	6.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	60.7	22.7	56.5	0.0	73.6	22.4
LnGrp LOS	E	C	E		E	C
Approach Vol, veh/h	1133		169	A		665
Approach Delay, s/veh	48.7		56.5			58.2
Approach LOS	D		E			E

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	29.0	22.5		58.5		51.5
Change Period (Y+Rc), s	6.5	6.4		7.3		6.4
Max Green Setting (Gmax), s	22.5	16.1		51.2		45.1
Max Q Clear Time (g_c+I1), s	24.5	11.9		52.9		10.1
Green Ext Time (p_c), s	0.0	0.3		0.0		1.1

Intersection Summary	
HCM 6th Ctrl Delay	52.6
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	16.1
Intersection LOS	C

Approach	WB	NB	SB
Entry Lanes	2	2	2
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	1272	774	665
Demand Flow Rate, veh/h	1454	825	728
Vehicles Circulating, veh/h	184	516	851
Vehicles Exiting, veh/h	1157	1063	787
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	12.6	15.7	23.4
Approach LOS	B	C	C

Lane	Left	Right	Left	Right	Left	Right
Designated Moves	L	TR	LT	R	L	TR
Assumed Moves	L	TR	LT	R	L	TR
RT Channelized						
Lane Util	0.585	0.415	0.223	0.777	0.709	0.291
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.535	2.535
Critical Headway, s	4.544	4.544	4.544	4.544	4.544	4.544
Entry Flow, veh/h	851	603	184	641	516	212
Cap Entry Lane, veh/h	1201	1201	888	888	655	655
Entry HV Adj Factor	0.910	0.826	0.917	0.944	0.901	0.943
Flow Entry, veh/h	774	498	169	605	465	200
Cap Entry, veh/h	1092	992	815	838	590	618
V/C Ratio	0.708	0.502	0.207	0.722	0.788	0.324
Control Delay, s/veh	14.4	9.7	6.6	18.2	29.0	10.2
LOS	B	A	A	C	D	B
95th %tile Queue, veh	6	3	1	6	8	1

HCM 6th Signalized Intersection Summary
2: SR 19 & W Central Ave

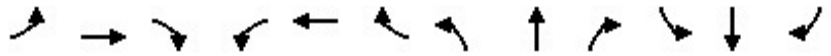


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	4	12	13	1	65	14	672	29	37	663	49
Future Volume (veh/h)	144	4	12	13	1	65	14	672	29	37	663	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1722	1411	1870	1870	1870	1870	1337	1752	1870	1278	1870	1737
Adj Flow Rate, veh/h	148	4	12	13	1	67	14	693	30	38	684	51
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	12	33	2	2	2	2	38	10	2	42	2	11
Cap, veh/h	310	10	15	105	29	252	78	1054	45	101	1041	75
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.64	0.64	0.64	0.64	0.64	0.64
Sat Flow, veh/h	965	56	81	128	159	1375	11	1642	70	43	1623	118
Grp Volume(v), veh/h	164	0	0	81	0	0	737	0	0	773	0	0
Grp Sat Flow(s),veh/h/ln	1102	0	0	1663	0	0	1722	0	0	1783	0	0
Q Serve(g_s), s	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	7.2	0.0	0.0	2.2	0.0	0.0	13.5	0.0	0.0	13.2	0.0	0.0
Prop In Lane	0.90		0.07	0.16		0.83	0.02		0.04	0.05		0.07
Lane Grp Cap(c), veh/h	335	0	0	386	0	0	1177	0	0	1218	0	0
V/C Ratio(X)	0.49	0.00	0.00	0.21	0.00	0.00	0.63	0.00	0.00	0.63	0.00	0.00
Avail Cap(c_a), veh/h	506	0	0	645	0	0	1177	0	0	1218	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	19.9	0.0	0.0	18.1	0.0	0.0	5.7	0.0	0.0	5.7	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	0.0	0.3	0.0	0.0	2.5	0.0	0.0	2.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.2	0.0	0.0	1.4	0.0	0.0	6.1	0.0	0.0	6.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.0	0.0	0.0	18.3	0.0	0.0	8.2	0.0	0.0	8.2	0.0	0.0
LnGrp LOS	C	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		164			81			737			773	
Approach Delay, s/veh		21.0			18.3			8.2			8.2	
Approach LOS		C			B			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	37.5	13.9	37.5	13.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	33.0	18.0	33.0	18.0
Max Q Clear Time (g_c+I1), s	15.5	9.2	15.2	4.2
Green Ext Time (p_c), s	5.0	0.5	5.4	0.3

Intersection Summary	
HCM 6th Ctrl Delay	9.9
HCM 6th LOS	A

HCM 6th Signalized Intersection Summary
2: SR 19 & W Central Ave

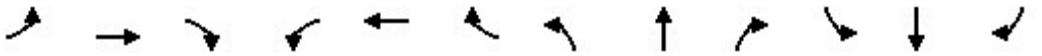


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	14	16	20	4	49	19	642	25	66	784	161
Future Volume (veh/h)	108	14	16	20	4	49	19	642	25	66	784	161
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1722	1411	1870	1870	1870	1870	1337	1752	1870	1278	1870	1737
Adj Flow Rate, veh/h	111	14	16	21	4	51	20	662	26	68	808	166
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	12	33	2	2	2	2	38	10	2	42	2	11
Cap, veh/h	338	28	21	191	43	187	124	917	35	154	784	155
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.56	0.56	0.56	0.56	0.56	0.56
Sat Flow, veh/h	839	169	129	296	258	1130	18	1650	64	64	1410	279
Grp Volume(v), veh/h	141	0	0	76	0	0	708	0	0	1042	0	0
Grp Sat Flow(s),veh/h/ln	1136	0	0	1684	0	0	1731	0	0	1753	0	0
Q Serve(g_s), s	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.1	0.0	0.0
Cycle Q Clear(g_c), s	3.7	0.0	0.0	1.3	0.0	0.0	9.9	0.0	0.0	18.0	0.0	0.0
Prop In Lane	0.79		0.11	0.28		0.67	0.03		0.04	0.07		0.16
Lane Grp Cap(c), veh/h	387	0	0	421	0	0	1077	0	0	1094	0	0
V/C Ratio(X)	0.36	0.00	0.00	0.18	0.00	0.00	0.66	0.00	0.00	0.95	0.00	0.00
Avail Cap(c_a), veh/h	803	0	0	1020	0	0	1077	0	0	1094	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.7	0.0	0.0	11.8	0.0	0.0	5.4	0.0	0.0	7.6	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.2	0.0	0.0	1.5	0.0	0.0	17.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	0.0	0.0	0.7	0.0	0.0	2.7	0.0	0.0	11.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.3	0.0	0.0	12.0	0.0	0.0	6.8	0.0	0.0	24.7	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	C	A	A
Approach Vol, veh/h		141			76			708			1042	
Approach Delay, s/veh		13.3			12.0			6.8			24.7	
Approach LOS		B			B			A			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	22.5	9.9	22.5	9.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.0	18.0	18.0	18.0
Max Q Clear Time (g_c+I1), s	11.9	5.7	20.0	3.3
Green Ext Time (p_c), s	2.5	0.6	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	16.9
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary
4: SR 19 & Revels Rd/Revels Rd

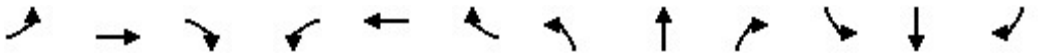


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	0	120	124	0	53	44	490	66	21	790	14
Future Volume (veh/h)	41	0	120	124	0	53	44	490	66	21	790	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1781	1722	1870	1752	1870
Adj Flow Rate, veh/h	46	0	133	138	0	59	49	544	73	23	878	16
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	8	12	2	10	2
Cap, veh/h	377	0	210	0	0	210	342	980	131	104	1093	1010
Arrive On Green	0.13	0.00	0.13	0.00	0.00	0.13	0.64	0.64	0.64	0.64	0.64	0.64
Sat Flow, veh/h	1455	0	1585	0	0	1585	622	1538	206	16	1716	1585
Grp Volume(v), veh/h	46	0	133	0	0	59	49	0	617	901	0	16
Grp Sat Flow(s),veh/h/ln	1455	0	1585	0	0	1585	622	0	1744	1731	0	1585
Q Serve(g_s), s	0.0	0.0	3.1	0.0	0.0	1.3	2.5	0.0	7.8	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.9	0.0	3.1	0.0	0.0	1.3	17.5	0.0	7.8	15.0	0.0	0.1
Prop In Lane	1.00		1.00	0.00		1.00	1.00		0.12	0.03		1.00
Lane Grp Cap(c), veh/h	377	0	210	0	0	210	342	0	1111	1197	0	1010
V/C Ratio(X)	0.12	0.00	0.63	0.00	0.00	0.28	0.14	0.00	0.56	0.75	0.00	0.02
Avail Cap(c_a), veh/h	819	0	731	0	0	731	630	0	1921	1984	0	1745
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.1	0.0	16.0	0.0	0.0	15.3	11.8	0.0	4.0	5.3	0.0	2.6
Incr Delay (d2), s/veh	0.1	0.0	3.1	0.0	0.0	0.7	0.2	0.0	0.4	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	0.0	2.0	0.0	0.0	0.8	0.5	0.0	1.7	3.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.2	0.0	19.2	0.0	0.0	16.0	12.0	0.0	4.4	6.3	0.0	2.6
LnGrp LOS	B	A	B	A	A	B	B	A	A	A	A	A
Approach Vol, veh/h		179			59			666			917	
Approach Delay, s/veh		18.2			16.0			5.0			6.2	
Approach LOS		B			B			A			A	

Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		29.4	0.0	9.7		29.4		9.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5		4.5				
Max Green Setting (Gmax), s		43.0	5.0	18.0		43.0		18.0				
Max Q Clear Time (g_c+I1), s		19.5	0.0	5.1		17.0		3.3				
Green Ext Time (p_c), s		4.8	0.0	0.5		7.9		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	7.3
HCM 6th LOS	A

HCM 6th Signalized Intersection Summary
4: SR 19 & Revels Rd/Revels Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	1	83	88	0	36	135	744	146	64	602	45
Future Volume (veh/h)	30	1	83	88	0	36	135	744	146	64	602	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1781	1722	1870	1752	1870
Adj Flow Rate, veh/h	33	1	92	98	0	40	150	827	162	71	669	50
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	8	12	2	10	2
Cap, veh/h	244	6	140	0	0	140	388	1102	216	126	1006	1207
Arrive On Green	0.09	0.09	0.09	0.00	0.00	0.09	0.76	0.76	0.76	0.76	0.76	0.76
Sat Flow, veh/h	1422	65	1585	0	0	1585	733	1447	283	80	1321	1585
Grp Volume(v), veh/h	34	0	92	0	0	40	150	0	989	740	0	50
Grp Sat Flow(s),veh/h/ln	1486	0	1585	0	0	1585	733	0	1730	1401	0	1585
Q Serve(g_s), s	0.0	0.0	3.4	0.0	0.0	1.4	9.8	0.0	19.1	4.7	0.0	0.5
Cycle Q Clear(g_c), s	1.1	0.0	3.4	0.0	0.0	1.4	33.6	0.0	19.1	24.0	0.0	0.5
Prop In Lane	0.97		1.00	0.00		1.00	1.00		0.16	0.10		1.00
Lane Grp Cap(c), veh/h	249	0	140	0	0	140	388	0	1318	1133	0	1207
V/C Ratio(X)	0.14	0.00	0.66	0.00	0.00	0.29	0.39	0.00	0.75	0.65	0.00	0.04
Avail Cap(c_a), veh/h	542	0	476	0	0	476	600	0	1818	1548	0	1666
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.4	0.0	26.5	0.0	0.0	25.6	15.2	0.0	4.0	3.3	0.0	1.8
Incr Delay (d2), s/veh	0.2	0.0	5.2	0.0	0.0	1.1	0.6	0.0	1.2	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	0.0	2.5	0.0	0.0	1.0	2.7	0.0	4.3	2.3	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.6	0.0	31.6	0.0	0.0	26.7	15.8	0.0	5.1	3.9	0.0	1.8
LnGrp LOS	C	A	C	A	A	C	B	A	A	A	A	A
Approach Vol, veh/h		126			40			1139			790	
Approach Delay, s/veh		30.0			26.7			6.5			3.8	
Approach LOS		C			C			A			A	

Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		50.5	0.0	9.8		50.5		9.8				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5		4.5				
Max Green Setting (Gmax), s		63.0	5.0	18.0		63.0		18.0				
Max Q Clear Time (g_c+I1), s		35.6	0.0	5.4		26.0		3.4				
Green Ext Time (p_c), s		10.8	0.0	0.3		7.2		0.1				

Intersection Summary	
HCM 6th Ctrl Delay	7.3
HCM 6th LOS	A

HCM 6th Signalized Intersection Summary
5: SR 19 & CR 455



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	78	88	596	133	183	927
Future Volume (veh/h)	78	88	596	133	183	927
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1337	1678	1781	1574	1767	1826
Adj Flow Rate, veh/h	81	92	621	139	191	966
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	38	15	8	22	9	5
Cap, veh/h	101	113	1527	1143	214	983
Arrive On Green	0.08	0.08	0.86	0.86	0.86	0.86
Sat Flow, veh/h	1273	1422	1781	1334	216	1146
Grp Volume(v), veh/h	81	92	621	139	1157	0
Grp Sat Flow(s),veh/h/ln	1273	1422	1781	1334	1362	0
Q Serve(g_s), s	8.9	9.1	10.9	2.4	105.7	0.0
Cycle Q Clear(g_c), s	8.9	9.1	10.9	2.4	116.6	0.0
Prop In Lane	1.00	1.00		1.00	0.17	
Lane Grp Cap(c), veh/h	101	113	1527	1143	1197	0
V/C Ratio(X)	0.80	0.81	0.41	0.12	0.97	0.00
Avail Cap(c_a), veh/h	161	180	1540	1153	1208	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	64.4	64.4	2.2	1.6	12.5	0.0
Incr Delay (d2), s/veh	13.6	13.9	0.2	0.0	18.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.9	6.7	4.5	0.8	40.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	78.0	78.4	2.4	1.7	30.8	0.0
LnGrp LOS	E	E	A	A	C	A
Approach Vol, veh/h	173		760			1157
Approach Delay, s/veh	78.2		2.3			30.8
Approach LOS	E		A			C

Timer - Assigned Phs	2			6	8
Phs Duration (G+Y+Rc), s	126.5			126.5	15.8
Change Period (Y+Rc), s	4.5			4.5	4.5
Max Green Setting (Gmax), s	123.0			123.0	18.0
Max Q Clear Time (g_c+I1), s	12.9			118.6	11.1
Green Ext Time (p_c), s	5.3			3.4	0.3

Intersection Summary	
HCM 6th Ctrl Delay	24.3
HCM 6th LOS	C

HCM 6th Signalized Intersection Summary
5: SR 19 & CR 455



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	100	179	956	110	130	756
Future Volume (veh/h)	100	179	956	110	130	756
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1337	1678	1781	1574	1767	1826
Adj Flow Rate, veh/h	104	186	996	115	135	788
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	38	15	8	22	9	5
Cap, veh/h	153	171	1461	1094	141	755
Arrive On Green	0.12	0.12	0.82	0.82	0.82	0.82
Sat Flow, veh/h	1273	1422	1781	1334	138	921
Grp Volume(v), veh/h	104	186	996	115	923	0
Grp Sat Flow(s),veh/h/ln	1273	1422	1781	1334	1059	0
Q Serve(g_s), s	11.7	18.0	34.2	2.5	88.8	0.0
Cycle Q Clear(g_c), s	11.7	18.0	34.2	2.5	123.0	0.0
Prop In Lane	1.00	1.00		1.00	0.15	
Lane Grp Cap(c), veh/h	153	171	1461	1094	896	0
V/C Ratio(X)	0.68	1.09	0.68	0.11	1.03	0.00
Avail Cap(c_a), veh/h	153	171	1461	1094	896	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	63.2	66.0	5.5	2.7	24.2	0.0
Incr Delay (d2), s/veh	11.6	95.0	1.3	0.0	38.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.7	17.1	15.7	1.1	52.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	74.9	161.0	6.8	2.7	62.3	0.0
LnGrp LOS	E	F	A	A	F	A
Approach Vol, veh/h	290		1111			923
Approach Delay, s/veh	130.1		6.4			62.3
Approach LOS	F		A			E

Timer - Assigned Phs	2			6	8
Phs Duration (G+Y+Rc), s	127.5			127.5	22.5
Change Period (Y+Rc), s	4.5			4.5	4.5
Max Green Setting (Gmax), s	123.0			123.0	18.0
Max Q Clear Time (g_c+I1), s	36.2			125.0	20.0
Green Ext Time (p_c), s	11.8			0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	44.1
HCM 6th LOS	D

Appendix N

Lake County Land Development Code (LDC)

2. Turn Lanes

Turn lanes consist of left-turn lanes and right-turn lanes (deceleration lanes). Turn lanes shall be installed on the road which is being accessed at the proposed entrance(s) to the development, as deemed necessary by the County Manager or Designee. The County Manager or Designee may also require turn lanes at adjacent or nearby intersections in lieu of, or in addition to, turn lanes at the development entrances.

Conditions which are to be considered in determining the need for turn lanes include the following:

a) If the property accessing the road is projected to generate 500 or more vehicle trips per day, or 50 or more vehicle trips in any hour;

b) If a traffic analysis indicates that turn lanes would be necessary to maintain capacity on fronting roads and/or on adjacent or nearby intersections.

c) If entrances are proposed at locations where grade, topography, site distance, traffic, or other unusual conditions indicate that turn lanes would be needed for traffic safety. The need for turn lanes to accommodate right turn movements and left turn movements shall be based upon anticipated traffic distribution and projected turning movement volumes among other considerations, including traffic safety.

C. ***Traffic Analysis***

1. Transportation Concurrency Management System

Transportation Concurrency Management System is administered by the Lake-Sumter Metropolitan Planning Organization (LSMPO). All information regarding traffic study could be found on LSPMO website www.lakesumtermpo.com/concurrency/index.aspx

D. ***Road Classification***

1. Arterial Roads

An arterial road is a route providing service which is relatively continuous and of relatively high traffic volume, long average trip length, high operating speed and of high mobility importance.

Arterial roads are grouped into the following sub-categories:

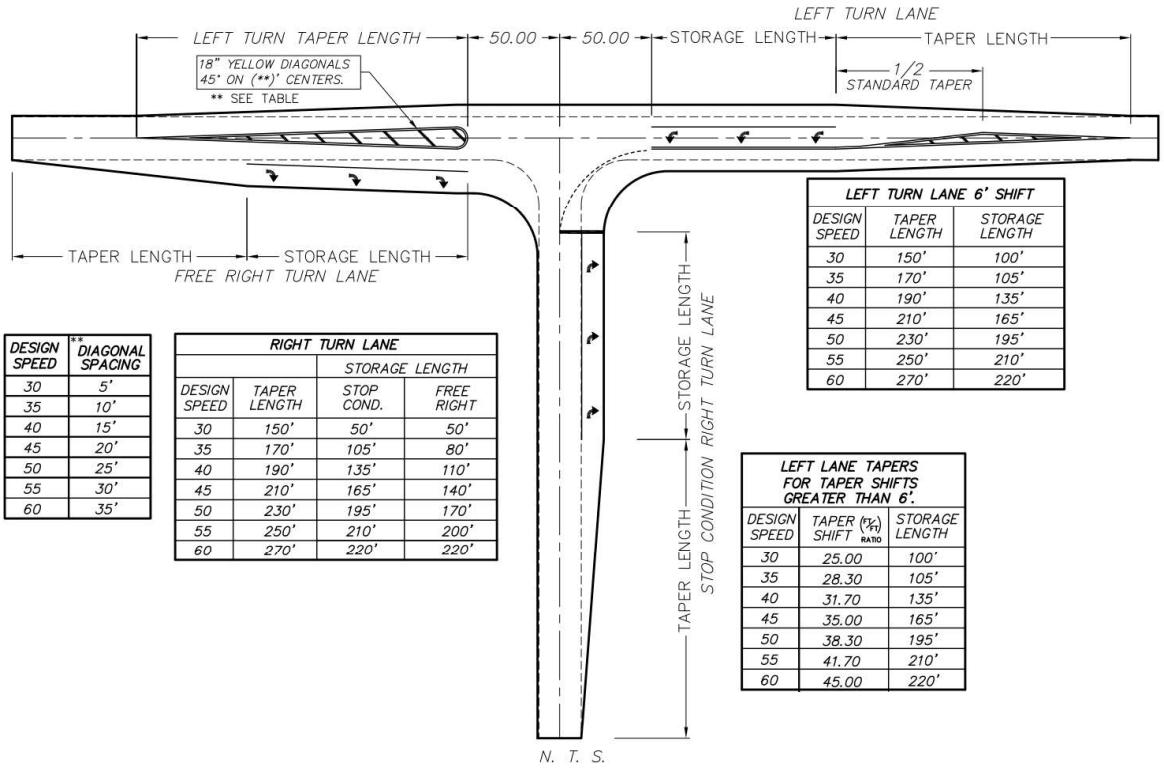
a) Principal Arterial
b) Minor Arterial

The classification of roads as arterials shall be based upon criteria established by the Florida Department of Transportation utilizing their most recent, adopted functional classification system.

2. Collector Roads

A collector road is a route providing services which is of relatively moderate traffic volume, moderate trip length and moderate operating speed. Collector roads collect and distribute the traffic between local roads and arterial roads and serves as a linkage between land access and mobility needs.

LAKE COUNTY STANDARD TURN LANES



DESIGN SPEED	** DIAGONAL SPACING
30	5'
35	10'
40	15'
45	20'
50	25'
55	30'
60	35'

RIGHT TURN LANE			
		STORAGE LENGTH	
DESIGN SPEED	TAPER LENGTH	STOP COND.	FREE RIGHT
30	150'	50'	50'
35	170'	105'	80'
40	190'	135'	110'
45	210'	165'	140'
50	230'	195'	170'
55	250'	210'	200'
60	270'	220'	220'

LEFT TURN LANE 6' SHIFT		
DESIGN SPEED	TAPER LENGTH	STORAGE LENGTH
30	150'	100'
35	170'	105'
40	190'	135'
45	210'	165'
50	230'	195'
55	250'	210'
60	270'	220'

LEFT LANE TAPERS FOR TAPER SHIFTS GREATER THAN 6'.		
DESIGN SPEED	TAPER SHIFT (W/Y1) RATIO	STORAGE LENGTH
30	25.00	100'
35	28.30	105'
40	31.70	135'
45	35.00	165'
50	38.30	195'
55	41.70	210'
60	45.00	220'

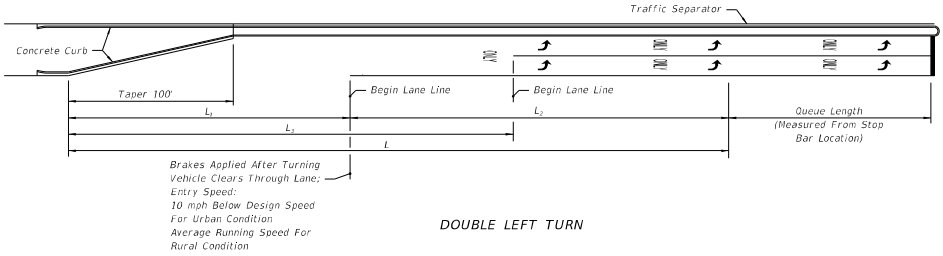
O:_CAD STANDARDS\DWG\Turn LanesR1.dwg (02/06/2007)

THIS SHOULD BE USED AS A GUIDE LINE ONLY.
ALL DESIGNS SHALL BE SUBMITTED FOR REVIEW.

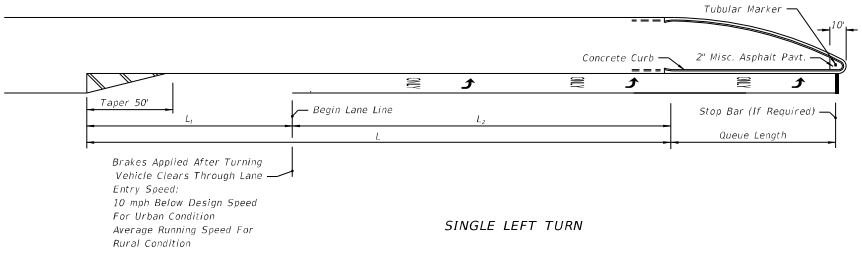
Typical Details

Appendix O
FDOT Design Manual Exhibit 212-1

MEDIAN TURN LANES
MINIMUM DECELERATION LENGTHS



DOUBLE LEFT TURN



SINGLE LEFT TURN

MEDIAN TURN LANES								
			URBAN CONDITIONS			RURAL CONDITIONS		
Design Speed (mph)	Entry Speed (mph)	Clearance Distance L_1 (ft.)	Brake To Stop Distance L_2 (ft.)	Total Decel. Distance L (ft.)	Clearance Distance L_3 (ft.)	Brake To Stop Distance L_2 (ft.)	Total Decel. Distance L (ft.)	Clearance Distance L_3 (ft.)
35	25	70	75	145	110	——	——	——
40	30	80	75	155	120	——	——	——
45	35	85	100	185	135	——	——	——
50	40/44	105	135	240	160	185	290	160
55	48	125	——	——	——	225	350	195
60	52	145	——	——	——	260	405	230
65	55	170	——	——	——	290	460	270

NOT TO SCALE

EXHIBIT 212-1
01/01/2022

Appendix B
Preliminary Development Plan

Appendix C
Lake County CMP Database and 2023 FDOT Q/LOS

Appendix D
Turning Movement Counts and Seasonal Factor Data

Appendix E
HCM Analysis Worksheets - Existing Conditions

Appendix F
ITE Trip Generation Sheets

Appendix G
CFRPM Model Output

Appendix H
LSMPO TIP and *LSMPO LOPP*

Appendix I
Vested Trips Data

Appendix J
AADT Model Plot

Appendix K
HCM Worksheets - Projected Conditions

Appendix L
Intersection Volume Projections

Appendix M
Background Conditions / Buildout Conditions with Mitigation

Appendix N

Lake County Land Development Code (LDC)

Appendix O
FDOT Design Manual Exhibit 212-1

SURVEYOR'S NOTES

1. THIS MAP OF BOUNDARY, TOPOGRAPHIC & WETLAND SURVEY SHOULD CONTAIN THE ELECTRONIC SEAL AND SIGNATURE OF A FLORIDA LICENSED SURVEYOR AND MAPPER, IS TO BE USED IN DIGITAL FORM ONLY, AND IS INVALIDATED ONCE PRINTED. PRINTED COPIES OF THIS SURVEY ARE NOT VALID WITHOUT THE ORIGINAL SIGNATURE AND RAISED SEAL OF SAID SURVEYOR.
2. ELEVATIONS SHOWN HEREON ARE RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AND IS BASED ON THE "REFERENCE BENCHMARK" STATED HEREON. THE SITE BENCHMARKS SHOWN HEREON WERE ESTABLISHED USING A CLOSED LEVEL LOOP UTILIZING THE SAID REFERENCE BENCHMARK, MEETING OR EXCEEDING THE STANDARDS OF PRACTICE.
3. NORTHINGS AND EASTINGS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83), 2011 ADJUSTMENT, FLORIDA STATE PLANE, EAST ZONE AND IS BASED ON THE "REFERENCE BENCHMARK" STATED HEREON. THE SITE BENCHMARKS SHOWN HEREON WERE ESTABLISHED USING A REAL-TIME KINEMATIC (RTK) GPS SOLUTION ON BOTH THE REFERENCE BENCHMARK AND SET SITE BENCHMARKS, MEETING OR EXCEEDING THE STANDARDS OF PRACTICE.
4. THE LANDS SHOWN HEREON LIE IN ZONE "X" (UNSHADED) DESCRIBED AS AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, AND ZONE "X" (SHADED) DESCRIBED AS AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD, AND ZONE "A" DESCRIBED AS NO BASE FLOOD ELEVATION DETERMINED, AND ZONE "AE" DESCRIBED AS BASE FLOOD ELEVATION DETERMINED AT 83.6 FEET, PER THAT CERTAIN "LETTER OF MAP REVISION DETERMINATION DOCUMENT," CASE NO: 19-04-2449P, DATED 01/30/2020, ACCOCIATED WITH THE FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY PANEL NO. 12069C0485E FOR HOWEY IN THE HILLS (120585), EFFECTIVE 12/18/2012. THE LIMITS OF SAID ZONES ARE GRAPHICALLY DEPICTED HEREON AS NEAR AS MAY BE SCALED FROM SAID MAP OR IMPORTED FROM GIS DATA PROVIDED BY FEMA. THE ABOVE STATEMENT IS FOR INFORMATION ONLY AND WE ASSUME NO LIABILITY FOR THE CORRECTNESS OF THE CITED MAP(S). IN ADDITION, THE ABOVE STATEMENT DOES NOT REPRESENT THE SURVEYOR'S OPINION OF THE PROBABILITY OF FLOODING.
5. THE "LEGAL DESCRIPTION" STATED HEREON WAS OBTAINED FROM THE LATEST PUBLIC DEED LISTED ON THE PROPERTY APPRAISER'S WEBSITE.
6. NO ABSTRACT FOR RIGHTS-OF-WAY, EASEMENTS, OWNERSHIP OR OTHER INSTRUMENTS OF RECORD, EXCEPT FOR THOSE NOTED HEREON, HAVE BEEN PROVIDED TO THIS FIRM.
7. UNLESS OTHERWISE NOTED OR SHOWN HEREON, THERE ARE NO APPARENT AND/OR UNOBSTRUCTED, ABOVE GROUND ENCROACHMENTS. THE DISPOSITION OF ANY POTENTIAL ENCROACHING IMPROVEMENTS SHOWN IS BEYOND PROFESSIONAL PURVIEW AND SUBJECT TO LEGAL INTERPRETATION.
8. NORTH-SOUTH AND EAST-WEST TIES TO RECOVERED MONUMENTATION NEAR VARIOUS LAND BOUNDARY CORNERS SHOWN HEREON ARE BY COORDINATE DIFFERENCE.
9. ATTENTION IS DIRECTED TO THE FACT THAT THIS MAP MAY HAVE BEEN REDUCED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.
10. SYMBOLS DEPICTED HEREON DO NOT REFLECT ACTUAL SIZE. PUBLISHED DIMENSIONS PRECEDE MAP SCALING.
11. THE SURVEYED LANDS MAY BE SUBJECT TO JURISDICTIONAL ENTITIES.
12. WETLANDS SHOWN HEREON WERE DETERMINED BY BIO-TECH CONSULTING INC ON 11/04/2022 AND THE REPORT WAS PROVIDED TO THIS FIRM BY THE CLIENT.
13. DUE TO PHYSICAL LIMITATIONS, A MONUMENT CONFORMING TO CHAPTER 5J-17 FLORIDA ADMINISTRATIVE CODE, STANDARDS OF PRACTICE COULD NOT BE SET, THE LOCATION OF WHICH HAS BEEN NOTED ON THE MAP.
14. THIS SURVEY WAS COMPLETED WITH THE BENEFIT OF A PREVIOUS SURVEY BY "DEWBERRY," PROJECT NUMBER 50060244, DATED 11/04/2013, AND WAS PROVIDED BY THE CLIENT.
15. TOPOGRAPHIC INFORMATION SHOWN HEREON WAS COLLECTED VIA LIDAR DRONE BY DRONEVIEW, PROJECT NUMBER 23021806P, FLIGHT DATE 02/27/2023. THE SURVEYOR HAS VERIFIED THE TOPOGRAPHIC INFORMATION SHOWN HEREON.

SURVEYOR'S LEGEND

BM	BENCHMARK
CCR	CERTIFIED CORNER RECORD
CM	CONCRETE MONUMENT
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
FND	FOUND
INS	INSTRUMENT
IP	IRON PIPE
IR	IRON ROD
IRC	IRON ROD & CAP
LB	LICENSED BUSINESS
NGS	NATIONAL GEODETIC SURVEY
NLD	NAIL & DISK
ORB	OFFICIAL RECORDS BOOK
PB	PLAT BOOK
PCP	PERMANENT CONTROL POINT
PG	PAGE
PRM	PERMANENT REFERENCE MONUMENT
R/W	RIGHT-OF-WAY
RD	ROOF DRAIN
RNG	RANGE
SEC	SECTION
SET	SET "LB 7832"
SW	SIDEWALK
TWN	TOWNSHIP
ESMT	EASEMENT

BENCHMARK
BREAKLINE
CONCRETE MONUMENT FOUND
IRON ROD FOUND
NAIL & DISK FOUND
WETLAND FLAG
WOODEN POWER POLE
TELEPHONE PEDESTAL
MITERED END SECTION
WETLAND
BUILDING FOOTPRINT
CONCRETE
ASPHALT PAVEMENT
SUBJECT PROPERTY LINE
ADJACENT PROPERTY LINE
EASEMENT LINE
CENTERLINE
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FEMA FLOOD LINE
WATER'S EDGE LINE
4' BARBED WIRE FENCE
GUARD RAIL

PROJECT KEYMAP

SCALE: NOT TO SCALE

SHEET LIST:

PAGE 1	BOUNDARY SURVEY
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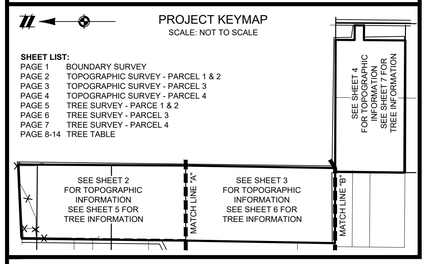
PAGE 3	TOPOGRAPHIC SURVEY - PARCEL 3
PAGE 4	TOPOGRAPHIC SURVEY - PARCEL 4
PAGE 5	TREE SURVEY - PARCE 1 & 2
PAGE 6	TREE SURVEY - PARCEL 3
PAGE 7	TREE SURVEY - PARCEL 4
PAGE 8-14	TREE TABLE



LEGAL DESCRIPTION

PER INS #2022092113, PUBLIC RECORDS OF LAKE COUNTY, FLORIDA

PARCEL 1:
THE EAST HALF OF THE NORTHEAST QUARTER OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 25 EAST, SAID LAND LYING AND BEING IN LAKE COUNTY, FLORIDA.

PARCEL 2:
THAT PART OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER LYING SOUTH OF CLAY ROAD (NUMBER TWO ROAD) IN SECTION 27, TOWNSHIP 20 SOUTH, RANGE 25 EAST, SAID LAND LYING AND BEING SITUATE IN LAKE COUNTY, FLORIDA.

PARCEL 3:
THE EAST HALF OF THE SOUTHEAST QUARTER OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 25 EAST, SAID LAND LYING AND BEING SITUATE IN LAKE COUNTY, FLORIDA.

PARCEL 4:
THE NORTH HALF OF GOVERNMENT LOTS 3 AND 4, ALSO KNOWN AS THE NORTH HALF OF THE NORTHWEST QUARTER OF SECTION 2, TOWNSHIP 21 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA, SAID LAND LYING AND BEING SITUATE IN LAKE COUNTY, FLORIDA.

LESS: THE EAST 262 FEET OF THE FOLLOWING DESCRIBED PROPERTY: NORTH HALF OF GOVERNMENT LOT 3, SECTION 2, TOWNSHIP 21 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA, LYING WEST OF ROAD RIGHT-OF-WAY FOR HIGHWAY 19. LESS THE SOUTH 907 FEET THEREOF.

AND

LESS: THE SOUTH 740 FEET OF THE EAST 262 FEET OF THE FOLLOWING DESCRIBED PROPERTY: NORTH HALF OF GOVERNMENT LOT 3, SECTION 2, TOWNSHIP 21 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA, LYING WEST OF ROAD RIGHT-OF-WAY FOR HIGHWAY 19.

PROJECT BENCHMARKS				
ID	NORTHING	EASTING	ELEVATION	DESCRIPTION
BM #1	1590322.14'	402056.54'	101.90'	SET ⅝" IRC
BM #2	1586590.62'	406069.98'	87.35'	SET ⅝" IRC

LINE TABLE		
L#	BEARING	DISTANCE
L1	N00°33'42"E	266.19'
L2	S00°38'43"W	339.44'
L3	S89°45'49"E	226.37'
L4	S00°33'59"W	167.00'
L5	N89°46'27"W	225.65'

THIS SURVEY HAS BEEN PREPARED WITH REFERENCE TO THE FOLLOWING BENCHMARK:

NGS BM Z430 (PID AB5338)
NORTHING: 1586685.37'
EASTING: 405933.84'
ELEVATION: 86.88'
DESCRIPTION: CONTROL DISK IN CM

THIS SURVEY HAS BEEN PREPARED FOR THE EXCLUSIVE USE OF THE PERSON, PERSONS, OR ORGANIZATIONS IDENTIFIED BELOW AND ITS CERTIFICATION IS NON-TRANSFERABLE. ANY COPY HEREOF, TO BE CONSIDERED VALID, MUST CONFIRM TO SURVEYOR'S NOTE 1.

REO FUNDING SOLUTIONS III, LLC

SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THAT ALL PARTS OF THIS SURVEY AND DRAWING HAVE BEEN COMPLETED IN ACCORDANCE WITH THE CURRENT REQUIREMENTS OF THE STANDARDS OF PRACTICE FOR SURVEYING IN THE STATE OF FLORIDA AS STATED IN RULE 5J-17, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES, TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF.

C. DREW BRANCH, P.S.M.
FLORIDA REGISTRATION NO. 5542
ATWELL, LLC
CERTIFICATE OF AUTHORIZATION NO.: LB 7832

REV	DRAFTER	REV. DATE	COMMENTS
1	KH	12/12/2024	ADDED TREE SURVEY
2	NW	01/20/2025	ADDED SHWE NAIL LOCATIONS
3	IL / NW	06/16/2025	ADJUSTED BOUNDARY ON FND MONUMENTS
4	NW	06/27/2025	ADJUSTED AG AND SUF EASEMENT

DWG.	KH
CH.	DB
PM.	NW
FIELD DATE:	05/04/2025
PLOT DATE:	06/27/2025
JOB	22005325
SHEET NO.	1 OF 14

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866.850.4200 www.atwell-group.com
2600 MAITLAND CENTER PKWY, STE 262
MAITLAND, FL 32751
407.775.6500
FLORIDA SURVEY CERTIFICATE OF AUTHORIZATION # LB 7832

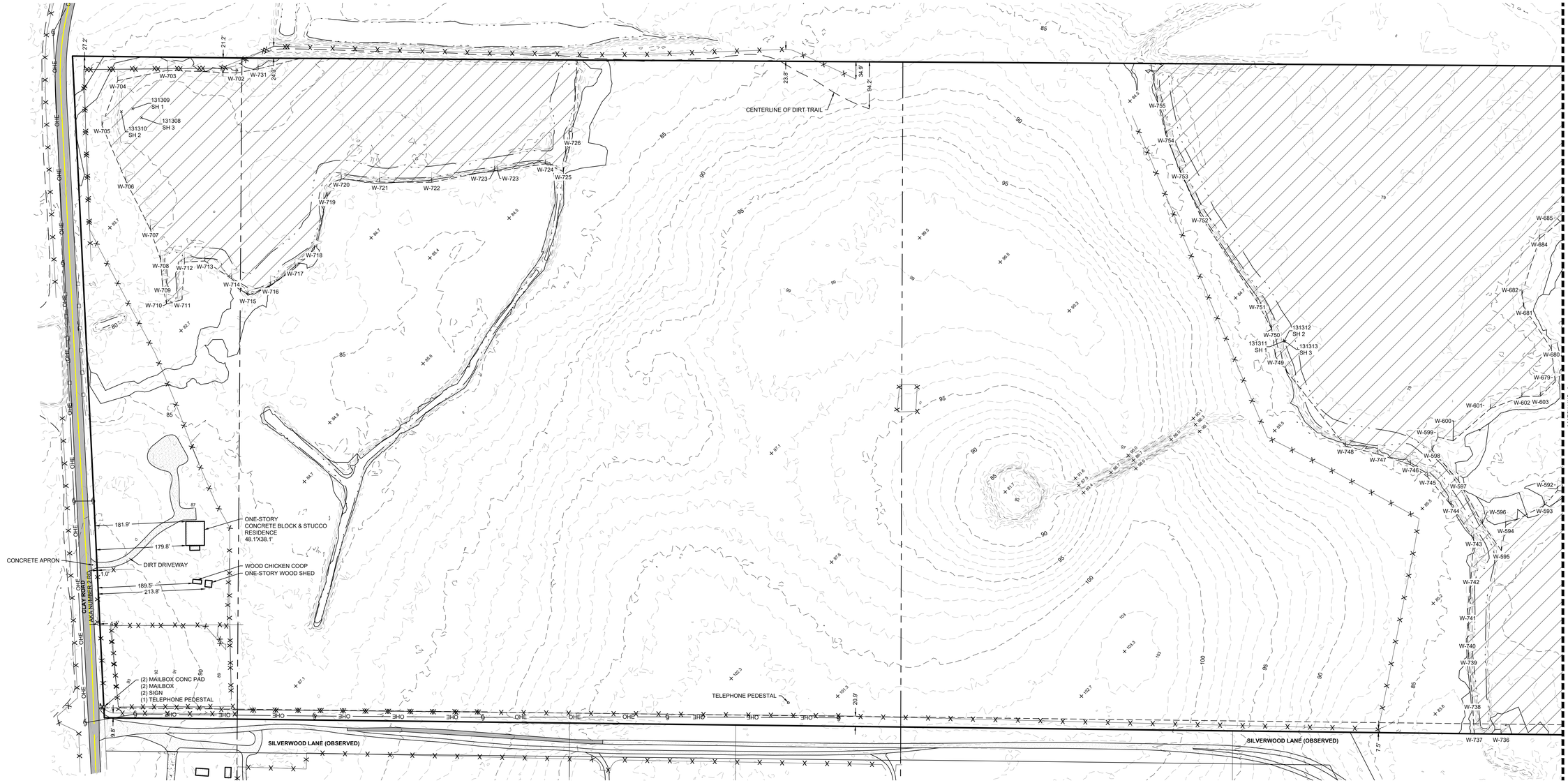
LOCATED IN:
SECCTION 2, TOWNSHIP 21 S, RANGE 25 E & SECTION 34, TOWNSHIP 20 S, RANGE 25 E

PARCEL ID: 22125000200004800;342025000400001003, 342025000100000100, & 272025000400001200

REVELS ROAD
HOWEY IN THE HILLS, LAKE COUNTY, FLORIDA, 34737

MAP OF
BOUNDARY, TOPOGRAPHIC, WETLAND & TREE SURVEY

MISSION RISE



SURVEYOR'S LEGEND

BM	BENCHMARK
CCR	CERTIFIED CORNER RECORD
CM	CONCRETE MONUMENT
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION
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FND	FOUND
INS	INSTRUMENT
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IR	IRON ROD
IRC	IRON ROD & CAP
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WATER'S EDGE LINE
4' BARBED WIRE FENCE
GUARD RAIL

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CONCRETE MONUMENT FOUND
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EASEMENT LINE
CENTERLINE
RIGHT-OF-WAY LINE
FEMA FLOOD LINE

NORTH AMERICAN DATUM OF 1983
FLORIDA STATE PLANE, EAST ZONE

CONTOUR INTERVAL:
MAJOR: 5.00'
MINOR: 1.00'

0 50 100 200
GRAPHIC SCALE
1" = 100'

Seasonal High Water Table

Point #	Northing	Easting	Elevation	Raw Description
131308	1591985.69	403288.85	78.85	SH 3
131309	1592003.27	403306.79	78.92	SH 1
131310	1592026.10	403300.95	78.86	SH 2

Seasonal High Water Table

Point #	Northing	Easting	Elevation	Raw Description
131311	1589697.63	402841.69	79.55	SH 1
131312	1589697.35	402841.37	79.56	SH 2
131313	1589695.51	402840.88	79.54	SH 3

PROJECT KEYMAP

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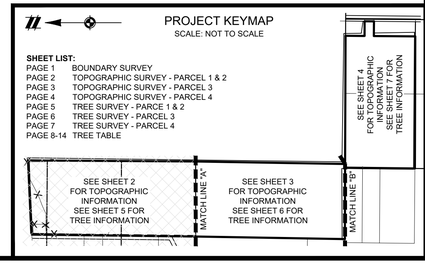

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LOCATED IN:
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SECTION 34, TOWNSHIP 20 S, RANGE 25 E

PARCEL ID: 22125000200004800,342025000400001003, 342025000100000100, & 272025000400001200

REVELS ROAD

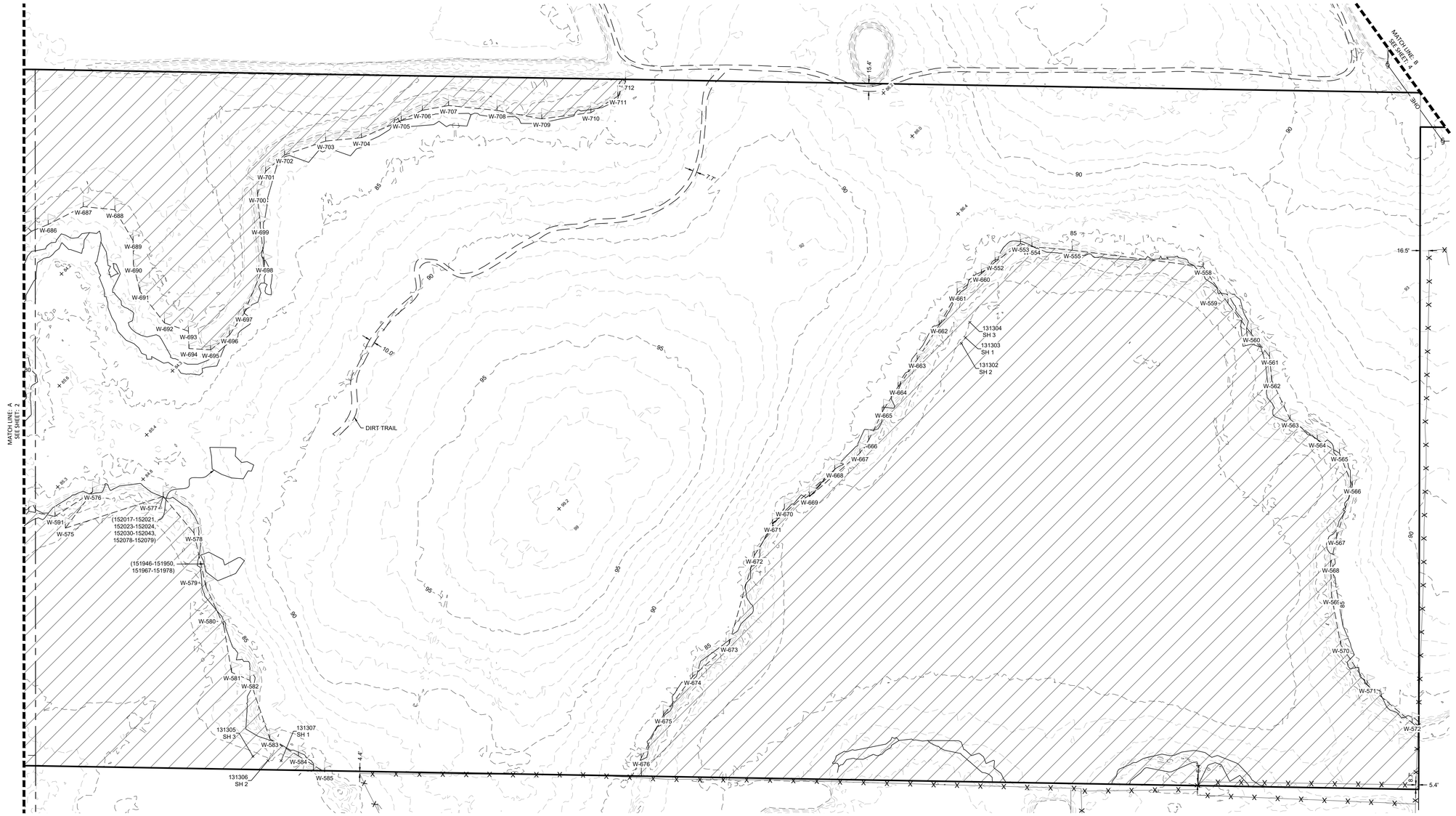
HOWEY IN THE HILLS, LAKE COUNTY, FLORIDA, 34737

MAP OF
BOUNDARY, TOPOGRAPHIC, WETLAND & TREE SURVEY

MISSION RISE

REV	DRAFTER	REV DATE	COMMENTS
1	KH	12/12/2024	ADDED TREE SURVEY
2	NW	01/20/2025	ADDED SHWE MAIL LOCATIONS

DWG. KH CH. DB
PM. NW
FIELD DATE: 01/20/2025
PLOT DATE: 06/27/2025
JOB 22005325
SHEET NO.
2 OF 14



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SEC	SECTION
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WATER'S EDGE LINE
4' BARBED WIRE FENCE
GUARD RAIL

BENCHMARK
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FEMA FLOOD LINE

NORTH AMERICAN DATUM OF 1983
FLORIDA STATE PLANE, EAST ZONE

CONTOUR INTERVAL:
MAJOR: 5.00'
MINOR: 1.00'

0 50 100 200
GRAPHIC SCALE
1" = 100'

Seasonal High Water Table				
Point #	Northing	Easting	Elevation	Raw Description
131305	1588718.32	402071.29	80.12	SH 3
131306	1588689.24	402062.81	80.51	SH 2
131307	1588664.02	402062.58	79.86	SH 1

Seasonal High Water Table				
Point #	Northing	Easting	Elevation	Raw Description
131302	1587354.71	402865.30	80.20	SH 2
131303	1587346.94	402876.46	80.14	SH 1
131304	1587338.49	402906.03	80.16	SH 3

PROJECT KEYMAP

SCALE: NOT TO SCALE

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PAGE 7	TREE SURVEY - PARCEL 4
PAGE 8-14	TREE TABLE

SEE SHEET 2 FOR TOPOGRAPHIC INFORMATION SEE SHEET 5 FOR TREE INFORMATION

SEE SHEET 3 FOR TOPOGRAPHIC INFORMATION SEE SHEET 6 FOR TREE INFORMATION

SEE SHEET 4 FOR TOPOGRAPHIC INFORMATION SEE SHEET 7 FOR TREE INFORMATION

MATCH LINE: A
MATCH LINE: B

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PARCEL ID: 22125002000048000,3422025004000010003, 3420250001000000100, & 2720250004000001200

REVELS ROAD

HOWEY IN THE HILLS, LAKE COUNTY, FLORIDA, 34737

MAP OF
BOUNDARY, TOPOGRAPHIC, WETLAND & TREE SURVEY

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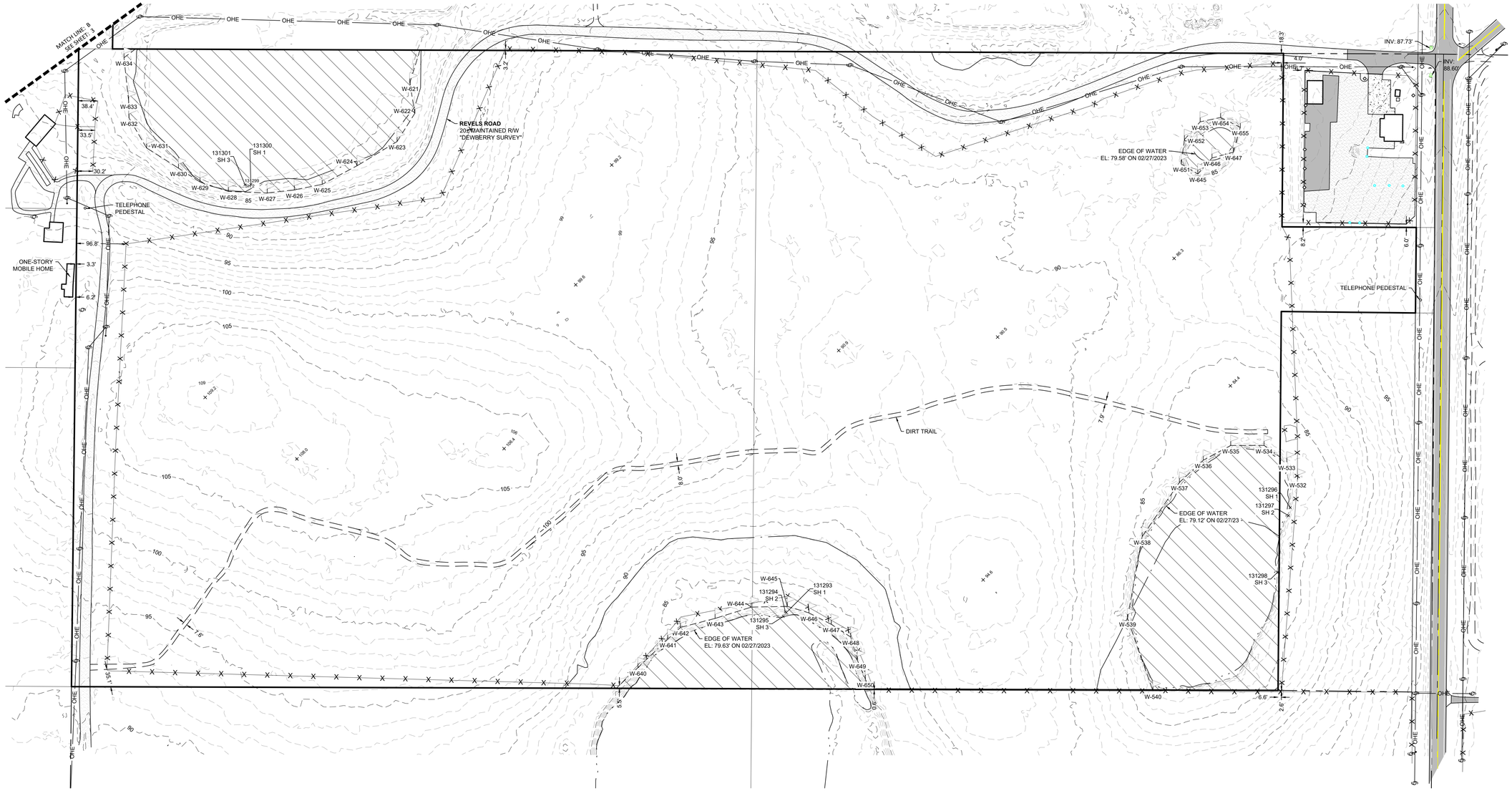
DWG. KH CH. DB
PM. NW
FIELD DATE: 01/20/2025
PLOT DATE: 06/27/2025
JOB 22005325
SHEET NO.
3 OF 14



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NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)
FLORIDA STATE PLANE EAST ZONE

CONTOUR INTERVAL:
MAJOR: 5.00'
MINOR: 1.00'

GRAPHIC SCALE
1" = 100'
0 50 100 200

Seasonal High Water Table

Point #	Northing	Easting	Elevation	Raw Description
131299	1586209.06	403620.22	79.86	SH 2
131300	1586206.91	403618.02	79.94	SH 1
131301	1586206.47	403606.47	79.98	SH 3

Seasonal High Water Table

Point #	Northing	Easting	Elevation	Raw Description
131293	1585370.83	404663.62	80.81	SH 1
131294	1585372.47	404661.76	80.76	SH 2
131295	1585363.22	404657.58	80.66	SH 3

Seasonal High Water Table

Point #	Northing	Easting	Elevation	Raw Description
131296	1585575.80	405647.74	80.43	SH 1
131297	1585560.19	405644.42	80.56	SH 2
131298	1585449.89	405623.27	80.70	SH 3

PROJECT KEYMAP

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PARCEL ID: 22'25000200004800;342025000400001003, 342025000100000100, & 272025000400001200

REVELS ROAD

HOWEY IN THE HILLS, LAKE COUNTY, FLORIDA, 34737

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BOUNDARY, TOPOGRAPHIC, WETLAND & TREE SURVEY

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PM. NW
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PLOT DATE: 06/27/2025
JOB 22005325
SHEET NO.
4 OF 14

SURVEYOR'S LEGEND

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2600 MAITLAND CENTER PKWY, STE 262
MAITLAND, FL 32751
407.775.6500
FLORIDA SURVEY CERTIFICATE OF AUTHORIZATION # LB 7832

LOCATED IN:
SECCTION 2, TOWNSHIP 21 S, RANGE 25 E &
SECTION 34, TOWNSHIP 20 S, RANGE 25 E

PARCEL ID: 22125000200004800,342025000400001003, 342025000100000100, & 272025000400001200

REVELS ROAD

HOWEY IN THE HILLS, LAKE COUNTY, FLORIDA, 34737

MAP OF
BOUNDARY, TOPOGRAPHIC, WETLAND & TREE SURVEY

MISSION RISE

REV	DRAFTER	REV. DATE	COMMENTS
1	KH	12/12/2024	ADDED TREE SURVEY
2	NW	01/20/2025	ADDED SHWE NAIL LOCATIONS

DWG. KH CH. DB
PM. NW
FIELD DATE: 01/20/2025
PLOT DATE: 06/27/2025
JOB 22005325
SHEET NO.
5 OF 14

MATCH LINE: A
SEE SHEET 2

MATCH LINE: B
SEE SHEET 3

(152017-152021,
152023-152024,
152030-152043,
152078-152079)

(151946-151950,
151967-151978)

SURVEYOR'S LEGEND

BM	BENCHMARK
CCR	CERTIFIED CORNER RECORD
CM	CONCRETE MONUMENT
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
FND	FOUND
INS	INSTRUMENT
IP	IRON PIPE
IR	IRON ROD
IRC	IRON ROD & CAP
LB	LICENSED BUSINESS
NGS	NATIONAL GEODETIC SURVEY
NLD	NAIL & DISK
ORB	OFFICIAL RECORDS BOOK
PB	PLAT BOOK
PCP	PERMANENT CONTROL POINT
PG	PAGE
PRM	PERMANENT REFERENCE MONUMENT
R/W	RIGHT-OF-WAY
RD	ROOF DRAIN
RNG	RANGE
SEC	SECTION
SET	SET "LB 7832"
SW	SIDEWALK
TWN	TOWNSHIP
ESMT	EASEMENT

WATER'S EDGE LINE
4' BARBED WIRE FENCE
GUARD RAIL

BENCHMARK
BREAKLINE
CONCRETE MONUMENT FOUND
IRON ROD FOUND
NAIL & DISK FOUND
WETLAND FLAG
WOODEN POWER POLE
TELEPHONE PEDESTAL
MITERED END SECTION
WETLAND
BUILDING FOOTPRINT
CONCRETE
ASPHALT PAVEMENT
SUBJECT PROPERTY LINE
ADJACENT PROPERTY LINE
EASEMENT LINE
CENTERLINE
RIGHT-OF-WAY LINE
FEMA FLOOD LINE

NORTH AMERICAN DATUM OF 1983
FLORIDA STATE PLANE, EAST ZONE

CONTOUR INTERVAL:
MAJOR: 5.00'
MINOR: 1.00'

0 50 100 200
GRAPHIC SCALE
1" = 100'

PROJECT KEYMAP
SCALE: NOT TO SCALE

SHEET LIST:

PAGE 1	BOUNDARY SURVEY
PAGE 2	TOPOGRAPHIC SURVEY - PARCEL 1 & 2
PAGE 3	TOPOGRAPHIC SURVEY - PARCEL 3
PAGE 4	TOPOGRAPHIC SURVEY - PARCEL 4
PAGE 5	TREE SURVEY - PARCEL 1 & 2
PAGE 6	TREE SURVEY - PARCEL 3
PAGE 7	TREE SURVEY - PARCEL 4
PAGE 8-14	TREE TABLE

SEE SHEET 4 FOR TOPOGRAPHIC INFORMATION SEE SHEET 7 FOR TREE INFORMATION

SEE SHEET 2 FOR TOPOGRAPHIC INFORMATION SEE SHEET 5 FOR TREE INFORMATION

MATCH LINE 1"=1'

SEE SHEET 3 FOR TOPOGRAPHIC INFORMATION SEE SHEET 6 FOR TREE INFORMATION

MATCH LINE 1"=1'

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PARCEL ID: 22125000200004800,34202500040001003,
34202500010000100, & 27202500040001200

REVELS ROAD

HOWEY IN THE HILLS, LAKE COUNTY, FLORIDA, 34737

MAP OF
BOUNDARY, TOPOGRAPHIC, WETLAND & TREE SURVEY

MISSION RISE

REV.	DRAFTER	REV. DATE	COMMENTS
1	KH	12/12/2024	ADDED TREE SURVEY
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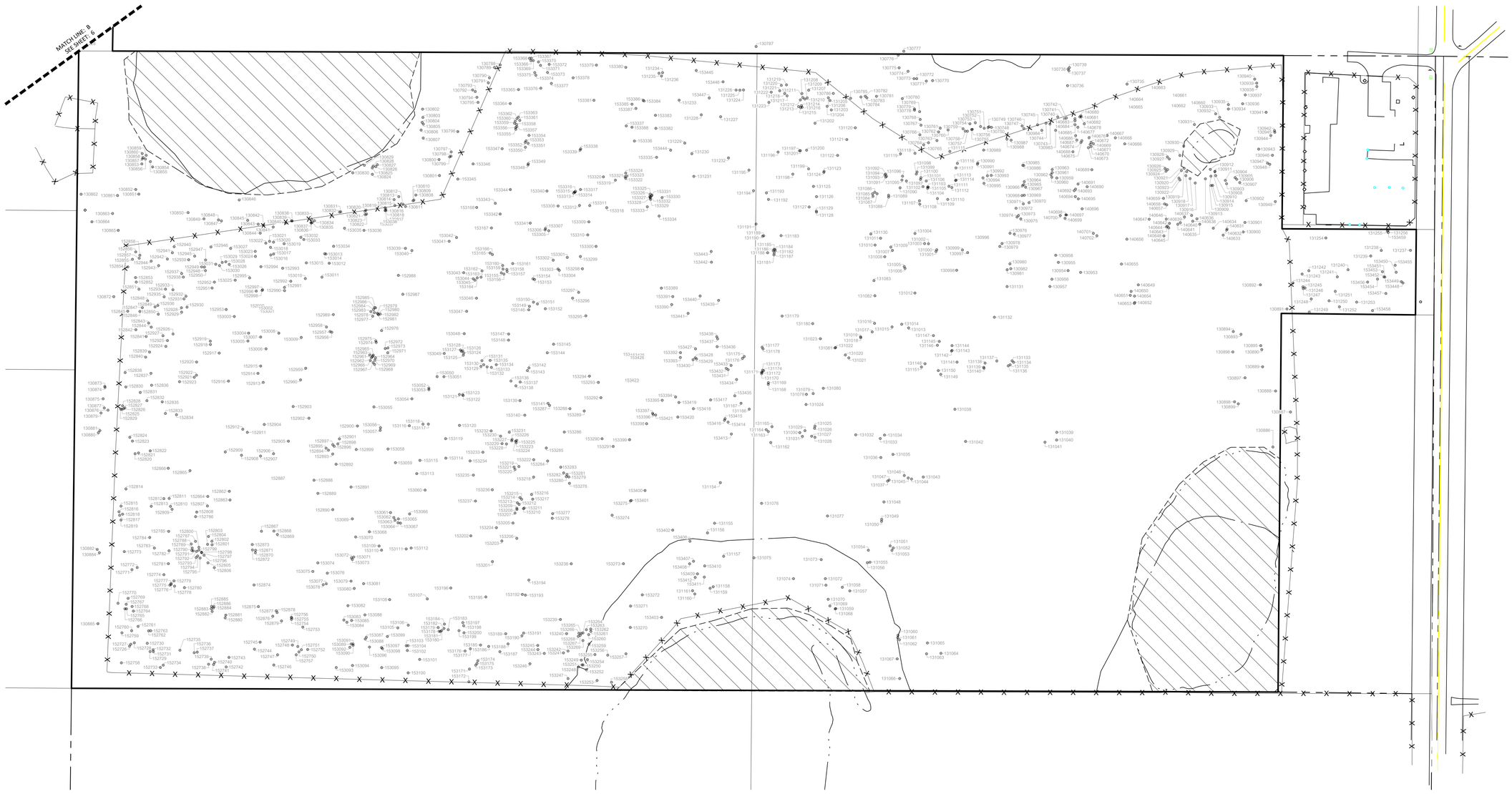
DWG. KH CH. DB
PM. NW
FIELD DATE: 01/20/2025
PLOT DATE: 06/27/2025
JOB 22005325
SHEET NO.
6 OF 14

MATCH LINE "B" SEE SHEET 3



NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)
LOWER STATE PLANE EAST ZONE

CONTOUR INTERVAL:
MAJOR: 5.00'
MINOR: 1.00'

0 50 100 200
GRAPHIC SCALE
1" = 100'

SURVEYOR'S LEGEND

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SET	SET "LB 7832"
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4' BARBED WIRE FENCE
GUARD RAIL

BENCHMARK
BREAKLINE
CONCRETE MONUMENT FOUND
IRON ROD FOUND
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WETLAND FLAG
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FEMA FLOOD LINE

PROJECT KEYMAP

SCALE: NOT TO SCALE

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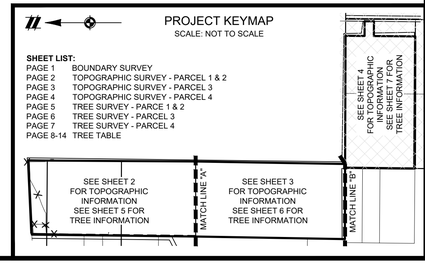

811
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PARCEL ID: 22125000200004800.3402250004000100.3, 3402250001000001000.1, & 27202500004000001200

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BOUNDARY, TOPOGRAPHIC, WETLAND & TREE SURVEY

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DWG. KH CH. DB
PM. NW
FIELD DATE: 01/20/2025
PLOT DATE: 06/27/2025
JOB 22005325
SHEET NO.
7 OF 14

Tree Table			
Point #	Northing	Easting	Raw Description
130011	1590440.00	402969.10	TREE 24 OAK
130012	1590429.06	402946.20	TREE 10 OAK
130013	1590441.62	403018.15	TREE 40 OAK
130014	1590436.39	403033.34	TREE 24 OAK
130015	1590303.88	403053.81	TREE 28 OAK
130016	1590280.87	402989.72	TREE 30 OAK
130017	1590275.37	403098.41	TREE 8(1) 10(1) OAK
130018	1590276.32	403114.87	TREE 26 OAK
130019	1590299.94	403126.51	TREE 12 PALM
130020	1590296.66	403206.73	TREE 18 OAK
130021	1590275.40	403202.41	TREE 14 OAK
130022	1590349.96	403205.57	TREE 10 OAK
130023	1590348.60	403206.89	TREE 16 OAK
130024	1590347.05	403201.12	TREE 8 OAK
130025	1590341.43	403205.34	TREE 8 OAK
130026	1590330.38	403219.14	TREE 18 OAK
130027	1590334.48	403258.53	TREE 28 OAK
130028	1590376.81	403279.28	TREE 16 OAK
130029	1590440.13	403327.86	TREE 24 OAK
130030	1590442.69	403326.27	TREE 8 OAK
130031	1590533.36	403335.95	TREE 8 OAK
130032	1590539.69	403335.49	TREE 12 OAK
130033	1590531.54	403354.80	TREE 10 OAK
130034	1590500.96	403350.09	TREE 14 OAK
130035	1590492.04	403345.21	TREE 28 OAK
130036	1590511.46	403260.47	TREE 18 (3) OAK
130037	1590537.28	403221.99	TREE 22 OAK
130038	1590519.15	403221.40	TREE 36 OAK
130039	1590530.50	403184.36	TREE 24 OAK
130040	1590535.77	403134.03	TREE 28 OAK
130041	1590512.58	403132.38	TREE 8 OAK
130042	1590511.18	403130.71	TREE 22 OAK
130043	1590281.07	402989.64	TREE 24 OAK
130044	1590230.01	403116.54	TREE 26 OAK
130045	1590238.04	403143.65	TREE 20 OAK
130046	1590200.84	403138.31	TREE 14 OAK
130047	1590168.70	403179.10	TREE 14 OAK
130048	1590137.26	403158.97	TREE 22 OAK
130049	1590074.82	403272.52	TREE 19 OAK
130050	1590078.68	403280.01	TREE 25 OAK
130051	1590065.97	403287.68	TREE 20 OAK
130052	1590055.03	403312.33	TREE 30 OAK
130053	1590079.62	403347.73	TREE 10 OAK
130054	1590068.56	403347.30	TREE 10 OAK
130055	1590072.08	403351.71	TREE 8 OAK
130056	1590146.05	403359.64	TREE 8 OAK
130057	1590144.70	403355.96	TREE 10 OAK
130058	1590175.57	403369.76	TREE 24 OAK
130059	1590223.45	403363.51	TREE 12 OAK
130060	1590248.22	403353.45	TREE 11 OAK
130061	1590224.64	403326.46	TREE 8 OAK
130062	1590224.35	403325.88	TREE 8 OAK
130063	1590228.33	403322.45	TREE 8 (2) OAK
130064	1590206.26	403307.93	TREE 14 OAK
130065	1590199.92	403312.38	TREE 12(1) 16(1) 14(1) OAK
130066	1590205.25	403298.93	TREE 12 OAK
130067	1590182.19	403256.48	TREE 28 OAK
130068	1590051.86	403241.02	TREE 10 OAK
130069	1590033.62	403202.10	TREE 14 OAK
130070	1590012.47	403194.08	TREE 50 OAK
130071	1589959.46	403172.65	TREE 50 OAK
130072	1589976.17	403173.37	TREE 8 OAK
130073	1589103.44	402047.06	TREE 8 OAK
130076	1589083.48	402050.43	TREE 8 PINE
130077	1589063.09	402058.68	TREE 16 PINE
130078	1589031.76	402069.63	TREE 8 PINE
130079	1589037.31	402100.01	TREE 10 PINE
130080	1589060.53	402089.66	TREE 8 PINE
130081	1589078.16	402091.72	TREE 8 PINE
130082	1589126.16	402047.79	TREE 10 PINE
130083	1589108.21	402087.69	TREE 8 PINE
130084	1589109.35	402093.54	TREE 8 pine
130085	1589128.06	402093.75	TREE 8 PINE
130086	1589125.17	402086.37	TREE 8 PINE
130087	1589140.83	402081.10	TREE 10 PINE
130088	1589139.13	402066.67	TREE 12 PINE
130089	1589157.97	402092.57	TREE 8 PINE
130090	1589175.73	402114.78	TREE 8 PINE
130091	1589193.74	402093.60	TREE 8(2) OAK
130092	1589199.86	402096.74	TREE 16 OAK
130093	1589214.76	402090.00	TREE 8 OAK
130094	1589213.40	402074.95	TREE 8 OAK
130095	1589227.28	402068.84	TREE 10 OAK
130096	1589215.98	402058.19	TREE 10 OAK
130097	1589201.49	402040.69	TREE 10 PINE
130098	1589217.69	402034.32	TREE 10(2) OAK
130099	1589251.21	402061.96	TREE 8 OAK
130100	1589270.78	402057.83	TREE 10 OAK
130101	1589271.19	402059.27	TREE 8 OAK
130102	1589269.25	402068.48	TREE 8 OAK

Tree Table			
Point #	Northing	Easting	Raw Description
130103	1589257.82	402075.38	TREE 10 OAK
130104	1589262.59	402093.77	TREE 8 OAK
130105	1589238.94	402096.99	TREE 8 OAK
130106	1589256.68	402104.36	TREE 10 OAK
130107	1589252.61	402113.04	TREE 8 OAK
130108	1589265.78	402121.88	TREE 8 OAK
130109	1589277.93	402122.14	TREE 8 OAK
130110	1589278.10	402126.81	TREE 8(2) OAK
130111	1589274.20	402144.44	TREE 10 PINE
130112	1589276.53	402146.28	TREE 8 OAK
130113	1589262.32	402156.01	TREE 9 PINE
130114	1589283.55	402186.48	TREE 8 OAK
130115	1589266.44	402196.77	TREE 9 OAK
130116	1589275.76	402214.14	TREE 8 OAK
130117	1589238.99	402202.71	TREE 9 PINE
130118	1589237.13	402195.52	TREE 12 PINE
130119	1589234.54	402191.83	TREE 8 PINE
130120	1589258.06	402173.70	TREE 8 PINE
130121	1589213.30	402168.85	TREE 8 PINE
130122	1589216.22	402172.10	TREE 10 PINE
130123	1589202.61	402183.56	TREE 11 PINE
130124	1589199.30	402176.11	TREE 8 PINE
130125	1589186.90	402177.47	TREE 8 PINE
130126	1589191.60	402161.10	TREE 13 PINE
130127	1589192.98	402139.96	TREE 8 PINE
130128	1589185.67	402141.47	TREE 9 PINE
130129	1589190.35	402132.85	TREE 8 PINE
130130	1589187.57	402121.23	TREE 11 PINE
130131	1589937.45	402099.06	TREE 12 OAK
130132	1589887.70	402167.44	TREE 13 OAK
130133	1589930.34	402253.67	TREE 42 OAK
130134	1589756.03	402496.38	TREE 8 OAK
130135	1589760.16	402492.87	TREE 10(2) OAK
130136	1589780.43	402563.85	TREE 44 OAK
130137	1589776.59	402571.06	TREE 18 OAK
130138	1589813.20	402606.55	TREE 28(2) 16(1) OAK
130139	1589692.58	402517.01	TREE 30 OAK
130140	1589608.01	402502.93	TREE 28 OAK
130141	1589604.26	402497.89	TREE 16 OAK
130142	1589642.16	402378.25	TREE 32 OAK
130143	1589661.69	402421.06	TREE 26 OAK
130144	1589661.80	402425.20	TREE 18 OAK
130145	1589676.99	402252.24	TREE 28 OAK
130146	1589711.50	402203.39	TREE 14 OAK
130147	1589714.99	402200.64	TREE 8 OAK
130148	1589715.99	402191.77	TREE 8 OAK
130149	1589699.11	402187.88	TREE 8 OAK
130150	1589690.42	402181.71	TREE 10 OAK
130151	1589688.35	402162.79	TREE 11 OAK
130152	1589715.94	402173.38	TREE 9 OAK
130153	1589743.46	402153.00	TREE 30 OAK
130154	1589629.78	402128.32	TREE 33 OAK
130155	1589544.05	402071.02	TREE 8 OAK
130156	1589506.46	402180.62	TREE 30 OAK
130157	1589477.00	402250.76	TREE 8 OAK
130158	1589473.89	402264.49	TREE 8 OAK
130159	1589430.83	402275.09	TREE 8 OAK
130160	1589417.07	402281.47	TREE 8 OAK
130161	1589400.32	402260.27	TREE 8 OAK
130162	1589431.77	402196.75	TREE 26 OAK
130163	1589417.78	402202.58	TREE 12 OAK
130164	1589396.36	402208.83	TREE 13 OAK
130165	1589360.33	402198.56	TREE 14 OAK
130166	1589337.76	402186.45	TREE 14 OAK
130167	1589342.24	402178.33	TREE 12 OAK
130168	1589333.57	402159.38	TREE 9 OAK
130169	1589332.84	402155.61	TREE 10 OAK
130170	1589325.90	402155.72	TREE 10 OAK
130171	1589325.74	402131.47	TREE 12 OAK
130172	1589328.66	402128.96	TREE 12 OAK
130173	1589322.16	402115.82	TREE 36 OAK
130174	1589351.09	402145.83	TREE 9 OAK
130175	1589369.94	402152.28	TREE 8 OAK
130179	1589512.80	402060.46	TREE 8(2) OAK
130180	1589464.30	402096.86	TREE 8 OAK
130181	1589468.01	402162.98	TREE 18(2) OAK
130182	1589369.67	402232.64	TREE 12 OAK
130183	1589349.47	402248.64	TREE 18 OAK
130184	1589327.59	402237.82	TREE 9 OAK
130185	1589359.49	402251.78	TREE 8 OAK
130186	1589368.38	402264.06	TREE 9 OAK
130187	1589351.12	402277.88	TREE 8(2) 10(1) OAK
130188	1589347.08	402299.55	TREE 18 OAK
130189	1589390.65	402336.55	TREE 20 OAK
130190	1589389.79	402337.20	TREE 26 OAK
130191	1589391.99	402366.34	TREE 24 OAK DILLAPADED
130192	1589396.59	402367.03	TREE 8 OAK
130193	1589346.20	402373.95	TREE 12 OAK
130194	1589346.84	402372.36	TREE 8 OAK
130195	1589349.30	402373.35	TREE 20 OAK

Tree Table			
Point #	Northing	Easting	Raw Description
130196	1589323.24	402384.99	TREE 18 OAK
130197	1589328.12	402423.69	TREE 14 OAK
130198	1589321.86	402455.85	TREE 12 OAK
130199	1589342.65	402487.41	TREE 24 OAK
130200	1589350.30	402491.07	TREE 10 OAK
130201	1589394.92	402436.22	TREE 18 OAK
130202	1589398.48	402438.91	TREE 9(1) 16(2) OAK
130203	1589406.47	402476.13	TREE 8 OAK
130204	1589422.07	402479.35	TREE 9 OAK
130205	1589420.80	402477.96	TREE 8 OAK
130206	1589415.10	402513.87	TREE 38 OAK
130207	1589381.85	402517.37	TREE 14 OAK
130208	1589422.67	402535.50	TREE 8 OAK
130209	1589425.04	402554.48	TREE 8 OAK
130210	1589456.54	402559.97	TREE 8 OAK
130211	1589469.57	402605.28	TREE 29 OAK
130212	1589498.04	402583.82	TREE 6(2) 8(3) 10(1) OAK
130213	1589486.81	402545.72	TREE 18 OAK
130214	1589485.79	402546.61	TREE 8 OAK
130215	1589485.78	402530.29	TREE 12 OAK
130216	1589516.02	402549.66	TREE 8 OAK
130217	1586580.30	403378.35	TREE 12 OAK
130218	1586576.16	403385.08	TREE 10 OAK
130219	1586685.46	403333.55	TREE 8(2) OAK
130220	1586692.85	403326.00	TREE 10 OAK
130221	1586614.00	403278.06	TREE 8 OAK
130222	1586566.02	403302.88	TREE 24 OAK
130223	1586512.38	403270.83	TREE 14 OAK
130224	1586506.40	403251.10	TREE 10 OAK
130225	1586508.53	403252.15	TREE 12 OAK
130226	1586503.49	403246.50	TREE 26 OAK
130227	1586481.42	403258.96	TREE 8 OAK
130228	1586473.68	403255.24	TREE 13 OAK
130229	1586477.70	403233.77	TREE 10 OAK
130230	1586488.67	403211.29	TREE 12 OAK
130231	1586480.84	403208.72	TREE 12 OAK
130232	1586485.41	403199.96	TREE 9 OAK
130233	1586536.49	403206.34	TREE 20 OAK
130234	1586536.40	403202.09	TREE 26 OAK
130235	1586532.74	403152.71	TREE 12(2) OAK
130236	1586541.83	403104.04	TREE 16 OAK
130237	1586551.25	403107.08	TREE 12 OAK
130238	1586536.16	403097.24	TREE 10 OAK
130239	1586537.76	403097.30	TREE 8 OAK
130240	1586578.60	403076.06	TREE 12 OAK
130241	1586582.13	403053.49	TREE 8 OAK
130242	1586571.37	403041.43	TREE 8 OAK
130243	1586582.22	403041.75	TREE 8 OAK
130244	1586572.96	403005.82	TREE 12 OAK
130245	1586564.91	402989.17	TREE 6(1) 8(1) 10(3) OAK
130246	1586567.67	402988.98	TREE 8 OAK
130247	1586549.34	402960.63	TREE 10 OAK
130248	1586548.24	402961.90	TREE 8 OAK DILLAPADED
130249	1586529.37	402942.38	TREE 14 OAK
130250	1586532.19	402931.13	TREE 9 OAK
130251	1586515.14	402950.53	TREE 8 OAK
130252	1586512.51	402963.77	TREE 8 OAK
130253	1586478.40	402966.00	TREE 20(2) OAK
130254	1586617.87	402931.83	TREE 8 OAK
130255	1586619.54	402906.12	TREE 22 OAK
130256	1586612.18	402906.12	TREE 12 OAK
130258	1586633.67	403039.02	TREE 9 OAK
130262	1586636.95	403310.29	TREE 8 OAK
130263	1586632.92	403259.52	TREE 8(3) OAK
130264	1586659.77	403169.58	TREE 8(1) 10(2) OAK
130265	1586669.24	403159.80	TREE 8 OAK
130266	1586672.51	403156.93	TREE 24 OAK
130267	1586668.54	403128.14	TREE 8 OAK
130268	1586682.91	403091.84	TREE 8(2) OAK
130269	1586694.80	403106.28	TREE 8(3) OAK
130270	1586712.04	403102.73	TREE 8(1) 10(3) OAK
130271	1586708.07	403101.10	TREE 8 OAK
130272	1586701.20	403091.74	TREE 8 OAK
130273	1586668.98	403072.38	TREE 14 OAK
130274	1586640.84	403062.66	TREE 8 OAK
130275	1586639.41	403061.59	TREE 8(3) OAK
130276	1586642.94	403060.31	TREE 8 OAK
130277	1586666.38	403040.95	TREE 12 OAK
130278	1586666.87	403041.46	TREE 8(2) OAK
130279	1586671.07	403039.46	TREE 8(2) OAK
130280	1586670.97	403036.14	TREE 24 OAK
130281	1586667.28	403008.08	TREE 8 OAK
130282	1586667.45	402993.37	TREE 10 OAK
130283	1586690.11	402931.64	TREE 9 OAK
130284	1586710.79	402924.01	TREE 8 OAK
130285	1586719.05	402918.23	TREE 8 OAK
130286	1586714.35	402893.78	TREE 18 OAK
130287	1586721.13	402892.29	TREE 16 OAK
130288	1586717.52	402887.35	TREE 10(1) 12(2) OAK
130289	1586711.16	402860.89	TREE 14 OAK

Tree Table			
Point #	Northing	Easting	Raw Description
130290	1586712.70	402838.96	TREE 14 OAK
130291	1586726.91	402814.76	TREE 22 OAK
130292	1586692.80	402774.75	TREE 12 OAK
130293	1586698.04	402768.93	TREE 26 OAK
130294	1586684.48	402759.77	TREE 24 OAK
130295	1586638.24	402726.69	TREE 18 OAK
130296	1586645.41	402708.72	TREE 10 OAK
130297	1586637.66	402695.48	TREE 9 OAK
130298	1586596.19	402668.11	TREE 22 OAK
130299	1586591.82	402677.25	TREE 13 OAK
130300	1586578.86	402654.09	TREE 12 OAK
130301	1586564.26	402627.20	TREE 10 OAK
130302	1586567.49	402605.84	TREE 20 OAK
130303	1586570.00	402556.43	TREE 8 OAK
130304	1586569.39	402548.94	TREE 14 OAK
130305	1586566.91	402537.92	TREE 12 OAK
130306	1586572.62	402529.69	TREE 16 OAK
130307	1586581.72	402511.23	TREE 10 OAK
130308	1586590.05	402515.85	TREE 14 OAK
130309	1586596.67	402499.46	TREE 20 OAK
130310	1586589.32	402496.81	TREE 12 OAK
130311	1586585.02	402496.19	TREE 12 OAK
130312	1586576.67	402486.79	TREE 12 OAK
130313	1586592.53	402478.85	TREE 12 OAK
130314	1586614.59	402462.30	TREE 14 OAK
130315	1586623.88	402461.32	TREE 12 OAK
130316	1586638.15	402436.21	TREE 12 OAK
130317	1586640.22	402430.45	TREE 26 OAK
130318	1586642.54	402452.15	TREE 8 OAK
130319	1586607.67	402424.11	TREE 12 OAK
130320	1586628.80	402381.87	TREE 30 OAK
130321	1586620.96	402375.40	TREE 8 OAK
130322	1586611.00	402348.61	TREE 8(3) OAK
130323	1586619.22	402332.70	TREE 10 OAK
130324	1586615.58	402332.82	TREE 8 OAK
130325	1586612.68	402335.03	TREE 8 OAK
130326	1586617.43	402295.70	TREE 16 OAK
130327	1586601.86	402285.21	TREE 12(2) OAK
130328	1586599.37	402272.32	TREE 16 OAK
130329	1586583.44	402248.22	TREE 20 OAK
130330	1586572.65	402219.60	TREE 14 OAK
130331	1586559.59	402194.73	TREE 8 OAK
130332	1586549.22	402190.14	TREE 10 OAK
130333	1586532.36	402178.06	TREE 8 OAK
130334	1586529.85	402193.13	TREE 8 OAK
130335	1586526.50	402195.42	TREE 8 OAK
130336	1586523.42	402195.51	TREE 14 OAK
130337	1586502.60	402213.94	TREE 16 OAK
130338	1586498.34	402206.38	TREE 12 OAK
130339	1586493.40	402211.99	TREE 30 OAK
130340	1586482.79	402209.31	TREE 12 OAK
130341	1586480.29	402242.29	TREE 8 OAK
130342	1586481.99	402244.12	TREE 8(2) OAK
130343	1586500.47	402241.52	TREE 14 OAK
130344	1586492.07	402256.76	TREE 16 OAK
130345	1586488.86	402266.97	TREE 20 OAK
130346	1586502.84	402276.55	TREE 18 OAK
130347	1586521.28	402278.55	TREE 14 OAK
130348	1586521.72	402293.49	TREE 16 OAK
130349	1586530.63	402287.08	TREE 14 OAK
130350	1586536.69	402283.18	TREE 30 OAK
130351	1586549.84	402261.12	TREE 14 OAK
130352	1586544.62	402256.69	TREE 12 OAK
130353	1586546.21	402250.89	TREE 8 OAK
130354	1586543.18	402241.20	TREE 17 OAK
130355	1586549.15	402299.85	TREE 9 OAK
130356	1586566.35	402305.30	TREE 9 OAK
130357	1586570.77	402287.32	TREE 24 OAK
130358	1586575.51	402287.84	TREE 20 OAK
130359	1586522.17	402345.51	TREE 18 OAK
130360	1586495.52	402347.81	TREE 25 OAK
130361	1586491.93	402370.28	TREE 18 OAK
130362	1586514.49	402367.12	TREE 16 OAK
130363	1586517.05	402374.97	TREE 24 OAK
130364	1586520.54	402398.13	TREE 8 OAK
130365	1586513.54	402402.27	TREE 8 OAK
130366	1586512.56	402404.17	TREE 14 OAK
130367	1586498.44	402391.86	TREE 12 OAK
130368	1586542.67	402407.62	TREE 16 OAK
130369	1586549.61	402379.33	TREE 24 OAK
130370	1586501.53	402419.08	TREE 14 OAK
130371	1586495.14	402406.08	TREE 14 OAK
130372	1586490.53	402446.98	TREE 8 OAK
130373	1586488.15	402456.30	TREE 8 OAK
130374	1586493.38	402459.58	TREE 8 OAK
130375	1586491.42	402468.40	TREE 8 OAK
130376	1586493.89	402470.88	TREE 12 OAK
130377	1586485.33	402472.30	TREE 10 OAK
130378	1586513.14	402471.37	TREE 8 OAK
130379	1586516.19	402455.49	TREE 8 OAK

Tree Table			
Point #	Northing	Easting	Raw Description
130380	1586530.08	402448.97	TREE 10 OAK
130381	1586529.82	402471.53	TREE 22 OAK
130382	1586537.22	402484.37	TREE 11 OAK
130383	1586543.54	402491.18	TREE 18 OAK
130384	1586545.30	402504.09	TREE 8 OAK
130385	1586541.93	402507.35	TREE 8 OAK
130386	1586523.01	402495.90	TREE 8 OAK
130387	1586510.22	402500.70	TREE 16 OAK
130388	1586497.07	402526.33	TREE 9 OAK
130389	1586517.70	402534.69	TREE 18 OAK
130390	1586529.38	402530.15	TREE 22 OAK
130391	1586504.84	402555.96	TREE 8 OAK
130392	1586499.23	402559.40	TREE 10 OAK
130393	1586493.37	402560.85	TREE 14 OAK
130394	1586525.45	402575.07	TREE 8 OAK
130395	1586530.98	402575.48	TREE 10 OAK
130396	1586509.65	402597.30	TREE 10 OAK
130397	1586507.89	402600.64	TREE 14 OAK
130398	1586511.95	402612.45	TREE 10 OAK
130399	1586498.32	402617.74	TREE 10 OAK
130400	1586498.93	402618.83	TREE 8 OAK
130401	1586503.76	402620.30	TREE 8 OAK
130402	1586502.11	402620.49	TREE 9 OAK
130403	1586490.28	402650.64	TREE 8 OAK
130404	1586493.30	402654.80	TREE 8 OAK
130405	1586493.84	402649.12	TREE 8 OAK
130406	1586486.82	402653.36	TREE 8 OAK
130407	1586495.71	402658.00	TREE 8(3) OAK
130408	1586493.70	402660.53	TREE 8 OAK
130409	1586499.72	402660.92	TREE 8 OAK
130410	1586516.75	402657.93	TREE 20 OAK
130411	1586518.20	402653.55	TREE 8 OAK
130412	1586518.82	402679.58	TREE 10 OAK
130413	1586546.19	402731.50	TREE 10 OAK
130414	1586540.63	402755.34	TREE 10 OAK
130415	1586571.39	402740.81	TREE 25 OAK
130416	1586579.90	402745.65	TREE 10 OAK
130417	1586574.45	402779.99	TREE 8 OAK
130418	1586613.50	402781.64	TREE 11 OAK
130419	1586616.42	402807.19	TREE 26 OAK
130420	1586591.63	402819.58	TREE 24 OAK
130421	1586514.69	402857.61	TREE 18 PALM
130422	1586500.61	402829.13	TREE 10 OAK
130423	1586496.79	402821.40	TREE 22 OAK
130424	1586470.09	402871.62	TREE 8 OAK
130425	1586477.00	402864.38	TREE 20 OAK
130426	1586477.04	402862.32	TREE 12(2) OAK
130427	1586481.59	402862.03	TREE 10 OAK
130428	1586488.72	402924.20	TREE 8 OAK
130432	1586739.71	403306.17	TREE 12(2) OAK
130433	1586740.72	403325.50	TREE 8 OAK
130434	1586768.94	403325.83	TREE 8(1) 12(2) OAK
130435	1586789.49	403353.34	TREE 8 OAK
130436	1586806.81	403353.56	TREE 12 OAK
130437	1586804.76	403358.90	TREE 10 OAK
130438	1586822.49	403347.89	TREE 8 OAK
130439	1586767.95	403279.22	TREE 9 OAK
130440	1586790.20	403276.49	TREE 12 OAK
130441	1586772.45	403263.37	TREE 8(2) OAK
130442	1586790.63	403264.11	TREE 8 OAK
130443	1586812.14	403257.86	TREE 8(3) OAK
130444	1586804.85	403208.72	TREE 10 OAK
130445	1586804.20	403207.66	TREE 12 OAK
130446	1586794.44	403189.02	TREE 24 OAK
130447	1586793.71	403185.88	TREE 24 OAK
130448	1586770.05	403160.45	TREE 10 OAK
130449	1586752.98	403178.14	TREE 8 OAK
130450	1586763.42	403202.46	TREE 10 OAK
130451	1586769.03	403159.64	TREE 10 OAK
130452	1586765.36	403153.90	TREE 8 OAK
130453	1586742.67	403157.66	TREE 8 OAK
130454	1586727.30	403129.52	TREE 10 OAK
130455	1586716.94	403153.35	TREE 9 OAK
130456	1586726.18	403130.03	TREE 8 OAK
130457	1586749.77	403112.84	TREE 8 OAK
130458	1586739.11	403082.13	TREE 10 OAK
130459	1586741.63	403082.87	TREE 10 OAK
130460	1586768.72	403083.13	TREE 10(3) OAK
130461	1586737.69	403036.94	TREE 12 OAK
130462	1586733.16	403039.60	TREE 10 OAK
130463	1586761.59	402984.11	TREE 10 OAK
130464	1586767.37	402956.46	TREE 16 OAK
130465	1586762.03	402941.86	TREE 8 OAK
130466	1586763.68	402931.34	TREE 16 OAK
130467	1586766.32	402932.22	TREE 8 OAK
130468	1586792.49	402925.74	TREE 12 OAK
130469	1586815.80	402939.91	TREE 8 OAK
130470	1586819.49	402932.47	TREE 10 OAK
130471	1586827.13	402951.25	TREE 8 OAK
130472	1586819.34	402954.27	TREE 8 OAK

Tree Table			
Point #	Northing	Easting	Raw Description
130473	1586832.84	402957.75	TREE 12 OAK
130474	1586840.83	402957.42	TREE 10 OAK
130475	1586812.51	403002.68	TREE 10 OAK
130476	1586815.61	403008.99	TREE 13 OAK
130477	1586820.77	402986.12	TREE 14 OAK
130478	1586822.98	403007.97	TREE 8 OAK
130479	1586810.26	403030.24	TREE 8 OAK
130480	1586811.58	403043.15	TREE 8 OAK
130481	1586789.97	403070.34	TREE 8(2) OAK
130482	1586800.95	403075.64	TREE 8(2) OAK
130483	1586824.83	403080.45	TREE 8 OAK
130484	1586834.24	403083.16	TREE 10 OAK
130485	1586853.32	403081.46	TREE 14 OAK
130486	1586873.49	403081.52	TREE 20 OAK
130487	1586875.43	403080.62	TREE 8 OAK
130488	1586889.19	403134.10	TREE 12 OAK
130489	1586891.44	403128.60	TREE 12(2) OAK
130490	1586897.47	403132.67	TREE 12 OAK
130491	1586904.76	403144.75	TREE 10(4) OAK
130492	1586940.08	403159.84	TREE 12 OAK
130493	1586952.50	403168.50	TREE 8 OAK
130494	1586960.87	403156.48	TREE 10 OAK
130495	1586966.60	403130.45	TREE 16 OAK
130496	1586963.22	403126.81	TREE 12 OAK
130497	1586941.56	403179.54	TREE 14 OAK
130498	1586940.85	403207.86	TREE 10 OAK
130499	1586936.49	403204.07	TREE 10 OAK
130500	1586940.61	403210.02	TREE 10 OAK
130501	1586938.10	403211.55	TREE 8 OAK
130502	1586912.36	403229.79	TREE 12 OAK
130503	1586890.40	403225.98	TREE 12 OAK
130504	1586884.68	403246.31	TREE 8 OAK
130505	1586880.94	403253.10	TREE 8 OAK
130506	1586884.47	403258.94	TREE 12 OAK
130507	1586895.78	403253.19	TREE 8 OAK
130508	1586905.52	403259.89	TREE 8 OAK
130509

Tree Table

Point #	Northing	Easting	Raw Description
130750	1586322.00	405057.74	TREE 12 OAK
130751	1586320.62	405050.10	TREE 20 OAK
130752	1586323.98	405043.02	TREE 12 OAK
130753	1586331.32	405032.76	TREE 26 OAK
130754	1586329.36	405022.25	TREE 12 OAK
130755	1586318.00	405025.63	TREE 24 OAK
130756	1586318.47	405026.87	TREE 8 OAK
130757	1586314.80	405017.35	TREE 16 OAK
130758	1586314.92	405012.94	TREE 12 OAK
130759	1586319.58	405008.81	TREE 12 OAK
130760	1586317.30	404979.53	TREE 30 OAK
130761	1586320.66	404964.28	TREE 10 OAK
130762	1586313.46	404960.95	TREE 14 OAK
130763	1586296.55	404957.82	TREE 16 OAK
130764	1586292.34	404941.32	TREE 12 PALM
130765	1586288.35	404931.83	TREE 12 OAK
130766	1586307.79	404924.46	TREE 16 PINE
130767	1586326.59	404926.71	TREE 9 OAK
130768	1586337.79	404925.15	TREE 9 OAK
130769	1586353.03	404923.99	TREE 20 OAK
130770	1586413.73	404949.33	TREE 34 OAK
130771	1586412.77	404937.05	TREE 18 OAK
130772	1586417.42	404918.28	TREE 8 OAK
130773	1586417.50	404912.99	TREE 12 OAK
130774	1586431.88	404901.34	TREE 8 OAK
130775	1586438.72	404883.93	TREE 14 OAK
130776	1586463.44	404882.29	TREE 50 OAK
130777	1586471.11	404893.04	TREE 10 OAK
130778	1586355.97	404914.06	TREE 14 OAK
130779	1586358.36	404913.82	TREE 14 OAK
130780	1586378.49	404890.20	TREE 20 OAK
130781	1586383.03	404839.66	TREE 8(2) OAK
130782	1586383.22	404817.72	TREE 60 OAK
130783	1586380.14	404820.92	TREE 10 OAK
130784	1586381.70	404809.33	TREE 8 OAK
130785	1586379.12	404789.15	TREE 12 OAK
130786	1586388.67	404755.43	TREE 10 OAK
130787	1586480.42	404604.66	TREE 48 OAK
130788	1586444.21	404104.96	TREE 8 OAK
130789	1586439.47	404093.72	TREE 12 OAK
130790	1586419.17	404083.81	TREE 14 OAK DECAYED
130791	1586409.33	404081.64	TREE 18 OAK
130792	1586395.42	404051.02	TREE 20 OAK
130793	1586392.36	404056.14	TREE 8 OAK
130794	1586381.06	404059.36	TREE 26 OAK
130795	1586371.14	404061.60	TREE 14 OAK
130796	1586314.06	404022.04	TREE 20 OAK
130797	1586274.33	404009.15	TREE 12(2) OAK
130798	1586265.98	404008.81	TREE 8 OAK
130799	1586264.69	404006.11	TREE 8 OAK
130800	1586259.47	403985.37	TREE 8(3) OAK
130801	1586228.21	403986.28	TREE 20 OAK
130802	1586358.00	403953.28	TREE 8 OAK
130803	1586341.74	403953.88	TREE 12 OAK
130804	1586332.03	403952.38	TREE 12 OAK
130805	1586328.75	403954.70	TREE 8 OAK
130806	1586317.07	403950.37	TREE 10 OAK
130807	1586301.46	403954.56	TREE 14 OAK DECAYED
130808	1586190.06	403940.14	TREE 12 OAK
130809	1586180.28	403936.31	TREE 14 OAK
130810	1586178.88	403934.66	TREE 8 OAK
130811	1586167.75	403919.92	TREE 12(1) 18(1) OAK
130812	1586172.05	403915.00	TREE 8 OAK
130813	1586186.97	403906.85	TREE 8 OAK
130814	1586181.13	403897.71	TREE 12 OAK
130815	1586169.77	403899.16	TREE 10 OAK
130816	1586162.34	403881.60	TREE 8 OAK DECAYING
130817	1586159.87	403879.91	TREE 12 OAK
130818	1586159.71	403881.47	TREE 8 OAK
130819	1586165.27	403880.07	TREE 8 OAK
130820	1586160.60	403842.71	TREE 8 OAK
130821	1586158.42	403840.76	TREE 8 OAK
130822	1586152.89	403843.93	TREE 8 OAK
130823	1586151.81	403841.32	TREE 8(2) OAK
130824	1586230.67	403855.20	TREE 24 OAK
130825	1586243.18	403855.10	TREE 25 OAK
130826	1586245.46	403861.75	TREE 8 OAK
130827	1586249.30	403864.87	TREE 10 OAK
130828	1586246.62	403856.74	TREE 8 OAK
130829	1586248.26	403839.53	TREE 22 OAK
130830	1586233.50	403816.91	TREE 10 OAK
130831	1586157.33	403793.45	TREE 22 OAK
130832	1586156.81	403791.09	TREE 18 OAK
130833	1586142.75	403736.46	TREE 26 OAK
130834	1586139.96	403742.00	TREE 8 OAK
130835	1586136.85	403738.06	TREE 8(3) OAK
130836	1586135.13	403735.99	TREE 8 OAK
130837	1586136.19	403735.23	TREE 8 OAK
130838	1586139.50	403698.49	TREE 16 OAK
130839	1586139.61	403697.35	TREE 8 OAK

Tree Table

Point #	Northing	Easting	Raw Description
130840	1586135.39	403686.13	TREE 26 OAK
130841	1586127.54	403661.56	TREE 14 OAK
130842	1586131.35	403642.76	TREE 8 OAK
130843	1586133.14	403632.23	TREE 36 OAK
130844	1586115.69	403636.24	TREE 22 OAK
130845	1586140.68	403611.65	TREE 18 OAK
130846	1586180.43	403595.19	TREE 24 OAK
130847	1586139.51	403560.33	TREE 8 OAK
130848	1586141.50	403554.72	TREE 12 OAK
130849	1586143.53	403526.33	TREE 26 OAK
130850	1586155.78	403495.30	TREE 30 OAK
130851	1586191.85	403399.06	TREE 8 OAK
130852	1586200.99	403393.09	TREE 30 OAK
130853	1586250.91	403404.99	TREE 12 OAK
130854	1586245.02	403425.99	TREE 8 OAK
130855	1586255.48	403421.69	TREE 26 OAK
130856	1586260.47	403411.89	TREE 8 OAK
130857	1586260.78	403405.69	TREE 12 OAK
130858	1586263.13	403407.59	TREE 23 OAK
130859	1586267.72	403413.49	TREE 8 OAK
130860	1586271.15	403405.68	TREE 16 OAK
130861	1586189.12	403357.59	TREE 18 OAK
130862	1586191.70	403286.36	TREE 24 OAK
130863	1586154.00	403347.83	TREE 26 OAK
130864	1586137.77	403307.46	TREE 8 OAK
130865	1586121.12	403358.88	TREE 10 OAK
130872	1585991.47	403350.18	TREE 26 OAK
130873	1585816.31	403332.69	TREE 8 OAK
130874	1585814.09	403332.99	TREE 10 OAK
130875	1585791.95	403329.40	TREE 8(2) OAK
130876	1585769.75	403338.92	TREE 8 OAK
130877	1585773.98	403331.58	TREE 10 OAK
130879	1585764.26	403325.34	TREE 8(3) OAK
130880	1585725.66	403320.10	TREE 14 OAK
130881	1585729.77	403323.04	TREE 12 OAK
130882	1585497.65	403317.78	TREE 10 OAK
130884	1585491.18	403321.97	TREE 16 OAK
130885	1585352.54	403319.24	TREE 24 OAK
130886	1585697.75	405613.89	TREE 16 OAK
130887	1585766.21	405648.26	TREE 25 OAK
130888	1585807.18	405619.13	TREE 8 OAK
130889	1585854.51	405593.83	TREE 10 OAK
130890	1585888.12	405592.21	TREE 10 OAK
130891	1585967.48	405641.45	TREE 10 OAK
130892	1586014.63	405589.49	TREE 12 OAK
130893	1585917.89	405551.60	TREE 14 PINE
130894	1585923.41	405536.57	TREE 8 OAK
130895	1585895.82	405590.17	TREE 18 OAK
130896	1585883.46	405535.70	TREE 14 OAK
130897	1585832.98	405559.44	TREE 8 OAK
130898	1585786.07	405539.03	TREE 8 OAK
130899	1585782.12	405546.34	TREE 10 OAK
130900	1586117.90	405555.96	TREE 8 OAK
130901	1586136.49	405559.24	TREE 16 PINE
130902	1586179.13	405561.76	TREE 26 OAK
130903	1586212.24	405523.42	TREE 24 PALM
130904	1586218.62	405521.11	TREE 18 OAK
130905	1586224.11	405540.10	TREE 24 PALM
130906	1586220.95	405543.19	TREE 24 PALM
130907	1586214.38	405549.22	TREE 20 OAK
130908	1586228.05	405502.18	TREE 8 OAK
130909	1586226.93	405492.88	TREE 16(2) OAK
130910	1586236.40	405500.79	TREE 8 OAL
130911	1586235.78	405500.56	TREE 8 OAK
130912	1586240.27	405491.70	TREE 12 OAK
130913	1586221.77	405482.08	TREE 18 OAK
130914	1586208.88	405496.23	TREE 9 OAK
130915	1586208.73	405493.22	TREE 16 OAK
130916	1586213.61	405462.19	TREE 8 OAK
130917	1586222.25	405452.21	TREE 8 OAK
130918	1586228.00	405443.83	TREE 24 OAK
130919	1586235.91	405445.54	TREE 10 OAK
130920	1586237.92	405435.16	TREE 26 OAK
130921	1586242.27	405440.75	TREE 24 OAK
130922	1586219.60	405432.38	TREE 8 OAK
130923	1586223.24	405430.37	TREE 10 OAK
130924	1586236.59	405405.20	TREE 8 OAK
130925	1586239.76	405408.20	TREE 12 OAK
130926	1586242.02	405403.35	TREE 8 OAK
130927	1586260.52	405411.61	TREE 22 OAK
130928	1586264.53	405407.83	TREE 16 OAK
130929	1586267.44	405432.29	TREE 14 OAK
130930	1586285.62	405439.78	TREE 10 OAK
130931	1586327.77	405460.73	TREE 18 OAK
130932	1586348.77	405502.18	TREE 8 OAK
130933	1586341.84	405509.93	TREE 8 OAK
130934	1586358.13	405526.93	TREE 22 OAK
130935	1586366.78	405526.94	TREE 24 OAK
130936	1586368.44	405554.80	TREE 10 OAK
130937	1586385.80	405560.01	TREE 12 OAK

Tree Table

Point #	Northing	Easting	Raw Description
130938	1586402.10	405582.58	TREE 8 OAK
130939	1586408.77	405582.31	TREE 8 OAK
130940	1586416.60	405578.39	TREE 10 OAK
130941	1586351.82	405600.68	TREE 20 OAK
130942	1586315.98	405617.02	TREE 22 OAK
130943	1586279.83	405586.16	TREE 20 OAK
130944	1586306.45	405609.83	TREE 8 OAK
130945	1586312.70	405617.67	TREE 24 OAK
130946	1586267.82	405613.04	TREE 10 OAK
130947	1586252.42	405603.45	TREE 18 OAK
130948	1586250.16	405607.78	TREE 16 OAK
130949	1586177.35	405618.65	TREE 20 OAK
130953	1586038.97	405238.34	TREE 15 PALM
130954	1586042.47	405213.92	TREE 20 OAK
130955	1586058.56	405194.97	TREE 18 OAK
130956	1586025.62	405182.32	TREE 16 OAK
130957	1586011.38	405178.42	TREE 24 OAK
130958	1586072.44	405189.78	TREE 18 OAK
130959	1586223.39	405191.90	TREE 10 OAK
130960	1586224.92	405182.16	TREE 8 OAK
130961	1586233.92	405182.86	TREE 12 OAK
130962	1586229.90	405180.53	TREE 8 OAK
130963	1586239.94	405182.94	TREE 8(2) OAK
130964	1586216.13	405128.32	TREE 8 OAK
130965	1586210.29	405127.21	TREE 24 OAK
130966	1586208.22	405124.75	TREE 28 OAK
130967	1586205.59	405130.94	TREE 26 OAK
130968	1586189.04	405123.91	TREE 8 OAK
130969	1586189.70	405128.41	TREE 8 OAK
130970	1586175.20	405137.78	TREE 12 OAK
130971	1586172.88	405126.53	TREE 8 OAK
130972	1586164.22	405112.26	TREE 8 OAK
130973	1586149.93	405116.90	TREE 12 OAK
130974	1586147.12	405114.24	TREE 10 OAK
130975	1586143.45	405121.59	TREE 8 OAK
130976	1586115.42	405100.51	TREE 28 OAK
130977	1586113.82	405108.95	TREE 8 OAK
130978	1586095.32	405084.91	TREE 14 OAK
130979	1586089.68	405080.62	TREE 14 OAK
130980	1586055.62	405100.36	TREE 20 OAK
130981	1586044.13	405094.94	TREE 12 OAK
130982	1586046.18	405102.00	TREE 8 OAK
130983	1586316.56	405189.64	TREE 10 OAK
130984	1586316.51	405162.60	TREE 12 OAK
130985	1586248.25	405125.44	TREE 12 PALM
130986	1586247.75	405127.31	TREE 14 PALM
130987	1586297.30	405102.66	TREE 36 OAK
130988	1586299.25	405094.59	TREE 8(1) 12(1) 14(1) 16(1) OAK
130989	1586278.01	405049.06	TREE 8 OAK
130990	1586252.70	405037.52	TREE 12 PALM
130991	1586250.34	405036.88	TREE 14 PALM
130992	1586227.79	405056.37	TREE 8 OAK
130993	1586228.43	405063.90	TREE 28 OAK
130994	1586223.62	405047.69	TREE 16 OAK
130995	1586212.92	405049.70	TREE 16 OAK
130996	1586107.44	405046.07	TREE 18 OAK
130997	1586077.58	405017.73	TREE 12 OAK
130998	1586043.13	404996.25	TREE 14(2) OAK
130999	1586082.77	405007.58	TREE 10 OAK
131000	1586083.17	404957.48	TREE 8 OAK
131001	1586079.82	404955.99	TREE 15 OAK
131002	1586094.92	404941.24	TREE 10 OAK
131003	1586095.25	404933.70	TREE 8 OAK
131004	1586114.96	404914.88	TREE 9 OAK
131005	1586050.20	404893.95	TREE 10 OAK
131006	1586046.68	404895.47	TREE 9 OAK
131007	1586082.00	404870.90	TREE 14 OAK
131008	1586069.51	404855.91	TREE 8 OAK
131009	1586088.30	404867.70	TREE 14 OAK
131010	1586092.41	404836.97	TREE 12 OAK
131011	1586105.73	404847.76	TREE 12(5) PALM
131012	1585998.62	404914.78	TREE 12(4) PALM
131013	1585930.40	404902.42	TREE 12 OAK
131014	1585937.60	404889.01	TREE 11 OAK
131015	1585932.37	404870.13	TREE 12 OAK
131016	1585939.38	404836.01	TREE 12 OAK
131017	1585922.74	404831.35	TREE 10 OAK
131018	1585911.35	404809.00	TREE 12 PALM
131019	1585913.14	404808.70	TREE 12 PALM
131020	1585877.50	404778.93	TREE 24 OAK
131021	1585871.88	404785.71	TREE 8 OAK
131022	1585892.26	404759.96	TREE 10 OAK
131023	1585909.32	404730.21	TREE 10 OAK
131024	1585780.77	404702.18	TREE 8 OAK
131025	1585738.52	404719.61	TREE 8 OAK
131026	1585734.39	404718.80	TREE 8 OAK
131027	1585718.84	404713.10	TREE 13 OAK
131028	1585716.77	404719.47	TREE 14 OAK
131029	1585729.66	404700.02	TREE 10 OAK
131030	1585725.91	404690.00	TREE 10 OAK

Tree Table

Point #	Northing	Easting	Raw Description
131031	1585718.49	404695.07	TREE 10 OAK
131032	1585721.58	404799.14	TREE 12 OAK
131033	1585714.29	404847.13	TREE 20 OAK
131034	1585721.10	404855.48	TREE 16 PALM
131035	1585683.27	404871.92	TREE 10 OAK
131036	1585677.17	404848.16	TREE 10 OAK
131037	1585631.16	404861.36	TREE 8 OAK
131038	1585771.46	404992.87	TREE 12 OAK
131039	1585726.43	405191.82	TREE 8 OAK
131040	1585711.41	405191.52	TREE 12 OAK
131041	1585707.08	405168.79	TREE 8 OAK
131042	1585708.55	405013.76	TREE 8 OAK
131043	1585639.09	404931.10	TREE 52 OAK
131044	1585635.18	404908.17	TREE 25 OAK
131045	1585637.21	404901.77	TREE 8 OAK
131046	1585642.01	404894.02	TREE 8 OAK
131047	1585633.09	404864.35	TREE 8 OAK
131048	1585590.38	404854.27	TREE 8 OAK
131049	1585556.46	404849.92	TREE 8 OAK
131050	1585552.54	404849.58	TREE 18 OAK
131051	1585504.48	404866.42	TREE 10 OAK
131052	1585500.50	404872.46	TREE 8(2) OAK
131053	1585495.80	404869.99	TREE 10 OAK
131054	1585496.06	404823.83	TREE 10 OAK
131055	1585472.65	404827.02	TREE 14 PALM
131056	1585471.65	404821.90	TREE 12 PALM
131057	1585416.53	404787.63	TREE 52 OAK
131058	1585423.66	404773.08	TREE 48 OAK
131059	1585382.01	404760.30	TREE 8 OAK
131060	1585329.78	404881.72	TREE 10 OAK
131061	1585325.30	404881.10	TREE 14 OAK
131062	1585321.06	404884.57	TREE 12 OAK
131063	1585293.69	404937.46	TREE 72 OAK
131064	1585294.57	404965.57	TREE 12 OAK
131065	1585314.83	404939.27	TREE 32 OAK
131066	1585245.31	404885.07	TREE 16 OAK
131067	1585283.73	404880.21	TREE 26 OAK
131068	1585381.38	404759.05	TREE 10 OAK
131069	1585387.19	404748.75	TREE 8 OAK
131070	1585400.18	404745.38	TREE 10 OAK
131071	1585427.71	404741.03	TREE 34 OAK
131072	1585440.49	404739.85	TREE 34 OAK
131073	1585477.69	404731.79	TREE 10 OAK
131074	1585440.49	404677.64	TREE 16 OAK
131075	1585481.29	404600.40	TREE 18 OAK
131076	1585587.68	404615.34	TREE 11 OAK
131077	1585562.91	404744.06	TREE 12 OAK
131078	1585800.65	404702.91	TREE 8 OAK
131079	1585802.10	404716.14	TREE 12 OAK
131080	1585812.51	404735.87	TREE 22 OAK
131081	1585891.35	404758.81	TREE 10 OAK
131082	1585993.28	404836.64	TREE 8(2) OAK
131083	1586022.92	404834.81	TREE 8(3) OAK
131084	1586187.73	404832.94	TREE 48 OAK
131085	1586192.56	404832.17	TREE 8 OAK
131086	1586195.63	404836.44	TREE 12 OAK
131087	1586192.64	404840.86	TREE 14 OAK
131088	1586186.14	404863.40	TREE 8 OAK
131089	1586189.66	404863.39	TREE 10 OAK
131090	1586204.24	404885.80	TREE 16 OAK
131091	1586225.17	404857.73	TREE 12 OAK
131092	1586231.00	404857.70	TREE 18 OAK
131093	1586226.80	404859.25	TREE 8 OAK
131094	1586229.56	404856.20	TREE 8 OAK
131095	1586219.41	404889.44	TREE 70 OAK
131096	1586226.94	404890.64	TREE 12 OAK
131097	1586217.50	404898.16	TREE 8 OAK
131098	1586231.10	404917.49	TREE 10 PALM
131099	1586235.18	404918.95	TREE 16 PALM
131100	1586223.98	404926.53	TREE 12 OAK
131101	1586220.61	404925.77	TREE 10 OAK
131102	1586206.56	404930.60	TREE 14 OAK
131103	1586205.92	404939.64	TREE 10 PALM
131104	1586203.18	404939.60	TREE 14 PALM
131105	1586205.62	404940.97	TREE 12 PALM
131106	1586217.56	404936.91	TREE 16 PALM
131107	1586178.84	404923.73	TREE 10 OAK
131108	1586172.24	404924.36	TREE 10 OAK
131109	1586183.19	404958.77	TREE 52 OAK
131110	1586181.59	404978.85	TREE 10 OAK
131111	1586207.23	404981.26	TREE 10 OAK
131112	1586204.80	404986.93	TREE 12 OAK
131113	1586218.43	404994.16	TREE 10 OAK
131114	1586219.28	404995.24	TREE 8 OAK
131115	1586275.23	404983.07	TREE 30 OAK
131116	1586251.99	404997.69	TREE 8 OAK
131117	1586243.18	404994.90	TREE 14 OAK
131118	1586271.59	404914.93	TREE 16 PALM
131119	1586270.64	404886.65	TREE 12 OAK
131120	1586321.50	404798.41	TREE 12 OAK

Tree Table

Point #	Northing	Easting	Raw Description
131121	1586298.52	404781.82	TREE 26 OAK
131122	1586267.51	404763.83	TREE 12 OAK
131123	1586236.42	404737.32	TREE 24 OAK
131124	1586234.41	404736.91	TREE 8 OAK
131125	1586207.02	404716.64	TREE 26 OAK
131126	1586186.92	404722.60	TREE 38 OAK
131127	1586166.72	404708.26	TREE 36 OAK
131128	1586156.71	404722.62	TREE 42 OAK
131129	1586158.71	404722.21	TREE 8 OAK
131130	1586113.99	404628.66	TREE 10 OAK
131131	1586011.31	405094.78	TREE 8 OAK
131132	1585951.30	405070.01	TREE 10 OAK
131133	1585866.12	405104.53	TREE 10 OAK
131134	1585863.28	405107.55	TREE 10 OAK
131135	1585858.35	405100.76	TREE 12 PALM
131136	1585856.35	405097.04	TREE 12 PALM
131137	1585865.82	405074.77	TREE 12 PALM
131138	1585861.65	405051.79	TREE 12 OAK
131139	1585853.39	405049.21	TREE 12 OAK
131140	1585851.57	405049.70	TREE 12 OAK
131141	1585863.59	404997.03	TREE 8 OAK
131142	1585885.22	404986.18	TREE 8 OAK
131143	1585886.47	404987.33	TREE 10 OAK
131144	1585895.85	404987.24	TREE 10 OAK
131145	1585904.05	404962.39	TREE 8 OAK
131146	1585896.53	404958.73	TREE 12 OAK
131147	1585915.45	404950.97	TREE 12 OAK
131148	1585860.43	404934.46	TREE 8 OAK
131149	1585839.65	404965.24	TREE 18 OAK
131150	1585847.08	404960.45	TREE 14 OAK
131151	1585854.04	404927.51	TREE 12 OAK
131154	1585628.12	404534.79	TREE 14 OAK
131155	1585548.80	404523.49	TREE 8 OAK
131156	1585529.90	404509.71	TREE 8 OAK
131157	1585484.20	404541.26	TREE 14 PALM
131158	1585424.62	404520.83	TREE 8 OAK
131159	1585421.64	404514.86	TREE 8 OAK
131160	1585410.58	404484.94	TREE 10 OAK
131161	1585416.91	404480.56	TREE 12 OAK
131162	1585706.47	404633.26	TREE 16 OAK
131163	1585727.94	404628.39	TREE 8 OAK
131164	1585731.55	404624.43	TREE 14 OAK
131165	1585737.39	404635.60	TREE 16 OAK
131166	1585771.85	404591.26	TREE 10 OAK
131167	1585783.18	404575.18	TREE 14 OAK
131168	1585820.24	404628.42	TREE 26 OAK
131169	1585823.46	404628.64	TREE 8 OAK
131170	1585840.94	404615.48	TREE 14 PALM
131171	1585843.30	404615.47	TREE 12 PALM
131172	1585844.17	404616.42	TREE 14 PALM
131173	1585847.92	404617.20	TREE 14 PALM
131174	1585846.95	404619.28	TREE 14 PALM
131175	1585874.52	404581.35	TREE 12(3) PALM
131176	1585870.97	404578.02	TREE 16 PALM
131177	1585892.72	404616.38	TREE 12 PALM
131178	1585889.47	404618.15	TREE 12 PALM
131179	1585953.61	404655.35	TREE 10 OAK
131180	1585938.83	404715.13	TREE 14 OAK
131181	1586073.09	404639.46	TREE 12 PALM
131182	1586081.41	404641.89	TREE 12 PALM
131183	1586110.75	404653.41	TREE 10 OAK
131184	1586083.87	404641.59	TREE 12 PALM
131185	1586084.07	404639.50	TREE 10 PALM
131186	1586081.27	404638.09	TREE 12 PALM
131187	1586076.77	404640.03	TREE 14 PALM
131188	1586077.33	404627.15	TREE 10 OAK
131189	1586110.44	404619.59	TREE 12 OAK
131190	1586109.82	404617.36	TREE 12 OAK
131191	1586133.43	404604.50	TREE 17 OAK
131192	1586181.50	404628.78	TREE 8 OAK
131193	1586194.33	404624.88	TREE 18 OAK
131194	1586198.47	404599.60	TREE 16 OAK
131195	1586238.85	404590.67	TREE 16 OAK
131196	1586274.09	404647.47	TREE 18 OAK
131197	1586276.56	404689.31	TREE 12 OAK
131198	1586230.93	404676.26	TREE 12(2) OAK
131199	1586241.22	404707.14	TREE 12(2) OAK
131200	1586277.78	404703.29	TREE 12 OAK
131201	1586276.82	404691.18	TREE 12 OAK
131202	1586330.38	404719.74	TREE 12 OAK
131203	1586356.39	404751.53	TREE 34 OAK
131204	1586363.45	404743.32	TREE 10 OAK
131205	1586374.92	404748.85	TREE 8 OAK
131206	1586380.10	404745.72	TREE 14 OAK
131207	1586394.95	404707.28	TREE 14 OAK
131208	1586388.48	404694.12	TREE 8 OAK
131209	1586379.91	404704.46	TREE 8 OAK
131210	1586377.64	404699.72	TREE 8 OAK
131211	1586380.54	404695.82	TREE 12 OAK
131212	1586376.02	404691.08	TREE 32 OAK

Tree Table

Point #	Northing	Easting	Raw Description
131213	1586363.10	404687.70	TREE 12 OAK
131214	1586364.72	404693.27	TREE 12 OAK
131215	1586360.82	404691.52	TREE 12 OAK
131216	1586361.63	404694.44	TREE 12 OAK
131217	1586383.98	404665.05	TREE 8 OAK
131218	1586388.46	404660.49	TREE 12 OAK
131219	1586405.41	404664.03	TREE 8 OAK
131220	1586404.44	404653.89	TREE 8 OAK
131221	1586393.97	404650.73	TREE 32 OAK
131222	1586391.16	404634.23	TREE 8 OAK
131223	1586371.16	404629.66	TREE 10 OAK
131224	1586395.41	404580.05	TREE 9 OAK
131225	1586395.04	404572.97	TREE 20 OAK
131226	1586395.28	404565.60	TREE 14 OAK
131227	1586343.09	404535.35	TREE 12 OAK
131228	1586346.82	404497.59	TREE 12 OAK
131229	1586291.56	404465.30	TREE 8(1) 12(1) OAK
131230	1586270.86	404479.16	TREE 18 OAK
131231	1586226.60	404483.00	TREE 22 OAK
131232	1586262.66	404550.67	TREE 16 OAK
131233	1586375.42	404454.31	TREE 18 OAK
131234	1586429.17	404421.89	TREE 8 OAK
131235	1586428.07	404414.93	TREE 8(3) OAK
131236	1586422.67	404419.86	TREE 12 OAK
131237	1586082.08	405882.63	TREE 12 OAK
131238	1586081.77	405825.59	TREE 12 OAK
131239	1586070.99	405804.94	TREE 8 OAK
131240	1586044.10	405760.66	TREE 10 OAK
131241	1586030.20	405739.69	TREE 10 OAK
131242	1586042.20	405684.17	TREE 8 OAK
131243	1586035.68	405670.99	TREE 8 OAK
131244	1586018.19	405653.06	TREE 8 OAK
131245	1586010.68	405672.59	TREE 12 PALM
131246	1586008.59	405676.75	TREE 12 PALM
131247	1586007.17	405673.28	TREE 14 PALM
131248	1585987.05	405688.80	TREE 8 OAK
131249	1585961.31	405684.85	TREE 8 OAK
131250	1585983.42	405723.63	TREE 12 PALM
131251	1586001.89	405735.75	TREE 8 OAK
131252	1585971.73	405743.77	TRE

Tree Table			
Point #	Northing	Easting	Raw Description
150224	1591172.12	402383.93	TREE 7 OAK
150225	1591164.21	402383.10	TREE 14 PALM CABBAGE
150226	1591160.62	402392.72	TREE 9 OAK
150227	1591172.18	402388.07	TREE 11 PALM CABBAGE
150228	1591131.37	402352.75	TREE 17 OAK
150229	1591171.95	402340.48	TREE 8 PALM CABBABE
150230	1591107.52	402321.63	TREE 9 OAK
150231	1591106.35	402323.93	TREE 15 OAK
150232	1591100.69	402361.97	TREE 19 OAK
150233	1591110.15	402369.54	TREE 9 OAK
150234	1591108.11	402390.26	TREE 9 OAK
150235	1591077.96	402374.63	TREE 9 OAK
150236	1591075.49	402374.43	TREE 5 OAK
150237	1591068.91	402361.75	TREE 9 PALM CABBAGE
150238	1591053.04	402369.24	TREE 14 OAK
150239	1591061.31	402395.36	TREE 7 OAK
150240	1591063.17	402394.16	TREE 6 OAK
150241	1591028.73	402379.94	TREE 20 OAK
150242	1591030.29	402382.23	TREE 5 OAK
150243	1591015.51	402390.01	TREE 15 PALM CABBAGE
150244	1591022.71	402400.67	TREE 15 PALM CABBAGE
150245	1591014.98	402325.43	TREE 13 OAK
150246	1591017.63	402325.73	TREE 7 OAK
150247	1591290.58	402118.07	TREE 16 PALM CABBAGE
150248	1591353.46	402117.95	TREE 16 OAK
150249	1591349.39	402131.31	TREE 11 OAK
150250	1591318.89	402228.17	TREE 13 OAK
150251	1591287.81	402211.54	TREE 12 OAK
150252	1591262.21	402233.34	TREE 13 OAK
150253	1591262.22	402181.25	TREE 14 OAK
150254	1591131.22	402422.91	TREE 11 OAK
150255	1591143.33	402414.97	TREE 10 OAK
150256	1591137.29	402427.38	TREE 14 OAK
150257	1591142.02	402431.66	TREE 4 OAK
150258	1591147.56	402418.47	TREE 8 OAK
150259	1591138.07	402429.70	TREE 7 OAK
150260	1591155.67	402450.33	TREE 9 OAK
150261	1591159.21	402452.54	TREE 9 OAK
150262	1591170.64	402448.63	TREE 17 OAK
150263	1591172.10	402458.02	TREE 4 OAK
150264	1591159.87	402466.47	TREE 13 OAK
150265	1591172.23	402474.56	TREE 14 OAK
150266	1591197.81	402478.91	TREE 7 OAK
150267	1591196.76	402453.32	TREE 15 OAK
150268	1591183.08	402434.09	TREE 9 OAK
150269	1591191.74	402417.27	TREE 16 OAK
150270	1591207.96	402392.80	TREE 9 OAK
150271	1591210.92	402383.90	TREE 13 OAK
150272	1591218.05	402412.26	TREE 18 OAK
150273	1591115.49	402446.81	TREE 7 OAK

Tree Table			
Point #	Northing	Easting	Raw Description
150314	1590927.78	402756.84	TREE 14 PALM CABBAGE
150315	1590969.60	402764.61	TREE 41 OAK
150316	1590976.11	402758.60	TREE 13 OAK
150317	1590949.32	402787.81	TREE 10 OAK
150318	1590926.69	402819.01	TREE 9 OAK
150319	1590951.07	402822.16	TREE 10 OAK
150320	1590957.24	402815.72	TREE 6 OAK
150321	1591000.31	402819.63	TREE 9 OAK
150322	1591013.09	402816.00	TREE 7 OAK
150323	1591027.54	402784.31	TREE 9 OAK
150324	1591040.88	402825.92	TREE 10 OAK
150325	1591026.09	402749.61	TREE 18 OAK
150326	1591019.03	402730.00	TREE 10 OAK
150327	1591020.02	402682.69	TREE 17 OAK
150328	1591049.99	402653.86	TREE 11 OAK
150329	1591076.67	402657.26	TREE 13 OAK
150330	1591107.28	402664.90	TREE 10 OAK
150331	1591134.14	402670.70	TREE 10 OAK
150332	1591132.60	402687.92	TREE 11 OAK
150333	1591171.58	402655.56	TREE 9 OAK
150334	1591172.06	402672.78	TREE 15 OAK
150335	1591169.78	402715.40	TREE 13 OAK
150336	1591140.56	402717.04	TREE 12 OAK
150337	1591114.56	402729.54	TREE 11 OAK
150338	1591103.87	402753.44	TREE 9 OAK
150339	1591051.90	402749.96	TREE 5 OAK
150340	1591082.91	402715.81	TREE 12 OAK
150341	1591078.30	402721.68	TREE 10 OAK
150342	1590981.31	402472.72	TREE 12 OAK
150343	1590993.30	402500.27	TREE 15 OAK
150344	1591014.44	402470.38	TREE 17 PALM CABBAGE
150345	1591046.72	402599.24	TREE 15 OAK
150346	1591018.26	402609.34	TREE 12 OAK
150347	1591039.41	402616.90	TREE 18 PALM CABBAGE
150348	1591084.65	402592.68	TREE 10 OAK
150349	1591069.54	402609.48	TREE 10 OAK
150350	1591073.88	402623.46	TREE 12 OAK
150351	1591093.70	402611.94	TREE 11 OAK
150352	1591088.97	402594.28	TREE 14 PALM CABBAGE
150353	1591116.41	402587.14	TREE 10 OAK
150356	1590532.25	402095.14	TREE 11 OAK
150357	1590305.51	402098.11	TREE 16 PALM CABBAGE
150358	1590259.61	402092.30	TREE 6 UNKNOWN
150359	1590258.43	402105.89	TREE 6 UNKNOWN
150360	1590283.72	402192.35	TREE 6 ORANGE
150361	1590261.40	402220.41	TREE 17 PALM CABBAGE
150362	1590233.56	402223.23	TREE 6 ORANGE
150363	1590233.04	402238.79	TREE 6 ORANGE
150364	1590256.80	402253.85	TREE 7 ORANGE
150365	1590282.59	402269.55	TREE 7 ORANGE
150366	1590281.95	402300.66	TREE 7 ORANGE
150367	1590257.15	402314.38	TREE 7 ORANGE
150368	1590234.03	402314.18	TREE 7 ORANGE
150369	1590207.30	402299.31	TREE 7 ORANGE
150370	1590208.32	402193.72	TREE 7 ORANGE
150371	1590208.64	402208.36	TREE 7 ORANGE
150372	1590208.99	402223.21	TREE 7 ORANGE
150373	1590182.73	402199.33	TREE 20 OAK
150374	1590209.67	402121.19	TREE 8 ORANGE
150375	1590208.92	402090.40	TREE 8 ORANGE
150376	1590184.08	402121.13	TREE 8 ORANGE
150377	1590408.59	402228.37	TREE 8 ORANGE
150378	1590409.13	402212.77	TREE 7 ORANGE
150379	1590433.70	402214.17	TREE 7 ORANGE
150380	1590408.97	402181.19	TREE 7 ORANGE
150381	1590434.95	402108.82	TREE 8 ORANGE
150382	1590410.35	402122.91	TREE 6 ORANGE
150383	1590385.54	402092.98	TREE 7 ORANGE
150384	1590133.52	402089.55	TREE 7 ORANGE
150385	1590060.22	402104.59	TREE 7 ORANGE
150386	1590060.96	402088.07	TREE 7 ORANGE
150387	1590109.64	402208.91	TREE 7 ORANGE
150388	1590133.06	402237.60	TREE 8 ORANGE
150389	1590181.84	402267.48	TREE 8 ORANGE
150390	1590157.41	402297.84	TREE 9 ORANGE
150391	1590157.06	402328.40	TREE 9 ORANGE
150392	1590158.22	402359.62	TREE 9 ORANGE
150393	1590045.83	402340.73	TREE 9 OAK
150394	1590047.26	402341.07	TREE 8 OAK
150395	1590085.89	402221.50	TREE 10 OAK
150396	1590085.01	402252.36	TREE 8 ORANGE
150397	1590059.94	402265.91	TREE 9 ORANGE
150398	1590034.49	402237.95	TREE 9 ORANGE
150399	1590011.20	402194.41	TREE 9 ORANGE
150400	1590080.34	402445.99	TREE 12 OAK
150401	1590091.59	402462.62	TREE 37 OAK
150402	1590088.26	402471.18	TREE 24 OAK
150403	1590113.34	402495.04	TREE 12 OAK
150404	1590111.12	402497.09	TREE 5 OAK
150405	1590067.95	402489.41	TREE 16 OAK

Tree Table			
Point #	Northing	Easting	Raw Description
150406	1590035.09	402470.20	TREE 30 OAK
150407	1590062.05	402510.81	TREE 11 OAK
150408	1590076.30	402502.62	TREE 13 OAK
150409	1590053.01	402519.68	TREE 5 OAK
150410	1590029.20	402523.63	TREE 9 OAK
150411	1590009.07	402508.88	TREE 20 OAK
150412	1590007.32	402539.91	TREE 14 OAK
150413	1589990.73	402538.84	TREE 7 OAK
150414	1589954.00	402538.60	TREE 7 OAK
150415	1589947.27	402540.65	TREE 6 ORANGE
150416	1589947.08	402511.67	TREE 6 ORANGE
150417	1589946.95	402497.14	TREE 5 OAK
150418	1589921.69	402480.60	TREE 5 ORANGE
150419	1589923.14	402512.37	TREE 5 ORANGE
150420	1589929.26	402520.93	TREE 18 OAK
150421	1589948.16	402555.51	TREE 5 ORANGE
150422	1589949.95	402583.94	TREE 9 OAK
150423	1589959.42	402596.02	TREE 9 OAK
150424	1589949.38	402602.28	TREE 6 OAK
150425	1589956.60	402608.77	TREE 12 OAK
150426	1589971.35	402587.79	TREE 5 OAK
150427	1589971.86	402585.34	TREE 13 OAK
150428	1589985.77	402588.47	TREE 4 OAK
150429	1589988.70	402591.60	TREE 14 OAK
150430	1589992.69	402573.76	TREE 4 OAK
150431	1590008.66	402580.76	TREE 14 OAK
150432	1589973.14	402554.16	TREE 4 PINE
150433	1589970.05	402553.03	TREE 5 ORANGE
150434	1589992.37	402548.70	TREE 15 OAK
150435	1590000.04	402556.42	TREE 10 OAK
150436	1590030.52	402571.25	TREE 22 OAK
150437	1590041.74	402533.34	TREE 9 OAK
150438	1590061.54	402547.71	TREE 8 OAK
150439	1590062.15	402555.04	TREE 7 OAK
150440	1590071.31	402548.41	TREE 11 OAK
150441	1590105.85	402537.78	TREE 13 OAK
150442	1590104.75	402540.72	TREE 13 OAK
150443	1590110.55	402541.07	TREE 10 OAK
150444	1590061.06	402418.15	TREE 6 ORANGE
150445	1590207.22	402449.11	TREE 6 ORANGE
150446	1590278.75	402670.65	TREE 5 ORANGE
150447	1590255.70	402643.58	TREE 5 ORANGE
150448	1590265.80	402588.74	TREE 16 OAK
150449	1590211.74	402651.30	TREE 5 OAK
150450	1590208.19	402640.00	TREE 12 OAK
150451	1590202.81	402654.87	TREE 9 OAK
150452	1590195.65	402647.17	TREE 11 OAK
150453	1590178.23	402626.82	TREE 6 ORANGE
150454	1590166.09	402628.97	TREE 8 OAK
150455	1590165.96	402633.85	TREE 11 OAK
150456	1590174.77	402660.99	TREE 11 OAK
150457	1590173.43	402676.00	TREE 10 OAK
150458	1590167.92	402669.80	TREE 5 OAK
150459	1590170.53	402681.18	TREE 5 OAK
150460	1590166.14	402662.62	TREE 7 OAK
150461	1590160.34	402657.13	TREE 4 OAK
150462	1590157.93	402695.88	TREE 8 OAK
150463	1590135.98	402669.00	TREE 15 OAK
150464	1590118.57	402677.12	TREE 12 OAK
150465	1590143.65	402631.88	TREE 10 OAK
150466	1590141.06	402622.66	TREE 13 OAK
150467	1590143.71	402571.38	TREE 5 OAK
150468	1590132.62	402575.76	TREE 30 OAK
150469	1590118.19	402604.80	TREE 9 OAK
150470	1590124.62	402612.82	TREE 8 OAK
150471	1590114.28	402612.96	TREE 13 OAK
150472	1590101.74	402620.13	TREE 6 OAK
150473	1590103.91	402625.39	TREE 6 ORANGE
150474	1590110.42	402568.72	TREE 4 OAK
150475	1590107.36	402570.12	TREE 13 OAK
150476	1590065.23	402580.47	TREE 24 OAK
150477	1590152.28	402761.94	TREE 7 ORANGE
150478	1590128.21	402789.70	TREE 8 ORANGE
150479	1590127.91	402821.20	TREE 8 ORANGE
150480	1590102.70	402820.60	TREE 7 ORANGE
150481	1590128.21	402747.14	TREE 7 ORANGE
150482	1590153.76	402730.94	TREE 8 ORANGE
150483	1590127.95	402716.12	TREE 7 ORANGE
150484	1590109.92	402711.25	TREE 14 OAK
150485	1590054.63	402699.58	TREE 7 ORANGE
150486	1590054.30	402668.90	TREE 8 ORANGE
150487	1590054.72	402628.69	TREE 8 OAK
150488	1590055.54	402625.14	TREE 8 OAK
150489	1590053.06	402639.33	TREE 7 ORANGE
150490	1590020.67	402609.77	TREE 17 OAK
150491	1590018.08	402662.68	TREE 51 OAK
150492	1589981.84	402655.41	TREE 14 OAK
150493	1590010.44	402669.39	TREE 4 OAK
150494	1589989.00	402677.46	TREE 9 OAK
150495	1589936.15	402654.22	TREE 7 OAK

Tree Table			
Point #	Northing	Easting	Raw Description
150496	1589913.87	402668.66	TREE 9 OAK
150497	1589928.54	402695.33	TREE 6 ORANGE
150498	1589928.97	402713.72	TREE 6 ORANGE
150499	1589949.08	402709.21	TREE 6 OAK
150500	1589985.75	402697.80	TREE 8 OAK
150501	1589958.44	402728.25	TREE 6 ORANGE
150502	1589981.92	402742.79	TREE 8 ORANGE
150503	1589981.25	402758.12	TREE 6 ORANGE
150504	1590037.52	402746.10	TREE 42 OAK
150505	1589939.06	402732.82	TREE 6 OAK
150506	1589936.77	402739.66	TREE 23 OAK
150507	1589925.57	402754.55	TREE 31 OAK
150508	1589936.11	402800.55	TREE 64 OAK
150509	1589903.88	402774.30	TREE 4 OAK
150510	1589881.61	402741.97	TREE 5 OAK
150511	1589881.26	402715.26	TREE 7 ORANGE
150512	1589857.78	402730.43	TREE 7 ORANGE
150513	1589882.56	402680.90	TREE 12 OAK
150514	1589804.04	402758.37	TREE 20 OAK
150515	1589766.28	402712.63	TREE 12 OAK
150516	1589786.96	402697.07	TREE 5 OAK
150517	1589762.38	402687.59	TREE 13 OAK
150518	1589765.58	402665.46	TREE 41 OAK
150519	1589787.55	402678.63	TREE 8 OAK
150520	1589880.31	402814.63	TREE 6 ORANGE
150521	1589898.62	402860.19	TREE 12 OAK
150522	1589889.82	402863.94	TREE 12 OAK
150523	1589889.17	402857.85	TREE 12 OAK
150524	1589889.96	402870.19	TREE 14 OAK
150525	1589895.73	402871.25	TREE 13 OAK
150526	1589898.07	402865.70	TREE 24 OAK
150527	1589900.01	402870.67	TREE 4 OAK
150528	1589898.42	402877.72	TREE 4 OAK
150529	1589895.64	402878.42	TREE 16 OAK
150530	1589980.00	402788.27	TREE 6 ORANGE
150531	1589953.98	402906.90	TREE 6 ORANGE
150532	1589953.38	402937.48	TREE 6 ORANGE
150533	1589977.84	402922.31	TREE 6 ORANGE
150534	1589898.55	402959.50	TREE 36 OAK
150535	1589953.30	402981.38	TREE 6 ORANGE
150536	1589985.41	402968.30	TREE 32 OAK
150537	1590004.02	402981.93	TREE 26 OAK
150538	1590101.00	402936.32	TREE 34 OAK
150539	1590089.91	402973.60	TREE 8 OAK
150540	1590090.84	402975.31	TREE 5 OAK
150541	1590103.03	402985.74	TREE 4 OAK
150542	1590097.83	402985.36	TREE 5 OAK
150543	1590102.52	402989.44	TREE 13 OAK
150544	1590103.45	402991.03	TREE 5 OAK
150545	1590097.53	402989.78	TREE 23 OAK
150546	1590094.91	402987.40	TREE 10 OAK
150547	1590091.89	402988.18	TREE 14 OAK
150548	1590097.00	402997.02	TREE 18 OAK
150549	1590125.47	402987.82	TREE 4 OAK
150550	1590124.74	402987.23	TREE 5 OAK
150553	1590949.98	403021.92	TREE 8 OAK
150554	1590922.99	403043.18	TREE 8 OAK
150555	1590931.26	403044.50	TREE 12 OAK
150556	1590953.81	403047.79	TREE 30 OAK
150557	1590951.40	403056.79	TREE 8 OAK
150558	1590956.76	403054.58	TREE 19 OAK
150559	1590968.28	403052.80	TREE 36 OAK
150560	1590916.69	403112.88	TREE 29 OAK
150561	1590912.58	403124.17	TREE 38 OAK
150562	1590839.40	403163.37	TREE 8 OAK
150563	1590865.68	403180.76	TREE 22 OAK
150564	1590868.78	403178.91	TREE 15 OAK
150565	1590867.58	403183.66	TREE 14 OAK
150566	1590839.65	403191.91	TREE 12 OAK
150567	1590879.70	403184.82	TREE 10 OAK
150568	1590936.83	403186.23	TREE 12 OAK
150569	1590934.80	403215.23	TREE 23 OAK
150570	1590964.74	403229.11	TREE 22 OAK
150571	1590964.00	403235.43	TREE 19 OAK
150572	1590960.43	403246.63	TREE 14 OAK
150573	1590957.97	403282.14	TREE 20 OAK
150574	1590946.81	403304.56	TREE 8 OAK
150575	1590952.16	403307.31	TREE 12 OAK
150576	1590938.52	403327.79	TREE 8 OAK
150577	1590904.30	403322.59	TREE 15 OAK
150578	1590884.85	403319.33	TREE 8 OAK
150579	1590891.46	403338.28	TREE 24 OAK
150580	1590911.10	403357.81	TREE 13 OAK
150581	1590952.44	403375.16	TREE 10 OAK
150582	1590981.07	403302.89	TREE 12 OAK
150583	1590996.37	403323.10	TREE 14 OAK
150584	1591065.23	403357.35	TREE 36 OAK
150585	1591074.26	403359.80	TREE 9 OAK
150586	1591038.31	403298.63	TREE 21 OAK
150587	1591018.83	403253.39	TREE 16 OAK

Tree Table			
Point #	Northing	Easting	Raw Description
150588	1591010.94	403246.42	TREE 14 OAK
150589	1590985.19	403255.63	TREE 19 OAK
150590	1590989.23	403221.04	TREE 24 OAK
150591	1590983.40	403179.49	TREE 19 OAK
150592	1590970.93	403161.17	TREE 34 OAK
150593	1590982.86	403148.30	TREE 22 OAK
150594	1590986.45	403149.24	TREE 22 OAK
150595	1590992.53	403118.84	TREE 13 OAK
150596	1590889.45	403041.54	TREE 13 OAK
150597	1590865.15	403038.29	TREE 12 OAK
150598	1590865.24	403054.56	TREE 8 OAK
150599	1590805.51	403033.23	TREE 24 OAK
150600	1590808.05	403034.40	TREE 9 OAK
150601	1590805.10	403055.75	TREE 36 OAK
150602	1590811.22	403059.36	TREE 8 OAK
150603	1590778.82	403077.72	TREE 15 OAK
150604	1590751.61	403090.59	TREE 9 OAK
150605	1590777.04	403091.37	TREE 14 OAK
150606	1590798.64	403086.36	TREE 13 OAK
150607	1590797.06	403085.66	TREE 12 OAK
150608	1590808.67	403105.49	TREE 18 OAK
150609	1590829.63	403098.15	TREE 12 OAK
150610	1590771.06	403125.70	TREE 29 OAK
150611	1590749.32	403128.36	TREE 11 OAK
150612	1590752.78	403134.31	TREE 32 OAK
150613	1590692.36	403158.51	TREE 15 OAK
150614	1590631.26	403201.00	TREE 23 OAK
150615	1590635.33	403205.89	TREE 40 OAK
150616	1590630.45	403227.49	TREE 21 OAK
150617	1590617.11	403244.85	TREE 18 OAK
150618	1590670.54	403290.86	TREE 29 OAK
150619	1590654.42	403299.45	TREE 23 OAK
150620	1590734.95	403356.72	TREE 17 OAK
150621	1590743.33	403356.56	TREE 23 OAK
150622	1590746.24	403334.83	TREE 8 OAK
150623	1590744.51	403335.86	TREE 16 OAK
150624	1590752.72	403338.44	TREE 16 OAK
150625	1590751.20	403348.28	TREE 17 OAK
150626	1590755.94	403354.60	TREE 15 OAK
150627	1590751.57	403367.89	TREE 12 OAK
150628	1590757.05	403366.75	TREE 15 OAK
150629	1590769.63	403375.09	TREE 8 OAK
150630	1590769.18	403390.16	TREE 12 OAK
150631	1590774.10	403390.31	TREE 25 OAK
150632	1590773.78	403392.59	TREE 15 OAK
150633	1590776.57	403345.93	TREE 21 OAK
150634	1590793.49	403359.42	TREE 15 OAK
150635	1590825.45	403365.43	TREE 15 OAK
150636	1590832.49	403379.13	TREE 11 OAK
150638	1590863.56	403301.76	TREE 20 OAK
150639	1590870.66	403312.76	TREE 20 OAK
150640	1590832.80	403318.14	TREE 32 OAK
150641	1590797.57	403325.57	TREE 29 OAK
150642	1590837.18	403225.37	TREE 11 OAK
150643	1590865.34	403244.69	TREE 30 OAK
150646	1590776.00	402988.30	TREE 36 OAK
150647	1590787.92	402937.07	TREE 32 OAK
150648	1590723.57	402947.92	TREE 40 OAK
150649	1590782.15	402898.49	TREE 16 OAK
150650	1590773.40	402901.74	TREE 8 OAK
150651	1590782.20	402893.85	TREE 27 OAK
150652	1590687.60	402926.93	TREE 12 OAK
150653	1590668.88	402923.87	TREE 17 OAK
150654	1590659.06	402899.90	TREE 26 OAK
150655	1590648.04	402931.01	TREE 15 OAK
150656	1590638.89	402950.36	TREE 27 OAK
150657	1590632.78	402981.33	TREE 16 OAK
150658	1590605.64	403055.28	TREE 24 OAK
150659	1590607.18	403084.71	TREE 25 OAK
150660	1590725.47	402836.75	TREE 36 OAK
150661	1590714.32	402831.87	TREE 26 OAK
150662	1590723.28	402812.74	TREE 19 OAK
150663	1590657.12	402772.20	TREE 17 OAK
150664	1590664.89	402784.81	TREE 12 OAK
150665	1590647.46	402787.18	TREE 13 OAK
150666	1590860.78	402797.58	TREE 17 OAK
150667	1590873.48	402797.06	TREE 14 OAK
150668	1590886.64	402866.74	TREE 13 OAK
150669	1590898.48	402886.51	TREE 12 OAK
150670	1590926.84	402886.97	TREE 15 OAK
150671	1590933.35	402884.12	TREE 16 OAK
150672	1590955.45	402900.84	TREE 15 OAK
150673	1590956.90	402881.52	TREE 12 OAK
150674	1590948.14	402862.99	TREE 12 OAK
150675	1590940.18	402933.72	TREE 29 OAK
150676	1590924.05	402957.33	TREE 11 OAK
150677	1590965.68	402954.56	TREE 24 OAK
150678	1590986.11	402985.32	TREE 18 OAK
150679	1590987.19	402982.04	TREE 19 OAK
150680	1590989.72	402920.91	TREE 30 OAK

Tree Table			
Point #	Northing	Easting	Raw Description
150681	1591019.36	402922.56	TREE 8 OAK
150682	1591030.16	402914.59	TREE 8 OAK
150683	1591021.75	402942.05	TREE 16 OAK
150684	1591017.80	402975.15	TREE 8 OAK
150685	1590984.93	403003.82	TREE 32 OAK
150686	1590983.52	403032.16	TREE 15 OAK
150687	1590985.32	403040.57	TREE 28 OAK
150688	1591006.54	403014.78	TREE 10 OAK
150689	1591015.98	403007.06	TREE 40 OAK
150690	1591015.43	403088.55	TREE 24 OAK
150691	1591012.50	403090.92	TREE 12 OAK
150692	1591039.05	403047.95	TREE 40 OAK
150693	1591048.82	403024.51	TREE 10 OAK
150694	1591066.16	403021.64	TREE 9 OAK
150695	1591046.39	402975.30	TREE 24 OAK
150696	1591056.94	402970.49	TREE 24 OAK
150697	1591051.87	402953.26	TREE 14 OAK
150698	1591068.13	402945.52	TREE 26 OAK
150699	1591076.63	402920.73	TREE 26 OAK
150700	1591076.10	402880.89	TREE 12 OAK
150701	1591018.54	402861.94	TREE 14 OAK
150702	1591051.39	402864.78	TREE 13 OAK
150703	1591064.10	402857.19	TREE 10 OAK
150704	1591095.07	402865.83	TREE 8 OAK
150705	1591113.06	402858.64	TREE 13 OAK
150706	1591131.34	402866.48	TREE 17 OAK
150707	1591137.50	402842.34	TREE 14 OAK
150708	1591144.04	402841.95	TREE 13 OAK
150709	1591167.76	402826.56	TREE 13 PALM CABBAGE
150710	1591111.61	402817.02	TREE 13 BIRCH
150711	1591084.30	402824.49	TREE 12 OAK
150712	1591077.36	402812.59	TREE 15 OAK
150713	1591068.84	402813.61	TREE 27 OAK
150714	1591065.71	402794.85	TREE 8 OAK
150715	1590860.52	402796.12	TREE 17 OAK
150716	1591137.79	402917.82	TREE 21 OAK
150717	1591107.07	402948.34	TREE 27 OAK
150718	1591143.36	402968.23	TREE 22 OAK
150719	1591142.95	402977.99	TREE 13 OAK
150720	1591136.83	402977.03	TREE 19 OAK
150721	1591132.72	403004.18	TREE 8 OAK
150722	1591083.61	403006.84	TREE 9 OAK
150723	1591107.11	403057.59	TREE 24 OAK
150724	1591099.05	403064.16	TREE 36 OAK
150725	1591125.41	403069.48	TREE 27 OAK
150726	1591045.64	403093.56	TREE 36 OAK
150727	1591077.69	403108.06	TREE 11 OAK
150728	1591077.45	403130.00	TREE 14 OAK
150729	1591097.30	403138.84	TREE 25 OAK
150730	1591110.17	403154.95	TREE 24 OAK
150731	1591133.59	403179.33	TREE 14 BIRCH
150732	1591140.30	403166.79	TREE 8 OAK
150733	1591109.20	403184.66	TREE 9 OAK
150734	1591067.40	403160.02	TREE 21 OAK
150735	1591039.11	403148.40	TREE 12 OAK
150736	1591042.81	403166.46	TREE 10 OAK
150737	1591057.93	403181.91	TREE 26 OAK
150738	1591070.69	403183.98	TREE 18 OAK
150739	1591071.19	403213.94	TREE 9 OAK
150740	1591072.80	403218.27	TREE 14 PALM CABBAGE
150741	1591074.94	403214.04	TREE 12 OAK
150742	1591121.87	403216.00	TREE 8 OAK
150743	1591042.88	403235.86	TREE 17 OAK
150744	1591038.66	403250.17	TREE 19 OAK
150745	1591050.90	403270.01	TREE 13 OAK
150746	1591081.29	403249.38	TREE 9 OAK
150747	1591093.67	403246.10	TREE 12 OAK
150748	1591098.21	403268.43	TREE 32 OAK
150749	1591169.56	403185.39	TREE 8 BIRCH
150750	1591170.85	403190.90	TREE 10 OAK
150751	1591177.71	403191.78	TREE 13 OAK
150752	1591188.35	403173.02	TREE 12 OAK
150753	1591191.01	403163.39	TREE 9 OAK
150754	1591173.40	403159.54	TREE 10

Tree Table			
Point #	Northing	Easting	Raw Description
150955	1591301.31	402435.93	TREE 10 OAK
150956	1591318.95	402431.84	TREE 12 OAK
150957	1591311.53	402413.53	TREE 13 OAK
150958	1591321.04	402411.27	TREE 11 OAK
150959	1591342.67	402422.02	TREE 13 PALM CABBAGE
150960	1591342.68	402424.04	TREE 13 PALM CABBAGE
150961	1591349.88	402423.75	TREE 14 OAK
150962	1591352.94	402420.68	TREE 8 OAK
150963	1591364.08	402469.88	TREE 10 OAK
150964	1591354.61	402519.67	TREE 10 OAK
150965	1591356.80	402519.35	TREE 8 OAK
150966	1591359.18	402524.43	TREE 12 OAK
150967	1591396.65	402497.66	TREE 8 OAK
150968	1591381.86	402495.52	TREE 13 OAK
150969	1591345.94	402558.61	TREE 9 OAK
150970	1591313.57	402566.71	TREE 9 OAK
150971	1591315.42	402583.22	TREE 13 OAK
150972	1591312.74	402543.63	TREE 8 OAK
150973	1591306.22	402530.96	TREE 8 OAK
150974	1591320.37	402623.05	TREE 12 OAK
150975	1591324.97	402628.02	TREE 17 OAK
150976	1591338.13	402629.29	TREE 10 OAK
150977	1591332.76	402615.04	TREE 8 OAK
150978	1591350.16	402625.09	TREE 8 OAK
150979	1591347.56	402617.73	TREE 12 OAK
150980	1591348.52	402613.57	TREE 11 OAK
150981	1591344.12	402599.96	TREE 15 OAK
150982	1591356.07	402616.44	TREE 8 OAK
150983	1591344.65	402636.79	TREE 13 OAK
150984	1591326.43	402647.83	TREE 12 BIRCH
150985	1591328.91	402649.96	TREE 8 BIRCH
150986	1591313.17	402687.03	TREE 11 OAK
150987	1591323.50	402672.68	TREE 8 OAK
150988	1591357.08	402684.16	TREE 9 BIRCH
150989	1591351.37	402653.92	TREE 13 OAK
150990	1591377.88	402639.75	TREE 15 OAK
150991	1591399.31	402611.62	TREE 8 OAK
150992	1591397.85	402607.78	TREE 14 OAK
150993	1591408.12	402653.06	TREE 8 OAK
150994	1591410.89	402660.99	TREE 8 OAK
150995	1591429.33	402673.73	TREE 10 OAK
150996	1591440.73	402665.57	TREE 8 OAK
150997	1591425.28	402641.92	TREE 9 OAK
150998	1591429.53	402631.66	TREE 12 OAK
150999	1591422.71	402619.24	TREE 9 OAK
151000	1591409.71	402601.75	TREE 13 OAK
151001	1591415.22	402598.30	TREE 13 OAK
151002	1591417.88	402588.75	TREE 12 OAK
151003	1591430.32	402597.75	TREE 8 OAK
151004	1591435.93	402622.40	TREE 8 OAK
151005	1591444.74	402615.70	TREE 8 OAK
151006	1591453.83	402612.67	TREE 9 OAK
151008	1591454.31	402613.26	TREE 8 OAK
151009	1591464.00	402620.07	TREE 8 OAK
151010	1591460.33	402600.78	TREE 13 OAK
151011	1591464.74	402597.33	TREE 11 OAK
151012	1591468.83	402579.52	TREE 17 OAK
151013	1591468.84	402564.13	TREE 8 OAK
151014	1591466.45	402564.42	TREE 8 OAK
151015	1591472.98	402553.66	TREE 12 OAK
151016	1591469.36	402553.50	TREE 9 OAK
151017	1591495.88	402563.23	TREE 13 OAK
151018	1591493.39	402543.96	TREE 8 OAK
151019	1591492.96	402537.22	TREE 13 OAK
151020	1591492.12	402536.30	TREE 10 OAK
151021	1591496.72	402519.57	TREE 14 OAK
151022	1591516.01	402505.40	TREE 9 OAK
151023	1591530.89	402516.28	TREE 13 OAK
151024	1591530.23	402500.96	TREE 15 PALM CABBAGE
151025	1591532.12	402498.83	TREE 14 PALM CABBAGE
151026	1591538.32	402475.98	TREE 8 OAK
151027	1591448.40	402518.18	TREE 8 OAK
151028	1591438.49	402514.11	TREE 14 OAK
151029	1591434.97	402517.98	TREE 10 OAK
151030	1591438.06	402531.59	TREE 16 OAK
151031	1591434.28	402543.21	TREE 8 OAK
151032	1591430.92	402557.14	TREE 8 PINE
151033	1591411.37	402549.98	TREE 8 OAK
151034	1591448.62	402547.86	TREE 11 OAK
151035	1591451.25	402550.63	TREE 8 OAK
151036	1591453.11	402553.86	TREE 11 OAK
151037	1591471.47	402551.37	TREE 8 OAK
151038	1591309.57	402346.74	TREE 10 OAK
151039	1591314.71	402345.37	TREE 10 OAK
151040	1591316.02	402344.09	TREE 11 OAK
151041	1591324.10	402348.87	TREE 9 OAK
151043	1591319.17	402352.11	TREE 9 OAK
151044	1591320.43	402355.31	TREE 10 OAK
151045	1591327.42	402362.72	TREE 16 OAK
151046	1591318.79	402462.96	TREE 15 OAK

Tree Table			
Point #	Northing	Easting	Raw Description
151047	1591354.95	402333.85	TREE 13 OAK
151048	1591346.44	402312.40	TREE 10 OAK
151049	1591330.32	402293.30	TREE 17 OAK
151052	1591419.87	402421.81	TREE 10 OAK
151053	1591417.36	402479.27	TREE 14 OAK
151054	1591394.53	402375.30	TREE 14 BIRCH
151055	1591381.78	402361.64	TREE 13 OAK
151056	1591378.23	402347.44	TREE 15 OAK
151057	1591394.15	402374.38	TREE 15 BIRCH
151058	1591414.46	402377.71	TREE 11 OAK
151059	1591413.92	402383.54	TREE 9 OAK
151060	1591500.78	402416.34	TREE 10 OAK
151061	1591500.64	402450.58	TREE 8 OAK
151062	1591527.98	402414.79	TREE 10 OAK
151063	1591547.07	402416.37	TREE 10 OAK
151064	1591547.10	402404.30	TREE 8 OAK
151065	1591481.18	402391.41	TREE 10 OAK
151066	1591506.71	402405.73	TREE 8 OAK
151067	1591478.91	402298.83	TREE 17 OAK
151068	1591475.71	402271.49	TREE 10 OAK
151069	1591453.36	402298.50	TREE 11 OAK
151070	1591447.50	402293.05	TREE 10 OAK
151071	1591447.83	402287.26	TREE 9 OAK
151072	1591451.10	402307.97	TREE 12 OAK
151073	1591375.17	402306.92	TREE 10 OAK
151074	1591375.04	402310.00	TREE 10 OAK
151075	1591380.82	402310.39	TREE 10 OAK
151076	1591386.40	402309.22	TREE 17 OAK
151077	1591339.48	402247.98	TREE 15 PALM CABBAGE
151078	1591347.66	402246.05	TREE 14 PALM CABBAGE
151079	1591347.91	402243.73	TREE 13 PALM CABBAGE
151080	1591347.75	402240.94	TREE 17 PALM CABBAGE
151081	1591354.90	402235.29	TREE 11 OAK
151082	1591371.46	402241.21	TREE 12 OAK
151083	1591393.99	402195.39	TREE 14 OAK
151084	1591387.10	402172.03	TREE 14 OAK
151085	1591399.51	402130.12	TREE 13 OAK
151086	1591424.00	402124.49	TREE 17 OAK
151087	1591419.22	402152.03	TREE 11 OAK
151088	1591431.06	402162.62	TREE 17 OAK
151089	1591465.93	402142.58	TREE 13 OAK
151090	1591434.67	402193.40	TREE 12 OAK
151091	1591435.22	402221.06	TREE 11 OAK
151092	1591434.02	402225.22	TREE 14 OAK
151093	1591418.56	402267.37	TREE 11 OAK
151094	1591416.62	402270.07	TREE 17 OAK
151096	1591452.23	402371.43	TREE 8 OAK
151097	1591478.12	402380.03	TREE 8 OAK
151098	1591531.53	402243.85	TREE 9 OAK
151099	1591507.76	402244.30	TREE 17 OAK
151100	1591514.60	402226.73	TREE 16 OAK
151101	1591505.32	402228.24	TREE 10 OAK
151102	1591501.85	402232.77	TREE 11 OAK
151103	1591537.09	402236.90	TREE 13 OAK
151104	1591578.95	402224.43	TREE 13 OAK
151105	1591564.30	402223.75	TREE 13 OAK
151106	1591567.67	402218.03	TREE 11 OAK
151107	1591562.78	402218.88	TREE 14 OAK
151108	1591558.10	402222.35	TREE 9 OAK
151109	1591552.19	402219.81	TREE 11 OAK
151110	1591540.38	402215.90	TREE 11 OAK
151111	1591550.80	402203.44	TREE 13 OAK
151112	1591537.41	402197.02	TREE 13 OAK
151113	1591546.16	402192.34	TREE 13 OAK
151114	1591551.96	402189.91	TREE 11 OAK
151115	1591515.76	402196.49	TREE 10 OAK
151116	1591503.09	402210.46	TREE 18 OAK
151117	1591497.35	402228.39	TREE 9 OAK
151118	1591463.25	402218.19	TREE 10 OAK
151119	1591464.65	402214.00	TREE 15 OAK
151120	1591468.19	402188.46	TREE 13 PALM CABBAGE
151121	1591477.27	402180.58	TREE 14 OAK
151122	1591477.91	402166.96	TREE 11 OAK
151123	1591504.37	402134.77	TREE 10 OAK
151124	1591537.72	402116.09	TREE 13 OAK
151125	1591547.32	402140.13	TREE 14 OAK
151126	1591557.00	402141.78	TREE 19 OAK
151127	1591553.28	402150.63	TREE 12 OAK
151128	1591558.28	402145.68	TREE 8 OAK
151129	1591583.06	402122.29	TREE 13 OAK
151130	1591629.80	402131.85	TREE 14 OAK
151131	1591593.20	402167.69	TREE 14 OAK
151132	1591619.73	402215.75	TREE 13 OAK
151133	1591646.15	402233.33	TREE 14 OAK
151134	1591658.45	402207.31	TREE 15 OAK
151135	1591675.86	402187.17	TREE 14 OAK
151136	1591673.87	402189.60	TREE 8 OAK
151137	1591693.85	402179.44	TREE 12 OAK
151138	1591698.56	402171.62	TREE 12 OAK
151139	1591696.52	402169.13	TREE 13 OAK

Tree Table			
Point #	Northing	Easting	Raw Description
151140	1591714.76	402152.62	TREE 18 OAK
151141	1591728.54	402158.35	TREE 12 OAK
151142	1591726.96	402159.26	TREE 9 OAK
151143	1591740.15	402155.19	TREE 11 OAK
151144	1591744.09	402153.35	TREE 16 OAK
151145	1591737.12	402167.38	TREE 12 OAK
151146	1591733.92	402172.92	TREE 11 OAK
151147	1591733.03	402175.82	TREE 17 OAK
151148	1591713.32	402182.56	TREE 21 OAK
151149	1591735.46	402201.36	TREE 12 OAK
151150	1591732.50	402203.67	TREE 12 OAK
151151	1591735.25	402204.14	TREE 8 OAK
151152	1591733.15	402206.68	TREE 11 OAK
151153	1591736.74	402212.38	TREE 9 OAK
151154	1591737.95	402221.52	TREE 8 OAK
151155	1591701.68	402204.30	TREE 15 OAK
151156	1591703.62	402208.22	TREE 13 OAK
151157	1591695.90	402206.56	TREE 10 OAK
151158	1591647.31	402232.52	TREE 13 OAK
151159	1591678.88	402253.23	TREE 9 OAK
151160	1591680.67	402256.48	TREE 8 OAK
151161	1591675.43	402275.75	TREE 13 OAK
151162	1591680.28	402269.47	TREE 15 OAK
151163	1591683.92	402273.38	TREE 13 OAK
151164	1591682.68	402320.88	TREE 15 OAK
151165	1591725.88	402319.15	TREE 13 OAK
151166	1591689.00	402389.61	TREE 16 OAK
151167	1591657.28	402385.86	TREE 8 OAK
151168	1591689.14	402391.53	TREE 15 OAK
151169	1591741.20	402493.41	TREE 19 OAK
151170	1591743.60	402494.36	TREE 17 OAK
151171	1591794.29	402143.72	TREE 23 OAK
151172	1591794.68	402153.76	TREE 9 OAK
151173	1591789.91	402171.51	TREE 30 OAK
151174	1591795.75	402195.27	TREE 23 OAK
151175	1591793.81	402209.34	TREE 16 OAK
151176	1591775.20	402234.38	TREE 30 OAK
151177	1591791.76	402267.50	TREE 13 OAK
151178	1591796.22	402268.65	TREE 18 OAK
151179	1591795.58	402286.41	TREE 8 OAK
151180	1591798.54	402295.60	TREE 9 OAK
151181	1591804.49	402318.85	TREE 14 OAK
151182	1591823.28	402241.84	TREE 33 OAK
151183	1591881.22	402228.29	TREE 9 OAK
151184	1591974.66	402206.20	TREE 11 OAK
151185	1591989.70	402201.08	TREE 17 OAK
151188	1591794.09	402495.02	TREE 21 OAK
151189	1591790.31	402504.12	TREE 14 PALM CABBAGE
151190	1591805.14	402511.79	TREE 14 OAK
151191	1591789.21	402515.90	TREE 13 PALM CABBAGE
151192	1591787.15	402521.40	TREE 14 PALM CABBAGE
151193	1591733.29	402538.54	TREE 8 OAK
151194	1591807.06	402634.83	TREE 10 OAK
151195	1591788.94	402647.67	TREE 17 OAK
151196	1591848.71	402669.27	TREE 12 OAK
151197	1591843.11	402700.61	TREE 17 PINE
151198	1591842.02	402661.52	TREE 11 OAK
151199	1591839.12	402660.50	TREE 9 OAK
151200	1591841.88	402651.39	TREE 9 OAK
151201	1591843.35	402650.32	TREE 15 OAK
151202	1591858.55	402668.55	TREE 8 OAK
151203	1591867.42	402670.80	TREE 11 OAK
151204	1591826.60	402617.80	TREE 10 PINE
151205	1591844.32	402592.16	TREE 15 OAK
151206	1591845.60	402590.55	TREE 11 OAK
151207	1591846.38	402577.18	TREE 13 OAK
151208	1591824.06	402582.33	TREE 13 PALM CABBAGE
151209	1591823.96	402577.65	TREE 12 OAK
151210	1591825.23	402573.60	TREE 14 OAK
151211	1591815.70	402572.89	TREE 13 OAK
151212	1591818.68	402569.55	TREE 14 OAK
151213	1591797.88	402559.05	TREE 30 OAK
151214	1591833.09	402555.25	TREE 21 OAK
151215	1591835.04	402551.17	TREE 15 OAK
151216	1591829.45	402542.54	TREE 17 OAK
151217	1591837.53	402540.00	TREE 12 OAK
151218	1591845.50	402538.39	TREE 23 OAK
151219	1591843.70	402544.93	TREE 12 OAK
151220	1591848.33	402543.62	TREE 14 OAK
151221	1591844.89	402545.71	TREE 21 OAK
151222	1591770.58	402555.09	TREE 13 OAK
151223	1591834.22	402649.70	TREE 15 OAK
151224	1591875.74	402728.11	TREE 8 PINE
151225	1591869.49	402732.18	TREE 12 PINE
151226	1591860.38	402735.67	TREE 9 PINE
151227	1591844.63	402742.15	TREE 9 PINE
151228	1591839.12	402743.73	TREE 9 PINE
151229	1591830.66	402746.14	TREE 8 PINE
151230	1591830.08	402754.83	TREE 11 PINE
151231	1591809.27	402778.92	TREE 8 PINE

Tree Table			
Point #	Northing	Easting	Raw Description
151232	1591793.19	402794.73	TREE 20 OAK
151233	1591792.42	402801.21	TREE 13 OAK
151234	1591793.76	402802.39	TREE 9 OAK
151235	1591814.97	402797.59	TREE 14 PINE
151236	1591815.15	402813.16	TREE 13 PINE
151237	1591808.34	402815.73	TREE 11 PINE
151238	1591797.57	402817.52	TREE 8 OAK
151239	1591806.47	402829.96	TREE 12 PINE
151240	1591770.44	402867.17	TREE 15 PINE
151241	1591775.51	402866.72	TREE 16 PINE
151242	1591805.20	402851.58	TREE 18 PINE
151243	1591801.27	402877.95	TREE 14 PINE
151244	1591782.41	402873.52	TREE 8 OAK
151245	1591809.92	402860.77	TREE 14 OAK
151246	1591823.90	402868.61	TREE 17 PINE
151247	1591836.63	402860.16	TREE 16 PINE
151248	1591853.65	402878.66	TREE 17 PINE
151249	1591842.96	402901.20	TREE 18 PINE
151250	1591867.24	402912.32	TREE 21 PINE
151251	1591858.89	402886.00	TREE 15 OAK
151252	1591876.81	402878.37	TREE 23 PINE
151253	1591857.93	402859.45	TREE 17 OAK
151254	1591883.52	402846.58	TREE 14 PINE
151255	1591891.08	402846.39	TREE 16 PINE
151256	1591890.26	402838.84	TREE 8 PINE
151257	1591892.90	402815.94	TREE 15 PINE
151258	1591877.82	402789.76	TREE 8 PINE
151259	1591879.79	402782.85	TREE 27 OAK
151260	1591899.79	402765.15	TREE 15 PINE
151261	1591870.18	402768.94	TREE 21 PINE
151262	1591850.42	402779.57	TREE 17 PINE
151263	1591842.76	402778.93	TREE 14 PINE
151264	1591891.19	402799.77	TREE 17 PINE
151265	1591930.79	402821.71	TREE 9 PINE
151266	1591932.53	402804.17	TREE 15 PINE
151267	1591924.36	402867.17	TREE 18 PINE
151268	1591904.40	402848.70	TREE 11 PINE
151269	1591901.14	402851.66	TREE 11 PINE
151270	1591918.37	402895.87	TREE 17 PINE
151271	1591925.90	402896.22	TREE 15 PINE
151272	1591905.48	402922.45	TREE 18 PINE
151273	1591879.59	402927.09	TREE 17 PINE
151274	1591868.94	402929.06	TREE 21 PINE
151275	1591865.24	402934.30	TREE 15 OAK
151276	1591851.25	402959.86	TREE 29 PINE
151277	1591816.44	402951.89	TREE 15 OAK
151278	1591812.59	402949.79	TREE 15 PINE
151279	1591816.05	402962.70	TREE 18 PINE
151280	1591793.22	402956.55	TREE 15 PINE
151281	1591830.47	402979.19	TREE 13 PINE
151282	1591832.54	402980.57	TREE 8 PINE
151283	1591840.59	402989.81	TREE 13 PINE
151284	1591842.40	403006.97	TREE 15 PINE
151285	1591850.46	403001.12	TREE 8 PINE
151286	1591852.67	403000.97	TREE 10 PINE
151287	1591880.47	402974.24	TREE 18 PINE
151288	1591886.66	402976.41	TREE 13 PINE
151289	1591890.61	402979.71	TREE 13 PINE
151290	1591881.16	402993.88	TREE 12 PINE
151291	1591898.77	402998.38	TREE 10 PINE
151292	1591910.11	402904.13	TREE 10 PINE
151293	1591941.59	402915.39	TREE 8 PINE
151294	1591942.09	402918.41	TREE 18 PINE
151295	1591936.76	402933.53	TREE 15 PINE
151296	1591946.31	402933.22	TREE 16 PINE
151297	1591985.34	402961.77	TREE 23 PINE
151298	1592019.99	402964.85	TREE 8 OAK
151299	1592037.25	403015.44	TREE 15 PINE
151300	1592023.40	403032.35	TREE 17 OAK
151301	1592025.78	403061.44	TREE 14 PINE
151302	1592051.74	403078.65	TREE 15 PINE
151303	1592020.66	403097.98	TREE 14 PINE
151304	1591998.18	403112.89	TREE 11 PINE
151305	1591995.32	403125.50	TREE 11 PINE
151306	1592058.13	403150.46	TREE 17 OAK
151307	1592063.14	403230.12	TREE 10 PINE
151308	1592091.17	403261.85	TREE 15 PINE
151309	1592071.46	403102.76	TREE 18 PINE
151310	1591984.74	402913.08	TREE 13 OAK
151311	1591949.15	402878.65	TREE 18 PINE
151312	1591954.02	402843.32	TREE 8 PINE
151313	1591791.72	403389.20	TREE 17 OAK
151314	1591772.42	403400.31	TREE 16 OAK
151315	1591770.98	403382.70	TREE 15 BIRCH
151316	1591776.42	403375.03	TREE 14 PINE
151317	1591768.38	403379.85	TREE 28 PINE
151370	1592110.15	402979.43	TREE 44 BIRCH
151371	1592099.59	402983.06	TREE 14 BIRCH
151372	1592098.24	402983.82	TREE 12 BIRCH
151373	1592093.85	402973.46	TREE 8 BIRCH

Tree Table			
Point #	Northing	Easting	Raw Description
151374	1592085.27	402976.26	TREE 8 BIRCH
151375	1592084.47	402980.52	TREE 15 BIRCH
151376	1592080.29	402999.04	TREE 9 BIRCH
151377	1592111.48	403002.52	TREE 12 BIRCH
151378	1592087.20	403041.68	TREE 44 BIRCH
151379	1592095.11	402960.89	TREE 13 PALM CABBAGE
151380	1592088.27	402958.54	TREE 21 PINE
151381	1592034.28	402920.28	TREE 13 PINE
151382	1592049.22	402908.88	TREE 13 PINE
151383	1592044.12	402906.90	TREE 11 PINE
151384	1592057.54	402904.22	TREE 8 BIRCH
151385	1592075.17	402889.49	TREE 17 PINE
151386	1592075.25	402885.39	TREE 16 PINE
151387	1592034.37	402896.59	TREE 12 PINE
151388	1592021.65	402901.40	TREE 8 PINE
151389	1592015.36	402898.01	TREE 8 PINE
151390	1591996.80	402875.04	TREE 11 PINE
151391	1592013.84	402878.91	TREE 15 BIRCH
151392	1592041.96	402859.83	TREE 17 PINE
151393	1592043.91	402850.21	TREE 16 PINE
151394	1592047.96	402849.46	TREE 14 PINE
151395	1592052.66	402862.38	TREE 13 PINE
151396	1592038.18	402841.30	TREE 15 PINE
151397	1592074.36	402848.32	TREE 13 PINE
151398	1592079.84	402830.82	TREE 13 PINE
151399	1592069.59	402829.57	TREE 8 PINE
151400	1592070.02	402833.56	TREE 12 PINE
151401	1592055.78	402838.39	TREE 13 PINE
151402	1592056.77	402831.32	TREE 15 PINE
151403	1592064.16	402815.00	TREE 13 PINE
151404	1592067.50	402812.50	TREE 12 PINE
151405	1592072.50	402817.12	TREE 9 PINE
151406	1592101.66	402825.15	TREE 17 PALM CABBAGE
151407	1592101.69	402820.45	TREE 17 PINE
151408	1592077.58	402808.06	TREE 19 PALM CABBAGE
151409	1592049.10	402818.81	TREE 16 PINE
151410	1592038.75	402818.81	TREE 16 PINE
151411	1592028.92	402822.41	TREE 9 PINE
151412	1592057.29	402806.14	TREE 16 PINE
151413	1592007.08	402838.73	TREE 12 PINE
151414	1591993.96	402846.73	TREE 9 PINE
151415	1591989.93	402836.43	TREE 13 PINE
151416	1591980.60	402840.29	TREE 9 PINE
151417	1591998.97	402823.00	TREE 8 PINE
151418	1591998.99	402809.93	TREE 12 PINE
151419	1591969.58	402818.19	TREE 13 PINE
151420	1591987.51	402798.83	TREE 10 PINE
151422	1591985.48	402802.72	TREE 9 PINE
151423	1591968.10	402806.47	TREE 8 PINE
151424	1591962.74	402791.89	TREE 12 PINE
151425	1591967.45	402782.51	TREE 9 PINE
151426	1592005.89	402776.37	TREE 15 OAK
151427	1592007.52	402772.51	TREE 17 OAK
151428	1592075.59	402778.64	TREE 20 PALM CABBAGE
151429	1592053.01	402760.05	TREE 22 OAK
151430	1592070.04	402748.14	TREE 8 BIRCH
151431	1592078.56	402752.45	TREE 13 OAK
151432	1592076.77	402743.10	TREE 29 OAK
151433	1592064.32	402734.30	TREE 27 OAK
151434	1592051.02	402744.73	TREE 13 OAK
151435	1592076.09	402677.25	TREE 15 PINE
151436	1592084.28	402659.30	TREE 9 OAK
151437	1592058.91	402652.51	TREE 16 OAK
151438	1592068.65	402644.63	TREE 15 OAK
151439	1592048.42	402636.90	TREE 14 OAK
151440	1592035.28	402642.28	TREE 12 OAK
151441	1592036.04	402645.53	TREE 17 OAK
151442	1592048.17	402612.94	TREE 27 OAK
151443	1592067.26	402604.14	TREE 21 PINE
151444	1592072.14	402601.84	TREE 11 OAK
151445	1592008.08	402640.57	TREE 36 OAK
151446	1592014.97	402650.96	TREE 14 PINE
151447	1592014.76	402658.40	TREE 25 OAK
151448	1592008.86	402653.98	TREE 16 PALM CABBAGE
151449	1592003.01	402668.69	TREE 14 OAK
151450	1591997.58	402672.74	TREE 14 OAK
151451	1592000.47	402682.60	TREE 12 PINE
151452	1591990.58	402650.09	TREE 15 PINE
151453	1591982.74	402641.04	TREE 13 OAK
151454	1591950.06	402696.13	TREE 11 OAK
151455	1591928.68	402695.51	TREE 8 OAK
151456	1591930.24	402707.54	TREE 29 PINE
151457	1591928.87	402737.93	TREE 21 PINE
151458	1591962.34	402434.34	TREE 21 OAK
151459	1591993.93	402442.86	TREE 20 OAK
151460	1592038.32	402431.75	TREE 17 PINE
151461	1592038.45	402404.18	TREE 15 OAK
151462	1592038.89	402468.12	TREE 32 OAK
151463	1592061.45	402462.62	TREE 21 OAK
151464	1591996.34	402495.82	TREE 17 OAK

Tree Table			
Point #	Northing	Easting	Raw Description
151465	1592000.31	402511.90	TREE 31 OAK
151466	1592005.35	402523.10	TREE 20 OAK
151467	1592014.93	402521.36	TREE 17 PALM CABBAGE
151468	1591975.38	402505.40	TREE 15 OAK
151469	1591978.36	402518.34	TREE 34 OAK
151470	1591973.51	402512.93	TREE 34 OAK
151471	1592007.26	402556.66	TREE 30 OAK
151472	1592026.13	402566.90	TREE 14 PALM CABBAGE
151473	1591974.31	402576.21	TREE 15 OAK
151474	1591985.15	402383.92	TREE 17 PALM CABBAGE
151475	1591988.34	402379.22	TREE 39 OAK
151476	1592020.95	402376.67	TREE 17 PINE
151477	1591982.72	402332.06	TREE 54 OAK
151478	1592069.65	402349.33	TREE 24 OAK
151479	1592070.52	402331.26	TREE 14 PALM
151480	1592075.60	402403.07	TREE 8 PINE
151481	1592075.48	402561.77	TREE 31 OAK
151482	1592089.23	402581.66	TREE 17 PINE
151483	1592086.13	402574.50	TREE 16 OAK
151484	1591896.83	402311.08	TREE 11 OAK
151485	1591889.55	402298.54	TREE 9 OAK
151486	1591962.42	402285.07	TREE 15 BIRCH
151487	1591984.34	402280.13	TREE 11 OAK
151488	1591938.35	402353.46	TREE 12 OAK
151489	1591934.08	402370.64	TREE 11 OAK
151490	1591876.33	402400.22	TREE 8 OAK
151491	1591855.97	402417.75	TREE 13 OAK
151492	1591851.95	402418.08	TREE 14 OAK
151493	1591850.87	402421.88	TREE 9 OAK
151494	1591837.27	402394.87	TREE 12 PINE
151495	1591813.06	402440.58	TREE 14 PINE
151496	1591823.28	402460.15	TREE 9 PINE
151497	1591822.58	402452.19	TREE 11 PINE
151498	1591821.91	402370.99	TREE 16 OAK
151499	1591843.54	402341.48	TREE 13 PALM
151500	1591860.67	402339.04	TREE 17 PALM CABBAGE
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Tree Table			
Point #	Northing	Easting	Raw Description
151743	1588541.24	402436.76	TREE 8 OAK
151744	1588530.75	402458.92	TREE 11 OAK
151745	1588535.26	402460.24	TREE 17 OAK
151746	1588552.93	402479.23	TREE 8 OAK
151747	1588558.10	402478.59	TREE 13 OAK
151748	1588577.92	402472.91	TREE 11 OAK
151749	1588598.58	402475.72	TREE 17 OAK
151750	1588581.01	402493.73	TREE 11 OAK
151751	1588570.52	402516.65	TREE 12 OAK
151752	1588565.86	402516.16	TREE 11 OAK
151753	1588551.09	402519.66	TREE 12 OAK
151754	1588576.70	402511.79	TREE 8 OAK
151755	1588573.62	402519.36	TREE 8 OAK
151756	1588586.87	402534.82	TREE 11 OAK
151757	1588614.80	402480.21	TREE 13 OAK
151758	1588615.89	402489.01	TREE 8 OAK
151759	1588642.67	402500.37	TREE 12 OAK
151760	1588645.52	402501.60	TREE 14 OAK
151761	1588645.93	402503.87	TREE 11 OAK
151762	1588661.24	402505.65	TREE 18 OAK
151763	1588698.75	402523.97	TREE 24 OAK
151764	1588721.83	402540.64	TREE 18 OAK
151765	1588740.84	402524.67	TREE 25 OAK
151766	1588737.37	402508.74	TREE 24 OAK
151767	1588750.30	402484.52	TREE 24 OAK
151768	1588757.17	402493.91	TREE 19 OAK
151769	1588760.70	402507.50	TREE 13 OAK
151770	1588756.68	402524.77	TREE 11 OAK
151771	1588792.22	402515.92	TREE 26 OAK
151772	1588807.39	402496.37	TREE 13 OAK
151773	1588816.58	402491.79	TREE 36 OAK
151774	1588787.68	402492.89	TREE 10 OAK
151775	1588814.23	402520.67	TREE 21 OAK
151776	1588757.78	402538.97	TREE 13 OAK
151777	1588760.79	402543.94	TREE 11 OAK
151778	1588762.04	402544.84	TREE 8 OAK
151779	1588766.87	402554.06	TREE 17 OAK
151780	1588779.72	402559.93	TREE 16 OAK
151781	1588779.93	402574.27	TREE 15 OAK
151782	1588784.80	402575.68	TREE 20 OAK
151783	1588763.56	402570.98	TREE 15 OAK
151784	1588743.52	402557.39	TREE 23 OAK
151785	1588739.44	402562.52	TREE 18 OAK
151786	1588719.64	402558.49	TREE 13 OAK
151787	1588722.25	402574.42	TREE 12 OAK
151788	1588704.28	402575.65	TREE 22 OAK
151789	1588694.12	402580.61	TREE 17 OAK
151790	1588683.66	402587.80	TREE 20 PALM
151791	1588678.94	402591.96	TREE 12 OAK
151792	1588671.22	402608.64	TREE 11 OAK
151793	1588651.55	402632.38	TREE 14 PINE
151794	1588654.98	402633.78	TREE 25 OAK
151795	1588677.27	402636.81	TREE 18 OAK
151796	1588690.15	402634.08	TREE 14 OAK
151797	1588696.47	402631.39	TREE 14 OAK
151798	1588697.69	402640.85	TREE 21 OAK
151801	1588464.50	402697.97	TREE 13 OAK
151802	1588442.50	402712.00	TREE 15 OAK
151803	1588449.99	402717.69	TREE 10 OAK
151804	1588460.27	402645.72	TREE 11 OAK
151805	1588414.63	402622.66	TREE 12 OAK
151806	1588432.25	402591.53	TREE 21 OAK
151807	1588444.22	402599.98	TREE 13 OAK
151808	1588436.22	402573.04	TREE 9 OAK
151809	1588452.05	402557.17	TREE 13 OAK
151810	1588429.27	402533.55	TREE 10 OAK
151811	1588413.82	402569.56	TREE 8 OAK
151812	1588389.27	402545.18	TREE 13 OAK
151813	1588426.91	402490.55	TREE 10 OAK
151814	1588414.27	402460.46	TREE 12 OAK
151815	1588405.40	402460.04	TREE 12 OAK
151816	1588412.58	402316.56	TREE 19 OAK
151817	1588414.46	402289.49	TREE 14 OAK
151818	1588425.77	402223.67	TREE 14 PALM CABBAGE
151819	1588400.94	402171.13	TREE 18 OAK
151820	1588406.40	402167.44	TREE 14 OAK
151821	1588416.21	402107.46	TREE 8 OAK
151822	1588422.34	402094.79	TREE 12 OAK
151823	1588404.52	402034.92	TREE 31 OAK
151824	1588402.36	402049.46	TREE 8 OAK
151825	1588396.06	402044.15	TREE 19 OAK
151826	1588396.87	402048.60	TREE 12 OAK
151827	1588431.75	402045.44	TREE 14 OAK
151828	1588443.25	402037.44	TREE 11 OAK
151829	1588453.52	402048.09	TREE 17 OAK
151830	1588469.00	402037.73	TREE 15 OAK
151831	1588475.88	402042.97	TREE 16 OAK
151832	1588484.95	402062.03	TREE 34 OAK
151833	1588459.82	402064.22	TREE 14 OAK
151834	1588487.48	402132.99	TREE 14 OAK

Tree Table			
Point #	Northing	Easting	Raw Description
151835	1588514.98	402068.65	TREE 15 OAK
151836	1588517.46	402061.96	TREE 12 OAK
151837	1588511.41	402037.62	TREE 11 OAK
151838	1588575.27	402040.22	TREE 12 OAK
151839	1588563.58	402087.49	TREE 42 OAK
151840	1588556.96	402100.79	TREE 37 OAK
151841	1588580.56	402123.88	TREE 13 OAK
151842	1588602.06	402121.06	TREE 23 OAK
151843	1588604.66	402128.02	TREE 13 OAK
151844	1588544.45	402134.03	TREE 8 OAK
151845	1588563.89	402143.91	TREE 33 OAK
151846	1588546.72	402155.37	TREE 14 OAK
151847	1588555.00	402172.90	TREE 15 OAK
151848	1588547.35	402182.14	TREE 13 OAK
151849	1588511.38	402198.17	TREE 13 OAK
151850	1588557.79	402192.81	TREE 10 OAK
151851	1588561.83	402193.38	TREE 14 OAK
151852	1588560.99	402195.05	TREE 13 OAK
151853	1588566.47	402195.47	TREE 12 OAK
151854	1588568.38	402212.91	TREE 26 OAK
151855	1588575.04	402223.23	TREE 8 OAK
151856	1588603.11	402211.27	TREE 25 OAK
151857	1588606.50	402219.83	TREE 21 OAK
151858	1588603.19	402166.00	TREE 12 OAK
151859	1588617.38	402140.24	TREE 31 OAK
151860	1588616.81	402179.31	TREE 8 OAK
151861	1588631.82	402179.10	TREE 14 OAK
151862	1588654.68	402174.17	TREE 24 OAK
151863	1588658.74	402160.08	TREE 31 OAK
151864	1588660.49	402164.41	TREE 8 OAK
151865	1588671.64	402149.04	TREE 8 OAK
151866	1588684.59	402162.54	TREE 9 OAK
151867	1588679.06	402195.38	TREE 16 OAK
151868	1588674.68	402206.71	TREE 17 OAK
151869	1588674.68	402204.11	TREE 22 OAK
151870	1588653.11	402327.42	TREE 8 OAK
151871	1588654.27	402206.55	TREE 13 OAK
151872	1588641.71	402232.79	TREE 18 OAK
151873	1588617.49	402237.92	TREE 13 OAK
151875	1588588.27	402263.53	TREE 12 OAK
151876	1588584.71	402288.11	TREE 8 OAK
151877	1588574.88	402264.59	TREE 8 OAK
151878	1588557.22	402276.45	TREE 14 OAK
151879	1588558.76	402276.77	TREE 8 OAK
151880	1588539.70	402287.25	TREE 17 PALM CABBAGE
151881	1588524.56	402297.05	TREE 13 OAK
151882	1588506.76	402314.38	TREE 10 OAK
151883	1588504.51	402290.53	TREE 14 OAK
151884	1588516.46	402246.71	TREE 13 OAK
151885	1588522.82	402241.71	TREE 14 OAK
151886	1588554.55	402286.80	TREE 8 OAK
151887	1588548.56	402294.80	TREE 12 OAK
151888	1588556.75	402309.07	TREE 8 OAK
151889	1588542.16	402315.93	TREE 10 OAK
151890	1588565.58	402310.05	TREE 12 OAK
151891	1588568.09	402294.89	TREE 8 OAK
151892	1588600.88	402282.54	TREE 21 PINE
151893	1588607.49	402288.44	TREE 12 OAK
151894	1588609.18	402291.82	TREE 24 OAK
151895	1588605.29	402294.52	TREE 13 OAK
151896	1588609.26	402295.13	TREE 13 OAK
151897	1588619.66	402284.10	TREE 11 OAK
151898	1588612.56	402281.83	TREE 12 OAK
151899	1588621.06	402291.56	TREE 12 OAK
151900	1588616.10	402308.51	TREE 14 OAK
151901	1588608.28	402304.52	TREE 12 OAK
151902	1588630.07	402317.15	TREE 15 OAK
151903	1588659.89	402314.91	TREE 21 OAK
151904	1588691.12	402299.51	TREE 12 OAK
151905	1588701.97	402288.36	TREE 12 OAK
151906	1588694.99	402277.08	TREE 24 OAK
151907	1588694.14	402273.08	TREE 24 OAK
151908	1588681.23	402274.11	TREE 8 OAK
151909	1588538.46	402211.18	TREE 12 OAK
151910	1588587.22	402251.87	TREE 8 OAK
151911	1588554.13	402332.55	TREE 8 OAK
151912	1588583.06	402349.67	TREE 8 OAK
151913	1588585.19	402327.42	TREE 8 OAK
151914	1588582.98	402320.61	TREE 12 OAK
151915	1588587.78	402325.39	TREE 8 OAK
151916	1588588.10	402371.62	TREE 8 OAK
151917	1588604.02	402363.18	TREE 8 PINE
151918	1588595.21	402382.70	TREE 8 OAK
151919	1588619.76	402386.35	TREE 15 OAK
151920	1588656.10	402405.06	TREE 24 OAK
151921	1588678.43	402368.84	TREE 24 OAK
151922	1588680.22	402358.58	TREE 13 OAK
151923	1588697.82	402343.12	TREE 17 OAK
151924	1588692.68	402330.75	TREE 13 OAK
151925	1588700.46	402326.63	TREE 26 OAK
151926	1588705.81	402320.45	TREE 14 OAK

Tree Table			
Point #	Northing	Easting	Raw Description
151927	1588709.30	402316.72	TREE 18 OAK
151928	1588704.84	402314.28	TREE 8 OAK
151929	1588705.07	402310.32	TREE 24 OAK
151930	1588727.03	402315.30	TREE 8 OAK
151931	1588744.69	402317.84	TREE 11 OAK
151932	1588752.30	402328.78	TREE 15 OAK
151933	1588759.10	402320.39	TREE 30 PINE
151934	1588767.68	402305.12	TREE 12 OAK
151935	1588760.31	402339.59	TREE 14 OAK
151936	1588772.59	402350.83	TREE 9 OAK
151937	1588785.64	402361.96	TREE 8 OAK
151938	1588791.26	402367.88	TREE 8 OAK
151939	1588760.13	402366.97	TREE 9 OAK
151940	1588755.85	402375.97	TREE 14 OAK
151941	1588753.21	402382.84	TREE 15 OAK
151942	1588755.32	402382.98	TREE 14 OAK
151943	1588731.64	402369.96	TREE 28 OAK
151944	1588714.31	402389.53	TREE 13 OAK
151945	1588749.24	402402.13	TREE 24 OAK
151946	1588785.54	402412.59	TREE 20 OAK
151947	1588785.66	402421.44	TREE 12 OAK
151948	1588789.43	402422.96	TREE 14 OAK
151949	1588765.41	402432.72	TREE 19 OAK
151950	1588754.43	402426.29	TREE 19 OAK
151951	1588731.31	402425.96	TREE 14 OAK
151952	1588727.22	402426.44	TREE 15 OAK
151953	1588728.27	402433.11	TREE 14 OAK
151954	1588696.72	402410.20	TREE 14 OAK
151955	1588692.37	402443.36	TREE 12 OAK
151956	1588678.99	402418.16	TREE 16 OAK
151957	1588675.92	402419.41	TREE 21 OAK
151958	1588668.36	402429.26	TREE 29 OAK
151959	1588657.31	402461.50	TREE 29 OAK
151960	1588667.72	402461.79	TREE 29 OAK
151961	1588684.81	402485.50	TREE 21 OAK
151962	1588693.74	402492.72	TREE 14 OAK
151963	1588705.06	402464.80	TREE 14 PINE
151964	1588708.63	402453.67	TREE 15 OAK
151965	1588708.22	402451.57	TREE 11 OAK
151966	1588723.62	402452.65	TREE 15 OAK
151967	1588743.56	402450.63	TREE 12 OAK
151968	1588740.03	402448.28	TREE 14 OAK
151969	1588756.26	402443.97	TREE 19 OAK
151970	1588777.58	402439.02	TREE 14 OAK
151971	1588777.94	402445.53	TREE 23 OAK
151972	1588784.89	402442.59	TREE 15 OAK
151973	1588785.84	402429.36	TREE 19 OAK
151974	1588805.90	402430.11	TREE 15 OAK
151975	1588807.72	402440.26	TREE 36 OAK
151976	1588808.29	402455.21	TREE 9 OAK
151977	1588815.33	402456.17	TREE 9 OAK
151978	1588802.67	402459.06	TREE 18 OAK
151979	1588801.08	402472.34	TREE 8 OAK
151980	1588809.55	402479.70	TREE 14 OAK
151981	1588800.65	402473.80	TREE 9 OAK
151982	1588766.53	402484.81	TREE 21 OAK
151983	1588761.86	402466.20	TREE 19 OAK
151984	1588736.73	402463.86	TREE 15 OAK
151985	1588733.74	402474.40	TREE 18 OAK
151986	1588616.40	402453.40	TREE 8 OAK
151987	1588601.51	402468.52	TREE 28 OAK
151988	1588583.93	402432.67	TREE 19 OAK
151989	1588584.58	402420.63	TREE 22 OAK
151990	1588560.84	402385.88	TREE 32 OAK
151991	1588564.14	402371.60	TREE 8 OAK
151992	1588555.46	402373.33	TREE 14 OAK
151993	1588542.80	402378.62	TREE 12 OAK
151994	1588492.58	402238.96	TREE 10 OAK
151995	1588502.95	402247.54	TREE 9 OAK
151998	1588524.77	402663.96	TREE 8 OAK
151999	1588594.71	402711.14	TREE 8 OAK
152000	1588604.39	402683.80	TREE 12 OAK
152001	1588600.86	402638.32	TREE 8 OAK
152002	1588592.44	402607.28	TREE 10 OAK
152003	1588564.82	402635.54	TREE 8 OAK
152004	1588538.96	402615.79	TREE 33 OAK
152005	1588628.02	402589.35	TREE 34 OAK
152006	1588649.71	402546.48	TREE 26 OAK
152007	1588663.99	402550.34	TREE 24 OAK
152008	1588643.40	402528.29	TREE 33 OAK
152009	1588637.35	402539.67	TREE 11 OAK
152010	1588666.02	402574.42	TREE 25 OAK
152011	1588672.35	402579.68	TREE 13 OAK
152012	1588679.02	402570.16	TREE 25 OAK
152013	1588690.02	402565.88	TREE 15 OAK
152014	1588691.48	402629.70	TREE 16 OAK
152015	1588699.60	402609.83	TREE 20 OAK
152016	1588710.13	402611.11	TREE 14 OAK
152017	1588723.43	402625.13	TREE 15 OAK
152018	1588721.26	402628.59	TREE 10 OAK

Tree Table			
Point #	Northing	Easting	Raw Description
152019	1588731.23	402634.06	TREE 15 OAK
152020	1588733.51	402622.72	TREE 13 OAK
152021	1588737.44	402617.72	TREE 13 OAK
152022	1588728.69	402608.32	TREE 14 OAK
152023	1588739.99	402609.32	TREE 14 OAK
152024	1588758.12	402610.46	TREE 13 OAK
152025	1588761.21	402602.18	TREE 16 OAK
152026	1588761.62	402592.28	TREE 13 OAK
152027	1588754.17	402581.79	TREE 13 OAK
152028	1588778.24	402585.98	TREE 13 OAK
152029	1588734.44	402585.20	TREE 19 OAK
152030	1588747.11	402636.13	TREE 13 OAK
152031	1588754.14	402642.94	TREE 12 OAK
152032	1588757.04	402652.99	TREE 14 OAK
152033	1588754.74	402661.57	TREE 15 OAK
152034	1588770.51	402648.80	TREE 8 OAK
152035	1588774.94	402648.80	TREE 9 OAK
152036	1588769.68	402633.29	TREE 14 OAK
152037	1588794.86	402647.68	TREE 21 OAK
152038	1588789.46	402638.38	TREE 8 OAK
152039	1588790.42	402628.26	TREE 13 OAK
152040	1588792.64	402630.26	TREE 8 OAK
152041	1588793.39	402627.63	TREE 13 OAK
152042	1588783.37	402627.82	TREE 10 OAK
152043	1588776.13	402617.02	TREE 14 OAK
152044	1588786.26	402611.92	TREE 21 OAK
152045	1588805.42	402627.45	TREE 8 OAK
152046	1588802.42	402631.93	TREE 8 OAK
152047	1588815.72	402628.36	TREE 13 OAK
152048	1588813.80	402621.69	TREE 12 OAK
152049	1588825.68	402643.62	TREE 12 OAK
152050	1588838.81	402644.51	TREE 9 OAK
152051	1588850.06	402613.64	TREE 19 OAK
152052	1588845.50	402593.04	TREE 15 OAK
152053	1588838.04	402573.06	TREE 20 OAK
152054	1588849.32	402561.39	TREE 25 PINE
152055	1588848.39	402561.60	TREE 19 OAK
152056	1588836.69	402546.58	TREE 14 OAK
152057	1588832.33	402539.16	TREE 21 OAK
152058	1588828.29	402533.66	TREE 24 PINE
152059	1588795.00	402556.88	TREE 19 OAK
152060	1588713.70	402650.07	TREE 25 OAK
152061	1588701.79	402654.85	TREE 14 OAK
152062	1588732.89	402670.43	TREE 9 OAK
152063	1588732.38	402677.83	TREE 24 OAK
152064	1588740.32	402681.33	TREE 14 OAK
152065	1588740.01	402696.50	TREE 14 OAK
152066	1588732.68	402698.70	TREE 13 OAK
152067	1588732.38	402707.11	TREE 15 OAK
152068	1588737.44	402712.08	TREE 8 OAK
152069	1588737.66	402718.49	TREE 8 OAK
152070	1588737.66	402724.89	TREE 8 OAK
152071	1588737.66	402731.30	TREE 8 OAK
152072	1588737.66	402737.70	TREE 8 OAK
152073	1588737.66	402744.11	TREE 8 OAK
152074	1588737.66	402750.51	TREE 8 OAK
152075	1588737.66	402756.92	TREE 8 OAK
152076	1588737.66	402763.32	TREE 8 OAK
152077	1588737.66	402769.73	TREE 8 OAK
152078	1588737.66	402776.13	TREE 8 OAK
152079	1588737.66	402782.54	TREE 8 OAK
152080	1588737.66	402788.94	TREE 8 OAK
152081	1588737.66	402795.35	TREE 8 OAK
152082	1588737.66	402801.75	TREE 8 OAK
152083	1588737.66	402808.16	TREE 8 OAK
152084	1588737.66	402814.56	TREE 8 OAK
152085	1588737.66	402820.97	TREE 8 OAK
152086	1588737.66	402827.37	TREE 8 OAK
152087	1588737.66	402833.78	TREE 8 OAK
152088	1588737.66	402840.18	TREE 8 OAK
152089	1588737.66	402846.59	TREE 8 OAK
152090	1588737.66	402852.99	TREE 8 OAK
152091	1588737.66	402859.40	TREE 8 OAK
152092	1588737.66	402865.80	TREE 8 OAK
152093	1588737.66	402872.21	TREE 8 OAK
152094	1588737.66	402878.61	TREE 8 OAK
152095	1588737.66	402885.02	TREE 8 OAK
152096	1588737.66	402891.42	TREE 8 OAK
152097	1588737.66	402897.83	TREE 8 OAK
152098	1588737.66	402904.23	TREE 8 OAK
152099	1588737.66	402910.64	TREE 8 OAK
152100	1588737.66	402917.04	TREE 8 OAK
152101	1588737.66	402923.45	TREE 8 OAK
152102	1588737.66	402929.85	TREE 8 OAK
152103	1588737.66	402936.26	TREE 8 OAK
152104	1588737.66	402942.66	TREE 8 OAK
152105	1588737.66	402949.07	TREE 8 OAK
152106	1588737.66	402955.47	TREE 8 OAK
152107	1588737.66	402961.88	TREE 8 OAK
152108	1588737.66	402968.28	TREE 8 OAK

Tree Table			
Point #	Northing	Easting	Raw Description
152109	1588625.08	402726.92	TREE 11 OAK
152110	1588621.33	402734.65	TREE 12 OAK
152113	1588595.20	402761.49	TREE 10 OAK
152114	1588598.85	402774.73	TREE 10 OAK
152115	1588582.96	402780.81	TREE 11 OAK
152116	1588590.14	402816.91	TREE 10 OAK
152117	1588567.88	402818.49	TREE 10 OAK
152118	1588553.84	402799.24	TREE 12 OAK
152119	1588578.70	402829.28	TREE 11 OAK
152120	1588529.05	402833.60	TREE 8 OAK
152121	1588584.29	402829.31	TREE 13 OAK
152122	1588598.06	402819.11	TREE 13 OAK
152123	1588605.15	402846.10	TREE 13 OAK
152124	1588615.18	402863.40	TREE 8 OAK
152125	1588603.54	402876.00	TREE 10 OAK
152126	1588625.52	402838.23	TREE 10 OAK
152127	1588626.39	402824.50	TREE 8 OAK
152128	1588640.78	402823.57	TREE 8 OAK
152129	1588656.19	402810.44	TREE 13 OAK
152130	1588636.03	402789.14	TREE 10 OAK
152131	1588624.44	402808.07	TREE 8 OAK
152132	1588613.19	402788.59	TREE 15 OAK
152133	1588626.50	402775.48	TREE 15 OAK
152134	1588648.35	402753.03	TREE 14 OAK
152135	1588699.21	402744.50	TREE 8 OAK
152136	1588720.15	402811.57	TREE 36 OAK
152137	1588712.13	402816.01	TREE 13 OAK
152138	1588744.25	402825.46	TREE 29 OAK
152139	1588747.76	402827.38	TREE 13 OAK
152140	1588751.98	402827.98	TREE 15 OAK
152141	1588731.53	402852.29	TREE 16 OAK
152142	1588718.55	402863.59	TREE 19 PINE
152143	1588704.25	402862.27	TREE 15 PINE
152144	1588705.62	402867.03	TREE 8 OAK
152145	1588710.50	402879.43	TREE 26 OAK
152146	1588728.61	402891.83	TREE 16 PINE
152147	1588752.11	402891.04	TREE 26 OAK
152148	1588755.45	402877.82	TREE 26 OAK
152149	1588760.09	402875.45	TREE 10 OAK
152150	1588763.76	402882.68	TREE 8 OAK
152151	1588761.90	402888.21	TREE 13 OAK
152152	1588796.32	402850.92	TREE 15 PALM CABBAGE
152153	1588808.85	402847.43	TREE 30 PINE
152154	1588699.92	402831.90	TREE 13 OAK
152155	1588681.60	402833.60	TREE 26 OAK
152156	1588684.82	402811.14	TREE 8 OAK
152157	1588655.12	402778.53	TREE 11 OAK
152158	1588690.19	402879.65	TREE 18 OAK
152159	1588684.31	402907.43	TREE 17 OAK
152160	1588681.21	402906.58	TREE 14 OAK
152161	1588728.54	402916.25	TREE 10 OAK
152162	1588736.84	402922.91	TREE 10 OAK
152163	1588718.59	402945.52	TREE 10 OAK
152164	1588716.27	402950.39	TREE 21 PINE
152165	1588675.06	402942.95	TREE 17 OAK
152166	1588674.08	402946.68	TREE 22 OAK
152167	1588668.41	402948.54	TREE 12 OAK
152168	1588671.64	402932.67	TREE 8 OAK
152169	1588579.46	402928.21	TREE 8 OAK
152170	1588531.11	402929.69	TREE 14 OAK
152171	1588532.86	402946.03	TREE 13 OAK
152172	1588548.63	402952.92	TREE 13 OAK
152173	1588561.40	402973.70	TREE 8 OAK
152174	1588514.97	403012.42	TREE 15 OAK
152175	1588500.66	403033.07	TREE 12 OAK
152176	1588485.62	403028.78	TREE 8 OAK
152177	1588464.79	403038.44	TREE 8 OAK
152178	1588428.97	403031.42	TREE 11 OAK
152179	1588406.53	403042.38	TREE 8 OAK
152180	1588433.47	403060.11	TREE 11 OAK
152181	1588412.02	403112.23	TREE 15 PALM
152182	1588418.86	403135.82	TREE 14 OAK
152183	1588409.73	403132.13	TREE 8 OAK
152184	1588407.14	403129.27	TREE 15 OAK
152185	1588403.22	403153.72	TREE 12 OAK
152186	1588435.88	403164.68	TREE 12 OAK
152187	1588447.24	403158.72	TREE 11 OAK
152188	1588459.79	403132.38	TREE 10 OAK
152189	1588394.38	403100.00	TREE 11 OAK
152190	1588424.99	402954.90	TREE 8 OAK
152191	1588434.17	402952.99	TREE 9 OAK
152192	1588422.60	402927.08	TREE 14 OAK
152193	1588462.73	402937.28	TREE 29 OAK
152194	1588472.79	402925.24	TREE 8 OAK
152195	1588475.81	402924.76	TREE 11 OAK
152196	1588501.08	402952.73	TREE 10 OAK
152197	1588497.00	402902.33	TREE 13 OAK
152198	1588501.27	402900.64	TREE 10 OAK
152199	1588518.10	402869.78	TREE 8 OAK
152200	1588425.59	402889.80	TREE 11 OAK

Tree Table			
Point #	Northing	Easting	Raw Description
152201	1588388.74	402852.41	TREE 12 OAK
152202	1588384.22	402821.34	TREE 12 OAK
152203	1588373.68	402789.98	TREE 8 OAK
152204	1588367.86	402744.93	TREE 15 OAK
152205	1588311.55	402745.38	TREE 14 OAK
152206	1588314.91	402740.74	TREE 12 OAK
152207	1588315.26	402734.20	TREE 12 OAK
152208	1588294.48	402730.50	TREE 10 OAK
152209	1588292.49	402719.20	TREE 10 OAK
152210	1588287.26	402656.14	TREE 16 OAK
152211	1588304.67	402657.04	TREE 10 OAK
152212	1588345.46	402645.22	TREE 10 OAK
152213	1588386.65	402636.50	TREE 8 OAK
152214	1588388.13	402651.27	TREE 8 OAK
152215	1588319.00	402634.38	TREE 8 OAK
152216	1588322.94	402586.82	TREE 11 OAK
152217	1588302.86	402570.67	TREE 12 OAK
152218	1588274.36	402579.18	TREE 11 OAK
152219	1588262.33	402613.14	TREE 8 OAK
152220	1588263.48	402786.40	TREE 14 OAK
152221	1588275.70	402806.19	TREE 8 OAK
152222	1588283.13	402795.48	TREE 12 OAK
152223	1588286.31	402817.23	TREE 11 OAK
152224	1588305.16	402802.36	TREE 15 OAK
152225	1588322.43	402812.63	TREE 13 OAK
152226	1588325.41	402813.41	TREE 8 OAK
152227	1588325.74	402857.53	TREE 11 OAK
152228	1588285.02	402913.91	TREE 14 PALM
152229	1588233.35	402894.29	TREE 19 OAK
152230	1588208.62	402960.99	TREE 8 OAK
152231	1588210.02	402865.68	TREE 8 OAK
152232	1588228.11	402778.97	TREE 15 OAK
152233	1588198.80	402802.13	TREE 13 OAK
152234	1588206.46	402784.57	TREE 15 OAK
152235	1588203.70	402782.59	TREE 14 OAK
152236	1588208.04	402762.17	TREE 10 OAK
152237	1588202.22	402748.37	TREE 8 OAK
152238	1588227.65	402730.67	TREE 10 OAK
152239	1588187.08	402733.73	TREE 36 OAK
152240	1588186.20	402712.92	TREE 8

Tree Table			
Point #	Northing	Easting	Raw Description
152475	1587994.42	402167.52	TREE 8 OAK
152476	1588000.77	402157.12	TREE 22 OAK
152477	1587990.36	402139.47	TREE 24 OAK
152478	1587989.50	402136.64	TREE 10 OAK
152479	1587958.80	402115.15	TREE 8 OAK
152480	1587961.31	402097.85	TREE 17 OAK
152481	1587962.37	402093.03	TREE 14 OAK
152482	1587977.45	402064.65	TREE 24 OAK
152483	1587976.30	402058.78	TREE 12 OAK
152484	1587984.56	402061.82	TREE 15 OAK
152485	1587979.23	402059.01	TREE 26 OAK
152486	1587978.82	402054.06	TREE 23 OAK
152487	1587981.23	402051.32	TREE 14 PALM
152488	1587988.73	402038.20	TREE 24 OAK
152489	1587992.06	402035.52	TREE 13 OAK
152490	1588008.44	402032.53	TREE 15 OAK
152491	1588010.68	402032.64	TREE 8 OAK
152492	1588033.08	402043.03	TREE 24 OAK
152493	1588005.96	402088.47	TREE 21 OAK
152494	1587920.87	402292.71	TREE 11 OAK
152495	1587915.88	402294.79	TREE 11 OAK
152496	1587917.52	402299.81	TREE 12 OAK
152497	1587917.82	402295.99	TREE 10 PINE
152498	1587926.83	402311.18	TREE 10 OAK
152499	1587921.39	402324.25	TREE 11 OAK
152500	1587941.65	402343.77	TREE 15 OAK
152503	1588076.46	402190.54	TREE 13 OAK
152504	1588076.17	402192.56	TREE 8 OAK
152505	1588084.96	402185.28	TREE 14 OAK
152506	1588092.60	402190.78	TREE 15 OAK
152507	1588111.86	402165.96	TREE 13 OAK
152508	1588107.75	402165.18	TREE 13 OAK
152509	1588085.12	402159.87	TREE 15 OAK
152510	1588084.60	402153.22	TREE 8 OAK
152511	1588083.12	402145.83	TREE 10 OAK
152512	1588083.67	402141.02	TREE 20 OAK
152513	1588085.79	402140.74	TREE 9 OAK
152514	1588084.68	402137.01	TREE 11 OAK
152515	1588062.13	402111.69	TREE 9 OAK
152516	1588061.13	402113.24	TREE 22 OAK
152517	1588082.44	402112.35	TREE 25 OAK
152518	1588063.33	402092.73	TREE 17 OAK
152519	1588057.33	402095.74	TREE 12 OAK
152520	1588073.22	402088.21	TREE 12 OAK
152521	1588067.70	402087.09	TREE 14 OAK
152522	1588072.12	402055.85	TREE 14 OAK
152523	1588082.49	402063.64	TREE 25 OAK
152524	1588095.03	402086.12	TREE 12 PINE
152525	1588107.11	402088.86	TREE 11 OAK
152526	1588110.25	402086.55	TREE 8 OAK
152527	1588122.90	402085.30	TREE 19 OAK
152528	1588133.03	402033.29	TREE 10 OAK
152529	1588130.94	402084.02	TREE 10 OAK
152530	1588149.01	402065.40	TREE 25 OAK
152531	1588156.58	402092.48	TREE 9 OAK
152532	1588132.16	402093.26	TREE 8 OAK
152533	1588134.37	402103.91	TREE 8 OAK
152534	1588121.14	402116.41	TREE 8 OAK
152535	1588125.40	402115.43	TREE 21 OAK
152536	1588112.44	402131.35	TREE 8 OAK
152537	1588109.44	402139.81	TREE 13 OAK
152538	1588128.97	402145.78	TREE 18 OAK
152539	1588127.71	402141.72	TREE 8 OAK
152540	1588135.42	402144.29	TREE 14 OAK
152541	1588140.36	402163.41	TREE 17 OAK
152542	1588144.14	402220.45	TREE 25 OAK
152543	1588162.59	402164.51	TREE 13 OAK
152544	1588167.55	402166.48	TREE 28 OAK
152545	1588183.15	402140.50	TREE 13 OAK
152546	1588221.88	402129.27	TREE 15 OAK
152547	1588235.08	402115.80	TREE 15 OAK
152548	1588247.78	402112.56	TREE 22 PINE
152549	1588252.50	402111.68	TREE 14 OAK
152550	1588259.20	402093.31	TREE 14 OAK
152551	1588269.04	402090.23	TREE 24 PINE
152552	1588273.75	402046.02	TREE 8 OAK
152553	1588279.35	402052.04	TREE 14 PINE
152554	1588264.59	402035.39	TREE 14 OAK
152555	1588273.73	402033.76	TREE 10 PINE
152556	1588288.87	402033.53	TREE 13 PINE
152557	1588289.62	402035.16	TREE 15 PINE
152558	1588250.00	402037.23	TREE 10 OAK
152559	1588236.05	402037.97	TREE 13 OAK
152560	1588215.02	402031.99	TREE 12 PINE
152561	1588207.95	402031.19	TREE 13 PINE
152562	1588208.33	402039.51	TREE 15 OAK
152563	1588219.67	402061.18	TREE 21 PINE
152564	1588209.32	402086.26	TREE 14 OAK
152565	1588235.50	402094.16	TREE 13 OAK
152566	1588188.47	402077.67	TREE 15 PINE

Tree Table			
Point #	Northing	Easting	Raw Description
152567	1588180.13	402083.90	TREE 17 OAK
152568	1588304.95	402031.44	TREE 13 PINE
152569	1588311.61	402037.87	TREE 15 OAK
152570	1588305.12	402064.78	TREE 14 OAK
152571	1588309.04	402066.19	TREE 29 OAK
152572	1588313.44	402101.92	TREE 24 OAK
152573	1588306.01	402116.24	TREE 15 OAK
152574	1588314.62	402141.88	TREE 14 OAK
152575	1588302.51	402158.51	TREE 19 OAK
152576	1588307.53	402170.71	TREE 26 OAK
152577	1588311.43	402170.71	TREE 16 OAK
152578	1588276.84	402162.08	TREE 24 OAK
152579	1588269.90	402200.20	TREE 15 PINE
152580	1588282.06	402217.79	TREE 13 OAK
152581	1588322.20	402205.40	TREE 8 OAK
152582	1588332.46	402136.79	TREE 13 OAK
152583	1588246.52	402154.87	TREE 8 PINE
152584	1588237.36	402150.66	TREE 8 OAK
152585	1588233.10	402167.73	TREE 11 OAK
152586	1588243.64	402194.97	TREE 8 PINE
152587	1588227.50	402210.25	TREE 16 PINE
152588	1588242.99	402256.37	TREE 15 OAK
152589	1588263.23	402244.74	TREE 13 OAK
152590	1588045.17	402300.20	TREE 8 OAK
152591	1588056.58	402306.25	TREE 15 OAK
152592	1588063.90	402331.71	TREE 17 OAK
152593	1588044.06	402328.82	TREE 14 OAK
152594	1588043.11	402334.67	TREE 13 OAK
152595	1588036.87	402315.05	TREE 22 OAK
152596	1588027.10	402302.53	TREE 12 OAK
152597	1588021.15	402269.20	TREE 10 OAK
152598	1587993.96	402294.88	TREE 14 PINE
152599	1587972.27	402382.85	TREE 8 OAK
152600	1587983.12	402383.48	TREE 8 OAK
152601	1587983.94	402385.66	TREE 25 OAK
152602	1587989.18	402391.71	TREE 10 OAK
152603	1588003.54	402410.80	TREE 21 OAK
152604	1587997.58	402446.92	TREE 8 OAK
152605	1587995.70	402449.53	TREE 10 OAK
152606	1587998.04	402490.19	TREE 8 OAK
152607	1588101.97	403132.93	TREE 17 OAK
152608	1588088.80	403108.42	TREE 15 OAK
152609	1588078.10	403116.44	TREE 14 OAK
152610	1588041.38	403081.16	TREE 20 OAK
152611	1588047.78	403056.17	TREE 9 OAK
152612	1588079.54	403175.48	TREE 10 OAK
152613	1588049.73	403188.07	TREE 21 OAK
152614	1588052.46	403187.66	TREE 13 OAK
152615	1588027.83	403225.63	TREE 8 OAK
152616	1588042.95	403235.78	TREE 19 OAK
152617	1588068.40	403255.91	TREE 13 OAK
152618	1588084.56	403253.07	TREE 14 OAK
152619	1588118.70	403215.44	TREE 19 OAK
152620	1588094.02	403266.85	TREE 17 OAK
152621	1588139.33	403248.96	TREE 8 OAK
152622	1588126.61	403276.09	TREE 8 OAK
152623	1588156.17	403279.11	TREE 8 OAK
152624	1588158.25	403245.52	TREE 8 OAK
152625	1588175.80	403239.95	TREE 11 OAK
152626	1588222.63	403288.57	TREE 17 OAK
152627	1588227.18	403271.93	TREE 9 OAK
152628	1588252.59	403276.20	TREE 8 OAK
152629	1588198.59	403183.43	TREE 14 OAK
152630	1587891.51	403060.04	TREE 19 PALM
152631	1587873.47	403043.07	TREE 8 OAK
152632	1587865.56	403036.88	TREE 16 PALM
152633	1587861.26	403039.79	TREE 8 OAK
152634	1587854.48	403029.43	TREE 10 OAK
152635	1587810.98	403026.97	TREE 12 OAK
152636	1587813.24	403013.67	TREE 11 OAK
152637	1587814.93	403007.24	TREE 14 OAK
152638	1587784.60	402975.77	TREE 13 OAK
152641	1589066.29	402637.53	TREE 12 OAK
152642	1589140.05	402568.33	TREE 14 OAK
152643	1589140.68	402523.91	TREE 16 OAK
152644	1589159.96	402531.11	TREE 15 OAK
152645	1589183.92	402528.68	TREE 20 OAK
152646	1589183.72	402531.36	TREE 17 OAK
152647	1589224.16	402562.84	TREE 14 OAK
152648	1589228.48	402567.71	TREE 14 OAK
152649	1589233.23	402567.51	TREE 12 OAK
152650	1589234.11	402571.84	TREE 9 OAK
152651	1589230.14	402578.50	TREE 8 OAK
152652	1589235.50	402577.70	TREE 10 OAK
152653	1589233.41	402592.96	TREE 12 OAK
152654	1589243.43	402572.10	TREE 9 OAK
152655	1589254.59	402562.77	TREE 14 OAK
152656	1589256.34	402564.48	TREE 8 OAK
152657	1589256.42	402566.76	TREE 10 OAK
152658	1589261.06	402569.92	TREE 9 OAK

Tree Table			
Point #	Northing	Easting	Raw Description
152659	1589269.60	402590.11	TREE 12 OAK
152660	1589272.63	402588.89	TREE 8 OAK
152661	1589285.18	402575.31	TREE 9 OAK
152662	1589305.19	402561.61	TREE 14 OAK
152663	1589307.38	402562.91	TREE 14 OAK
152664	1589312.74	402551.42	TREE 14 OAK
152665	1589310.60	402544.82	TREE 14 OAK
152666	1589346.45	402560.18	TREE 17 OAK
152667	1589357.04	402592.45	TREE 10 OAK
152668	1589357.80	402596.85	TREE 22 OAK
152669	1589344.11	402610.16	TREE 17 OAK
152670	1589325.52	402613.02	TREE 23 OAK
152671	1589321.86	402624.58	TREE 8 OAK
152672	1589323.66	402630.63	TREE 27 OAK
152673	1589325.16	402633.26	TREE 12 OAK
152674	1589330.82	402628.91	TREE 25 OAK
152675	1589333.64	402627.58	TREE 11 OAK
152676	1589335.67	402630.13	TREE 30 OAK
152677	1589296.47	402637.05	TREE 9 OAK
152678	1589297.88	402643.55	TREE 56 OAK
152679	1589283.80	402641.90	TREE 23 OAK
152680	1589281.47	402649.51	TREE 20 OAK
152681	1589285.08	402673.06	TREE 19 OAK
152682	1589316.78	402662.06	TREE 26 OAK
152683	1589278.30	402691.56	TREE 30 OAK
152684	1589241.10	402707.65	TREE 36 OAK
152685	1589239.71	402696.60	TREE 21 OAK
152686	1589235.84	402692.75	TREE 42 OAK
152687	1589235.76	402689.68	TREE 28 OAK
152689	1589183.86	402699.23	TREE 15 OAK
152690	1589183.03	402701.36	TREE 33 OAK
152691	1589252.53	402659.09	TREE 23 OAK
152692	1589250.97	402655.10	TREE 20 OAK
152693	1589254.58	402654.52	TREE 22 OAK
152694	1589245.57	402614.72	TREE 23 OAK
152695	1589264.29	402538.06	TREE 14 OAK
152696	1589264.92	402524.03	TREE 15 OAK
152697	1589253.33	402524.86	TREE 9 OAK
152698	1587788.46	402863.44	TREE 15 OAK
152699	1587806.14	402859.24	TREE 13 OAK
152700	1587839.24	402874.27	TREE 12 OAK
152701	1587857.64	402870.07	TREE 11 OAK
152702	1587828.70	402810.72	TREE 14 OAK
152703	1587822.82	402775.68	TREE 15 OAK
152704	1587793.47	402787.15	TREE 8 OAK
152705	1587737.51	402798.34	TREE 11 OAK
152706	1587763.56	402805.95	TREE 12 OAK
152707	1587769.15	402810.91	TREE 11 OAK
152708	1587763.89	402821.54	TREE 11 OAK
152709	1587792.54	402819.75	TREE 11 OAK
152710	1587791.40	402817.72	TREE 10 OAK
152711	1587816.49	402819.19	TREE 9 OAK
152712	1587870.88	402785.27	TREE 8 OAK
152713	1587909.64	402796.60	TREE 10 OAK
152714	1587899.20	402800.33	TREE 8 OAK
152715	1587864.10	402832.22	TREE 12 OAK
152716	1587857.03	402856.27	TREE 8 OAK
152717	1587890.07	402898.08	TREE 15 OAK
152718	1587921.95	402861.96	TREE 12 OAK
152719	1587962.83	402856.95	TREE 13 OAK
152720	1587961.50	402862.51	TREE 12 OAK
152721	1587915.18	402887.93	TREE 8 OAK
152722	1587916.32	402919.00	TREE 15 OAK
152723	1587756.76	402882.91	TREE 39 OAK
152726	1585308.51	403380.88	TREE 17 OAK
152727	1585312.33	403383.47	TREE 17 OAK
152728	1585315.11	403390.31	TREE 9 OAK
152729	1585297.99	403421.13	TREE 24 OAK
152730	1585314.18	403415.54	TREE 24 OAK
152731	1585297.83	403427.43	TREE 12 OAK
152732	1585301.39	403427.01	TREE 8 OAK
152733	1585266.93	403441.16	TREE 16 OAK
152734	1585271.49	403446.85	TREE 17 OAK
152735	1585300.63	403479.43	TREE 12 OAK
152736	1585295.78	403507.31	TREE 20 OAK
152737	1585296.93	403513.14	TREE 17 OAK
152738	1585273.28	403535.36	TREE 15 OAK
152739	1585283.15	403540.46	TREE 17 OAK
152740	1585276.98	403547.02	TREE 8 OAK
152741	1585272.74	403545.09	TREE 28 OAK
152742	1585267.96	403569.70	TREE 28 OAK
152743	1585286.59	403575.14	TREE 14 OAK
152744	1585302.75	403624.92	TREE 24 OAK
152745	1585316.46	403636.00	TREE 14 OAK
152746	1585271.83	403662.66	TREE 14 OAK
152747	1585291.65	403669.98	TREE 13 PALM CABBAGE
152748	1585310.76	403699.06	TREE 36 OAK
152749	1585307.88	403709.59	TREE 16 OAK
152750	1585297.39	403711.82	TREE 14 OAK
152751	1585301.54	403716.52	TREE 14 OAK

Tree Table			
Point #	Northing	Easting	Raw Description
152752	1585302.12	403728.77	TREE 15 OAK
152753	1585345.83	403719.37	TREE 8 OAK
152754	1585360.94	403697.16	TREE 18 OAK
152755	1585363.55	403697.75	TREE 13 OAK
152756	1585365.02	403696.91	TREE 21 OAK
152757	1585291.68	403706.43	TREE 16 OAK
152758	1585276.01	403365.02	TREE 19 OAK
152759	1585334.62	403366.16	TREE 8 OAK
152760	1585338.78	403385.09	TREE 13 OAK
152761	1585347.15	403397.64	TREE 8 OAK
152762	1585338.52	403418.29	TREE 8 OAK
152763	1585338.71	403422.32	TREE 8 OAK
152764	1585377.11	403388.55	TREE 15 OAK
152765	1585381.54	403375.01	TREE 19 OAK
152766	1585381.53	403371.99	TREE 8 OAK
152767	1585390.45	403374.42	TREE 15 OAK
152768	1585386.14	403385.97	TREE 11 OAK
152769	1585402.03	403378.16	TREE 12 OAK
152770	1585392.44	403358.39	TREE 12 OAK
152771	1585458.07	403385.68	TREE 15 OAK
152772	1585462.20	403395.90	TREE 18 PALM CABBAGE
152773	1585493.27	403370.74	TREE 14 OAK
152774	1585448.25	403448.14	TREE 15 OAK
152775	1585427.79	403459.76	TREE 12 OAK
152776	1585429.21	403462.17	TREE 13 OAK
152777	1585431.18	403462.18	TREE 15 OAK
152778	1585425.89	403468.82	TREE 10 OAK
152779	1585436.14	403467.78	TREE 10 OAK
152780	1585422.94	403488.17	TREE 17 OAK
152781	1585469.76	403456.80	TREE 11 OAK
152782	1585494.96	403458.17	TREE 15 OAK
152783	1585500.22	403429.47	TREE 16 OAK
152784	1585520.89	403420.45	TREE 14 OAK
152785	1585532.94	403457.32	TREE 18 OAK
152786	1585561.63	403510.04	TREE 27 OAK
152787	1585513.40	403509.83	TREE 9 OAK
152788	1585508.15	403501.46	TREE 10 OAK
152789	1585500.24	403503.37	TREE 16 OAK
152790	1585495.73	403502.67	TREE 9 OAK
152791	1585494.68	403505.39	TREE 14 OAK
152792	1585493.78	403511.71	TREE 23 OAK
152793	1585481.75	403510.97	TREE 8 OAK
152794	1585484.84	403514.05	TREE 14 OAK
152795	1585480.74	403518.64	TREE 8 OAK
152796	1585486.23	403526.50	TREE 9 OAK
152797	1585491.10	403521.78	TREE 12 OAK
152798	1585492.26	403521.51	TREE 8 OAK
152799	1585496.24	403516.32	TREE 8 OAK
152800	1585501.74	403516.40	TREE 8 OAK
152801	1585506.69	403542.13	TREE 25 OAK
152802	1585513.59	403541.90	TREE 15 OAK
152803	1585507.50	403533.38	TREE 11 OAK
152804	1585522.88	403535.04	TREE 15 OAK
152805	1585471.45	403534.14	TREE 17 OAK
152806	1585462.04	403546.49	TREE 16 OAK
152807	1585582.49	403533.09	TREE 32 OAK
152808	1585570.60	403512.19	TREE 16 OAK
152809	1585576.08	403464.00	TREE 14 OAK
152810	1585581.76	403460.96	TREE 12 OAK
152811	1585597.28	403458.39	TREE 21 OAK
152812	1585596.83	403447.97	TREE 15 OAK
152813	1585581.88	403423.34	TREE 18 OAK
152814	1585615.69	403373.89	TREE 22 OAK
152815	1585582.17	403364.37	TREE 15 OAK
152816	1585571.15	403360.39	TREE 20 OAK
152817	1585564.39	403361.57	TREE 10 OAK
152818	1585566.51	403367.32	TREE 13 OAK
152819	1585555.11	403364.29	TREE 22 OAK
152820	1585684.61	403391.82	TREE 14 OAK
152821	1585686.06	403398.46	TREE 17 OAK
152822	1585690.20	403421.34	TREE 16 OAK
152823	1585709.35	403386.64	TREE 18 OAK
152824	1585716.71	403381.56	TREE 24 OAK
152825	1585771.13	403365.98	TREE 10 OAK
152826	1585772.45	403369.27	TREE 15 OAK
152827	1585774.23	403371.76	TREE 12 OAK
152828	1585778.18	403367.47	TREE 13 OAK
152829	1585771.82	403363.64	TREE 8 OAK
152830	1585815.04	403373.74	TREE 13 OAK
152831	1585804.29	403401.86	TREE 20 OAK
152832	1585788.25	403414.89	TREE 22 PALM CABBAGE
152833	1585763.34	403451.04	TREE 20 OAK
152834	1585760.87	403472.65	TREE 17 PALM CABBAGE
152835	1585786.00	403444.79	TREE 17 PALM CABBAGE
152836	1585818.44	403423.99	TREE 19 OAK
152837	1585841.73	403422.81	TREE 20 OAK
152838	1585843.23	403372.38	TREE 19 OAK
152839	1585883.20	403420.10	TREE 19 PINE
152840	1585873.31	403412.42	TREE 8 OAK
152841	1585913.76	403413.43	TREE 12 OAK

Tree Table			
Point #	Northing	Easting	Raw Description
152842	1585926.93	403393.35	TREE 17 OAK
152843	1585939.92	403418.22	TREE 19 OAK
152844	1585931.91	403423.38	TREE 17 OAK
152845	1585963.11	403377.44	TREE 14 OAK
152846	1585962.63	403401.26	TREE 8 OAK
152847	1585970.06	403406.03	TREE 12 OAK
152848	1585983.31	403416.23	TREE 15 OAK
152849	1585971.58	403430.78	TREE 13 OAK
152850	1585957.15	403437.15	TREE 15 OAK
152851	1586006.10	403399.35	TREE 17 OAK
152852	1586020.01	403394.09	TREE 13 OAK
152853	1586028.80	403392.68	TREE 16 OAK
152854	1586049.68	403377.74	TREE 8 OAK
152855	1586064.50	403386.73	TREE 24 OAK
152856	1586078.91	403393.01	TREE 13 OAK
152857	1586066.64	403399.84	TREE 15 OAK
152858	1586072.41	403401.15	TREE 13 OAK
152862	1585611.24	403575.84	TREE 16 OAK
152863	1585594.16	403577.16	TREE 12 OAK
152864	1585601.10	403533.79	TREE 17 OAK
152865	1585651.56	403499.01	TREE 12 OAK
152866	1585656.18	403456.58	TREE 13 OAK
152867	1585533.16	403638.56	TREE 28 OAK
152868	1585533.42	403662.87	TREE 19 PALM CABBAGE
152869	1585526.75	403669.73	TREE 20 PALM CABBAGE
152870	1585491.13	403626.69	TREE 24 OAK
152871	1585495.83	403627.10	TREE 24 OAK
152872	1585496.52	403621.09	TREE 12 OAK
152873	1585507.11	403620.67	TREE 12 OAK
152874	1585428.15	403624.10	TREE 19 OAK
152875	1585385.86	403632.58	TREE 14 OAK
152876	1585367.03	403660.66	TREE 15 OAK
152877	1585377.70	403667.53	TREE 30 OAK
152878	1585374.29	403669.20	TREE 10 OAK
152879	1585357.83	403677.76	TREE 8 OAK
152880	1585363.96	403567.79	TREE 18 OAK
152881	1585369.12	403568.93	TREE 13 OAK
152882	1585376.47	403542.32	TREE 8 OAK
152883	1585381.72	403540.75	TREE 12 OAK
152884	1585383.19	403544.74	TREE 14 OAK
152885	1585386.34	403541.16	TREE 12 OAK
152886	1585386.13	403545.74	TREE 20 OAK
152887	1585636.90	403671.22	TREE 20 OAK
152888	1585632.86	403741.22	TREE 16 OAK
152889	1585607.17	403748.84	TREE 14 OAK
152890	1585575.36	403777.83	TREE 12 OAK
152891	1585619.54	403813.54	TREE 60 OAK
152892	1585664.14	403784.35	TREE 17 PALM CABBAGE
152893	1585684.06	403777.72	TREE 8 OAK
152894	1585691.57	403769.42	TREE 12 OAK
152895	1585695.43	403764.83	TREE 10 OAK
152896	1585699.21	403780.56	TREE 10 OAK
152897	1585702.22	403777.86	TREE 28 OAK
152898	1585703.83	403787.78	TREE 16 OAK
152899	1585692.88	403823.65	TREE 12 OAK
152900	1585738.78	403826.11	TREE 17 OAK
152901	1585713.64	403790.90	TREE 15 OAK
152902	1585753.98	403731.37	TREE 32 OAK
152903	1585776.86	403700.50	TREE 23 PALM CABBAGE
152904	1585741.72	403644.13	TREE 15 OAK
152905	1585709.10	403691.28	TREE 15 OAK
152906	1585684.60	403662.24	TREE 21 PALM CABBAGE
152907	1585680.08	403636.85	TREE 14 OAK
152908	1585681.60	403599.64	TREE 24 OAK
152909	1585688.04	403567.90	TREE 18 PALM CABBAGE
152911	1585726.46	403611.04	TREE 12 OAK
152912	1585732.43	403602.11	TREE 19 OAK
152913	1585824.00	403642.00	TREE 16 OAK
152914	1585841.65	403631.80	TREE 16 PALM CABBAGE
152915	1585855.92	403637.14	TREE 15 OAK
152916	1585826.57	403574.18	TREE 15 OAK
152917	1585881.29	403556.09	TREE 21 PALM CABBAGE
152918	1585898.02	403538.98	TREE 8 OAK
152919	1585904.55	403538.74	TREE 13 OAK
152920	1585863.76	403511.93	TREE 16 OAK
152921	1585834.04	403507.37	TREE 14 PALM CABBAGE
152922	1585838.05	403511.61	TREE 18 PALM CABBAGE
152923	1585825.34	403478.55	TREE 18 OAK
152924	1585894.34	403451.90	TREE 20 OAK
152925	1585905.68	403455.04	TREE 23 OAK
152926	1585918.59	403465.95	TREE 18 OAK
152927	1585915.10	403446.25	TREE 8 OAK
152928	1585969.77	403482.30	TREE 9 OAK
152929	1585961.27	403482.63	TREE 14 OAK
152930	1585971.02	403493.24	TREE 14 OAK
152931	1585987.18	403487.33	TREE 15 OAK
152932	1585992.30	403491.14	TREE 15 OAK
152933	1586004.90	403465.72	TREE 14 OAK
152934	1586006.18	403451.25	TREE 13 OAK
152935	1585991.19	403448.52	TREE 25 OAK

Tree Table			
Point #	Northing	Easting	Raw Description
152936	1585974.29	403436.15	TREE 10 OAK
152937	1586036.68	403482.70	TREE 14 OAK
152938	1586029.73	403486.10	TREE 8 OAK
152939	1586063.63	403496.47	TREE 15 OAK
152940	1586089.21	403468.13	TREE 30 OAK
152941	1586077.33	403464.60	TREE 14 OAK
152942	1586064.99	403454.82	TREE 13 OAK
152943	1586052.12	403437.77	TREE 13 OAK
152944	1586060.93	403423.21	TREE 8 OAK
152945	1586070.69	403508.17	TREE 9 OAK
152946	1586088.57	403539.90	TREE 24 OAK
152947	1586063.12	403529.48	TREE 11 OAK
152948	1586049.36	403527.16	TREE 14 OAK
152949	1586049.70	403521.78	TREE 14 OAK
152950	1586042.51	403529.25	TREE 8 OAK
152951	1586008.43	403542.16	TREE 15 OAK
152952	1586019.98	403546.76	TREE 13 OAK
152953	1585966.49	403569.72	TREE 14 OAK
152956	1585922.07	403775.97	TREE 14 OAK
152957	1585923.24	403772.66	TREE 12 OAK
152958	1585932.18	403765.52	TREE 13 OAK
152959	1585851.69	403725.07	TREE 16 OAK
152960	1585828.92	403714.97	TREE 16 PALM CABBAGE
152961	1585877.53	403849.97	TREE 13 OAK
152962	1585872.25	403853.17	TREE 13 OAK
152963	1585873.85	403854.98	TREE 9 OAK
152964	1585875.66	403856.00	TREE 13 OAK
152965	1585877.31	403857.00	TREE 12 OAK
152966	1585866.56	403851.24	TREE 11 OAK
152967	1585862.53	403856.77	TREE 15 OAK
152968	1585859.10	403859.54	TREE 10 OAK
152969	1585867.30	403860.12	TREE 8 OAK
152970	1585871.93	403861.26	TREE 10 OAK
152971	1585881.83	403885.23	TREE 8 OAK
152972	1585890.13	403880.34	TREE 16 OAK
152973	1585891.28	403885.47	TREE 13 OAK
152974	1585902.12	403862.75	TREE 18 OAK
152975	1585905.12	403861.89	TREE 19 OAK
152976	1585925.21

Tree Table			
Point #	Northing	Easting	Raw Description
153210	1585577.23	404150.23	TREE 10 OAK
153211	1585578.35	404151.76	TREE 10 OAK
153212	1585585.56	404141.79	TREE 21 OAK
153213	1585588.74	404138.49	TREE 15 OAK
153214	1585598.87	404143.47	TREE 19 OAK
153215	1585595.62	404146.77	TREE 14 OAK
153216	1585604.94	404166.09	TREE 15 OAK
153217	1585595.88	404168.34	TREE 50 OAK
153218	1585638.96	404170.09	TREE 19 OAK
153219	1585659.51	404141.43	TREE 27 OAK
153220	1585653.95	404133.75	TREE 10 OAK
153221	1585658.46	404132.00	TREE 10 OAK
153222	1585672.94	404170.30	TREE 14 OAK
153223	1585706.15	404136.03	TREE 15 OAK
153224	1585709.06	404134.63	TREE 10 OAK
153225	1585710.69	404137.19	TREE 8 OAK
153226	1585712.60	404128.02	TREE 9 OAK
153227	1585709.85	404127.32	TREE 13 OAK
153228	1585703.74	404117.08	TREE 33 OAK
153229	1585704.29	404108.53	TREE 13 OAK
153230	1585719.01	404105.66	TREE 11 OAK
153231	1585726.59	404122.60	TREE 13 OAK
153232	1585729.19	404087.26	TREE 26 OAK
153233	1585687.52	404071.08	TREE 13 OAK
153234	1585670.55	404045.98	TREE 18 PALM CABBAGE
153235	1585642.77	404052.47	TREE 25 OAK
153236	1585614.22	404089.48	TREE 14 OAK
153237	1585592.15	404056.55	TREE 20 OAK
153238	1585469.51	404243.64	TREE 18 OAK
153239	1585360.72	404222.51	TREE 35 OAK
153240	1585333.01	404234.52	TREE 23 OAK
153241	1585295.44	404228.32	TREE 28 OAK
153242	1585299.03	404237.29	TREE 13 OAK
153243	1585294.39	404190.98	TREE 36 OAK
153244	1585301.85	404178.54	TREE 13 OAK
153245	1585309.98	404178.22	TREE 13 OAK
153246	1585274.19	404162.91	TREE 14 OAK
153247	1585245.23	404237.35	TREE 23 OAK
153248	1585268.22	404257.91	TREE 13 OAK
153249	1585281.32	404263.28	TREE 8 OAK
153250	1585271.97	404266.50	TREE 8 OAK
153251	1585271.99	404264.80	TREE 12 OAK
153252	1585262.26	404273.13	TREE 11 OAK
153253	1585241.44	404294.05	TREE 26 OAK
153254	1585282.13	404275.26	TREE 12 OAK
153255	1585292.13	404289.85	TREE 19 PALM CABBAGE
153256	1585291.04	404314.95	TREE 15 OAK
153257	1585293.70	404350.42	TREE 21 OAK
153258	1585238.10	404322.23	TREE 9 OAK
153259	1585312.77	404278.45	TREE 8 OAK
153260	1585331.15	404277.65	TREE 13 OAK
153261	1585337.56	404281.91	TREE 13 OAK
153262	1585342.08	404281.64	TREE 14 OAK
153263	1585340.70	404273.10	TREE 15 OAK
153264	1585334.41	404266.46	TREE 14 OAK
153265	1585333.42	404263.11	TREE 22 OAK
153266	1585333.66	404258.59	TREE 12 OAK
153267	1585329.60	404261.05	TREE 14 OAK
153268	1585327.80	404257.34	TREE 21 OAK
153269	1585319.53	404266.43	TREE 8 OAK
153270	1585345.18	404358.87	TREE 15 OAK
153271	1585386.89	404359.41	TREE 19 OAK
153272	1585408.81	404382.36	TREE 14 OAK
153273	1585469.67	404345.57	TREE 19 PALM CABBAGE
153274	1585564.41	404323.46	TREE 19 OAK
153275	1585592.35	404359.10	TREE 23 PALM CABBAGE
153276	1585626.83	404240.06	TREE 18 OAK
153277	1585567.45	404207.32	TREE 17 OAK
153278	1585558.53	404206.50	TREE 10 OAK
153279	1585639.28	404238.77	TREE 18 OAK
153280	1585639.87	404233.90	TREE 9 OAK
153281	1585644.12	404235.31	TREE 24 OAK
153282	1585647.13	404228.81	TREE 17 OAK
153283	1585658.23	404223.09	TREE 15 OAK
153284	1585670.39	404197.54	TREE 15 OAK
153285	1585695.80	404194.86	TREE 15 OAK
153286	1585726.97	404230.04	TREE 33 OAK
153287	1585778.98	404201.29	TREE 42 OAK
153288	1585772.61	404241.03	TREE 14 OAK
153289	1585768.07	404268.94	TREE 14 OAK
153290	1585713.91	404303.86	TREE 15 OAK
153291	1585698.86	404325.48	TREE 19 OAK
153292	1585794.19	404301.53	TREE 24 OAK
153293	1585823.99	404296.61	TREE 16 PALM CABBAGE
153294	1585836.24	404279.12	TREE 22 OAK
153295	1585954.06	404272.12	TREE 28 OAK
153296	1585988.64	404246.30	TREE 23 OAK
153297	1585999.96	404258.02	TREE 11 OAK
153298	1586046.02	404265.39	TREE 15 OAK
153299	1586069.97	404261.54	TREE 20 PALM CABBAGE

Tree Table			
Point #	Northing	Easting	Raw Description
153300	1586089.78	404292.05	TREE 24 OAK
153301	1586068.22	404235.81	TREE 18 OAK
153302	1586062.79	404208.44	TREE 14 OAK
153303	1586045.57	404217.68	TREE 21 PALM
153304	1586043.04	404220.25	TREE 15 PALM
153305	1586120.41	404199.58	TREE 13 OAK
153306	1586121.91	404192.51	TREE 20 PALM CABBAGE
153307	1586124.89	404193.29	TREE 18 PALM CABBAGE
153308	1586168.69	404217.88	TREE 48 OAK
153309	1586137.65	404278.05	TREE 21 OAK
153310	1586112.19	404275.87	TREE 12 OAK
153311	1586169.57	404279.78	TREE 18 PALM CABBAGE
153312	1586169.71	404259.66	TREE 15 PALM CABBAGE
153313	1586193.88	404248.12	TREE 15 PALM CABBAGE
153314	1586195.46	404250.91	TREE 14 PALM CABBAGE
153315	1586195.97	404249.95	TREE 14 PALM CABBAGE
153316	1586197.34	404251.91	TREE 16 PALM CABBAGE
153317	1586200.90	404261.66	TREE 19 PALM CABBAGE
153318	1586165.37	404312.94	TREE 15 PALM CABBAGE
153319	1586219.22	404329.86	TREE 24 OAK
153320	1586225.59	404306.42	TREE 14 OAK
153321	1586225.53	404348.76	TREE 14 PALM CABBAGE
153322	1586222.76	404349.94	TREE 20 PALM CABBAGE
153323	1586227.26	404352.32	TREE 19 PALM CABBAGE
153324	1586232.84	404349.99	TREE 11 OAK
153325	1586192.01	404397.98	TREE 16 PALM CABBAGE
153326	1586187.19	404397.12	TREE 15 PALM CABBAGE
153327	1586185.95	404398.07	TREE 17 PALM CABBAGE
153328	1586184.23	404397.83	TREE 17 PALM CABBAGE
153329	1586181.49	404398.58	TREE 17 PALM CABBAGE
153330	1586185.09	404421.05	TREE 26 OAK
153331	1586189.99	404401.19	TREE 15 PALM CABBAGE
153332	1586188.53	404400.34	TREE 15 PALM CABBAGE
153333	1586167.15	404392.17	TREE 22 OAK
153334	1586149.01	404415.26	TREE 15 OAK
153335	1586263.90	404410.27	TREE 16 OAK
153336	1586295.55	404367.04	TREE 13 OAK
153337	1586325.16	404351.05	TREE 17 OAK
153338	1586280.28	404262.10	TREE 14 PALM CABBAGE
153339	1586277.92	404260.85	TREE 16 PALM CABBAGE
153340	1586197.93	404196.14	TREE 24 OAK
153341	1586135.23	404163.55	TREE 19 OAK
153342	1586152.97	404104.81	TREE 20 PALM CABBAGE
153343	1586173.94	404095.32	TREE 22 OAK
153344	1586200.88	404124.63	TREE 22 OAK
153345	1586221.33	404022.04	TREE 17 OAK
153346	1586250.91	404051.93	TREE 18 OAK
153347	1586280.59	404108.66	TREE 30 OAK
153348	1586248.81	404159.06	TREE 36 OAK
153349	1586251.30	404159.76	TREE 10 OAK
153350	1586283.48	404154.09	TREE 12 OAK
153351	1586291.19	404159.37	TREE 15 PALM CABBAGE
153352	1586292.92	404153.66	TREE 15 PALM CABBAGE
153353	1586295.98	404155.37	TREE 15 PALM CABBAGE
153354	1586306.69	404161.01	TREE 16 PALM CABBAGE
153355	1586318.54	404135.28	TREE 9 OAK
153356	1586321.88	404134.98	TREE 14 OAK
153357	1586323.94	404137.42	TREE 13 OAK
153358	1586328.10	404136.72	TREE 14 OAK
153359	1586330.42	404132.77	TREE 14 OAK
153360	1586334.15	404134.16	TREE 17 OAK
153361	1586335.95	404143.12	TREE 14 OAK
153362	1586339.37	404137.53	TREE 12 OAK
153363	1586342.44	404140.42	TREE 13 OAK
153364	1586368.88	404124.51	TREE 27 OAK
153365	1586396.11	404140.65	TREE 27 OAK
153366	1586452.74	404164.87	TREE 12 OAK
153367	1586457.59	404165.58	TREE 11 OAK
153368	1586457.29	404161.97	TREE 8 OAK
153369	1586452.93	404169.42	TREE 10 OAK
153370	1586450.14	404179.57	TREE 12 OAK
153371	1586443.52	404183.63	TREE 22 OAK
153372	1586445.49	404200.52	TREE 8 OAK
153373	1586429.65	404197.29	TREE 8 OAK
153374	1586424.10	404174.54	TREE 8 OAK
153375	1586429.34	404172.40	TREE 9 OAK
153376	1586398.89	404184.17	TREE 17 PALM CABBAGE
153377	1586408.18	404204.76	TREE 24 OAK
153378	1586419.15	404247.27	TREE 17 OAK
153379	1586443.98	404292.85	TREE 31 OAK
153380	1586439.57	404350.19	TREE 12 OAK
153381	1586375.27	404287.97	TREE 18 OAK
153382	1586320.44	404408.80	TREE 17 OAK
153383	1586345.89	404408.12	TREE 11 OAK
153384	1586373.88	404385.80	TREE 10 OAK
153385	1586367.61	404362.24	TREE 15 OAK
153386	1586375.23	404384.01	TREE 13 OAK
153387	1586359.33	404369.91	TREE 8 OAK
153388	1586322.64	404362.24	TREE 12 PALM CABBAGE
153389	1586008.21	404419.63	TREE 19 OAK

Tree Table			
Point #	Northing	Easting	Raw Description
153390	1585976.05	404439.80	TREE 31 OAK
153391	1585991.70	404441.91	TREE 21 OAK
153392	1585882.07	404456.95	TREE 19 OAK
153393	1585872.72	404456.64	TREE 16 PALM CABBAGE
153394	1585795.51	404447.45	TREE 14 OAK
153395	1585789.14	404421.29	TREE 22 OAK
153396	1585761.14	404403.48	TREE 21 PALM CABBAGE
153397	1585763.69	404402.49	TREE 16 PALM CABBAGE
153398	1585743.22	404390.77	TREE 19 OAK
153399	1585712.02	404357.49	TREE 20 PALM CABBAGE
153400	1585612.73	404387.68	TREE 19 OAK
153401	1585593.27	404360.90	TREE 18 PALM CABBAGE
153402	1585535.33	404441.80	TREE 20 PALM CABBAGE
153403	1585364.73	404420.02	TREE 25 OAK
153406	1585513.62	404475.52	TREE 18 OAK
153407	1585474.50	404482.41	TREE 15 OAK
153408	1585469.51	404474.80	TREE 12 OAK
153409	1585449.87	404490.13	TREE 10 OAK
153410	1585465.34	404504.25	TREE 13 OAK
153411	1585443.57	404503.52	TREE 14 OAK
153412	1585442.86	404485.71	TREE 12 OAK
153413	1585723.15	404556.40	TREE 15 OAK
153414	1585746.30	404549.90	TREE 17 OAK
153415	1585753.10	404544.02	TREE 15 PALM
153416	1585750.02	404542.84	TREE 17 PALM
153417	1585789.69	404515.79	TREE 19 PALM
153418	1585772.60	404482.15	TREE 16 OAK
153419	1585784.71	404453.88	TREE 21 OAK
153420	1585756.26	404451.70	TREE 17 PALM CABBAGE
153421	1585760.22	404408.48	TREE 16 PALM CABBAGE
153422	1585826.56	404362.89	TREE 14 OAK
153423	1585828.49	404362.11	TREE 14 OAK
153424	1585879.03	404358.96	TREE 13 OAK
153425	1585877.32	404373.19	TREE 17 PALM CABBAGE
153426	1585872.36	404372.48	TREE 15 OAK
153427	1585889.56	404486.29	TREE 18 OAK
153428	1585871.94	404485.72	TREE 18 PALM CABBAGE
153429	1585869.78	404488.34	TREE 16 PALM CABBAGE
153430	1585868.31	404481.55	TREE 20 PALM CABBAGE
153431	1585848.92	404549.98	TREE 15 PALM CABBAGE
153432	1585851.40	404546.20	TREE 12 OAK
153433	1585857.18	404555.76	TREE 20 OAK
153434	1585829.61	404566.49	TREE 14 OAK
153435	1585797.79	404562.92	TREE 15 OAK
153436	1585893.80	404528.52	TREE 24 OAK
153437	1585909.09	404529.50	TREE 14 PALM
153438	1585913.26	404527.76	TREE 19 PALM
153439	1585984.35	404531.43	TREE 52 OAK
153440	1585992.82	404495.27	TREE 18 PALM
153441	1585958.88	404471.80	TREE 17 PALM CABBAGE
153442	1586058.93	404517.46	TREE 20 PALM CABBAGE
153443	1586079.83	404516.85	TREE 20 PALM CABBAGE
153444	1586277.80	404437.78	TREE 21 OAK
153445	1586433.51	404487.72	TREE 18 PALM CABBAGE
153446	1586411.33	404540.06	TREE 18 OAK
153447	1586379.84	404513.15	TREE 22 OAK
153448	1586018.30	405867.96	TREE 25 OAK
153449	1586020.79	405864.79	TREE 17 OAK
153450	1586039.22	405854.67	TREE 15 OAK
153451	1586029.82	405832.59	TREE 18 OAK
153452	1586030.11	405830.88	TREE 19 OAK
153453	1586040.25	405827.90	TREE 10 OAK
153454	1586025.88	405818.23	TREE 12 OAK
153455	1586052.79	405852.73	TREE 16 PALM CABBAGE
153456	1586020.00	405798.93	TREE 15 OAK
153457	1585997.73	405834.59	TREE 15 OAK
153458	1585964.26	405808.54	TREE 18 PALM CABBAGE
153459	1586116.77	405839.11	TREE 17 PALM CABBAGE

811 Know what's **below.** **Call** before you dig.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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ATWELL
866.850.4200 www.atwell-group.com
2600 MAITLAND CENTER PKWY, STE 262
MAITLAND, FL 32751
407.775.6500
FLORIDA SURVEY CERTIFICATE OF AUTHORIZATION # LB 7832

LOCATED IN:
SECCTION 2, TOWNSHIP 21 S, RANGE 25 E &
SECTION 34, TOWNSHIP 20 S, RANGE 25 E

PARCEL ID: 22125002000004800,342025000400001003, 342025000100000100, & 272025000400001200

REVELS ROAD

HOWEY IN THE HILLS, LAKE COUNTY, FLORIDA, 34737

MAP OF
BOUNDARY, TOPOGRAPHIC, WETLAND & TREE SURVEY

MISSION RISE

REV.	DRAFTER	REV. DATE	COMMENTS
1	KH	12/12/2024	ADDED TREE SURVEY
2	NW	01/20/2025	ADDED SHWE NAIL LOCATIONS

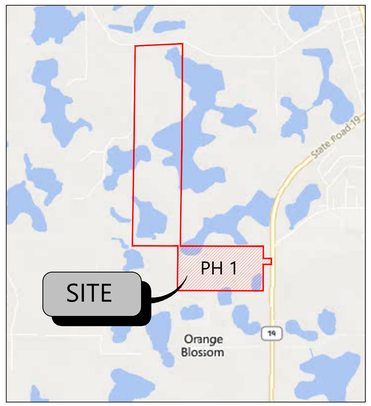
DWG. KH CH. DB
PM. NW
FIELD DATE: 01/20/2025
PLOT DATE: 06/27/2025
JOB 22005325
SHEET NO.
14 OF 14

FINAL SUBDIVISION PLANS FOR MISSION RISE

PHASE 1

HOWEY-IN-THE-HILLS, FLORIDA

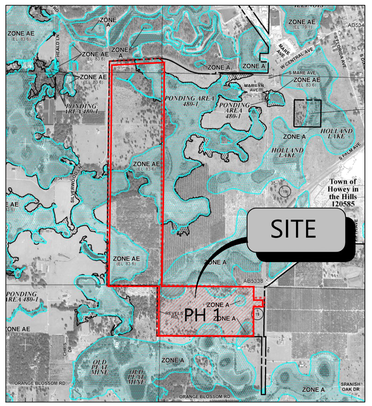
TAX PARCELS: 34-20-25-0004-000-01003, 27-20-25-0004-000-01200, 34-20-25-0001-000-00100, & 02-21-25-0002-000-04800



VICINITY MAP
1" = 2000'

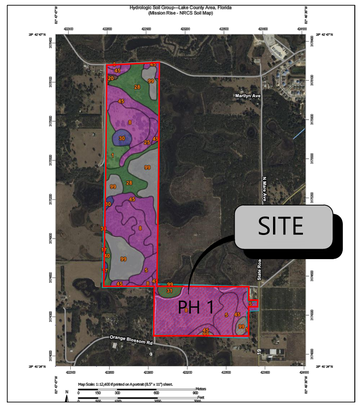


AERIAL MAP
N.T.S.



FEMA MAP
N.T.S.

BASED ON GRAPHIC DETERMINATION, THIS PROPERTY LIES IN A F.E.M.A./F.I.R.M. SPECIAL FLOOD HAZARD AREA (ZONES "A" & "AE") PER COMMUNITY PANEL NO.12069C0485E, DATED 12/18/2012.



SOILS MAP
N.T.S.

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C806	POTABLE WATER DETAILS
C807	POTABLE WATER DETAILS
C808	SANITARY DETAILS
C809	LIFT STATION DETAIL
C810	LIFT STATION DETAIL

DEVELOPMENT TEAM

OWNER
ASF TAP FL, LLC
3565 PIEDMONT RD
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PHONE: (630) 816-7002
CONTACT: JASON HUMM
EMAIL:
JHUMM@TURNSTONEGROUP.COM

DEVELOPER
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LANDSCAPE
RVi PLANNING + LANDSCAPE
ARCHITECTURE
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ENVIRONMENTAL
BIO-TECH CONSULTING INC.
3025 EAST SOUTH STREET
ORLANDO, FL 32803
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CONTACT: KATE GRONINGRT
EMAIL:
KATE@BIO-TECHCONSULTING.COM

GEOTECH
UES PROFESSIONAL SOLUTIONS,
LLC
3532 MAGGIE BOULEVARD
ORLANDO, FLORIDA 32811
PHONE: (407) 423-0504
CONTACT: RICARDO C. KIRIAKIDIS L.
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TRAFFIC
TRAFFIC & MOBILITY CONSULTANTS
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SUITE 265
ORLANDO, FLORIDA 32803
PHONE: (407) 531-5332
CONTACT: CHARLOTTE N. DAVIDSON, P.E.
EMAIL: CHARLOTTED@TRAFFICMOBILITY.COM

GOVERNING AGENCIES AND UTILITY PROVIDERS

ST. JOHNS RIVER WATER
MANAGEMENT DISTRICT
4049 REID STREET
PALATKA, FL 32177
PHONE: (386) 329-4500

TOWN OF HOWEY-IN-THE-HILLS
101 N PALM AVE
HOWEY-IN-THE-HILLS, FL 34737
PHONE: (352) 324-2290

WATER
TOWN OF HOWEY-IN-THE-HILLS
101 N PALM AVE
HOWEY-IN-THE-HILLS, FL 34737
PHONE: (352) 324-2290

SANITARY SEWER
CENTRAL LAKE CDD
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ORLANDO, FL 32801
PHONE: (407) 841-5524

ELECTRIC
SECO ENERGY
330 US-301
SUMTERVILLE, FL 33585
PHONE: (352) 661-0479

NATURAL GAS
TECO PEOPLES GAS
600 W ROBINSON ST
ORLANDO, FL 32801
PHONE: (407) 425-4662

TELEPHONE/INTERNET
COMCAST
PHONE: (561) 512-9726

LEGAL DESCRIPTION

PARCEL1:
THE EAST HALF OF THE NORTHEAST QUARTER OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 25 EAST, SAID LAND LYING AND BEING IN LAKE COUNTY, FLORIDA.

PARCEL 2:
THAT PART OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER LYING SOUTH OF CLAY ROAD (NUMBER TWO ROAD) IN SECTION 27, TOWNSHIP 20 SOUTH, RANGE 25 EAST, SAID LAND LYING AND BEING SITUATE IN LAKE COUNTY, FLORIDA.

PARCEL 3:
THE EAST HALF OF THE SOUTHEAST QUARTER OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 25 EAST, SAID LAND LYING AND BEING SITUATE IN LAKE COUNTY, FLORIDA.

PARCEL 4:
THE NORTH HALF OF GOVERNMENT LOTS 3 AND 4, ALSO KNOWN AS THE NORTH HALF OF THE NORTHWEST QUARTER OF SECTION 2, TOWNSHIP 21 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA, SAID LAND LYING AND BEING SITUATE IN LAKE COUNTY, FLORIDA.

LESS: THE EAST 262 FEET OF THE FOLLOWING DESCRIBED PROPERTY: NORTH HALF OF GOVERNMENT LOT 3, SECTION 2, TOWNSHIP 21 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA, LYING WEST OF ROAD RIGHT-OF-WAY FOR HIGHWAY 19. LESS THE SOUTH 907 FEET THEREOF.

AND

LESS: THE SOUTH 740 FEET OF THE EAST 262 FEET OF THE FOLLOWING DESCRIBED PROPERTY: NORTH HALF OF GOVERNMENT LOT 3, SECTION 2, TOWNSHIP 21 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA, LYING WEST OF ROAD RIGHT-OF-WAY FOR HIGHWAY 19.

Item 2.

811 Know what's below. Call before you dig.
THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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24 HOUR
EMERGENCY CONTACT

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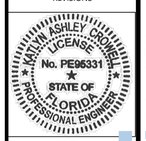
866.850.4200 www.atwell-group.com
111 N. MAGNOLIA AVENUE, SUITE 1350
ORLANDO, FL 32801
4C0A# 29091
COA# 29091

SEC 27,34 TWP 20 S RGE 25 E
--
HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
COVER SHEET

DATE 08/29/2025

REVISIONS



DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C000

FILE: 0180-C000 COVER PH1

PLOTTED -- ISSUED--FOR--CONSTRUCTION -- 08/29/2025

FILE NAME: \\VLGRL\Projects\23000180 Mission Rise 01 and PUP\DWG\Plan Set\Construction\Phase 1\0180-C000 COVER PH1.dwg LAST SAVED BY: zorfu PLOTTED BY: Zuperie Orfu-Mussah 8/28/2025 3:23 PM PLOTTED BY: ATWELLCTB

GENERAL NOTES:

1. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS. THE CONTRACTOR SHALL FIELD LOCATE, VERIFY, AND FURTHER IDENTIFY THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES (IDENTIFIED ON THE PLANS OR NOT) AFFECTING ANY COMPONENT OF WORK HEREIN PRIOR TO THE START OF ANY CONSTRUCTION. DISCREPANCIES, CONFLICTS, OR POTENTIAL DEVIATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE START OF ANY CONSTRUCTION.

2. THE CONTRACTOR SHALL CHECK PLANS FOR CONFLICTS AND DISCREPANCIES PRIOR TO THE START OF ANY CONSTRUCTION. SPECIAL ATTENTION SHALL BE TAKEN WITH THOSE EXISTING UTILITIES, STRUCTURES OR FEATURES (IDENTIFIED ON THE PLANS OR NOT) THAT MAY POTENTIALLY CONFLICT OR CROSS PROPOSED DESIGN COMPONENTS (I.E., STORM SEWERS, SANITARY SEWERS, WATER MAINS, EXFILTRATION, BUILDING FOUNDATIONS, ETC) AND ANY DISCREPANCIES, CONFLICTS, OR POTENTIAL DEVIATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE START OF ANY CONSTRUCTION. ANY COST ASSOCIATED WITH THE LOCATION OF EXISTING UTILITIES AS OUTLINED ABOVE IS THE RESPONSIBILITY OF THE CONTRACTOR.

3. ERRORS OR OMISSIONS - CONTRACTOR SHALL NOT TAKE ADVANTAGE OF ANY APPARENT ERROR OR OMISSION DISCOVERED IN THE CONTRACT DOCUMENTS, BUT IMMEDIATELY NOTIFY THE ENGINEER OF SUCH DISCOVERY. THE ENGINEER WILL THEN MAKE SUCH CORRECTIONS AND INTERPRETATIONS AS NECESSARY TO REFLECT THE ACTUAL SPIRIT AND INTENT OF THE CONTRACT DOCUMENTS.

4. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN AREAS OF BURIED UTILITIES AND SHALL PROVIDE AT LEAST 48-HOURS NOTICE TO THE UTILITY COMPANIES PRIOR TO CONSTRUCTION TO OBTAIN FIELD LOCATIONS OF EXISTING UNDERGROUND UTILITIES.

5. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING FACILITIES, ABOVE OR BELOW GROUND, THAT MAY OCCUR AS A RESULT OF THE WORK PERFORMED BY THE CONTRACTOR CALLED FOR IN THIS CONTRACT. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SURVEY MONUMENTATION, AND ANY DISTURBED MONUMENTATION SHALL BE RESTORED AT CONTRACTOR'S EXPENSE BY A SURVEYOR SELECTED BY THE OWNER.

6. ALL UNDERGROUND UTILITIES MUST BE IN PLACE AND PASS ALL TESTING AND INSPECTION REQUIREMENTS PRIOR TO BASE AND SURFACE IMPROVEMENT CONSTRUCTION.

7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BECOME FAMILIAR WITH THE PERMIT AND INSPECTION REQUIREMENTS SPECIFIED BY THE VARIOUS GOVERNMENTAL AGENCIES AND THE ENGINEER. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION, AND SCHEDULE INSPECTIONS AND TESTING ACCORDING TO AGENCY REQUIREMENTS.

8. ALL WORK PERFORMED SHALL COMPLY WITH THE CODES, STANDARDS, REGULATIONS AND REQUIREMENTS OF THE TOWN OF HOWEY-IN-THE-HILLS LAND DEVELOPMENT CODE AND ENGINEERING STANDARDS, PLUS THE CURRENT EDITION OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND UTILITY CONSTRUCTION, PLUS THE REGULATIONS AND ORDINANCES OF THE VARIOUS OTHER GOVERNMENTAL AGENCIES HAVING JURISDICTION OVER THE WORK.

9. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON ALL PRECAST AND MANUFACTURED ITEMS TO THE ENGINEER FOR APPROVAL. FAILURE TO OBTAIN APPROVAL BEFORE INSTALLATION COULD RESULT IN REMOVAL AND REPLACEMENT AT CONTRACTOR'S EXPENSE. THE ENGINEER'S REVIEW OF THE SHOP DRAWINGS IS FOR CONFORMITY WITH THE CONTRACT DOCUMENTS AND DOES NOT INCLUDE IN-DEPTH CHECK FOR THE ABILITY OF THE CONTRACTOR TO PERFORM THE WORK IN A SAFE OR EFFICIENT MANNER. THE ENGINEER'S REVIEW OF THE SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR DIMENSIONAL ACCURACY TO ENSURE FIELD FIT AND CONFORMITY OF THE VARIOUS COMPONENTS AND DETAILS. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF SANITARY SEWER COMPONENTS TO THE TOWN OF HOWEY-IN-THE-HILLS FOR WASTEWATER DIVISION REVIEW OF THOSE COMPONENTS.

10. CONTRACTOR SHALL KEEP ENGINEER ADVISED OF CONSTRUCTION SCHEDULE CHANGES SO THAT ENGINEER CAN SCHEDULE PERIODIC SITE VISITS AT APPROPRIATE TIMES IN ORDER TO PROVIDE CONSTRUCTION CERTIFICATIONS TO JURISDICTIONAL AGENCIES.

11. WORK PERFORMED UNDER THIS CONTRACT SHALL INTERFACE SMOOTHLY WITH OTHER WORK BEING PERFORMED ON OR ADJACENT TO THE SITE BY OTHER CONTRACTORS AND UTILITY COMPANIES. IT WILL BE NECESSARY FOR THE CONTRACTOR TO COORDINATE AND SCHEDULE HIS ACTIVITIES, WHERE NECESSARY, WITH OTHER CONTRACTORS AND UTILITY COMPANIES.

12. SAFETY:
    A. DURING THE CONSTRUCTION AND/OR MAINTENANCE OF THIS PROJECT, ALL SAFETY REGULATIONS ARE TO BE ENFORCED. THE CONTRACTOR OR HIS REPRESENTATIVE SHALL BE RESPONSIBLE FOR THE CONTROL AND SAFETY OF THE TRAVELING PUBLIC AND THE SAFETY OF HIS PERSONNEL.
    B. LABOR SAFETY REGULATIONS SHALL CONFORM TO THE PROVISIONS SET FORTH BY OSHA IN THE FEDERAL REGISTER OF THE DEPARTMENT OF TRANSPORTATION.
    C. THE MAINTENANCE OF TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH THE FDOT AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
    D. ALL TRAFFIC CONTROL MARKINGS AND DEVICES SHALL CONFORM TO THE PROVISIONS SET FORTH IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" PREPARED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.
    E. CONTACT TOWN OF HOWEY-IN-THE-HILLS (863-534-0100) FOR MANAGEMENT OF TRAFFIC CONTROL REVIEW PRIOR TO AND DURING CONSTRUCTION.

13. CONTRACTOR SHALL PROVIDE ALL EQUIPMENT NECESSARY FOR DEWATERING. DISCHARGE WATER FROM DEWATERING SHALL BE CLEAR WITH NO VISIBLE SOIL PARTICLES. DISCHARGE WATER FROM DEWATERING SHALL BE DISPOSED OF IN SUCH A MANNER THAT IT WILL NOT INTERFERE WITH THE NORMAL DRAINAGE OF THE AREA IN WHICH THE WORK IS BEING PERFORMED, OR CREATE PONDING. THE OPERATION SHALL NOT CAUSE ANY DAMAGE TO ANY PORTION OF THE WORK COMPLETED, OR IN PROGRESS. THE DEWATERING OPERATION SHALL COMPLY WITH THE REQUIREMENTS OF APPLICABLE REGULATORY AGENCIES. A PRE-WORK MEETING WILL BE CONDUCTED WITH THE GEOTECHNICAL FIRM, THE OWNER, THE CONTRACTOR, AND THE ENGINEER PRIOR TO BEGINNING ANY SITE EXCAVATION.

14. CONFORMITY WITH WORK - IN THE EVENT THAT THE ENGINEER FINDS THAT THE CONTRACTOR HAS USED MATERIAL OR PRODUCED A FINISH PRODUCT THAT IS NOT REASONABLY CLOSE IN CONFORMITY WITH THE CONTRACT DOCUMENTS, I.E. UNSATISFACTORY PRODUCT, THE CONTRACTOR SHALL REMOVE AND REPLACE OR OTHERWISE CORRECT THE WORK OR MATERIALS AT NO EXPENSE TO THE OWNER.

15. "AS-BUILTS" FOR THE PROPOSED CONSTRUCTION SHALL BE PROVIDED UPON COMPLETION OF CONSTRUCTION. THE CONTRACTOR SHALL FURNISH THE OWNER'S ENGINEER WITH COMPLETE "AS-BUILT" INFORMATION CERTIFIED BY A FLORIDA REGISTERED PROFESSIONAL SURVEYOR. ONCE PROVIDED WITH "AS-BUILTS" AND AFTER OBSERVATION OF THE ENTIRE PROJECT, SHOULD THE ENGINEER DETERMINE THAT THE CONTRACTOR HAS SATISFACTORILY COMPLETED THE WORK, THE ENGINEER WILL GIVE THE CONTRACTOR WRITTEN NOTICE OF FINAL ACCEPTANCE.

16. PIPE LENGTHS SHOWN ON THE PLANS ARE APPROXIMATE AND SHOULD ONLY BE ORDERED FROM FIELD STAKED QUANTITIES. PLAN PIPE LENGTHS ARE MEASURED FROM CONNECTION POINT TO END OF THE LINES FOR WATER LINES.

17. CONTRACTOR MUST REVIEW "MAINTENANCE OF UTILITY SERVICE PLAN" WITH ENGINEER AND UTILITY COMPANY PRIOR TO START OF UTILITY CONSTRUCTION.

18. DIRECTIONAL BORING IS REQUIRED FOR DEVELOPMENT AND INFRASTRUCTURE PLANNED WITHIN ALL CRITICAL ROOT ZONES (CRZs) OF TREES.

GOVERNING SPECIFICATIONS:

A. GRADING, DRAINAGE AND PAVING MATERIALS AND CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE CURRENT PUBLICATION OF THE FDOT "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AS SUPPLEMENTED BY THE FDOT STANDARD INDEX AND AS SUPPLEMENTED BY DETAILS AND NOTES ON PLANS.

B. CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE CURRENT PUBLICATION OF THE TOWN OF HOWEY-IN-THE-HILLS LAND DEVELOPMENT REGULATIONS AND TOWN OF HOWEY-IN-THE-HILLS CONSTRUCTION SPECIFICATIONS FOR WATER AND WASTEWATER EXCEPT AS NOTED ON PLANS.

C. WATER DISTRIBUTION SYSTEM MATERIALS AND CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE TOWN OF HOWEY-IN-THE-HILLS CONSTRUCTION SPECIFICATIONS FOR WATER AND WASTEWATER, EXCEPT AS NOTED ON PLANS.

D. CONSTRUCTION SHALL BE IN CONFORMANCE WITH ALL REQUIREMENTS OF THE FLORIDA DEPT. OF ENVIRONMENTAL PROTECTION (FDEP) SOILS DISTURBANCE AND WATER OR SANITARY SYSTEM EXTENSIONS PERMITS.

E. CONSTRUCTION SHALL BE IN CONFORMANCE WITH ALL REQUIREMENTS OF THE "ST. JOHNS RIVER WATER MANAGEMENT DISTRICT" (SJRWMD) ENVIRONMENTAL RESOURCES PERMIT (ERP).

CLEARING AND GRUBBING NOTES:

1. PRIOR TO CLEARING AND GRUBBING, ALL SILT FENCE EROSION CONTROL DEVICES AND SEDIMENT CONTROL BASINS SHALL BE INSTALLED AND OPERATIONAL.

2. ALL INDICATED MATERIALS TO BE CLEARED, GRUBBED AND REMOVED FROM THE CONSTRUCTION AREA INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING: ALL TREES, STUMPS, ROOTS, BRUSH, TRASH, ORGANIC MATTER WITHIN THE SITE, CURBING, PAVING, MISCELLANEOUS STRUCTURES (IF ANY), AND OTHER DEBRIS.

3. GRUBBING SHALL CONSIST OF COMPLETELY REMOVING ROOTS, STUMPS, TRASH AND OTHER DEBRIS FROM SITE, SO THAT THE TOPSOIL IS FREE OF ROOTS AND DEBRIS. TOPSOIL IS TO BE LEFT SUFFICIENTLY CLEAN SO THAT FURTHER PICKING AND RAKING WILL NOT BE REQUIRED.

4. BURNING OF TREES, ROOTS, OR ANY KIND OF MATERIALS WILL NOT BE ALLOWED ANYWHERE ON THE SITE.

5. THE CONTRACTOR SHALL EXERCISE SPECIAL PRECAUTIONS FOR THE PROTECTION AND PRESERVATION OF TREES, SOD, FENCES, ETC., SITUATED WITHIN THE VICINITY OF THE PROJECT AREA OR TREE SAVE AREAS BUT NOT DIRECTLY WITHIN EXCAVATION AND/OR FILL LIMITS. THE CONTRACTOR SHALL BE HELD LIABLE FOR ANY DAMAGE AS A RESULT OF HIS OPERATIONS.

6. TREES WHICH ARE SEVERELY DAMAGED OR DESTROYED BY CLEARING OPERATIONS OUTSIDE THE CLEARING LIMITS WILL BE PAID FOR BY THE CONTRACTOR IN WHOLE. MINOR DAMAGE INFLICTED TO TREE BRANCHES AND TRUNKS WILL BE REPAIRED, AT NO COST TO THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING AND MAINTAINING TREE PROTECTION FENCING AROUND TREE SAVE AREAS WITHIN THE SITE, AS SHOWN ON PLANS OR DIRECTED BY THE MUNICIPAL AUTHORITY. THE TREE PROTECTION FENCING SHALL BE IN ACCORDANCE WITH MUNICIPAL STANDARDS AND REQUIREMENTS. TREE PROTECTION SHALL BE IN ACCORDANCE WITH ANSI A300, ALL 10 PARTS, AND THE ACCOMPANYING BEST MANAGEMENT PRACTICES.

EXCAVATION, GRADING AND PAVING NOTES:

1. ALL DELETERIOUS SUBSURFACE MATERIAL (I.E. MUCK, PEAT, BURIED DEBRIS) IS TO BE EXCAVATED IN ACCORDANCE WITH THESE PLANS OR AS DIRECTED BY THE OWNER, THE ENGINEER, OR OWNER'S SOIL TESTING COMPANY. DELETERIOUS MATERIAL SHALL BE REMOVED FROM THE SITE. EXCAVATED AREAS SHALL BE BACKFILLED AND COMPACTED WITH APPROVED MATERIALS AS DIRECTED BY THE GEOTECHNICAL REPORT PREPARED BY UES PROFESSIONAL SOLUTIONS, LLC, DATED NOVEMBER 18, 2024 . CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ANY PERMITS THAT ARE NECESSARY FOR REMOVING DELETERIOUS MATERIAL FROM THE SITE.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXCAVATIONS AGAINST COLLAPSE AND WILL PROVIDE BRACING, SHEETING OR SHORING AS NECESSARY.

3. DEWATERING METHODS SHALL BE USED AS REQUIRED TO KEEP TRENCHES DRY WHILE PIPE AND APPURTENANCES ARE BEING PLACED.

4. ALL NECESSARY FILL AND EMBANKMENT THAT IS PLACED DURING CONSTRUCTION SHALL CONSIST OF MATERIAL SPECIFIED BY THE OWNER'S SOIL TESTING COMPANY OR ENGINEER AND BE PLACED AND COMPACTED ACCORDING TO THESE PLANS.

5. DISPOSAL OF ANY EXCESS EARTHWORK MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

6. PROPOSED SPOT ELEVATIONS REPRESENT FINISHED PAVEMENT OR GROUND SURFACE GRADE UNLESS OTHERWISE NOTED ON DRAWINGS.

7. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE COMPLIANCE WITH A.D.A. STANDARDS.

8. CONTRACTOR SHALL SAW-CUT EXISTING PAVEMENT TO PROVIDE CLEAN JOINT. REMOVE EXISTING PAVEMENT FOR NEW INSTALLATION AND MATCH EXISTING PAVEMENT AT LOCATIONS WHERE NEW PAVEMENT MEETS EXISTING PAVEMENT.

9. REFER TO THE CURRENT EDITION OF THE FDOT "ROADWAY AND TRAFFIC DESIGN STANDARDS" FOR DETAILS AND SPECIFICATIONS OF ALL FDOT TYPE CURBING CALLED FOR IN THESE PLANS.

10. REFER TO THE CURRENT EDITION OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION FOR SPECIFICATIONS ON PAVING MATERIALS.

11. CONTRACTOR TO PROVIDE A 1/2-INCH BITUMINOUS EXPANSION JOINT MATERIAL WITH SEALER WHERE CONCRETE ABUTS BUILDINGS, OTHER CONCRETE, OR OTHER RIGID MATERIALS.

12. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SURVEY MONUMENTATION. DISTURBED MONUMENTATION SHALL BE RESTORED AT CONTRACTOR'S EXPENSE BY A SURVEYOR SELECTED BY THE OWNER.

13. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE SOILS ENGINEER FOR APPLICABLE TESTING UPON COMPLETION OF THE WORK. THE SOILS ENGINEER WILL SUBMIT CERTIFICATIONS TO THE OWNER AND ENGINEER STATING THAT ALL REQUIREMENTS HAVE BEEN MET.

14. TESTING AND INSPECTION TO BE PERFORMED BY A QUALIFIED INDEPENDENT TESTING LABORATORY, UNDER THE SUPERVISION OF A REGISTERED ENGINEER, SPECIALIZING IN SOILS ENGINEERING. PERFORM ALL TESTING NECESSARY AS REQUIRED BY THESE PLANS AND THE VARIOUS PERMITTING AGENCIES. THE CONTRACTOR WILL PAY THE COSTS OF ALL INITIAL TESTING. SHOULD RETESTING BE REQUIRED DUE TO THE FAILURE OF ANY TESTS TO MEET SPECIFICATIONS, THE CONTRACTOR SHALL BEAR ALL COSTS OF SAID RETESTING.

15. ALL UNDERGROUND UTILITIES MUST BE IN PLACE AND PASS ALL TESTING AND INSPECTION REQUIREMENTS PRIOR TO ROAD BASE AND/OR SURFACE IMPROVEMENT CONSTRUCTION.

UTILITY SYSTEM NOTES:

1. CONTRACTOR SHALL NOTIFY ALL PUBLIC AND PRIVATE UTILITY OWNERS AND FLORIDA'S "SUNSHINE ONE-CALL" SYSTEM 48-HRS PRIOR TO STARTING CONSTRUCTION. COST OF REPLACEMENT AND REPAIR OF EXISTING UTILITIES DAMAGED AS A RESULT OF THE CONTRACTOR'S OPERATION SHALL BE CONTRACTOR'S RESPONSIBILITY.

2. WORK IN THE PUBLIC RIGHT-OF-WAY SHALL BE COORDINATED WITH GOVERNING AUTHORITIES. THE CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS AND PAY REQUIRED FEES, AND COMPLY WITH LOCAL, STATE AND FEDERAL REGULATIONS APPLICABLE TO CONSTRUCTION OF THE PROJECT.

3. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MAKING ALL NECESSARY ARRANGEMENTS FOR PERFORMING WORK INVOLVED IN CONNECTION WITH THE DISCONTINUANCE OR INTERRUPTION OF ALL UTILITIES UNDER THE JURISDICTION OF THE UTILITY COMPANIES.

4. EXISTING OUT-OF-SERVICE BURIED UTILITIES ENCOUNTERED WITHIN THE PROPOSED PROJECT SHALL BE REMOVED WHEN WITHIN THE EXCAVATED AREA AND SLURRY FILLED BY THE CONTRACTOR ALONG OTHER AREAS WITHIN THE WORK ZONE. DISPOSITION TO BE AS DIRECTED BY THE UTILITY'S OWNER. NO ABANDONMENT OF UTILITY LINES ARE ALLOWED UNDER BUILDINGS WITHOUT THE PROJECT ENGINEER'S APPROVAL.

5. CONFLICTS BETWEEN UNDERGROUND UTILITIES (I.E. WATER, ELECTRICAL, COMMUNICATIONS, GAS, AND STORM OR SANITARY SEWERS) SHALL BE RESOLVED BY ADJUSTING THE UNDERGROUND UTILITIES AS NECESSARY, AND IS INCLUSIVE IN CONTRACTOR'S COST. GRAVITY SEWERS SHALL NOT BE ADJUSTED WITHOUT PRIOR APPROVAL OF THE ENGINEER AND THE MUNICIPAL AUTHORITY.

6. CONTRACTOR SHALL MAKE EXPLORATORY EXCAVATIONS AT ALL INTERSECTIONS OF PROPOSED WORK WITH EXISTING UTILITIES. THE EXPLORATORY EXCAVATIONS SHALL BE MADE A MINIMUM OF 72-HRS IN ADVANCE OF THE PROPOSED WORK, AND PRIOR TO SHOP DRAWING SUBMITTALS, WHEN APPLICABLE. THE CONTRACTOR SHALL IMMEDIATELY INFORM THE ENGINEER IF THERE IS A CONFLICT. INFORMATION TO BE FURNISHED BY THE CONTRACTOR SHALL INCLUDE: LOCATION, ELEVATION, UTILITY TYPE, MATERIAL AND SIZE.

7. UTILITY APPURTENANCES SHALL MEET THE FOLLOWING REQUIREMENTS: A) BE AESTHETICALLY ACCEPTABLE. B) BE IN COMPLIANCE WITH INDUSTRY AND MANUFACTURER'S STANDARDS. C) BE PLACED IN AREA WITH THE MINIMUM INTERFERENCE TO THE OPERATION AND MAINTENANCE OF THE SITE. D) NOT BE IN CONFLICT WITH OTHER FACILITIES AND AS CLOSE TO THE RIGHT-OF-WAY AS POSSIBLE.

8. CONTRACTOR SHALL PROVIDE FOR THE TEMPORARY SUPPORT AND PROTECTION OF EXISTING UTILITIES WITHIN THE WORK ZONE. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE ADEQUACY OF THESE METHODS (I.E. ALL SHEETING, SHORING, AND BRACING SYSTEMS).

9. THE CONTRACTOR SHALL PROVIDE APPLICABLE TEST RESULTS FOR THE PURPOSE OF CERTIFICATIONS REQUIRED BY THE FDEP OR OTHER GOVERNING AGENCIES HAVING JURISDICTION. TESTING AND CERTIFICATION SHALL INCLUDE BUT ARE NOT LIMITED TO WATER LINE, SANITARY SEWERS, TRENCH BACKFILL AND COMPACTION, PAVING MATERIALS.

10. SANITARY SEWERS AND WATER MAINS SHALL NOT BE PLACED INTO SERVICE UNTIL A CLEARANCE LETTER/CERTIFICATION OF COMPLETION IS RECEIVED FROM FDEP FOR THE PROJECT.

STRIPING AND SIGNAGE NOTES:

1. SIGNING AND PAVEMENT MARKINGS TO BE DONE IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), AND THE FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS.

2. COORDINATE AND PROVIDE FOR THE DISPOSITION AND PER PLAN REMOVAL OF EXISTING SIGNS WITH THE MUNICIPAL AUTHORITY.

3. EXISTING SIGNS THAT ARE TO REMAIN SHALL BE PROTECTED AND REMAIN VISIBLE DURING THE COURSE OF CONSTRUCTION. EXISTING SIGNS WHICH ARE TO BE RELOCATED AND ARE DAMAGED BY THE CONTRACTOR SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER/MUNICIPALITY.

4. CAUTION SHALL BE EXERCISED IN THE INSTALLATION OF POST MOUNTED ROAD SIDE SIGNS IN ORDER TO PREVENT DAMAGE TO BURIED UTILITIES. LOCATIONS SHALL CONFORM TO FDOT STANDARD 700-101.

5. ENGINEER TO BE NOTIFIED WHEN SIGN ASSEMBLY LOCATIONS SHOWN ON THE PLANS ARE IN CONFLICT WITH SIGNALS, LIGHTING, UTILITIES, ETC. LOCATION MAY BE SLIGHTLY ADJUSTED AS DIRECTED BY THE ENGINEER.

6. SIGNS SHALL BE CONSTRUCTED WITH TYPE III B HIGH PERFORMANCE PRISMATIC REFLECTIVE SHEETING, EXCEPT FOR "STOP", "WRONG-WAY", AND "DO-NOT-ENTER" WHICH SHALL BE TYPE VII SHEETING.

7. SIGN POST FOR ANY SINGLE COLUMN SIGNS SHALL BE A MINIMUM OF 3" DIA. CONFORMING TO FDOT STANDARD 700-010-1, AND LISTED IN THE FDOT'S QUALIFIED PRODUCTS LIST (QPL). THE CONTRACTOR SHALL FIELD VERIFY THE LENGTH OF SIGN COLUMN SUPPORTS PRIOR TO FABRICATION.

8. ALL SURFACES SHALL BE CLEANED PRIOR TO THE START OF INSTALLATION OF ALL PAVEMENT MARKINGS.

9. REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL BE ACCOMPLISHED BY A COMBINATION OF SAND AND WATER BLASTING, OR OTHER APPROVED METHOD THAT WILL NOT MATERIALLY DAMAGE THE SURFACE TEXTURE OF THE PAVEMENT, AND WILL FULLY ELIMINATE ANY TRACE OF THE PREVIOUS MARKINGS. METHOD USED MUST RECEIVE PRE-APPROVAL OF THE MUNICIPAL AUTHORITY.

10. PAINTED PAVEMENT MARKINGS SHALL BE INSTALLED ON THE FINAL ASPHALT SURFACE DURING THE INITIAL 30-DAY CURE PERIOD, AND FINAL THERMOPLASTIC PAVEMENT MARKINGS SHALL BE INSTALLED AFTER THE 30-DAY CURING PERIOD. PAINTED PAVEMENT MARKINGS SHALL CONFORM TO FDOT STANDARD 711-001.

11. PLACEMENT OF TURN ARROWS SHALL CONFORM TO FDOT STANDARD 711-001.

12. CROSSWALKS SHALL BE 10-LF WIDE UNLESS OTHERWISE SHOWN ON THE PLANS, AND SHALL CONFORM TO FDOT STANDARD 711-001.

13. ALL PERMANENT STRIPING SHALL BE INSTALLED PRIOR TO RETRO-REFLECTIVE PAVEMENT MARKERS (RPMS) INSTALLATION. PLACEMENT OF RPMS SHALL CONFORM TO FDOT STANDARD 706-001.

14. CONTRACTOR SHALL COORDINATE WITH THE LOCAL PUBLIC TRANSIT AGENCY FOR BUS STOP OR RESPECTIVE SIGNS TO BE REMOVED OR RELOCATED.

DEMOLITION NOTES:

1. PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES AND GRAVITY STORM AND SANITARY SEWER LINES TO DETERMINE THE ACCURACY OF SURVEY INFORMATION REFLECTED ON THESE DRAWINGS. ADDITIONALLY, THE CONTRACTOR SHALL VERIFY THE ELEVATIONS OF ALL CONNECTIONS RELATIVE TO THOSE SHOWN ON THESE DRAWINGS. IF DISCREPANCIES ARE DETERMINED CONTACT THE ENGINEER.

2. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED UTILITIES SHOWN ON THE PLANS.

48 HOURS BEFORE DIGGING
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TOLL FREE
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SUNSHINE STATE ONE CALL CENTER
WWW.CALLSUNSHINE.COM

811
Know what's **below.**
Call before you dig.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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24 HOUR
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HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
GENERAL NOTES

DATE 08/29/2025

REVISIONS



DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C001

CONSTRUCTION ACTIVITIES AND CONTRACTOR RESPONSIBILITIES:

1. THE CONTRACTOR SHALL BECOME FAMILIAR WITH AND ABIDE BY ALL PERMIT CONDITIONS, INSPECTIONS, SCHEDULES, AND OTHER RELEVANT REGULATORY AGENCY RULES AND REGULATIONS.
2. BMPs: SYNTHETIC BALES OR SEDIMENT FILTER LOGS.
3. INLET PROTECTION: PERFORATED PIPE WRAPPED IN FILTER FABRIC (FILTER LOGS).
4. TEMPORARY SLOPE STABILIZATION: CONTRACTOR SHALL PROVIDE FOR THE SAFETY OF TEMPORARY SOIL EMBANKMENT AND SHORING REQUIREMENTS AT NO ADDITIONAL COST TO THE OWNER.
5. POTENTIAL POLLUTANTS DURING CONSTRUCTION: DELETERIOUS, TOXIC, OR CONTAMINATED MATERIAL, IF ENCOUNTERED, IS TO BE STOCKPILED OR REMOVED FROM THE SITE AS DIRECTED BY THE OWNER AND DISPOSED OF IN APPROVED LANDFILL. CONTACT LOCAL EMERGENCY OFFICIALS REPRESENTATIVES IN CASE OF ANY SPILLS OR CONTAMINATION OF A CHEMICAL NATURE (CALL FDEP 407-894-7555) PRIOR TO ANY OTHER ACTION.
6. INSPECTIONS: CONTRACTOR TO INSPECT CONSTRUCTION SITE FOR EROSION PROBLEMS DAILY AND AFTER EACH RAINFALL GREATER THAN 0.5 INCHES WITHIN 24 HRS. CONTRACTOR TO PROVIDE AND MONITOR A RAIN GAUGE ON SITE AND RECORD DAILY RAINFALL AMOUNTS. ANY NECESSARY REMEDIES SHALL BE PERFORMED IMMEDIATELY.
7. PERMANENT STORMWATER MANAGEMENT CONTROLS: RETENTION AND DETENTION/EXFILTRATION SYSTEMS, STORMWATER SEWER SYSTEM, PLUS STORMWATER CONTROL STRUCTURE IS TO PREVENT TRASH FROM GOING TO LAKE COUNTY'S DRAINAGE SYSTEM.
8. DEWATERING: IN GENERAL, WATERS FROM CONTAMINATED AREAS ARE TO BE DISCHARGED TO SANITARY SEWER SYSTEM AND WATERS FROM NON-CONTAMINATED AREAS ARE TO BE DISCHARGED INTO STORM SEWER SYSTEM. THE DEWATERING OPERATION SHALL COMPLY WITH THE REQUIREMENTS OF F.D.E.P., THE NPDES PERMIT, AND THE GEOTECHNICAL REPORT.
9. DEWATERING: DEWATERING ACTIVITIES SHALL NOT RESULT IN THE DISCHARGE OF ANY WATER WITH TURBIDITY GREATER THAN 29 NTUS FROM THE SITE PER SECTION 6.14.01 (H) OF THE ESM.
10. CONTRACTOR SHALL MAKE AN EFFORT TO MINIMIZE THE AREA OF DISTURBANCE AND WILL BE RESPONSIBLE FOR ALL DAMAGES. ALL EXISTING SODDED AREAS DISTURBED DURING THE CONSTRUCTION SHALL BE REPLACED WITH THE SAME TYPE OF SOD IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS WITHIN 7 DAYS OF FINAL GRADING.
11. SURFACE DRAINAGE SHALL BE DIVERTED FROM EXCAVATIONS AND STOCKPILE AREAS SUCH THAT PROPER SITE CONDITIONS ARE MAINTAINED AND EROSION DUE TO RAIN RUN-OFF OR SEEPAGE IS PREVENTED OR MINIMIZED.
12. INLETS AND CATCH BASINS SHALL BE PROTECTED FROM SEDIMENT UNTIL THE COMPLETION OF ALL CONSTRUCTION OPERATIONS. EROSION CONTROL AT ALL INLET DRAINAGE STRUCTURES DURING CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE FLORIDA STORMWATER, EROSION AND SEDIMENTATION CONTROL INSPECTORS HANDBOOK.
13. NO FERTILIZERS, HERBICIDES, OR PESTICIDES ARE TO BE USED ON-SITE WITHOUT PRIOR APPROVAL OF CITY OR COUNTY STAFF.
14. AFTER ALL CONSTRUCTION IS COMPLETE, ALL STRUCTURES AND STORM SEWER PIPES IN THE SYSTEM SHALL BE CLEANED AND TEMPORARY PLUGS IN STRUCTURES SHALL BE REMOVED.
15. ADDITIONAL NOTES: IF NECESSARY, CONTRACTOR SHALL INSTALL TURBIDITY BARRIER, AND USE STREET SWEEPER TO CLEAN ANY OFF-SITE TRACKING OF SOIL. CONTRACTOR IS RESPONSIBLE FOR INSTALLING ANY ADDITIONAL EROSION CONTROL IF IT BECOMES NECESSARY TO MEET STATE AND LOCAL STANDARDS AND TO COMPLY WITH THIS PLAN.
16. WASTE DISPOSAL: ALL WASTE SUCH AS DISCARDED BUILDING MATERIALS, CHEMICALS, LITTER, AND SANITARY WASTE SHALL BE PROPERLY CONTROLLED IN ACCORDANCE WITH ALL APPLICABLE STATE, LOCAL, AND FEDERAL REGULATIONS. THERE SHOULD BE NO DISCHARGE OF SOLID MATERIALS, INCLUDING BUILDING MATERIALS, TO SURFACE WATERS OF THE STATE OR AN MS4.

GENERAL CONSTRUCTION NOTES:

1. ALL CONSTRUCTION SHALL CONFORM TO THESE DRAWINGS AND SPECIFICATIONS.
2. THE CONTRACTOR SHALL PERFORM A "SUNSHINE ONE-CALL" PRIOR TO EXCAVATIONS.
3. THE CONTRACTOR SHALL OBTAIN ALL APPLICABLE PERMITS PRIOR TO CONSTRUCTION AND MAINTAIN COPIES AT THE JOBSITE.
4. THE LOCATION OF ALL EXISTING UTILITIES AND STORM DRAINAGE SHOWN ON THE PLANS IS APPROXIMATE AND HAS BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND IS GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE OWNER/ENGINEER ASSUMES NO RESPONSIBILITY FOR INACCURACY. PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE VARIOUS UTILITIES, FIELD DETERMINE THE EXACT LOCATION OF UTILITIES AND TO MAKE THE NECESSARY ARRANGEMENTS FOR ANY RELOCATION OF THESE UTILITIES WITH THE OWNER OF THE UTILITY IF CONFLICTS EXIST. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN CROSSING UNDERGROUND UTILITY AND ALL EXISTING UTILITIES SHALL BE PROTECTED.
5. THE CONTRACTOR SHALL COORDINATE ALL TREE REMOVALS REQUIRED BY CONSTRUCTION WITH THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL STRIVE TO PROTECT AS MANY TREES AS POSSIBLE DURING CONSTRUCTION OPERATIONS. COORDINATE EFFORTS WITH AREA DEVELOPMENT PLANS.
6. THE CONTRACTOR IS ADVISED TO BRING ANY LAYOUT DISCREPANCIES TO THE IMMEDIATE ATTENTION OF THE OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
7. ALL PAVEMENT MARKINGS SHALL CONFORM TO THE LATEST M.U.T.C.D. AND F.D.O.T. SPECIFICATIONS.
8. COORDINATE WITH LOCAL EMERGENCY SERVICES AND PROVIDE EMERGENCY ACCESS CORRIDOR THROUGHOUT CONSTRUCTION.
9. CONTACT LOCAL ENVIRONMENTAL COMPLIANCE OFFICIAL FOR APPROVAL OF EROSION CONTROL MEASURES 24 HOURS PRIOR TO BEGINNING GRADE WORK.
10. MATERIALS INTERFERING WITH CONSTRUCTION SHALL BE DISPOSED OF AS DIRECTED BY THE OWNER.
11. ALL EXCESS DIRT, CLEARING DEBRIS, UNSUITABLE MATERIALS AND EXISTING ROADWAY MATERIAL RESULTING FROM CONSTRUCTION ACTIVITIES SHALL BE HAULED OFF IN A LEGAL MANNER.
12. THE CONTRACTOR SHALL PROVIDE A LEVEL GROUND SURFACE AREA ACCESSIBLE TO THE HAUL ROADS AND CONSTRUCTION ENTRANCE FOR MATERIAL LAY-DOWN AND CONSTRUCTION STAGING. THE AREA SHALL BE DELINEATED WITH SAFETY FENCING AND SILT FENCE SHALL BE INSTALLED ALONG THE DOWNHILL BOUNDARY.
13. EXISTING TOPOGRAPHY AND ROADWAY DATA SHOWN ARE BASED UPON TOPOGRAPHIC SURVEYS BY:

    ATWELL, LLC
    2600 MAITLAND CENTER PKWY,STE 262
    MAITLAND, FL 32751
    PHONE: (407) 775-6500
    CONTACT: DALTON R. CROSS

14. CONTRACTOR SHALL CONFINE HIS OFF-SITE ACTIVITIES TO LIMITS OF CONSTRUCTION AS DEPICTED ON THE DEMOLITION PLAN (PROPOSED BY ATWELL LLC.).
15. ANY PUBLIC LAND CORNER WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED. IF A CORNER MONUMENT IS IN DANGER OF BEING DESTROYED AND HAS NOT BEEN PROPERLY REFERENCED, THE CONTRACTOR SHALL NOTIFY THE OWNERS REPRESENTATIVE WITHOUT DELAY.
16. SOILS DATA GEOTECHNICAL REPORT PREPARED BY UES PROFESSIONAL SOLUTIONS, LLC.
17. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL THE REQUIRED CONSTRUCTION PERMITS HAVE BEEN OBTAINED PRIOR TO COMMENCING WORK.
18. ALL REFERENCES TO PROPOSED CONSTRUCTION INDICATES CONSTRUCTION INCLUDED IN THIS CONTRACT.

EROSION AND SEDIMENTATION CONTROL NOTES:

1. THE CONTRACTOR MUST IMPLEMENT AND MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES REQUIRED TO RETAIN SEDIMENT ON-SITE AND TO PREVENT VIOLATIONS OF THE WATER QUALITY CRITERIA AND STANDARDS IN CHAPTERS 62-4, 62-302, F.A.C. ALL EROSION/SEDIMENT CONTROL PRACTICES MUST BE IN ACCORDANCE WITH THE GUIDELINES AND SPECIFICATIONS IN SECTION 6 OF THE FLORIDA LAND DEVELOPMENT MANUAL: A GUIDE TO SOUND LAND AND WATER MANAGEMENT (FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION 1988), AS WELL AS THE FLORIDA STORMWATER, EROSION AND SEDIMENTATION CONTROL INSPECTORS HANDBOOK, UNLESS A PROJECT-SPECIFIC EROSION AND SEDIMENT CONTROL PLAN IS APPROVED BY THE WATER MANAGEMENT DISTRICT IN WHICH CASE THE PRACTICES MUST BE IN ACCORDANCE WITH THE PLAN. IF SITE SPECIFIC CONDITIONS REQUIRE ADDITIONAL MEASURES DURING ANY PHASE OF CONSTRUCTION OR OPERATION TO PREVENT EROSION OR CONTROL SEDIMENT, THE CONTRACTOR MUST IMPLEMENT THE NECESSARY ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES.
2. STABILIZATION MEASURES SHALL BE INITIATED FOR EROSION AND SEDIMENT CONTROL ON DISTURBED AREAS AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN 14-DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.
3. THE LOCATION AND TYPE OF THE EROSION CONTROL MEASURES SHOWN ON THESE DRAWINGS ARE PROVIDED FOR GENERAL GUIDANCE TO THE CONTRACTOR. THE METHODS AND SEQUENCING OF CONSTRUCTION EMPLOYED BY THE CONTRACTOR MAY REQUIRE MORE OR LESS EROSION CONTROL MEASURES THAN THAT DEPICTED TO MAINTAIN ADEQUATE EROSION AND SEDIMENT CONTROL FOR THE CONSTRUCTION ACTIVITIES.
4. EROSION/TURBIDITY BARRIERS MUST BE INSTALLED AT ALL LOCATIONS WHERE THE POSSIBILITY OF TRANSFERRING SEDIMENT OR SUSPENDED SOLIDS TO ADJACENT PROPERTIES, JURISDICTIONAL WETLANDS AND/OR RECEIVING WATERBODIES EXISTS DUE TO THE PROPOSED WORK. TURBIDITY BARRIERS MUST REMAIN IN PLACE AT ALL LOCATIONS UNTIL CONSTRUCTION IS COMPLETED AND SOILS ARE STABILIZED AND VEGETATION HAS BEEN ESTABLISHED. THEREAFTER THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REMOVAL OF THE BARRIERS. THE CONTRACTOR SHALL MAINTAIN THE EROSION/TURBIDITY CONTROL BARRIERS DAILY. THE CONTRACTOR IS TOTALLY RESPONSIBLE FOR PROVIDING THE NECESSARY EROSION/TURBIDITY CONTROL FOR THIS PROJECT. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY PENALTIES IMPOSED BY THE PERMITTING AGENCIES FOR ANY EROSION, SHOALING, OR WATER QUALITY PROBLEMS RESULTANT TO CONSTRUCTION ACTIVITIES.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CORRECTION OF ANY EROSION, SEDIMENTATION, SHOALING OR WATER QUALITY PROBLEMS THAT RESULT FROM THE CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL USE APPROPRIATE BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROL AS DESCRIBED IN THE FLORIDA LAND DEVELOPMENT MANUAL, A GUIDE TO SOUND LAND AND WATER MANAGEMENT (DEP, 1988) AND/OR ACCORDING TO FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS FOR EROSION CONTROL APPLICATIONS AND ACCORDING TO THE FLORIDA STORMWATER, EROSION AND SEDIMENTATION CONTROL INSPECTORS HANDBOOK.
6. MEASURES SHALL BE TAKEN BY THE CONTRACTOR TO INSURE THAT SEDIMENTATION AND/OR TURBIDITY PROBLEMS ARE NOT CREATED IN THE RECEIVING WATER.
7. PRIOR TO BEGINNING THE CLEARING AND GRUBBING OF THE SITE, SYNTHETIC BALES SHALL BE STAKED TO THE GROUND ALONG THE PROPERTY LINE AT LOW AREAS IN ADDITION TO THE PERIMETER SILT FENCE TO PREVENT STORMWATER FROM WASHING ERODED SOIL FROM THE SITE.
8. THE SITE SHALL BE GRADED SUCH THAT ALL STORMWATER WILL BE DIRECTED INTO THE ON-SITE STORMWATER SYSTEM. SYNTHETIC BALES SHALL BE STAKED IN LOCATIONS WHERE WATER ENTERS THE SYSTEM TO FILTER OUT THE ERODED SOILS AND CONSTRUCTION FINES. CONTRACTOR SHALL MAKE PROVISIONS TO AVOID TRACKING DIRT AND CONSTRUCTION DEBRIS TO THE ROADWAY VIA TRUCK AND EQUIPMENT TIRES.
9. SILT FENCE SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH LAKE COUNTY, AND FDOT STANDARDS AND SPECIFICATIONS, AND THE CONTRACT DRAWINGS.
10. CONTRACTOR SHALL REPLACE CLOGGED SECTIONS OF SILT FENCES AND PERFORATED PIPE WITH FABRIC SOCK AS NECESSARY TO MAINTAIN WATER PASSAGE.
11. CONTRACTOR SHALL PROVIDE SEDIMENT CONTROL DURING INSTALLATION OF NEW CURBING AND DRIVEWAYS AS APPROVED BY THE ENGINEER.
12. CONTRACTOR SHALL TAKE CARE TO KEEP EXPOSED AREAS TO A MINIMUM POSSIBLE TIME DURING CONSTRUCTION.
13. ON-SITE CONTROL MEASURES SHALL BE APPLIED TO REDUCE EROSION AS SHOWN ON THE PLANS, DETAIL SHEETS AND IN ACCORDANCE WITH FDOT, FDEP AND THE LAKE COUNTY REGULATIONS FOR EROSION CONTROL MEASURES. STOCKPILING AND STORAGE OF MATERIALS SHOULD NOT BE LOCATED IN A MANNER TO IMPEDE FLOW OR CAUSE MATERIALS TO BE ERODED BY STORMWATER RUNOFF.
14. ALL TEMPORARY SEDIMENTATION CONTROL STRUCTURES AND MEASURES TO BE USED DURING CONSTRUCTION SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION ACTIVITY AND SHALL BE MAINTAINED IN AN EFFECTIVE CONDITION UNTIL SUCH TIME AS THE COMPLETION OF THE PERMANENT SYSTEM OR OTHER EROSION CONTROL MEASURES CAN ASSURE ADEQUATE EROSION AND SEDIMENT CONTROL.
15. CONTRACTOR TO INSPECT EROSION/SEDIMENT CONTROL DEVICES DAILY AND WITHIN 24 HOURS OF EACH 0.5 INCH OR GREATER RAINFALL EVENT FOR EFFECTIVENESS. ANY NECESSARY REMEDIES SHALL BE PERFORMED IMMEDIATELY.
16. NO EXCAVATING MATERIAL SHALL BE STOCKPILED IN A MANNER AS TO DIRECT RUNOFF DIRECTLY OFF THE PROJECT SITE OR INTO ANY ADJACENT WATER BODY OR STORMWATER COLLECTION FACILITY.
17. ALL EXCESS FILL MATERIAL WILL BE HAULED OFFSITE.

DEVELOPER CONTACT INFORMATION
TURNSTONE GROUP
1170 PEACHTREE STREET
SUITE 1150
ATLANTA, GA 30309
PHONE: (630) 816-7002
CONTACT: JASON HUMM
JHUMM@TURNSTONEGROUP.COM

STORMWATER POLLUTION PREVENTION PLAN NOTES:

LOCATION: THE 243.3± ACRE SITE IS LOCATED WITHIN THE LIMITS OF THE TOWN OF HOWEY-IN-THE-HILLS, IN LAKE COUNTY, FLORIDA.

LIMITS OF CONSTRUCTION: 183.5± ACRES WILL BE DISTURBED DURING CONSTRUCTION. 0.45± ACRES OF THE WETLAND WILL BE IMPACTED, 0.29± ACRES OF SECONDARY IMPACT AND THE REMAINDER 59.29± ACRES TO BE PRESERVED AND NOT DISTURBED.

CONSTRUCTION ACTIVITIES: CLEARING AND GRUBBING OF EXISTING SITE; GRADING OPERATIONS; CONSTRUCTION OF PONDS AND ASSOCIATED SITE WORK.

SOIL TYPES: REFER TO THE GEOTECHNICAL REPORT PREPARED BY UES PROFESSIONAL SOLUTIONS, LLC, DATED NOVEMBER 18, 2024 FOR ON-SITE SOIL CLASSIFICATIONS.

GENERAL CONSTRUCTION SEQUENCE:
1. INSTALL SILT FENCE AROUND PERIMETER OF SITE, EXISTING PONDS, AND WETLANDS. PROVIDE MINIMUM SITE DEMOLITION REQUIRED TO INSTALL SILT FENCE. INSTALL TEMPORARY INLET PROTECTION AS REQUIRED.
2. GENERAL SITE CLEARING AND GRUBBING, AND DEMOLITION.
3. ROUGH GRADE SITE.
4. INSTALL UNDERGROUND UTILITIES.
5. CONSTRUCT PROPOSED ABOVE GROUND INFRASTRUCTURE PER THE SITE PLAN.
6. INSTALL LANDSCAPING.
7. REMOVE TEMPORARY PROTECTION SYSTEMS.

STORMWATER DISCHARGE: STORMWATER WILL DISCHARGE INTO TWELVE (12) PROPOSED PONDS WHICH WILL OUTFALL TO THE PRESERVED WETLANDS ADJACENT TO THE PROPERTY. THE PROJECT SITE DO NOT HAVE EXISTING PONDS OR EXISTING INLETS.

ENGINEER CERTIFICATION

I CERTIFY THAT I PREPARED THE SWPPP FOR THE REFERENCED SITE. TO THE BEST OF MY KNOWLEDGE, THE SWPPP MEETS THE INTENT AND REQUIREMENTS OF THE NPDES GENERAL PERMIT NO. FLR100000, AND IS IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS WHICH GOVERN THE DISCHARGES FROM CONSTRUCTION SITES.

SIGNATURE _____ DATE _____

NAME AND TITLE _____

ATWELL, LLC.
COMPANY

111 N MAGNOLIA AVE, SUITE 1350, ORLANDO, FL 32801
ADDRESS

CONTRACTOR CERTIFICATION

"I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND THE TERMS AND CONDITIONS OF THE GENERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT THAT AUTHORIZES THE STORM WATER DISCHARGES ASSOCIATED WITH THE INDUSTRIAL ACTIVITY FROM THE CONSTRUCTION SITE IDENTIFIED AS A PART OF THIS CERTIFICATION."

SIGNATURE _____ DATE _____

PROJECT MANAGER _____

NAME AND TITLE _____

COMPANY _____

ADDRESS (CONTRACTING FIRM) _____

ADDRESS (CONSTRUCTION SITE) _____

TELEPHONE: _____
AREA CODE NUMBER

ABBREVIATIONS:

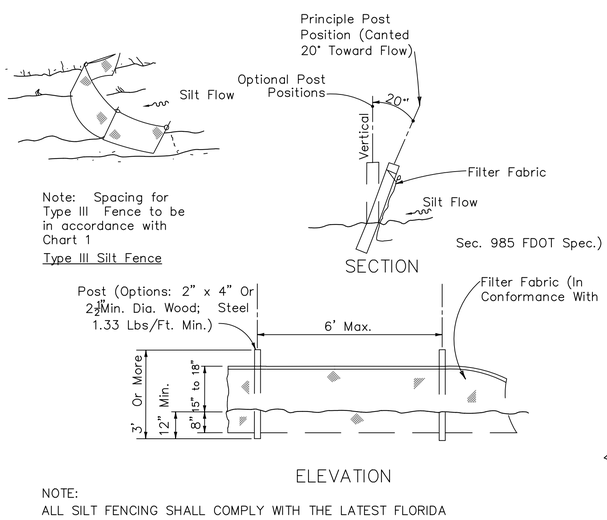
FDOT - FLORIDA DEPARTMENT OF TRANSPORTATION

A.D.A. - AMERICAN DISABILITY ACT

HDPE - HIGH DENSITY POLYETHYLENE PIPE

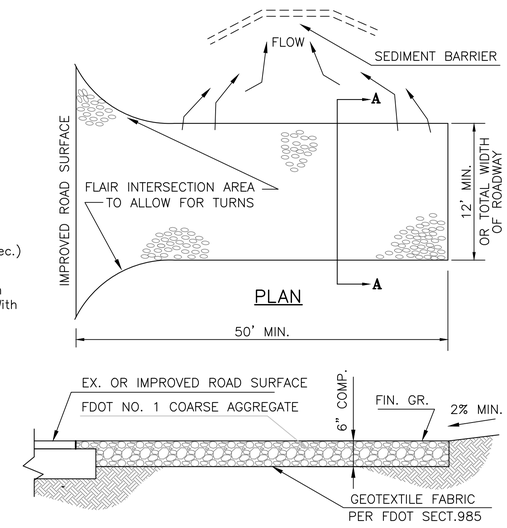
FDEP - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

FOR STANDARD ABBREVIATIONS REFER TO THE FDOT STANDARD INDEX ABBREV, UNLESS OTHERWISE NOTED ON PLANS.



TYPE III SILT FENCE

SCALE: NTS



ROCK CONSTRUCTION ENTRANCE

SCALE: NTS

ATWELL
866.850.4200 www.atwell-group.com
111 N. MAGNOLIA AVENUE, SUITE 1350
ORLANDO, FL 32801
4077-1-324
COA# 29091

SEC 27,34 TWP 20 S RGE 25 E | -- | HOWEY-IN-THE-HILLS | LAKE COUNTY , FLORIDA

MISSION RISE

TURNSTONE GROUP

PHASE 1 CONSTRUCTION PLANS
SWPPP NOTES AND DETAILS

DATE 08/29/2025

REVISIONS

KELVIN ASHLEY CROMWELL LICENSE No. PE95331 STATE OF FLORIDA PROFESSIONAL ENGINEER

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C002

FILE: 0180-C001 GENERAL NOTES PH1

ISSUED FOR CONSTRUCTION

Know what's below. Call before you dig.
THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.
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24 HOUR EMERGENCY CONTACT

FILE: \\ATLORL\Projects\23000180 Mission Rise 00 and PSP\DWG\Plan Set\Construction\Plans \\ATLORL-C001 GENERAL NOTES PH1.dwg LAST SAVED BY: cpena 8/28/2025 2:04 PM PLOTTED BY: Zophie Ortiz-Rosado 8/28/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG TO PDF.PC3 PLOT STYLE: ATWELL.CTB

DEMOLITION AND UTILITY ADJUSTMENT NOTES:

1. DEMO LIMITS REPRESENT EXPECTED AREA OF DEMOLITION. ANY ROADWAYS, GUTTERS, CURBS, DRIVEWAYS, OR SIDEWALKS LOCATED WITHIN THESE LIMITS MAY NEED TO BE REMOVED DURING THE INSTALLATION OF THE STORM SEWER SYSTEM. THE CONTRACTOR SHALL ATTEMPT TO REDUCE THE REQUIRED DEMO AREA AND AVOID REMOVAL OF CURBS, SIDEWALKS, AND DRIVEWAYS WHEN POSSIBLE.
2. ALL EXISTING UTILITIES ARE TO BE PROTECTED AND REMAIN IN SERVICE UNLESS SPECIFICALLY INDICATED IN THE CONSTRUCTION DOCUMENTS.
3. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING ANY PLAN DISCREPANCIES OR FIELD CONFLICTS AND NOTIFYING THE ENGINEER OF RECORD IMMEDIATELY UPON DISCOVERY OF SUCH DISCREPENCY OR CONFLICT AND PRIOR TO PROCEEDING.
4. SEE COVER SHEET FOR UTILITY PROVIDER CONTACT INFORMATION. CONTRACTOR SHALL COORDINATE ALL UTILITY RELOCATIONS, ADJUSTMENTS, OR REMOVALS WITH UTILITY COMPANY.
5. ALL DISTURBED SURFACE AREAS SHALL BE RESTORED TO EXISTING OR IMPROVED CONDITIONS.
6. THE ACTUAL DEPTH AND LOCATION OF EXISTING UTILITIES ARE SHOWN PER THE BEST AVAILABLE INFORMATION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE LOCATION AND CROSSINGS OF EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION.
7. CONTRACTOR SHALL PROVIDE ADVANCE NOTIFICATION TO RESPECTIVE UTILITY COMPANY AND COORDINATE ACTIVITIES WITHIN THE PROJECT SITE. NO UTILITY ADJUSTMENTS OR RELOCATIONS SHALL OCCUR WITHOUT THE CONTRACTOR RECEIVING APPROVAL FROM THE UTILITY OWNER.
8. NO UTILITY ADJUSTMENTS, RELOCATIONS, OR MODIFICATIONS SHALL BE PERFORMED OUTSIDE THE RIGHT OF WAY WITHOUT WRITTEN APPROVAL FROM THE RESPECTIVE PROPERTY OWNER. ALL INDIVIDUAL SERVICES SHALL BE MAINTAINED AT ALL TIMES.
9. EXISTING UTILITY SERVICES SHALL BE MAINTAINED AT ALL TIMES. CONTRACTOR SHALL EMPLOY TEMPORARY FACILITIES AND CONTROLS AS LONG AS NEEDED FOR THE SAFE AND PROPER COMPLETION OF THE WORK. REMOVE ALL SUCH TEMPORARY FACILITIES AND CONTROLS AS RAPIDLY AS PROGRESS OF THE WORK WILL PERMIT, OR AS DIRECTED BY THE OWNER.
10. REFER TO THE SITE PLAN SHEETS FOR ADDITIONAL INFORMATION.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ACCURATE AS-BUILT SURVEY INFORMATION DURING CONSTRUCTION OF ALL UTILITY ADJUSTMENTS, RELOCATIONS, REMOVALS, AND INSTALLATIONS. THE CONTRACTOR SHALL PROVIDE A DETAILED AS-BUILT CERTIFIED BY A PROFESSIONAL SURVEYOR, MEETING ALL CITY, COUNTY, WATER MANAGEMENT DISTRICT, FDEP, AND UTILITY PROVIDER REQUIREMENTS, TO THE ENGINEER OF RECORD.
12. LENGTH OF WATER MAIN TO BE ADJUSTED SHALL BE DETERMINED AFTER HORIZONTAL AND VERTICAL LOCATION OF EXISTING WATER MAIN IS VERIFIED BY CONTRACTOR.
13. INSTALLATION OF SILT FENCE AT FLOOD HAZARD LINE SHALL MEET THE REQUIREMENTS OF THE GOVERNING AGENCIES.

DEFINITIONS:

1. REMOVE: DETACH ITEM FROM EXISTING CONSTRUCTION AND LEGALLY DISPOSE OF OFF-SITE UNLESS INDICATED TO BE SALVAGED OR RECYCLED. COORDINATE WITH THE UTILITY REPRESENTATIVES FOR THE DISPOSITION OF ITEMS OWNED BY THE UTILITY COMPANIES. OFF-SITE DISPOSAL IS THE RESPONSIBILITY OF THE CONTRACTOR.
2. SALVAGE: DETACH ITEM FROM EXISTING CONSTRUCTION, PROTECT FROM DAMAGE AND DELIVER TO OWNER READY FOR REUSE. COORDINATE DELIVERY LOCATION WITH OWNER AND PROVIDE DELIVERY.
3. REMAIN: EXISTING ITEMS OF CONSTRUCTION THAT ARE NOT TO BE RAZED AND THAT ARE NOT OTHERWISE INDICATED TO BE REMOVED OR SALVAGED. PROVIDE TEMPORARY PROTECTION DURING THE CONSTRUCTION PERIOD. PROVIDE ADJUSTMENTS AS REQUIRED BY PLANS.
4. REFURBISH: RENOVATE EXISTING STRUCTURE/APPURTENANCE TO CURRENT SPECIFICATIONS. PROTECT DURING CONSTRUCTION.
5. TO BE TAKEN OUT OF SERVICE: ABANDONMENT IN PLACE OF UTILITY LINES ALONG UNEXCAVATED AREAS PER RESPECTIVE UTILITY COMPANY REQUIREMENTS. SEE "CONCRETE GROUT FILLING OF EXISTING LINES DETAIL" ON DETAIL SHEET.
6. REPLACE: STRUCTURE OR PIPE TO BE REMOVED AND SIMILAR PRODUCT TO BE INSTALLED AS INDICATED IN THE CONSTRUCTION DOCUMENTS.
7. ADJUST: EXISTING ITEM OF CONSTRUCTION TO BE MOVED OR REPLACED AS NEEDED TO AVOID CONFLICT WITH PROPOSED CONSTRUCTION. COORDINATE WITH OWNER OF THE UTILITIES.

NOTES:

VERTICAL DATUM NAVD 1988

LEGEND

- PROPERTY BOUNDARY
- TO BE DEMOLISHED
- SINGLE ROW SILT FENCE
- DOUBLE ROW SILT FENCE
- FEMA FLOOD LINE
- WETLAND PRESERVATION AREA
- SECONDARY WETLAND IMPACT AREA
- WETLAND IMPACT AREA
- FEMA ZONE "AE" AND ZONE "A"
- FEMA ZONE "X" SHADED

WETLANDS SUMMARY:

IMPACT AREA:	± 0.45 AC
SECONDARY IMPACT AREA:	± 0.29 AC
PRESERVATION AREA:	± 58.90 AC

811
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ORLANDO, FL 32801
407.774.7778
COA# 29091

SEC 27,34 TWP 20 S RGE 25 E | -- | HOWEY-IN-THE-HILLS | LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
EXISTING CONDITIONS & DEMO PLAN

DATE 08/29/2025

REVISIONS



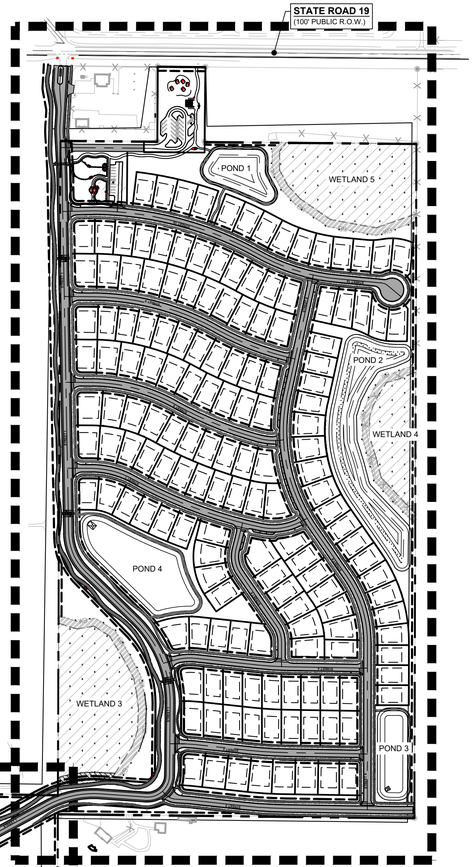
0 125' 250'

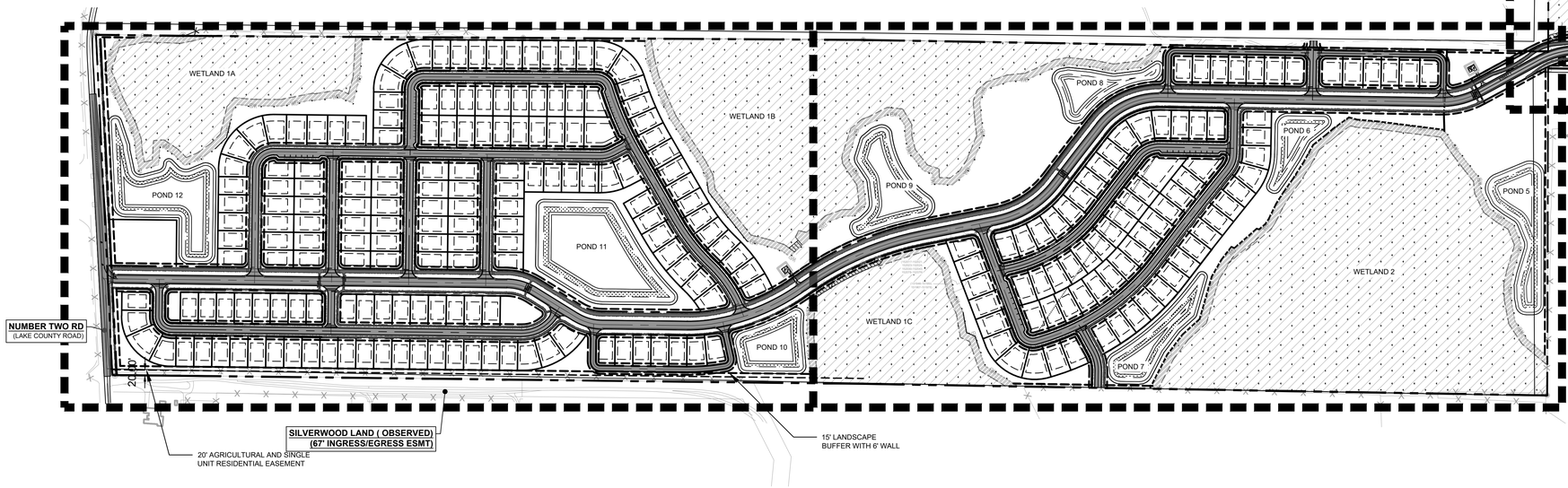
DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C100

FILE: 0180-C100 EXISTING CONDITIONS PLAN PH1

--ISSUED--FOR--CONSTRUCTION--

FILE NAME: \\ATLWIN\Projects\23000180 Mission Rise 80 and 95\PSP\DWG\Plan Set\Construction\Phase 1\0180-C100 EXISTING CONDITIONS PLAN PH1.dwg LAST SAVED BY: zoefernandes 8/29/2025 11:24 AM PLOTTED BY: Zoefer Ovin-Rosado 8/29/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG TO PDF.PC3 PLOT STYLE: ATWELL.CTB





LEGEND

- CONSTRUCTION LIMITS LINE
- RIGHT OF WAY LINE
- STREET CENTER LINE
- DRAINAGE EASEMENT LINE
- PLANS MATCH LINE
- PROPOSED CONCRETE PAVEMENT
- PROPOSED CONCRETE SIDEWALK

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24 HOUR
EMERGENCY CONTACT

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ORLANDO, FL 32801
4TH FL 3538
COA# 29091

SEC 27,34 TWP 20 S RGE 25 E

--

HOWEY-IN-THE-HILLS

LAKE COUNTY , FLORIDA

MISSION RISE

TURNSTONE GROUP

PHASE 1 CONSTRUCTION PLANS

OVERALL PUD PLAN

DATE 08/29/2025

REVISIONS

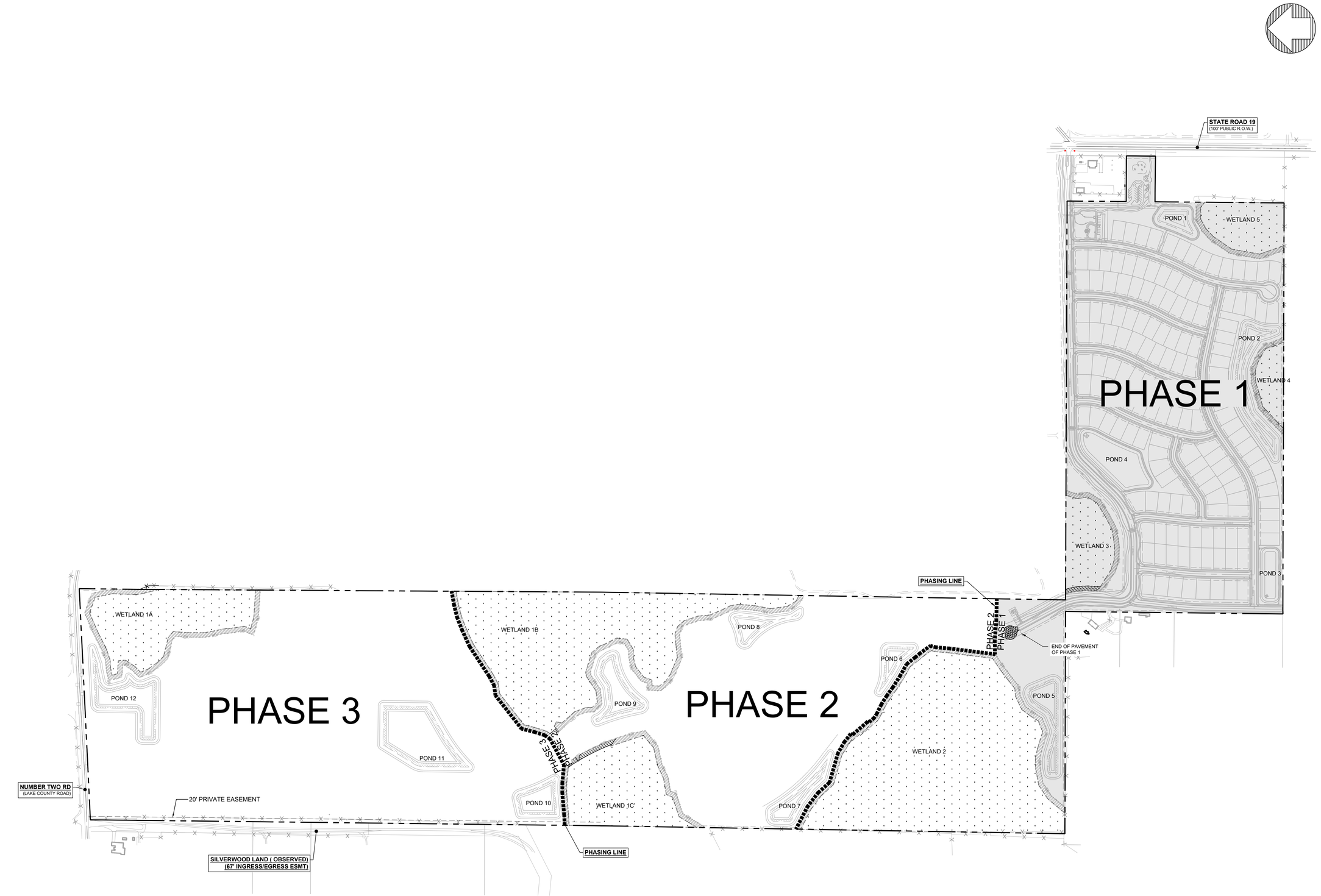
KATLYN ASHLEY CROWELL
LICENSE
No. PE96331
STATE OF FLORIDA
PROFESSIONAL ENGINEER

0 125' 250'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C101

ISSUED FOR CONSTRUCTION

FILE NAME: \\ATLANTA\Projects\23000180 Mission Rise DD and PUD\DWG\Plan Set\Construction\Phase 1\01-00-C102 OVERALL PD PLAN.dwg LAST SAVED BY: apenas 8/29/2025 2:21 PM PLOTTED BY: Zayda Ortiz-Rosado 8/29/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG TO PDF.PC3 PLOT STYLE: ATWELL.CTB



PSPXX-XXXX

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407.774.3159
COA# 29091

SEC 27,34 TWP 20 S RGE 25 E
--
HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PRELIMINARY SUBDIVISION PLAT
PHASING PLAN

DATE 02/27/2025

REVISIONS

KELVIN ASHLEY CROMEER
LICENSED
No. PE95331
STATE OF FLORIDA
PROFESSIONAL ENGINEER

0 125' 250'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C102

FILE: (1)DOCUMENTS\PHASING PLAN

--- ISSUED FOR CONSTRUCTION ---

FILE NAME: \\VLOWFL\Projects\23000180 Mission Rise PD and PSP\DWG\Plan Set\Construction\Phase 1\C102-C104 PHASING PLAN.dwg LAST SAVED BY: apenna 8/25/2025 2:23 PM PLOTTED BY: Zuleyka Ortiz-Rosado 8/28/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG TO PDF.PC3 PLOT STYLE: ATWELL.CTB

SITE INFORMATION

PARCEL ID: 02-21-25-0002-000-04800
34-20-25-0001-000-00100
34-20-25-0004-000-01003
27-20-25-0004-000-01200

TOTAL PROJECT AREA: 240.56 AC
PHASE 1 PROJECT AREA: 99.84 AC

NUMBER OF LOTS: 157 TOTAL
120 UNITS - 8,400 SQ.FT. (76%)
37 UNITS - 9,600 SQ.FT. (24%)

UNIT TYPE: SINGLE FAMILY - DETACHED

LOT COVERAGE: 55% IMPERVIOUS LOT COVERAGE

RESIDENTIAL DENSITY (DU/A): 4 DU/ACRE

ZONING CLASSIFICATION

JURISDICTION: HOWEY-IN-THE-HILLS
ZONING: PUD, PLANNED UNIT DEVELOPMENT
FUTURE LAND USE: VMU - VILLAGE MIXED USE
ADJACENT ZONING: PUD (THE RESERVE) - EAST
MDR-1 - EAST
AG - WEST

FLOODPLAIN: LOCATED IN FEMA FLOOD ZONE A AND AE PER
MAP NO. 12069C0485E, EFF. DATE 12/18/2012

ZONE AE 100 YR-24 HR FLOOD ELEV = 83.6 (ESTABLISHED)

SERVICES / UTILITY PROVIDER

WATER	TOWN OF HOWEY-IN-THE-HILLS
SANITARY SEWER	CENTRAL LAKE CDD
ELECTRIC	SECO
STORMWATER MANAGEMENT	SJRWMD

BUILDING SETBACKS AND BUFFERS

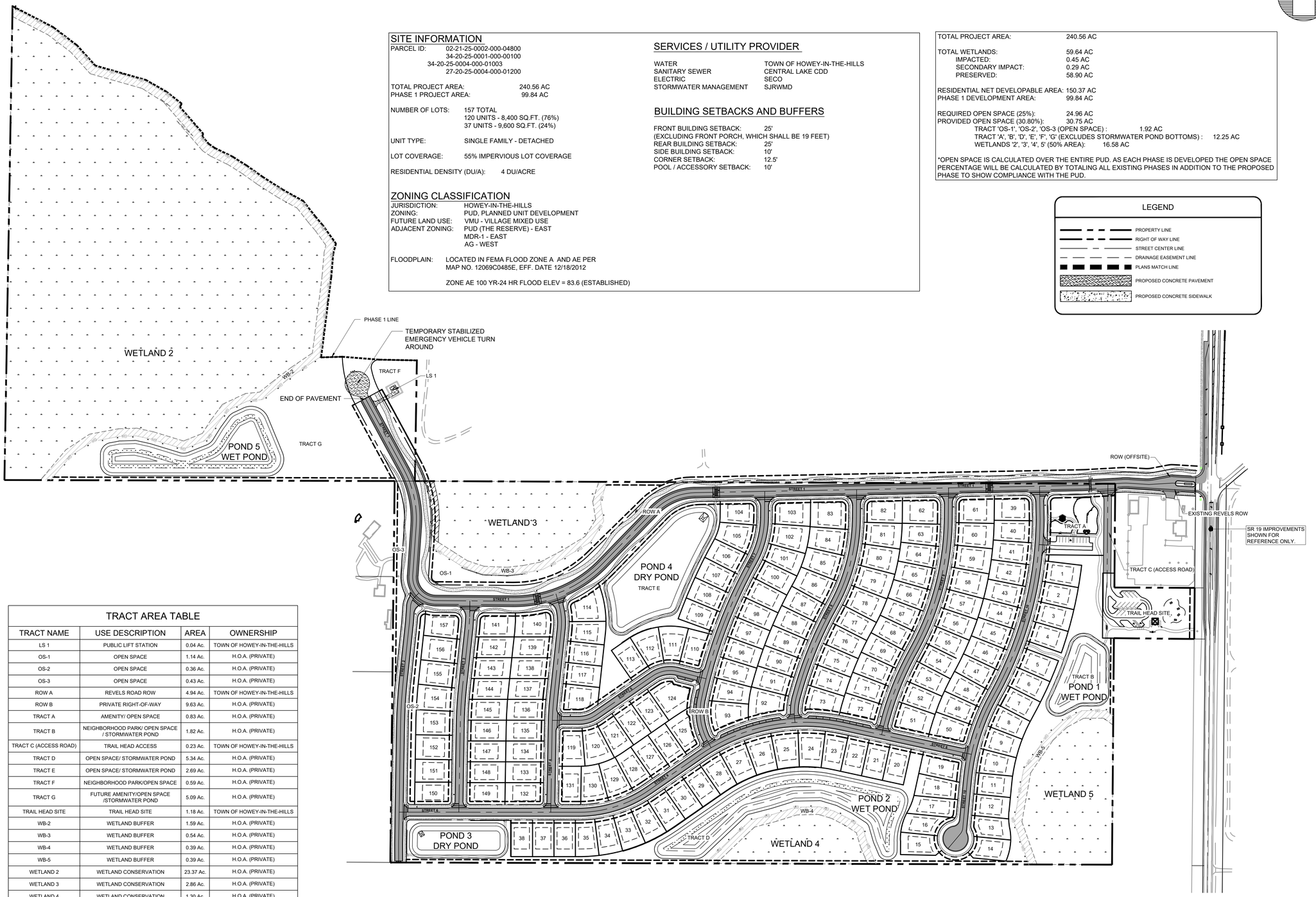
FRONT BUILDING SETBACK: 25'
(EXCLUDING FRONT PORCH, WHICH SHALL BE 19 FEET)
REAR BUILDING SETBACK: 25'
SIDE BUILDING SETBACK: 10'
CORNER SETBACK: 12.5'
POOL / ACCESSORY SETBACK: 10'

TOTAL PROJECT AREA:	240.56 AC
TOTAL WETLANDS:	59.64 AC
IMPACTED:	0.45 AC
SECONDARY IMPACT:	0.29 AC
PRESERVED:	58.90 AC
RESIDENTIAL NET DEVELOPABLE AREA:	150.37 AC
PHASE 1 DEVELOPMENT AREA:	99.84 AC
REQUIRED OPEN SPACE (25%):	24.96 AC
PROVIDED OPEN SPACE (30.80%):	30.75 AC
TRACT 'OS-1', 'OS-2', 'OS-3 (OPEN SPACE) :	1.92 AC
TRACT 'A', 'B', 'D', 'E', 'F', 'G' (EXCLUDES STORMWATER POND BOTTOMS) :	12.25 AC
WETLANDS '2', '3', '4', 5' (50% AREA):	16.58 AC

*OPEN SPACE IS CALCULATED OVER THE ENTIRE PUD. AS EACH PHASE IS DEVELOPED THE OPEN SPACE PERCENTAGE WILL BE CALCULATED BY TOTALING ALL EXISTING PHASES IN ADDITION TO THE PROPOSED PHASE TO SHOW COMPLIANCE WITH THE PUD.

LEGEND

- PROPERTY LINE
- RIGHT OF WAY LINE
- STREET CENTER LINE
- DRAINAGE EASEMENT LINE
- PLANS MATCH LINE
- PROPOSED CONCRETE PAVEMENT
- PROPOSED CONCRETE SIDEWALK



TRACT AREA TABLE

TRACT NAME	USE DESCRIPTION	AREA	OWNERSHIP
LS 1	PUBLIC LIFT STATION	0.04 Ac.	TOWN OF HOWEY-IN-THE-HILLS
OS-1	OPEN SPACE	1.14 Ac.	H.O.A. (PRIVATE)
OS-2	OPEN SPACE	0.36 Ac.	H.O.A. (PRIVATE)
OS-3	OPEN SPACE	0.43 Ac.	H.O.A. (PRIVATE)
ROW A	REVELS ROAD ROW	4.94 Ac.	TOWN OF HOWEY-IN-THE-HILLS
ROW B	PRIVATE RIGHT-OF-WAY	9.63 Ac.	H.O.A. (PRIVATE)
TRACT A	AMENITY/ OPEN SPACE	0.83 Ac.	H.O.A. (PRIVATE)
TRACT B	NEIGHBORHOOD PARK/ OPEN SPACE / STORMWATER POND	1.82 Ac.	H.O.A. (PRIVATE)
TRACT C (ACCESS ROAD)	TRAIL HEAD ACCESS	0.23 Ac.	TOWN OF HOWEY-IN-THE-HILLS
TRACT D	OPEN SPACE/ STORMWATER POND	5.34 Ac.	H.O.A. (PRIVATE)
TRACT E	OPEN SPACE/ STORMWATER POND	2.69 Ac.	H.O.A. (PRIVATE)
TRACT F	NEIGHBORHOOD PARK/OPEN SPACE	0.59 Ac.	H.O.A. (PRIVATE)
TRACT G	FUTURE AMENITY/OPEN SPACE /STORMWATER POND	5.09 Ac.	H.O.A. (PRIVATE)
TRAIL HEAD SITE	TRAIL HEAD SITE	1.18 Ac.	TOWN OF HOWEY-IN-THE-HILLS
WB-2	WETLAND BUFFER	1.59 Ac.	H.O.A. (PRIVATE)
WB-3	WETLAND BUFFER	0.54 Ac.	H.O.A. (PRIVATE)
WB-4	WETLAND BUFFER	0.39 Ac.	H.O.A. (PRIVATE)
WB-5	WETLAND BUFFER	0.39 Ac.	H.O.A. (PRIVATE)
WETLAND 2	WETLAND CONSERVATION	23.37 Ac.	H.O.A. (PRIVATE)
WETLAND 3	WETLAND CONSERVATION	2.86 Ac.	H.O.A. (PRIVATE)
WETLAND 4	WETLAND CONSERVATION	1.30 Ac.	H.O.A. (PRIVATE)
WETLAND 5	WETLAND CONSERVATION	2.71 Ac.	H.O.A. (PRIVATE)

PSPXX-XXXX

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LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PRELIMINARY SUBDIVISION PLAT
OVERALL SITE PLAN

DATE 02/27/2025

REVISIONS

KAITLYN ASHLEY CROWLEY LICENSE No. PE95331 STATE OF FLORIDA PROFESSIONAL ENGINEER

0 75' 150'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C200

FILE NAME: \\ATLORL\Projects\23000180 Mission Rise 80 and 90\PLNG\Plan Set\Construction\Phase 1\c180-c200 OVERALL SITE PLAN.dwg LAST SAVED BY: dgarcia 8/28/2025 1:47 PM PLOTTED BY: Zayda Ortiz-Rosado 8/28/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DRIVE: DWG TO PDF.PC3 PLOT STYLE: ATWELL.CTB

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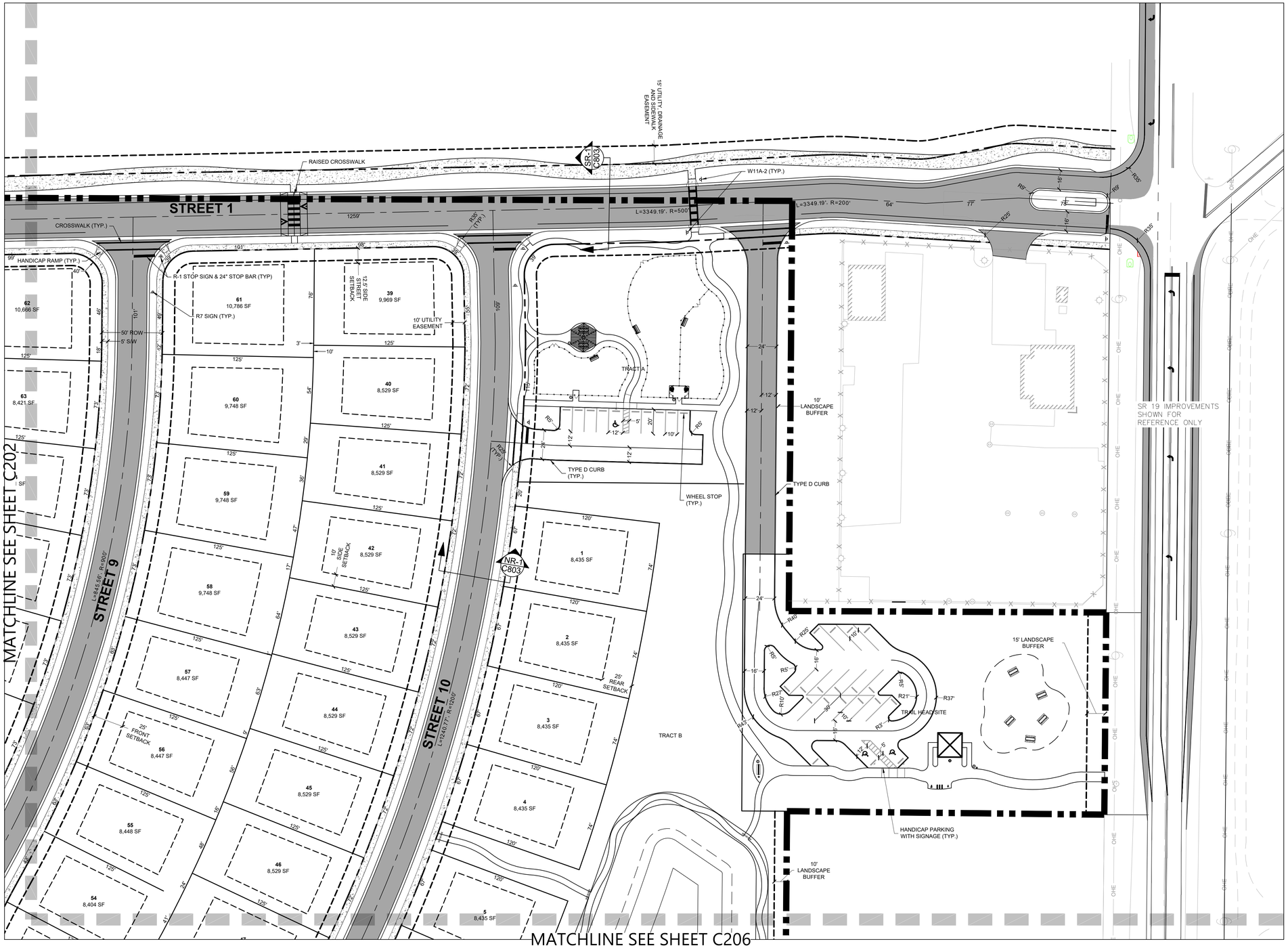

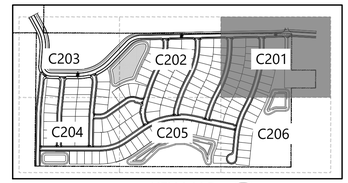

KEY MAP
NTS

LEGEND

- CONSTRUCTION LIMITS LINE
- STREET CENTER LINE
- DRAINAGE EASEMENT / BUFFER LINE
- PLANS MATCH LINE
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HOWEY-IN-THE-HILLS

LAKE COUNTY , FLORIDA

MISSION RISE

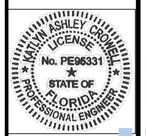
TURNSTONE GROUP

PHASE 1 CONSTRUCTION PLANS

SITE PLAN

DATE 08/29/2025

REVISIONS



0 20' 40

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C201

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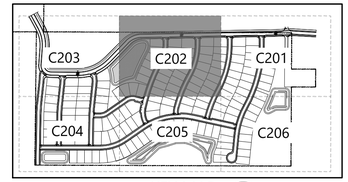
FILE NAME: \\ATLORL\Projects\23000180 Mission Rise DD and PSP\DWG\Plan Sets\Construction\Phase 1\01B0-C201 SITE PLAN.dwg LAST SAVED BY: zoehr-rosado 8/28/2025 3:28 PM PLOTTED BY: Zuleyra Ortiz-Rosado 8/28/2025 #ANSI B (24.00 X 36.00 INCHES) DEVICE: DWG To PDF.PC3 PLOT STYLE: ATWELL.CTB





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COA# 29091

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HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
SITE PLAN

DATE 08/29/2025

REVISIONS

KATHRYN ASHLEY CRONEY LICENSE No. PE96331 STATE OF FLORIDA PROFESSIONAL ENGINEER

0 20' 40'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C202

FILE NAME: \\ATLORL\Projects\23000180 Mission Rise 00 and 05\Dwg\Plan Sets\Construction\Phase 1\C202-C205 SITE PLAN.dwg LAST SAVED BY: zoryc-rosado 8/28/2025 3:28 PM PLOTTED BY: Zoryc Ortiz-Rosado 8/28/2025 PAPER: ARCH FULL BLED D (24.00 X 36.00 INCHES) DEVICE: DWG To PDF.PC3 PLOT STYLE: ATWELL.CTB

--ISSUED--FOR--CONSTRUCTION--

FILE: 08/29/2025 8:28:28 PM

END OF ROADWAY MARKERS

12" OF STABILIZED SUBGRADE, MINIMUM LBR EQUAL TO 40, AND COMPACTED TO A MINIMUM DENSITY EQUIVALENT TO 98 PERCENT OF THE SOLID MODIFIED PROCTOR DENSITY VALUE AS DETERMINED BY AASHTO T-180 TEST METHOD

LIFT STATION 1
TRACT LS1

R40'

R25'

TRACT F

END OF PAVED ROADWAY, BEGIN TEMPORARY STABILIZED EMERGENCY VEHICLE TURN AROUND

STREET 1

25'

TRACT G

10' LANDSCAPE BUFFER

L=3349.19', R=339'

WETLAND 3

OS-1

10' LANDSCAPE BUFFER

25' WETLAND BUFFER

RETAINING WALL

SR-2
C802

OS-1

RETAINING WALL WITH HANDRAIL

RAISED CROSSWALK

L=3349.19', R=402'

MATCHLINE SEE SHEET C202

OS-3

L=890.76', R=50'

L=3349.19', R=777'

CROSSWALK (TYP.)

R25' (TYP.)

252'

STREET 1

HANDICAP RAMP (TYP.)

NR-1
C803

R-1 STOP SIGN & 24" STOP BAR (TYP)

R7 SIGN (TYP.)

OS-2

157
9,679 SF

25' FRONT SETBACK

141
9,691 SF

140
10,387 SF

12.5' SIDE STREET SETBACK

L=716.79', R=275'

50' ROW

5' S/W

10' UTILITY EASEMENT

114
11,012 SF

10' SIDE SETBACK

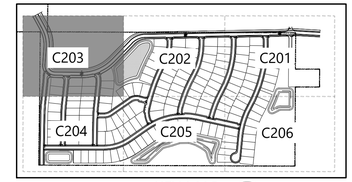
25' REAR SETBACK

115
8,420 SF

TRACT E

RETAINING WALL

MATCHLINE SEE SHEET C204



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SEC 27,34 TWP 20 S RGE 25 E
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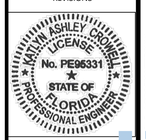
HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
SITE PLAN

DATE 08/29/2025

REVISIONS

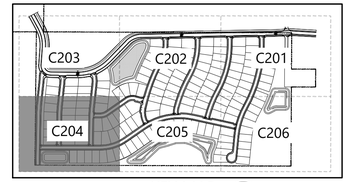


0 20' 40'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C203

FILE NAME: \\ATLWIL\Projects\23000180 Mission Rise 80 and PSP\DWG\Plan Sets\Construction\Phase 1\Utility\C201 SITE PLAN.dwg LAST SAVED BY: mmcmasters 8/28/2025 3:28 PM PLOTTED BY: Sujeeta Dinka-Rosado 8/28/2025 MAP24: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG To PDF.PC3 PLOT STYLE: ATWELL.CTB





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LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
SITE PLAN

DATE 08/29/2025

REVISIONS

KALVIN ASHLEY CROMEEN
LICENSED
No. PE95331
STATE OF FLORIDA
PROFESSIONAL ENGINEER

FILE: 0386220518FEPNA1

0 20' 40

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C204

ISSUED FOR CONSTRUCTION

FILE NAME: \\ATLWKL\Projects\23000180 Mission Rise 00 and PSP\DWG\Plan Set\Construction\Plans \\ATLWKL-CIVIL PLOT STYLE: ATWELL.CTB PLOTTED BY: Zaparia Ortiz-Rosado 8/28/2025 3:28 PM SAVED BY: zortiz-rosado 8/28/2025 3:28 PM PLOTTED @ 24.00 X 36.00 INCHES) DEVICE: DWG To PDF.PC3

MATCHLINE SEE SHEET C202

MATCHLINE SEE SHEET C204

MATCHLINE SEE SHEET C206

STREET 5

STREET 6

L=552.50', R=100'

L=883.23', R=1600'

L=883.23', R=200'

L=1952.16', R=600'

L=1952.16', R=400'

L=798.38', R=1300'

L=798.38', R=200'

L=845.56', R=600'

50' ROW

5' S/W

25' FRONT SETBACK

25' REAR SETBACK

10' SIDE SETBACK

12.5' SIDE STREET SETBACK

10' UTILITY EASEMENT

R7 SIGN (TYP.)

R-1 STOP SIGN & 24" STOP BAR (TYP)

CROSSWALK (TYP.)

HANDICAP RAMP (TYP.)

INF. C203

INF. C203

POND 2

WETLAND 4

TRACT D

25' WETLAND BUFFER

RETAINING WALL WITH HANDRAILS

10' LANDSCAPE BUFFER

113 8,590 SF	90 8,480 SF	75 8,625 SF	53 8,490 SF
95 8,418 SF	91 8,419 SF	74 8,625 SF	70 8,417 SF
94 8,506 SF	92 10,240 SF	73 9,544 SF	71 8,417 SF
124 12,717 SF	93 10,779 SF	72 8,817 SF	52 8,490 SF
123 8,750 SF			51 10,581 SF
122 8,750 SF			
125 9,179 SF			
126 8,500 SF			
127 8,500 SF			
128 8,494 SF			
29 8,400 SF	26 9,653 SF	25 9,653 SF	24 9,653 SF
28 8,409 SF	27 9,653 SF		
30 8,400 SF			
31 8,411 SF			
32 8,402 SF			
33 8,408 SF			

23 8,430 SF	22 8,400 SF	21 8,400 SF	20 8,400 SF
16 8,452 SF			
15 8,487 SF			

KEY MAP
NTS

LEGEND

- CONSTRUCTION LIMITS LINE
- STREET CENTER LINE
- DRAINAGE EASEMENT / BUFFER LINE
- PLANS MATCH LINE
- PROPOSED ASPHALT PAVEMENT
- EXISTING ASPHALT PAVEMENT
- PROPOSED CONCRETE PAVEMENT
- PROPOSED CONCRETE SIDEWALK
- EXISTING WETLAND
- PROPOSED WETLAND BUFFER
- PROPOSED POND AREA

811
Know what's **below.**
Call before you dig.

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47-4204
COA# 29091

SEC 27,34 TWP 20 S RGE 25 E

--

HOWEY-IN-THE-HILLS

LAKE COUNTY , FLORIDA

MISSION RISE

TURNSTONE GROUP

PHASE 1 CONSTRUCTION PLANS

SITE PLAN

DATE 08/29/2025

REVISIONS

KATLYN ASHLEY CROWDER
LICENSE
No. PE95331
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

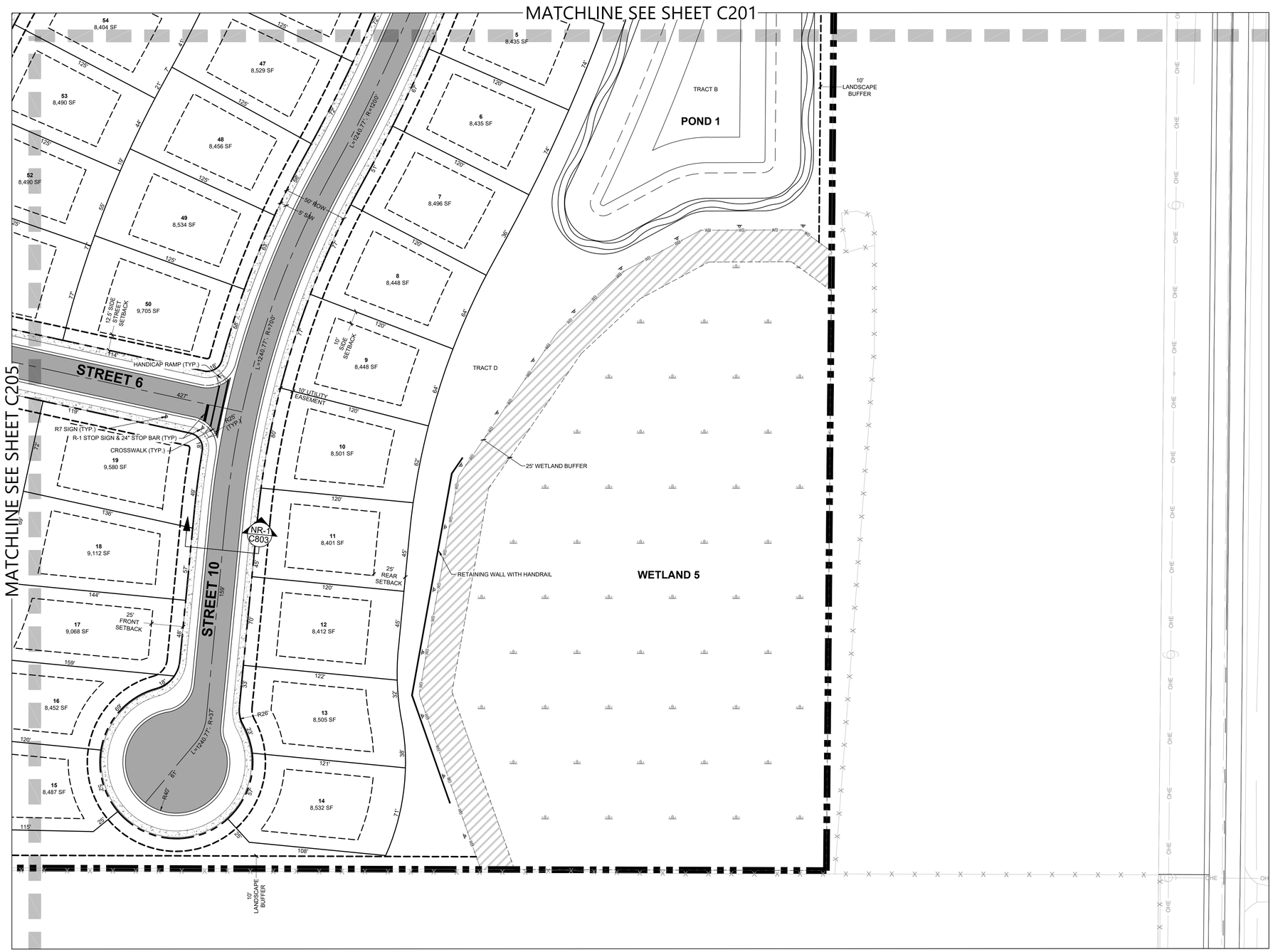
0 20' 40'

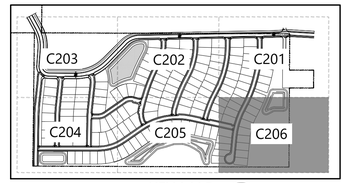
DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C205

ISSUED FOR CONSTRUCTION

FILE: 0180620058EFEAN

FILE NAME: \\ATLWKL\Projects\23000180 Mission Rise 60 and 99\PUD\DWG\Plan Set\Construction\Phase 1\C205-C207- SITE PLAN.dwg LAST SAVED BY: austin.rosado 8/28/2025 3:29 PM PLOTTED BY: Zulayka Ortiz-Rosado 8/28/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG To PDF.PC3 PLOT STYLE: ATWELL.CTB





KEY MAP
NTS

LEGEND

- CONSTRUCTION LIMITS LINE
- STREET CENTER LINE
- DRAINAGE EASEMENT / BUFFER LINE
- PLANS MATCH LINE
- PROPOSED ASPHALT PAVEMENT
- EXISTING ASPHALT PAVEMENT
- PROPOSED CONCRETE PAVEMENT
- PROPOSED CONCRETE SIDEWALK
- EXISTING WETLAND
- PROPOSED WETLAND BUFFER
- PROPOSED POND AREA

811
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COA# 29091

SEC 27,34 TWP 20 S RGE 25 E
--
HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
SITE PLAN

DATE 08/29/2025

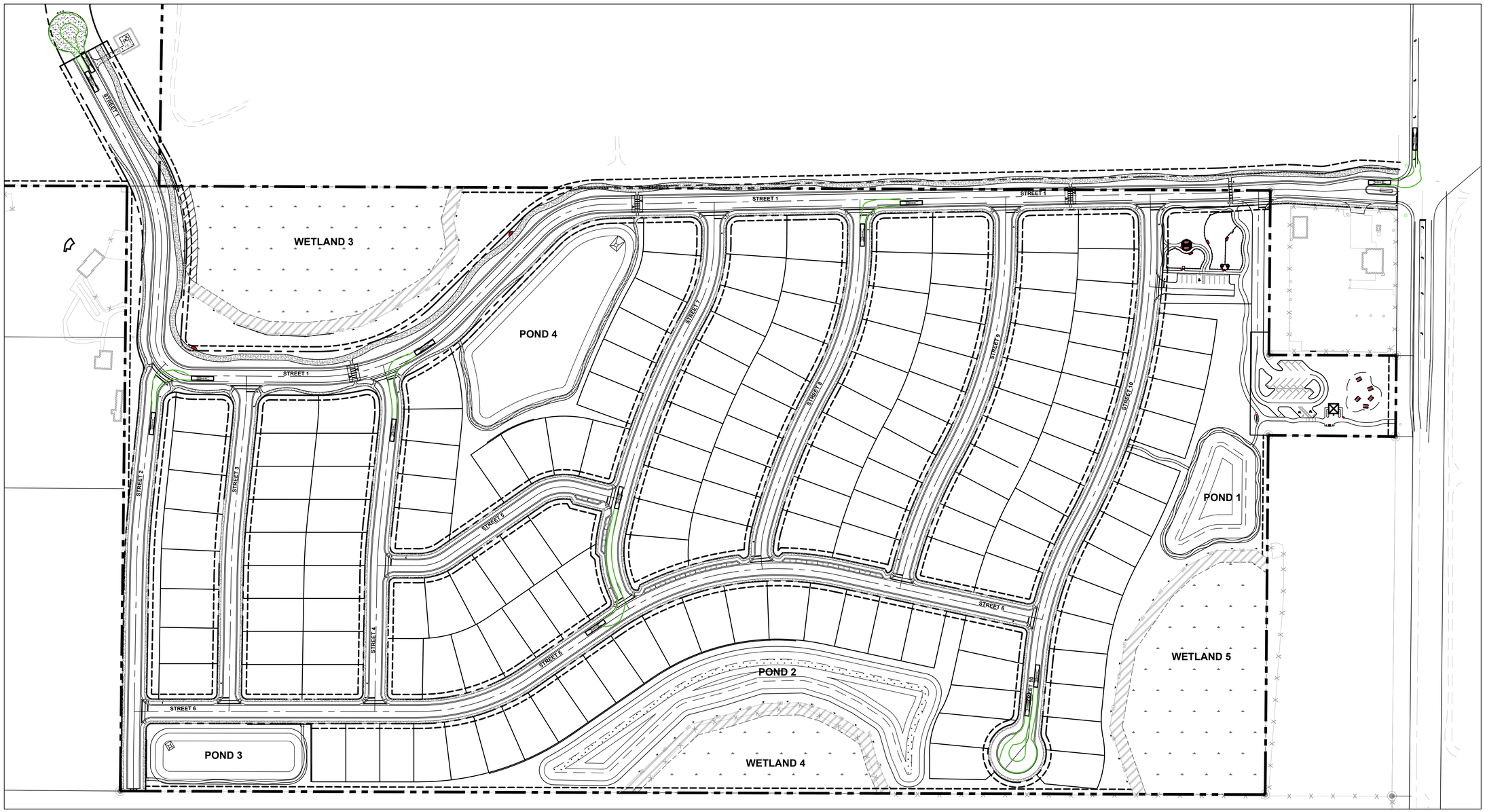
REVISIONS

KATLYN ASHLEY CROWELL
LICENSE
No. PE95331
STATE OF FLORIDA
PROFESSIONAL ENGINEER

0 20' 40'

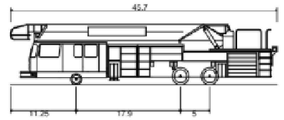
DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C206

672



LEGEND

- CONSTRUCTION LIMITS LINE
- STREET CENTER LINE
- DRAINAGE EASEMENT / BUFFER LINE
- PLANS MATCH LINE
- PROPOSED ASPHALT PAVEMENT
- EXISTING ASPHALT PAVEMENT
- PROPOSED CONCRETE PAVEMENT
- PROPOSED CONCRETE SIDEWALK
- EXISTING WETLAND
- WB WB PROPOSED WETLAND BUFFER
- PROPOSED POND AREA



LAKE COUNTY FIRE TRUCK	
Overall Length	45.700ft
Overall Width	8.330ft
Overall Body Height	10.316ft
Min Body Ground Clearance	0.746ft
Track Width	8.330ft
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	44.20°

811
Know what's **below.** **Call** before you dig.

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COA# 29091

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--
HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
VEHICULAR CIRCULATION

DATE 08/29/2025

REVISIONS

KELVIN ASHLEY CROMWELL LICENSE No. PE95331 STATE OF FLORIDA PROFESSIONAL ENGINEER

0 50' 100'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C207

FILE: 0180 - VEHICULAR CIRCULATION
ISSUED FOR CONSTRUCTION

FILE NAME: \\VLVDATA\Projects\23000180 Watson Rise DD and PSP\DWG\Plan Set\Construction\Phase 1\0180 - VEHICULAR CIRCULATION.dwg LAST SAVED BY: kcromwell 8/29/2025 9:28 AM PLOTTED BY: Zuleyka Ortiz-Rosado 8/29/2025 AWG: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG TO PDF.PC3 PLOT STYLE: ATWELL.CTB



LEGEND

	CONSTRUCTION LIMITS LINE
70	EXISTING CONTOUR
74	PROPOSED CONTOUR
	DITCH BOTTOM INLETS
	STORM MANHOLE (MH)
	MITERED END SECTION
	FLOW ARROW

PSPXX-XXXX

Know what's below. Call before you dig.

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COA# 29091

SEC 27,34 TWP 20 S RGE 25 E

--

HOWEY-IN-THE-HILLS

LAKE COUNTY , FLORIDA

MISSION RISE

TURNSTONE GROUP

PRELIMINARY SUBDIVISION PLAT

OVERALL GRADING PLAN

DATE 02/27/2025

REVISIONS

KATLYN ASHLEY CROWELL LICENSE No. PE95331 STATE OF FLORIDA PROFESSIONAL ENGINEER

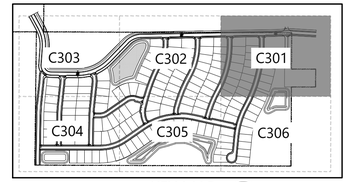
0 50' 100'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C300

674

FILE NAME: \\FLORIDA\Projects\23000180 Mission Rise DO and PSP\DWG\Plan Sets\Construction\Phase 1\0180-C300 OVERALL GRADING PLAN.dwg LAST SAVED BY: zorfla-rosado 8/29/2025 2:41 PM PLOTTED BY: Zujeyle Ortiz-Rosado 8/29/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG TO PDF.PC3 PLOT STYLE: ATWELL.CTB





KEY MAP
NTS

LEGEND

- CONSTRUCTION LIMITS LINE
- 70 EXISTING CONTOUR
- 74 PROPOSED CONTOUR
- DITCH BOTTOM INLETS
- STORM MANHOLE (MH)
- MITERED END SECTION
- FLOW ARROW

811
Know what's **below.**
Call before you dig.

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COA# 29091

SEC 27,34 TWP 20 S RGE 25 E

--

HOWEY-IN-THE-HILLS

LAKE COUNTY , FLORIDA

MISSION RISE

TURNSTONE GROUP

PHASE 1 CONSTRUCTION PLANS

GRADING PLAN

DATE 08/29/2025

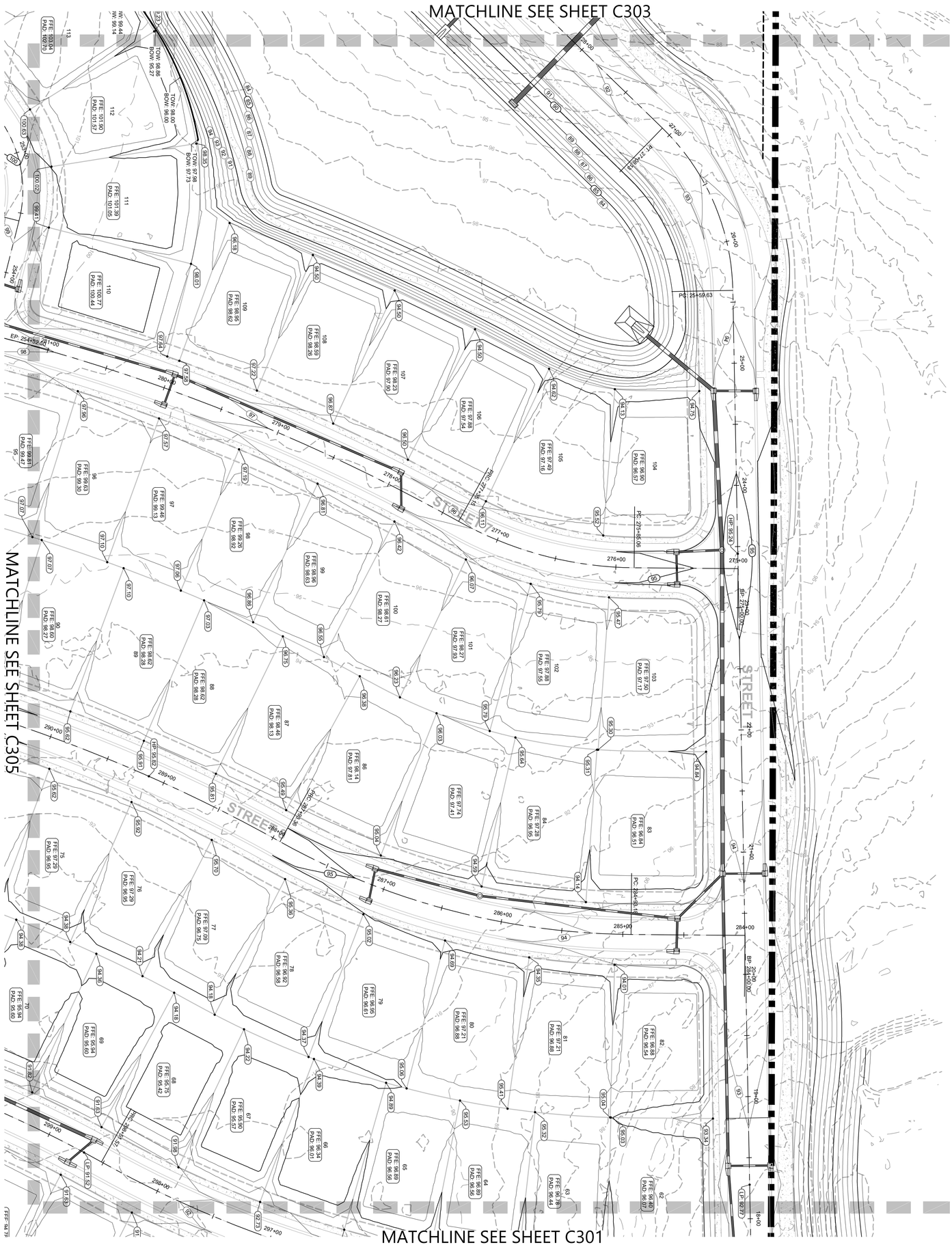
REVISIONS

KATLYN ASHLEY CROWELL
LICENSE
No. PE95331
STATE OF FLORIDA
PROFESSIONAL ENGINEER

0 20' 40'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C301

FILE NAME: \\FLORL\Projects\23000180 Mission Rise OO and PSP\DWG\Plan Sets\Construction\Phase 1\0180-C301 GRADING PLAN.dwg LAST SAVED BY: zortiz-rosado 8/29/2025 2:52 PM PLOTTED BY: ZuJayelle Ortiz-Rosado 8/29/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG TO PDF.PC3 PLOT STYLE: ATWELL.CTB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MATCHLINE SEE SHEET C305
MATCHLINE SEE SHEET C301
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PC: 28+03.00
BP: 28+10.00
EP: 29+00.00
EP: 25+49.28
TOW: 98.86
BOW: 95.27
TOW: 98.86
BOW: 96.00
TOW: 97.98
BOW: 97.73
W: 99.44
NW: 99.14
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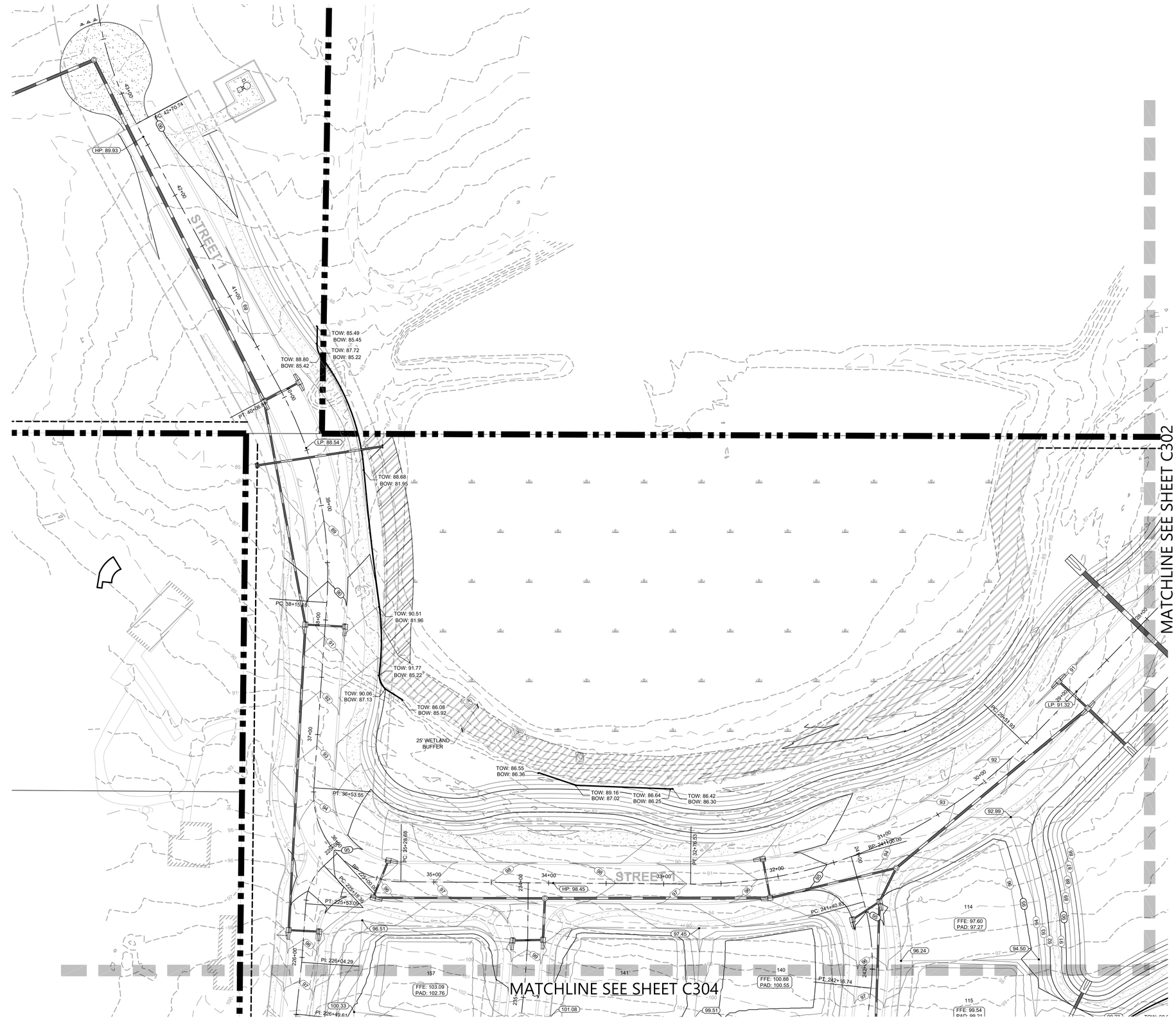

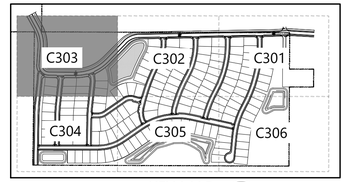

KEY MAP
NTS

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COA# 29091

SEC 27,34 TWP 20 S RGE 25 E
--
HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
GRADING PLAN

DATE 08/29/2025

REVISIONS

0 20' 40'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C303

--ISSUED--FOR--CONSTRUCTION--

FILE NAME: \\ATLWIL\Projects\23000180 Mission Rise 00 and 01\PLDWG\Plan Sets\Construction\Phase 1\01b-C301 GRADING PLAN.dwg LAST SAVED BY: zorbic--tesada 8/29/2023 1:49 PM PLOTTED BY: Zayda Ortiz-Rosado 8/29/2023 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG TO PDF.PC3 PLOT STYLE: ATWELL.CTB

MATCHLINE SEE SHEET C303

MATCHLINE SEE SHEET C305

KEY MAP
NTS

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407.774.7778
COA# 29091

SEC 27,34 TWP 20 S RGE 25 E
--
HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
GRADING PLAN

DATE 08/29/2025

REVISIONS

KALVIN ASHLEY CROWELL
LICENSE
No. PE95331
STATE OF FLORIDA
PROFESSIONAL ENGINEER

0 20' 40'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C304

ISSUED FOR CONSTRUCTION

FILE NAME: \\ATWELL\Projects\23000180 Mission Rise DD and PSP\DWG\Civ\ SHT\Construction\Phase 1\01GRADING PLAN.dwg LAST SAVED BY: zorfic-rosado 8/29/2025 2:52 PM PLOTTED BY: Zulyrie Ortiz-Rosado 8/29/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) SCALE: Dwg TO PDF.PC3 PLOT STYLE: ATWELL.CTB

MATCHLINE SEE SHEET C304

MATCHLINE SEE SHEET C306

KEY MAP
NTS

TOW: 93.04
BOW: 92.54

TOW: 92.37
BOW: 92.13

TOW: 93.92
BOW: 92.51

TOW: 94.74
BOW: 92.12

TOW: 95.77
BOW: 92.22

TOW: 97.26
BOW: 94.23

TOW: 98.08
BOW: 98.06

221 LF 30" RCP @0.9%

25' WETLAND BUFFER

STREET 05

811
Know what's below. Call before you dig.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

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4007 TX
COA# 29091

SEC 27,34 TWP 20 S RGE 25 E

--

HOWEY-IN-THE-HILLS

LAKE COUNTY, FLORIDA

MISSION RISE

TURNSTONE GROUP

PHASE 1 CONSTRUCTION PLANS

GRADING PLAN

DATE 08/29/2025

REVISIONS

KALYN ASHLEY CROWELL
LICENSE
No. PE95331
STATE OF FLORIDA
PROFESSIONAL ENGINEER

0 20' 40'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C305

FILE NAME: \\CIVIL\Projects\23000180 Mission Rise 09 and PDP\DWG\Plan Set\Construction\Phase 1\CIVIL-C3D\ GRADING PLAN.dwg LAST SAVED BY: zorbs-remote 8/29/2025 3:52 PM PLOTTED BY: Zayleth Ortiz-Resende 8/29/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) STATUS: DWG TO PDF.PC3

MATCHLINE SEE SHEET C301

MATCHLINE SEE SHEET C305

STREET 6

STREET 10

25' WETLAND BUFFER

KEY MAP
NTS

811
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HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
GRADING PLAN

DATE 08/29/2025

REVISIONS

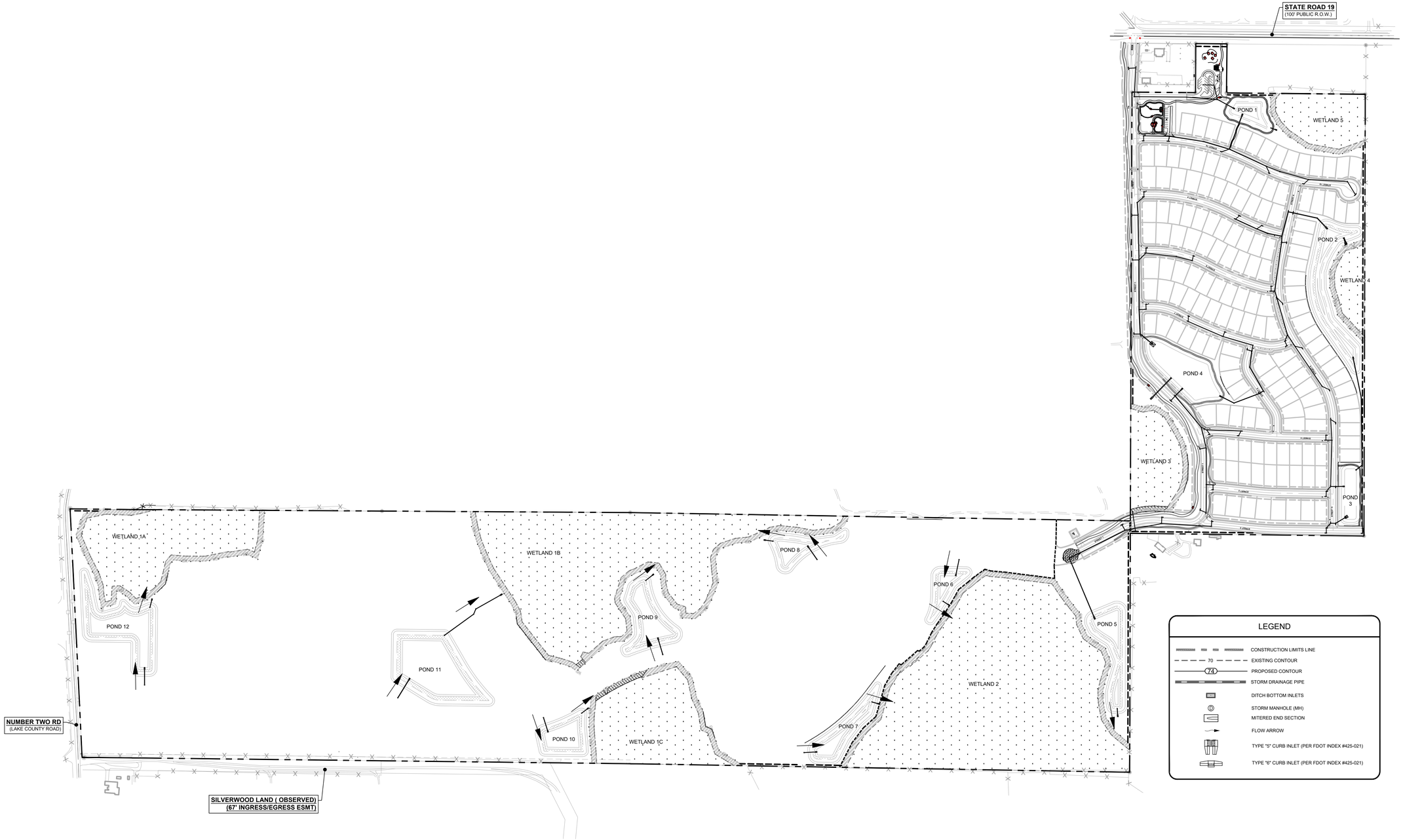
KAITLIN ASHLEY CROWELL
LICENSE
No. PE95331
STATE OF FLORIDA
PROFESSIONAL ENGINEER

0 20' 40'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C306

680

FILE NAME: \\ATLANTA-Projects\23000180 Mission Rise SD and PSP\Civil\Plan Sets\Construction\Phase 1\Grade-C301 GRADING PLAN.dwg LAST SAVED BY: zoeller-rosado 8/29/2025 2:52 PM PLOTTED BY: Zayleth Ortiz-Rosado 8/29/2025 PAPER: ARCH (VAL BLEED 0 (24.00 X 36.00 INCHES) DEVICE: DWG TO PDF.PC3 PLOT STYLE: ATWELL.CTB



PSPXX-XXXX

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4CTY, LLC 3574
COA# 29091

SEC 27,34 TWP 20 S RGE 25 E

--

HOWEY-IN-THE-HILLS

LAKE COUNTY , FLORIDA

MISSION RISE

TURNSTONE GROUP

PRELIMINARY SUBDIVISION PLAT

OVERALL DRAINAGE PLAN

DATE 02/27/2025

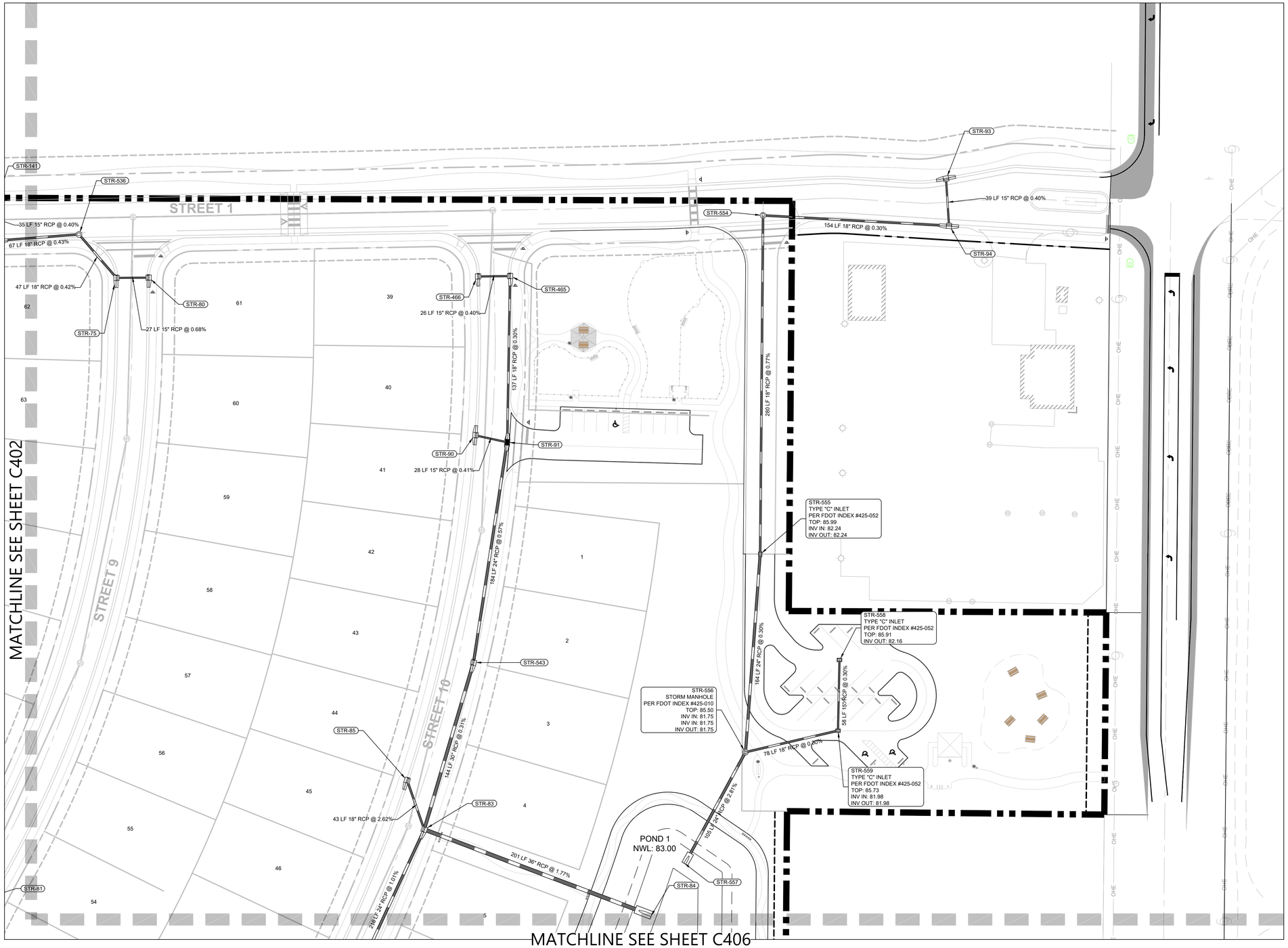
REVISIONS

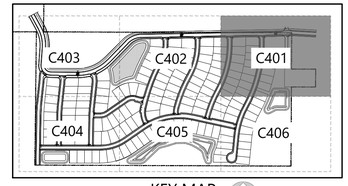
KATHRYN ASHLEY CROWELL LICENSE No. PE95331 STATE OF FLORIDA PROFESSIONAL ENGINEER

0 125' 250'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C400

FILE NAME: \\VLOBCLfnpsvs\23000180 Mission Rise 80 and P3P\DWG\Plan Set\Construction\Prose \\VLOBC-D400 OVERALL DRAINAGE PLAN.dwg LAST SAVED BY: dpena 8/26/2025 11:58 AM PLOTTED By: Zayde Ortiz-Rosado 8/26/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG TO PDF.PC3 PLOT STYLE: ATWELL.CTB





KEY MAP
NTS

LEGEND

- CONSTRUCTION LIMITS LINE
- 70 EXISTING CONTOUR
- 74 PROPOSED CONTOUR
- STORM DRAINAGE PIPE
- DITCH BOTTOM INLETS
- STORM MANHOLE (MH)
- MITERED END SECTION
- FLOW ARROW
- TYPE "5" CURB INLET (PER FDOT INDEX #425-021)
- TYPE "6" CURB INLET (PER FDOT INDEX #425-021)

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COA# 29091

SEC 27,34 TWP 20 S RGE 25 E
--
HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
DRAINAGE PLAN

DATE 08/29/2025

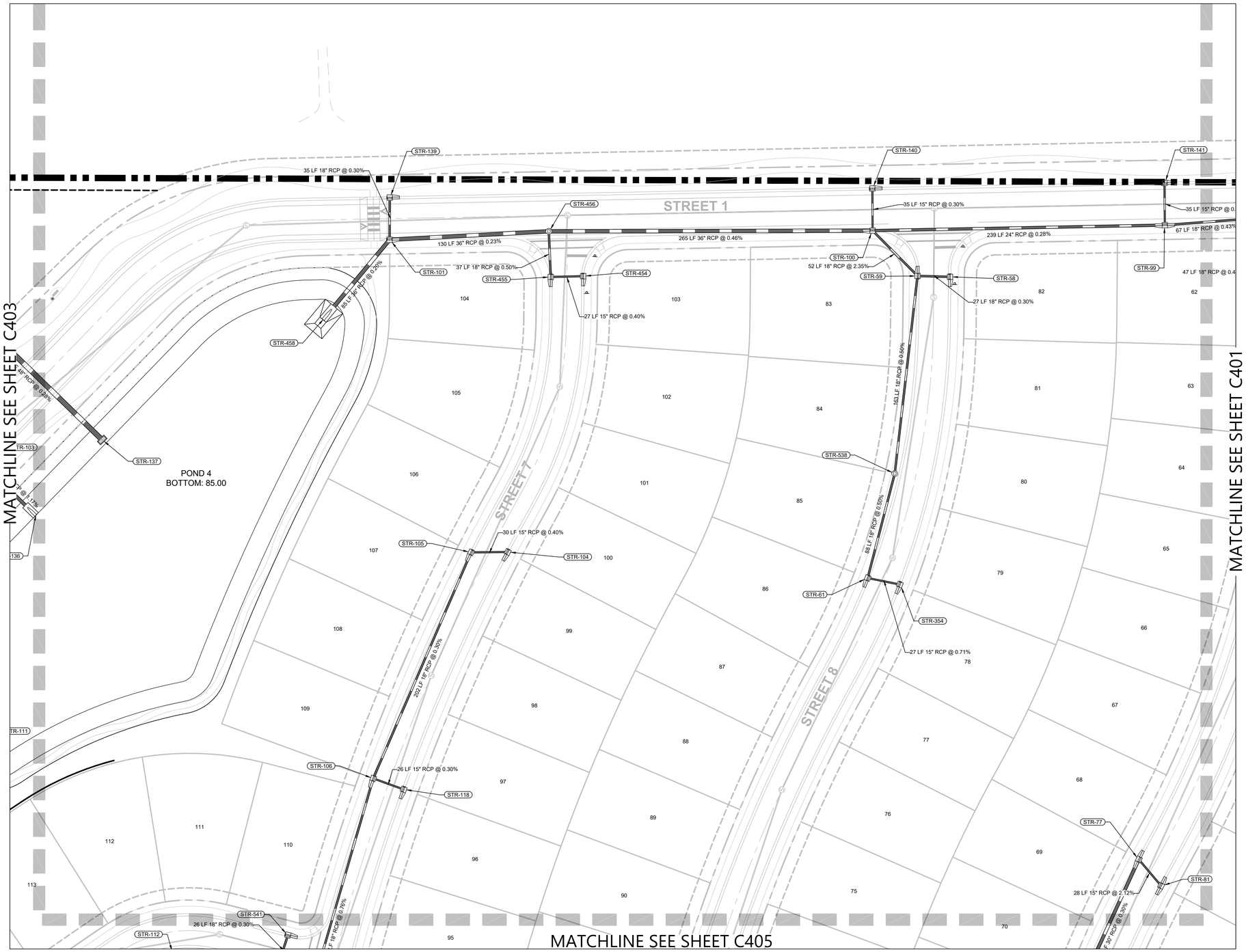
REVISIONS

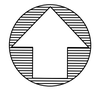
KATLYN ASHLEY CROWELL
LICENSE
No. PE95331
STATE OF FLORIDA
PROFESSIONAL ENGINEER

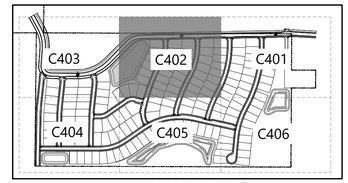
0 20' 40'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C401

FILE: 0180-C401 DRAINAGE PLAN
NOT-ISSUED-FOR-CONSTRUCTION PLAN







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NTS

LEGEND

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- 70 EXISTING CONTOUR
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- STORM DRAINAGE PIPE
- DITCH BOTTOM INLETS
- STORM MANHOLE (MH)
- MITERED END SECTION
- FLOW ARROW
- TYPE "S" CURB INLET (PER FDOT INDEX #425-021)
- TYPE "6" CURB INLET (PER FDOT INDEX #425-021)

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COA # 29091

SEC 27,34 TWP 20 S RGE 25 E
--
HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
DRAINAGE PLAN

DATE 08/29/2025

REVISIONS

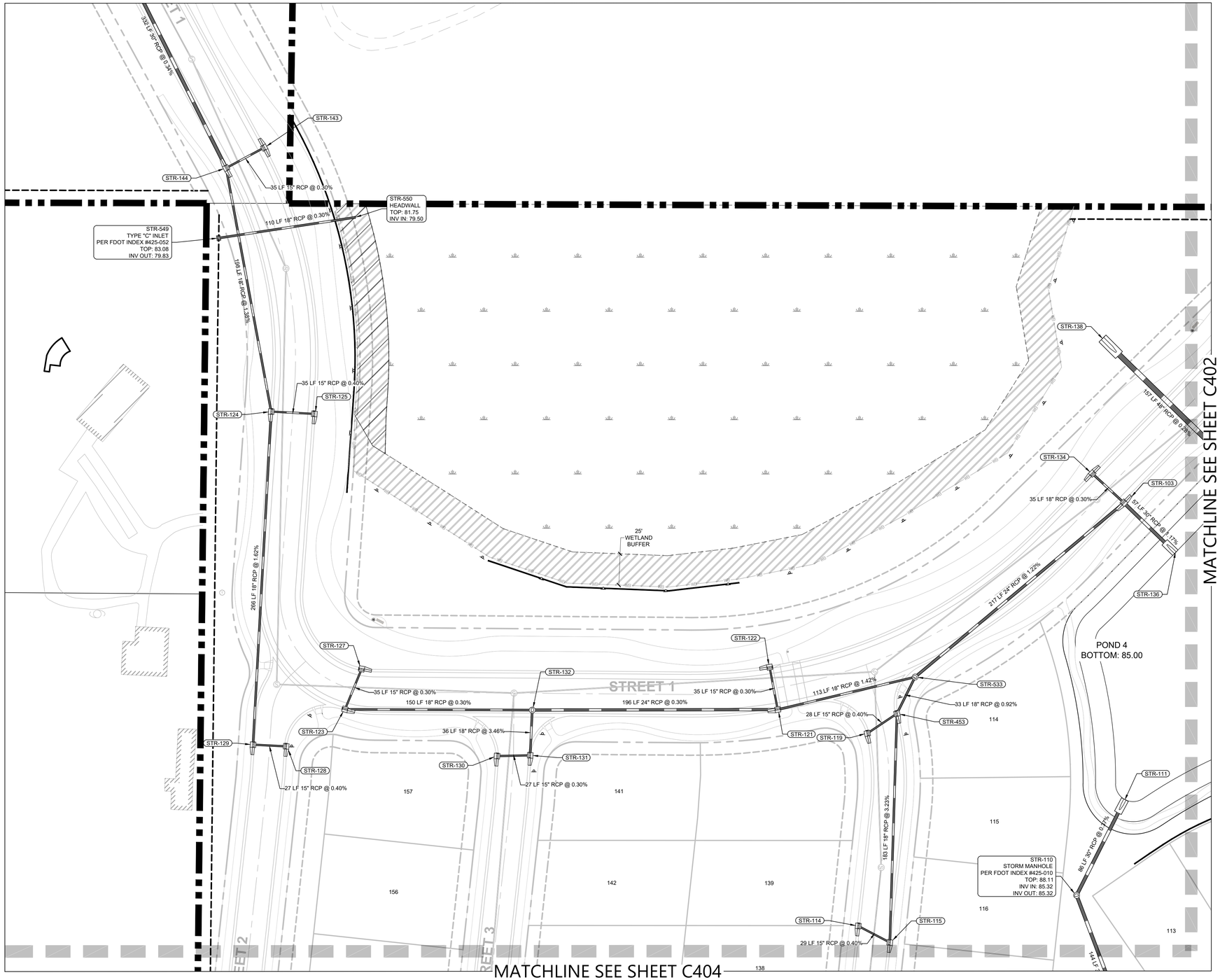
KALYN ASHLEY CROWELL
LICENSED
No. PE95331
STATE OF FLORIDA
PROFESSIONAL ENGINEER

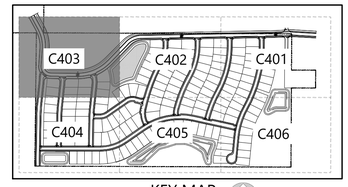
0 20' 40

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C402

FILE: (0)DRAINAGE PLAN
NOT ISSUED FOR CONSTRUCTION

FILE NAME: \\ATLWKL\Projects\23000180 Mission Rise DD and PSP\DWG\Plan Set\Construction\Phase 1\01-00-C401 DRAINAGE PLAN.dwg LAST SAVED BY: apenna 8/27/2025 5:23 PM PLOTTED BY: Zdayne Ortiz-Rosado 8/28/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) STATUS: DWG TO PDF.PC3 PLOT STYLE: ATWELL.CTB





KEY MAP
NTS

LEGEND

- CONSTRUCTION LIMITS LINE
- 70 EXISTING CONTOUR
- 74 PROPOSED CONTOUR
- STORM DRAINAGE PIPE
- DITCH BOTTOM INLETS
- STORM MANHOLE (MH)
- MITERED END SECTION
- FLOW ARROW
- TYPE "5" CURB INLET (PER FDOT INDEX #425-021)
- TYPE "6" CURB INLET (PER FDOT INDEX #425-021)

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COA# 29091

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HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
DRAINAGE PLAN

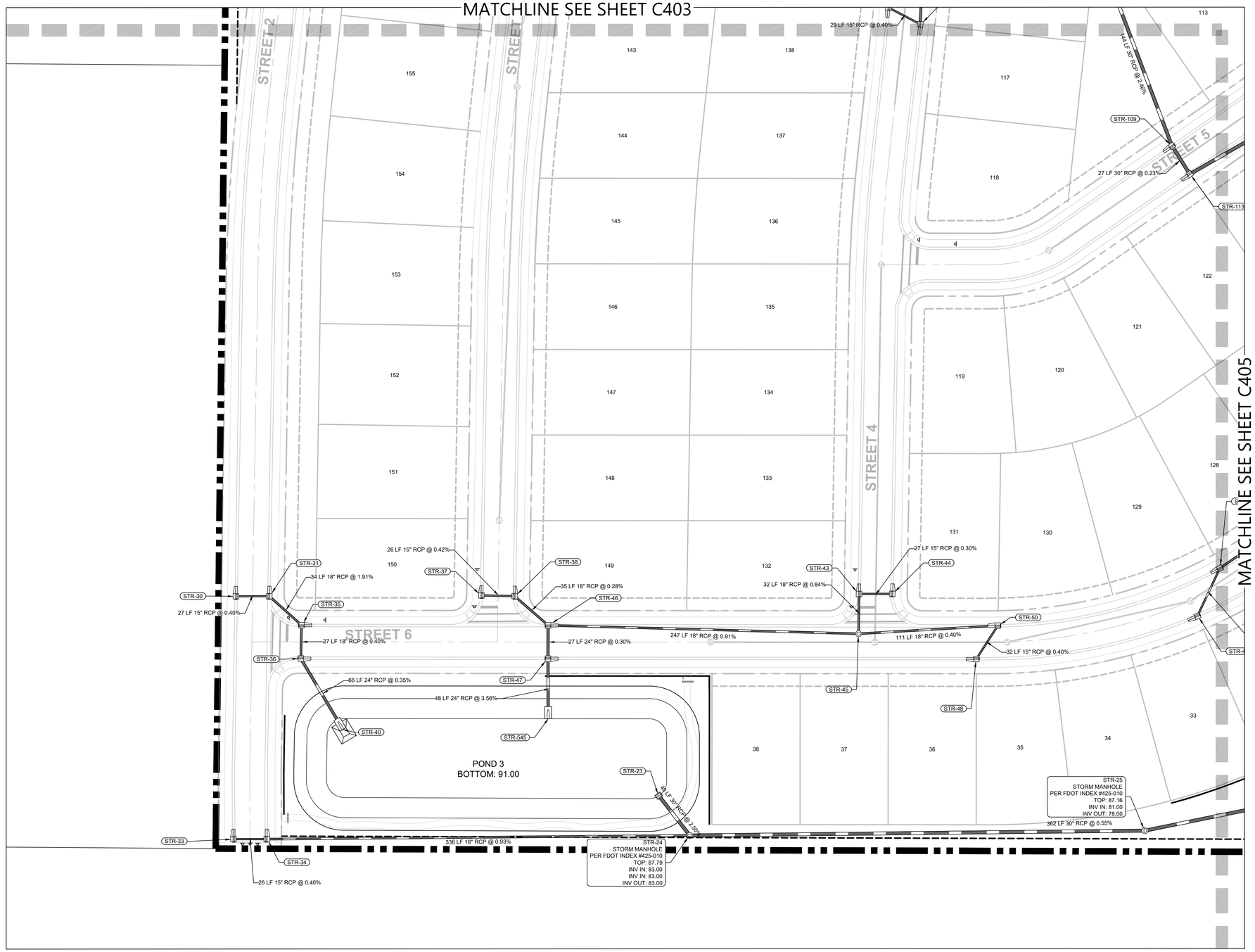
DATE 08/29/2025

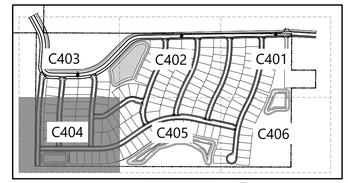
REVISIONS

KATLYN ASHLEY CROWELL
LICENSE
No. PE95331
STATE OF FLORIDA
PROFESSIONAL ENGINEER

0 20' 40'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C403





KEY MAP
NTS

LEGEND

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- 70 EXISTING CONTOUR
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COA # 29091

SEC 27,34 TWP 20 S RGE 25 E
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HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
DRAINAGE PLAN

DATE 08/29/2025

REVISIONS

KELVIN ASHLEY CROMEEN LICENSE No. PE95331 STATE OF FLORIDA PROFESSIONAL ENGINEER

0 20' 40'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C404

FILE: 01DSG\CIVIL\DRAINAGE PLAN\

NOT ISSUED FOR CONSTRUCTION

FILE NAME: \\VLOSRL\Projects\23000180 Mission Rise 09 and PSP\DWG\Plan Set\Construction\Phase 1\01DSG\C401 DRAINAGE PLAN.dwg LAST SAVED BY: spavey 8/27/2025 5:25 PM PLOTTED BY: Zayvia Ortiz-Rosado 8/28/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG To PDF.PC3 PLOT STYLE: FINELL.CTB

MATCHLINE SEE SHEET C402

MATCHLINE SEE SHEET C404

MATCHLINE SEE SHEET C406

STREET 5

STREET 6

STR-112
26 LF 18" RCP @ 0.30%
STR-541
186 LF 18" RCP @ 0.76%
STR-540
86 LF 24" RCP @ 0.41%
STR-542
32 LF 18" RCP @ 0.74%
186 LF 36" RCP @ 0.21%
STR-113

STR-62
19 LF 24" RCP @ 0.30%
STR-63
27 LF 15" RCP @ 1.76%
STR-353
STR-534
STR-56
36 LF 18" RCP @ 1.67%
STR-55
207 LF 24" RCP @ 0.57%
37 LF 24" RCP @ 0.57%
43 LF 15" RCP @ 4.45%
STR-53
261 LF 30" RCP @ 0.32%
27 LF 15" RCP @ 0.30%
STR-57
72 LF 24" RCP @ 0.30%
STR-457
40 LF 15" RCP @ 4.90%
STR-52
259 LF 18" RCP @ 0.30%
STR-424
42 LF 15" RCP @ 0.40%
STR-425

34 LF 30" RCP @ 1.76%
STR-65
27 LF 15" RCP @ 0.30%
STR-66
77 LF 30" RCP @ 0.30%
STR-547
135 LF 36" RCP @ 0.30%
STR-68
27 LF 36" RCP @ 0.45%
STR-69
132 LF 36" RCP @ 2.72%
STR-54
79 LF 42" RCP @ 3.07%

28 LF 15" RCP @ 2.12%
STR-81
125 LF 30" RCP @ 0.30%
STR-78
32 LF 15" RCP @ 0.40%
STR-535
61 LF 30" RCP @ 0.30%
STR-449

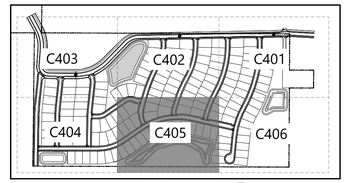
STR-532
STORM MANHOLE
PER FDOT INDEX #425-010
TOP: 83.13
INV IN: 78.42
INV OUT: 78.42

POND 2
NWL: 84.00

25' WETLAND BUFFER

37 LF 30" RCP @ 0.34%
37 LF 30" RCP @ 0.34%
STR-291
STR-292
STR-552

221 LF 30" RCP @ 0.91%
STR-29



KEY MAP
NTS

LEGEND

- CONSTRUCTION LIMITS LINE
- 70 EXISTING CONTOUR
- 74 PROPOSED CONTOUR
- STORM DRAINAGE PIPE
- DITCH BOTTOM INLETS
- STORM MANHOLE (MH)
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4007-21-1758
COA# 29091

SEC 27,34 TWP 20 S RGE 25 E
--
HOWEY-IN-THE-HILLS
LAKE COUNTY, , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
DRAINAGE PLAN

DATE 08/29/2025

REVISIONS

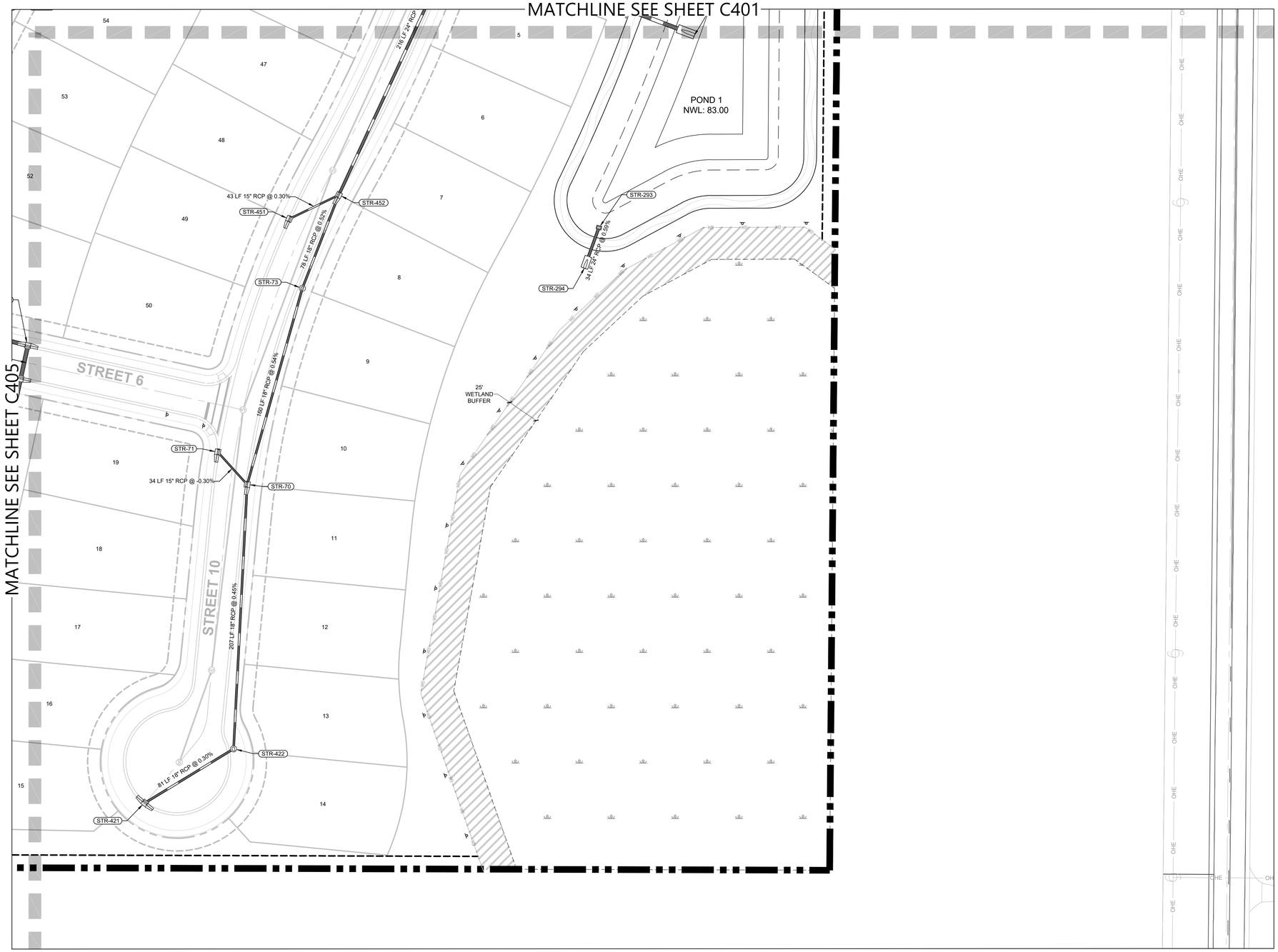
KATHLEEN ASHLEY CROWLEY
LICENSE
No. PE95331
STATE OF FLORIDA
PROFESSIONAL ENGINEER

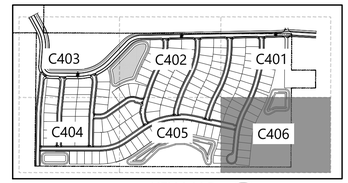
0 20' 40'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C405

FILE: I:\DRAWINGS\C405 DRAINAGE PLAN.dwg
ISSUED FOR CONSTRUCTION

FILE NAME: \\ATLWIL\Projects\23000180 Mission Rise DD and PUP\DWG\Plan Set\Construction\Phase 1\01-Sht-C401 DRAINAGE PLAN.dwg LAST SAVED BY: aparra 8/27/2025 3:25 PM PLOTTED BY: Zuleyka Ortiz-Rosado 8/28/2025 PAPER: ANSI FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG To PDF.PC3 PLOT STYLE: FINELL.CTB





KEY MAP
NTS

LEGEND

- CONSTRUCTION LIMITS LINE
- 70 EXISTING CONTOUR
- 74 PROPOSED CONTOUR
- STORM DRAINAGE PIPE
- DITCH BOTTOM INLETS
- STORM MANHOLE (MH)
- MITERED END SECTION
- FLOW ARROW
- TYPE "5" CURB INLET (PER FDOT INDEX #425-021)
- TYPE "6" CURB INLET (PER FDOT INDEX #425-021)

811
Know what's **below.**
Call before you dig.

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COA# 29091

SEC 27,34 TWP 20 S RGE 25 E

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HOWEY-IN-THE-HILLS

LAKE COUNTY , FLORIDA

MISSION RISE

TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
DRAINAGE PLAN

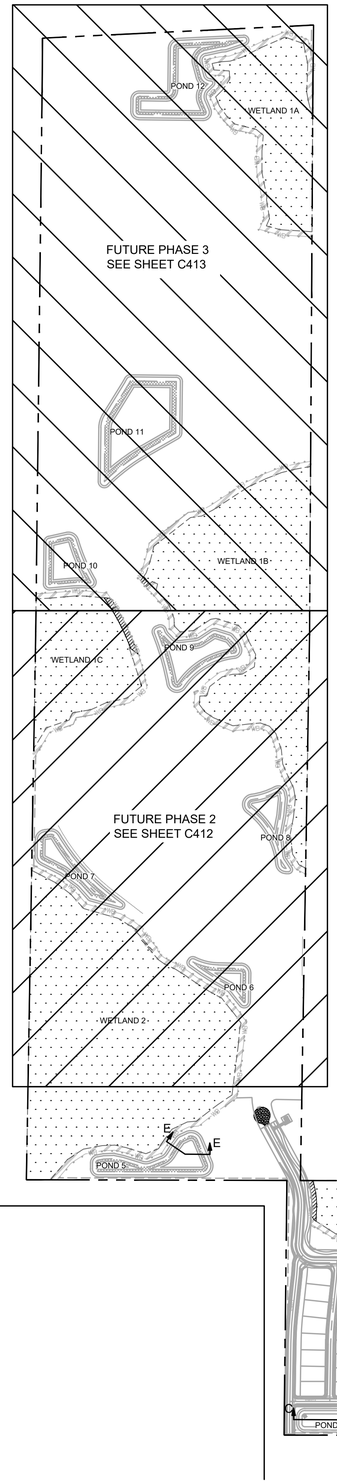
DATE 08/29/2025

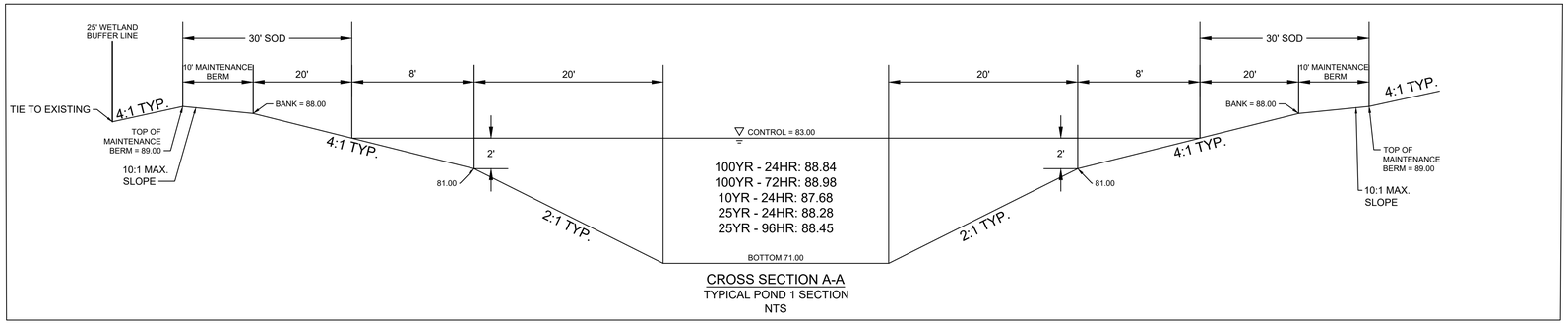
REVISIONS

KATLYN ASHLEY CROWELL
LICENSE
No. PE95331
STATE OF FLORIDA
PROFESSIONAL ENGINEER

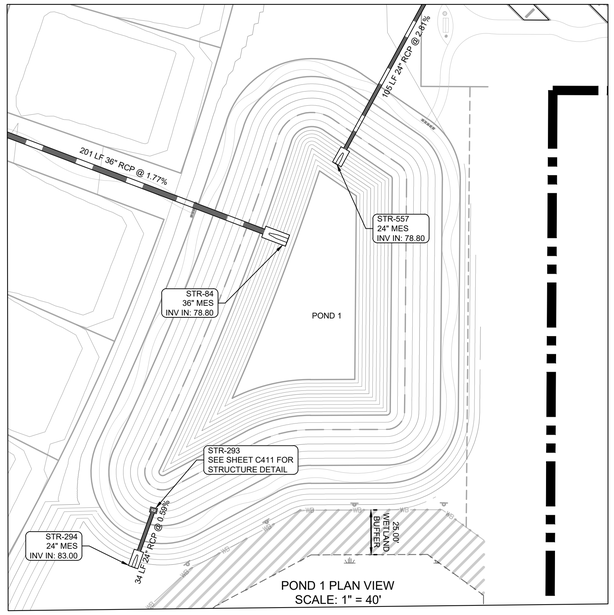
0 20' 40'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C406

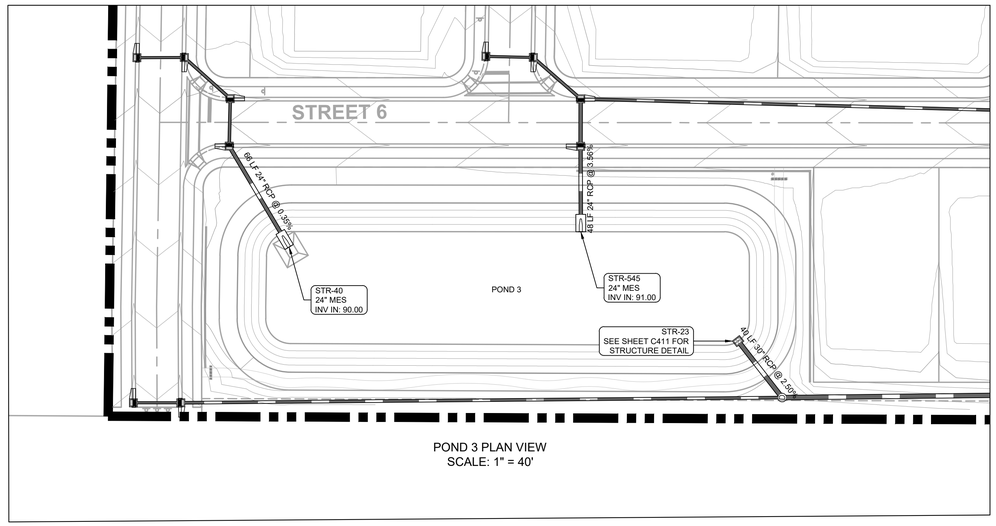




CROSS SECTION A-A
TYPICAL POND 1 SECTION
NTS



POND 1 PLAN VIEW
SCALE: 1" = 40'



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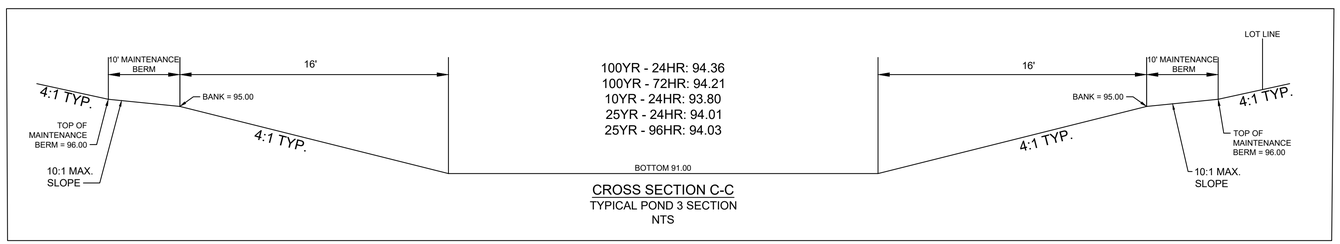
SCALE: 1" = 40'



CROSS SECTION C-C
TYPICAL POND 3 SECTION
NTS

PSPXX-XXXX

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MISSION RISE
TURNSTONE GROUP
PRELIMINARY SUBDIVISION PLAT
POND 1 & 3 DETAIL

DATE 02/27/2025

REVISIONS

KALYN ASHLEY CROWELL
LICENSE
No. PE95331
STATE OF FLORIDA
PROFESSIONAL ENGINEER

0 175' 350'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C407

NOT ISSUED FOR CONSTRUCTION

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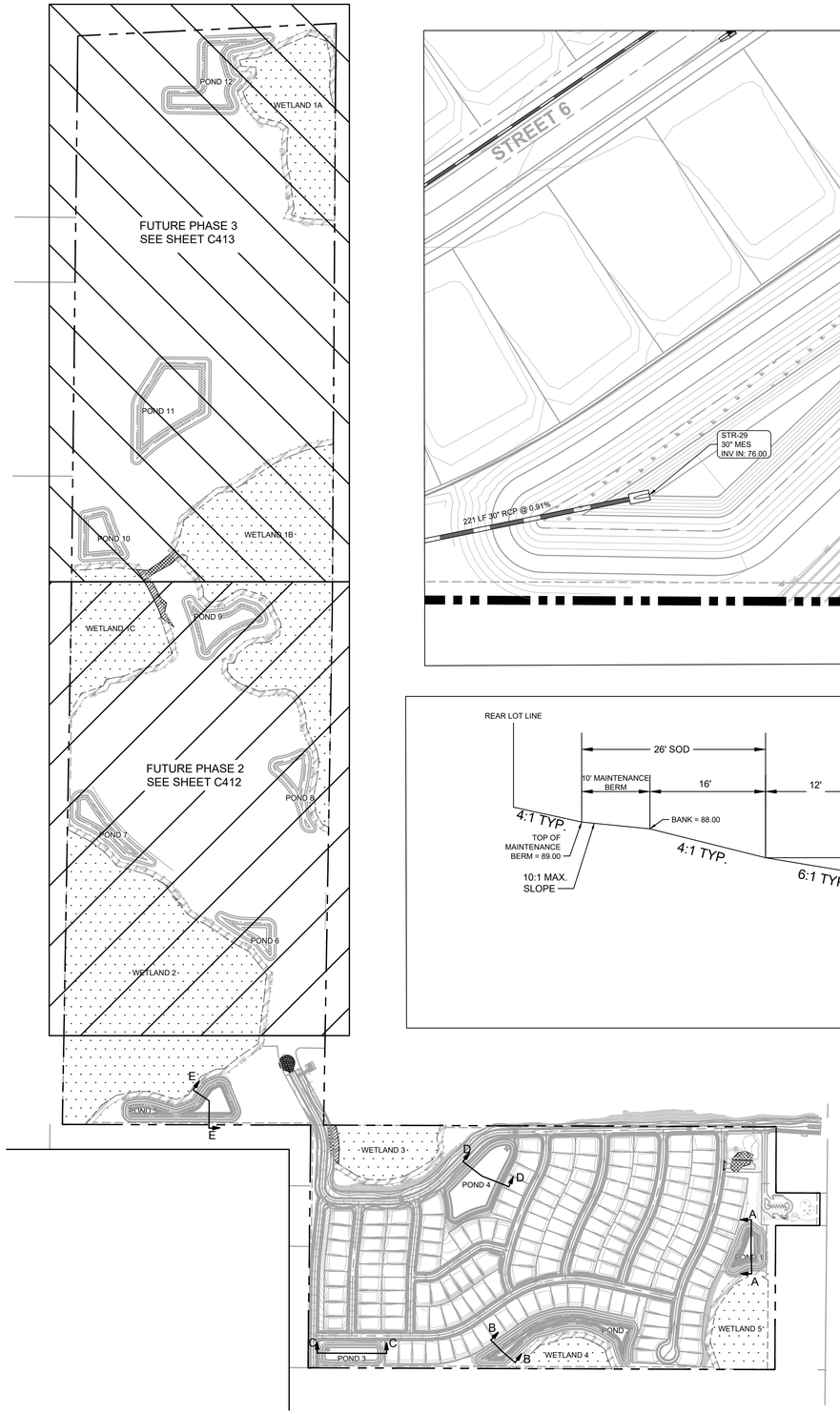

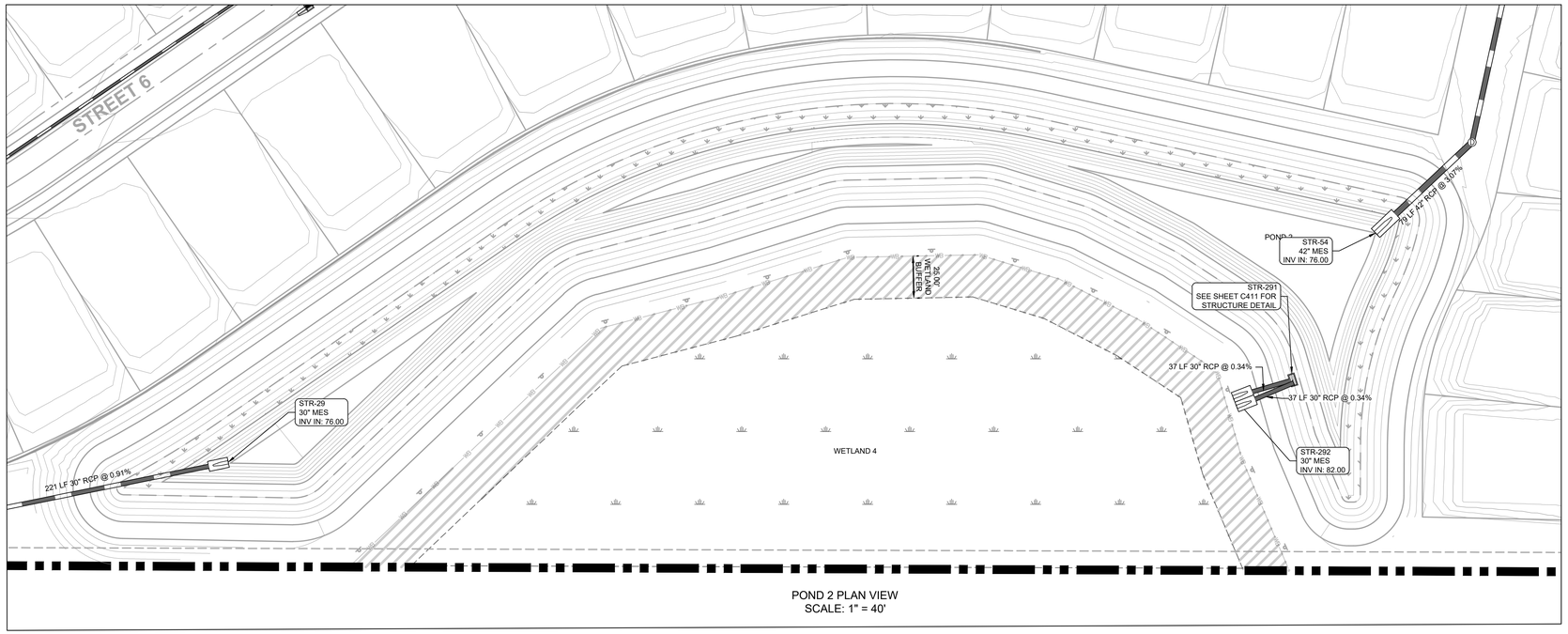

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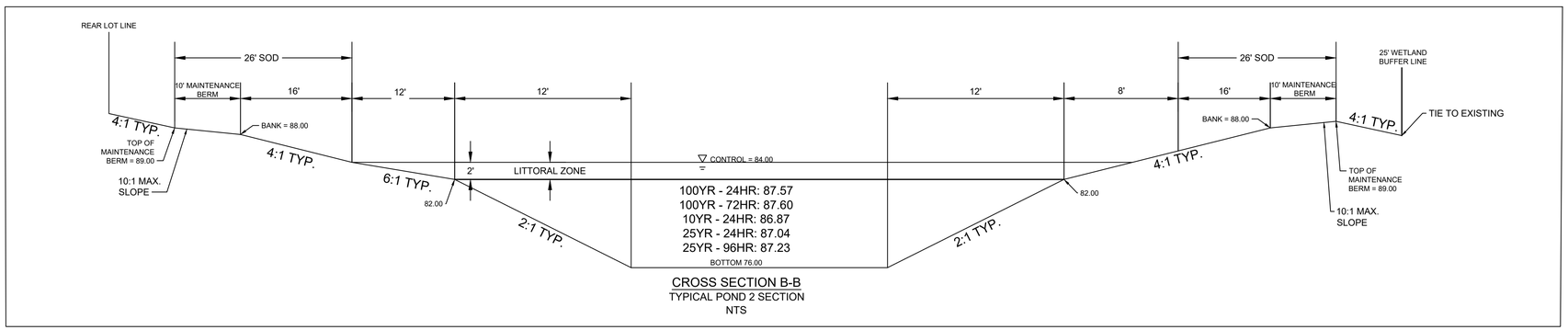
SCALE: 1" = 40'



CROSS SECTION B-B
TYPICAL POND 2 SECTION
NTS

PSPXX-XXXX

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HOWEY-IN-THE-HILLS

LAKE COUNTY , FLORIDA

MISSION RISE

TURNSTONE GROUP
PRELIMINARY SUBDIVISION PLAT
POND 2 DETAIL

DATE 02/27/2025

REVISIONS

KATLYN ASHLEY CROWELL
LICENSE
No. PE95331
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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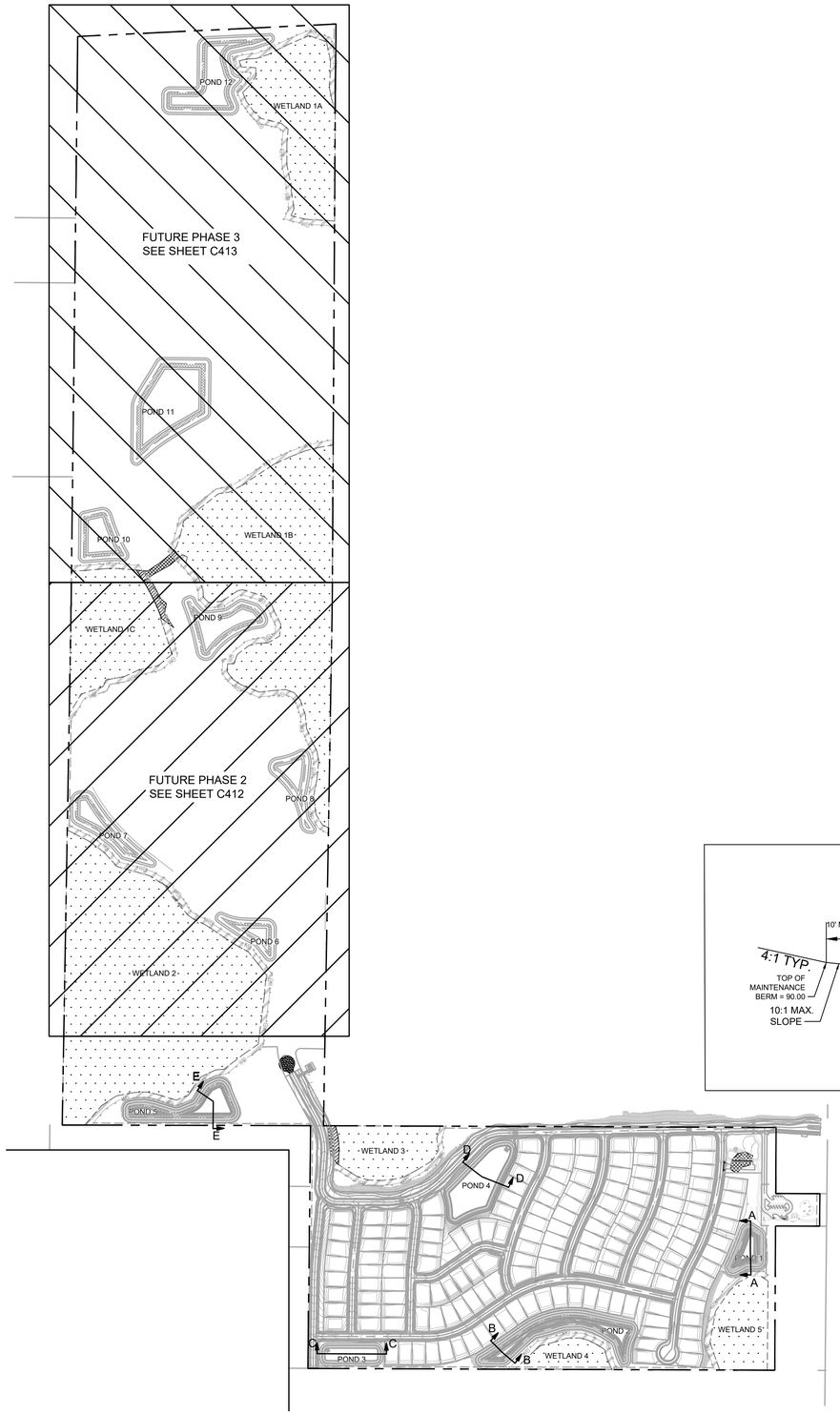
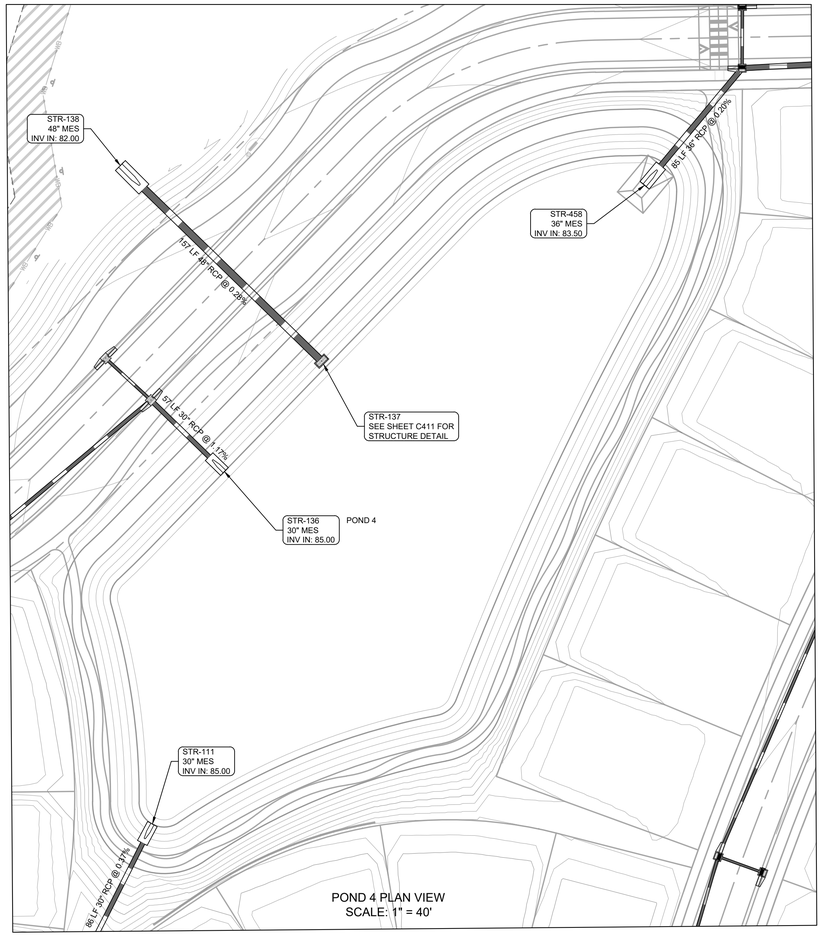
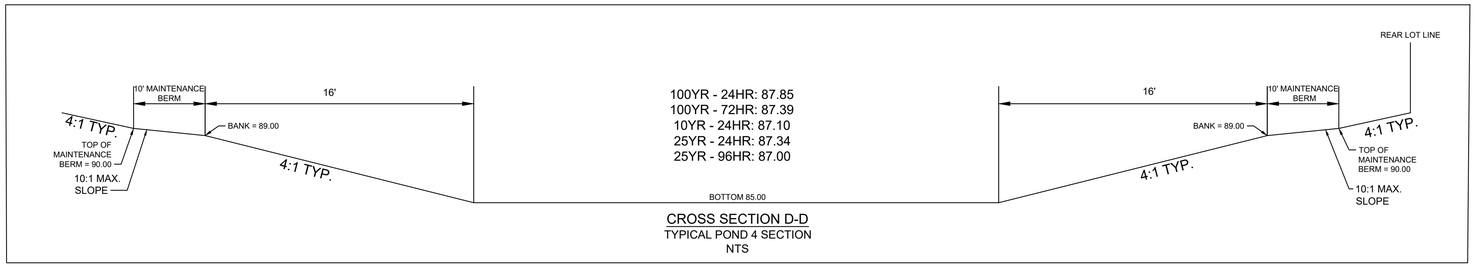
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C408

689





POND 4 PLAN VIEW
SCALE: 1" = 40'



CROSS SECTION D-D
TYPICAL POND 4 SECTION
NTS

PSPXX-XXXX

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COA# 29091

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HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PRELIMINARY SUBDIVISION PLAT
POND 4 DETAIL

DATE 02/27/2025

REVISIONS

KATLYN ASHLEY CROWELL
LICENSE
No. PE95331
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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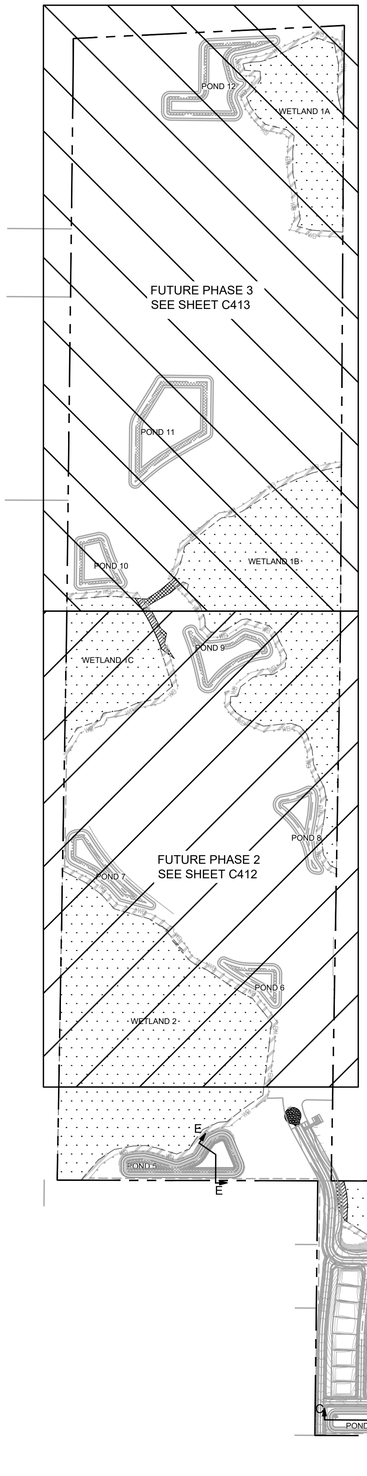
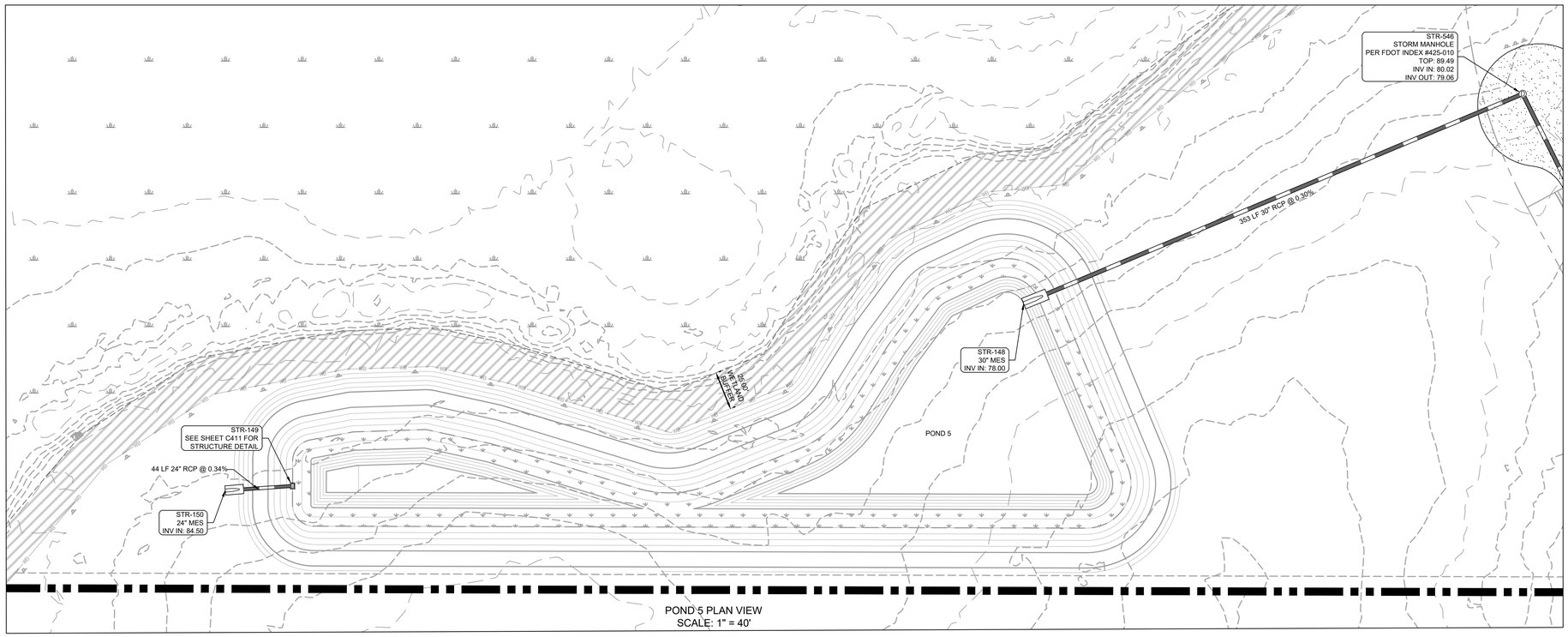
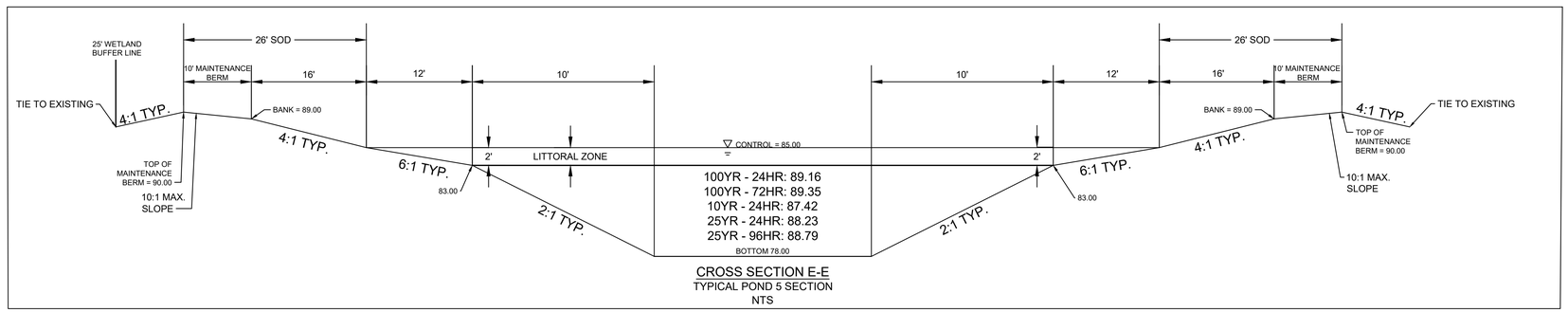
DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C409





POND 5 PLAN VIEW
SCALE: 1" = 40'



CROSS SECTION E-E
TYPICAL POND 5 SECTION
NTS

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COA# 29091

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LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PRELIMINARY SUBDIVISION PLAT
POND 5 DETAIL

DATE 02/27/2025

REVISIONS

KAITLIN ASHLEY CROWELL LICENSE No. PE95331 STATE OF FLORIDA PROFESSIONAL ENGINEER

0 ### ###

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CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C410

PSPXX-XXXX

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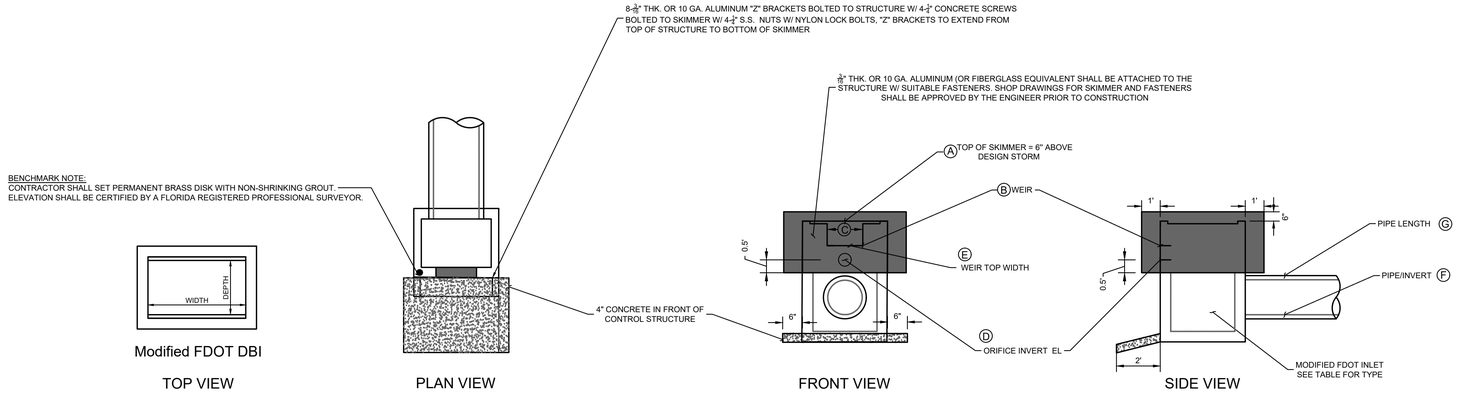
FILE: D:\DOCAUTOFORMS\SECTIONS\PHASE 1

ISSUED--FOR--CONSTRUCTION



CONTROL STRUCTURE DETAIL

STRUCTURE TO BE CONSTRUCTED UNDER THIS PLAN SET	STRUCTURE NAME	STRUCTURE TYPE	STRUCTURE WIDTH	STRUCTURE DEPTH	GRATE ELEV.	WEIR ELEV.	WEIR WIDTH	ORIFICE INVERT EL.	ORIFICE WIDTH	PIPE / START INVERT	END INVERT	LENGTH OF PIPE	25/YR- 96 HR DESIGN STORM
YES	STR 293	MOD. FDOT DBI	3.00'	2.33'	88.15	-	-	83.00	3.25"	24" / 83.20	83.00	34.0'	88.45
YES	STR 291	MOD. FDOT DBI	8.44'	3.38'	86.80	84.60	165"	84.00	3.5"	2-30" / 82.125	82.00	41.0'	87.23
YES	STR 23	MOD. FDOT DBI	4.42'	3.01'	93.70	93.00	96"	-	-	30" / 84.00	76.00	700.0'	94.03
YES	STR 137	MOD. FDOT DBI	8.44'	3.38'	88.00	86.25	180"	-	-	48" / 82.44	82.00	157.0'	87.00
YES	STR 149	MOD. FDOT DBI	3.00'	2.33'	89.00	-	-	85.00	3.5"	24" / 84.65	84.50	44.0'	88.79

PSPXX-XXXX

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COA# 29091

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HOWEY-IN-THE-HILLS

LAKE COUNTY , FLORIDA

MISSION RISE

TURNSTONE GROUP

PRELIMINARY SUBDIVISION PLAT

STRUCTURE DETAILS

DATE 02/27/2025

REVISIONS

KAITLYN ASHLEY CROWELL LICENSE No. PE95331 STATE OF FLORIDA PROFESSIONAL ENGINEER

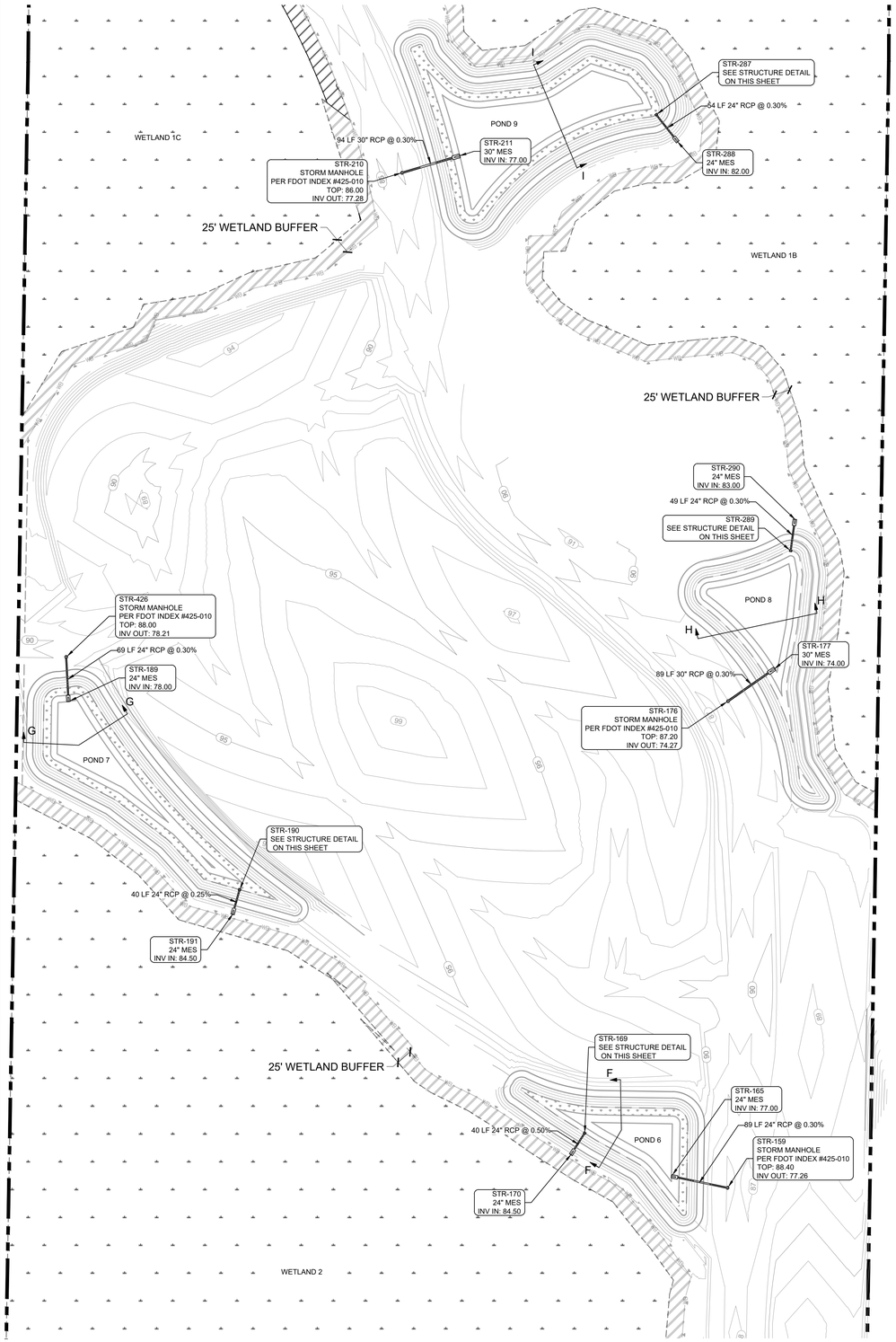
0 ### ###

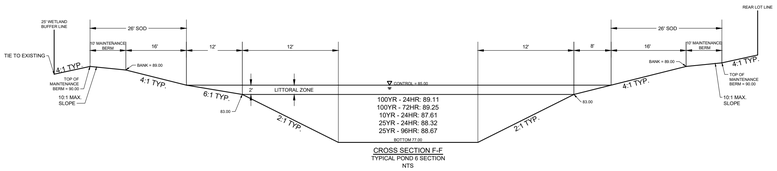
DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C411

FILE 01DRAWINGS\SHEETS\SHEETS\PHASE 1

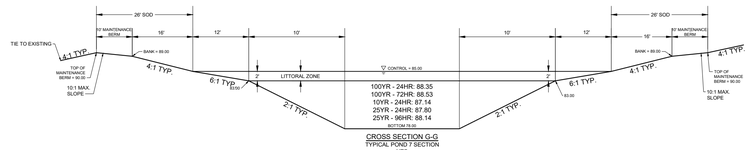
ISSUED FOR CONSTRUCTION

FILE NAME: \\ATLORL\Projects\23000180 Mission Rise DD and PUD\DWG\Turn Key\Construction\Phase 1\01DD-CA07 POND SECTIONS-PHASE 1.dwg LAST SAVED BY: cpeters 8/28/2025 2:10 PM PLOTTED BY: Zulphie Ortiz-Rosado 8/28/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG To PDF.PC3 PLOT STYLE: ATWELL.CTB

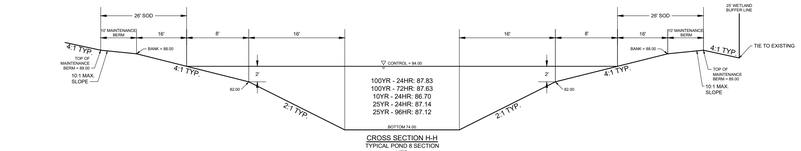




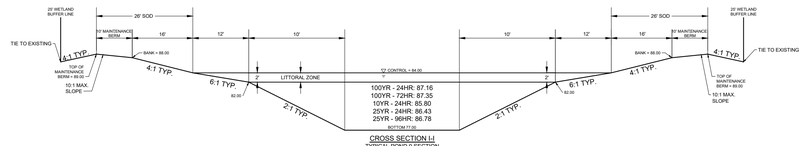
CROSS SECTION F-F
TYPICAL POND 6 SECTION
NTS



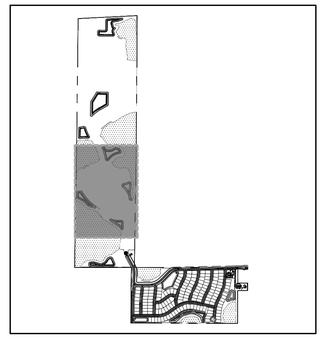
CROSS SECTION G-G
TYPICAL POND 7 SECTION
NTS



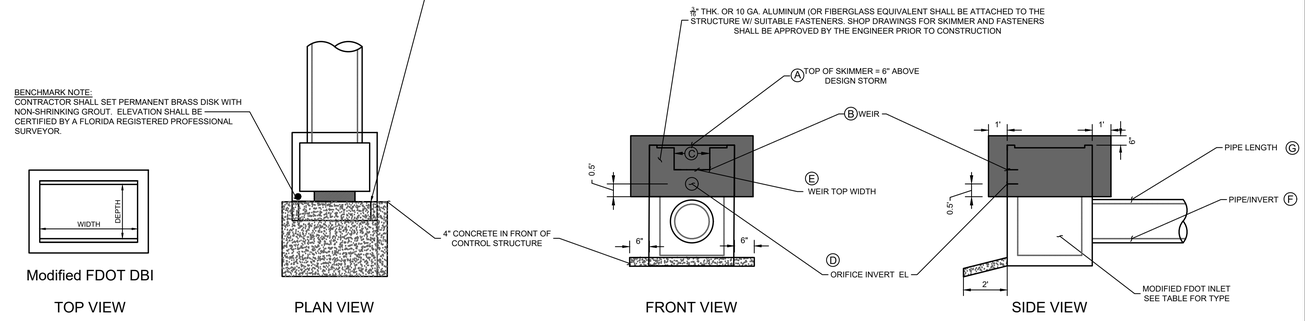
CROSS SECTION H-H
TYPICAL POND 8 SECTION
NTS



CROSS SECTION H
TYPICAL POND 9 SECTION
NTS



KEY MAP
NTS



NOTE: ALL STRUCTURES SHALL HAVE STEEL GRATES

CONTROL STRUCTURE DETAIL

STRUCTURE TO BE CONSTRUCTED UNDER THIS PLAN SET	STRUCTURE NAME	STRUCTURE TYPE	STRUCTURE WIDTH	STRUCTURE DEPTH	GRATE ELEV.	WEIR ELEV.	WEIR WIDTH	ORIFICE INVERT EL.	ORIFICE WIDTH	PIPE / START INVERT	END INVERT	LENGTH OF PIPE	25/YR- 96 HR DESIGN STORM
NO	STR 169	MOD. FDOT DBI	3.00'	2.33'	89.00	-	-	85.00	2.75"	24" / 84.70	84.50	40.0'	88.67
NO	STR 190	MOD. FDOT DBI	3.00'	2.33'	88.20	-	-	85.00	3"	24" / 84.66	84.50	52.0'	88.14
NO	STR 289	MOD. FDOT DBI	3.00'	2.33'	87.10	86.00	36"	84.00	3.25"	24" / 83.15	83.00	50.0'	87.12
NO	STR 287	MOD. FDOT DBI	3.00'	2.33'	87.00	-	-	84.00	4"	24" / 82.16	82.00	54.0'	86.78

PSPXX-XXXX

811
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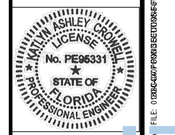
COA # 29091

SEC 27,34 TWP 20 S RGE 25 E
--
HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PRELIMINARY SUBDIVISION PLAT
FUTURE PH 2 - POND DETAILS

DATE 02/27/2025

REVISIONS

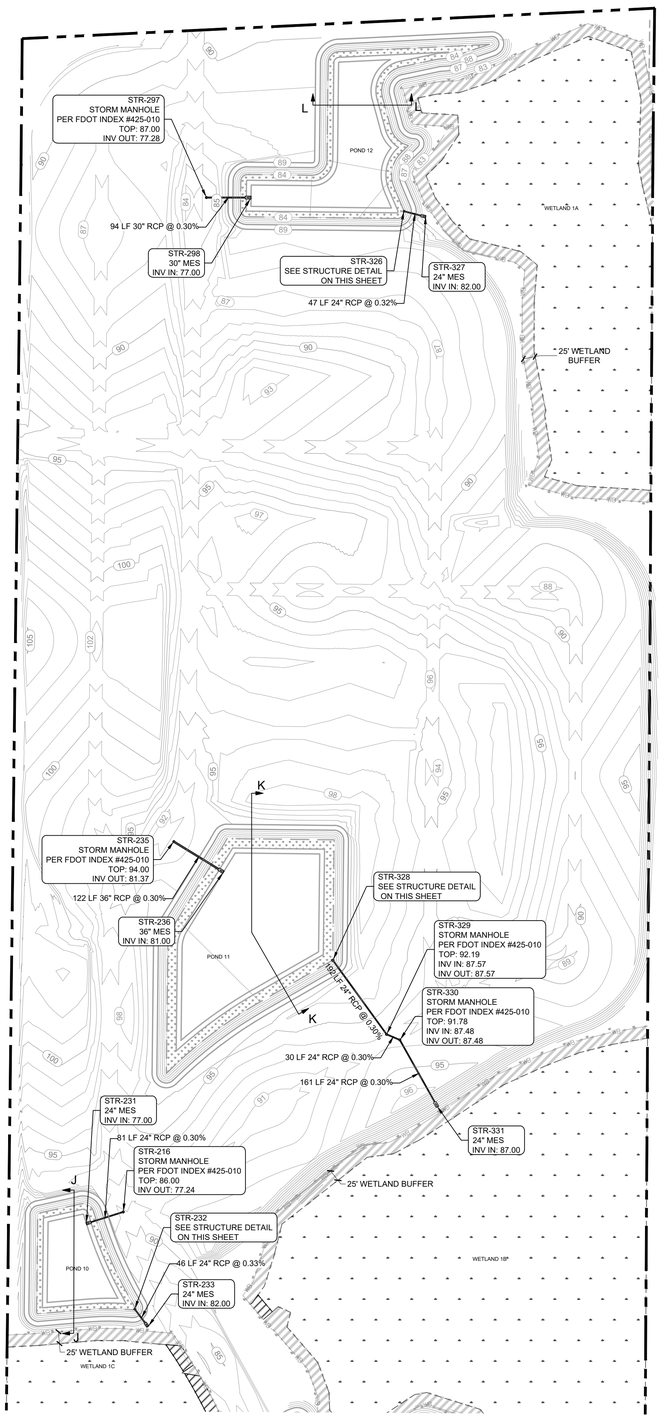


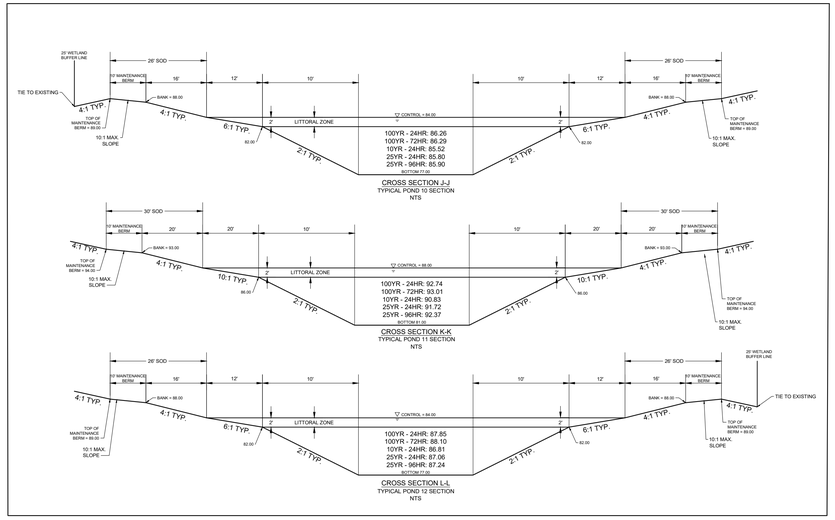
0 50' 100'

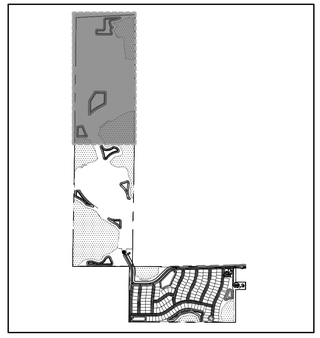
DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C412

ISSUED FOR CONSTRUCTION

FILE NAME: \\ATLWIL\Projects\23000180 Mission Rise DD and PSP\DWG\Plan Set\Construction\Phase 1\C181-C407 POND SECTIONS-FUTURE PH.dwg LAST SAVED BY: aparra 8/28/2025 1:47 PM PLOTTED BY: Zaphyr Orbe-Rosado 8/28/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG TO PDF.PC3 PLOT STYLE: ATWELL.CTB

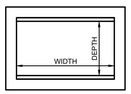






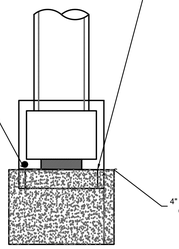
KEY MAP
NTS

BENCHMARK NOTE:
CONTRACTOR SHALL SET PERMANENT BRASS DISK WITH NON-SHRINKING GROUT. ELEVATION SHALL BE CERTIFIED BY A FLORIDA REGISTERED PROFESSIONAL SURVEYOR.

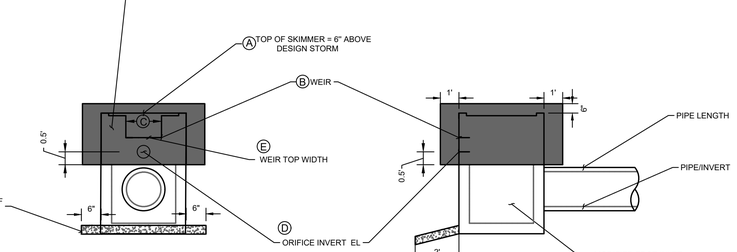


Modified FDOT DBI

TOP VIEW



PLAN VIEW



FRONT VIEW

SIDE VIEW

NOTE: ALL STRUCTURES
SHALL HAVE STEEL GRATES

CONTROL STRUCTURE DETAIL

STRUCTURE TO BE CONSTRUCTED UNDER THIS PLAN SET	**STRUCTURE NAME**	**STRUCTURE TYPE**	STRUCTURE WIDTH	STRUCTURE DEPTH	**GRATE ELEV.**	**WEIR ELEV.**	**WEIR WIDTH**	**ORIFICE INVERT EL.**	**ORIFICE WIDTH**	**PIPE / START INVERT**	END INVERT	**LENGTH OF PIPE**	**25/YR- 96 HR DESIGN STORM**
NO	STR 232	MOD. FDOT DBI	3.00'	2.33'	85.95	85.30	36"	84.00	3.50"	24" / 82.15	82.00	46.0'	85.90
NO	STR 328	MOD. FDOT DBI	4.42'	3.01'	92.50	-	-	88.00	5.50"	24" / 88.15	87.00	405.0'	92.37
NO	STR 326	MOD. FDOT DBI	3.00'	2.33'	86.70	-	-	84.00	5.00"	24" / 82.20	82.00	74.0'	87.24

PSPXX-XXXX

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COA# 29091

SEC 27,34 TWP 20 S RGE 25 E
--
HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PRELIMINARY SUBDIVISION PLAT
FUTURE PH 3- POND DETAILS

DATE 02/27/2025

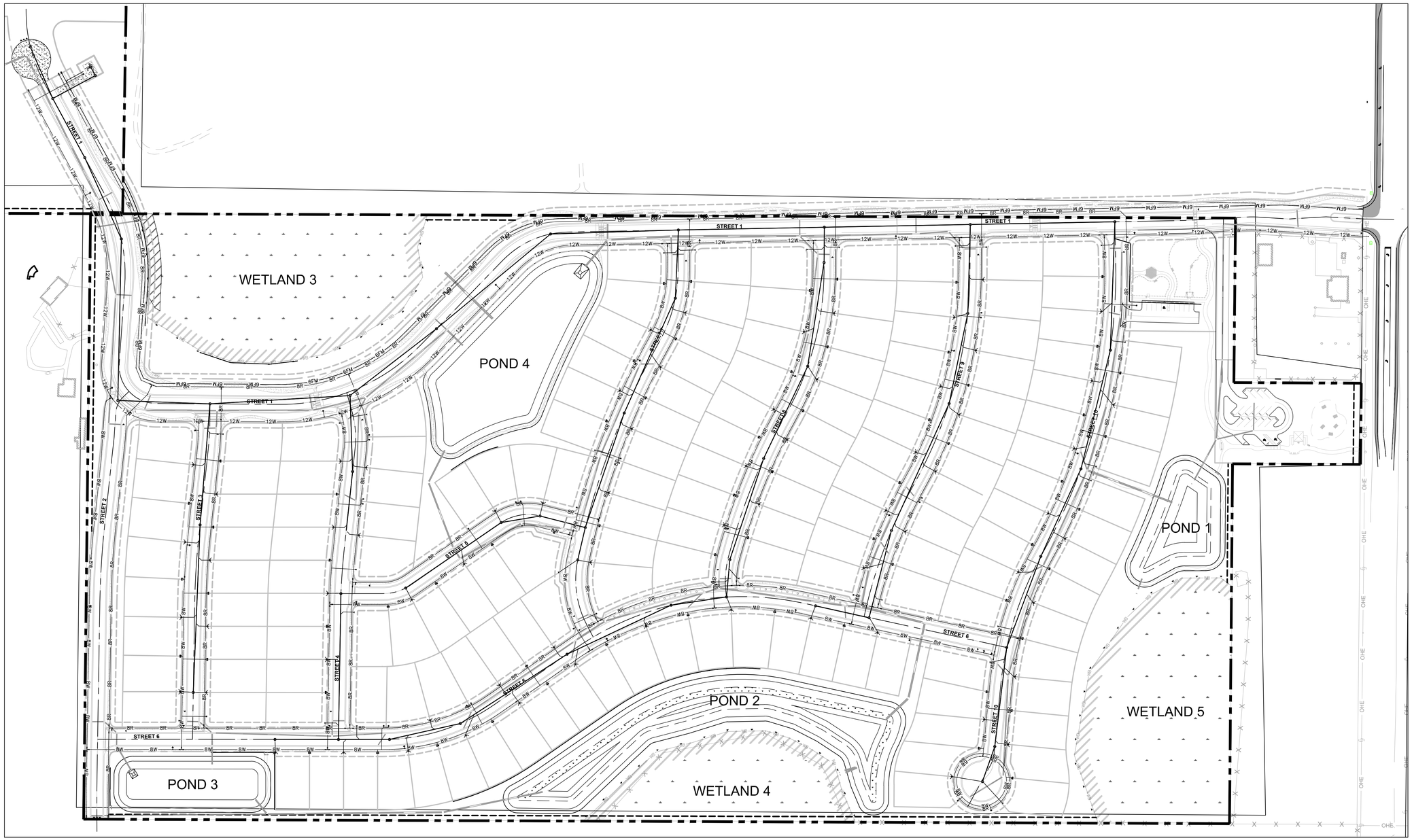
REVISIONS

MALYN ASHLEY CROMEL LICENSED No. PE95331 STATE OF FLORIDA PROFESSIONAL ENGINEER

0 75' 150'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C413

FILE: C:\Users\mcromel\Documents\CivilDocs\Projects\23000180 Mission Rise DO and PSP\DWG\Pond Sets\Construction\Phase 1\C413-C417 POND SECTIONS-FUTURE PH.dwg LAST SAVED BY: mcromel 5/28/2025 1:47 PM PLOTTED BY: Jujerie Ortiz-Rosado 5/28/2025 4:04:54 PM FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG TO PDF.PC3 PLOT STYLE: ATWELL.CTB



LEGEND

- EX. WATER MAIN
- PROP. 8" REUSE WATER MAIN
- PROP. 6" WATER MAIN
- PROP. 8" WATER MAIN
- PROP. SINGLE WATER SERVICE
- PROP. DOUBLE WATER SERVICE
- PROP. SANITARY SEWER MAIN
- PROP. SINGLE SANITARY SERVICE
- PROP. DOUBLE SANITARY SERVICE
- PROP. SANITARY SEWER MANHOLE
- PROP. FIRE HYDRANT
- PROP. TEE
- PROP. REDUCER
- PROP. GATE VALVE (TO MATCH SIZE OF CONNECTING PIPE)

PSPXX-XXXX

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COA# 29091

SEC 27,34 TWP 20 S RGE 25 E | -- | HOWEY-IN-THE-HILLS | LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PRELIMINARY SUBDIVISION PLAT
OVERALL UTILITY PLAN

DATE 02/27/2025

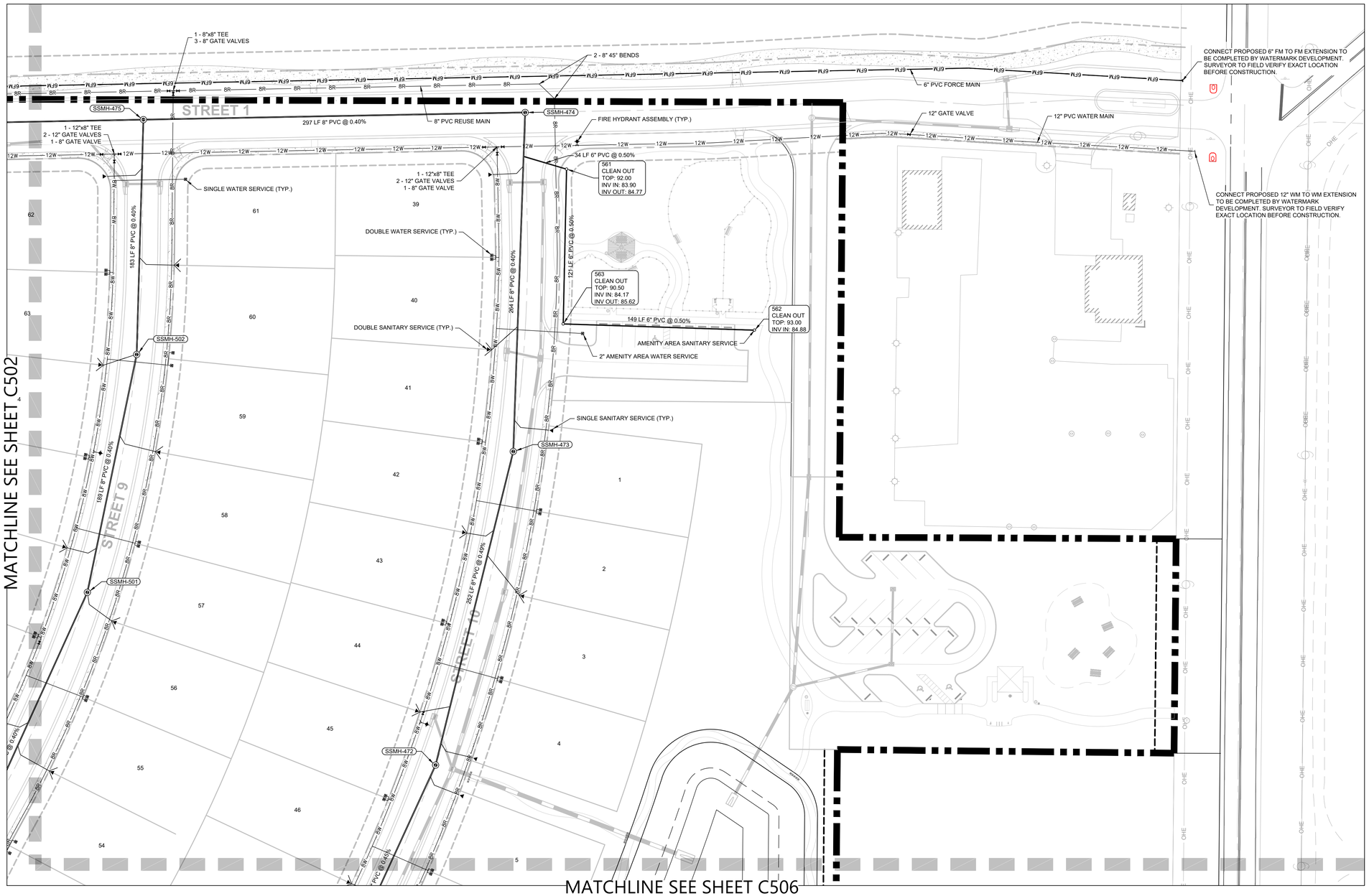
REVISIONS

KATELYN ASHLEY CROWDER LICENSE No. PE95331 STATE OF FLORIDA PROFESSIONAL ENGINEER

0 50' 100'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C500

FILE NAME: \\ATLWIL\Projects\23000180 Mission Rise 01 and PUP\DWG\Plan Set\Construction\Prose \\ATLWP-0509 OVERALL UTILITY PLAN.dwg LAST SAVED BY: apena 8/29/2025 3:47 PM PLOTTED BY: Zuleyma Ortiz-Rosado 8/29/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG TO PDF.PC3 PLOT STYLE: ATWELL.CTB



KEY MAP
NTS

LEGEND

- EX. WATER MAIN
- PROP. 8" REUSE WATER MAIN
- PROP. 6" WATER MAIN
- PROP. 8" WATER MAIN
- PROP. SINGLE WATER SERVICE
- PROP. DOUBLE WATER SERVICE
- PROP. SANITARY SEWER MAIN
- PROP. SINGLE SANITARY SERVICE
- PROP. DOUBLE SANITARY SERVICE
- PROP. SANITARY SEWER MANHOLE
- PROP. FIRE HYDRANT
- PROP. TEE
- PROP. REDUCER
- PROP. GATE VALVE (TO MATCH SIZE OF CONNECTING PIPE)

NOTES:

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FL CA # 29184
COA # 29091

SEC 27,34 TWP 20 S RGE 25 E
--
HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
UTILITY PLAN

DATE 08/29/2025

REVISIONS

KALYN ASHLEY CROMWELL
LICENSE
No. PE95331
STATE OF FLORIDA
PROFESSIONAL ENGINEER

0 20' 40'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C501

FILE: 0180450\0180450-00001\PERMIT\

ISSUED--FOR--CONSTRUCTION

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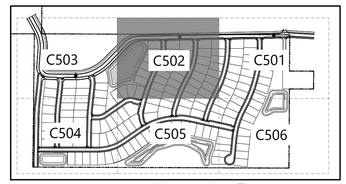
Item 2.





KEY MAP
NTS

LEGEND

W — W	EX. WATER MAIN
8R — 8R	PROP. 8" REUSE WATER MAIN
6W — 6W	PROP. 6" WATER MAIN
8W — 8W	PROP. 8" WATER MAIN
	PROP. SINGLE WATER SERVICE
	PROP. DOUBLE WATER SERVICE
	PROP. SANITARY SEWER MAIN
	PROP. SINGLE SANITARY SERVICE
	PROP. DOUBLE SANITARY SERVICE
	PROP. SANITARY SEWER MANHOLE
	PROP. FIRE HYDRANT
	PROP. TEE
	PROP. REDUCER
	PROP. GATE VALVE (TO MATCH SIZE OF CONNECTING PIPE)

NOTES:

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COA# 29091

SEC 27,34 TWP 20 S RGE 25 E
--
HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
UTILITY PLAN

DATE 08/29/2025

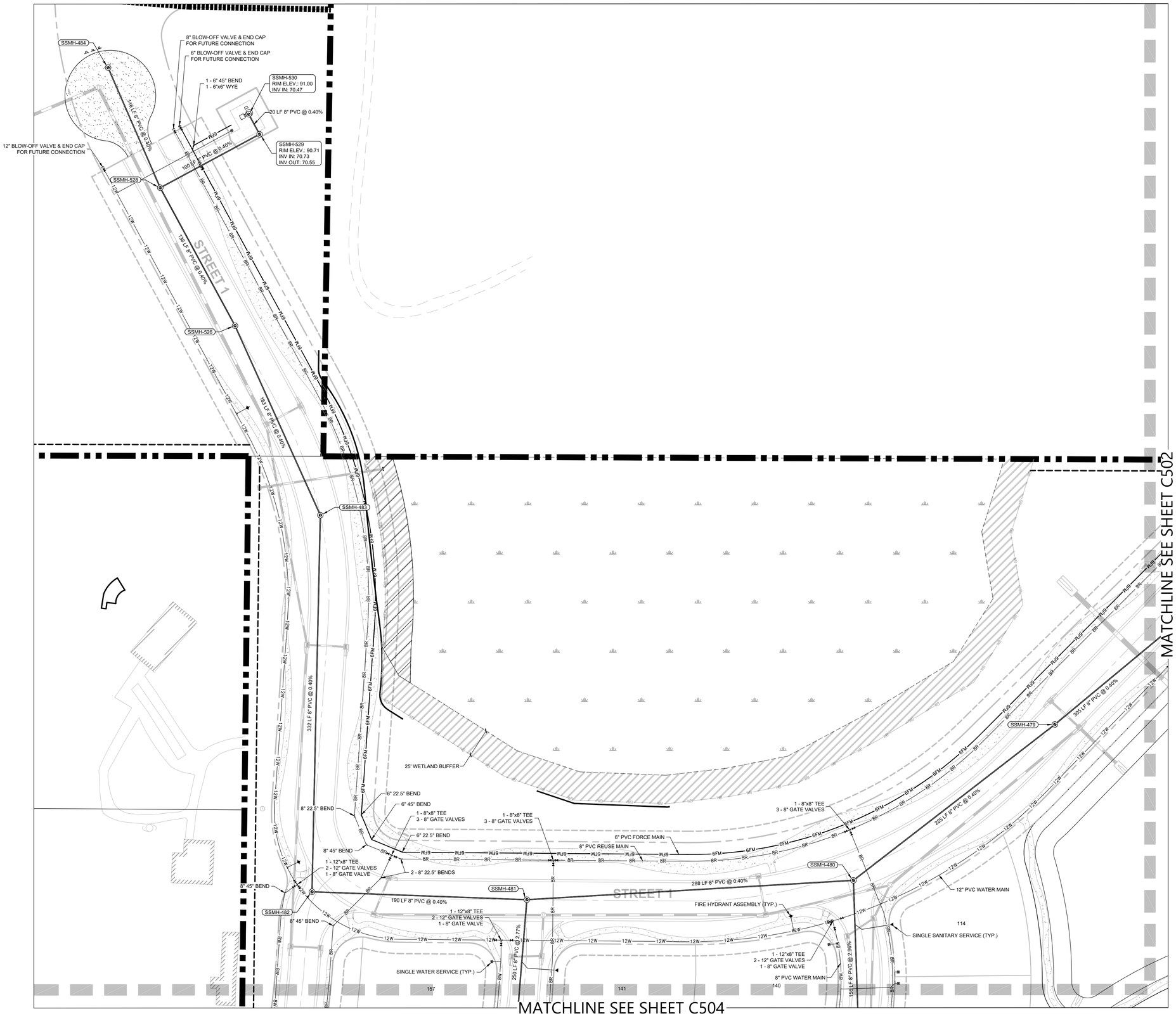
REVISIONS

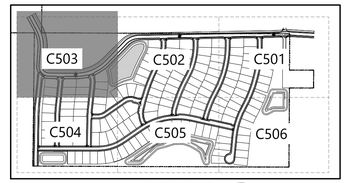
KATLYN ASHLEY CROWELL
LICENSE
No. PE95331
STATE OF FLORIDA
PROFESSIONAL ENGINEER

0 20' 40'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C502

697





KEY MAP
NTS

LEGEND

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COA # 29091

SEC 27,34 TWP 20 S RGE 25 E

--

HOWEY-IN-THE-HILLS

LAKE COUNTY , FLORIDA

MISSION RISE

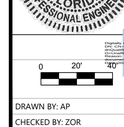
TURNSTONE GROUP

PHASE 1 CONSTRUCTION PLANS

UTILITY PLAN

DATE 08/29/2025

REVISIONS



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DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C503

ISSUED FOR CONSTRUCTION

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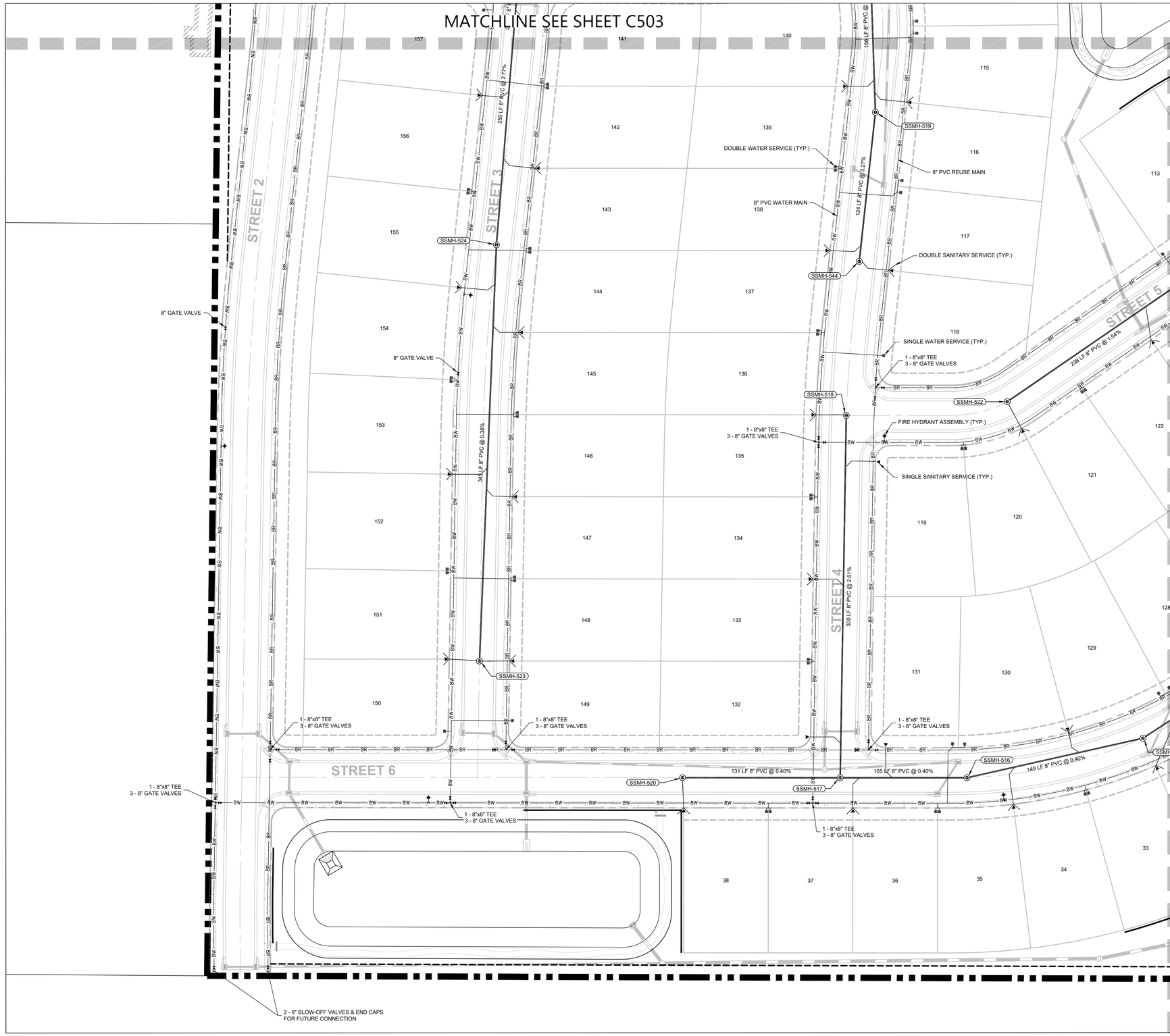

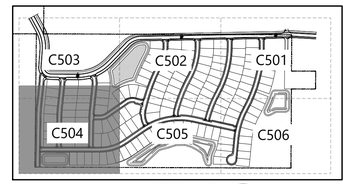

KEY MAP
NTS

LEGEND

W — W	EX. WATER MAIN
8R — 8R	PROP. 8" REUSE WATER MAIN
6W — 6W	PROP. 6" WATER MAIN
8W — 8W	PROP. 8" WATER MAIN
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	PROP. SANITARY SEWER MAIN
	PROP. SINGLE SANITARY SERVICE
	PROP. DOUBLE SANITARY SERVICE
	PROP. SANITARY SEWER MANHOLE
	PROP. FIRE HYDRANT
	PROP. TEE
	PROP. REDUCER
	PROP. GATE VALVE (TO MATCH SIZE OF CONNECTING PIPE)

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COA# 29091

SEC 27,34 TWP 20 S RGE 25 E
--
HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
UTILITY PLAN

DATE 08/29/2025

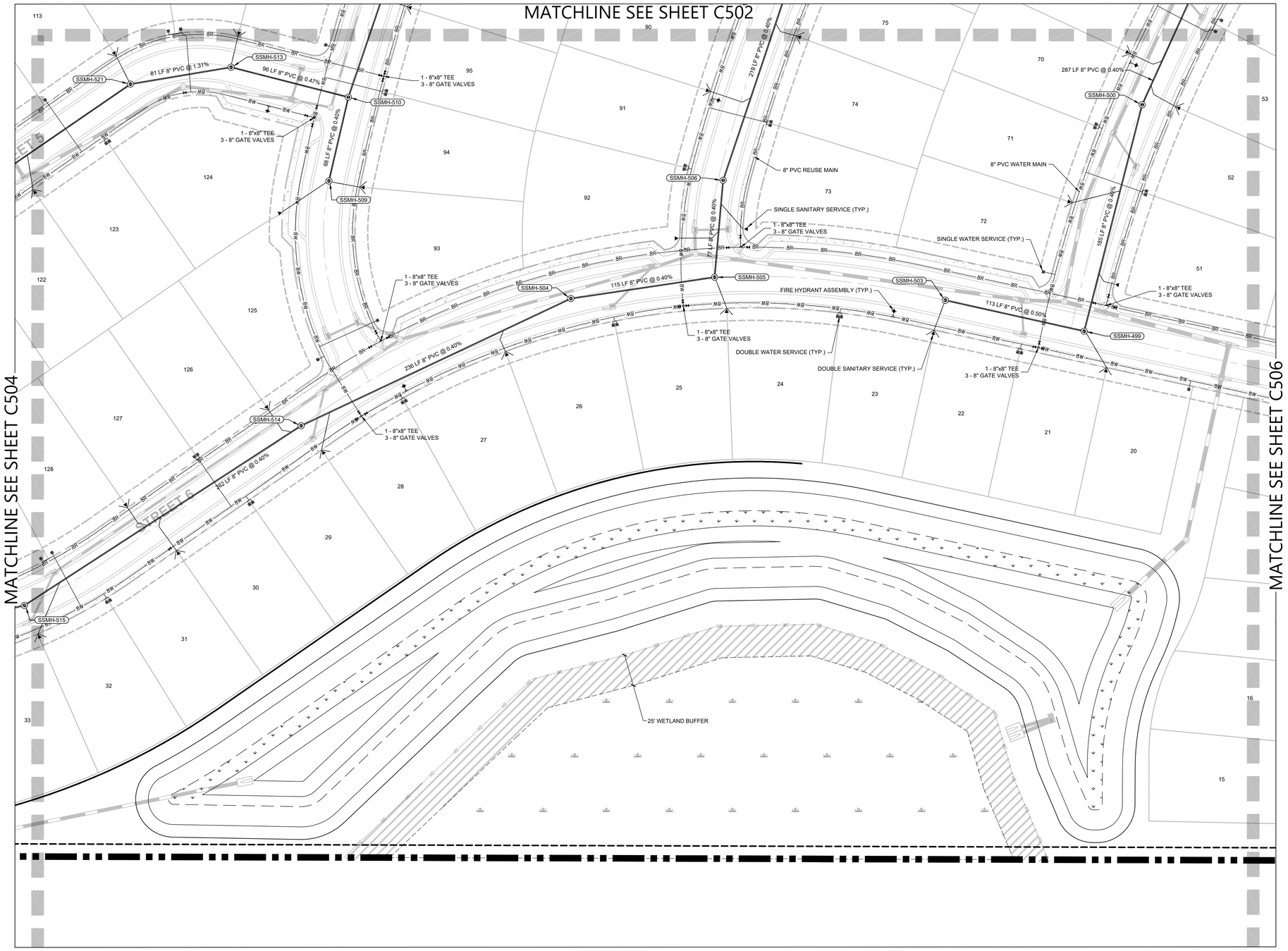
REVISIONS

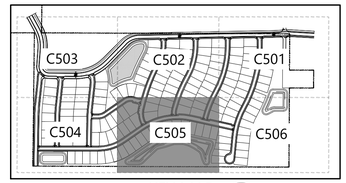
KATLYN ASHLEY CROWELL LICENSE No. PE95331 STATE OF FLORIDA PROFESSIONAL ENGINEER

0 20' 40'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C504

Item 2.





KEY MAP
NTS

LEGEND

W — W	EX. WATER MAIN
8R — 8R	PROP. 8" REUSE WATER MAIN
6W — 6W	PROP. 6" WATER MAIN
8W — 8W	PROP. 8" WATER MAIN
	PROP. SINGLE WATER SERVICE
	PROP. DOUBLE WATER SERVICE
	PROP. SANITARY SEWER MAIN
	PROP. SINGLE SANITARY SERVICE
	PROP. DOUBLE SANITARY SERVICE
	PROP. SANITARY SEWER MANHOLE
	PROP. FIRE HYDRANT
	PROP. TEE
	PROP. REDUCER
	PROP. GATE VALVE (TO MATCH SIZE OF CONNECTING PIPE)

NOTES:

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COA# 29091

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HOWEY-IN-THE-HILLS
LAKE COUNTY, FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
UTILITY PLAN

DATE 08/29/2025

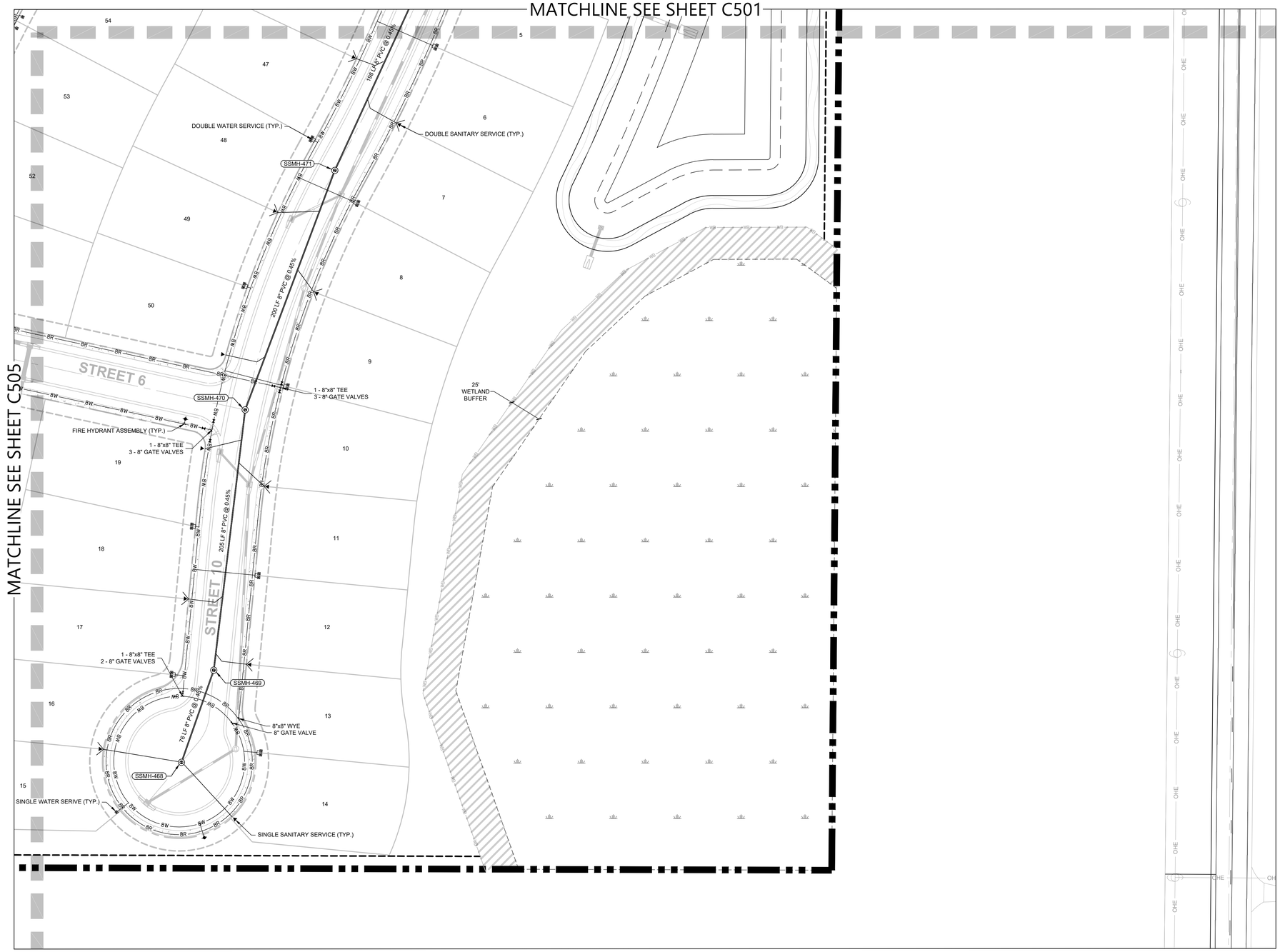
REVISIONS

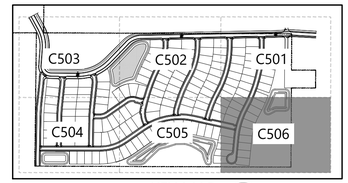
KATLYN ASHLEY CROWELL
LICENSE
No. PE95331
STATE OF FLORIDA
PROFESSIONAL ENGINEER

0 20' 40'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C505

700





KEY MAP
NTS

LEGEND

W W	EX. WATER MAIN
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6W 6W	PROP. 6" WATER MAIN
8W 8W	PROP. 8" WATER MAIN
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	PROP. DOUBLE WATER SERVICE
	PROP. SANITARY SEWER MAIN
	PROP. SINGLE SANITARY SERVICE
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HOWEY-IN-THE-HILLS
LAKE COUNTY, FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
UTILITY PLAN

DATE 08/29/2025

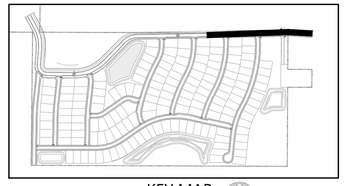
REVISIONS

KATLYN ASHLEY CROWELL
LICENSE
No. PE95331
STATE OF FLORIDA
PROFESSIONAL ENGINEER

0 20' 40'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C506

701



KEY MAP
NTS

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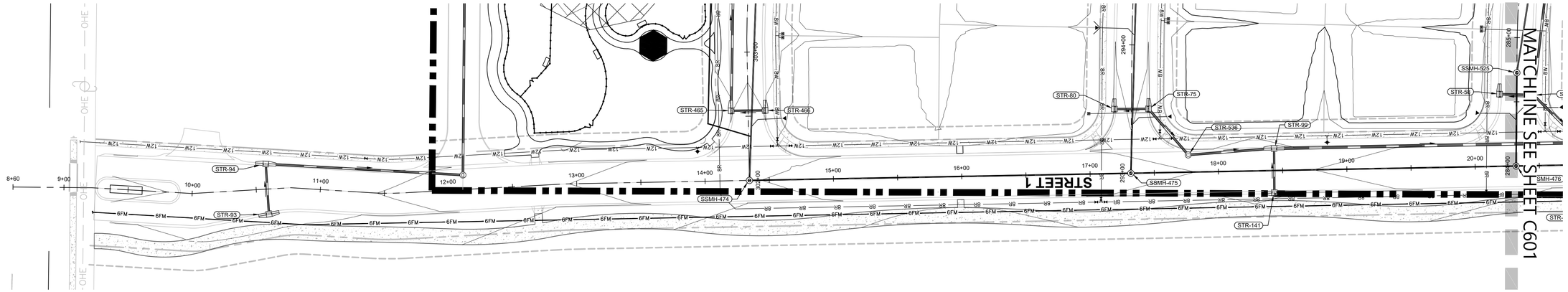
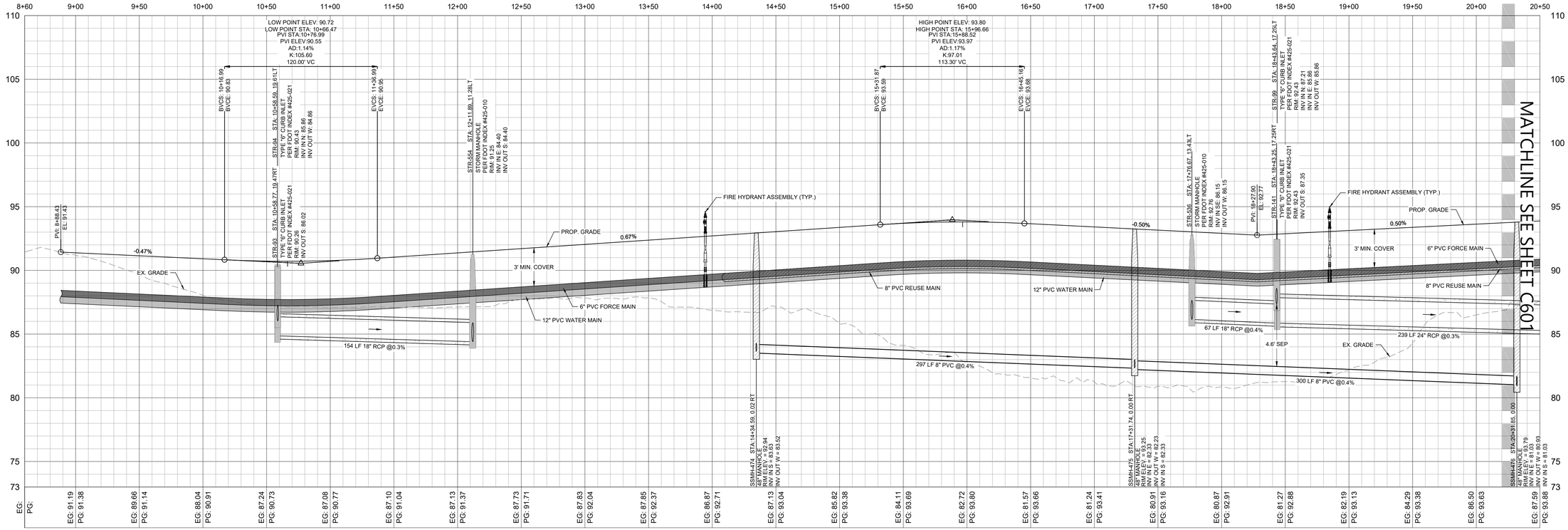


PROFILE - STREET 1 PH 1
From Station: 8+60.00 to Station 20+50.00
SCALE: 1" = 40' H & 1" = 4' V

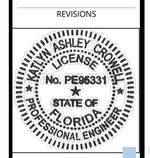


MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
STREET 1 PLAN & PROFILE

SEC 27,34 TWP 20 S RGE 25 E
--
HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

DATE 08/29/2025

REVISIONS



0 20' 40

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C600

FILE: 0180-0500 STREET 1 P&P

ISSUED FOR CONSTRUCTION

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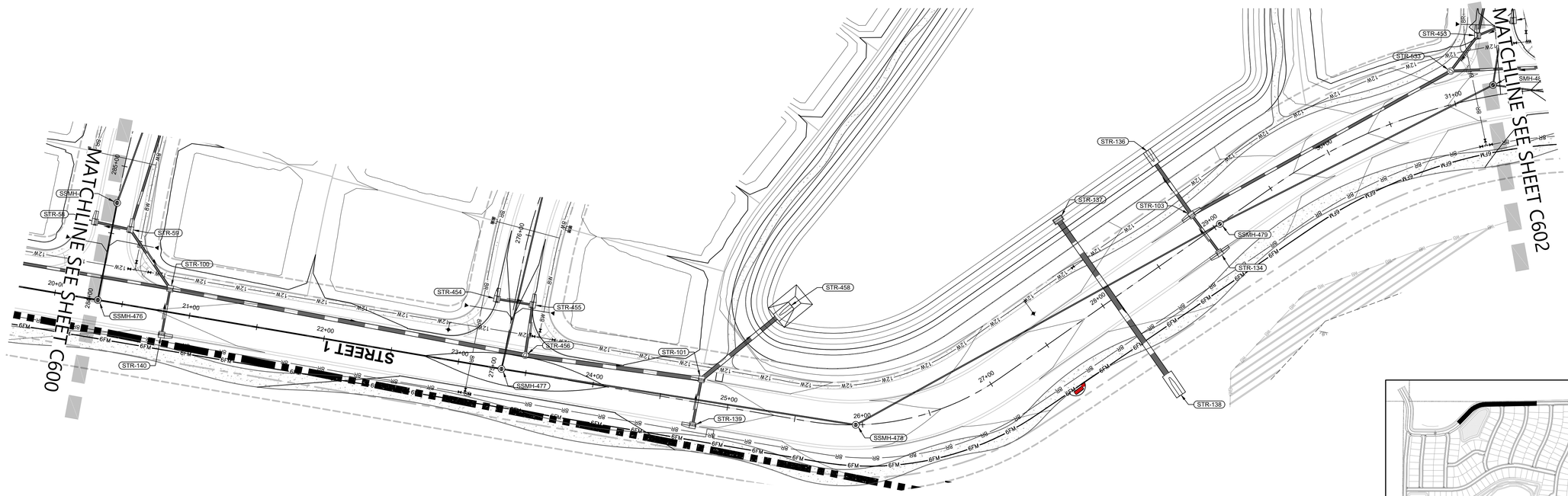
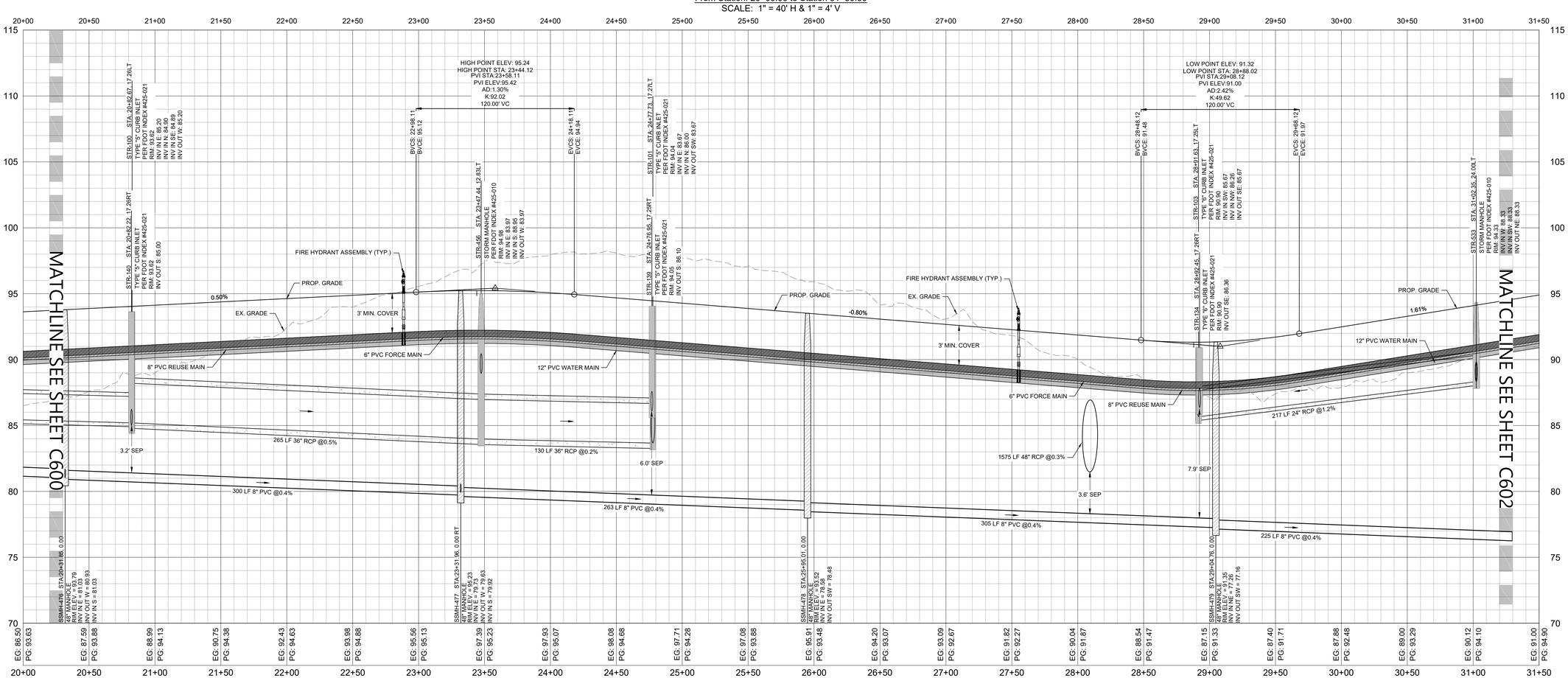


KEY MAP
NTS

PROFILE - STREET 1 PH 1
From Station: 20+00.00 to Station 31+50.00
SCALE: 1" = 40' H & 1" = 4' V



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LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
STREET 1 PLAN & PROFILE

DATE 08/29/2025

REVISIONS

KATLYN ASHLEY CROWDER
LICENSE
No. PE95331
STATE OF FLORIDA
PROFESSIONAL ENGINEER

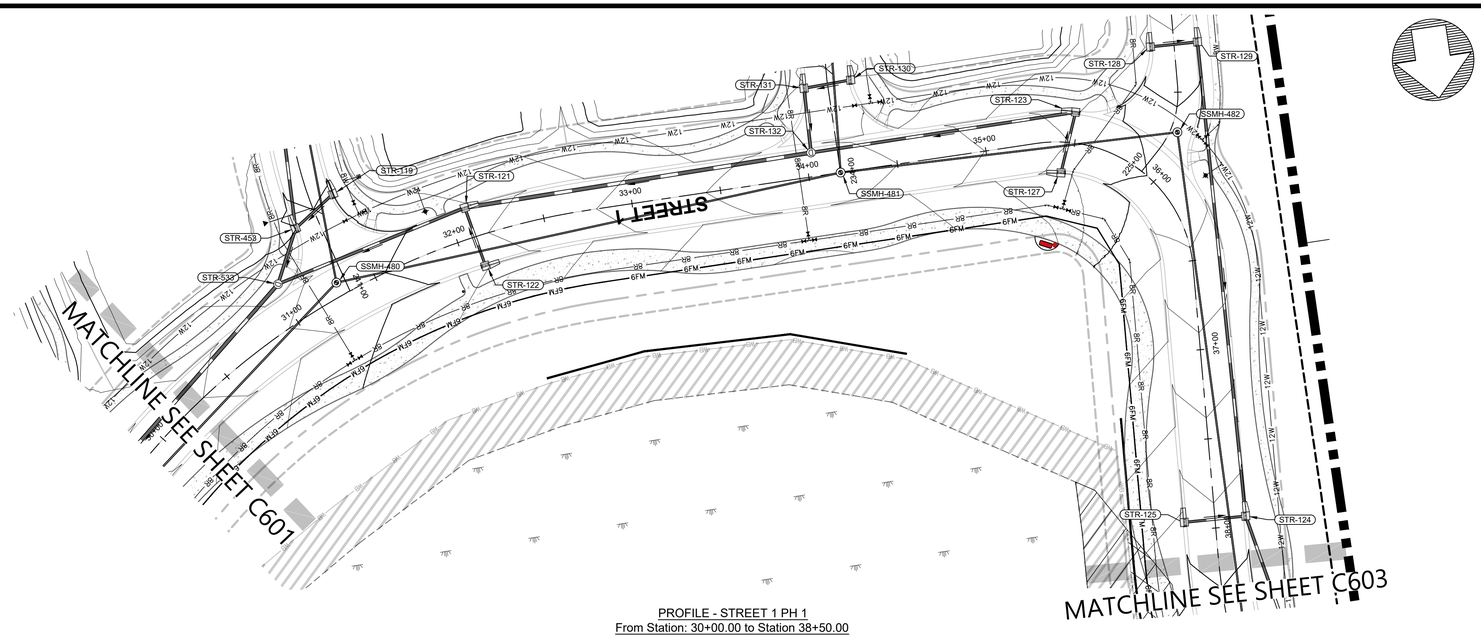
0 20' 40'

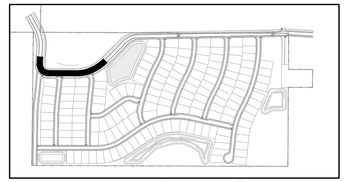
DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C601

FILE: 0180-C600 STREET 1 P&P

ISSUED--FOR--CONSTRUCTION

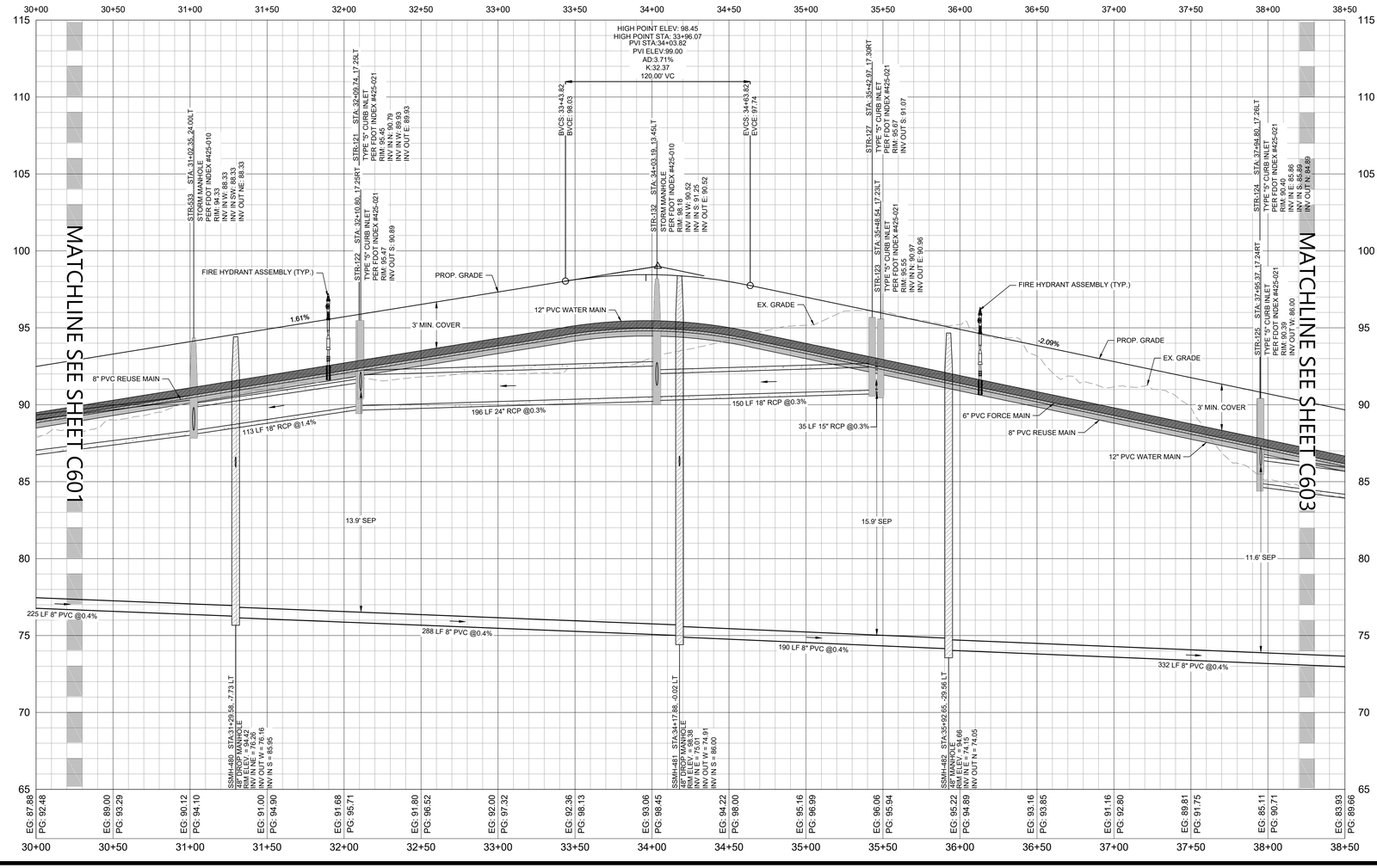
FILE NAME: \\ATLWIL1\Projects\23000180 Mission Rise 80 and P&P\DWG\For Sale\Construction\Phase 1\0180-C600 STREET 1 P&P.dwg LAST SAVED BY: cgreene 8/29/2025 3:07 PM PLOTTED BY: Zagayle Ortiz-Rosado 8/29/2025 3:07 PM PLOTTED TO PDF/PC3 PLOT STYLE: ATWELL.CTB





KEY MAP
NTS

PROFILE - STREET 1 PH 1
From Station: 30+00.00 to Station 38+50.00
SCALE: 1" = 40' H & 1" = 4' V



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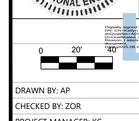
HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
STREET 1 PLAN & PROFILE

DATE 08/29/2025

REVISIONS

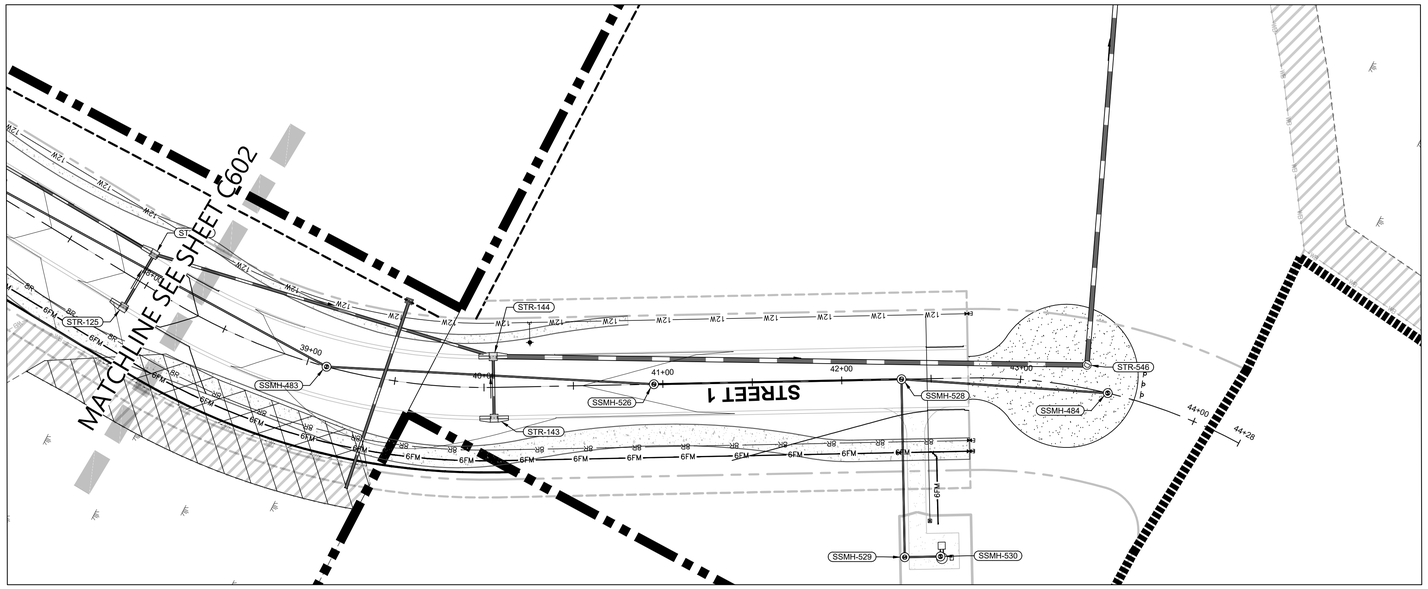


0 20' 40'

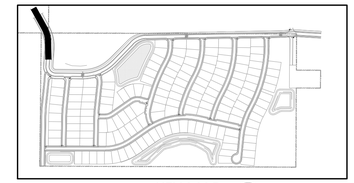
DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C602

ISSUED FOR CONSTRUCTION
FILE: 0180-C600 STREET 1 P&P

FILE NAME: \\ATWELL\Projects\23000180 Mission Rise DD and PSP\Civil\Cad\Construction\Phase 1\Utility Plan\0180-C600 STREET 1 P&P.dwg LAST SAVED BY: cpenna 8/28/2025 3:07 PM PLOTTED BY: Zayda Ortiz-Rosado 8/29/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG TO PDF.PC3 PLOT STYLE: ATWELL.CTB

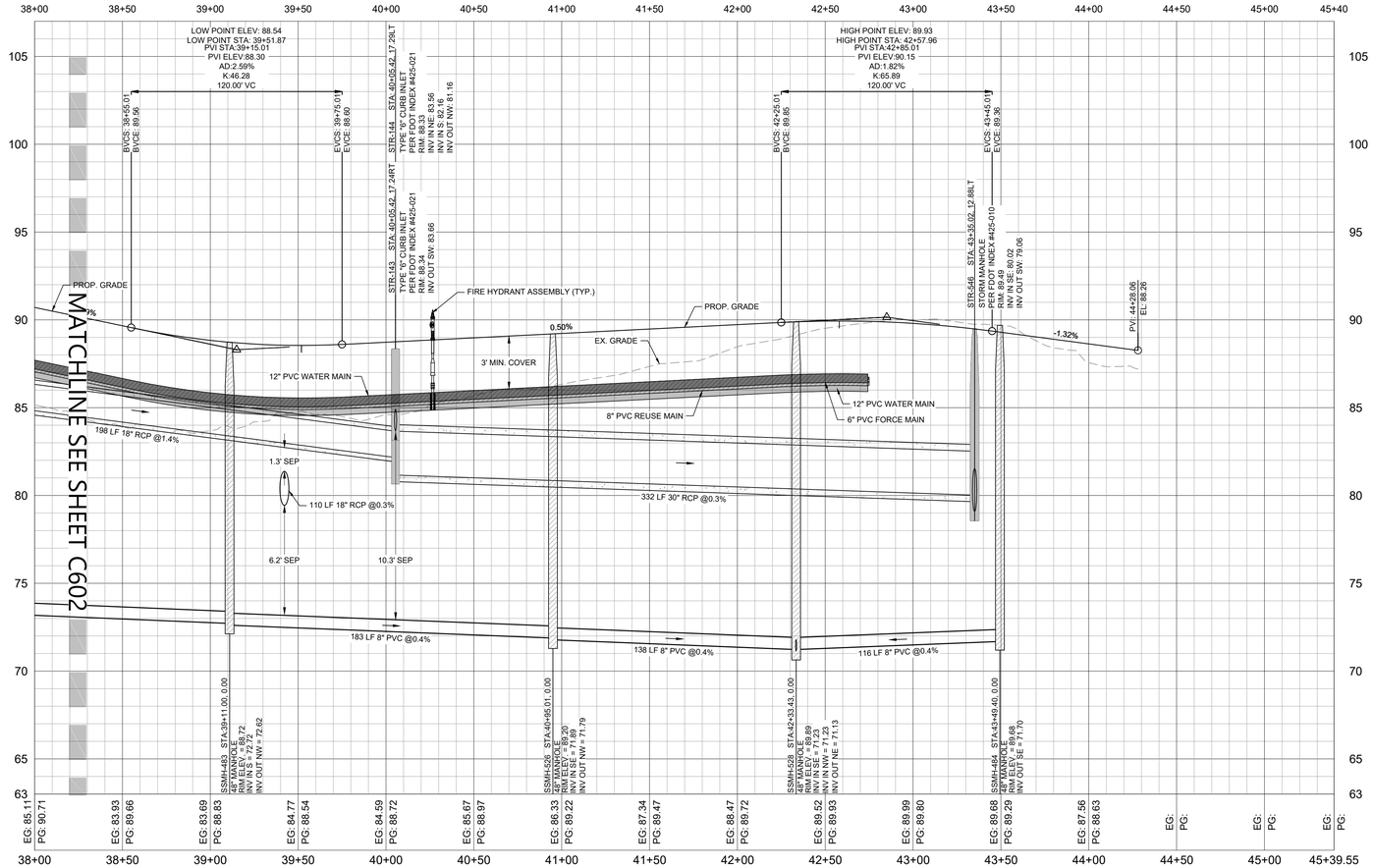






KEY MAP
NTS

PROFILE - STREET 1 PH 1
From Station: 38+00.00 to Station 45+39.55
SCALE: 1" = 40' H & 1" = 4' V



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COA# 29091

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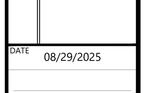
HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
STREET 1 PLAN & PROFILE

DATE 08/29/2025

REVISIONS



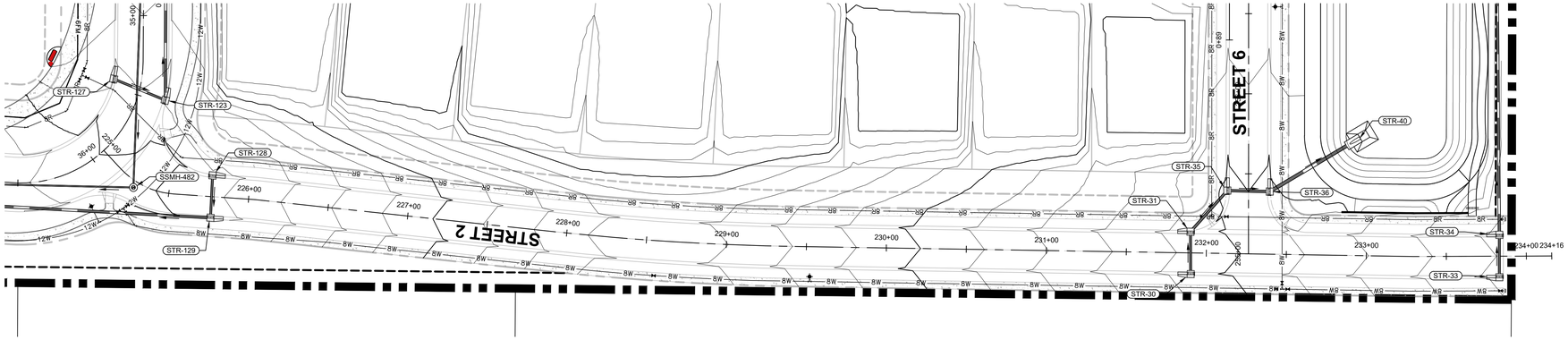
0 20' 40'

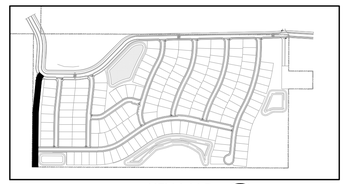
DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C603

FILE: 0180-C600 STREET 1 P&P

NOT ISSUED FOR CONSTRUCTION

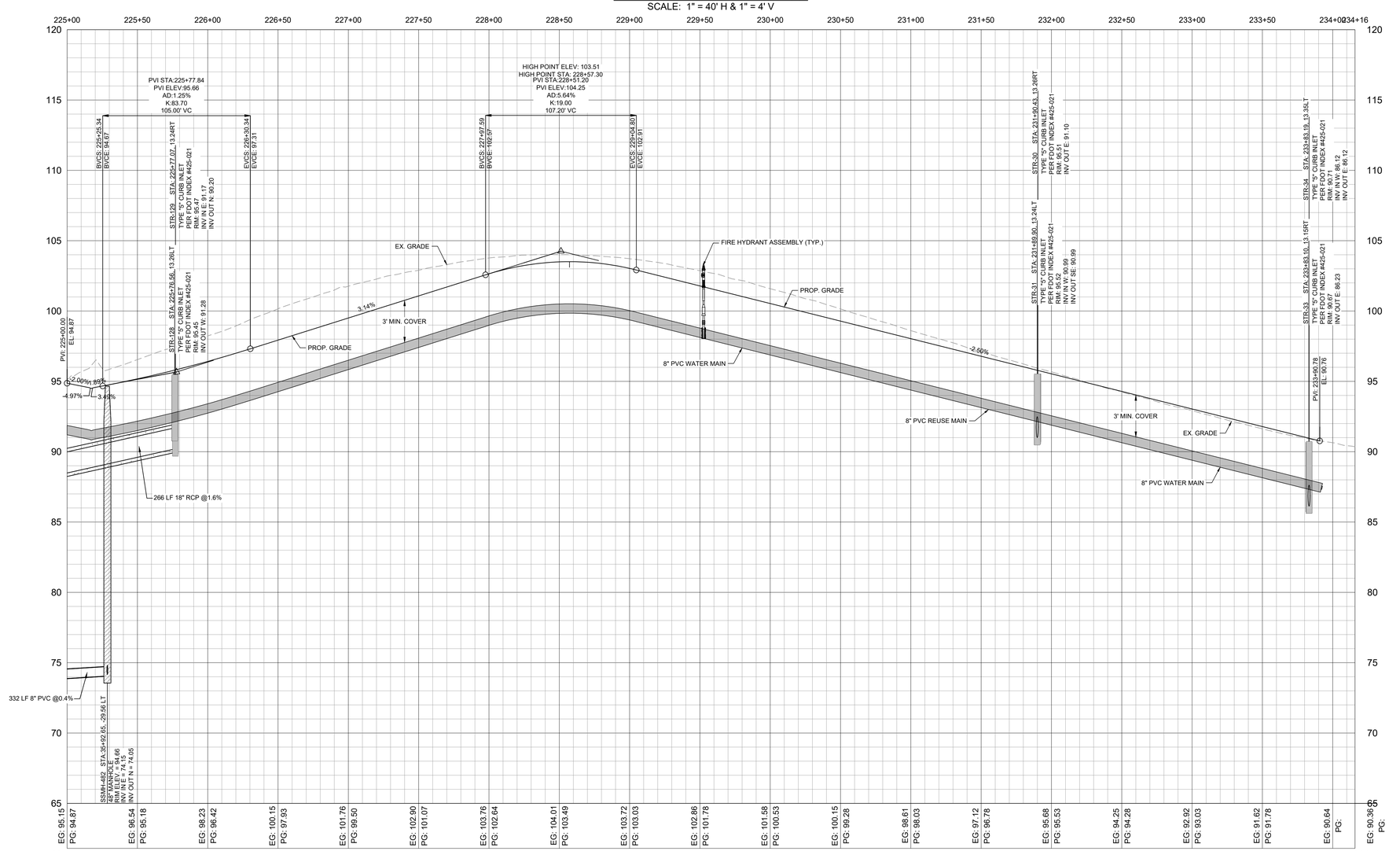
FILE NAME: \\Vc08k\Projects\23000180 Mission Rise 02 and PSP\DWG\Plan Sets\Construction\Phase 1\0180-C600 STREET 1 P&P.dwg LAST SAVED BY: cpreus 8/28/2025 3:07 PM PLOTTED BY: Zdpete Ortiz-Morales 8/29/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) STYCFG: DWG TO PDF.PC3 PLOT STYLE: ATWELL.CTB





KEY MAP
NTS

PROFILE - STREET 2
From Station: 225+00.00 to Station 234+15.87
SCALE: 1" = 40' H & 1" = 4' V



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ORLANDO, FL 32801
407.774.7778
COA # 29091

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HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
STREET 2 PLAN & PROFILE

DATE 08/29/2025

REVISIONS



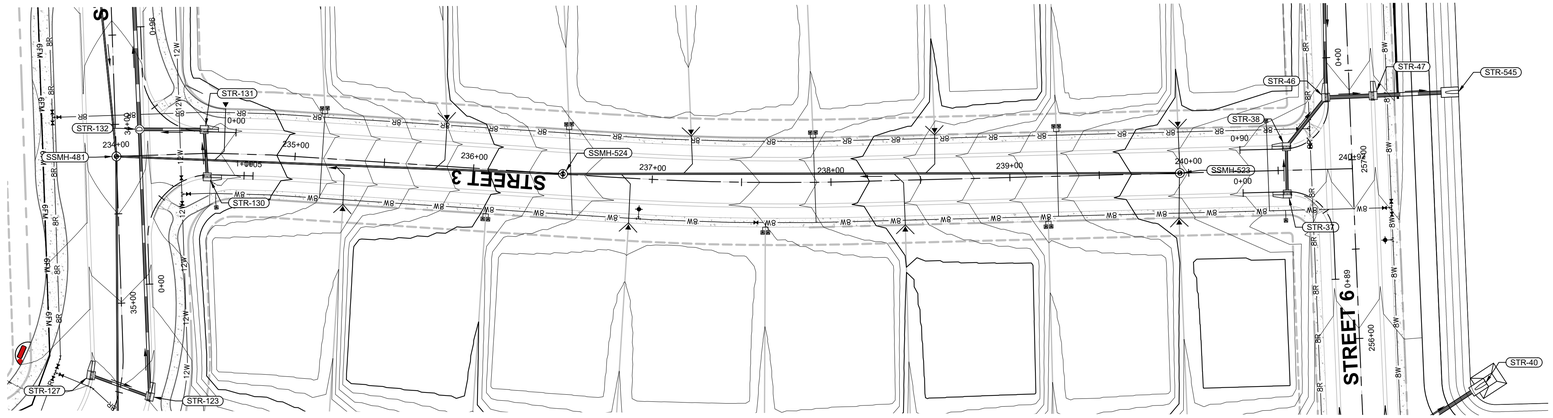
0 20' 40

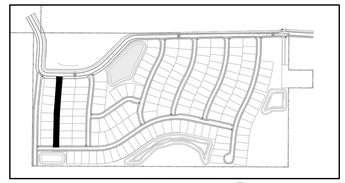
DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C604

FILE: 0180-D00 STREET 12-15 P&P

ISSUED—FOR—CONSTRUC

FILE NAME: \\JV1DWL\Projects\23000180 Mission Rise DD and PSP\DWG\Plan Set\Construction\Plans \\JV1BH-D00 STREET 12-15 P&P.dwg LAST SAVED BY: apenn 8/28/2025 4:08 PM PLOTTED BY: Edgardo Ortiz-Rosado 8/29/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG TO PDF.PC3 PLOT STYLE: ATWELL.CTB





KEY MAP
NTS

PROFILE - STREET 3
From Station: 233+50.00 to Station 241+50.00
SCALE: 1" = 40' H & 1" = 4' V

811
Know what's below. Call before you dig.
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COA# 29091

SEC 27,34 TWP 20 S RGE 25 E
--
HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
STREET 3 PLAN & PROFILE

DATE 08/29/2025

REVISIONS

KATHLEEN ASHLEY CROWDER
LICENSE
No. PE95331
STATE OF FLORIDA
PROFESSIONAL ENGINEER

0 20' 40'

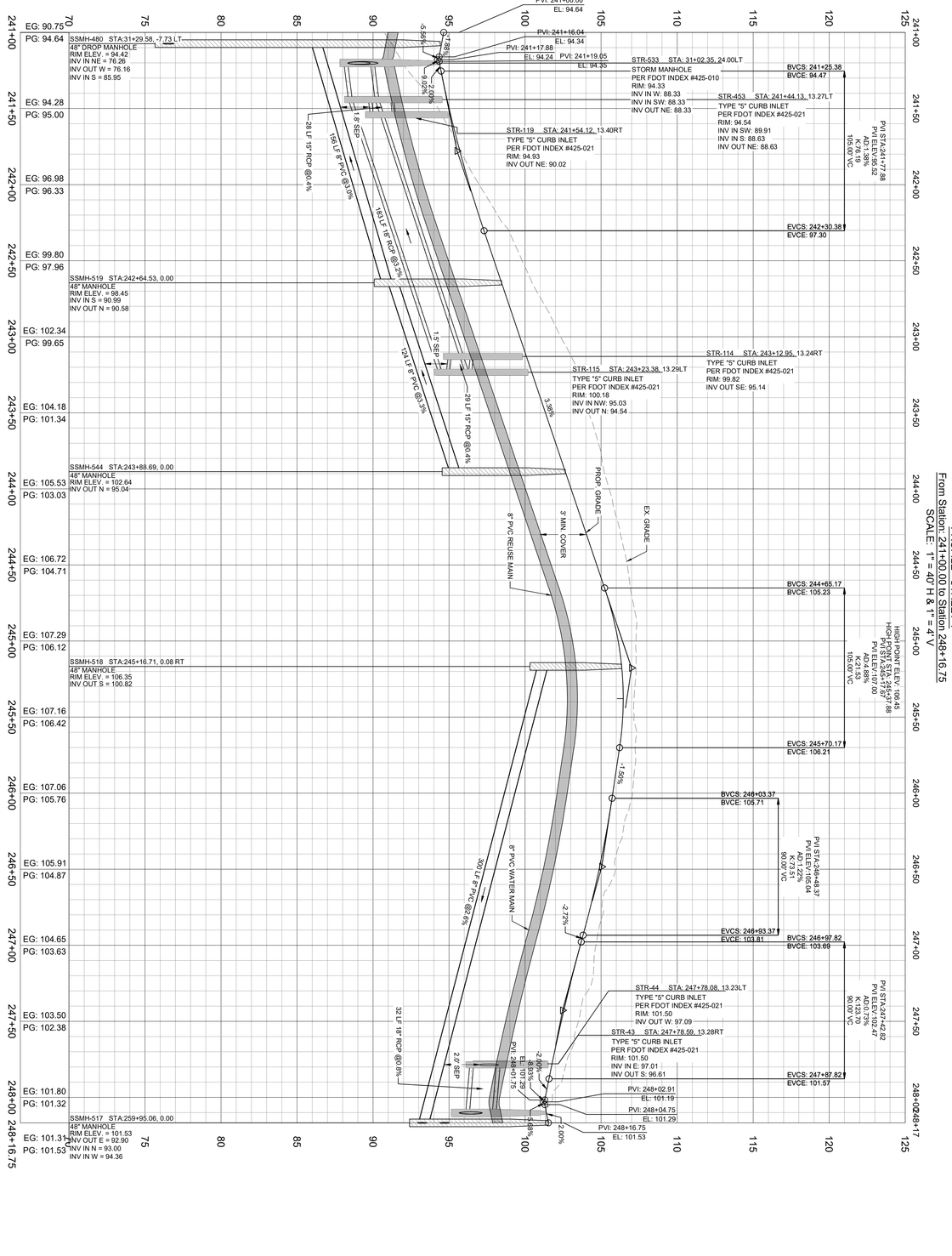
DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C605

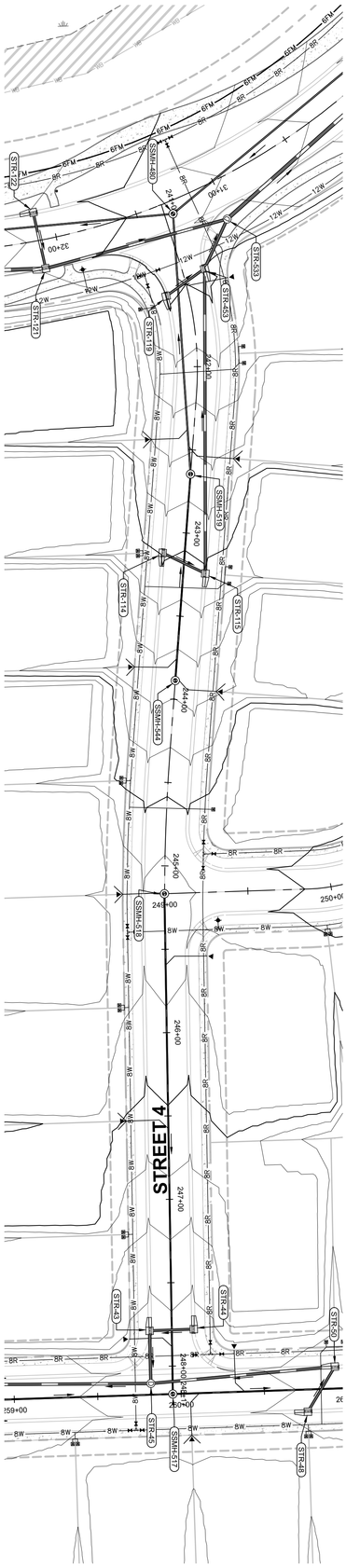
FILE: 0180-C600 STREET 12-15 P&P

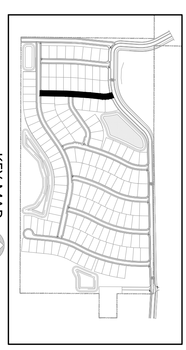
ISSUED--FOR--CONSTRUCTION

FILE NAME: \\VLOBCLPnpnvh\230001801 Mission Rise 01 and P3P\pnh\Plan Sets\Construction\Phase 1\0180-C600 STREET 12-15 P&P.dwg LAST SAVED BY: dgomez 8/29/2025 4:08 PM PLOTTED BY: Zuleyka Ortiz-Rosado 8/29/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) STATUS: DWG TO PDF.PC3 PLOT STYLE: ATWELL.CTB

FILE NAME: \\FLORL\Projects\23000180 Mission Rise OD and PSP\DWG\Plan Sets\Construction\Phase 1\0180-C600 STREET 12-15 P&P.dwg LAST SAVED BY: aperez 8/28/2025 4:08 PM PLOTTED BY: Zujeylie Ortiz-Rosado 8/29/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG TO PDF.PC3 PLOT STYLE: ATWELL.CTB







KEY MAP
NTS

DATE 08/29/2025	MISSION RISE	SEC 27,34 TWP 20 S RGE 25 E	ATWELL 866.850.4200 www.atwell-group.com 111 N. MAGNOLIA AVENUE, SUITE 1350 ORLANDO, FL 32801 407.743.3524 COA# 29091
REVISIONS	TURNSTONE GROUP	--	
	PHASE 1 CONSTRUCTION PLANS	HOWEY-IN-THE-HILLS	
	STREET 4 PLAN & PROFILE	LAKE COUNTY , FLORIDA	

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C606

KATLYN ASHLEY CHOMELL LICENSE No. PE96331 STATE OF FLORIDA PROFESSIONAL ENGINEER

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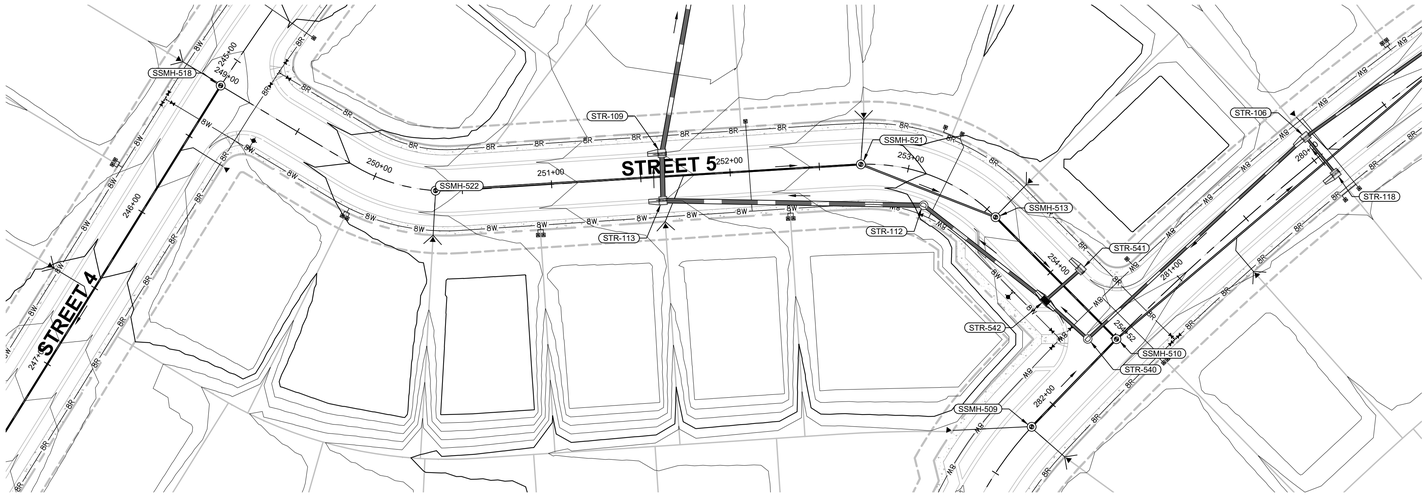
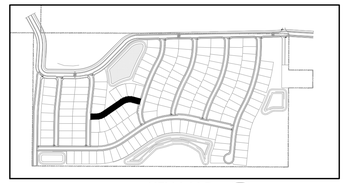
NOT-ISSUED-FOR-CONSTRUCTION FILE: 0180-C600 STREET 12-15 P&P

708

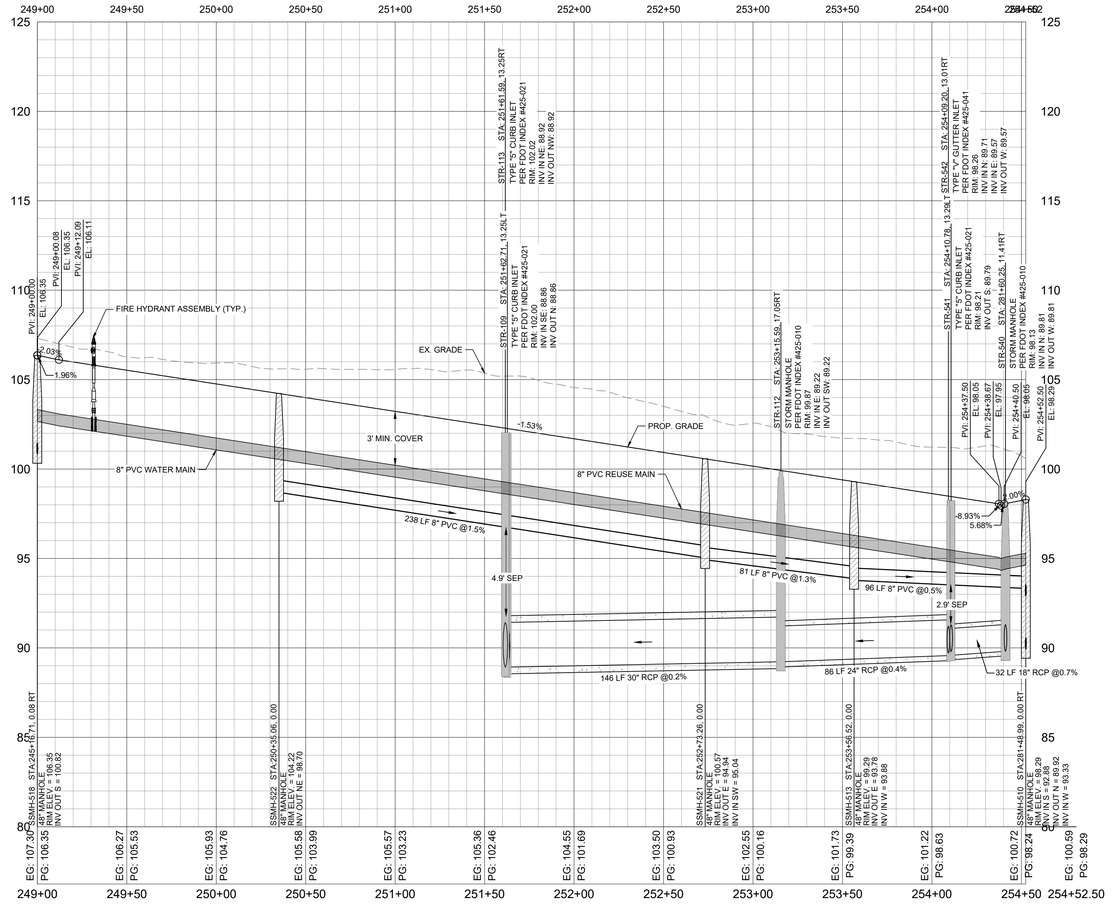
Item 2





KEY MAP
NTS

PROFILE - STREET 5
From Station: 249+00.00 to Station 254+52.50
SCALE: 1" = 40' H & 1" = 4' V



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MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
STREET 5 PLAN & PROFILE

DATE 08/29/2025

REVISIONS

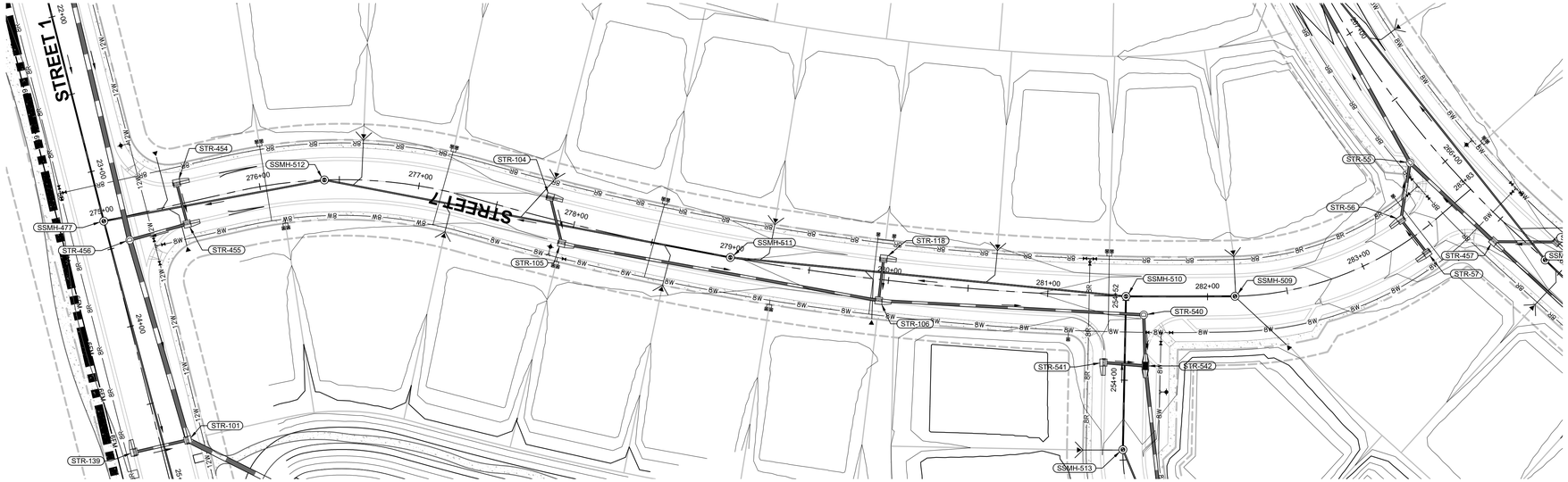
0 20' 40

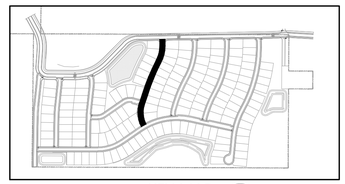
DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C607

FILE: 0180-C600 STREET 12-15 P&P

NOT ISSUED FOR CONSTRUCTION

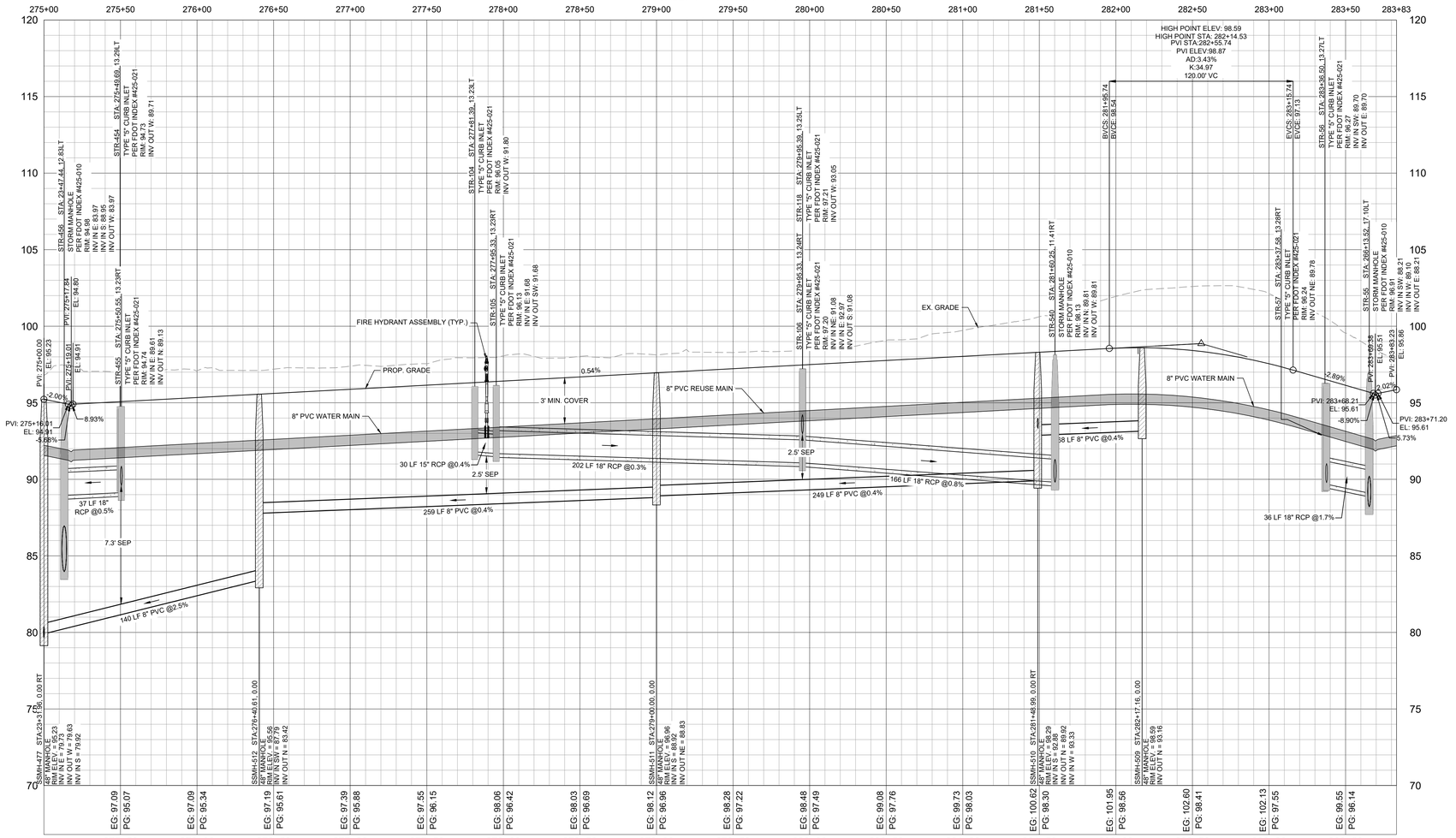
FILE NAME: \\ATLORL\Projects\23000180 Mission Rise 00 and PSP\DWG\Plan Sets\Construction\Phase 1\0180-C600 STREET 12-15 P&P.dwg LAST SAVED BY: apeters 8/28/2025 4:08 PM PLOTTED BY: Edwina Ortiz-Rosado 8/29/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) STYLES: ENV. TO PDF.PCS PLOT STYLE: ATWELL.CTB





KEY MAP
NTS

PROFILE - STREET 7
From Station: 275+00.00 to Station 283+83.23
SCALE: 1" = 40' H & 1" = 4' V



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COA# 29091

SEC 27,34 TWP 20 S RGE 25 E

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HOWEY-IN-THE-HILLS

LAKE COUNTY , FLORIDA

MISSION RISE

TURNSTONE GROUP

PHASE 1 CONSTRUCTION PLANS

STREET 7 PLAN & PROFILE

DATE 08/29/2025

REVISIONS

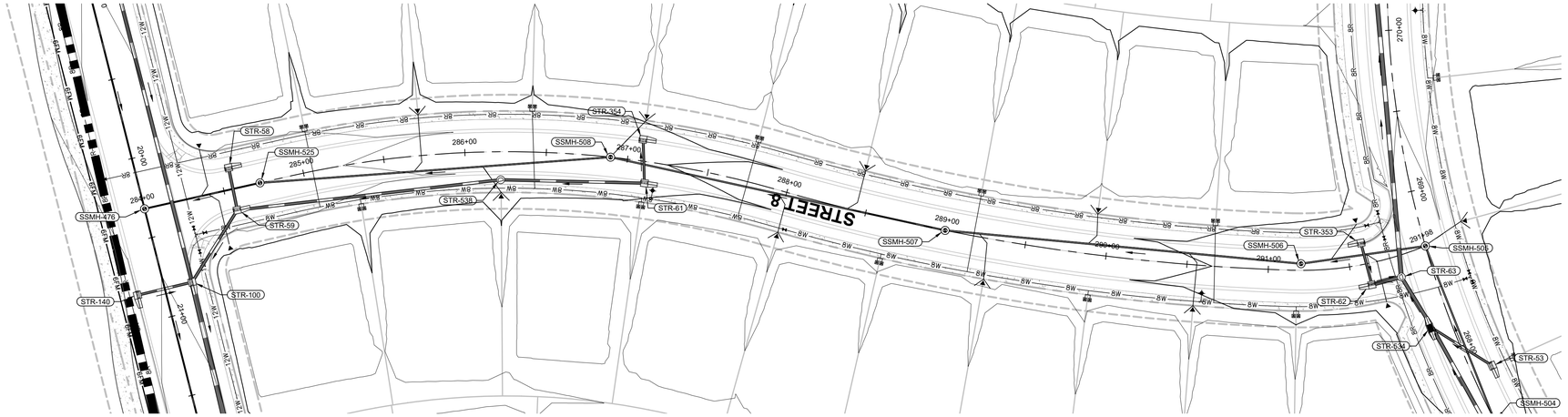
0 20' 40'

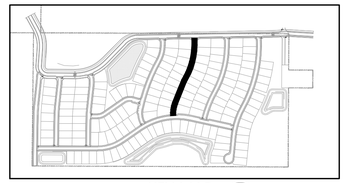
DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C608

ISSUED FOR CONSTRUCTION

FILE: 0180-0500 STREET 17-20 P&P

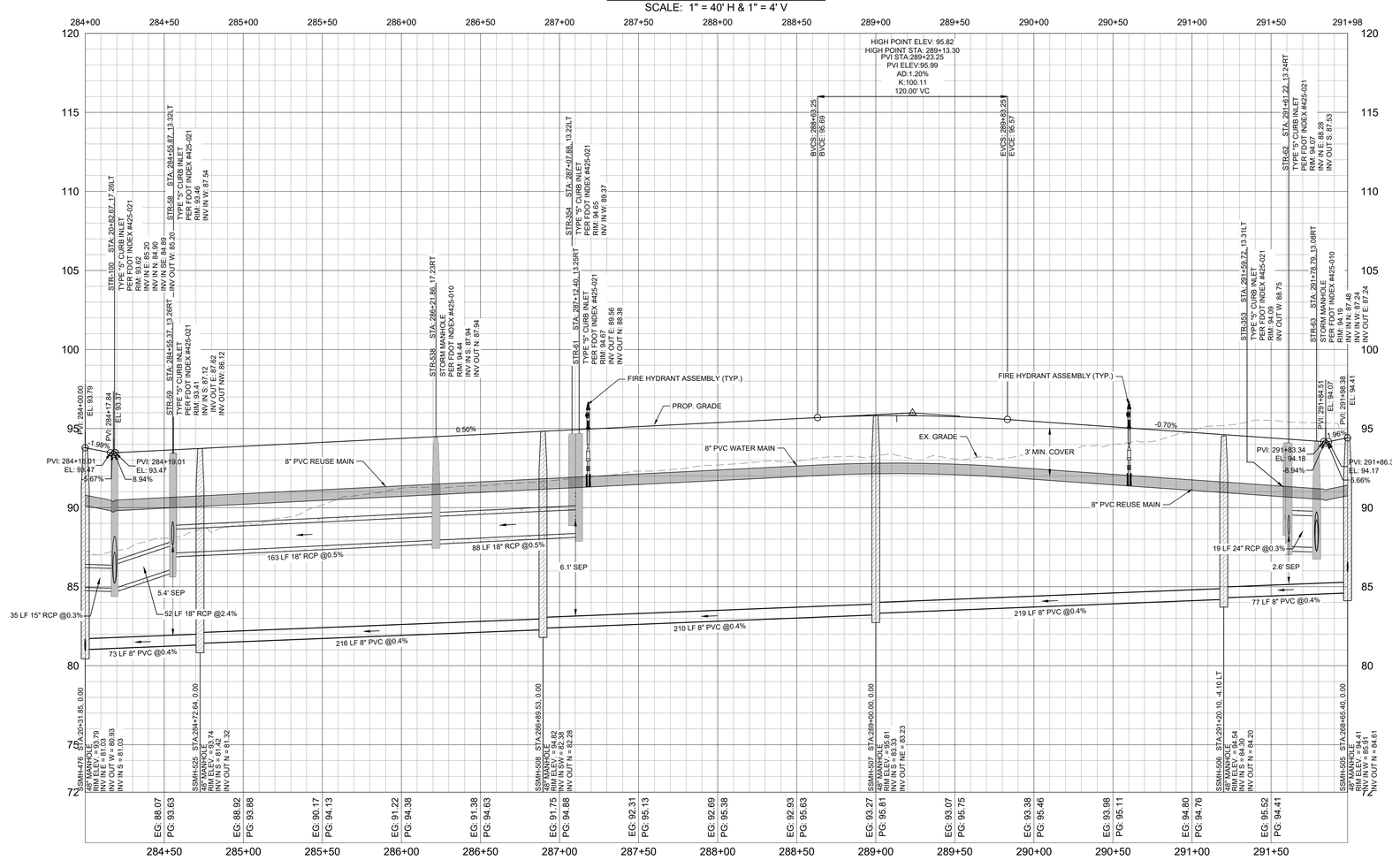
FILE NAME: \\VOWA\Projects\23000180 Mission Rise 09 and PSP\DWG\Plan Set\Construction\Phase 1\0180-0500 STREET 17-20 P&P.dwg LAST SAVED BY: apenna 8/28/2025 2:40 PM PLOTTED BY: Zaynia Orlin-Rosado 8/29/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE:





KEY MAP
NTS

PROFILE - STREET 8
From Station: 284+00.00 to Station 291+98.38
SCALE: 1" = 40' H & 1" = 4' V



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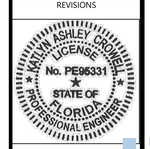
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
STREET 8 PLAN & PROFILE

DATE 08/29/2025

REVISIONS



0 20' 40

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C609

FILE: 0180-C600 STREET 17-20 P&P

ISSUED--FOR--CONSTRUCTION

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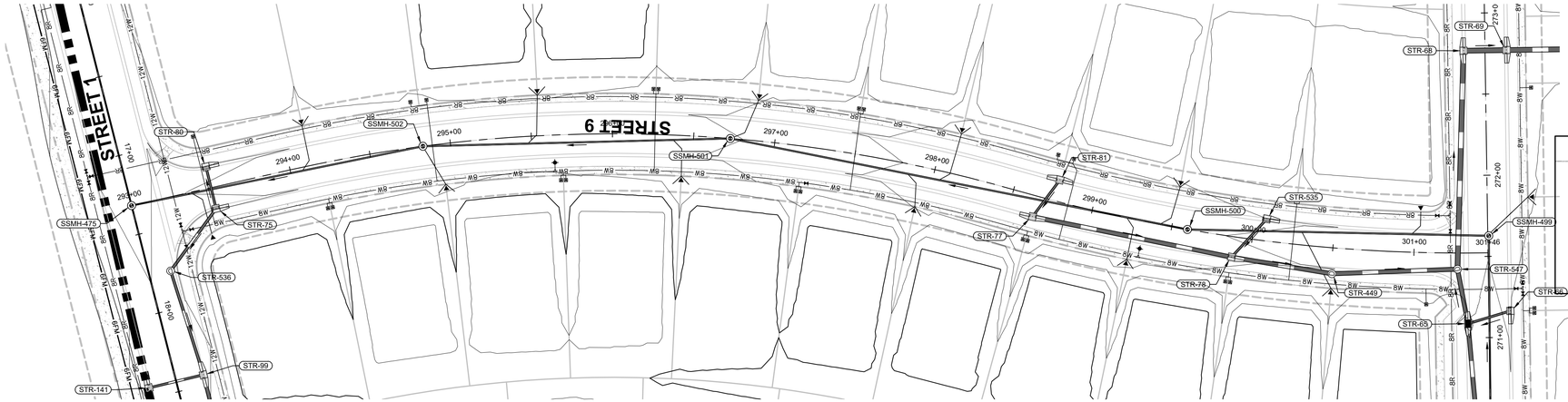
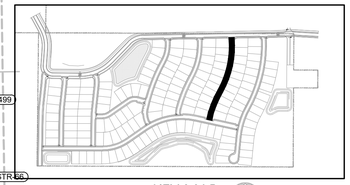
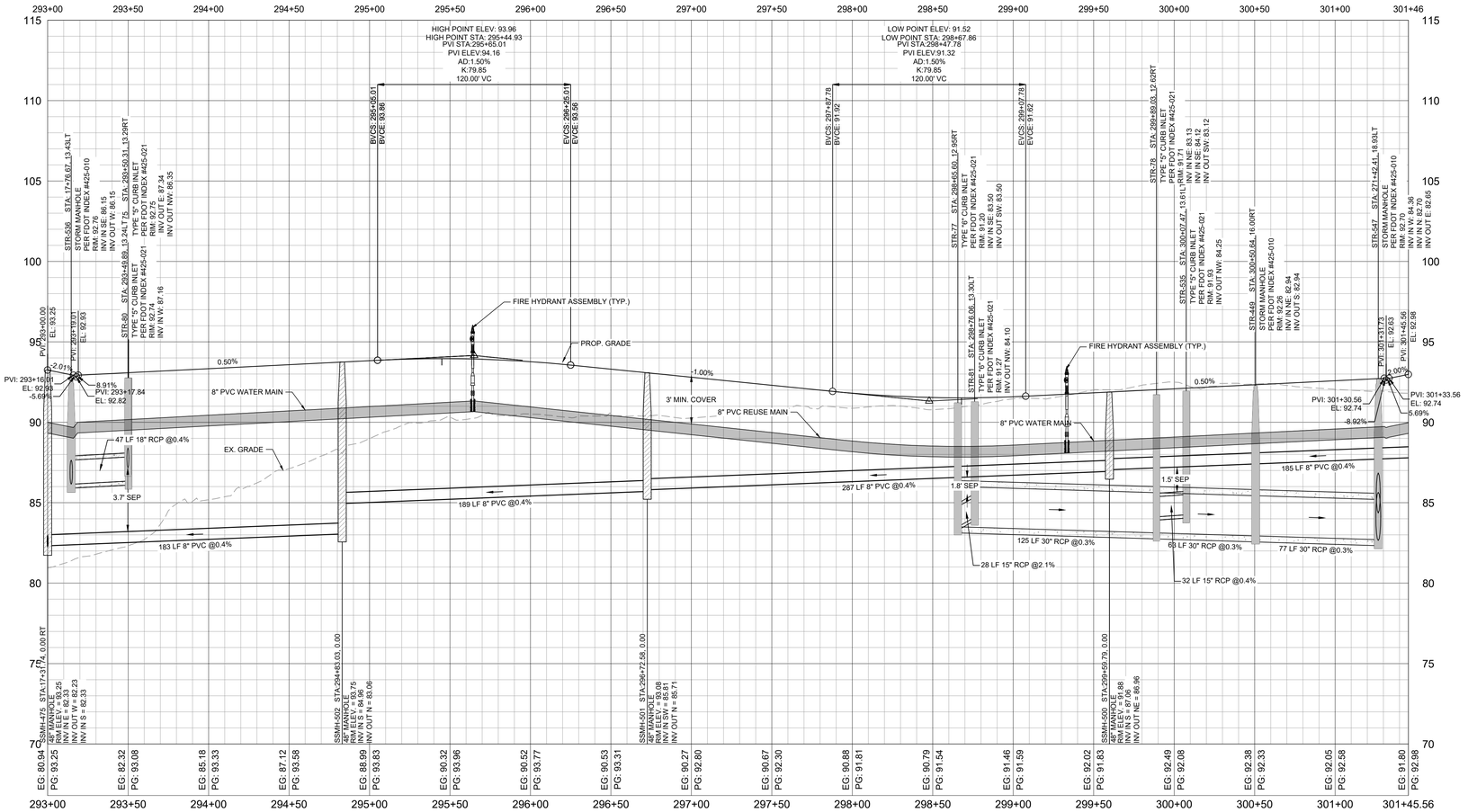
FILE NAME: \\VLOANL\Projects\23000180 Mission Rise 80 and PSP\LWC\Plan Sets\Construction\Phase 1\01-80--0600 STREET 17-20 P&P.dwg LAST SAVED BY: aperez 8/28/2025 3:40 PM PLOTTED BY: Adrian Perez 8/29/2025 8:47:03 AM PLOT STYLE: ATWELL.CTB





KEY MAP
NTS

PROFILE - STREET 9
From Station: 293+00.00 to Station 301+45.56
SCALE: 1" = 40' H & 1" = 4' V



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COA# 29091

SEC 27;34 TWP 20 S RGE 25 E
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HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
STREET 9 PLAN & PROFILE

DATE 08/29/2025

REVISIONS

0 20' 40

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C610

ISSUED FOR CONSTRUCTION

FILE: 0180-C600 STREET 17-20 P&P

FILE NAME: \\ATLWIN\Projects\230000180 Mission Rise 00 and P3P\DWG\Plan Sets\Construction\Phase 1\0180-C600 STREET 17-20 P&P.dwg LAST SAVED BY: apenta 8/28/2025 2:40 PM PLOTTED BY: Zuberie Ortiz-Rosado 8/29/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG To PDF.PC3 PLOT STYLE: ATWELL.CTB

Item 2.

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NOTICE

CONSTRUCTION BY CONTRACTOR SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LAWS, RULES, REGULATIONS AND ORDINANCES OF ANY GOVERNMENTAL AUTHORITY HAVING JURISDICTION OVER THE WORK. ALL WORK SHALL COMPLY WITH THE OWNER'S AND ENGINEER'S REQUIREMENTS AND SPECIFICATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND APPROVALS REQUIRED FOR CONSTRUCTION. ANY DEVIATIONS FROM THE PLANS OR SPECIFICATIONS MUST BE APPROVED BY THE ENGINEER IN WRITING. CONTRACTOR SHALL NOTIFY ENGINEER AT LEAST 48 HOURS PRIOR TO COMMENCING WORK.

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COA # 29091

SEC 27,34 TWP 20 S RGE 25 E

LAKE COUNTY, FLORIDA

MISSION RISE

TURNSTONE GROUP

PHASE 1 CONSTRUCTION PLANS

STREET 10 PLAN & PROFILE

DATE 08/29/2025

REVISIONS

ASHLEY CROWELL LICENSE No. 85331 STATE OF FLORIDA PROFESSIONAL ENGINEER

20' 0 40'

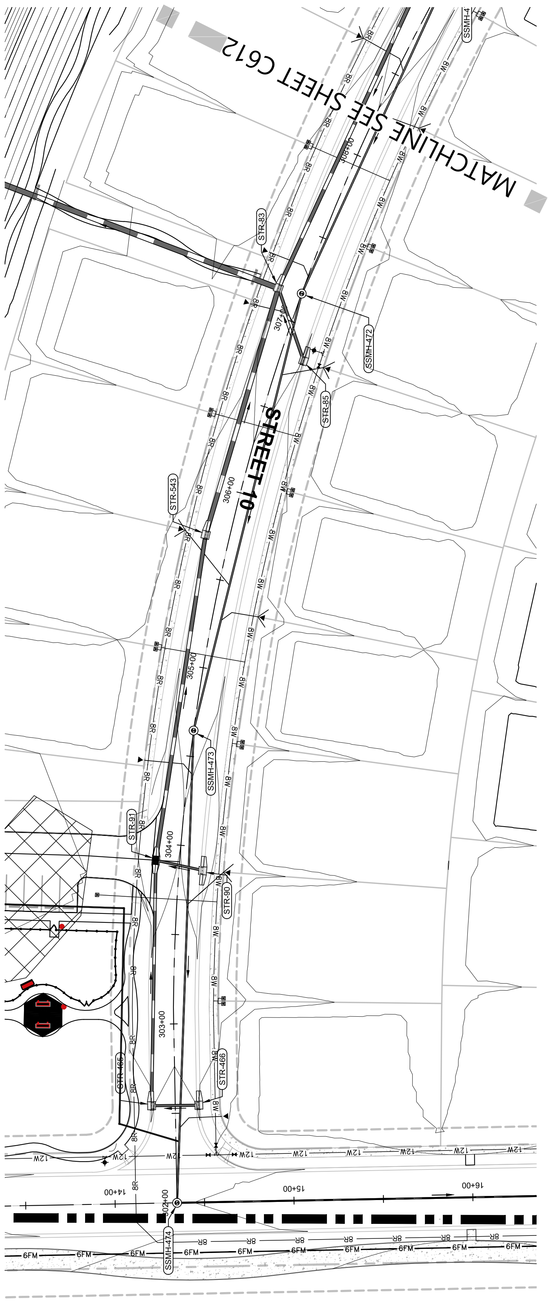
DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23009180
FILE CODE: --
SHEET NO. C611

713

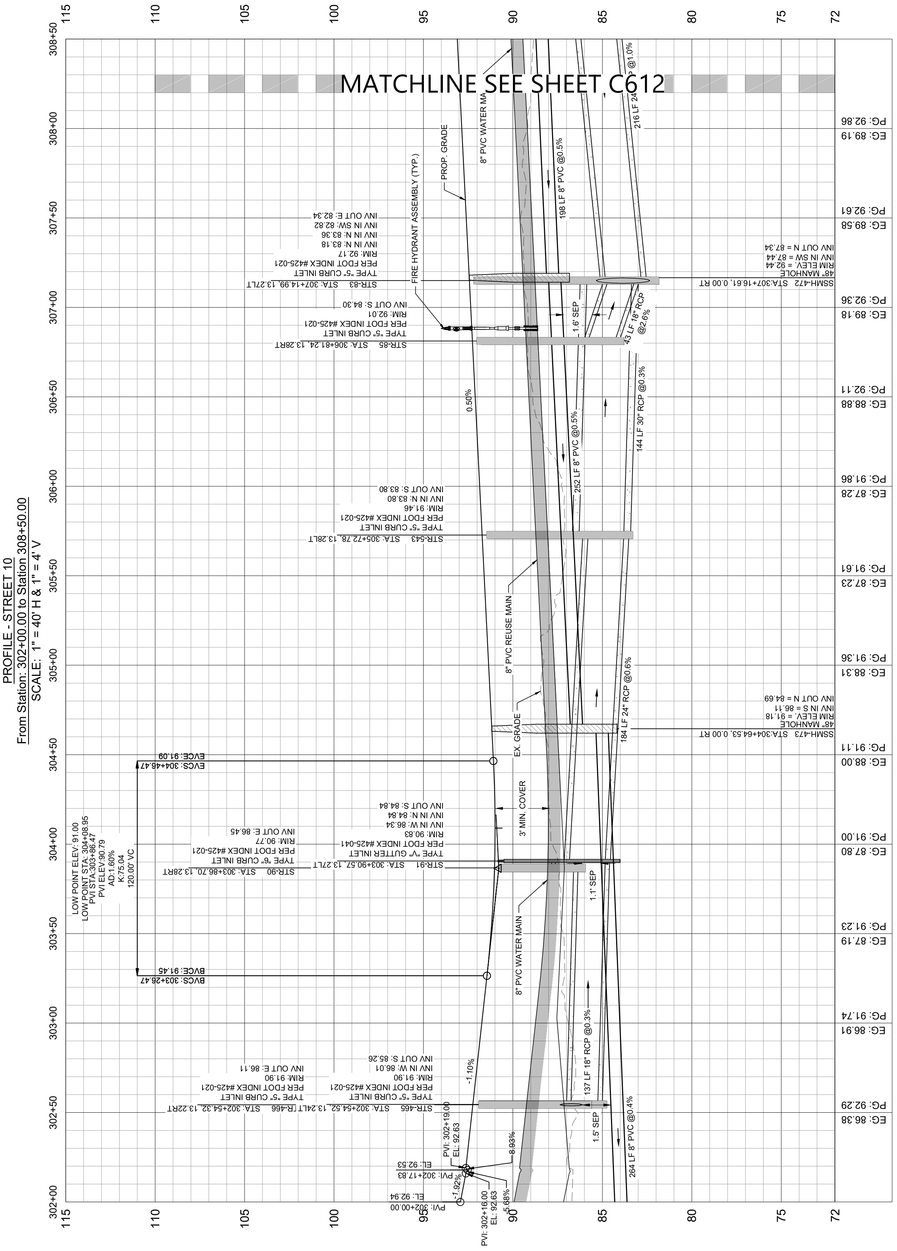
FILE NAME: \\TUDEL\Projects\23009180 Mission Rise 00 and PSR\CWD\Plan Sets\Construction\Sheets\010-C600 STREET 17-20 P&P.dwg LAST SAVED BY: agarcia 8/28/2025 2:40 PM PLOTTED BY: Zachary Ortiz-Rosado 8/29/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG TO PDF.PC3 PLOT STYLE: ATWELL.CTB

KEY MAP
NTS





PROFILE - STREET 10
From Station: 302+00.00 to Station 308+50.00
SCALE: 1" = 40' H & 1" = 4' V



Item 2.

811
Know what's below.
Call before you dig.
THE LOCATIONS OF UNDERGROUND UTILITIES AS SHOWN ON THESE PLANS ARE APPROXIMATE AND ARE BASED ON THE BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL INDEPENDENTLY VERIFY THE LOCATIONS OF ALL UTILITIES AND OTHER FACILITIES PRIOR TO BEGINNING WORK. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ANY DAMAGE TO UTILITIES OR OTHER FACILITIES OCCASIONED BY THE CONTRACTOR'S FAILURE TO LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE TO CONTRACTOR
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE RESPONSIBLE FOR CONTRACTOR'S SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.

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ORLANDO, FL 32801
407.743.3524
COA # 29091

	SEC 27,34 TWP 20 S RGE 25 E
	LAKE COUNTY , FLORIDA
MISSION RISE	
TURNSTONE GROUP	
PHASE 1 CONSTRUCTION PLANS	
STREET 10 PLAN & PROFILE	

REVISIONS	DATE
	08/29/2025

STATE OF FLORIDA
PROFESSIONAL ENGINEER
No. 76833
ISSUED: CROWELL, JOSEPH, LICENSE

0 20' 40'

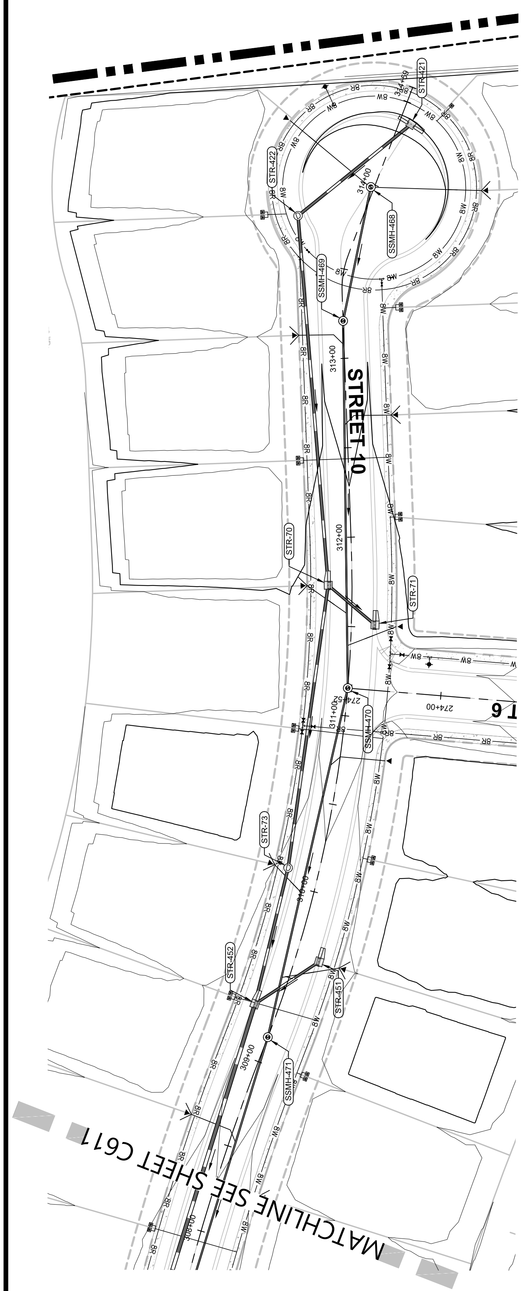
DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23009180
FILE CODE: --
SHEET NO. C612

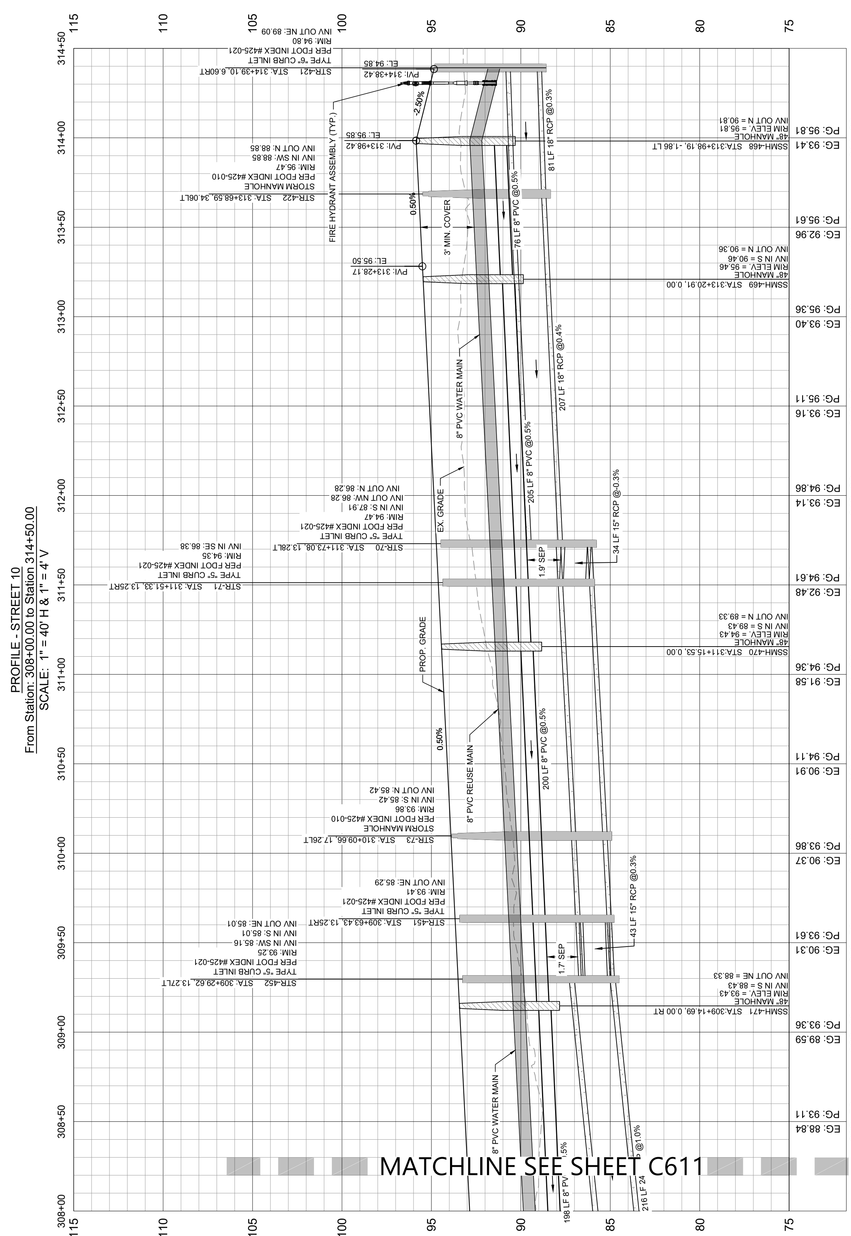
714

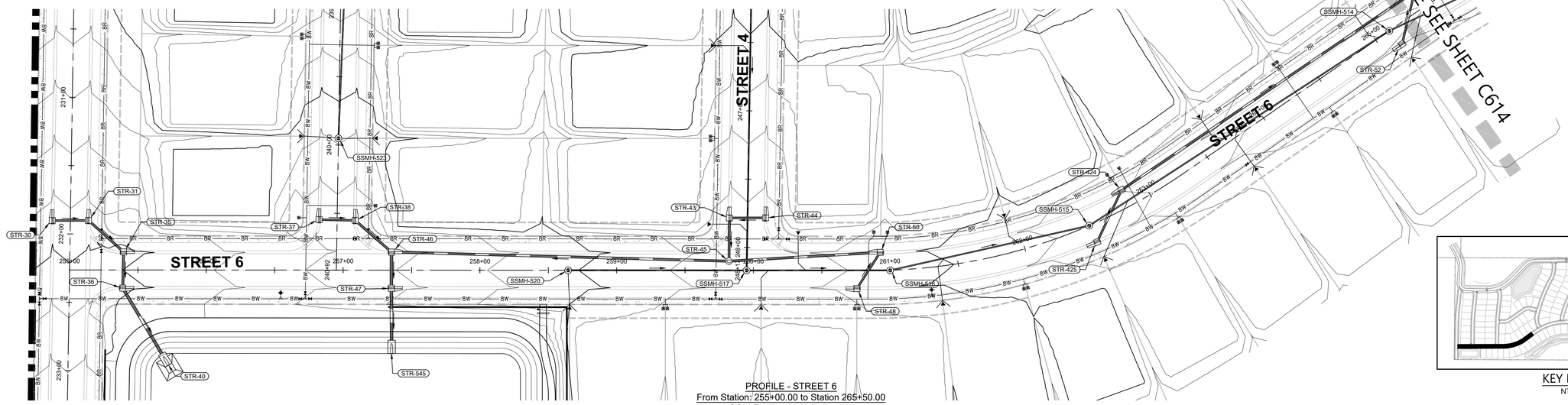
FILE NAME: \\TUORK\Tuorkv1\23009180 Mission Rise 00 and PSR\DWG\Plan Set\Construction\Sheet 11\010-C600 STREET 11-20 PAP.dwg LAST SAVED BY: apenet 8/28/2025 2:40 PM PLOTTED BY: Zachary Orso-Hauser 8/29/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG TO PDF.PC3 PLOT STYLE: ATWELL.CTB

KEY MAP
NTS









KEY MAP
NTS

PROFILE - STREET 6
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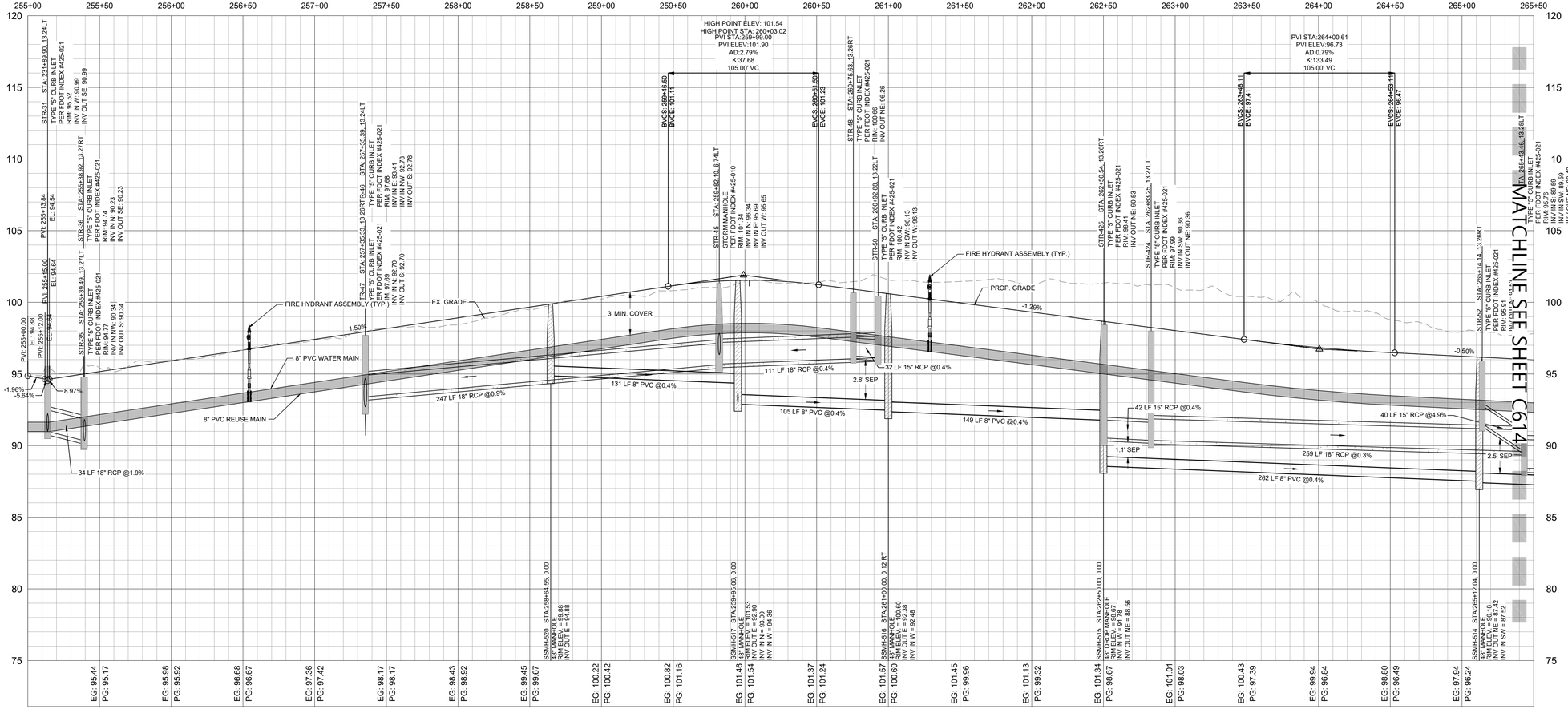
SCALE: 1" = 40' H & 1" = 4' V



811
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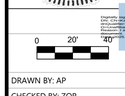
COA# 29091

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
STREET 6 PLAN & PROFILE

SEC 27,34 TWP 20 S RGE 25 E
--
HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

DATE 08/29/2025

REVISIONS



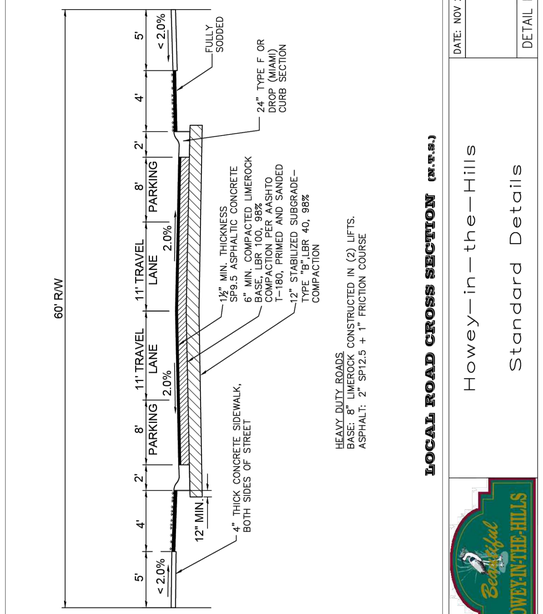
0 20' 40'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C613

FILE: 0180-0000 STREET 16 P&P

ISSUED FOR CONSTRUCTION

FILE NAME: \\ATWELL\Projects\23000180 Mission Rise 09 and 10\PLANS\Civil Set\Construction\Phase 1\0180-0000 STREET 16 P&P.dwg LAST SAVED BY: agarcia 8/28/2025 3:40 PM PLOTTED BY: Zuleyka Ortiz-Rosado 8/29/2025 AVER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) STYLE: ONE TO PSF.PCS PLOT



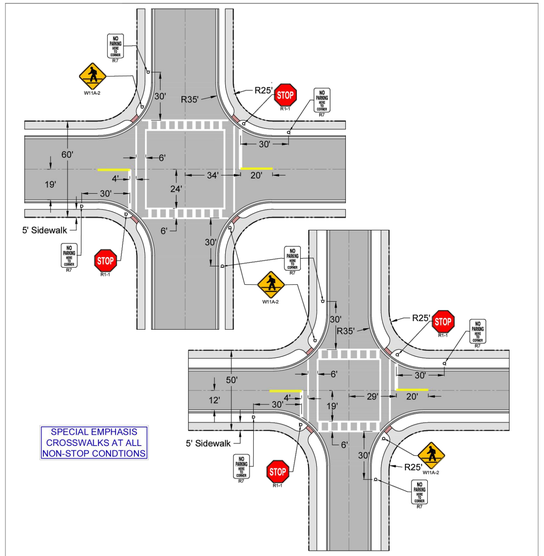
LOCAL ROAD CROSS SECTION (N.T.S.)

DATE: NOV 2024

DETAIL R-1

Howey-in-the-Hills

Standard Details



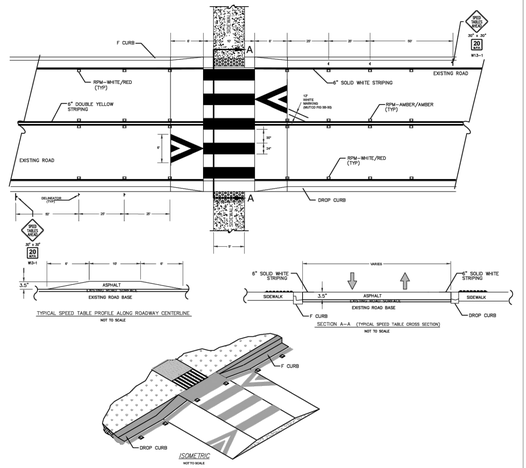
LOCAL ROAD INTERSECTION PEDESTRIAN & TRAFFIC CONTROL

DATE: AUG 2025

DETAIL R-1A

Howey-in-the-Hills

Standard Details



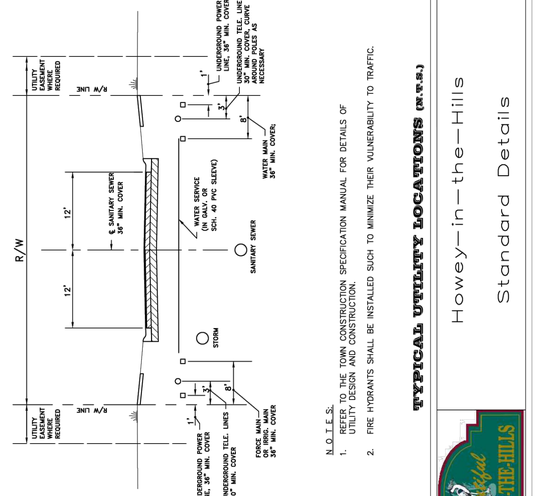
RAISED CROSSWALK

DATE: NOV 2024

DETAIL R-1B

Howey-in-the-Hills

Standard Details



N O T E S:

1. REFER TO THE TOWN CONSTRUCTION SPECIFICATION MANUAL FOR DETAILS OF UTILITY DESIGN AND CONSTRUCTION.
2. FIRE HYDRANTS SHALL BE INSTALLED SUCH TO MINIMIZE THEIR VULNERABILITY TO TRAFFIC.

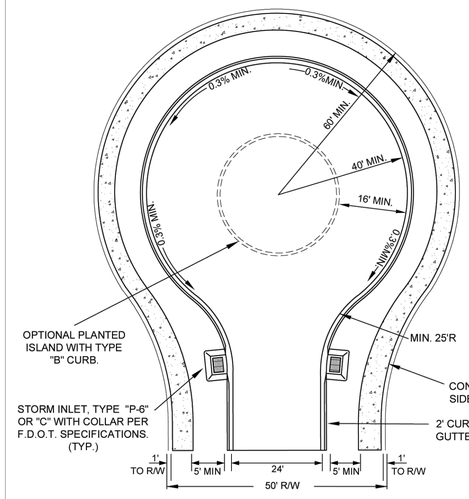
TYPICAL UTILITY LOCATIONS (N.T.S.)

DATE: JAN 2024

DETAIL R-2

Howey-in-the-Hills

Standard Details



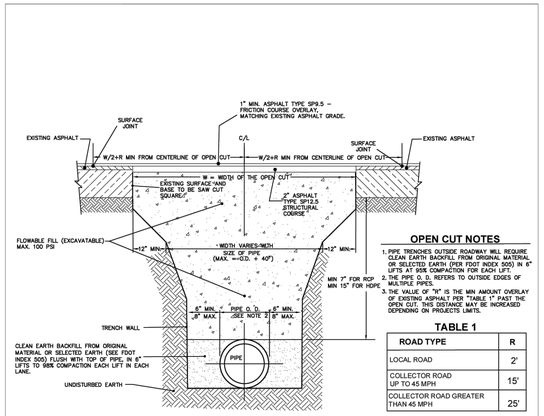
CUL-DE-SAC WITH TWO STORM INLETS (N.T.S.)

DATE: FEB 2022

DETAIL R-4

Howey-in-the-Hills

Standard Details



OPEN CUT NOTES

1. PIPE TRENCHES OUTSIDE ROADWAY WILL REQUIRE CLEAN EARTH BACKFILL FROM ORIGINAL MATERIAL OR SELECTED EARTH (PER FDOT INDEX 500) IN 6" LIFTS AT 95% COMPACTION FOR EACH LIFT.
2. THE PIPE O. D. REFERS TO OUTSIDE EDGES OF MULTIPLE PIPES.
3. THE VALUE OF "R" IS THE MIN AMOUNT OVERLAY OF EXISTING ASPHALT PER "TABLE 1" PAST THE OPEN CUT. THIS DISTANCE MAY BE INCREASED DEPENDING ON PROJECTS LIMITS.

TABLE 1

ROAD TYPE	R
LOCAL ROAD	2'
COLLECTOR ROAD UP TO 45 MPH	15'
COLLECTOR ROAD GREATER THAN 45 MPH	25'

*NOTES:

OPEN CUTS WILL NOT BE ALLOWED UNLESS SPECIFICALLY AUTHORIZED BY THE TOWN.

THIS DETAIL REPRESENTS THE STANDARD INSTALLATION OF CROSS PIPES FOR APPROVED OPEN CUTS OF TOWN ROADWAYS DURING CONSTRUCTION.

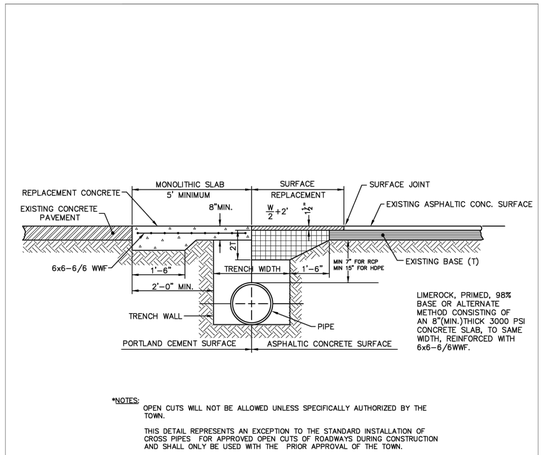
OPEN CUT & REPAIR (N.T.S.)

DATE: FEB 2022

DETAIL R-5

Howey-in-the-Hills

Standard Details



LIMEROCK, PRIMED, 98% BASE OR ALTERNATE METHOD CONSISTING OF AN 8"(MIN.)THICK 3000 PSI CONCRETE SLAB, TO SAME WIDTH, REINFORCED WITH 6x6-6/6WWF.

*NOTES:

OPEN CUTS WILL NOT BE ALLOWED UNLESS SPECIFICALLY AUTHORIZED BY THE TOWN.

THIS DETAIL REPRESENTS AN EXCEPTION TO THE STANDARD INSTALLATION OF CROSS PIPES FOR APPROVED OPEN CUTS OF ROADWAYS DURING CONSTRUCTION AND SHALL ONLY BE USED WITH THE PRIOR APPROVAL OF THE TOWN.

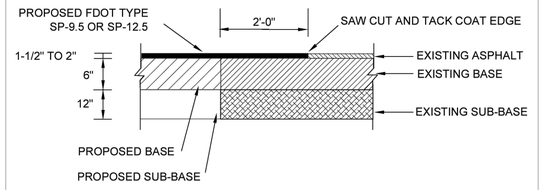
OPEN CUT & REPAIR ALTERNATE (N.T.S.)

DATE: FEB 2022

DETAIL R-6

Howey-in-the-Hills

Standard Details



PAVEMENT BUTT JOINT (N.T.S.)

DATE: FEB 2022

DETAIL R-7

Howey-in-the-Hills

Standard Details

Item 2.

811 Know what's below. Call before you dig.

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407.774.7778
COA# 29901

SEC 27,34 TWP 20 S RGE 25 E

--

HOWEY-IN-THE-HILLS

LAKE COUNTY , FLORIDA

MISSION RISE

TURNSTONE GROUP

PHASE 1 CONSTRUCTION PLANS

SITE DETAILS

DATE 08/29/2025

REVISIONS

KALVIN ASHLEY CROWELL LICENSE No. PE95331 STATE OF FLORIDA PROFESSIONAL ENGINEER

DRAWN BY: AP

CHECKED BY: ZOR

PROJECT MANAGER: KC

JOB #: 23000180

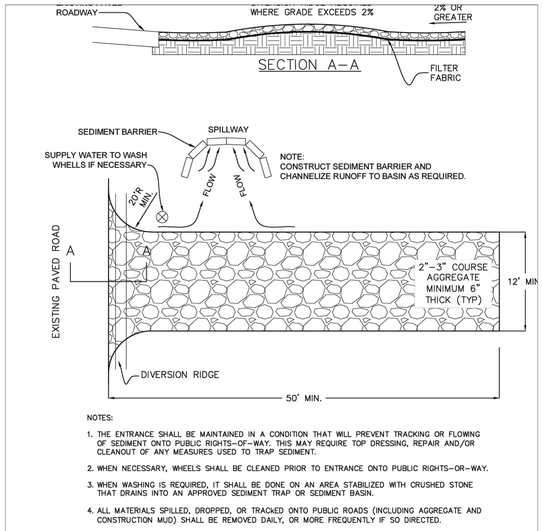
FILE CODE: --

SHEET NO. C800

FILE: 0180-C700 DETAILS

ISSUED FOR CONSTRUCTION

FILE NAME: \\ATWELL\Projects\23000180 Mission Rise DD and PSP\Civil\Plan Sets\Construction\Phase 1\0180-C700 DETAILS.dwg LAST SAVED BY: cpeet 8/26/2025 1:13 PM PLOTTED BY: Edwin Ortiz-Rosado 8/28/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG TO PDF.PC3 PLOT STYLE: ATWELL.CTB

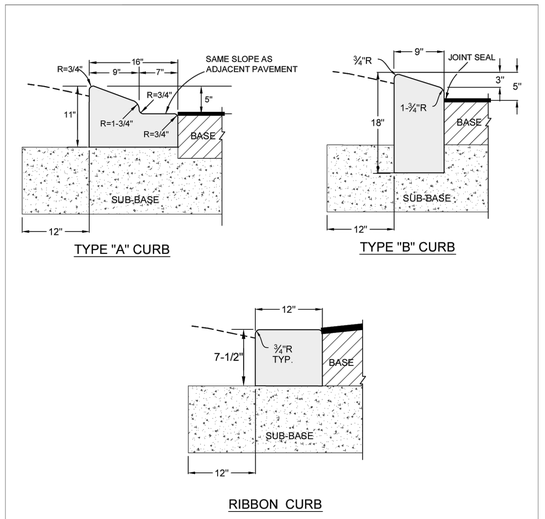


NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS–OR–WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
4. ALL MATERIALS SPILLED, DROPPED, OR TRACKED ONTO PUBLIC ROADS (INCLUDING AGGREGATE AND CONSTRUCTION MUD) SHALL BE REMOVED DAILY, OR MORE FREQUENTLY IF SO DIRECTED.

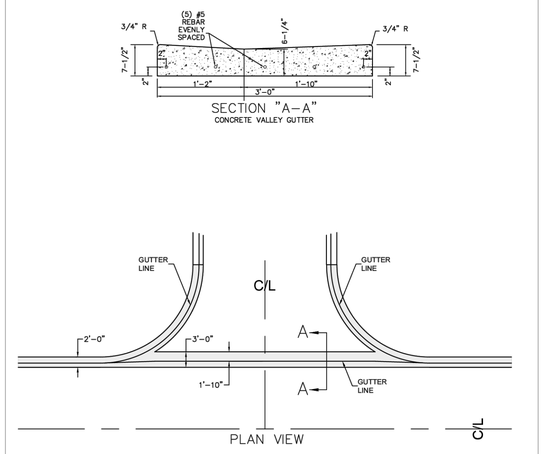
TEMPORARY CONSTRUCTION ENTRANCE (N.T.S.)

Howey–in–the–Hills Standard Details	DATE: FEB 2022
	DETAIL R–23



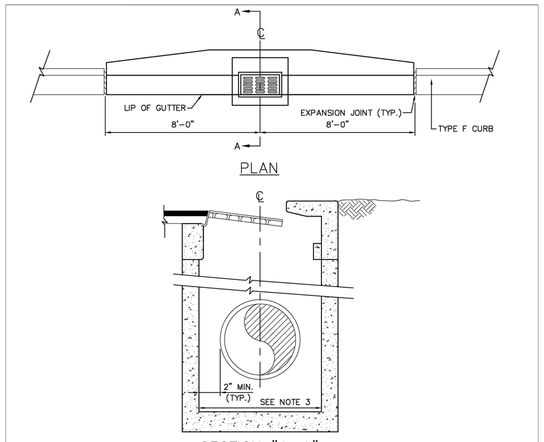
CONCRETE CURB (2) (N.T.S.)

Howey–in–the–Hills Standard Details	DATE: FEB 2022
	DETAIL R–11A



CONCRETE VALLEY GUTTER (N.T.S.)

Howey–in–the–Hills Standard Details	DATE: FEB 2022
	DETAIL R–13

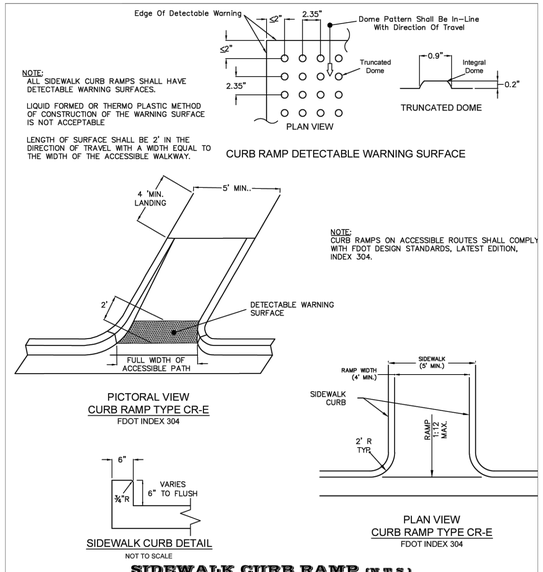


NOTES:

1. CURB INLET TOPS SHALL BE FDOT TYPE 5 OR TYPE 6, (TYPE 6 SHOWN). FRAME AND COVER SHALL BE STEEL MEETING ASTM A–36 OR CAST IRON, CLASS No. 30 IN ACCORDANCE WITH ASTM A–48.
2. PRECAST STRUCTURES SHALL BE FDOT TYPE P OR J AND MAY BE CIRCULAR, SQUARE OR RECTANGULAR. WALL THICKNESS AND REINFORCEMENT SHALL BE IN ACCORDANCE WITH ASTM C–478.
3. MINIMUM INSIDE DIMENSIONS SHALL BE 4' DIAMETER FOR CIRCULAR AND 3'–6" FOR SQUARE OR RECTANGULAR.
4. ALTERNATE DRAINAGE INLET DESIGNS MAY BE PROPOSED BY ENGINEER.

CURB INLET (N.T.S.)

Howey–in–the–Hills Standard Details	DATE: FEB 2022
	DETAIL R–14



SIDEWALK CURB RAMP (N.T.S.)

Howey–in–the–Hills Standard Details	DATE: FEB 2022
	DETAIL R–15

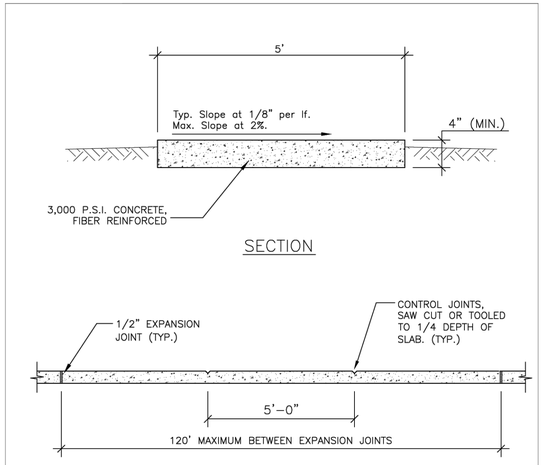
CURB RAMP – GENERAL NOTES

ALL REFERENCES TO FDOT AND ADA STANDARDS SHALL MEAN THE LATEST EDITION

1. Public sidewalk curb ramps shall be constructed in the public right of way at locations that will provide continuous unobstructed pedestrian circulation paths to pedestrian areas, elements and facilities in the public right of way and to accessible pedestrian routes on adjacent sites. Curbed facilities with sidewalks and those without sidewalks are to have curb ramps constructed at all street intersections and at turnouts that have curbed returns. Partial curb returns shall extend to the limit prescribed by FDOT Index No. 515 to accommodate curb ramps. Ramps constructed at locations without sidewalks shall have a 5' x 5' landing constructed at the top of each ramp.
2. The location of curb ramps shall be as shown in the plans, but shall conform to F.D.O.T. standard details. All ramps, landings and curbs shall be constructed with minimum 3000 psi, Class A concrete and shall have minimum thickness of 6 inches. All concrete for pedestrian areas shall have a medium broom finish and standard color, unless specifically required by the plans.
3. Curb ramp running slopes at unrestrained sites shall not be steeper than 1 : 12 and cross slope shall not be steeper than 2%. Transition slopes shall not be steeper than 1 : 12. When altering existing pedestrian facilities where existing site development precludes the accommodation of a ramp slope of 1 : 12, a running slope between 1 : 12 and 1 : 10 is permitted for a rise of 6" maximum and a running slope of between 1 : 10 and 1 : 8 is permitted for a rise of 3" maximum.
4. If a curb ramp is located where pedestrians must walk across the ramp, then the walk shall have transitions with a maximum longitudinal slope of 1 : 12. and a 2% cross–slope. Ramps with curb returns may be used to provide guidance, avoid an obstacle, or when R/W limitations prohibit flares. Improvements for directional guidance are required whenever necessary to guide or re–direct the pedestrian towards the receiving ramp.
5. All curb ramps shall have detectable warning surfaces that extend the full width of the ramp and 24" from the back of curb in the direction of travel. Detectable warning surfaces shall be constructed in conformance with A.D.A. Standards For Accessible Design, A.D.A. Accessibility Guidelines, Section 4.29.2, Transition slopes are not to have detectable warnings. Dome pattern shall be in–line with direction of travel.
6. The color requirement for detectable warnings is to provide a dark–on–light visual contrast between the detectable warning surface and the adjacent walking surface. Where adjacent walking surfaces are dark colored and/or constructed with materials other than standard Class I Portland Cement Concrete in accordance with the Standard Specifications, the Contractor must provide a detectable warning surface color that provides the necessary contrast, with the adjacent concrete. The standard color is dark red brick or yellow colored detectable warning tile with standard concrete unless otherwise noted.
7. Where a curb ramp is constructed within existing curb, curb and gutter or sidewalk, the existing concrete shall be removed to the nearest joint beyond the transition slope so that no remaining section of concrete is less than 5' long. The existing sidewalk shall be removed to the nearest joint beyond the transition slope, if the ramp must extend into the sidewalk.
8. Expansion joints shall be placed at all perimeter edges abutting concrete, but no joints shall be made in the ramp itself.

SIDEWALK CURB RAMP GENERAL NOTES

Howey–in–the–Hills Standard Details	DATE: FEB 2022
	DETAIL R–15A



SIDEWALK (N.T.S.)

Howey–in–the–Hills Standard Details	DATE: FEB 2022
	DETAIL R–16

SIDEWALK CONSTRUCTION- GENERAL NOTES

1. SIDEWALKS, BIKE PATHS, RAMPS, AND DRIVEWAY APRONS SHALL BE CONSTRUCTED OF PLAIN PORTLAND CEMENT CONCRETE WITH A MAXIMUM SLUMP OF 3 INCHES, A MINIMUM DEVELOPED COMPRESSIVE STRENGTH OF 3,000 P.S.I. IN 28 DAYS, AND A MINIMUM UNIFORM THICKNESS OF 4 INCHES WHERE INTENDED SOLELY FOR PEDESTRIAN TRAFFIC, AND 6 INCHES THICK WHERE MOTOR VEHICLES ARE LIKELY TO CROSS.
2. SIDEWALKS AND BIKE PATHS SHALL BE PLACED PARALLEL TO, AND ONE FOOT WITHIN THE RIGHT–OF–WAY LINE EXCEPT THAT THE CITY MAY APPROVE DEVIATIONS TO SAVE SPECIMEN TREES PROVIDED THAT THE PAVEMENT REMAINS WITHIN THE RIGHT–OF–WAY, OR ADJACENT EASEMENT DEDICATED FOR SIDEWALK USE, IS NOT DIMINISHED IN WIDTH, AND REMAINS AT LEAST 3 FEET FROM THE EDGE OF THE STREET PAVEMENT, UNLESS OTHERWISE APPROVED BY THE CITY.
3. THE TOP OF THE CONCRETE SHALL BE AT AN ELEVATION NO LOWER THAN THE CROWN OF THE ADJACENT ROADWAY, AND NO HIGHER THAN 6 INCHES ABOVE THE CROWN UNLESS APPROVED BY THE CITY TO MAKE A MORE NATURAL TRANSITION WITH THE ADJACENT LAND. UNDER NO CIRCUMSTANCES WILL THE SIDEWALK EXCEED ADA MAXIMUM GRADES.
4. ISOLATION JOINTS (TYPE A JOINTS) SHALL BE PROVIDED BETWEEN EXISTING SLABS OR STRUCTURES AND FRESH CONCRETE, TO SEPARATE PEDESTRIAN SECTIONS FROM SECTIONS WHICH WILL ENCOUNTER VEHICLE TRAFFIC, TO SEPARATE FRESH PLACEMENT FROM CONCRETE WHICH HAS SET FOR MORE THAN 60 MINUTES, AND NO FARTHER APART THAN 120 FEET IN SIDEWALKS AND BIKE PATHS. JOINT MATERIAL SHALL BE AS SPECIFIED IN FDOT STANDARDS AND SPECIFICATIONS AND SHALL BE RUBBER, PLASTIC OR OTHER APPROVED NON–BIODEGRADABLE ELASTOMERIC MATERIAL. WOOD IS PROHIBITED.
5. CONTROL JOINTS (TYPE B JOINTS) SHALL BE TOOLED INTO THE FRESH CONCRETE, OR SAW–CUT WITHIN 24 HOURS OF PLACEMENT, TO A DEPTH EQUAL TO 1/4 THE SLAB THICKNESS AND SPACED APART A DISTANCE EQUAL TO THE WIDTH OF THE SLAB OR 5 FEET, WHICHEVER IS GREATEST.
6. THE SLAB SURFACE SHALL BE BROOM FINISHED TO BE SLIP RESISTANT, AND SHALL MATCH AS CLOSELY AS POSSIBLE THE FINISH OF EXISTING ADJACENT SLABS AND ALL EDGES SHALL BE TOOLED TO ELIMINATE SHARP CORNERS.
7. THE BEARING SUBSURFACE SHALL HAVE ALL ORGANIC, LOOSE, AND DELETERIOUS MATTER REMOVED, AND THE REMAINING CLEAN SOIL SHALL BE SMOOTH, SOUND, AND SOLID. ANY FILL MATERIAL SHALL BE COMPACTED WITH A VIBRATORY OR IMPACT COMPACTION MACHINE IN MAXIMUM 12 INCH LIFTS OR COMPACTED WITH A HAND TAMPER IN MAXIMUM 4 INCH LIFTS. THE CITY SHALL REQUIRE A COMPACTION TEST FOR EACH LIFT IF THE TOTAL FILLED SECTION IS MORE THEN 12 INCHES DEEP OR IF THE SUBSURFACE HAS BEEN DISTURBED MORE THAN 12 INCHES DEEP. WHERE SUCH TEST IS REQUIRED, THE RESULTS SHALL SHOW A MINIMUM PROCTOR FIELD DENSITY OF 95 PERCENT.
8. ALL CONCRETE WORK IN THE RIGHT–OF–WAY SHALL BE INSPECTED BY THE CITY AFTER THE SUBSOIL IS PREPARED AND THE FORMS ARE SET, BUT BEFORE THE CONCRETE PLACEMENT BEGINS.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE FINISHED SLAB FROM ALL DAMAGE AND VANDALISM UNTIL THE CITY ACCEPTS OR APPROVES THE SLAB.
10. SIDEWALKS LOCATED WITHIN THE RIGHT–OF–WAY SHALL NOT BE TINTED, STAINED, COLORED, OR COATED, UNLESS APPROVED BY THE CITY ENGINEER.
11. ALL FORMS SHALL BE REMOVED PRIOR TO ACCEPTANCE OR APPROVAL AND THE DISTURBED GROUND SHALL BE BACK–FILLED, RE–GRADED, AND SODDED SO THAT THE WEAR SURFACE OF THE CONCRETE IS REASONABLY FLUSH WITH THE ADJACENT GRADE.
12. THE CITY MAY REQUIRE ADDITIONAL JOINTS AROUND UTILITY STRUCTURES LOCATED WITHIN THE SIDEWALK.

SIDEWALK - GENERAL NOTES

Howey–in–the–Hills Standard Details	DATE: FEB 2022
	DETAIL R–16A

811 Know what's below. Call before you dig.

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NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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CO.A # 29991

SEC 27,34 TWP 20 S RGE 25 E
--
HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
SITE DETAILS

DATE 08/29/2025

REVISIONS

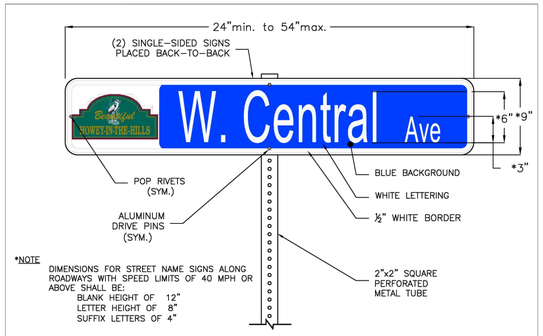


FILE: 0180-C700 DETAILS

ISSUED FOR CONSTRUCTION

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C801

FILE NAME: \\FLORH\Projects\23000180 Mission Rise 00 and PSP\DWG\Plan Set\Construction\Phase 1\0180-C700 DETAILS.dwg LAST SAVED BY: aparnell 8/28/2025 1:13 PM PLOTTED BY: Aparnell PLOT SCALE: 1.0000 PLOT STYLE: ATWELL.CTB



*NOTE
DIMENSIONS FOR STREET NAME SIGNS ALONG ROADWAYS WITH SPEED LIMITS OF 40 MPH OR ABOVE SHALL BE:
BLANK HEIGHT OF 12"
LETTER HEIGHT OF 8"
SUFFIX LETTERS OF 4"

SIGN BLANKS:
- .063" ALUMINUM
- ALUMINUM CHEMICALLY TREATED TO MEET ATSM B449 STANDARD (PRE-TREATMENT FOR PAINT OR REFLECTIVE SHEETING)
- DIMENSIONS ARE TO BE 9" or 12" HEIGHT X 24" MINIMUM TO 54" MAXIMUM LENGTH. BLANK LENGTH TO BE DETERMINED BY ROAD NAME LENGTH AND BE ESTABLISHED IN 6" INCREMENTS, I.E. (24",30",36",42",48" OR 54")

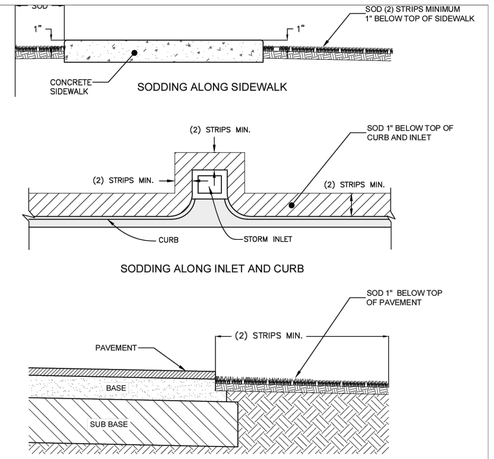
COLOR:
- THE BACKGROUND SHALL BE HIGH INTENSITY PRISMATIC GREATER WHITE SHEETING WITH BLUE TRANSPARENT FILM OVERLAY.

LEGEND/LETTERING:
- ONE-HALF INCH (1/2") WHITE BORDER, 1/2" FROM THE EDGE.
- STREET NAMES SHALL BE 6" or 8" SERIES B LETTERS.
- THE ABBREVIATED SUFFIX "Rd", "Ave", "Dr", ETC., SHALL BE 3" or 4" SERIES B.

MOUNTING:
- MOUNTING SHALL BE TWO SINGLE-SIDED SIGNS WITH ATTRIBUTES ABOVE, MOUNTED BACK TO BACK, WITH ENDS POP RIVETED TOGETHER ON 2"x2" METAL POST, ATTACHED WITH ALUMINUM DRIVE PINS. NO EDGE-CLAMPING STYLE MOUNTING BLOCKS ARE TO BE USED.

STREET SIGN (N.T.S.)

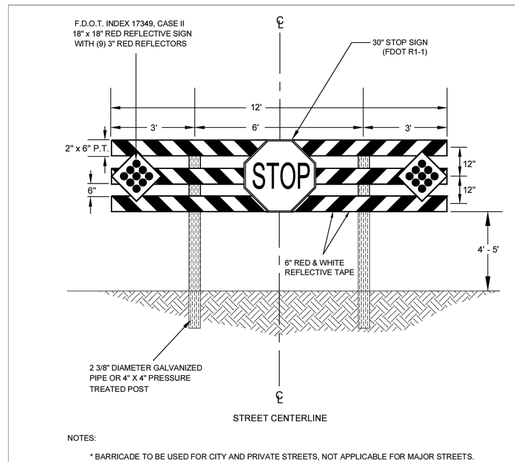
Howey-in-the-Hills	Standard Details	DATE: FEB 2022 DETAIL R-20



NOTE:
ANY EXISTING SODDED AREAS THAT ARE DISTURBED BY CONSTRUCTION SHALL BE RESODDED WITH LIKE SOD AND RESTORED TO ITS ORIGINAL STATE.

SOD PLANTING (N.T.S.)

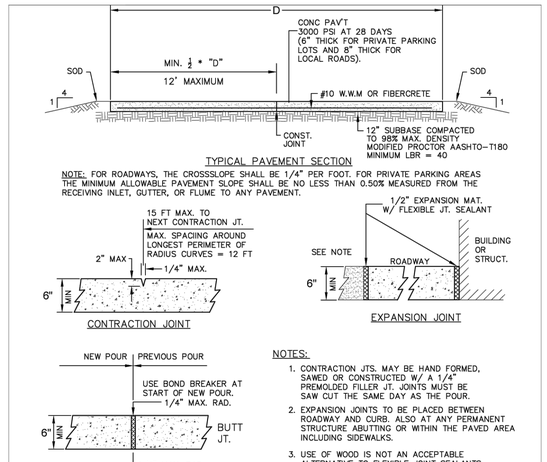
Howey-in-the-Hills	Standard Details	DATE: FEB 2022 DETAIL R-22



NOTES:
* BARRICADE TO BE USED FOR CITY AND PRIVATE STREETS, NOT APPLICABLE FOR MAJOR STREETS.
* A DEAD END SIGN (F.D.O.T. W14-1) SHALL BE POSTED AT A SUFFICIENT ADVANCE DISTANCE TO PERMIT VEHICLE OPERATOR TO TURN OFF, IF POSSIBLE AT THE NEAREST INTERSECTING STREET.
* BARRICADE SIGNS AND MARKERS SHALL BE IN ACCORDANCE WITH F.DO.T. DESIGN STANDARDS, LATEST EDITION, INDEX #17349.

ROAD BARRICADE (N.T.S.)

Howey-in-the-Hills	Standard Details	DATE: FEB 2022 DETAIL R-21

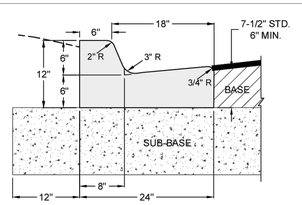


NOTE: FOR ROADWAYS, THE CROSSSLOPE SHALL BE 1/4" PER FOOT. FOR PRIVATE PARKING AREAS THE MINIMUM ALLOWABLE PAVEMENT SLOPE SHALL BE NO LESS THAN 0.50% MEASURED FROM THE RECEIVING INLET, GUTTER, OR FLUME TO ANY PAVEMENT.

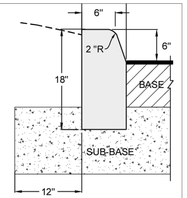
NOTES:
1. CONTRACTION JTS. MAY BE HAND FORMED, SAWED OR CONSTRUCTED W/ A 1/4" PREMOLDED FILLER JT. JOINTS MUST BE SAW CUT THE SAME DAY AS THE POUR.
2. EXPANSION JOINTS TO BE PLACED BETWEEN ROADWAY AND CURB. ALSO AT ANY PERMANENT STRUCTURE ABUTTING OR WITHIN THE PAVED AREA INCLUDING SIDEWALKS.
3. USE OF WOOD IS NOT AN ACCEPTABLE ALTERNATIVE TO FLEXIBLE JOINT SEALANTS.
4. FINAL DETERMINATION OF CONSTRUCTION JOINT SELECTION AND APPLICATION SHALL BE MADE BY THE ENGINEER OF RECORD BASED ON PROJECT REQUIREMENTS AND LOCATION.
5. CONSTRUCTION JOINTS WITHIN THE SLAB AREA SHOULD NOT CONTAIN PREMOLDED EXPANSION JOINT FILLER.

CONCRETE PAVEMENT (N.T.S.)

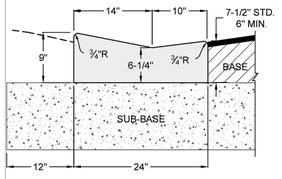
Howey-in-the-Hills	Standard Details	DATE: FEB 2022 DETAIL R-10



TYPE "F" CURB



TYPE "D" CURB

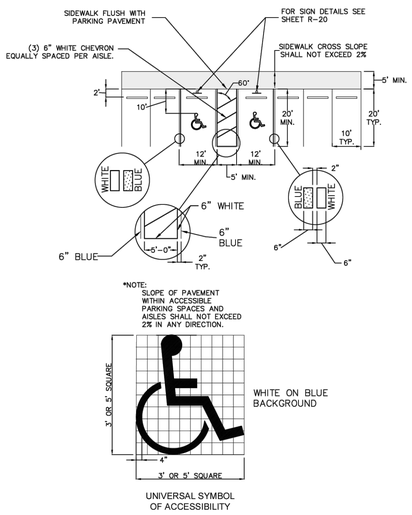


DROP CURB (MIAMI TYPE)

NOTES:
1. ALL CURBS TO BE CONSTRUCTED OF 28 DAY, 3,000 P.S.I. CONCRETE.
2. 1/2" PRE-MOLDED EXPANSION JOINT REQUIRED EVERY 500', CONSTRUCTION JOINT REQUIRED EVERY 10' MAXIMUM (4' MINIMUM).
3. 1/2" PRE-MOLDED EXPANSION JOINT REQUIRED AT EACH SIDE OF ALL STORM INLET STRUCTURES AND AT ALL RADIUS POINTS.
4. SUB-BASE TO BE COMPACTED AND TESTED TO 98% MINIMUM DENSITY WITH MINIMUM L.B.R. 40 BASED ON AASHTO T-180 MODIFIED PROCTOR TEST.
5. EXPANSION JOINT MATERIAL MUST COVER THE ENTIRE CROSS SECTION OF CURB.

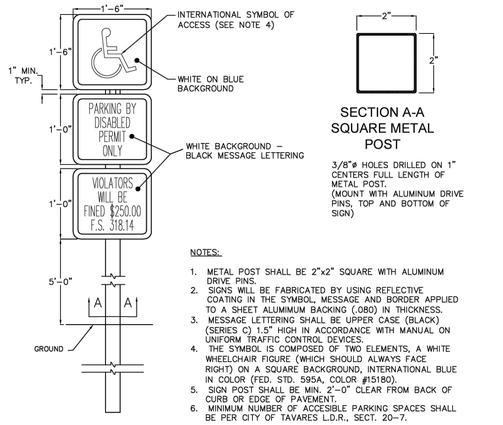
CONCRETE CURB (1) (N.T.S.)

Howey-in-the-Hills	Standard Details	DATE: FEB 2022 DETAIL R-11



ACCESSIBLE PARKING (N.T.S.)

Howey-in-the-Hills	Standard Details	DATE: FEB 2022 DETAIL R-18



3/8"ø HOLES DRILLED ON 1" CENTERS FULL LENGTH OF METAL POST.
(MOUNT WITH ALUMINUM DRIVE PINS, TOP AND BOTTOM OF SIGN)

NOTES:
1. METAL POST SHALL BE 2"x2" SQUARE WITH ALUMINUM DRIVE PINS.
2. SIGNS WILL BE FABRICATED BY USING REFLECTIVE COATING IN THE SYMBOL, MESSAGE AND BORDER APPLIED TO A SHEET ALUMIMUM BACKING (.080) IN THICKNESS.
3. MESSAGE LETTERING SHALL BE UPPER CASE (BLACK) (SERIES C) 1.5" HIGH IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
4. THE SYMBOL IS COMPOSED OF TWO ELEMENTS, A WHITE WHEELCHAIR FIGURE (WHICH SHOULD ALWAYS FACE RIGHT) ON A SQUARE BACKGROUND, INTERNATIONAL BLUE IN COLOR (FED. STD. 595A, COLOR #15180).
5. SIGN POST SHALL BE MIN. 2'-0" CLEAR FROM BACK OF CURB OR EDGE OF PAVEMENT.
6. MINIMUM NUMBER OF ACCESIBLE PARKING SPACES SHALL BE PER CITY OF TAVARES L.D.R., SECT. 20-7.

ACCESSIBLE PARKING SIGN (N.T.S.)

Howey-in-the-Hills	Standard Details	DATE: FEB 2022 DETAIL R-19

Item 2.

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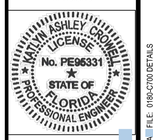
SEC 27,34 TWP 20 S RGE 25 E
--
HOWEY-IN-THE-HILLS
LAKE COUNTY, FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
SITE DETAILS

DATE 08/29/2025

REVISIONS



DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C802

FILE: D180-C700 DETAILS

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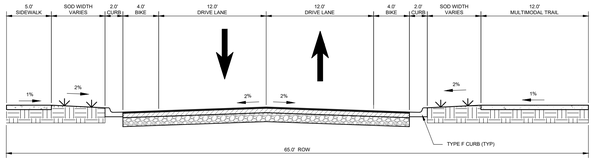
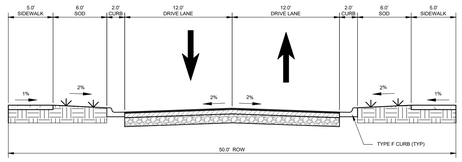
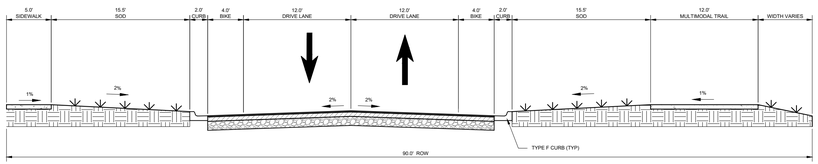
TYPICAL SECTIONS



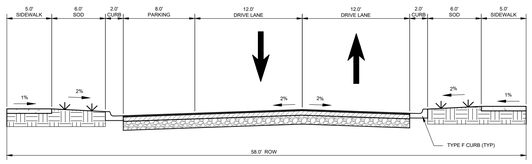
SR-1 C803 **SPINE ROAD - ROW WIDTH VARIES (65' MIN.)**



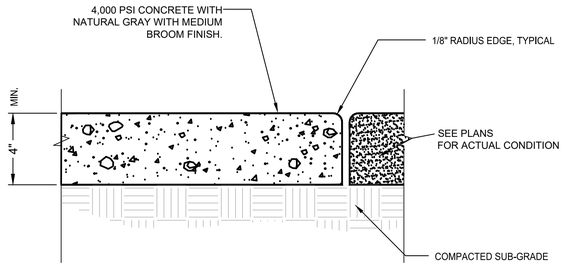
NR-1 C803 **NEIGHBORHOOD ROAD - 50' ROW**



SR-2 C803 **SPINE ROAD - 90' ROW WITH BIKE LANE & 12' MULTIMODAL TRAIL**

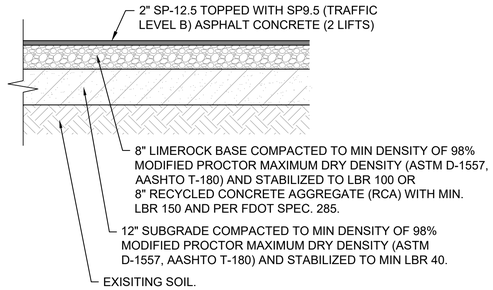


NR-2 C803 **NEIGHBORHOOD ROAD - 58' ROW WITH PARKING**



CONCRETE SIDEWALK DETAIL

NTS



HEAVY DUTY ASPHALT PAVEMENT SECTION

NTS

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MISSION RISE

TURNSTONE GROUP

PHASE 1 CONSTRUCTION PLANS

SITE DETAILS

DATE 08/29/2025

REVISIONS



DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C803

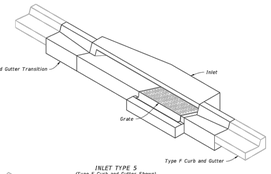
FILE: 0180-C700 DETAILS

--- ISSUED FOR CONSTRUCTION ---

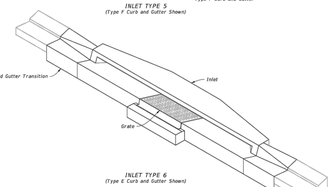
FILE NAME: \\VLOWFL\Projects\23000180 Mission Rise PD and PSP\DWG\Plan Set\Construction\Phase 1\0180-C700 DETAILS.dwg LAST SAVED BY: cwance 8/28/2025 1:13 PM PLOTTED BY: Zayerie Ortiz-Rosado 8/28/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG TO PDF.PC3 PLOT STYLE: ATWELL.CTB

GENERAL NOTES:

1. Work this Index with Index 425-001 and Index 425-010.
2. Conform the finished grade and slope of the inlet tops with the finished cross slope and grade of the proposed sidewalk and/or border.
3. For inlets constructed on a curve, refer to the plans to determine the radius. Bend steel when necessary.
4. Use Grade 60 reinforcing bars with 1½" minimum cover unless otherwise shown, see Sheet 6 for equivalent area Welded Wire Reinforcement details.
5. Inlet tops may be either cast-in-place or precast concrete. Conform precast units to the dimensions shown or in accordance with approved shop drawings.
6. Corner fillets are required at inlet opening for precast units or C-I-P units used in conjunction with circular inlet bottoms or skewed rectangular inlet bases. Finish top of fillets flush with drain throat bottom and match slope.
7. For Type E curb and gutter, transition the shape of the curb over the gutter transition length to match the face of the inlet (Type F).
8. Meet the requirements of ASTM A36/A36M with steel used for frames and grates.
9. Use either cast iron grates or steel grates.



INLET TYPE 5
(Type F Curb and Gutter Shown)



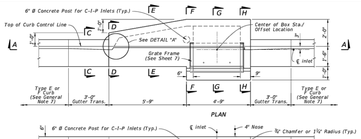
INLET TYPE 6
(Type E Curb and Gutter Shown)

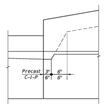
TABLE OF CONTENTS:

Sheet	Description
1	General Notes and Contents
2	Type 5 and 6 Dimensional Details
3	Type 5 and 6 Reinforcing and Bar Bending Details
4	Precast Dimensional and Reinforcing Details
5	Cast-In-Place Dimensional and Reinforcing Details
6	Alternate Welded Wire Reinforcing (WWR) Details
7	Grate, Anchor, and Grouting Details

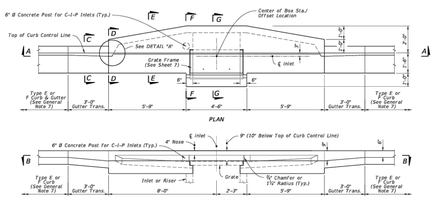
CURB INLETS TOPS

LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2025-26 STANDARD PLANS	CURB INLET TOP TYPES 5 AND 6	INDEX 425-021	SHEET 1 of 7





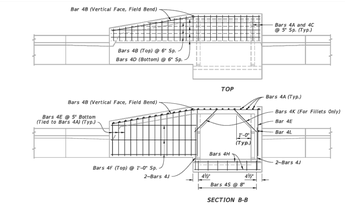
TYPE 5 DIMENSIONAL DETAILS



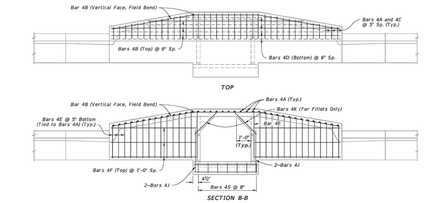
TYPE 6 DIMENSIONAL DETAILS

TYPE 5 AND 6 DIMENSIONAL DETAILS

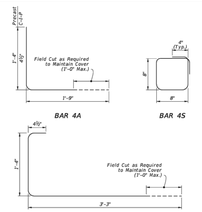
LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2025-26 STANDARD PLANS	CURB INLET TOP TYPES 5 AND 6	INDEX 425-021	SHEET 2 of 7



TYPE 5 REINFORCING DETAILS



TYPE 6 REINFORCING DETAILS

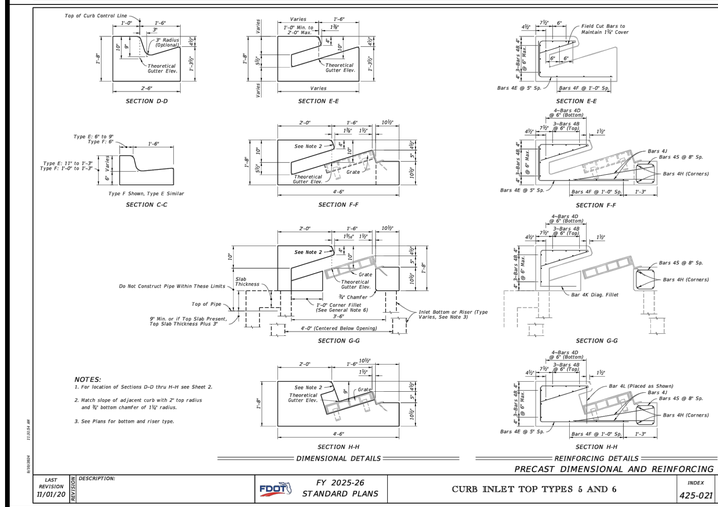


BILL OF REINFORCING STEEL					
MARK	SIZE	TYPE 5 INLET NO.	TYPE 5 INLET LENGTH	TYPE 6 INLET NO.	TYPE 6 INLET LENGTH
A (Precast)	4	25	3'-1"	38	3'-1"
A (C-I-P)	4	25	2'-11½"	38	2'-11½"
B	4	6	10'-3"	6	15'-9"
C	4	25	11' to 1'-11"	38	11' to 1'-11"
D	4	4	10'-3"	4	15'-9"
E	4	16	4'-11½"	30	4'-11½"
F	4	3	6'-0"	6	6'-0"
H	4	4	4'-6"	4	4'-6"
J	4	4	3'-0"	4	3'-0"
K (Fillet)	4	2	2'-2"	2	2'-2"
L (Precast)	4	1	1'-4"	0	----
L (C-I-P)	4	10	1'-4"	9	1'-4"
S	4	7	3'-2"	7	3'-2"

NOTES:
1. All bar dimensions in the bending diagrams are out to out.
2. Bars 4A and 4E may be combined into a single bar.
3. Welded Wire Reinforcement consists of smooth or deformed wire meeting the requirements of Specification 931.

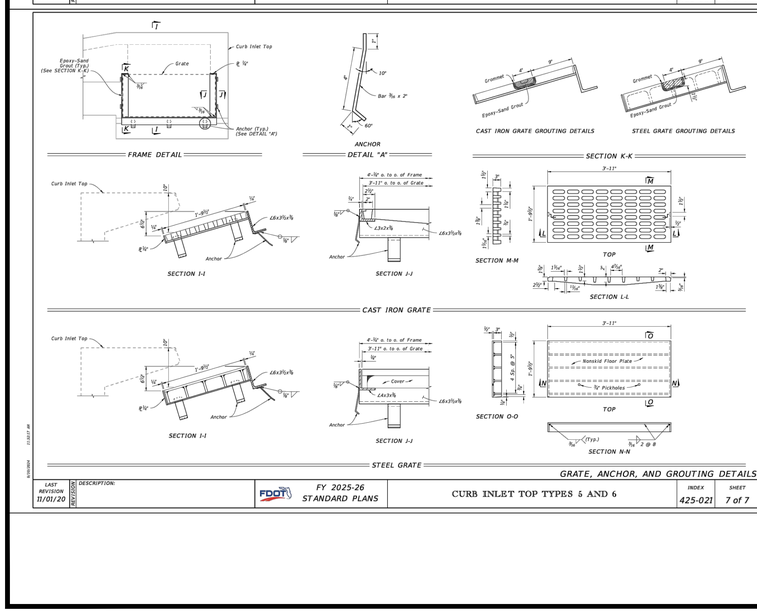
TYPE 5 AND 6 REINFORCING AND BAR BENDING DETAILS

LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2025-26 STANDARD PLANS	CURB INLET TOP TYPES 5 AND 6	INDEX 425-021	SHEET 3 of 7

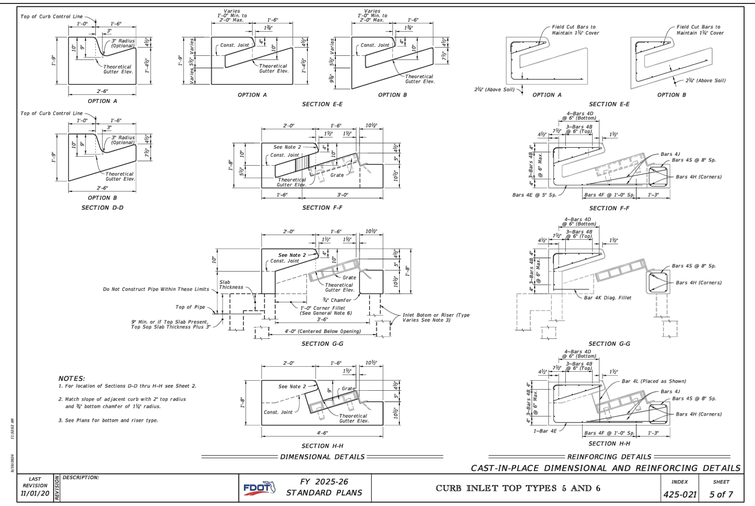


NOTES:
1. For location of Sections D-D thru H-H see Sheet 2.
2. Match slope of adjacent curb with 2" top radius and ½" bottom chamfer of 1½" radius.
3. See Plans for bottom and riser type.

LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2025-26 STANDARD PLANS	CURB INLET TOP TYPES 5 AND 6	INDEX 425-021	SHEET 4 of 7

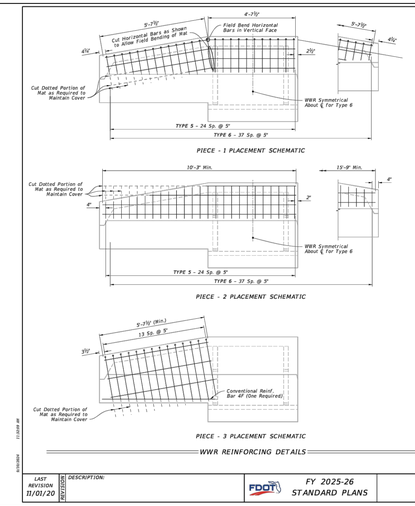


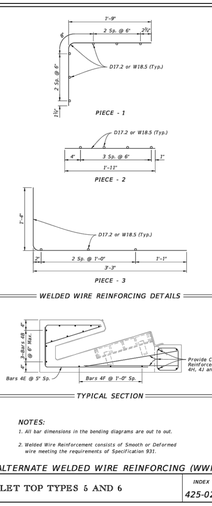
LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2025-26 STANDARD PLANS	CURB INLET TOP TYPES 5 AND 6	INDEX 425-021	SHEET 7 of 7



NOTES:
1. For location of Sections D-D thru H-H see Sheet 2.
2. Match slope of adjacent curb with 2" top radius and ½" bottom chamfer of 1½" radius.
3. See Plans for bottom and riser type.

LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2025-26 STANDARD PLANS	CURB INLET TOP TYPES 5 AND 6	INDEX 425-021	SHEET 5 of 7





NOTES:
1. All bar dimensions in the bending diagrams are out to out.
2. Welded Wire Reinforcement consists of Smooth or Deformed wire meeting the requirements of Specification 931.

ALTERNATE WELDED WIRE REINFORCING (WWR) DETAILS

LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2025-26 STANDARD PLANS	CURB INLET TOP TYPES 5 AND 6	INDEX 425-021	SHEET 6 of 7

811 Know what's below. Call before you dig.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:

CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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ORLANDO, FL 32801
4000 STAR
COA # 29091

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
STORM DETAILS

SEC 27;34 TWP 20 S RGE 25 E
--
HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

DATE 08/29/2025

REVISIONS

MELVIN ASHLEY CROMER LICENSE No. PE95331 STATE OF FLORIDA PROFESSIONAL ENGINEER

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C804

FILE: 0180-C700-DETAILS

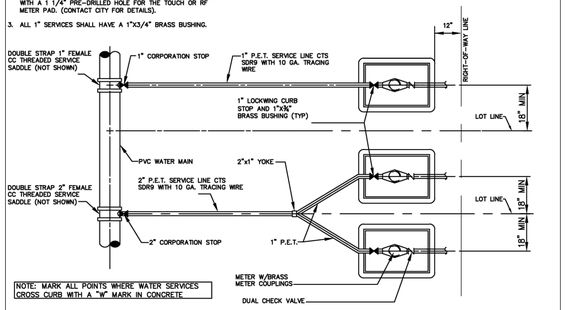
ISSUED FOR CONSTRUCTION

720

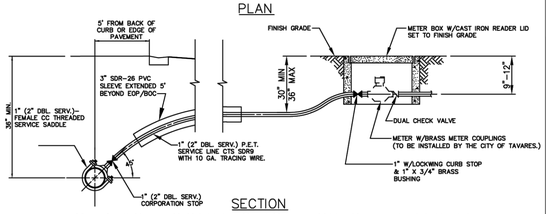
FILE NAME: \\ATWELL\Projects\23000180 Mission Rise PD and PSP\DWG\Plan Set\Construction\Phase 1\0180-C700-DETAILS.dwg LAST SAVED BY: cvance 8/28/2025 1:13 PM PLOTTED BY: Zulyeris Ortiz-Rosado 8/28/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG TO PDF.PC3 PLOT STYLE: ATWELL.CTB

NOTES:

1. METERS TO BE INSTALLED BY THE CITY OF TAVARES.
2. ALL METER BOXES SHALL BE STANDARD PLASTIC RECTANGLE WITH A 1 1/4" PRE-DRILLED HOLE FOR THE TOUCH OR RF METER PAD. (CONTACT CITY FOR DETAILS).
3. ALL 1" SERVICES SHALL HAVE A 1"X3/4" BRASS BUSHING.



PLAN



SECTION

SERVICE CONNECTION–SINGLE FAMILY

NOT TO SCALE

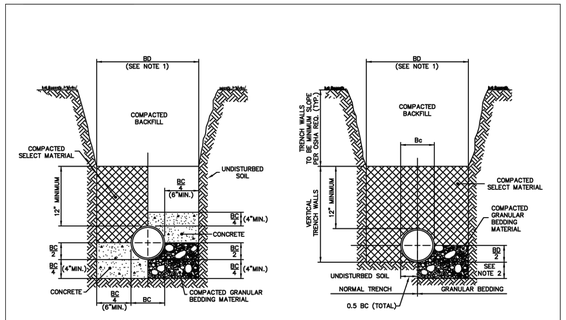
(NOTE: METERS TO BE INSTALLED BY CITY OF TAVARES.)

Howey–in–the–Hills

Standard Details

DATE: FEB 2022

DETAIL PW–1



CLASS "A" BEDDING SPECIAL CONDITIONS

CLASS "B" BEDDING NORMAL CONDITIONS

NOTES: FOR BEDDING AND TRENCHING

1. DIMENSION BC = PIPE O.D.
   DIMENSION BD = TRENCH WIDTH AT TOP OF PIPE
   MAXIMUM BD = BC + 30"
   MINIMUM BD = MAXIMUM DIMENSION OF BELL + 8" (UNSHEETED TRENCH)
2. DEPTH FOR REMOVAL FOR UNSUITABLE MATERIAL SHALL BE AS REQUIRED TO REACH SUITABLE FOUNDATION. FOR ROCK OR OTHER NON-CUSHIONING MATERIAL, DEPTH SHALL BE 6" BELOW BOTTOM OF UTILITY.
3. ALL BACKFILL AND SELECT MATERIAL UNDER ALL ROADWAYS, DRIVES (INCLUDING DIRT DRIVES), AND PARKING AREAS SHALL BE COMPACTED TO 98% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY. (AASHTO T-180). BACKFILL AND SELECT MATERIAL UNDER ALL OTHER AREAS SHALL BE COMPACTED AS FOLLOWS: FROM BOTTOM OF TRENCH TO 12" ABOVE TOP OF PIPE – 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY (AASHTO T-180). FROM 12" ABOVE TOP OF PIPE TO TOP OF BACKFILL – 90% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY (AASHTO T-180)

TRENCHING AND BEDDING

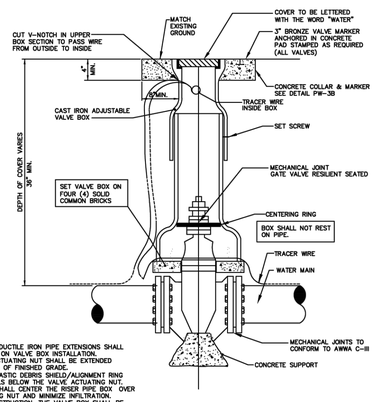
NOT TO SCALE

Howey–in–the–Hills

Standard Details

DATE: FEB 2022

DETAIL PW–2



NOTES

1. PVC PIPE OR DUCTILE IRON PIPE EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.
2. THE VALVE ACTUATING NUT SHALL BE EXTENDED WITHIN 2 FEET OF FINISHED GRADE.
3. PROVIDE A PLASTIC DEBRIS SHIELD/ALIGNMENT RING WHICH INSTALLS BELOW THE VALVE ACTUATING NUT. THIS SHIELD SHALL CENTER THE RISER PIPE BOX OVER THE ACTUATING NUT AND MINIMIZE INFILTRATION. FOR NEW CONSTRUCTION, THE VALVE BOX SHALL BE ADJUSTED TO MIDRANGE TO ALLOW FOR FUTURE BOX ADJUSTMENTS.
4. VALVE BOX SHALL BE A TWO PIECE SCREW TYPE.

GATE VALVE AND BOX

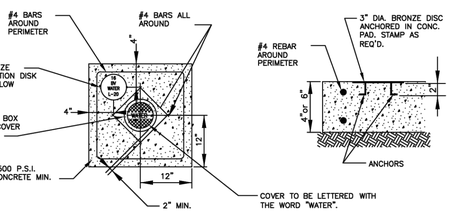
NOT TO SCALE

Howey–in–the–Hills

Standard Details

DATE: FEB 2022

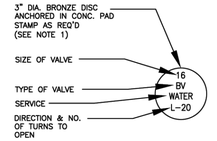
DETAIL PW–3A



NOTE:

1. BRONZE IDENTIFICATION DISC SHALL BE REQUIRED FOR ALL VALVES.
2. 6" THICK CONCRETE PAD IN ROADWAY OR PAVED AREAS, 4" THICK CONCRETE PAD IN OTHER AREAS.

BRONZE IDENTIFICATION DISC DETAIL



VALVE COLLAR

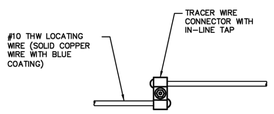
NOT TO SCALE

Howey–in–the–Hills

Standard Details

DATE: FEB 2022

DETAIL PW–3B



NOTES:

1. TRACER WIRE CONNECTOR SHALL BE DIRECT BURY, SELF-STRIPPING, LOCKING.
2. AFTER INSTALLATION OF THE LOCATING WIRE THE SYSTEM SHALL BE SUBJECTED TO TESTING, IN THE PRESENCE OF CITY UTILITY DIRECTOR OR HIS DESIGNEE PRIOR TO BACKFILL, IN ORDER TO CONFIRM THAT THE SYSTEM IS FUNCTIONAL.

LOCATING WIRE SPLICING

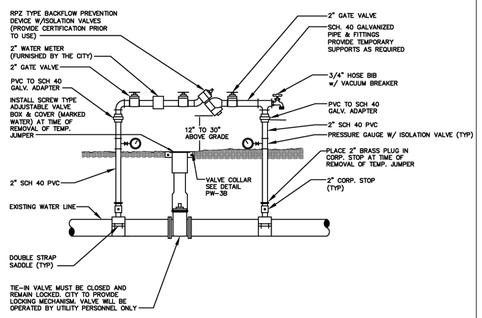
NOT TO SCALE

Howey–in–the–Hills

Standard Details

DATE: FEB 2022

DETAIL PW–5



TEMPORARY JUMPER CONNECTION

NOT TO SCALE

NOTE: LOCATION TO BE DETERMINED AT TIME OF PRECONSTRUCTION CONFERENCE W/ CITY.

Howey–in–the–Hills

Standard Details

DATE: FEB 2022

DETAIL PW–6A

TEMPORARY JUMPER CONNECTION NOTES

1. A TEMPORARY JUMPER CONNECTION IS REQUIRED AT ALL CONNECTIONS BETWEEN EXISTING ACTIVE WATER MAINS AND PROPOSED NEW WATER MAIN IMPROVEMENTS.
2. THE DETAILS TO BE USED FOR FILLING ANY WATER MAIN OF ANY SIZE FROM EXISTING ACTIVE WATER MAINS AND FOR FLUSHING OF NEW MAINS UP TO 8" DIAMETER (2.5 FPS MINIMUM VELOCITY) AND FOR PULLING BACTERIOLOGICAL SAMPLES FROM ANY NEW WATER MAIN OF ANY SIZE. THE JUMPER CONNECTION SHALL BE MAINTAINED UNTIL AFTER FILLING, FLUSHING, TESTING AND DISINFECTION OF THE NEW MAIN HAS BEEN SUCCESSFULLY COMPLETED AND CLEARANCE FOR USE FROM THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) AND OTHER PERTINENT AGENCIES HAS BEEN RECEIVED. THE JUMPER CONNECTION SHALL ALSO BE USED TO MAINTAIN A MINIMUM PRESSURE OF 20 PSI IN THE NEW MAINS ALL THE TIME AFTER DISINFECTION AND UNTIL THE FDEP CLEARANCE LETTER IS OBTAINED. ADEQUATE RESTRAINTS SHALL BE PROVIDED TEMPORARILY, AS REQUIRED. PIPE AND FITTINGS USED FOR CONNECTING THE NEW PIPE TO THE EXISTING PIPE SHALL BE DISINFECTED PRIOR TO INSTALLATION IN ACCORDANCE WITH AWWA C651, LATEST EDITION. THIS TAPPING SLEEVE AND THE EXTERIOR OF THE MAIN TO BE TAPPED SHALL BE DISINFECTED BY SPRAYING OR SWABBING PER SECTION II OF AWWA C561, LATEST EDITION.
3. FLUSHING OF 10" DIAMETER AND LARGE WATER MAINS MAY BE DONE THROUGH THE TIE-IN VALVE, IN THE PRESENCE OF THE UTILITY DIRECTOR OR HIS DESIGNEE. THE UTILITY DEPARTMENT WILL NOTIFIED IN WRITING 48 HOURS PRIOR TO THE FLUSHING OF SAID MAINS.

   THE FOLLOWING PROCEDURES SHALL BE FOLLOWED:

   A. THE TIE-IN VALVES SHALL BE OPERATED AND PRESSURE TESTED IN THE PRESENCE OF THE UTILITY COMPANY AND ENGINEER TO VERIFY WATER TIGHTNESS PRIOR TO THE TIE-IN. VALVES WHICH ARE NOT WATERTIGHT SHALL BE REPLACED OR A NEW VALVE INSTALLED IMMEDIATELY ADJACENT TO THE LEAKING VALVE.

   B. THE TEMPORARY JUMPER CONNECTION SHALL BE CONSTRUCTED AS DETAILED. THE JUMPER CONNECTION SHALL BE USED TO FILL THE NEW WATER MAIN AND FOR PROVIDING WATER FOR BACTERIOLOGICAL SAMPLING OF THE NEW MAIN AS REQUIRED BY THE FDEP PERMIT.
      - FLUSHING SHALL NOT BE ATTEMPTED DURING PEAK DEMAND HOURS OF THE EXISTING WATER MAIN.
      - ALL DOWNSTREAM VALVES IN THE NEW SYSTEM MUST BE OPEN PRIOR TO OPENING THE TIE-IN VALVE.
      - PROVIDE FOR AND MONITOR THE PRESSURE AT THE TIE-IN POINT, THE PRESSURE IN THE EXISTING MAIN MUST NOT DROP BELOW 35 psi.
      - TIE-IN VALVE SHALL BE OPENED A FEW TURNS ONLY, ENSURING A PRESSURE DROP ACROSS THE VALE IS ALWAYS GRATER THAN 10 psi.

   C. THE TIE-IN VALVE SHALL BE LOCKED CLOSED BY THE CITY UNTIL FLUSHING BEGINS.

   D. THE TIE-IN VALVE SHALL BE OPENED ONLY A FEW TURNS FOR FLUSHING OF THE NEW MAIN. THE PROCEDURE SHALL BE DIRECTED BY THE CITY AND OBSERVED BY THE ENGINEER.

   E. AFTER FLUSHING, THE TIE-IN VALVE SHALL BE CLOSED AND LOCKED IN THE CLOSED POSITION BY THE CITY.
4. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION DEMONSTRATING THAT THE RPZ BACKFLOW PREVENTION DEVICE HAS BEEN TESTED WITHIN ONE YEAR AT THE TIME OF INSTALLATION AND IS IN GOOD WORKING ORDER AT THE TIME OF INSTALLATION. THE TEST SHALL BE PERFORMED BY A QUALIFIED BACKFLOW PREVENTION TECHNICIAN.
5. EXCEPT AS REQUIRED TO FLUSH LINES OF GREATER THAN 8" IN DIAMETER, THE TIE-IN VALVE SHALL REMAIN CLOSED AND SHALL BE LOCKED IN THE CLOSED POSITION BY THE CITY. THE TIE-IN VALVE SHALL REMAIN LOCKED CLOSED UNTIL THE NEW SYSTEM HAS BEEN CLEARED FOR USE BY FDEP AND ALL OTHER PERTINENT AGENCIES.
6. UPON RECEIPT OF CLEARANCE FOR USE FROM FDEP AND ALL OTHER PERTINENT AGENCIES, THE CONTRACTOR SHALL REMOVE THE JUMPER CONNECTION. THE CORPORATION STOPS ARE TO BE CLOSED AND PLUGGED WITH 2" BRASS PLUGS.
7. ALL INSTALLATION AND MAINTENANCE OF THE TEMPORARY JUMPER CONNECTION AND ASSOCIATED BACKFLOW PREVENTION DEVICE FITTINGS, VALVE, ETC., SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

Howey–in–the–Hills

Standard Details

DATE: FEB 2022

DETAIL PW–6B

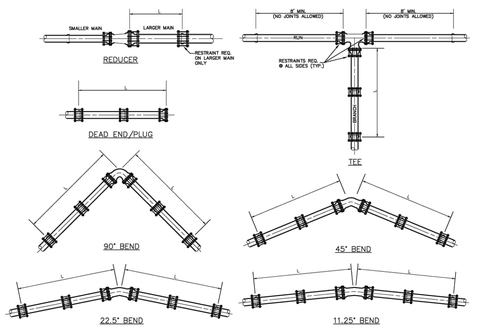


TABLE OF THRUST RESTRAINT LENGTHS

PIPE SIZE (inches)	90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND		TEES		DEAD END & CAP		REDUCER			
	P.V.C. DJ	DUCTILE IRON DJ	P.V.C. DJ	DUCTILE IRON DJ	P.V.C. DJ	DUCTILE IRON DJ	P.V.C. DJ	DUCTILE IRON DJ	P.V.C. DJ	DUCTILE IRON DJ	P.V.C. DJ	DUCTILE IRON DJ	PIPE SIZES	P.V.C. DJ	DUCTILE IRON DJ
4	20'	16'	8'	7'	4'	3'	2'	2'	15'	10'	45'	29'	6"x4"	33'	21'
6	28'	23'	12'	9'	6'	4'	3'	2'	33'	21'	63'	40'	8"x6"	34'	22'
8	36'	29'	15'	12'	7'	6'	4'	3'	52'	33'	82'	52'	10"x8"	33'	21'
10	43'	34'	18'	14'	9'	7'	4'	3'	68'	43'	98'	63'	12"x10"	34'	22'
12	50'	40'	21'	17'	10'	8'	5'	4'	84'	54'	116'	74'	16"x12"	63'	40'
16	63'	51'	26'	21'	13'	10'	6'	5'	116'	74'	148'	94'	18"x16"	33'	21'
18	70'	56'	29'	23'	14'	11'	7'	6'	131'	83'	163'	103'	20"x18"	33'	21'
20	75'	61'	31'	25'	15'	12'	7'	6'	145'	92'	178'	113'	20"x20"	62'	39'
24	86'	70'	36'	29'	17'	14'	9'	7'	173'	110'	207'	132'			

THRUST RESTRAINT DESIGN NOTES

1. RESTRAINT JOINTS, FITTINGS, & VALVE REQUIREMENTS CALCULATED BY THE THRUST RESTRAINT DESIGN PROGRAM PROVIDED BY EBBA IRON SALES, INC.
2. DATA BASED ON MAX. PRESSURE OF 150 p.s.i., THE UNIFIED SOILS CLASSIFICATION SYSTEM (SOIL TYPE SP), THE PIPE BEDDED IN NATIVE SOIL w/ A MINIMUM OF 2.5' COMPACTED FILL OVER THE PIPE, AND USING A SAFETY FACTOR OF 1.5 FOR THE DATA.
3. ALL FITTINGS & VALVES SHALL HAVE RESTRAINED WITH "MEGA-LUG' RESTRAINTS, & ALL BELL & SPIGOT JOINTS TO BE RESTRAINED WITH A RESTRAINING HARNESS WITHIN THE REQUIRED LENGTH OF RESTRAINED PIPE (L).

THRUST RESTRAINT

NOT TO SCALE

Howey–in–the–Hills

Standard Details

DATE: FEB 2022

DETAIL PW–7

Know what's below. Call before you dig.
THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.
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ORLANDO, FL 32801
FL CA# 29754
COA# 29901

SEC 27,34 TWP 20 S RGE 25 E

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HOWEY-IN-THE-HILLS

LAKE COUNTY , FLORIDA

MISSION RISE

TURNSTONE GROUP

PHASE 1 CONSTRUCTION PLANS

POTABLE WATER DETAILS

DATE 08/29/2025

REVISIONS

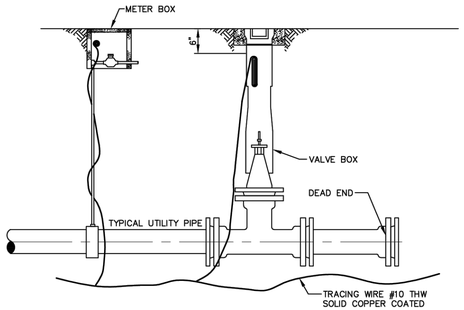
KATLYN ASHLEY CRONKHITE LICENSE No. PE95331 STATE OF FLORIDA PROFESSIONAL ENGINEER

FILE: 0180-0700 DETAILS

ISSUED FOR CONSTRUCTION

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C805

FILE NAME: \\ATLWKL\Projects\23000180 Mission Rise DD and PDP\DWG\Plan Set\Construction\Phase 1\0180-0700 DETAILS.dwg LAST SAVED BY: cpena 8/26/2025 1:13 PM PLOTTED BY: Zophie Ortiz-Rosado 8/28/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG TO PDF.PC3 PLOT STYLE: ATWELL.CTB



ALL PIPE INSTALLED VIA OPEN CUT SHALL BE INSTALLED WITH #10 THW SOLID COPPER COATED TRACING WIRE. ALL PIPE INSTALLED VIA HDD SHALL BE INSTALLED WITH TWO #10 COPPER CLAD STEEL WIRES.

THE TRACING WIRE MUST BE INSTALLED DIRECTLY BELOW THE PIPE AND BROUGHT TO THE SURFACE AT 500' MINIMUM INTERVALS. WIRE SHALL EXTEND A MINIMUM OF 12" ABOVE GRADE AT EACH INTERVAL AND BE COILED AND PLACED IN A VALVE BOX, METER BOX, MANHOLE, CLEANOUT, LOCATE WIRE BOX, OR OTHER APPLICABLE STRUCTURE.

COLOR CODING:

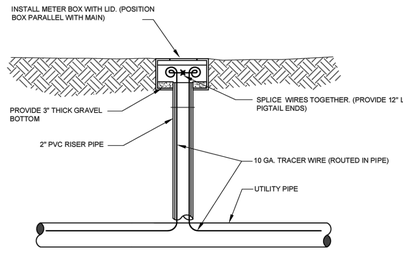
POTABLE WATER SYSTEM: BLUE
REUSE WATER SYSTEM: PANTONE PURPLE
SANITARY SEWER, FORCE MAINS AND LOW PRESSURE SEWER SYSTEMS: GREEN

1. FOR LOW PRESSURE SEWER, POTABLE WATER AND REUSE WATER SYSTEMS: WIRE SHALL BE INSTALLED BELOW ALL MAINS AND SERVICE LINES AND ATTACHED TO VALVES, HYDRANTS AND FITTINGS. WIRE INSTALLED WITH SERVICE LINES SHALL CONNECT TO THE WIRE INSTALLED BELOW THE MAIN AND EXTEND TO THE CURB STOP.
2. FIRE SPRINKLER LINES: WIRE SHALL CONNECT TO THE WIRE INSTALLED BELOW THE MAIN AND EXTEND TO THE RISER CONNECTION.
3. SANITARY SEWER FORCE MAINS: WIRE SHALL BE INSTALLED BELOW THE FORCE MAIN AND ATTACHED TO ALL VALVES AND FITTINGS AND BROUGHT TO THE SURFACE AND PLACED IN A METAL, CITY OF TAVARES APPROVED, VALVE BOX.
4. DEAD END MAINS: WIRE SHALL BE PLACED IN A PROPERLY IDENTIFIED METAL VALVE BOX AT THE END OF THE RUN.
5. WIRE SHALL NOT BE FASTENED OR COILED TO VALVE OPERATING NUT.
6. UTILITY TRACING WIRE SHALL BE IN ACCORDANCE WITH CITY CSM AND PER CITY'S APPROVED MANUFACTURER LIST.

UTILITY PIPE LOCATION MATERIAL – WIRE

NOT TO SCALE

Howey-in-the-Hills — Standard Details — DATE: FEB 2022 — DETAIL PW-8



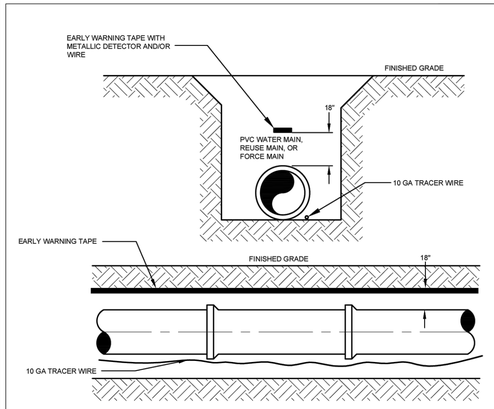
TRACER WIRE BOX UTILIZING METER BOX

NOTES:

1. TRACER WIRE STATION BOX TO BE INSTALLED WHERE THE WIRE CANNOT BE BROUGHT TO GRADE IN A VALVE BOX WITHIN THE MANDATORY 600 FOOT INTERVAL OR WHERE A SPLICE MUST BE MADE ON THE TRACER WIRING. NO UNDERGROUND SPLICES.
2. BOXES SHALL NOT BE LOCATED IN ROADWAYS OR DRIVEWAYS.
3. BOX AND LID PER DETAIL PW-19.
4. TRAFFIC RATED LID (STANDARD-NON BOLT DOWN)
5. LID COLOR SHALL BE PRE-MANUFACTURED OR PAINTED TO MATCH SERVICE (BLUE= POTABLE WATER, GREEN=WASTEWATER, PANTONE PURPLE=RECLAIMED WATER)

TRACER WIRE BOX

Howey-in-the-Hills — NOT TO SCALE — Standard Details — DATE: FEB 2022 — DETAIL PW-9



NOTES:

1. ALL MAINS INSTALLED BY OPEN CUT SHALL HAVE AN "EARLY WARNING" PROTECTION TAPE AND WIRE INSTALLED CONTINUOUSLY ALONG THE ALIGNMENT. THE PROTECTION TAPE SHALL BE PER THE CITY'S APPROVED MANUFACTURER LIST. TAPE SHALL BE INSTALLED DURING BACKFILLING 18" ABOVE THE PIPE AND SHALL BE CONTINUOUSLY MARKED FOR THE TYPE OF PIPE (EXAMPLE: CAUTION, WATER MAIN BURIED BELOW"). THE TAPE SHALL HAVE A METALLIC DETECTABLE STRIP INCLUDED AND COLOR CODED AS FOLLOWS:
   BLUE - POTABLE WATER
   GREEN - SANITARY FORCE MAIN, GRAVITY SEWER, LOW PRESSURE MAIN
   PANTONE PURPLE - RECLAIMED WATER
   RED - DEDICATED FIRE LINE
2. ALL PVC MAINS SHALL BE A SOLID COLOR AS DESCRIBED ABOVE.
   ALL DUCTILE IRON MAINS SHALL BE WRAPPED WITH COLOR CODED BAGS.
   ALL POTABLE WATER PIPE SHALL BEAR THE NATIONAL SANITATION FOUNDATION (NSL) SEAL OF APPROVAL.

UTILITY PIPE LOCATION MATERIAL – TAPE

NOT TO SCALE

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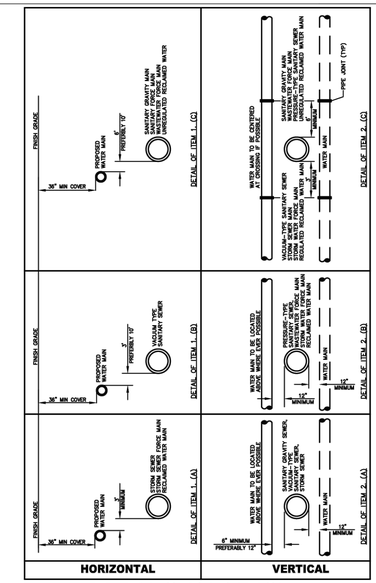
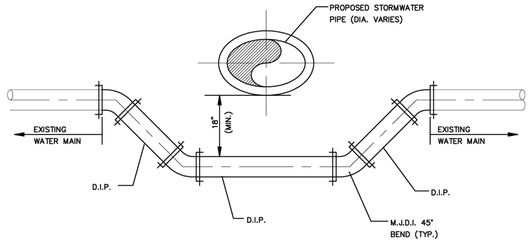


UTILITY SEPARATION

NOT TO SCALE

Howey-in-the-Hills — Standard Details — DATE: FEB 2022 — DETAIL PW-11A



NOTES:

1. ALL PROPOSED JOINTS SHALL BE RESTRAINED.
2. ALL EXISTING JOINTS WITHIN SHALL BE RESTRAINED IN ACCORDANCE WITH GR-6.
3. ALL PIPING CLEARANCES SHALL BE IN ACCORDANCE WITH CHAPTER 62-555.314 F.A.C.

WATER LINE CROSSING

NOT TO SCALE

Howey-in-the-Hills — Standard Details — DATE: FEB 2022 — DETAIL PW-11B

GENERAL WATER NOTES

1. WATER SYSTEM COMPONENTS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND REGULATIONS, CLEANED, DISINFECTED AND BACTERIOLOGICALLY CLEARED FOR SERVICE IN ACCORDANCE WITH THE LATEST AWWA STANDARDS AND CHAPTER 62-555 FLORIDA ADMINISTRATIVE CODE.
2. ALL PIPING SHALL BEAR THE "NSF" SEAL FOR POTABLE WATER.
3. WATER MAINS SHALL BE PVC CONFORMING TO AWWA C-900, DR 18 FOR PIPE SIZES 4"-12". PIPES 14" OR LARGER SHALL BE AWWA C-905, DR 18. ALL COUPLINGS, CLEANING COMPOUNDS, SOLVENTS, LUBRICANTS, AND PIPE PREPARATION, FOR LAYING, SHALL BE IN ACCORDANCE WITH THE PIPE MANUFACTURER'S LATEST RECOMMENDATIONS.
4. DEPTH OF WATER LINES TO BE 36" MINIMUM COVER FROM FINISH GRADE.
5. WATER MAINS TO BE LOCATED 5' FROM BACK OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
6. ALL WATER MAINS UNDER PAVEMENT SHALL BE DUCTILE IRON.
7. ALL CASINGS UNDER PAVEMENT SHALL EXTEND 5' BEYOND THE BACK OF CURB.
8. DISINFECTING: FOLLOWING THE PRESSURE TESTING, THE CONTRACTOR SHALL DISINFECT ALL SECTIONS OF THE NEW WATER DISTRIBUTION SYSTEM. DISINFECTION SHALL BE IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF AWWA STANDARD C651 "DISINFECTING WATER MAINS", AND ALL APPROPRIATE AGENCY APPROVAL.
9. ALL HYDROSTATIC TESTS SHALL BE IN ACCORDANCE WITH AWWA C600 FOR DUCTILE IRON PIPE AND C605/M23 FOR PVC PIPE.
10. ALL WATER MAINS SHALL BE INSTALLED, PRESSURE AND LEAK TESTED IN ACCORDANCE WITH AWWA C600, (62-555.320(21)(B)1 AND 62-555.330, F.A.C. ALL INSTALLATION, TESTING AND FIELD PROCEDURES MUST BE PROVIDED AND MUST CONFORM TO THE APPLICABLE AWWA STANDARDS.
11. ALL PIPING MATERIALS AND SPECIFICATIONS COVERING PIPES, JOINTS AND PACKING MATERIALS, INTERNAL COATING AND LININGS, FITTINGS, SPECIALS AND APPURTENANCES SHALL ALL BE IN ACCORDANCE WITH THE CORRESPONDING AWWA STANDARDS AND BE CONFORMING TO NSF REQUIREMENTS, AS MAY BE APPLICABLE, WITH EXCEPTIONS ALLOWED ONLY IF DOCUMENTATION AND ASSURANCES ARE PROVIDED IN COMPLIANCE WITH PARAGRAPHS 62-555.320(3) (D), 622-555.320 (3) (B), AND 62-555.320 (21) (C), F.A.C. THE LEAD USE PROHIBITION IN RULE 62-555.322, F.A.C. SHALL ALSO APPLY. POLYETHYLENE TUBING SHALL BE PER AWWA C901. UNDERGROUND SERVICE LINES AND VALVES SHALL BE PER AWWA C800.

COLOR CODING

ALL PIPE AND PIPE FITTINGS INSTALLED UNDER THIS PROJECT WILL BE COLOR CODED OR MARKED IN ACCORDANCE WITH SUBPARAGRAPH 62-555.320(21)(B)3, F.A.C., USING BLUE AS A PREDOMINANT COLOR. (UNDERGROUND PLASTIC PIPE WILL BE SOLID-WALL BLUE PIPE, WILL HAVE A CO-EXTRUDED BLUE EXTERNAL SKIN, OR WILL BE WHITE OR BLACK PIPE WITH BLUE STRIPES INCORPORATED INTO, OR APPLIED TO, THE PIPE WALL; AND UNDERGROUND METAL OR CONCRETE PIPE WILL HAVE BLUE STRIPES APPLIED TO THE PIPE WALL. PIPE STRIPED DURING MANUFACTURING OF THE PIPE WILL HAVE CONTINUOUS STRIPES THAT RUN PARALLEL TO THE AXIS OF THE PIPE, THAT ARE LOCATED AT NO GREATER THAN 90-DEGREE INTERVALS AROUND THE PIPE, AND THAT WILL REMAIN INTACT DURING AND AFTER INSTALLATION OF THE PIPE. IF TAPE OR PAINT IS USED TO STRIPE PIPE DURING INSTALLATION OF THE PIPE, THE TAPE OR PAINT WILL BE APPLIED IN A CONTINUOUS LINE THAT RUNS PARALLEL TO THE AXIS OF THE PIPE AND THAT IS LOCATED ALONG THE TOP OF THE PIPE. FOR PIPE WITH AN INTERNAL DIAMETER OF 24 INCHES OR GREATER, TAPE OR PAINT WILL BE APPLIED IN CONTINUOUS LINES ALONG EACH SIDE OF THE PIPE AS WELL AS ALONG THE TOP OF THE PIPE. ABOVEGROUND PIPE WILL BE PAINTED BLUE OR WILL BE COLOR CODED OR MARKED LIKE UNDERGROUND PIPE.) [FAC 62/CELL 555.320(21)(B)3]

UNLESS DESCRIBED IN THE CITY CSM ELSEWHERE, ALL WATER MAINS SHALL BE INSTALLED IN ACCORDANCE WITH **CHAPTER 62-555.314, F.A.C.,** AND ANY UPDATES TO THE F.A.C., AND IN CONFORMANCE WITH ALL SEPARATION REQUIREMENTS AS FOUND THEREIN.

62-555.314 LOCATION OF PUBLIC WATER SYSTEM MAINS.

FOR THE PURPOSE OF THIS SECTION, THE PHRASE "WATER MAINS" SHALL MEAN MAINS, INCLUDING TREATMENT PLANT PROCESS PIPING, CONVEYING EITHER RAW, PARTIALLY TREATED, OR FINISHED DRINKING WATER, FIRE HYDRANT LEADS, AND SERVICE LINES THAT ARE UNDER THE CONTROL OF A PUBLIC WATER SYSTEM AND THAT HAVE AN INSIDE DIAMETER OF THREE INCHES OR GREATER.

(1) HORIZONTAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS.

(A) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C

(B) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER.

(C) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS SHALL BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER.

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GENERAL WATER NOTES

(D) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST TEN FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM" AS DEFINED IN SECTION 381.0065(2), F.S., AND RULE 64E-6.002, F.A.C.

(2) VERTICAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS AND RECLAIMED WATER PIPELINES.

(A) NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY- OR VACUUM-TYPE SANITARY SEWER OR STORM SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES, AND PREFERABLY 12 INCHES, ABOVE OR AT LEAST 12 INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

(3) SEPARATION BETWEEN WATER MAINS AND SANITARY OR STORM SEWER MANHOLES:

(A) NO WATER MAIN SHALL PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A SANITARY SEWER MANHOLE.

(B) EFFECTIVE AUGUST 28, 2003, WATER MAINS SHALL NOT BE CONSTRUCTED OR ALTERED TO PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A STORM SEWER MANHOLE OR INLET STRUCTURE. WHERE IT IS NOT TECHNICALLY FEASIBLE OR ECONOMICALLY SENSIBLE TO COMPLY WITH THIS REQUIREMENT (I.E., WHERE THERE IS A CONFLICT IN THE ROUTING OF A WATER MAIN AND A STORM SEWER AND WHERE ALTERNATIVE ROUTING OF THE WATER MAIN OR THE STORM SEWER IS NOT TECHNICALLY FEASIBLE OR IS NOT ECONOMICALLY SENSIBLE), THE DEPARTMENT SHALL ALLOW EXCEPTIONS TO THIS REQUIREMENT (I.E., THE DEPARTMENT SHALL ALLOW CONSTRUCTION OF CONFLICT MANHOLES), BUT SUPPLIERS OF WATER OR PERSONS PROPOSING TO CONSTRUCT CONFLICT MANHOLES MUST FIRST OBTAIN A SPECIFIC PERMIT FROM THE DEPARTMENT AND MUST PROVIDE IN THE PRELIMINARY DESIGN REPORT OR DRAWINGS, SPECIFICATIONS, AND DESIGN DATA ACCOMPANYING THEIR PERMIT APPLICATION THE FOLLOWING INFORMATION:

1. TECHNICAL OR ECONOMIC JUSTIFICATION FOR EACH CONFLICT MANHOLE.
2. A STATEMENT IDENTIFYING THE PARTY RESPONSIBLE FOR MAINTAINING EACH CONFLICT MANHOLE.
3. ASSURANCE OF COMPLIANCE WITH THE DESIGN AND CONSTRUCTION REQUIREMENTS IN SUB-PARAGRAPHS A. THROUGH D. BELOW. - 361
   A. EACH WATER MAIN PASSING THROUGH A CONFLICT MANHOLE SHALL HAVE A FLEXIBLE, WATERTIGHT JOINT ON EACH SIDE OF THE MANHOLE TO ACCOMMODATE DIFFERENTIAL SETTLING BETWEEN THE MAIN AND THE MANHOLE.
   B. WITHIN EACH CONFLICT MANHOLE, THE WATER MAIN PASSING THROUGH THE MANHOLE SHALL BE INSTALLED IN A WATERTIGHT CASING PIPE HAVING HIGH IMPACT STRENGTH (I.E., HAVING IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25-INCH-THICK DUCTILE IRON PIPE).
   C. EACH CONFLICT MANHOLE SHALL HAVE AN ACCESS OPENING, AND SHALL BE SIZED, TO ALLOW FOR EASY CLEANING OF THE MANHOLE.
   D. GRATINGS SHALL BE INSTALLED AT ALL STORM SEWER INLETS UPSTREAM OF EACH CONFLICT MANHOLE TO PREVENT LARGE OBJECTS FROM ENTERING THE MANHOLE.

(4) SEPARATION BETWEEN FIRE HYDRANT DRAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS.

(A) NEW OR RELOCATED FIRE HYDRANTS WITH UNDERGROUND DRAINS SHALL BE LOCATED SO THAT THE DRAINS ARE AT LEAST THREE FEET FROM ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.; AT LEAST THREE FEET, AND PREFERABLY TEN FEET, FROM ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER; AT LEAST SIX FEET, AND PREFERABLY TEN FEET, FROM ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.; AND AT LEAST TEN FEET FROM ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM" AS DEFINED IN SECTION 381.0065(2), F.S., AND RULE 64E-6.002, F.A.C.

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GENERAL WATER NOTES

(5) EXCEPTIONS. WHERE IT IS NOT TECHNICALLY FEASIBLE OR ECONOMICALLY SENSIBLE TO COMPLY WITH THE REQUIREMENTS IN SUBSECTION (1) OR (2) ABOVE, THE DEPARTMENT SHALL ALLOW EXCEPTIONS TO THESE REQUIREMENTS IF SUPPLIERS OF WATER OR CONSTRUCTION PERMIT APPLICANTS PROVIDE TECHNICAL OR ECONOMIC JUSTIFICATION FOR EACH EXCEPTION AND PROVIDE ALTERNATIVE CONSTRUCTION FEATURES THAT AFFORD A SIMILAR LEVEL OF RELIABILITY AND PUBLIC HEALTH PROTECTION. ACCEPTABLE ALTERNATIVE CONSTRUCTION FEATURES INCLUDE THE FOLLOWING:

(A) WHERE AN UNDERGROUND WATER MAIN IS BEING LAID LESS THAN THE REQUIRED MINIMUM HORIZONTAL DISTANCE FROM ANOTHER PIPELINE AND WHERE AN UNDERGROUND WATER MAIN IS CROSSING ANOTHER PIPELINE AND JOINTS IN THE WATER MAIN ARE BEING LOCATED LESS THAN THE REQUIRED MINIMUM DISTANCE FROM JOINTS IN THE OTHER PIPELINE:
1. USE OF PRESSURE-RATED PIPE CONFORMING TO THE AMERICAN WATER WORKS ASSOCIATION STANDARDS INCORPORATED INTO RULE 62-555.330, F.A.C., FOR THE OTHER PIPELINE IF IT IS A GRAVITY- OR VACUUM-TYPE PIPELINE;
2. USE OF WELDED, FUSED, OR OTHERWISE RESTRAINED JOINTS FOR EITHER THE WATER MAIN OR THE OTHER PIPELINE; OR
3. USE OF WATERTIGHT CASING PIPE OR CONCRETE ENCASEMENT AT LEAST FOUR INCHES THICK FOR EITHER THE WATER MAIN OR THE OTHER PIPELINE.

(B) WHERE AN UNDERGROUND WATER MAIN IS BEING LAID LESS THAN THREE FEET HORIZONTALLY FROM ANOTHER PIPELINE AND WHERE AN UNDERGROUND WATER MAIN IS CROSSING ANOTHER PIPELINE AND IS BEING LAID LESS THAN THE REQUIRED MINIMUM VERTICAL DISTANCE FROM THE OTHER PIPELINE:
1. USE OF PIPE, OR CASING PIPE, HAVING HIGH IMPACT STRENGTH (I.E., HAVING AN IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25-INCH-THICK DUCTILE IRON PIPE) OR CONCRETE ENCASEMENT AT LEAST FOUR INCHES THICK FOR THE WATER MAIN; AND
2. USE OF PIPE, OR CASING PIPE, HAVING HIGH IMPACT STRENGTH (I.E., HAVING AN IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25-INCH-THICK DUCTILE IRON PIPE) OR CONCRETE ENCASEMENT AT LEAST FOUR INCHES THICK FOR THE OTHER PIPELINE IF IT IS NEW AND IS CONVEYING WASTEWATER OR RECLAIMED WATER.

Howey-in-the-Hills — Standard Details — DATE: FEB 2022 — DETAIL PW-11E

811 Know what's below. Call before you dig.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:

CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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SEC 27,34 TWP 20 S RGE 25 E
--
HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
POTABLE WATER DETAILS

DATE 08/29/2025

REVISIONS

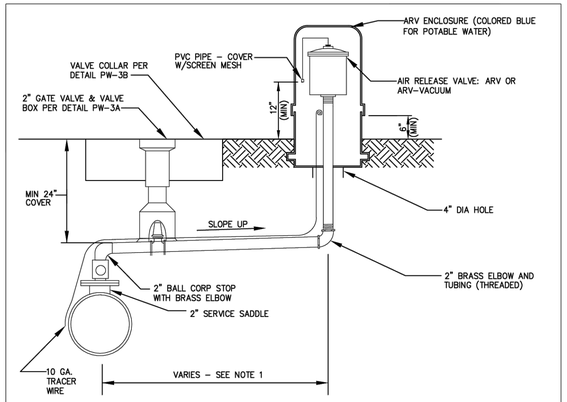


FILE: 0180-C700 DETAILS

ISSUED FOR CONSTRUCTION

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C806

FILE NAME: \\FLORM\Projects\23000180 Mission Rise DD and PSP\DWG\Plan Set\Construction\Phase 1\0180-C700 DETAILS.dwg LAST SAVED BY: cpeel 8/26/2025 1:13 PM PLOTTED BY: Edwin Ortiz-Rosado 8/26/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG To PDF.pc3 PLOT STYLE: ATWELL.ctb



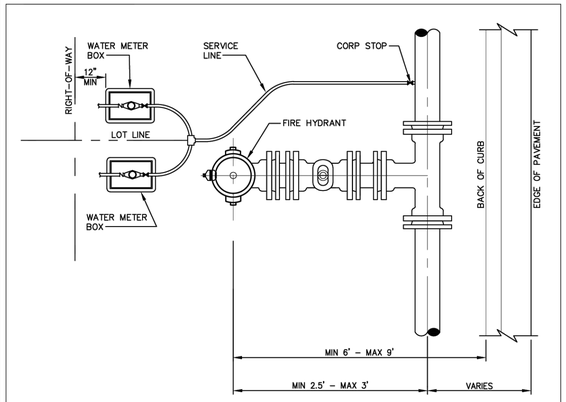
NOTES:

1. OFFSET DISTANCE SHOWN ON DRAWINGS.
2. ADJUST HORIZONTAL LOCATION OF ARV ENCLOSURE, AS REQUIRED TO AVOID SIDEWALK. LOCATE ARV ENCLOSURE WITHIN 1' OF R/W OR AS OTHERWISE DETERMINED BY THE CITY.

OFFSET AIR RELEASE VALVE VAULT

NOT TO SCALE

Howey–in–the–Hills Standard Details | DATE: FEB 2022 | DETAIL PW–13



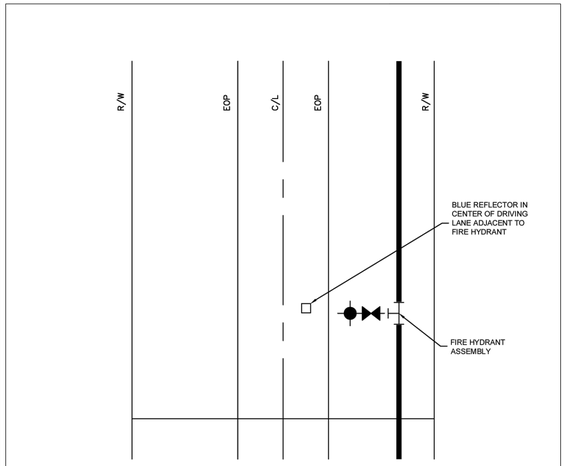
NOTES:

1. ALL METER BOXES TO BE LOCATED INSIDE ROAD R/W LINE
2. DETAIL TO BE USED WHERE FIRE HYDRANTS AND WATER SERVICES ARE LOCATED ON PLANS AND CONFLICT APPEARS APPARENT.

TYPICAL WATER SERVICE AND HYDRANT LOCATION

NOT TO SCALE

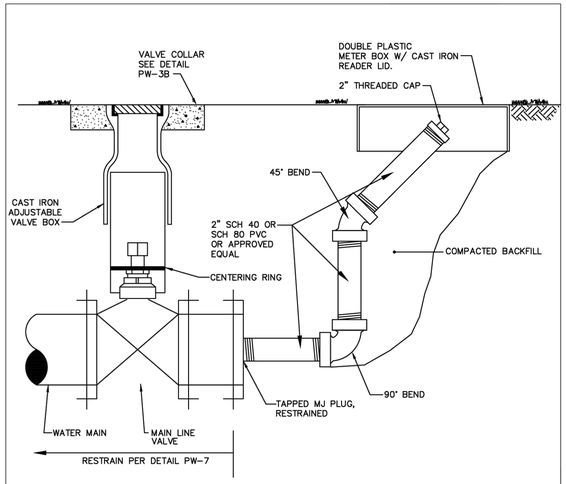
Howey–in–the–Hills Standard Details | DATE: FEB 2022 | DETAIL PW–14



FIRE HYDRANT REFLECTOR

NOT TO SCALE

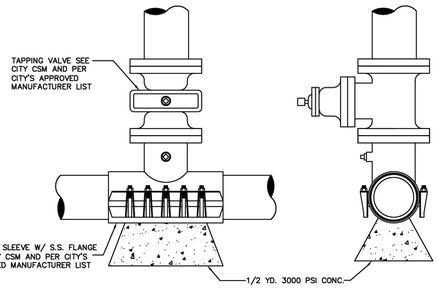
Howey–in–the–Hills Standard Details | DATE: FEB 2022 | DETAIL PW–15



BLOWOFF VALVE

NOT TO SCALE

Howey–in–the–Hills Standard Details | DATE: FEB 2022 | DETAIL PW–16



WET TAP SLEEVE AND TAPPING VALVE

NOT TO SCALE

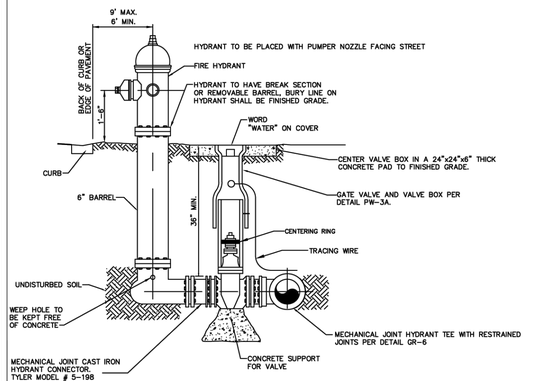
Howey–in–the–Hills Standard Details | DATE: FEB 2022 | DETAIL PW–17

PAINTING

1. APPLY TWO COATS OF OSHA SAFETY INDUSTRIAL RED PAINT TO HYDRANT BARREL.
2. APPLY TWO COATS OF OSHA SAFETY INDUSTRIAL ENAMEL PAINT TO THE BONNET AND NOZZLE CAPS. THE UTILITY DEPARTMENT INSPECTOR WILL DETERMINE THE COLOR TO PAINT THE HYDRANT BONNET AND NOZZLE CAPS BY FLOW TESTING HYDRANT.
   - BLUE 1500 GPM OR MORE (SHERWIN WILLIAMS #SW4086)
   - GREEN 1000 GPM TO 1499 GPM (SHERWIN WILLIAMS #B54614)
   - ORANGE 500 GPM TO 999 GPM (SHERWIN WILLIAMS #B54E39)
   - RED 499 GPM OR LESS (SHERWIN WILLIAMS #B54R38)
   - RED HYDRANT BARREL (SHERWIN WILLIAMS #B54R38)

SPECIFICATIONS

1. AWWA SPECIFICATIONS C–502
2. TWO 2–1/2" HOSE NOZZLE DISCHARGE
3. ONE 4–1/2" PUMPER NOZZLE DISCHARGE
4. ONE 1–1/2" OPERATING NUT, LEFT
5. ALL HYDRANTS SHALL BE EQUIPPED WITH FITTINGS TO ALLOW FOR ELEVATION ADJUSTMENTS.
6. 5¼" MAIN VALVE OPENING
7. RESTRAINED JOINTS OR ALL THREADED ROD REQUIRED TO SECURE PIPE, RISER AND VALVE IN THE FIRE HYDRANT ASSEMBLY TO THE MAIN



FIRE HYDRANT WITH VALVE

NOT TO SCALE
(STANDARD FIRE HYDRANT ASSEMBLY)

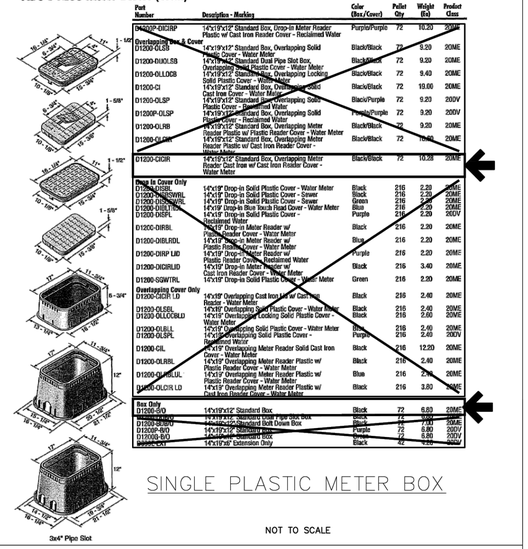
Howey–in–the–Hills Standard Details | DATE: FEB 2022 | DETAIL PW–18

NDS METER BOXES

STANDARD COMMERCIAL GRADE

NDS D1200 Meter Boxes (cont.)

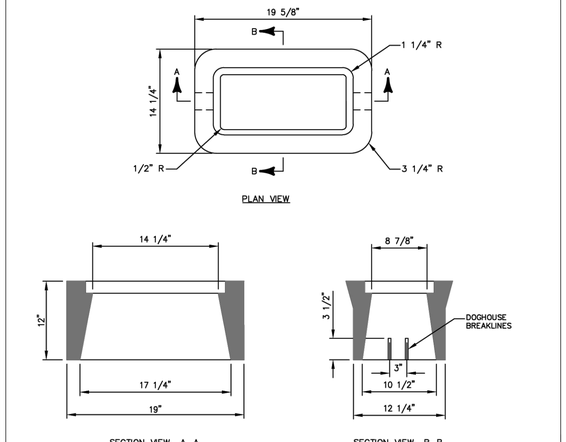
Part Number	Description - Marking	Color (Box/Cover)	Pallet Qty	Weight (lbs)	Product Class
D1200P-DIDRP	14"x19"x12" Standard Box, Drop-in Meter Reader Plastic w/ Cast Iron Reader Cover - Reclaimed Water	Purple/Purple	72	10.20	20DM
Overlapping Box & Cover					
D1200-OLDB	14"x19"x12" Standard Box, Overlapping Solid Plastic Cover - Water Meter	Black/Black	72	9.20	20ME
D1200-DUOLSB	14"x19"x12" Standard Dual Pipe Slot Box, Overlapping Solid Plastic Cover - Water Meter	Black/Black	72	9.20	20ME
D1200-OLLOCB	14"x19"x12" Standard Box, Overlapping Locking Solid Plastic Cover - Water Meter	Black/Black	72	9.40	20ME
D1200-CI	14"x19"x12" Standard Box, Overlapping Solid Cast Iron Cover - Water Meter	Black/Black	72	10.00	20ME
D1200-OLSP	14"x19"x12" Standard Box, Overlapping Solid Plastic Cover - Reclaimed Water	Black/Purple	72	9.20	200V
D1200P-OLSP	14"x19"x12" Standard Box, Overlapping Solid Plastic Cover - Reclaimed Water	Purple/Purple	72	9.20	200V
D1200-OLRB	14"x19"x12" Standard Box, Overlapping Meter Reader Plastic w/ Plastic Reader Cover - Water Meter	Black/Black	72	9.20	20ME
D1200-CLRB	14"x19"x12" Standard Box, Overlapping Meter Reader Plastic w/ Cast Iron Reader Cover - Water Meter	Black/Black	72	10.60	20ME
D1220-CIRR	14"x19"x12" Standard Box, Overlapping Meter Reader Cast Iron w/ Cast Iron Reader Cover - Water Meter	Black/Black	72	10.28	20ME
Drop-In Cover Only					
D1200-DIDRR	14"x19" Drop-in Solid Plastic Cover - Water Meter	Black	216	2.20	20ME
D1200-DIDRSWRL	14"x19" Drop-in Solid Plastic Cover - Sewer	Black	216	2.20	20ME
D1200-DIDRSWRL	14"x19" Drop-in Solid Plastic Cover - Sewer	Green	216	2.20	20ME
D1200-DIDETRR	14"x19" Drop-in Blue Touch Read Cover - Water Meter	Blue	216	2.20	20ME
D1200-DIDSPL	14"x19" Drop-in Solid Plastic Cover - Reclaimed Water	Purple	216	2.20	200V
D1210C-DIRBL	14"x19" Drop-in Meter Reader w/ Plastic Reader Cover - Water Meter	Black	216	2.30	20ME
D1200-DIBLRDL	14"x19" Drop-in Meter Reader w/ Plastic Reader Cover - Water Meter	Blue	216	2.20	20ME
D1200-DIRP LID	14"x19" Drop-in Meter Reader w/ Plastic Reader Cover - Reclaimed Water	Purple	216	2.20	20ME
D1200-DIGRLID	14"x19" Drop-in Meter Reader w/ Cast Iron Reader Cover - Water Meter	Black	216	3.40	20ME
D1200-DSWTRL	14"x19" Drop-in Solid Plastic Cover - Water Meter	Green	216	2.20	20ME
Overlapping Cover Only					
D1200-OLCIR LID	14"x19" Overlapping Cast Iron Lid w/ Cast Iron Reader - Water Meter	Black	216	2.40	20ME
D1200-OLSBL	14"x19" Overlapping Solid Plastic Cover - Water Meter	Black	216	2.40	20ME
D1200-OLLOCBLD	14"x19" Overlapping Locking Solid Plastic Cover - Water Meter	Black	216	2.00	20ME
D1200-OLBLL	14"x19" Overlapping Solid Plastic Cover - Water Meter	Blue	216	2.40	20ME
D1200-OLSPL	14"x19" Overlapping Solid Plastic Cover - Reclaimed Water	Purple	216	2.40	200V
D1200-CIL	14"x19" Overlapping Meter Reader Solid Cast Iron Cover - Water Meter	Black	216	12.20	20ME
D1200-OLRBL	14"x19" Overlapping Meter Reader w/ Plastic Reader Cover - Water Meter	Black	216	2.40	20ME
D1200-OLBRLDL	14"x19" Overlapping Meter Reader Plastic w/ Plastic Reader Cover - Water Meter	Blue	216	2.40	20ME
D1200-OLCIR LD	14"x19" Overlapping Meter Reader Plastic w/ Cast Iron Reader Cover - Water Meter	Black	216	3.80	20ME
Box Only					
D1200-SO	14"x19"x12" Standard Box	Black	72	6.80	20ME
D1200-DUOLSBO	14"x19"x12" Standard Dual Pipe Slot Box	Black	72	7.00	20ME
D1200-DSBV	14"x19"x12" Standard Split Valve Box	Purple	72	6.80	200V
D1200B-SO	14"x19"x12" Standard Box	Purple	72	6.80	200V
D1200E-EXT	14"x19"x6" Extension Only	Black	42	4.50	20ME



SINGLE PLASTIC METER BOX

NOT TO SCALE

Howey–in–the–Hills Standard Details | DATE: FEB 2022 | DETAIL PW–19



NOTE:
METER BOX SHALL BE COMPLETE WITH POLYMER COVER LID

SINGLE POLYMER METER BOX

NOT TO SCALE

Howey–in–the–Hills Standard Details | DATE: FEB 2022 | DETAIL PW–21

811 Know what's below. Call before you dig.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:

CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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COA# 29091

SEC 27,34 TWP 20 S RGE 25 E | -- | HOWEY-IN-THE-HILLS | LAKE COUNTY , FLORIDA

MISSION RISE

TURNSTONE GROUP

PHASE 1 CONSTRUCTION PLANS

POTABLE WATER DETAILS

DATE 08/29/2025

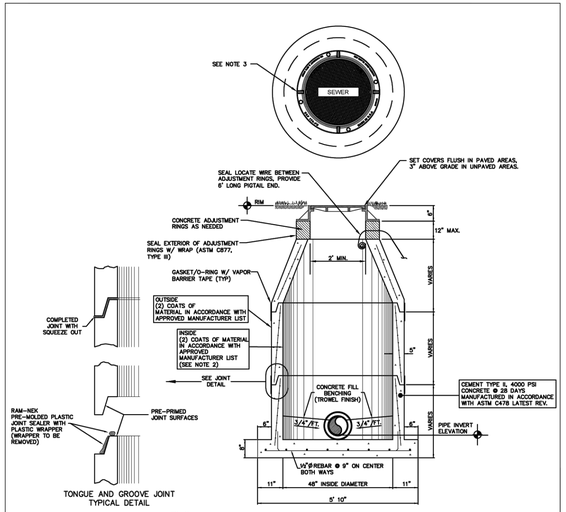
REVISIONS



DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C807

ISSUED–FOR–CONSTRUCTION | FILE: 0180-C700 DETAILS

FILE NAME: \\ATWELL\Projects\23000180 Mission Rise DD and PSP\Civil\Plan Sets\Construction\Phase 1\0180-C700 DETAILS.dwg LAST SAVED BY: cgreen 8/28/2025 1:13 PM PLOTTED BY: Edgardo Cortes-Rosado 8/28/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) SERVICE: DWG TO PDF.PC3 PLOT STYLE: ATWELL.CTB



TONGUE AND GROOVE JOINT
TYPICAL DETAIL

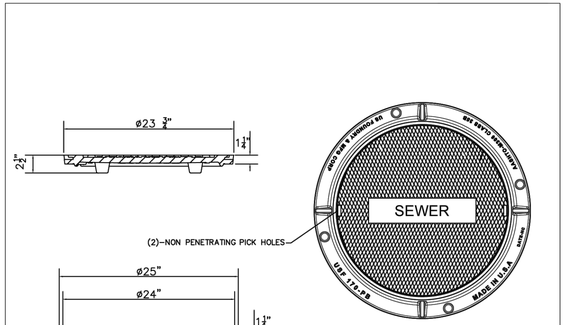
NOTES

1. ALTERNATE-PRECAST MANHOLE TOPS MUST BE APPROVED IN ADVANCE.
2. LINER (150 MILS DFT) SHALL BE USED WHERE SHOWN ON DRAWINGS AND/OR REQUIRED BY THE CITY.
3. MANHOLE TO BE CENTERED OVER PIPE FLOW PATH.
4. APPLY CAULKING CONTINUOUSLY OF RAM-NEK AROUND ENTIRE MATING SURFACE BETWEEN ADJUSTMENT RINGS AND MANHOLE FRAME.

SANITARY PRECAST MANHOLE

NOT TO SCALE

Howey-in-the-Hills Standard Details	DATE: FEB 2022	DETAIL WW-1

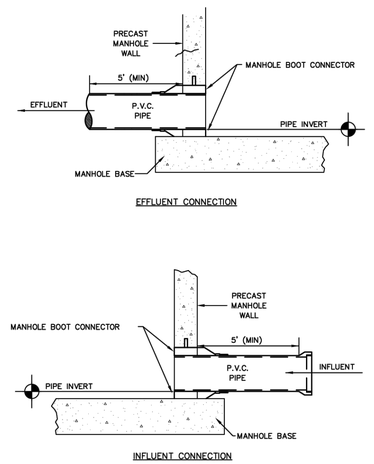


*MODEL USF 170-PB RING AND CE-PB COVER
RING NO. 8021468
COVER NO. 8017774
MATERIAL AASHTO M306 GRAY CAST IRON CLASS 35B

SANITARY MANHOLE COVER

NOT TO SCALE

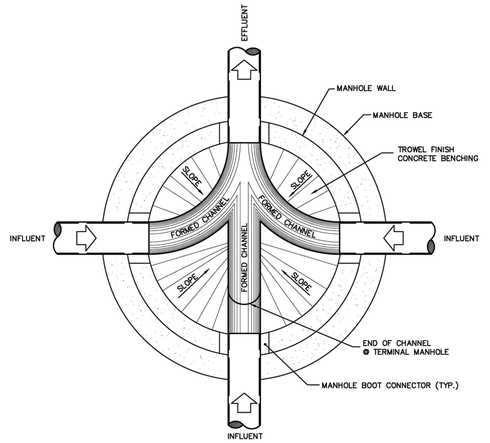
Howey-in-the-Hills Standard Details	DATE: FEB 2022	DETAIL WW-2



PIPE CONNECTION TO PRECAST SANITARY MANHOLE

NOT TO SCALE

Howey-in-the-Hills Standard Details	DATE: FEB 2022	DETAIL WW-3



FLOW PATTERNS FOR INVERT CHANNELS

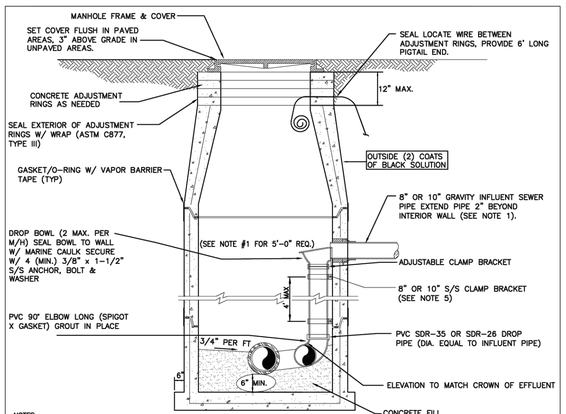
NOTES:

1. INVERT CHANNELS TO BE CONSTRUCTED FOR SMOOTH FLOW WITH NO OBSTRUCTIONS, HALF PIPE INVERT CHANNELS.
2. SPILLWAYS SHALL BE CONSTRUCTED BETWEEN PIPES WITH DIFFERENT INVERT ELEVATIONS PROVIDING FOR SMOOTH FLOWS.
3. CHANNELS FOR FUTURE CONNECTIONS (STUBS) SHALL BE CONSTRUCTED, FILLED WITH SAND AND COVERED WITH 1" OF MORTAR.

TYPICAL MANHOLE PLAN

NOT TO SCALE

Howey-in-the-Hills Standard Details	DATE: FEB 2022	DETAIL WW-4



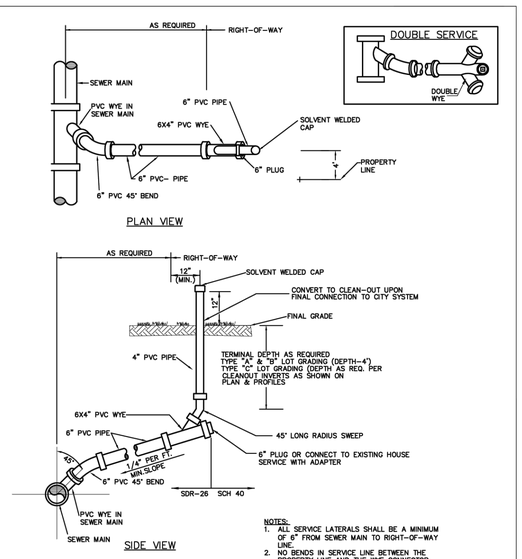
NOTES:

1. THIS ASSEMBLY IS FOR 8" OR 10" GRAVITY INFLUENT LINES ONLY. NO DROPS ALLOWED FOR FORCE MAINS. MAXIMUM OF 2 INSIDE DROP BOWLS PER MANHOLE. A 5'-0" DIA. MANHOLE (6" THICK WALLS) IS REQUIRED. THE INSIDE DROP FOR 8" HIGH-LINE SHALL BE CONSTRUCTED SIMILAR TO ABOVE.
2. PRECAST MANHOLE SECTIONS TO BE MANUFACTURED IN ACCORDANCE WITH THE LATEST EDITIONS OF A.S.T.M. C-478 WITH 4000 LB. CONC., TYPE II CEMENT. ALL LIFTING HOLES AND OUTSIDE INSERTS SHALL BE FILLED WITH NON-SHRINK GROUT AND COATED WITH BITUMINOUS WATERPROOFING MATERIAL.
3. THE INTERIOR OF MANHOLE AND THE INTERIOR OF ADJUSTMENT RINGS SHALL BE LINED (150 MILS DFT) AS INDICATED ON THE DRAWINGS AND/OR REQUIRED BY THE CITY.
4. THE DROP BOWL ASSEMBLY SHALL BE INSTALLED PRIOR TO APPLICATION OF SPECIALTY LINING MATERIAL.
5. ADJUSTABLE CLAMPING BRACKET (MIN. 2 PER DROP BOWL ASSY). 1-1/2" WIDE, 11 GA. W/ 3/8" DIA. 18-8 PINCH BOLTS AND NUTS. SECURE TO M/H WALL WITH (2) 3/8" X 1" BOLT, ANCHOR & WASHER PER BRACKET ASSY. ALL 316 STAINLESS STEEL MATERIALS.
6. INSTALL ONE CONTINUOUS PIECE OF RAM-NEK AROUND ENTIRE MATING SURFACE BETWEEN ADJUSTMENT RINGS AND MANHOLE FRAME.
7. MANHOLE LID SHALL BE CENTERED OVER DROP BOWL.

INSIDE DROP STANDARD PRECAST MANHOLE

NOT TO SCALE

Howey-in-the-Hills Standard Details	DATE: FEB 2022	DETAIL WW-5



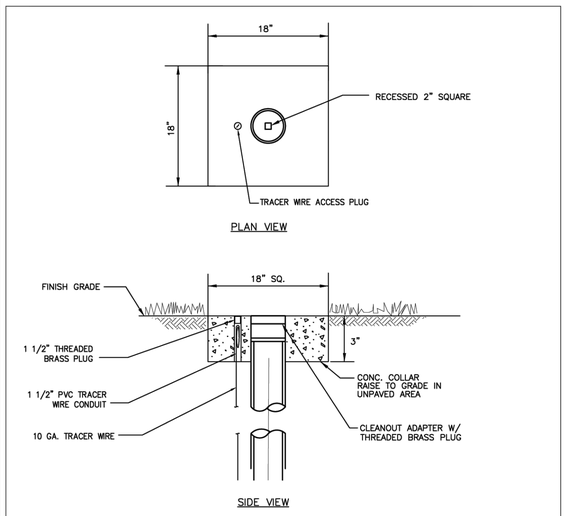
NOTES:

1. ALL SERVICE LATERALS SHALL BE A MINIMUM OF 6" FROM SEWER MAIN TO RIGHT-OF-WAY LINE.
2. NO BENDS IN SERVICE LINE BETWEEN THE PROPERTY LINE AND THE WYE CONNECTOR.

SANITARY SEWER SERVICE

PVC SEWER SERVICE - NOT TO SCALE

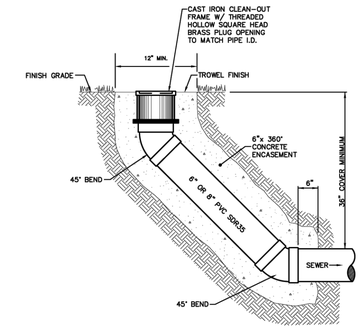
Howey-in-the-Hills Standard Details	DATE: FEB 2022	DETAIL WW-6



SERVICE CLEANOUT

NOT TO SCALE

Howey-in-the-Hills Standard Details	DATE: FEB 2022	DETAIL WW-7



TRUNK LINE CLEAN-OUT

NOT TO SCALE

Howey-in-the-Hills Standard Details	DATE: FEB 2022	DETAIL WW-8

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COA# 29091

SEC 27,34 TWP 20 S RGE 25 E

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HOWEY-IN-THE-HILLS

LAKE COUNTY , FLORIDA

MISSION RISE

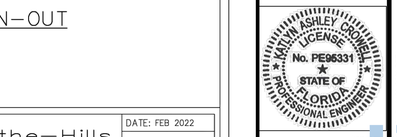
TURNSTONE GROUP

PHASE 1 CONSTRUCTION PLANS

SANITARY DETAILS

DATE 08/29/2025

REVISIONS

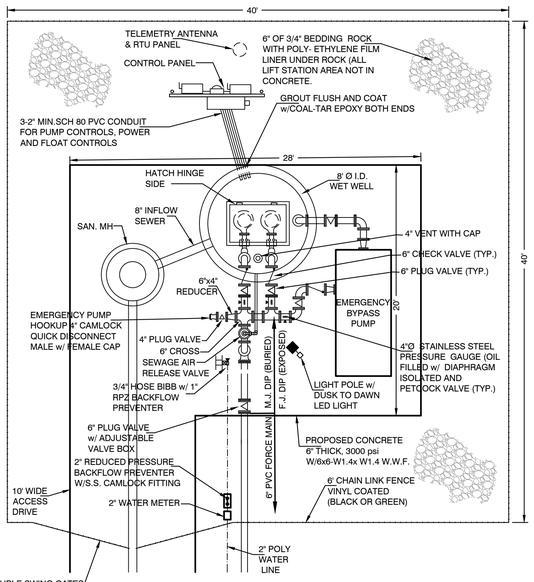


FILE: 0180-C700 DETAILS

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C808

ISSUED FOR CONSTRUCTION

FILE NAME: \\ATWELL\Projects\23000180 Mission Rise 80 acre PSP\DWG\Plan Sets\Construction\Phase 1\0180-C700 DETAILS.dwg LAST SAVED BY: cpeet 8/28/2025 1:13 PM PLOTTED BY: Edwin Ortiz-Rosado 8/28/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG TO PDF.PC3 PLOT STYLE: ATWELL.CTB



LIFT STATION SITE LAYOUT

NOT TO SCALE

1. ALL PUMP STATIONS SHALL BE PROVIDED WITH A SUITABLY-SIZED, ENGINE-DRIVEN STANDBY EMERGENCY BYPASS PUMP ASSEMBLY, TO BE SIZED BY THE PROJECT ENGINEER. THE BYPASS PUMP SHALL BE A HORIZONTAL END SUCTION SOLIDS HANDLING CENTRIFUGAL PUMP CAPABLE OF HANDLING THE DESIGN FLOW OF THE PUMP STATION AND BE SELF-PRIMING FROM DRY CONDITIONS.
2. THE BYPASS PUMP SHALL BE FULLY AUTOMATIC, UTILIZING AUTO-START CONTROLS INTEGRATED INTO THE MAIN CONTROL PANEL THAT RESPOND TO VARYING LIQUID LEVELS VIA FLOAT SWITCHES. AUTOMATION SHALL ALLOW FOR PUMP STATION OPERATION IN THE EVENT OF A POWER OUTAGE OR SUBMERSIBLE PUMP FAILURE. THE CONTROLLER SHALL BE EQUIPPED WITH AUTOMATIC AND MANUAL OPERATION MODES.
3. THE SUB-BASE DUAL WALL FUEL TANK SHALL BE THE MANUFACTURER'S STANDARD UNIT, SIZED TO PROVIDE A MINIMUM OF 24-HOURS OF FUEL TO OPERATE THE BYPASS PUMP. HOWEVER, THE FUEL TANK SHALL BE LESS THAN 500 GALLONS IN SIZE.
4. THE MAXIMUM SOUND LEVEL WITH THE COMPLETE BYPASS PUMP ASSEMBLY OPERATING SHALL NOT EXCEED 72 DBA AT 23 FEET. EXHAUST SYSTEM SHALL BE IN COMPLIANCE WITH EPA TIER 2 EXHAUST EMISSION REQUIREMENTS.
5. THE UNIT SHALL BE PROVIDED WITH AN APPROPRIATE BLOCK HEATER FOR COLD STARTS. THE TRANSFORMER FOR PROVIDING POWER TO THE BLOCK HEATER SHALL BE PLACED SEPARATELY FROM THE CONTROL PANEL AND THE BYPASS PUMP UNIT.
6. BYPASS PUMP ASSEMBLY INCLUDING BASE AND VIBRATION ISOLATORS SHALL BE ANCHORED TO A SUITABLY-SIZED CONCRETE PAD IN NEARBY PROXIMITY TO THE PUMP STATION.
7. THE BYPASS PUMP UNIT SHALL BE A GODWIN DRI-PRIME CD SERIES OR APPROVED EQUAL.
8. THE BYPASS PUMP SET SHALL BE SHOP PRIMED AND FINISH COATED IN ACCORDANCE WITH THE MANUFACTURER'S STANDARD PRACTICE. AN ADEQUATE SUPPLY OF TOUCH-UP PAINT SHALL BE PROVIDED.
9. A REPRESENTATIVE OF HOWEY-IN-THE-HILLS SHALL BE PRESENT FOR THE INITIAL START-UP OF THE BYPASS PUMP ASSEMBLY. SPECIAL TOOLS AND SPARE PARTS AS REQUIRED SHALL BE PROVIDED TO THE TOWN.
10. THE FOLLOWING TABLE SHALL BE COMPLETED AND SHOWN ON THE PLANS.

XYLEM / GODWIN PUMP MODEL NO.: _____

MUFFLERS RESIDENTIAL GRADE, BATTERY CHARGER

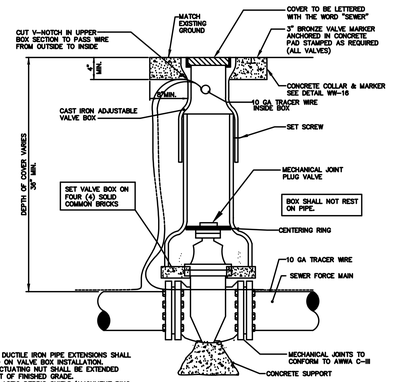
DUAL WALL SUBBASE FUEL STORAGE TANK _____ GALLONS

SOUND ATTENUATED OUTDOOR ENCLOSURE

RAINHOODS: _____ YES _____ NO

DISTRIBUTION PANEL: _____ FACTORY MOUNTED _____ ADJACENT TO GENERATOR ASSEMBLY

LS BYPASS PUMP NOTES

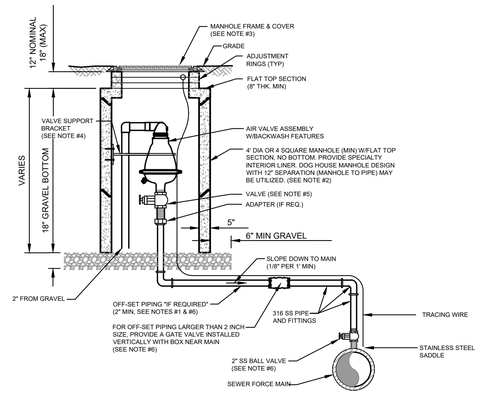


NOTES

1. PVC PIPE OR DUCTILE IRON PIPE EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.
2. THE VALVE ACTUATING NUT SHALL BE EXTENDED WITHIN 2 FEET OF FINISHED GRADE.
3. PROVIDE A PLASTIC DEBRIS SHIELD/ALIGNMENT RING WHICH INSTALLS BELOW THE VALVE ACTUATING NUT. THIS SHIELD SHALL CENTER THE RISER PIPE BOX OVER THE ACTUATING NUT AND MINIMIZE INFILTRATION. FOR NEW CONSTRUCTION, THE VALVE BOX SHALL BE ADJUSTED TO MIDRANGE TO ALLOW FOR FUTURE BOX ADJUSTMENTS.
4. VALVE BOX SHALL BE A TWO PIECE SCREW TYPE.

PLUG VALVE AND BOX

NOT TO SCALE

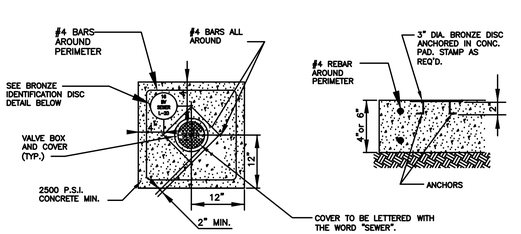


NOTES:

1. THE AIR ASSEMBLY MANHOLE SHALL BE LOCATED OUTSIDE OF THE ROADWAY PAVEMENT AREA. IF OFF-SET PIPING IS REQUIRED, THE PIPING SHALL BE 2 INCH MINIMUM, (SAME SIZE AS AIR VALVE INLET). FOR PIPE SIZES 3 INCH AND SMALLER: PIPING SHALL BE 316 STAINLESS STEEL SCH.40, STD GRADE, THREADED. FOR PIPE SIZES 4 INCH AND LARGER: PIPING SHALL BE 316 STAINLESS STEEL SCH. 10 (MIN), WELDED.
2. THE CONCRETE MANHOLE SHALL INCLUDE A LINER TO BE INSTALLED ON THE INTERIOR SURFACES INCLUDING THE RISER SECTION TOP AND THE ADJUSTMENT RINGS. A BITUMINOUS WATERPROOFING MATERIAL SHALL BE PROVIDED ON THE OUTSIDE SURFACES OF THE MANHOLE.
3. FRAME AND COVER SHALL BE CITY STANDARD. THE COVER SHALL HAVE NO GASKET TO ALLOW AIR TO EXIT VAULT (REMOVE GASKET IF NECESSARY FROM THE UNDERSIDE OF STANDARD COVER). THE COVER (WHEN FLIPPED OPEN) MUST CLEAR THE AIR VALVE ASSEMBLY AT ALL TIMES OR A SQUARE TOP WITH ALUMINUM DOOR SHALL BE PROVIDED (NON-TRAFFIC LOCATIONS ONLY).
4. A VALVE SUPPORT BRACKET IS ONLY REQUIRED FOR ASSEMBLIES WHICH INCLUDE OFF-SET PIPING. THE BRACKET SHALL BE WELDED AND FABRICATED FROM ALL 316 STAINLESS STEEL MATERIALS AND INCLUDE 4" x 6" x 3/" THICK END PLATES (CONTOURED TO MATCH ATTACHING SURFACES), 3" ANGLE IRON FOR SUPPORT ARM AND TWO U-BOLTS 3/" DIA TO ATTACH AROUND AIR VALVE. SECURE TO CONCRETE MANHOLE WITH FOUR 3/" DIA X 2" LONG S/S ANCHOR (MIN). MODIFY THE ABOVE AS REQUIRED TO FIT SPECIFIC AIR VALVE AND TO ASSURE A SOLID SUPPORT BRACKET.
5. FOR PIPE SIZES 3 INCH AND SMALLER, PROVIDE A STAINLESS STEEL BALL VALVE (2" MIN). FOR PIPE SIZES 4 INCH AND LARGER, PROVIDE A FLANGED PLUG VALVE. (LEVER ARM OPERATOR) SEE SPECIFICATION FOR ADDITIONAL REQUIREMENTS.
6. FOR A 2" AIR VALVE, PROVIDE 2" STAINLESS STEEL BALL VALVE AT THE MAIN. FOR AIR VALVES LARGER THAN 2" SIZE, PROVIDE A TAPPING SLEEVE OR DUCTILE IRON TEE FITTING. ALSO, FOR OFF-SET PIPING LARGER THAN 2 INCH SIZE, PROVIDE A GATE VALVE (INSTALLED VERTICALLY NEAR MAIN WITH A GEAR ACTUATOR). SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

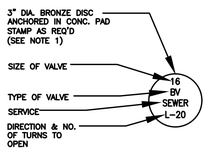
AIR VALVE ASSEMBLY INSIDE MANHOLE

NOT TO SCALE



NOTE:

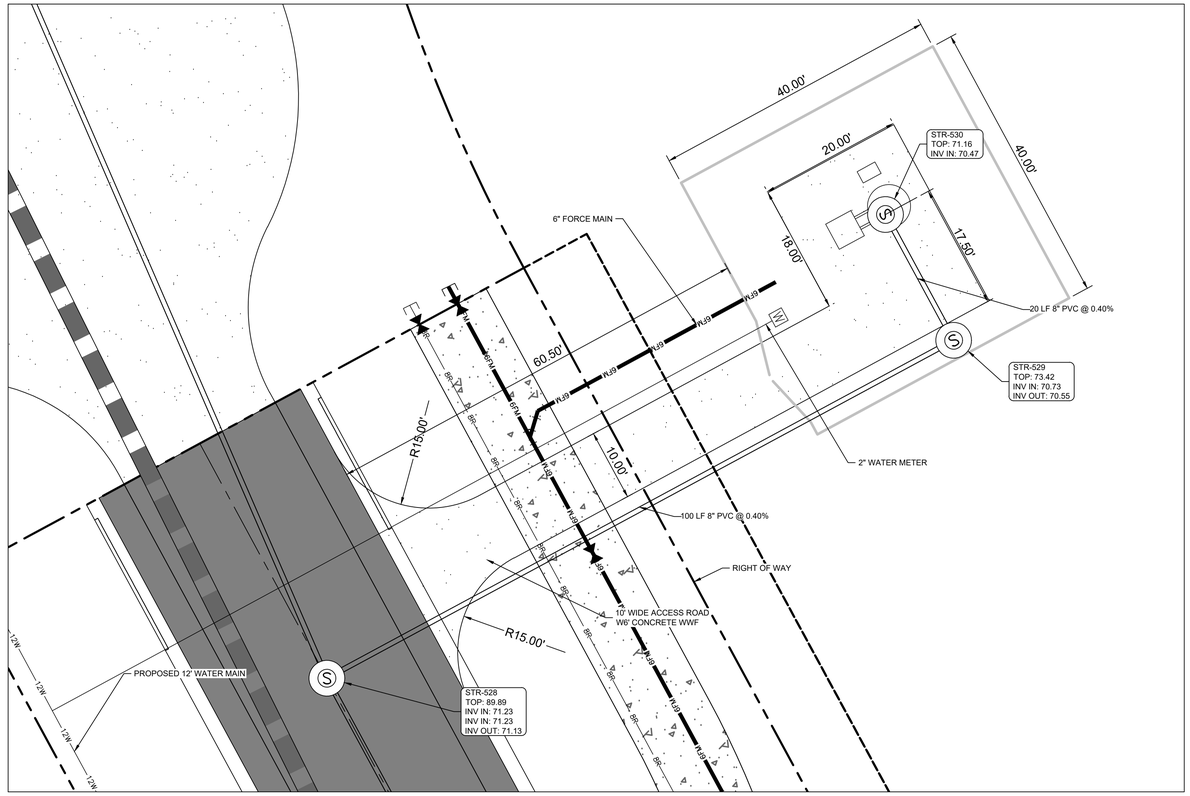
1. BRONZE IDENTIFICATION DISC SHALL BE REQUIRED FOR ALL VALVES.
2. 6" THICK CONCRETE PAD IN ROADWAY OR PAVED AREAS.



BRONZE IDENTIFICATION DISC DETAIL

VALVE COLLAR

NOT TO SCALE



Know what's below. Call before you dig.
THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.
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24 HOUR EMERGENCY CONTACT

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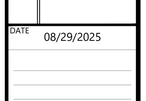
ORLANDO, FL 32801
FL COA # 34754
COA# 29091

SEC 27,34 TWP 20 S RGE 25 E
--
HOWEY-IN-THE-HILLS
LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
LIFT STATION DETAIL

DATE 08/29/2025

REVISIONS



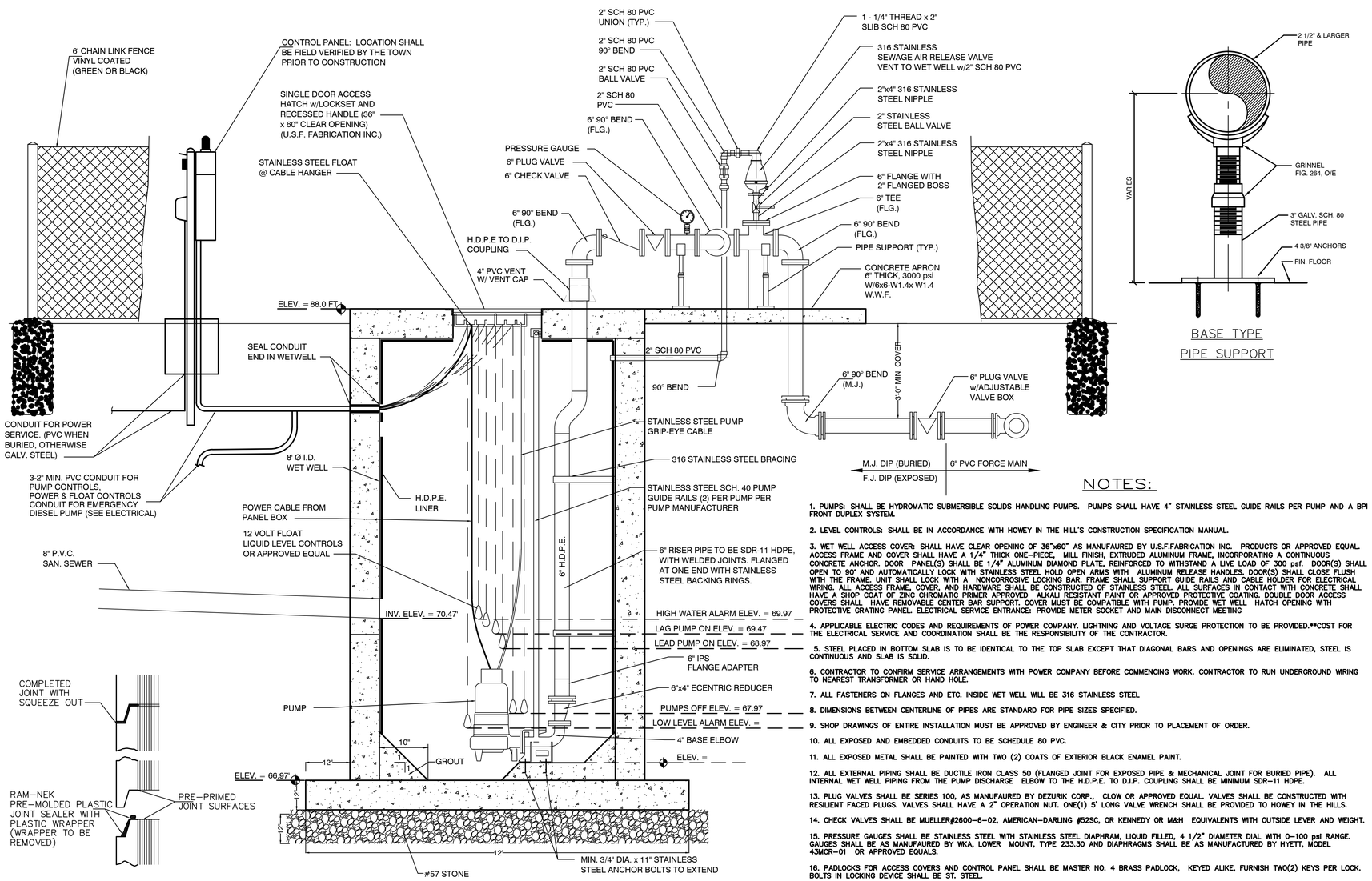
DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C809

FILE: 018-C700 LIFT STATION DETAILS

--- ISSUED--FOR--CONSTRUCTION ---

Howey–in–the–Hills Standard Details	DETAIL WW–10	DATE: AUG 2025
Howey–in–the–Hills Standard Details	DETAIL WW–11	DATE: AUG 2025
Howey–in–the–Hills Standard Details	DETAIL WW–13	DATE: FEB 2022
Howey–in–the–Hills Standard Details	DETAIL WW–14	DATE: FEB 2022
Howey–in–the–Hills Standard Details	DETAIL WW–15	DATE: FEB 2022

FILE NAME: \\ATLWKL\Projects\23000180 Mission Rise 00 and PSP\DWG\For Set\Construction\Phase 1\018-C700 LIFT STATION DETAILS.dwg LAST SAVED BY: kcrowell 8/29/2025 12:42 PM PLOTTED BY: Zulphie Orlin-Rosado 8/29/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG To PDF.PC3 PLOT STYLE: ATWELL.CTB

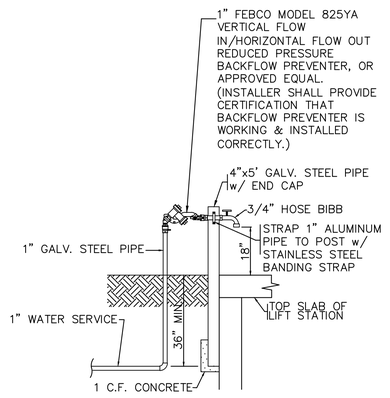


BASE TYPE
PIPE SUPPORT

TONGUE AND GROOVE JOINT
TYPICAL DETAIL

PUMP DATA

WETWELL INSIDE DIA.	8 FT		
1	SUBMERSIBLE PUMPS		
MODEL NUMBER	NP 3102 SH 3 ADAPTIVE 357		
IMPELLER	125 mm	R.P.M.	3,515 RPM
PUMP SIZE	100 mm	HORSE POWER	6.5 HP
G.P.M.	52.7	T.D.H.	172.74
ELECTRICAL VOLTAGE	460 V		
ELECTRICAL PHASE	3 PHASES		



HOSE BIBB

NOTES:

1. PUMPS: SHALL BE HYDROMATIC SUBMERSIBLE SOLIDS HANDLING PUMPS. PUMPS SHALL HAVE 4" STAINLESS STEEL GUIDE RAILS PER PUMP AND A BPI FRONT DUPLEX SYSTEM.
2. LEVEL CONTROLS: SHALL BE IN ACCORDANCE WITH HOWEY IN THE HILL'S CONSTRUCTION SPECIFICATION MANUAL.
3. WET WELL ACCESS COVER: SHALL HAVE CLEAR OPENING OF 36"x60" AS MANUFAURED BY U.S.F.FABRICATION INC. PRODUCTS OR APPROVED EQUAL. ACCESS FRAME AND COVER SHALL HAVE A 1/4" THICK ONE-PIECE, MILL FINISH, EXTRUDED ALUMINUM FRAME, INCORPORATING A CONTINUOUS CONCRETE ANCHOR. DOOR PANEL(S) SHALL BE 1/4" ALUMINUM DIAMOND PLATE, REINFORCED TO WITHSTAND A LIVE LOAD OF 300 psf. DOOR(S) SHALL OPEN TO 90° AND AUTOMATICALLY LOCK WITH STAINLESS STEEL HOLD OPEN ARMS WITH ALUMINUM RELEASE HANDLES. DOOR(S) SHALL CLOSE FLUSH WITH THE FRAME. UNIT SHALL LOCK WITH A NONCORROSIVE LOCKING BAR. FRAME SHALL SUPPORT GUIDE RAILS AND CABLE HOLDER FOR ELECTRICAL WIRING. ALL ACCESS FRAME, COVER, AND HARDWARE SHALL BE CONSTRUCTED OF STAINLESS STEEL. ALL SURFACES IN CONTACT WITH CONCRETE SHALL HAVE A SHOP COAT OF ZINC CHROMATIC PRIMER APPROVED ALKALI RESISTANT PAINT OR APPROVED PROTECTIVE COATING. DOUBLE DOOR ACCESS COVERS SHALL HAVE REMOVABLE CENTER BAR SUPPORT. COVER MUST BE COMPATIBLE WITH PUMP. PROVIDE WET WELL HATCH OPENING WITH PROTECTIVE GRATING PANEL. ELECTRICAL SERVICE ENTRANCE: PROVIDE METER SOCKET AND MAIN DISCONNECT MEETING
4. APPLICABLE ELECTRIC CODES AND REQUIREMENTS OF POWER COMPANY. LIGHTNING AND VOLTAGE SURGE PROTECTION TO BE PROVIDED.**COST FOR THE ELECTRICAL SERVICE AND COORDINATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
5. STEEL PLACED IN BOTTOM SLAB IS TO BE IDENTICAL TO THE TOP SLAB EXCEPT THAT DIAGONAL BARS AND OPENINGS ARE ELIMINATED, STEEL IS CONTINUOUS AND SLAB IS SOLID.
6. CONTRACTOR TO CONFIRM SERVICE ARRANGEMENTS WITH POWER COMPANY BEFORE COMMENCING WORK. CONTRACTOR TO RUN UNDERGROUND WIRING TO NEAREST TRANSFORMER OR HAND HOLE.
7. ALL FASTENERS ON FLANGES AND ETC. INSIDE WET WELL WILL BE 316 STAINLESS STEEL
8. DIMENSIONS BETWEEN CENTERLINE OF PIPES ARE STANDARD FOR PIPE SIZES SPECIFIED.
9. SHOP DRAWINGS OF ENTIRE INSTALLATION MUST BE APPROVED BY ENGINEER & CITY PRIOR TO PLACEMENT OF ORDER.
10. ALL EXPOSED AND EMBEDDED CONDUITS TO BE SCHEDULE 80 PVC.
11. ALL EXPOSED METAL SHALL BE PAINTED WITH TWO (2) COATS OF EXTERIOR BLACK ENAMEL PAINT.
12. ALL EXTERNAL PIPING SHALL BE DUCTILE IRON CLASS 50 (FLANGED JOINT FOR EXPOSED PIPE & MECHANICAL JOINT FOR BURIED PIPE). ALL INTERNAL WET WELL PIPING FROM THE PUMP DISCHARGE ELBOW TO THE H.D.P.E. TO D.I.P. COUPLING SHALL BE MINIMUM SDR-11 HDPE.
13. PLUG VALVES SHALL BE SERIES 100, AS MANUFAURED BY DEZURIK CORP., CLOW OR APPROVED EQUAL. VALVES SHALL BE CONSTRUCTED WITH RESILIENT FACED PLUGS. VALVES SHALL HAVE A 2" OPERATION NUT. ONE(1) 5' LONG VALVE WRENCH SHALL BE PROVIDED TO HOWEY IN THE HILLS.
14. CHECK VALVES SHALL BE MUELLER#2600-6-02, AMERICAN-DARLING #52SC, OR KENNEDY OR M&H EQUIVALENTS WITH OUTSIDE LEVER AND WEIGHT.
15. PRESSURE GAUGES SHALL BE STAINLESS STEEL WITH STAINLESS STEEL DIAPHRAM, LIQUID FILLED, 4 1/2" DIAMETER DIAL WITH 0-100 psi RANGE. GAUGES SHALL BE AS MANUFAURED BY WKA, LOWER MOUNT, TYPE 233.30 AND DIAPHRAGMS SHALL BE AS MANUFACTURED BY HYETT, MODEL 43MCR-01 OR APPROVED EQUALS.
16. PADLOCKS FOR ACCESS COVERS AND CONTROL PANEL SHALL BE MASTER NO. 4 BRASS PADLOCK, KEYED ALIKE, FURNISH TWO(2) KEYS PER LOCK. BOLTS IN LOCKING DEVICE SHALL BE ST. STEEL.
17. WET WELL TO BE H.D.P.E. LINED WITH AN AGRU SURE GRIP LINER OR APPROVED EQUAL, WITH A MINIMUM THICKNESS OF 2 MM, MECHANICALLY ANCHORED TO THE CONCRETE.ALL JOINTS SHALL BE EXTRUSION WELDED BY CERTIFIED WELDERS.
18. SOD ALL AREAS DISTURBED BY CONSTRUCTION.
19. BACKFILL AROUND WETWELL IN 12?LIFTS COMPACTING TO A MINIMUM OF 95%%%.
20. ALL LOCATIONS WHERE PIPES ENTER OF LEAVE THE WETWELL SHALL BE MADE WATERTIGHT WITH LINK SEAL CLOSURES SEALED FOR THE PROPER SEALING RANGE.
21. INSTALL PUMP BASE ELBOWS, GUIDE RAILS AND DISCHARGE PIPING PLUMB, LEVEL AND SQUARE.
22. INSTALL BENCH FOR PUMP BASE ELL IF NECESSARY, PER MANUFACTURER'S APPROVED SHOP DRAWINGS.
23. COAT ALL METALS THAT ARE NOT STAINLESS STEEL AND ARE LOCATED IN THE WETWELL WITH 10 MILS (DRY FILM THICKNESS) OF BLACK, HIGH GLOSS EPOXY, (TNEMEC SERIES 69 HI-BUILD EPOXYLINE II OR AN EQUIVALENT PRODUCT). COATING SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION AND SHALL NOT BE IMMERSED UNTIL FULL CURE IS ACHIEVED.
24. COAT ALL ALUMINUM SURFACE IN CONTACT WITH CONCRETE WITH BITUMINOUS COATING PRIOR TO INSTALLATION.
25. PUMP BASE ELBOWS, PUMP ANCHOR BOLTS, UPPER AND INTERMEDIATE GUIDE RAIL BRACKETS, GUIDE RAILS, CABLE HANGER, PUMP LIFING CABLES, CONTROL PANEL AND FLOAT SWITCHES TO BE APPROVED BY PUMP SUPPLIER.
26. INSTALL INTERMEDIATE GUIDE RAIL BRACKETS AS REQUIRED BY PUMP MANUFACTURER OR, AT MINIMUM, WHEN GUIDE RAIL RAILS EXCEED 20'-0?IN LENGTH.
27. DUCTILE IRON PIPE SHALL COMPLY WITH AWWA C115 AND SHALL HAVE A PROTEO 401 INTERIOR LINING.
28. DUCTILE IRON FITTINGS SHALL COMPLY WITH AWWA C110 OR C153 WITH AN AWWA C116 OR PROTEO 401 INTERIOR LINING.
29. ORIENTATION OF PUMPS AND ACCESS HATCH SHALL BE IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS FOR PUMPS FURNISHED.
30. BASE AND FIRST RISER UNIT OF WETWELL TO BE CAST MONOLITHIC.
31. PAINT EXTERIOR PIPE, VALVES AND FITTINGS WITH AN ALIPHATIC, ACRYLIC POLYURETHANE SYSTEM, COLOR SAFETY GREEN, TNEMEC SERIES 74 OR AN EQUIVALENT PRODUCT. COMPLY WITH ALL MANUFACTURER'S RECOMMENDATIONS.
32. PROVIDE 1-INCH WATER SERVICE, REDUCED PRESSURE BACKFLOW PREVENTER AND HOSE BIBB. FIELD TESTING: THE CONTRACTOR SHALL FURNISH THE SERVICES OF THE SYSTEM SUPPLIER'S
33. SERVICEMAN, ALL SPECIAL TOOLS, CALIBRATION EQUIPMENT, AND LABOR TO PERFORM THE TESTS. CERTIFIED COPIES OF THE TESTS SHALL BE FURNISHED IN DUPLICATE TO THE TOWN PRIOR TO FINAL APPROVAL.
34. CONTRACTOR AND/OR MANUFACTURER TO PROVIDE ELECTRICAL SCHEMATIC AND SHOP DRAWINGS TO THE TOWN FOR APPROVAL PRIOR TO PLACEMENT OF ORDER.
35. CONTROL PANEL WITH AUTO TRANSFER SWITCH, SCADA SYSTEM, BYPASS PUMP, & LIFT STATION SHOP DRAWINGS TO BE SUBMITTED TO TOWN FOR APPROVAL PRIOR TO PLACEMENT OF ORDER.
36. CONTRACTOR TO COORDINATE BYPASS PUMP SIZE & TYPE AND SUBMIT TO THE TOWN PRIOR TO PLACEMENT OF ORDER.

DATE: AUG 2025

DETAIL WW-12

Howey-in-the-Hills

Standard Details



Know what's below. Call before you dig.

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ORLANDO, FL 32801
4007-23-1304
COA# 29091

SEC 27,34 TWP 20 S RGE 25 E | -- | HOWEY-IN-THE-HILLS | LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PHASE 1 CONSTRUCTION PLANS
LIFT STATION DETAIL

DATE 08/29/2025

REVISIONS

KALEIN ASHLEY CROWELL LICENSE No. PE95331 STATE OF FLORIDA PROFESSIONAL ENGINEER

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C810

ISSUED-FOR-CONSTRUCTION

FILE: 0180-C700 LIFT STATION DETAILS

FILE NAME: \\ATLORL\Projects\23000180 Mission Rise DD and PSP\DWG\Plan Set\Construction\Phase 1\0180-C700 LIFT STATION DETAILS.dwg LAST SAVED BY: kcrowell 8/22/2025 12:41 PM PLOTTED BY: Zophie Ortiz-Rosado 8/28/2025 PAPER: ARCH FULL BLEED D (24.00 X 36.00 INCHES) DEVICE: DWG TO PDF.PC3 PLOT STYLE: ATWELL.CTB

PERMIT LANDSCAPE PLAN SET

MISSION RISE PHASE 1

PART OF SECTION 27,34, TOWNSHIP 20, RANGE 25
TOWN OF HOWEY-IN-THE-HILLS, FLORIDA



PROJECT LOCATION MAP
NO SCALE

PROPERTY DESCRIPTION

PARCEL 1:
THE EAST HALF OF THE NORTHEAST QUARTER OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 25 EAST, SAID LAND LYING AND BEING IN LAKE COUNTY FLORIDA.

PARCEL 2:
THAT PART OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER LYING SOUTH OF CLAY ROAD (NUMBER TWO ROAD) IN SECTION 27, TOWNSHIP 20 SOUTH, RANGE 25 EAST, SAID LAND LYING AND BEING SITUATE IN LAKE COUNTY, FLORIDA.

PARCEL 3:
THE EAST HALF OF THE SOUTHEAST QUARTER OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 25 EAST, SAID LYING AND BEING SITUATE IN LAKE COUNTY FLORIDA.

PARCEL 4
THE NORTH HALF OF THE GOVERNMENT LOTS 3 AND 4, ALSO KNOW AS THE NORTH HALF OF THE NORTHWEST QUARTER OF SECTION 2, TOWNSHIP 21 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA, SAID LYING AND BEING SITUATE IN LAKE COUNTY FLORIDA.

LESS: THE EAST 262 FEET OF THE FOLLOWING DESCRIBED PROPERTY: NORTH HALF OF GOVERNMENT LOT 3, SECTION 2, TOWNSHIP 21, SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA, LYING WEST OF ROAD RIGHT-OF-WAY FOR HIGHWAY 19. LESS SOUTH 907 FEET THEREOF.

AND

LESS: THE SOUTH 740 FEET OF THE EAST 262 FEET OF THE FOLLOWING DESCRIBED PROPERTY NORTH HALF OF THE GOVERNMENT LOT 3, SECTION 2, TOWNSHIP 21 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA, LYING WEST OF THE ROAD RIGHT-OF-WAY FOR HIGHWAY 19.

Sheet List Table

Sheet Number	Sheet Title
COVER	COVER
L000	GENERAL NOTES
LM100	MITIGATION REF PLAN
LM101	MITIGATION PLAN
LM102	MITIGATION PLAN
LM103	MITIGATION PLAN
LM600	MITIGATION SCHEDULE
LM601	MITIGATION SCHEDULE
LM602	MITIGATION SCHEDULE
LS100	HARDSCAPE REF PLAN
LS400	HARDSCAPE ENLARGEMENT
LS401	HARDSCAPE ENLARGEMENT
LS500	HARDSCAPE DETAILS
LS501	HARDSCAPE DETAILS
LS600	HARDSCAPE SPECIFICATIONS
LS601	HARDSCAPE SPECIFICATIONS
LP100	LANDSCAPE REF PLAN
LP101	LANDSCAPE PLAN
LP102	LANDSCAPE PLAN
LP103	LANDSCAPE PLAN
LP104	LANDSCAPE PLAN
LP105	LANDSCAPE PLAN
LP106	LANDSCAPE PLAN
LP400	LANDSCAPE ENLARGEMENT
LP401	LANDSCAPE ENLARGEMENT
LP500	LANDSCAPE DETAILS
LP501	LANDSCAPE DETAILS
LP600	LANDSCAPE SPECIFICATIONS
LP601	MULCH & SOD EXHIBIT



PROJECT SITE MAP
NO SCALE

DEVELOPED BY:

TURNSTONE GROUP / ASF TAP FL I LLC.

CLIENT ADDRESS

1170 Peachtree Street NE, Suite 1150, Atlanta, GA 30309

PHONE: (630) 816-7002

RVi
111 North Magnolia Avenue
Suite 1350
Orlando, Florida 32801
Tel: 407.680.0650
www.rviplanning.com

Digitally signed by Jack E Caldwell
Date: 2025.08.28 16:52:08-04'00'

JACK E. CALDWELL, P.L.A.
FL LICENSE NO. LA6667214

Sunshine811
Call 811 or visit sunshine811.com two full business days before digging to have buried facilities located and marked.
Check positive response codes before you dig!

MISSION RISE PHASE 1
PERMIT LANDSCAPE PLAN SET
TOWN OF HOWEY-IN-THE-HILLS

PROJECT NO : 25006053
DATE : 07/07/2025
DRAWN: CD/JH
REVIEWED: JC

REVISIONS

COVER

COVER

01_ORIGINAL ISSUE

L:\2025\25006053 - mission rise la design (orl fay fl \ 8cr\06 landscape architecture\03 CD\01 phase 1 emails\02 current plans\03 SHEETS\00_COVER & NOTES\25006053-COVER.dwg 8/28/2025 john harris

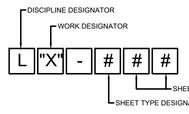
PLAN SET FORMAT DESCRIPTION:

THE CONSTRUCTION DATA INCLUDED IN THIS PLAN SET CONFORMS TO THE UNITED STATES NATIONAL CAD STANDARD (NCS) - "MODIFIED FORMAT". PLEASE REFERENCE THIS SHEET(L000) AS A DETAILED LEGEND OF INCLUDED PLAN REFERENCES, LABELS, CALL-OUTS, NOTES, ETC. CONTRACTOR SHALL CONTACT LANDSCAPE ARCHITECT WITH ANY CONFLICTS IN COMPREHENSION OF PLAN SET FOR RESOLUTION.

THIS PLAN SET IS ORGANIZED BY STARTING WITH AN OVERVIEW, OR 'BIG PICTURE', OF CONSTRUCTION DATA INCLUDED IN THE DOCUMENT, AND PROCEEDS TO INTRODUCE FURTHER DETAIL THROUGHOUT THE PLAN SET.

CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES BETWEEN DRAWINGS, SPECIFICATIONS AND SITE CONDITIONS IMMEDIATELY. ALL SUBCONTRACTORS SHALL NOTIFY THE GENERAL CONTRACTOR OF ANY DISCREPANCIES AND DIFFICULTIES IN THIS SHALL BE CONSIDERED "TURN-KEY" UNLESS OTHERWISE NOTED - GENERAL/SITE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SUBCONTRACTOR WORK.

PLAN SHEETS:



'WORK' DESIGNATOR CODE:

D	- DEMOLITION
R	- RELOCATION
S	- SITE
G	- GRADING
M	- MITIGATION
P	- PLANTING
I	- IRRIGATION
L	- LIGHTING
F	- FINISHES / FURNISHINGS
'X'	- USER DEFINED

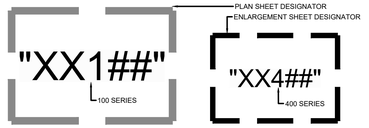
'SHEET TYPE' DESIGNATOR CODE:

000	- GENERAL
100	- SITE PLANS
200	- ELEVATIONS
300	- SECTIONS
400	- PLAN ENLARGEMENTS
500	- DETAILS
600	- SCHEDULES / MATERIALS
700	- USER DEFINED
800	- USER DEFINED
900	- 3D REPRESENTATIONS

PLAN REFERENCES:

VIEWPORT:

A POLYGON VIEWING REGION USED TO DISPLAY A DESIGNATED PORTION OF THE PROJECT.



MATCHLINE

A LINE DESIGNATING THE VIEWPORT EXTENTS. THE MATCHLINE LABEL REFERS TO THE ADJOINING SHEET.

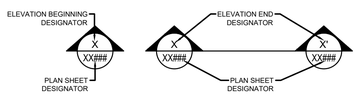
DETAIL ENLARGEMENT

A BOUNDARY DESIGNATING A PORTION OF THE DESIGN TO BE ENLARGED IN A SEPARATE DETAIL.



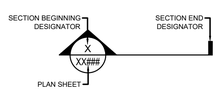
ELEVATION

A DETAIL DRAWING SHOWING A DESIGN FROM A HORIZONTAL POSITION WITHOUT DIMENSIONAL PERSPECTIVE.



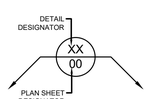
SECTION

A DETAIL DRAWING REPRESENTING A VERTICAL PLANE CUT THROUGH A DESIGNATED PORTION OF A PROJECT DESIGN.



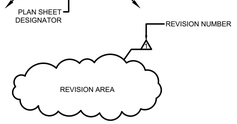
DETAIL CALL-OUTS

A DESIGNATION GIVEN TO AN ELEMENT OF THE DRAWING REQUIRING FURTHER DETAIL.

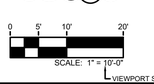


REVISION CLOUD & NUMBER

THE CLOUDED AREA REPRESENTS THE AREA OF WHICH THE REVISION TOOK PLACE AND THE CURRENT REVISION NUMBER.

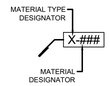


GRAPHIC SCALE



MATERIAL CALL-OUTS

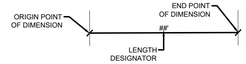
A LABEL DESIGNATING A MATERIAL, FINISH AND/OR FURNISHING TYPE SPECIFIED IN FULL DETAIL ON THE 600 SERIES SHEET.



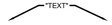
'MATERIAL TYPE' ABBR. CODE:

C-###	CURB
P-###	PAVING
V-###	VEHICULAR PAVING
F-###	FENCE
G-###	GATE
S-###	SITE FURNISHINGS
W-###	WALL
CL-###	COLUMN

DIMENSION



LEADER LABEL



NOTE CALL-OUT

A BOXED AREA CONTAINING A PROJECT SPECIFIC NOTE.

NOTE: / IMPORTANT!!
"NOTE TEXT "

SITE TABLE/CALCULATIONS CALL-OUT

A BOXED AREA CONTAINING PROJECT SPECIFIC TABLES, NOTES AND / OR CALCULATIONS PER CODE REQUIREMENTS.

TITLE / HEADING
TEXT

	Required	Provided
Calculation/Note text	#	#
Calculation/Note text	#	#

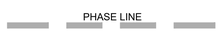
NOTES:

NORTH ARROW



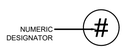
PROJECT PHASE LINE

A LINE REPRESENTING THE START/END OF A PROJECT PHASE.



NUMERIC REFERENCE CALL-OUT

A CIRCLE CONTAINING A NUMBER SYSTEM FOR ELEMENTS WITHIN A DRAWING.



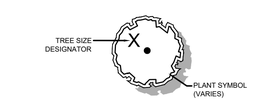
PLANT LABEL

A LABEL GIVEN TO ALL PROPOSED LANDSCAPE ELEMENT FOR SPECIES, QUANTITY AND SQUARE FOOTAGE INFORMATION.



PLANT SYMBOL

A SYMBOL REPRESENTING EACH SPECIES OF PLANT PROPOSED IN A DRAWING WITH OPTION TO DESIGNATE MULTIPLE SIZES OF THE SAME SPECIES.



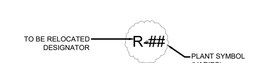
PLANT TO BE REMOVED

A SYMBOL REPRESENTING AN EXISTING PLANT TO BE REMOVED FROM THE SITE.



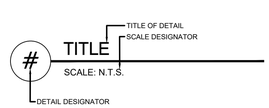
PLANT TO BE RELOCATED

A SYMBOL REPRESENTING AN EXISTING PLANT TO BE RELOCATED ON SITE.



DETAIL TITLE BAR

A DETAIL TITLE BAR IS PROVIDED FOR ALL DETAILS ON A SHEET IN ORDER TO LOCATE SPECIFIC DETAIL INFORMATION.



ABBREVIATION LEGEND:

A	ANGLE
ADDL	ADDITIONAL
AD	AREA DRAIN
ASPH	ASPH
B&B	BALLED & BURLAPPED
B.R.	BARE ROOT
BOS	BOTTOM OF STAIRS
BC	BACK OF CURB
CAL	CALIPER
CB	CATCH BASIN
CIP	CAST IN PLACE
CJ	CONTROL JOINT
CL	CENTER LINE
CMU	CONCRETE MASONRY UNIT
CU FT	CUBIC FEET
CU YD	CUBIC YARD
DBL	DOUBLE TRUNK
D.E.	DRAINAGE EASEMENT
DIA	DIAMETER
EJ	EXPANSION JOINT
EP	EDGE OF PAVEMENT
EQ	EQUAL
FF EL	FINISH FLOOR ELEVATION
FIN GR	FINISH GRADE
FT	FOOT
GAL	GALLON
HT	HEIGHT
HP	HIGH POINT
INT	INTERPOLATED SPOT ELEV.
INV	INVERT
LDG	LANDING
LF	LINEAR FOOT
LOW	LIMIT OF WORK
LP	LOW POINT
MAX	MAXIMUM
MIN	MINIMUM
NTS	NOT TO SCALE
OA HT	OVERALL HEIGHT
OC	ON CENTER
OH	OVERHEAD
POB	POINT OF BEGINNING
POR	POINT OF REFERENCE
PUE	PUBLIC UTILITY EASEMENT
PVC	POLYVINYL CHLORIDE
R	RADIUS
ROW	RIGHT OF WAY
SF	SQUARE FOOT
SLV	SLEEVE
SPEC	SPECIFICATIONS
SPRD	SPREAD
STD	STANDARD
TSLP	TOE OF SLOPE
TCOP	TOP OF COPING
TCOL	TOP OF COLUMN
TPED	TOP OF PEDESTAL
TBRM	TOP OF BERM/BANK
TOS	TOP OF STAIRS
TRP	TRIPLE TRUNK
TYP	TYPICAL
TOW	TOP OF WALL
TOS	TOP OF STAIRS
WD	WOOD

SYMBOL LEGEND:

PROPERTY BOUNDARY, TYP.

EASEMENT (P.U.E., D.E., A.E., P.E., L.M.E., L.B.E)

RIGHT OF WAY (R.O.W.)

LIMIT OF WORK — LIMIT OF WORK (L.O.W.)

CENTER LINE — CENTER LINE (C.L.) DETAILS

CENTER LINE (C.L.)

PROPOSED STREET LIGHT

PROPOSED CHAIN LINK FENCE

PROPOSED DECORATIVE FENCE

PROPOSED WALL

EXISTING CHAIN LINK FENCE

EXISTING DECORATIVE FENCE

GATE VALVE

YARD DRAIN

CATCH BASIN

SLEEVE/CONDUIT

SECONDARY DRAINAGE PIPE

JUNCTION BOX

FIRE HYDRANT

CONTOUR INTERVAL = 1 FOOT (1')

EXISTING CONTOUR LINE (INDEX)

EXISTING CONTOUR LINE (INTERMEDIATE)

PROPOSED CONTOUR LINE (INDEX)

PROPOSED CONTOUR LINE (INTERMEDIATE)

DIRECTION/PERCENTAGE OF DRAINAGE FLOW

CONTROL POINT

EXISTING SPOT ELEVATION

PROPOSED SPOT ELEVATION - HARDSCAPE

PROPOSED SPOT ELEVATION - LANDSCAPE

SURVEYED SPOT ELEVATION

AS BUILT SPOT ELEVATION

BASE PLAN, SURVEY and UTILITY NOTES:

THE LANDSCAPE ARCHITECTURAL PLANS ARE PREPARED BASED ON DATA AND/OR PLANS PROVIDED UNDER SEPARATE CONTRACTS FOR THE BASIS OF DESIGN AND ARE SUBJECT TO THE ACCURACY OF THESE DOCUMENTS. RVi PLANNING+LANDSCAPE ARCHITECTURE SHALL NOT BE RESPONSIBLE FOR FIELD DISCREPANCIES OCCURRING DUE TO ERRORS, INACCURACIES AND/OR OMISSIONS IN THE BASE INFORMATION PROVIDED TO THEIR OFFICE OR CANNOT BE HELD RESPONSIBLE FOR SAME DUE TO BASE INFORMATION NOT BEING PROVIDED PRIOR TO THE PREPARATION OF THE LANDSCAPE ARCHITECTURAL PLANS IN A TIMELY MANNER IN ORDER TO MEET THE CONSTRUCTION SCHEDULE OF THE PROJECT. CONTRACTOR SHALL VERIFY THEY ARE IN POSSESSION OF THE MOST UP TO DATE PLANS, AND THAT THEY HAVE BEEN APPROVED AND ACCEPTED BY THE OWNER PRIOR TO COMMENCING CONSTRUCTION.

CONTRACTOR TO VERIFY PROPERTY LINES, SETBACKS, AND ALL DIMENSIONS PRIOR TO CONSTRUCTION. ADDITIONALLY, CONTRACTOR SHALL LOCATE AND STAKE OR FLAG PROPERTY LINES, AND MUST VERIFY PLAN DIMENSIONS AND FIELD CONDITIONS ARE CONSISTENT, WITHOUT EXCEPTION, ANY DEVIATIONS OR OMISSIONS FOUND BETWEEN THESE PLANS AND EXISTING CONDITIONS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE PRIOR TO ANY FIELD ADJUSTMENTS. ALL FIELD ADJUSTMENTS REQUIRE APPROVAL BY LANDSCAPE ARCHITECT AND/OR OWNER'S REPRESENTATIVE AND ALL REQUIRED REVISIONS, RELOCATIONS, AND/OR RE-STAKING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR IF VERIFICATION, FIELD LOCATION AND APPROVAL ARE NOT OBTAINED PRIOR TO COMMENCEMENT OF CONSTRUCTION.

EXISTING UTILITY INFORMATION SHOWN IN THESE DOCUMENTS IS APPROXIMATE AND FOR GENERAL INFORMATION ONLY. IT IS THE CONTRACTORS RESPONSIBILITY TO NOTIFY ALL UTILITY COMPANIES TO STAKE AND FIELD VERIFY THE LOCATIONS OF ALL UTILITIES, INCLUDING DEPTHS (EXISTING, PROPOSED BY OTHERS, OR CURRENTLY UNDER CONSTRUCTION) PRIOR TO COMMENCING ANY RELATED OPERATIONS. CONTRACTOR SHALL MAINTAIN UTILITY LOCATIONS/STRUCTURES DURING ALL PHASES OF WORK AND SHALL REPORT TO THE OWNER'S REPRESENTATIVE ANY UTILITIES THAT MAY CONFLICT WITH PROPOSED WORK. THE CONTRACTOR SHALL EXPLORE, UNDERSTAND, AND COORDINATE, INCLUDING WITH OTHER SUBCONTRACTORS, ALL UTILITY IMPACTS PRIOR TO SUBMITTING BID AND SHALL BE RESPONSIBLE FOR ANY MODIFICATIONS OR DAMAGES TO UTILITY LINES, STRUCTURES OR INJURIES THEREFROM.

Call Before You Dig

Call One Call, at **811**, three full days before digging in any easement, right-of-way or permitted use area.

CONSTRUCTION INSTALLATION NOTES:

1. UNLESS OTHERWISE INDICATED, THE OWNER'S REPRESENTATIVE FOR THIS PROJECT SHALL BE A SPECIFICALLY DESIGNATED LANDSCAPE ARCHITECT FROM RVi PLANNING+LANDSCAPE ARCHITECTURE. THE CONTRACTOR WILL BE REQUIRED TO COORDINATE AND CORRESPOND WITH THE OWNER'S REPRESENTATIVE AND KEY CONSULTANTS FOR THE OWNER.
2. THESE DRAWINGS SUPPLEMENT OTHER CONTRACTUAL INFORMATION WHICH MAY INCLUDE BID INSTRUCTIONS AND PROJECT SPECIFICATIONS. ANYTHING MENTIONED IN THE PROJECT SPECIFICATIONS AND IN THE DRAWINGS, OR VICE-VERSA, SHALL BE OF LIKE EFFECT AS IF SHOWN ON OR MENTIONED IN BOTH. NOTES AND DETAILS ON SPECIFIC DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTE AND TYPICAL DETAILS. IN CASE OF A DISCREPANCY BETWEEN DRAWINGS OR PROJECT SPECIFICATIONS, THE MATTER SHALL BE IMMEDIATELY SUBMITTED TO THE OWNER'S REPRESENTATIVE; WITHOUT THEIR DECISION SAID DISCREPANCY SHALL NOT BE ADJUSTED BY THE LANDSCAPE CONTRACTOR, SAVE ONLY AT THEIR OWN RISK AND EXPENSE. THE LANDSCAPE CONTRACTOR SHALL NOT TAKE ADVANTAGE OF ANY APPARENT ERROR OR OMISSION ON THE DRAWINGS OR IN THE SPECIFICATIONS. IN THE EVENT THE LANDSCAPE CONTRACTOR DISCOVERS SUCH ERROR OR OMISSION, THEY SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE FOR CLARIFICATION AND INTERPRETATION.
3. THE INTENT OF THESE DRAWINGS AND ASSOCIATED SPECIFICATIONS IS FOR THE CONTRACTOR TO PROVIDE THE OWNER WITH A COMPLETE, ACCURATE, FUNCTIONALLY AND TECHNICALLY SOUND PROJECT AS GENERALLY DESCRIBED IN THESE DOCUMENTS. THE SCOPE OF WORK SHALL GENERALLY CONSIST OF, BUT NOT BE LIMITED TO, ALL LABOR, MATERIALS, SUPPLIES, AND EQUIPMENT NECESSARY TO BUILD A COMPLETE-IN-PLACE SYSTEM AS DESCRIBED, AND/OR INFERRED BY, THESE PLANS, DETAILS AND SPECIFICATIONS.
4. ALL ELEMENTS SHOWN OR IMPLIED BY THE DRAWINGS SHALL BE INSTALLED PER CURRENT LOCAL BUILDING CODES, CITY CODES AND ORDINANCES, MANUFACTURER'S RECOMMENDATIONS, AND STANDARD INDUSTRY PRACTICES AS WELL AS ADHERENCE TO ALL PERMITS, CODES, SETBACKS AND BUILDING RESTRICTIONS OF ALL AGENCIES HAVING JURISDICTION OVER THE PROJECT.
5. THE CONTRACTOR SHALL OBTAIN, AT THEIR OWN EXPENSE, ALL SPECIALTY PERMITS NEEDED FOR SPECIFIC ITEMS INCLUDED WITH THE WORK, UNLESS OTHERWISE INDICATED IN THE CONTRACT DOCUMENTS. CONTRACTOR SHALL COMPLY WITH ALL NOTIFICATIONS AND INSPECTION REQUIREMENTS.
6. THE CONTRACTOR SHALL SUPPLY ALL SHOP DRAWINGS OR STRUCTURAL DATA ASSOCIATED WITH THIS PLAN SET IF REQUIRED, FOR OWNER'S REPRESENTATIVE APPROVAL.
7. UNLESS SPECIFICALLY NOTED OTHERWISE IN THE CONTRACT DOCUMENTS, THE LANDSCAPE CONTRACTOR SHALL OBTAIN AND COORDINATE ALL TECHNICAL TESTS AND REPORTS BY A CERTIFIED INDEPENDENT LABORATORY OR AGENCY AS OUTLINED IN THE SPECIFICATIONS OR THESE DRAWINGS. THE OWNER MAY, AT THEIR SOLE DISCRETION, PROVIDE SEPARATE TESTING AND/OR INSPECTION SERVICES AND THE LANDSCAPE CONTRACTOR IS REQUIRED TO FULLY COORDINATE WITH THOSE CONSULTANTS.
8. THESE DRAWINGS DO NOT SPECIFY SAFETY MATERIALS, STAFFING, EQUIPMENT, METHODS OR SEQUENCING TO PROTECT PERSONS AND PROPERTY. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO DIRECT AND IMPLEMENT SAFETY OPERATIONS, STAFFING, AND PROCEDURES TO PROTECT THE OWNER AND HIS REPRESENTATIVES, NEW IMPROVEMENTS, PROPERTY, OTHER CONTRACTORS, THE PUBLIC AND OTHERS.
9. ALL SOIL BEARING, STEEL REINFORCEMENT, CONCRETE STRENGTH, WIND LOADS, HYDRAULIC AND/OR PLUMBING, OR OTHER REQUIRED STRUCTURAL CALCULATIONS TO BE VERIFIED BY ENGINEER AND COORDINATED BY OWNER.
10. ALL FILL TO BE CLEAN AND FREE OF ALL DEBRIS, MEETING AASHTO STANDARDS OR IF PROVIDED, THOSE SPECIFIED BY GEOTECHNICAL REPORT OR STRUCTURAL DRAWINGS.
11. IF AN ELECTRICAL PLAN HAS NOT BEEN PROVIDED AS PART OF THIS PLAN SET, CONTRACTOR TO COORDINATE ELECTRICAL REQUIREMENTS FOR ANY FIXTURES SPECIFIED INCLUDING CONNECTIONS TO ANY MUNICIPAL INFRASTRUCTURE. COST ASSOCIATED SHALL BE PROVIDED AS PART OF BID. FIXTURES TO BE AS SPECIFIED OR APPROVED EQUAL.
12. SOME WORK IN THIS CONTRACT MAY OCCUR CONCURRENT WITH WORK BY OTHERS. PHASING, SEQUENCING AND COORDINATION, WITH WORK BY OTHERS, AND ON-GOING FACILITY OPERATIONS IN AND AROUND THE SITE AREA, IS A PART OF THE SCOPE OF WORK FOR THIS PROJECT. NOTICE TO PROCEED WITH WORK IN ANY GENERAL AREA SHALL BE OBTAINED FROM THE OWNER.
13. THE CONTRACTOR SHALL TAKE PHOTOGRAPHIC DOCUMENTATION OF ALL EXISTING WORK PRIOR TO STARTING CONSTRUCTION TO CONFIRM ANY FUTURE DAMAGE DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING SITE ELEMENTS AND SYSTEMS. REPAIR OF ANY DAMAGE TO ANY OF THESE ELEMENTS SHALL BE AT THE EXPENSE OF THE CONTRACTOR.
14. THE CONTRACTOR SHALL MAINTAIN AND HAVE IN CURRENT FORCE ALL REQUIRED INSURANCE FOR THE DURATION OF THE PROJECT.
15. MAINTENANCE, WARRANTIES AND PERFORMANCE GUARANTEES MAY BE A REQUIREMENT OF THIS CONTRACT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THEIR WORK, REGARDLESS OF WARRANTY, UNTIL FINAL ACCEPTANCE BY OWNER.
16. THE CONTRACTOR IS REQUIRED TO MAINTAIN A COMPLETE AND "UP TO DATE" SET OF ALL CONTRACT DOCUMENTS, INCLUDING CLARIFICATIONS, CHANGE ORDER, ETC, IN GOOD CONDITION, AT THE CONSTRUCTION SITE AT ALL TIME. THIS SET OF DOCUMENTS WILL BE MADE IMMEDIATELY AVAILABLE FOR REVIEW BY THE OWNER'S REPRESENTATIVE AND/OR AUTHORIZED CONSULTANTS UPON REQUEST. COMPLETE "AS BUILT" DRAWINGS, OPERATIONS AND MAINTENANCE MANUALS, AND DOCUMENT SUBMITTALS ARE ALSO A REQUIREMENT OF THIS CONTRACT.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAILY SITE CLEANUP AND FOR FINAL SITE CLEANUP AND HAUL OFF OF ANY CONSTRUCTION RELATED DEBRIS. ANY SITE IMPROVEMENTS REQUIRING REMOVAL UNDER THIS CONTRACT SHALL BE PROPERLY AND LEGALLY DISPOSED OFF-SITE OR, AT THE OWNER'S OPTION SURRENDERED/STOCKPILED IN AN APPROVED ON-SITE LOCATION PER THE DIRECTION OF THE OWNER'S REPRESENTATIVE.

LAYOUT AND GRADING NOTES

LAYOUT

1. ALL WORK SHOWN SHALL BE FIELD STAKED OR OTHERWISE DENOTED AND SUBJECT TO FIELD VERIFICATION, REVIEW AND APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO ANY CONSTRUCTIONS OR DEMOLITION. FIELD STAKING OF ALL PROPOSED WORK AND ADJACENT CONSTRUCTION (EVEN IF FUTURE WORK BY OTHERS) MAY BE REQUIRED BY THE OWNER'S REPRESENTATIVE PRIOR TO APPROVAL OF ALL IMPROVEMENTS AND ADEQUATE STAKES SHALL BE PROVIDED BY CONTRACTOR'S SURVEYOR. NOTIFY THE OWNER'S REPRESENTATIVE A MINIMUM OF 24 HOURS IN ADVANCE FOR REVIEW. IMPROVEMENTS INSTALLED WITHOUT FIELD APPROVAL BY OWNER'S REPRESENTATIVE MAY BE REJECTED. REJECTED WORK MUST BE REMOVED AND REPLACED AT CONTRACTOR'S SOLE EXPENSE.
2. TO EXPEDITE THE LAYOUT OF THE SITE LAYOUT COORDINATES AND OR GRIDS MAY HAVE BEEN ESTABLISHED IN THE DRAWINGS. THESE POINTS SHALL BE FIELD STAKED BY THE LANDSCAPE CONTRACTOR'S SURVEYOR AS A PART OF THIS CONTRACT. THE ESTABLISHMENT OF THESE POINTS SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO ANY CONSTRUCTION IN THOSE AREAS AND WILL ASSIST THE LANDSCAPE CONTRACTOR IN THE LAYOUT OF ALL SITE IMPROVEMENTS AS SHOWN ON DRAWINGS OR OTHERWISE. THE LAYOUT TO INITIATE THE ORIGIN POINT/DIMENSION MARK ARE TO BE LOCATED IN THE FIELD BY SURVEY METHOD IF NOT EXISTING.
3. THE CONSTRUCTION TOLERANCES FOR THE PROJECT ARE MINIMAL AND THE DIMENSIONS SHOWN ARE TO BE STRICTLY ADHERED TO.
4. COMPUTED DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS. LARGE SCALE DRAWINGS SHALL TAKE PRECEDENCE OVER SMALL SCALE DRAWINGS. DIMENSIONS SHOWN WITH (+/-) SHALL BE THE ONLY LAYOUT INFORMATION ALLOWED TO VARY, AND MAY ONLY VARY TO THE TOLERANCES GIVEN.
5. IT IS THE INTENT AND REQUIREMENT OF THIS CONTRACT TO PROVIDE CURVILINEAR WALKS, WALLS AND CURBS WITH SMOOTH TRANSITIONS AND ARCS (BOTH HORIZONTAL AND VERTICAL). STRAIGHT SEGMENTS AND ABRUPT TRANSITIONS WILL NOT BE ACCEPTED UNLESS SHOWN AS SUCH ON THE PLANS. WOOD CURVING FORMS MY BE REQUIRED TO OBTAIN THE PROPER EFFECTS.

GRADING

6. THESE GRADING PLANS ARE INTENDED TO SHOW VERTICAL CONTROL OF THE SITE AND ARE BASED UPON THE BENCHMARKS, EXISTING ELEVATIONS AND TOPOGRAPHY AS PROVIDED BY THE OWNER'S SURVEYOR. HOWEVER, THE CONTRACTOR, UPON SUBMITTAL OF BID, AGREES TO ACCEPT THE SITE GRADES AND MAKE ALL ADJUSTMENTS REQUIRED TO ACCOMPLISH THE WORK AS PROPOSED. ADDITIONALLY, PROPOSED ELEVATIONS FOR ADJACENT CONSTRUCTION PROJECTS MAY HAVE TO BE INCORPORATED IF NECESSARY.
7. THE CONTRACTOR SHALL VERIFY ALL EXISTING GRADES TO REMAIN AND ALL ADJACENT NEW CONSTRUCTION GRADES FOR COMPLIANCE WITH THOSE SHOWN, PRIOR TO BID AND CONSTRUCTION. ALL DEVIATIONS OR CONFLICTS WITH PROPOSED WORK SHALL BE REPORTED IMMEDIATELY WITHIN 24 HOURS TO THE OWNER'S REPRESENTATIVE FOR DIRECTION TO PROCEED.
8. ALL DESIGN ELEVATIONS SHOWN ARE "FINISHED" GRADES" UNLESS OTHERWISE INDICATED. CONTRACTOR SHALL REFER TO DRAWINGS, DETAILS AND SPECIFICATIONS REGARDING DEPTH OF SUB-GRADE MATERIALS REQUIRED TO CONSTRUCT PROJECT IMPROVEMENTS. FINISH GRADE IS TO BE .01' OF THAT INDICATED ON DESIGN PLANS UNLESS OTHERWISE INDICATED.
9. IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE PROPER POSITIVE DRAINAGE THROUGHOUT THIS PROJECT. FIELD CONDITIONS SHALL BE VERIFIED IN CONJUNCTION WITH THE PROPOSED ELEVATIONS TO ENSURE THAT ADEQUATE DRAINAGE IS PROVIDED. REPORT ANY DEVIATIONS OR CONFLICTS TO OWNER'S REPRESENTATIVE.

RVi
111 North Magnolia Avenue
Suite 1350
Orlando, Florida 32801
Tel: 407.680.0650
www.rviplanning.com

LA 6667214 STATE OF FLORIDA

Digitally signed by Jack E Caldwell
Date: 2025.08.28 16:52:12-04'00'

JACK E. CALDWELL, P.L.A.
FL LICENSE NO. LA6667214

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Call 811 or visit sunshine811.com two full business days before digging to have buried facilities located and marked.
Check positive response codes before you dig!

MISSION RISE PHASE 1

PERMIT LANDSCAPE PLAN SET

TOWN OF HOWEY-IN-THE-HILLS

PROJECT NO :	25006053
DATE :	07/07/2025
DRAWN:	CD/JH
REVIEWED:	JC

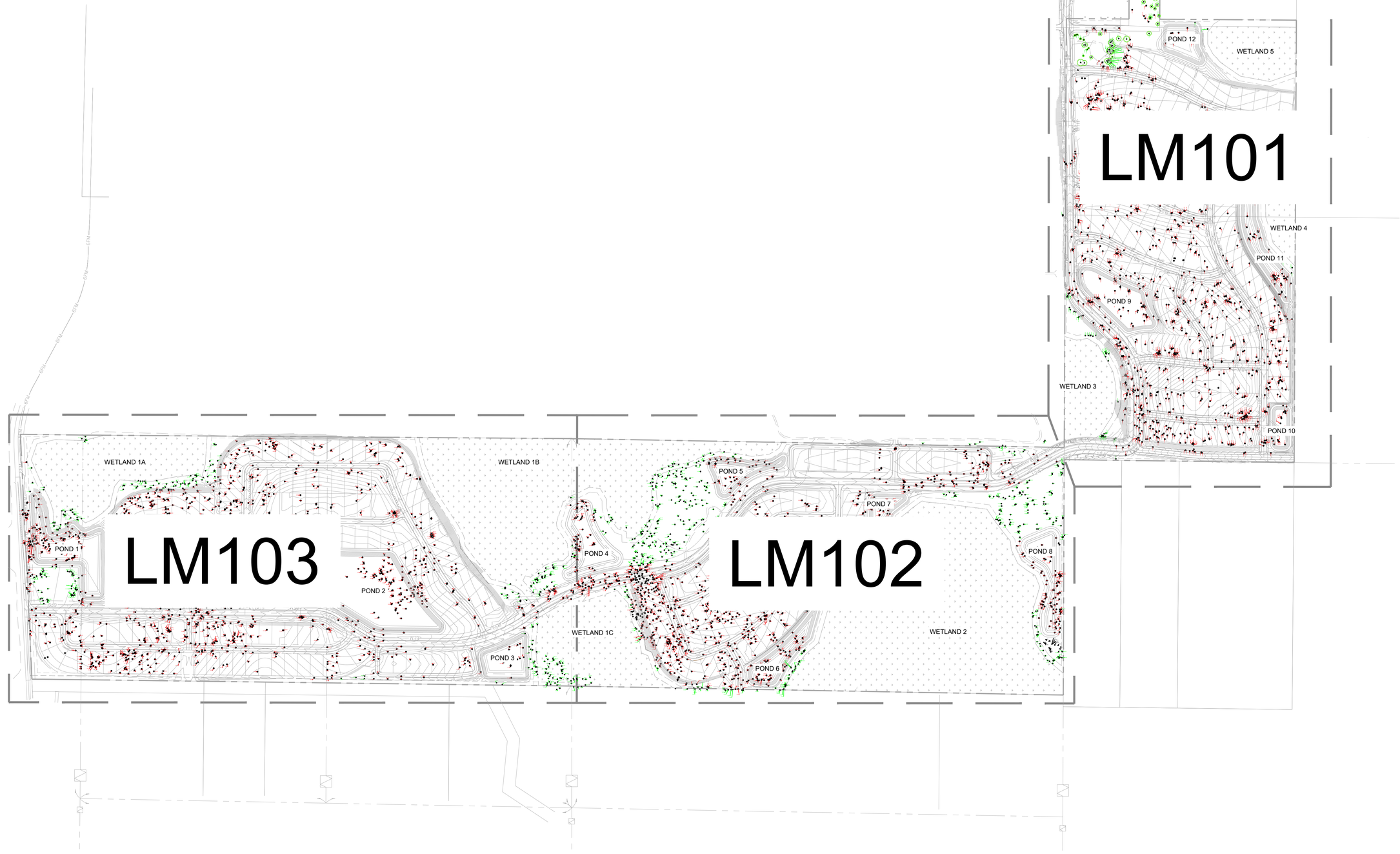
REVISIONS

GENERAL NOTES

L000

01_ORIGINAL ISSUE

L:\2025\25006053 - mission rise ta design (self tap ft)\ 8x36 landscape architecture\03 CD\01 phase 1 cmtal\02 current plans\03 SHEETS\00_COVER & NOTES\25006053-L-000-GENERAL.dwg 8/28/2025 john harre



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TOWN OF HOWEY-IN-THE-HILLS

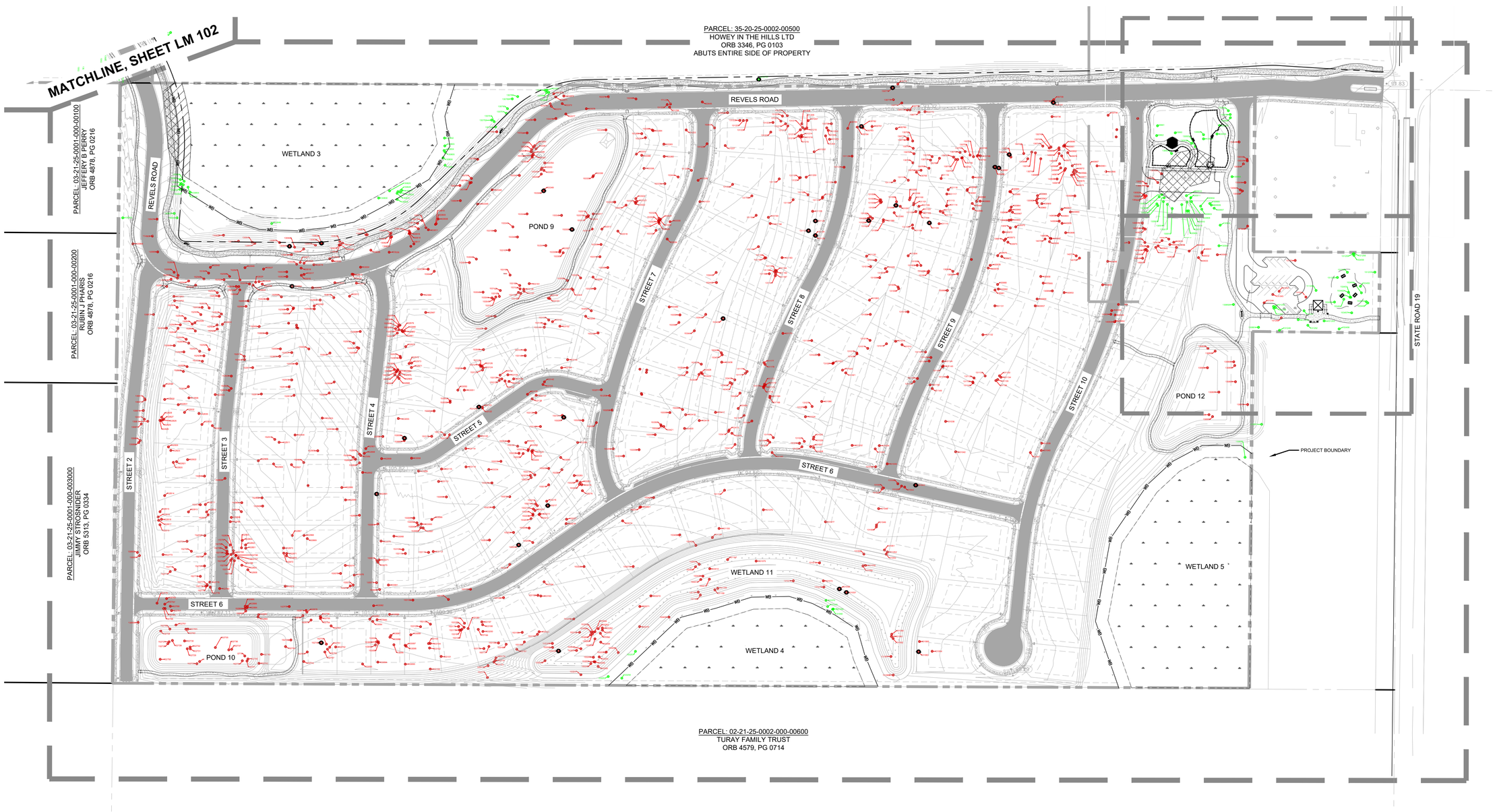
PROJECT NO :	25006053
DATE :	07/07/2025
DRAWN:	CD/JH
REVIEWED:	JC

REVISIONS

MITIGATION REF PLAN

LM100

01_ORIGINAL ISSUE



TREE LEGEND

- TREES TO BE PRESERVED
- TREES TO BE REMOVED
- HISTORIC TREES

0 50' 100' 200'
SCALE: 1" = 100'-0"

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PROJECT NO :	25006053
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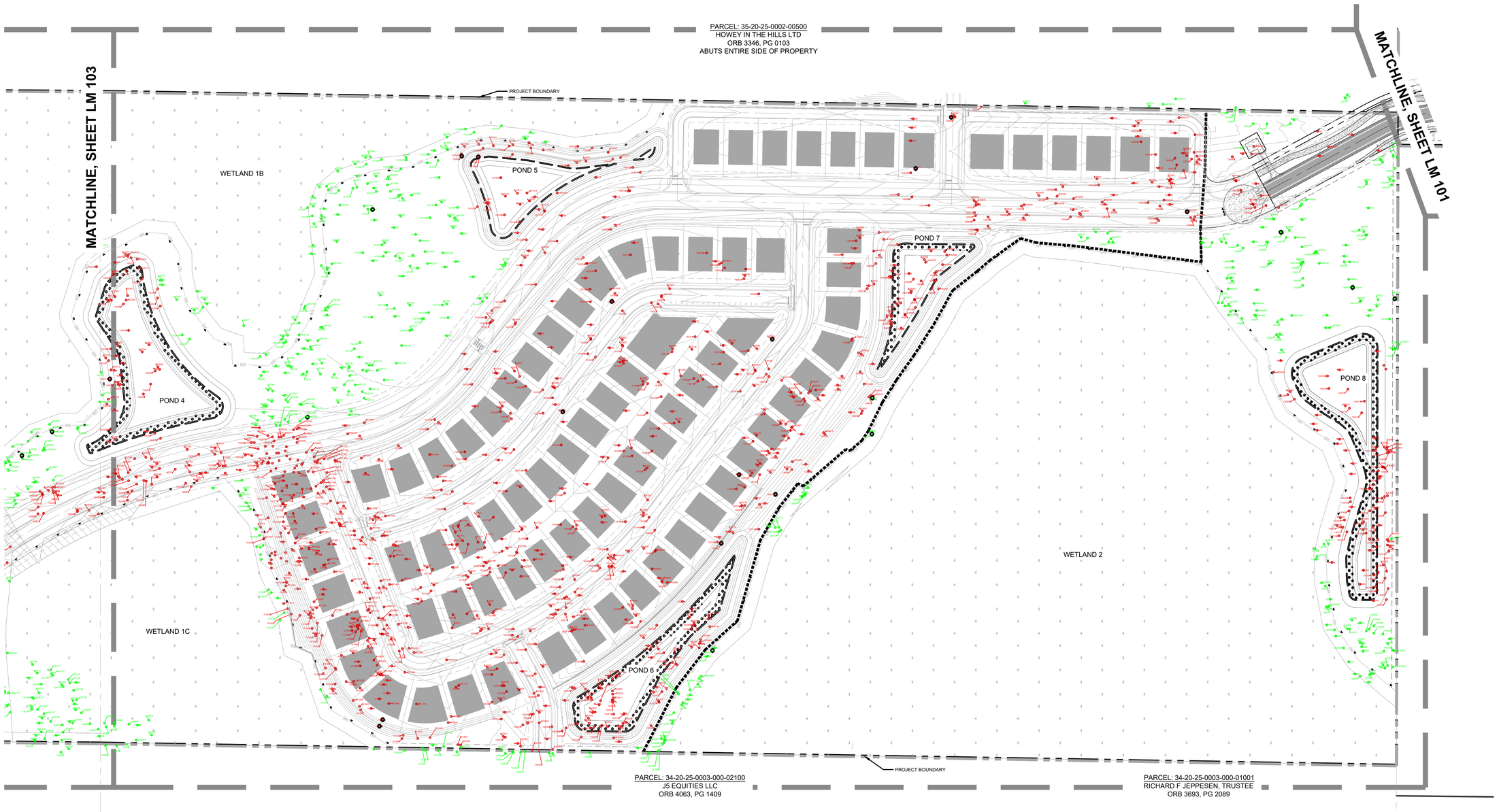
REVIEWED:	JC

REVISIONS

MITIGATION PLAN

LM101

01_ORIGINAL ISSUE



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MISSION RISE PHASE 1

PERMIT LANDSCAPE PLAN SET

TOWN OF HOWEY-IN-THE-HILLS

PROJECT NO :	25006053
DATE :	07/07/2025
DRAWN:	CD/JH
REVIEWED:	JC

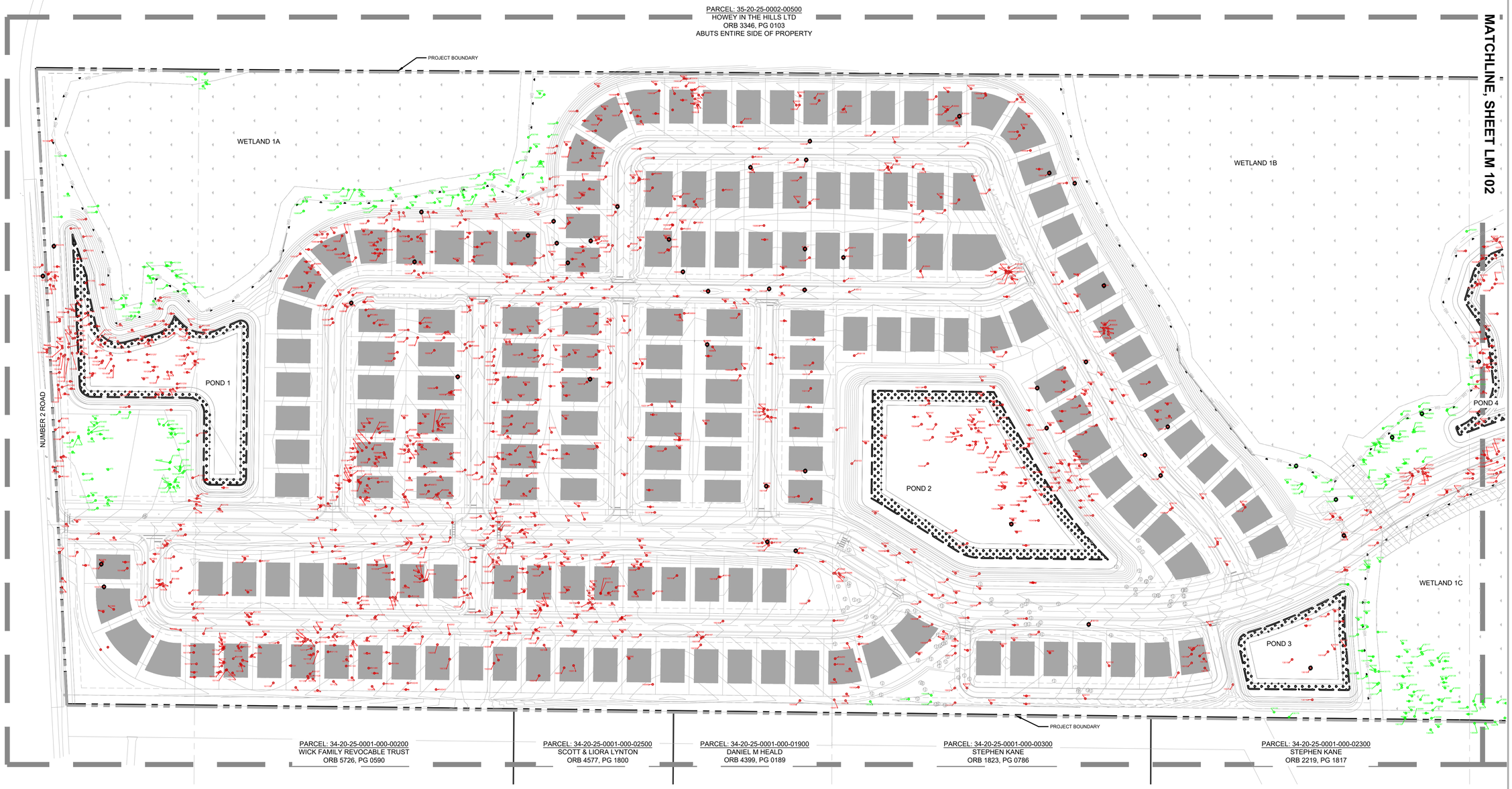
REVISIONS

MITIGATION PLAN

LM102

01_ORIGINAL ISSUE

L:\2025\25006053 - mission rise tx design (arif tap ft\...\lm\06 landscape architecture\03 CD\01 phase 1 cmta\02 current (demo)\03 SHEETS\06_MITIGATION\25006053-LM101-PLN_SERIES.dwg 8/28/2025 john hamre



TREE LEGEND

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- HISTORIC TREES

0 50' 100' 200'
SCALE: 1" = 100'-0"

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REVIEWED:	JC

REVISIONS

MITIGATION PLAN

LM103

01_ORIGINAL ISSUE

Point #	Easting	Northing	Description	Caliper	Status
130075	402047.062	1589103.442	TREE OAK	8	SAVE
130091	402093.605	1589193.742	TREE OAK	16	SAVE
130092	402096.743	1589199.86	TREE OAK	16	SAVE
130093	402090.005	1589214.765	TREE OAK	8	SAVE
130094	402074.946	1589213.398	TREE OAK	8	SAVE
130095	402068.837	1589227.283	TREE OAK	10	SAVE
130096	402058.191	1589215.979	TREE OAK	10	SAVE
130098	402034.324	1589217.69	TREE OAK	20	SAVE
130099	402061.958	1589251.209	TREE OAK	8	SAVE
130100	402057.833	1589270.78	TREE OAK	10	SAVE
130101	402059.274	1589271.189	TREE OAK	8	SAVE
130102	402068.478	1589269.25	TREE OAK	8	SAVE
130103	402075.378	1589257.825	TREE OAK	10	SAVE
130104	402093.772	1589262.588	TREE OAK	8	SAVE
130105	402096.992	1589238.938	TREE OAK	8	SAVE
130106	402104.362	1589256.685	TREE OAK	10	SAVE
130107	402113.041	1589252.607	TREE OAK	8	SAVE
130108	402121.879	1589265.778	TREE OAK	8	SAVE
130109	402122.141	1589277.931	TREE OAK	8	SAVE
130110	402126.808	1589278.095	TREE OAK	16	SAVE
130112	402146.277	1589276.534	TREE OAK	8	SAVE
130114	402186.478	1589283.546	TREE OAK	8	SAVE
130115	402196.773	1589266.437	TREE OAK	9	SAVE
130116	402214.139	1589275.755	TREE OAK	8	SAVE
130124	402176.107	1589199.302	TREE OAK	8	SAVE
130154	402128.322	1589629.784	TREE OAK	33	SAVE
130166	402186.452	1589337.725	TREE OAK	14	SAVE
130167	402178.327	1589342.245	TREE OAK	12	SAVE
130168	402159.38	1589333.566	TREE OAK	9	SAVE
130169	402155.607	1589332.837	TREE OAK	10	SAVE
130170	402155.716	1589325.901	TREE OAK	10	SAVE
130171	402131.466	1589325.74	TREE OAK	12	SAVE
130172	402128.96	1589328.657	TREE OAK	12	SAVE
130173	402115.82	1589322.163	TREE OAK	36	SAVE
130175	402152.281	1589360.945	TREE OAK	8	SAVE
130179	402060.455	1589512.802	TREE OAK	24	SAVE
130182	402232.638	1589369.673	TREE OAK	12	SAVE
130183	402248.638	1589349.468	TREE OAK	18	SAVE
130184	402237.821	1589327.593	TREE OAK	9	SAVE
130185	402251.777	1589359.492	TREE OAK	8	SAVE
130187	402277.875	1589351.117	TREE OAK	26	SAVE
130188	402299.554	1589347.075	TREE OAK	18	SAVE
130190	402337.197	1589389.793	TREE OAK	26	SAVE
130193	402373.948	1589346.195	TREE OAK	12	SAVE
130194	402372.355	1589346.837	TREE OAK	8	SAVE
130195	402373.348	1589349.297	TREE OAK	20	SAVE
130196	402384.993	1589323.238	TREE OAK	18	SAVE
130206	402513.872	1589415.101	TREE OAK	38	SAVE
130207	402517.372	1589381.848	TREE OAK	14	SAVE
130208	402535.499	1589412.667	TREE OAK	8	SAVE
130209	402554.484	1589425.042	TREE OAK	8	SAVE
130210	402559.966	1589456.538	TREE OAK	8	SAVE
130211	402605.28	1589469.57	TREE OAK	29	SAVE
130212	402583.825	1589498.037	TREE OAK	46	SAVE
130213	402545.718	1589486.81	TREE OAK	18	SAVE
130214	402546.607	1589485.79	TREE OAK	8	SAVE
130215	402530.287	1589485.775	TREE OAK	12	SAVE
130216	402549.661	1589516.016	TREE OAK	8	SAVE
130217	403178.347	1589580.297	TREE OAK	12	SAVE
130218	403385.083	1586576.164	TREE OAK	10	SAVE
130219	403333.552	1586685.461	TREE OAK	16	SAVE
130220	403326.002	1586692.849	TREE OAK	10	SAVE
130225	403252.153	1586508.531	TREE OAK	12	SAVE
130226	403246.497	1586503.486	TREE OAK	26	SAVE
130227	403258.956	1586481.425	TREE OAK	8	SAVE
130228	403255.242	1586473.684	TREE OAK	13	SAVE
130229	403233.767	1586477.705	TREE OAK	10	SAVE
130230	403211.286	1586488.67	TREE OAK	12	SAVE
130231	403208.721	1586480.845	TREE OAK	12	SAVE
130232	403199.962	1586485.412	TREE OAK	9	SAVE
130253	402966.002	1586478.397	TREE OAK	40	SAVE
130262	403310.287	1586636.952	TREE OAK	8	SAVE
130314	402462.298	1586614.587	TREE OAK	14	SAVE
130315	402461.323	1586623.877	TREE OAK	12	SAVE
130316	402436.213	1586638.149	TREE OAK	12	SAVE
130317	402430.451	1586640.216	TREE OAK	26	SAVE
130318	402452.146	1586642.539	TREE OAK	8	SAVE
130320	402381.871	1586628.805	TREE OAK	30	SAVE
130321	402375.398	1586620.956	TREE OAK	8	SAVE
130322	402348.612	1586611.005	TREE OAK	24	SAVE
130323	402332.704	1586619.223	TREE OAK	10	SAVE
130324	402332.816	1586615.578	TREE OAK	8	SAVE
130325	402335.031	1586612.676	TREE OAK	8	SAVE
130326	402295.699	1586617.431	TREE OAK	16	SAVE
130327	402285.212	1586601.86	TREE OAK	24	SAVE
130328	402272.323	1586599.371	TREE OAK	16	SAVE
130329	402248.224	1586583.439	TREE OAK	20	SAVE
130330	402219.596	1586572.65	TREE OAK	14	SAVE
130331	402194.729	1586559.593	TREE OAK	8	SAVE
130332	402190.145	1586549.224	TREE OAK	10	SAVE
130333	402178.058	1586532.362	TREE OAK	8	SAVE
130334	402193.133	1586529.846	TREE OAK	8	SAVE
130335	402195.421	1586526.502	TREE OAK	8	SAVE
130336	402195.506	1586523.415	TREE OAK	14	SAVE
130337	402213.945	1586502.598	TREE OAK	16	SAVE
130338	402206.384	1586498.335	TREE OAK	12	SAVE
130339	402211.994	1586493.4	TREE OAK	30	SAVE
130340	402209.314	1586482.787	TREE OAK	12	SAVE
130341	402242.287	1586480.288	TREE OAK	8	SAVE
130342	402244.12	1586481.987	TREE OAK	16	SAVE
130344	402256.764	1586492.074	TREE OAK	16	SAVE
130345	402266.971	1586488.862	TREE OAK	20	SAVE
130346	402276.547	1586502.835	TREE OAK	18	SAVE
130347	402278.548	1586521.278	TREE OAK	14	SAVE
130348	402293.488	1586521.722	TREE OAK	16	SAVE
130349	402287.075	1586530.634	TREE OAK	14	SAVE
130350	402283.183	1586536.686	TREE OAK	30	SAVE
130351	402261.119	1586549.84	TREE OAK	14	SAVE
130352	402256.686	1586544.622	TREE OAK	12	SAVE
130353	402250.89	1586546.208	TREE OAK	8	SAVE
130354	402241.2	1586543.175	TREE OAK	17	SAVE
130355	402299.849	1586549.152	TREE OAK	9	SAVE
130356	402305.304	1586566.354	TREE OAK	9	SAVE
130357	402287.325	1586570.769	TREE OAK	24	SAVE
130358	402287.835	1586575.511	TREE OAK	20	SAVE
130372	402446.975	1586490.532	TREE OAK	8	SAVE
130373	402456.301	1586488.154	TREE OAK	8	SAVE
130374	402459.579	1586493.382	TREE OAK	8	SAVE
130375	402468.397	1586491.425	TREE OAK	8	SAVE
130376	402470.885	1586493.894	TREE OAK	12	SAVE
130377	402472.295	1586485.334	TREE OAK	10	SAVE
130393	402560.851	1586493.373	TREE OAK	14	SAVE
130424	402871.616	1586470.094	TREE OAK	8	SAVE
130425	402864.377	1586477.005	TREE OAK	20	SAVE
130426	402862.318	1586477.04	TREE OAK	24	SAVE
130427	402862.03	1586481.586	TREE OAK	10	SAVE
130428	402924.199	1586488.722	TREE OAK	8	SAVE
130432	403306.173	1586739.711	TREE OAK	24	SAVE
130433	403325.504	1586740.719	TREE OAK	8	SAVE
130434	403325.828	1586768.943	TREE OAK	32	SAVE
130435	403353.337	1586789.49	TREE OAK	8	SAVE
130436	403353.565	1586806.811	TREE OAK	12	SAVE
130437	403358.898	1586804.758	TREE OAK	10	SAVE
130438	403347.893	1586822.49	TREE OAK	8	SAVE
130439	403279.223	1586767.952	TREE OAK	9	SAVE
130440	403276.494	1586790.197	TREE OAK	12	SAVE
130441	403263.371	1586772.447	TREE OAK	16	SAVE
130442	403264.108	1586790.629	TREE OAK	6	SAVE
130443	403257.855	1586812.135	TREE OAK	24	SAVE
130468	402925.743	1586792.49	TREE OAK	12	SAVE
130469	402939.912	1586815.795	TREE OAK	8	SAVE
130470	402932.468	1586819.488	TREE OAK	10	SAVE
130471	402951.248	1586827.134	TREE OAK	8	SAVE
130472	402954.272	1586819.344	TREE OAK	8	SAVE
130473	402957.746	1586832.839	TREE OAK	12	SAVE
130474	402957.424	1586840.827	TREE OAK	10	SAVE
130512	403376.747	1586928.156	TREE OAK	12	SAVE
130514	403365.606	1586954.65	TREE OAK	8	SAVE
130541	403100.542	1587068.121	TREE OAK	16	SAVE
130542	403083.176	1587065.682	TREE OAK	20	SAVE
130543	403089.043	1587061.53	TREE OAK	24	SAVE
130544	403082.928	1587057.578	TREE OAK	10	SAVE
130545	403103.132	1587092.406	TREE OAK	16	SAVE
130546	403090.615	1587109.372	TREE OAK	8	SAVE
130547	403092.627	1587122.547	TREE OAK	36	SAVE
130550	402767.604	1587554.738	TREE OAK	24	SAVE
130551	402765.933	1587549.438	TREE OAK	8	SAVE
130552	402761.98	1587551.254	TREE OAK	64	SAVE
130553	402764.534	1587558.652	TREE OAK	8	SAVE
130554	402735.106	1587571.907	TREE OAK	9	SAVE
130556	402730.184	1587573.84	TREE OAK	44	SAVE
130557	402687.85	1587552.187	TREE OAK	44	SAVE
130558	402691.427	1587550.792	TREE OAK	16	SAVE
130692	402612.039	1587682.243	TREE OAK	20	SAVE
130693	402577.755	1587683.323	TREE OAK	12	SAVE
130694	402565.128	1587688.348	TREE OAK	12	SAVE
130695	402561.54	1587689.798	TREE OAK	10	SAVE
130696	402563.756	1587691.032	TREE OAK	30	SAVE
130697	402560.102	1587695.655	TREE OAK	8	SAVE
130698	402558.715	1587695.737	TREE OAK	8	SAVE
130711	402498.015	1587750.599	TREE OAK	30	SAVE
130712	402495.609	1587750.599	TREE OAK	14	SAVE
130713	402496.162	1587743.474	TREE OAK	10	SAVE
130715	402487.445	1587743.278	TREE OAK	24	SAVE
130716	402482.462	1587784.535	TREE OAK	16	SAVE
130787	404604.656	1586480.415	TREE OAK	48	SAVE
130824	403855.201	1586230.673	TREE OAK	24	SAVE
130825	403855.098	1586243.185	TREE OAK	25	SAVE
130826	403861.752	1586245.456	TREE OAK	8	SAVE
130827	403864.868	1586237.2	TREE OAK	10	SAVE
130828	403856.737	1586246.617	TREE OAK	8	SAVE
130829	403839.531	1586248.262	TREE OAK	22	SAVE
130830	403816.911	1586233.501	TREE OAK	10	SAVE
130846	403595.193	1586180.433	TREE OAK	24	SAVE
130851	403399.061	1586191.849	TREE OAK	8	SAVE
130852	403393.089	1586200.99	TREE OAK	30	SAVE
130853	403404.994	1586250.914	TREE OAK	12	SAVE
130854	403425.991	1586245.018	TREE OAK	8	SAVE
130855	403421.67	1586255.478	TREE OAK	26	SAVE
130856	403411.892	1586260.471	TREE OAK	8	SAVE
130857	403405.689	1586260.775	TREE OAK	12	SAVE
130858	403407.592	1586263.131	TREE OAK	23	SAVE
130859	403413.493	1586267.721	TREE OAK	8	SAVE
130860	403405.677	1586271.146	TREE OAK	16	SAVE
130862	403286.363	1586191.698	TREE OAK	24	SAVE
130886	405613.894	1585697.75	TREE OAK	16	SAVE
130891	405641.449	1585967.477	TREE OAK	10	SAVE
130892	405589.492	1586014.634	TREE OAK	12	SAVE
130900	405555.959	1586117.901	TREE OAK	8	SAVE
130902	405561.758	1586179.13	TREE OAK	26	SAVE
130903	405523.424	1586212.243	TREE PALM	24	SAVE
130904	405521.111	1586218.622	TREE OAK	18	SAVE
130905	405540.099	1586224.108	TREE PALM	24	SAVE
130906	405543.192	1586220.949	TREE PALM	24	SAVE
130907	405549.216	1586214.377	TREE OAK	20	SAVE
130908	405502.175	1586228.05	TREE OAK	8	SAVE
130909	405492.884	1586226.933	TREE OAK	32	SAVE
130910	405500.791	1586236.399	TREE OAL	8	SAVE
130911	405500.564	1586235.782	TREE OAK	8	SAVE
130912	405491.695	1586240.274	TREE OAK	12	SAVE
130913	405482.077	1586221.766	TREE OAK	18	SAVE
130914	405496.226	1586208.88	TREE OAK	9	SAVE
130915	405491.92	1586208.734	TREE OAK	16	SAVE
130916	405462.19	1586213.61	TREE OAK	8	SAVE
130917	405452.207	1586222.253	TREE OAK	8	SAVE
130918	405443.828	1586227.998	TREE OAK	24	SAVE
130919	405445.541	1586235.906	TREE OAK	10	SAVE
130920	405435.161	1586237.918	TREE OAK	26	SAVE
130921	405440.702	1586242.271	TREE OAK	24	SAVE
130922	405432.376	1586219.596	TREE OAK	8	SAVE
130923	405430.374	1586223.241	TREE OAK	10	SAVE
130924	405405.204	1586236.594	TREE OAK	8	SAVE
130925	405408.195	1586239.765	TREE OAK	12	SAVE
130926	405403.354	1586242.023	TREE OAK	8	SAVE
130930	405439.78	1586285.618	TREE OAK	10	SAVE
130931	405460.73	1586327.766	TREE OAK	18	SAVE
130932	405502.178	1586348.768	TREE OAK	8	SAVE
130933	405509.933	1586341.843	TREE OAK	8	SAVE
130934	405526.932	1586358.129	TREE OAK	22	SAVE
130935	405526.942	1586366.782	TREE OAK	24	SAVE
130936	405554.801	1586368.442	TREE OAK	10	SAVE
130937	405560.009	1586385.797	TREE OAK	12	SAVE
130938	405582.568	1586402.096	TREE OAK	8	SAVE
130939	405582.311	1586408.772	TREE OAK	8	SAVE
130940	405578.386	1586416.598	TREE OAK	10	SAVE
130943	405586.157	1586279.833	TREE OAK	20	SAVE
131053	404823.828	1585495.805	TREE OAK	10	SAVE
131054	404823.828	1585496.061	TREE OAK	10	SAVE
131059	404760.302	1585382.012	TREE OAK	8	SAVE
131068	404759.05	1585381.376	TREE OAK	10	SAVE
131069	404748.746	1585387.192	TREE OAK	8	SAVE
131070	404745.384	1585400.178	TREE OAK	10	SAVE
131237	405882.628	1586082.083	TREE OAK	12	SAVE
131238	405825.593	1586081.766	TREE OAK	12	SAVE
131239	405804.937	1586070.993	TREE OAK	8	SAVE
131240	405760.665	1586044.104	TREE OAK	10	SAVE
131249	405684.846	1585961.307	TREE OAK	8	SAVE
131251	405735.748	1586001.888	TREE OAK	8	SAVE
131252	405743.772	1585971.727	TREE OAK	18	SAVE
131253	405777.453	1585980.877	TREE OAK	2	SAVE
140631	405524.313	1586123.6	TREE OAK	14	SAVE
140632	405523.75	1586121.282	TREE OAK	1	SAVE
140660	405468.329	1586370.593	TREE OAK	10	SAVE
140661	405431.517	1586385.238	TREE OAK	36	SAVE
140662	405429.8	1586364.826	TREE OAK	28	SAVE
150584	403357.353	1591065.228	TREE OAK	36	SAVE
150585	403359.801	1591074.257	TREE OAK	9	SAVE
150586	403298.629	1591038.308	TREE OAK	21	SAVE
150730	403154.947	1591110.174	TREE OAK	24	SAVE
150731	403179.333	1591133.587	TREE BIRCH	14	SAVE
150732	403166.792	1591140.302	TREE OAK	8	SAVE
150733	403184.657	1591109.199	TREE OAK	9	SAVE
150734	403160.023	1591067.403	TREE OAK	21	SAVE
150738	403183.978	1591070.692	TREE OAK	18	SAVE
150739	403213.945	1591071.192	TREE OAK	9	SAVE
150741	403214.035	1591074.942	TREE OAK	12	SAVE
150742	403216.002	1591121.869	TREE OAK	8	SAVE
150745	403270.006	1591055.895	TREE OAK	13	SAVE
150746	403249.383	1591081.29	TREE OAK	9	SAVE
150747	403246.105	1591093.67	TREE OAK	12	SAVE
150748	403268.433	1591098.206	TREE OAK	32	SAVE
150749	403185.388	1591169.564	TREE BIRCH	8	SAVE
150750	403190.897	1591170.848	TREE OAK	10	SAVE
150751	403191.78	1591177.706	TREE OAK	13	SAVE
150752	403173.02	1591188.348	TREE OAK	12	SAVE
150753	403163.386	1591191.007	TREE OAK	9	SAVE
150754	403159.542	1591173.398	TREE OAK	10	SAVE
150759	403148.215	1591207.624	TREE OAK	16	SAVE
150760	403144.65	1591214.429	TREE OAK	16	SAVE
150761	403188.76	1591201.653	TREE OAK	9	SAVE
150762	403148.31	1591234.61	TREE OAK	17	SAVE
150763	403143.444	1591232.484	TREE OAK	24	SAVE
150764	403148.303	1591234.358	TREE OAK	12	SAVE
150765	403143.471	1591255.554	TREE OAK	8	SAVE
150766	403154.834	1591274.584	TREE OAK	36	SAVE
150767	403134.298	1591282.619	TREE OAK	18	SAVE
150781	403132.422	1591298.316	TREE OAK	27	SAVE
150782	403153.083	1591298.361	TREE OAK	17	SAVE
150785	403144.251	1591332.601	TREE OAK	13	SAVE
150786	403127.179	1591339.33	TREE OAK	11	SAVE
150787	403122.198	1591350.927	TREE OAK	23	SAVE
150806	403136.574	1591551.096	TREE OAK	10	SAVE
150807	403145.722	1591373.783	TREE OAK	9	SAVE
150808	403162.411	1591385.477	TREE OAK	13	SAVE
150809	403125.118	1591420.576	TREE OAK	15	SAVE
150810	403124.035	1591435.177	TREE OAK	19	SAVE
150819	403130.805	1591448.286	TREE OAK	21	SAVE
150820	403149.499	1591445.771	TREE OAK	14	SAVE
150821	403158.771	1591450.053	TREE OAK	8	SAVE
150822	403159.08	1591460.625	TREE OAK	9	SAVE
150823	403158.773	1591464.742	TREE OAK	8	SAVE
150824	403161.611	1591484.425	TREE OAK	10	SAVE
150825	403142.115	1591519.429	TREE OAK	28	SAVE
150826	403130.89	1591489.641	TREE OAK	32	SAVE
150827	403123.5	1591485.747	TREE OAK	25	SAVE
150838	403114.889	1591566.627	TREE OAK	40	SAVE
150839	403135.129	1591560.316	TREE OAK	8	SAVE
150840	403135.228	1591567.252	TREE OAK	8	SAVE
151194	402634.833	1591807.064	TREE OAK	10	SAVE
151196	402669.207	1591848.717	TREE OAK	12	SAVE
151198	402661.518	1591842.019	TREE OAK	11	SAVE
151199	402660.501	1591839.119	TREE OAK	9	SAVE
151200	402651.394	1591841.884	TREE OAK	9	SAVE
151201	402650.324	1591843.349	TREE OAK	15	SAVE
151202	402668.553	1591858.548	TREE OAK	8	SAVE
151203	402670.795	1591867.423	TREE OAK	11	SAVE
151205	402592.157	1591844.319	TREE OAK	15	SAVE
151206	402590.551	1591845.599	TREE OAK	14	SAVE
151207	402431.67	1591825.478	TREE OAK	13	SAVE
151209	402577.651	1591823.965	TREE OAK	12	SAVE
151210	402573.595	1591825.226	TREE OAK	14	SAVE
151211	402572.887	1591815.697	TREE OAK	13	SAVE
151212	402569.549	1591818.683	TREE OAK	14	SAVE
151214	402555.249	1591833.086	TREE OAK	21	SAVE
151215	402551.166	1591835.036	TREE OAK	15	SAVE
151216	402543.545	1591829.451	TREE OAK	17	SAVE
151217	402540.002	1591837.533	TREE OAK	12	SAVE
151218	402538.392	1591845.501	TREE OAK	23	SAVE
151219	402544.927	1591843.7	TREE OAK	12	SAVE
151220	402543.616	1591848.33	TREE OAK	14	SAVE
151221	402540.708	1591844.889	TREE OAK	21	SAVE
151222	402555.087	1591770.577	TREE OAK	13	SAVE
151223	402649.704	1591834.217	TREE OAK	15	SAVE
151275	402934.3	1591865.238	TREE OAK	15	SAVE
151276	402959.865	1591851.247	TREE PINE	29	SAVE
151277	402951.89	1591816.441	TREE OAK	15	SAVE
151306	403150.458	1592058.132	TREE OAK	17	SAVE
151313	403389.201	1591791.721	TREE OAK	17	SAVE
151314	403400.31	1591772.415	TREE OAK	16	SAVE
151315	403382.769	1591770.976	TREE BIRCH	15	SAVE
151317	403379.846	1591768.385	TREE PINE	28	SAVE
151371	402983.059	1592099.594	TREE BIRCH	14	SAVE
151372	402983.824	1592098.244	TREE BIRCH	12	SAVE
151373	402973.458	1592093.854	TREE BIRCH	8	SAVE
151374	402976.255	1592085.869	TREE BIRCH	8	SAVE
151375	402980.521	1592084.473	TREE BIRCH	15	SAVE
151376	402999.041	1592080.292	TREE BIRCH	9	SAVE
151377	403002.523	1592111.484	TREE BIRCH	12	SAVE
151380	402958.542	1592042.271	TREE PINE	21	SAVE
151430	402748.143	1592070.036	TREE BIRCH	8	SAVE
151431	402752.452	1592078.56	TREE OAK	13	SAVE
151432	402743.099	1592076.771	TREE OAK	29	SAVE
151436	402659.303	1592084.276	TREE OAK	9	SAVE
151437	402652.511	1592058.909	TREE OAK	16	SAVE
151438	402644.632	1592068.653	TREE OAK	15	SAVE
151439	402636.903	1592048.415	TREE OAK	14	SAVE
151440	402642.278	1592035.285	TREE OAK	12	SAVE
151441	402645.533	1592036.039	TREE OAK	17	SAVE
151442	402612.935	1592048.168	TREE OAK	27	SAVE
151443	402604.145	1592067.259	TREE PINE	21	SAVE
151444	402601.845	1592072.137	TREE OAK	11	SAVE
151445	402640.567	1592008.085	TREE OAK	36	SAVE
151447	402658.399	1592014.764	TREE OAK	25	SAVE
151450	402672.736	1591997.575	TREE OAK	14	SAVE
151453	402641.036	1591982.74	TREE OAK	13	SAVE
151454	402696.132	1591950.064	TREE OAK	11	SAVE
151455	402695.509	1591928.683	TREE OAK	8	SAVE
151459	402442.858	1591993.93	TREE OAK	20	SAVE
151461	402404.175	1592038.453	TREE OAK	15	SAVE
151464	402495.816	1591996.338	TREE OAK	17	SAVE
151465	402511.896	1592000.312	TREE OAK	31	SAVE
151466	402506.584	1591985.213	TREE OAK	20	SAVE
151468	402505.405	1591975.377	TREE OAK	15	SAVE
151469	402518.336	1591978.355	TREE OAK	34	SAVE
151470	402512.933	1591973.506	TREE OAK	34	SAVE
151471	402556.655	1592007.262	TREE OAK	30	SAVE
151473	402576.21	1591974.314	TREE OAK	15	SAVE
151481	402561.77	1592075.485	TREE OAK	31	SAVE
151483	402574.496	1592086.128	TREE OAK	16	SAVE
151488	402383.357	1591938.347	TREE OAK	12	SAVE
151534	403296.555	1588264.835	TREE OAK	24	SAVE
151536	403295.012	1588264.57	TREE OAK	11	SAVE
151537	403308.25	1588253.017	TREE OAK	13	SAVE
151538	403286.467	1588256.823	TREE OAK	17	SAVE
151541	403321.425	1588313.057	TREE OAK	12	SAVE
151542	403307.938	1588369.387	TREE OAK	13	SAVE
151543	403314.715	1588386.915	TREE OAK	9	SAVE
151548	403273.687	1588423.579	TREE OAK	12	SAVE
151549	403272.241	1588424.266	TREE OAK	8	SAVE
151551	403270.542	1588450.498	TREE OAK	8	SAVE
151552	403249.996	1588443.195	TREE OAK	25	SAVE
151553	403262.66	1588462.867	TREE OAK	10	SAVE
151554	403245.348	1588465.124	TREE OAK	17	SAVE
151555	403232.855	1588519.275	TREE OAK	25	SAVE
151556	403256.195	1588508.89	TREE OAK	25	SAVE
151557	403251.213	1588508.565	TREE OAK	24	SAVE
151558	403236.834	1588538.404	TREE OAK	26	SAVE
151559	403216.526	1588545.284	TREE OAK	27	SAVE
151560	403199.746	1588547.29	TREE OAK	27	SAVE
151561	403186.632	1588541.175	TREE OAK	22	SAVE
151562	403212.63	1588546.848	TREE OAK	14	SAVE
151563	403218.086	1588570.57	TREE OAK	14	SAVE
151564	403252.156	1588559.424	TREE OAK	10	SAVE
151565	403257.365	1588581.864	TREE OAK	21	SAVE
151566	403256.295	1588591.985	TREE OAK	8	SAVE
151567	403242.644	1588590.663	TREE OAK	12	SAVE
151568	403242.981	1588613.709	TREE OAK	13	SAVE
151569	403217.919	1588609.164	TREE OAK	31	SAVE
151570	403202.63	1588588.142	TREE OAK	22	SAVE
151571	403193.419	1588575.088	TREE OAK	10	SAVE
151572	403186.569	1588569.774	TREE OAK	12	SAVE
151573	403194.972	1588609.813	TREE OAK	8	SAVE
151574	403192.91	1588634.358	TREE OAK	11	SAVE
151575	403188.628	1588646.882	TREE OAK	31	SAVE
151576	403228.191	1588648.962	TREE OAK	36	SAVE
151577	403197.164	1588672.141	TREE OAK	11	SAVE
151578	403180.864	1588568.526	TREE OAK	24	SAVE
151579	403195.755	1588686.785	TREE OAK	18	SAVE
151580	403176.056	1588700.822	TREE OA

Point #	Easting	Northing	Description	Caliper	Status
130001	402969.1	1590440.002	TREE OAK	24	REMOVE
130012	402946.2	1590429.055	TREE OAK	10	REMOVE
130013	402918.2	1590441.618	TREE OAK	40	REMOVE
130014	402933.5	1590434.387	TREE OAK	24	REMOVE
130015	402953.8	1590393.817	TREE OAK	20	REMOVE
130016	402989.7	1590280.868	TREE OAK	20	REMOVE
130017	403098.4	1590270.369	TREE OAK	18	REMOVE
130018	403114.9	1590276.321	TREE OAK	26	REMOVE
130020	403206.7	1590266.658	TREE OAK	18	REMOVE
130021	403202.4	1590275.786	TREE OAK	14	REMOVE
130022	403206.8	1590343.961	TREE OAK	16	REMOVE
130023	403206.8	1590548.603	TREE OAK	6	REMOVE
130024	403201.1	1590347.054	TREE OAK	8	REMOVE
130025	403205.3	1590347.797	TREE OAK	18	REMOVE
130026	403219.1	1590330.382	TREE OAK	18	REMOVE
130027	403258.5	1590334.185	TREE OAK	28	REMOVE
130028	403279.3	1590376.814	TREE OAK	16	REMOVE
130029	403272.9	1590403.139	TREE OAK	14	REMOVE
130030	403326.3	1590402.686	TREE OAK	8	REMOVE
130031	403336	1590353.363	TREE OAK	8	REMOVE
130032	403335.5	1590339.687	TREE OAK	12	REMOVE
130033	403354.8	1590331.545	TREE OAK	12	REMOVE
130034	403350.1	1590350.955	TREE OAK	14	REMOVE
130035	403345.2	1590402.037	TREE OAK	28	REMOVE
130036	403351.6	1590401.46	TREE OAK	24	REMOVE
130037	403222	1590337.281	TREE OAK	22	REMOVE
130038	403221.4	1590319.146	TREE OAK	36	REMOVE
130039	403184.4	1590353.499	TREE OAK	14	REMOVE
130040	403134	1590335.771	TREE OAK	28	REMOVE
130041	403132.6	1590319.597	TREE OAK	22	REMOVE
130042	403130.7	1590301.18	TREE OAK	22	REMOVE
130043	402988.8	1590281.069	TREE OAK	24	REMOVE
130044	403116.5	1590230.208	TREE OAK	26	REMOVE
130045	403178.1	1590232.539	TREE OAK	14	REMOVE
130046	403139.3	1590244.861	TREE OAK	14	REMOVE
130047	403179.3	1590189.697	TREE OAK	14	REMOVE
130048	403159	1590137.393	TREE OAK	14	REMOVE
130049	403372.5	1590174.818	TREE OAK	19	REMOVE
130059	403179.2	1590173.173	TREE OAK	20	REMOVE
130060	403247.8	1590445.519	TREE OAK	25	REMOVE
130061	403270.3	1590491.931	TREE OAK	18	REMOVE
130062	403371.1	1590553.499	TREE OAK	24	REMOVE
130063	403375	1590517.046	TREE OAK	24	REMOVE
130064	403351.5	1590538.319	TREE OAK	10	REMOVE
130065	403353.5	1590513.536	TREE OAK	8	REMOVE
130066	403424.2	1590512.558	TREE OAK	14	REMOVE
130067	403391.9	1590444.144	TREE OAK	12	REMOVE
130068	403447.6	1590444.467	TREE OAK	24	REMOVE
130069	403279.3	1590549.812	TREE OAK	14	REMOVE
130070	403273.8	1590549.242	TREE OAK	24	REMOVE
130071	403406.1	1590445.133	TREE OAK	14	REMOVE
130078	403471.4	1590513.136	TREE OAK	8	REMOVE
130079	403503.8	1590513.287	TREE OAK	12	REMOVE
130080	403449	1590513.584	TREE OAK	10	REMOVE
130081	403471.5	1590539.817	TREE OAK	22	REMOVE
130082	403484.4	1590512.222	TREE OAK	14	REMOVE
130083	403504.1	1590543.537	TREE OAK	12	REMOVE
130084	403504.1	1590545.301	TREE OAK	18	REMOVE
130085	403547.1	1590513.832	TREE OAK	14	REMOVE
130086	403539.8	1590539.248	TREE OAK	14	REMOVE
130087	403550.7	1590539.224	TREE OAK	16	REMOVE
130088	403547.1	1590539.224	TREE OAK	14	REMOVE
130089	403547.1	1590539.224	TREE OAK	14	REMOVE
130090	403547.1	1590539.224	TREE OAK	14	REMOVE
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130434	402621.4	1586539.968	TREE OAK	12	REMOVE
130435	402621.4	1586539.968	TREE OAK	12	REMOVE
130436	402621.4

RVi
111 North Magnolia Avenue
Suite 1350
Orlando, Florida 32801
Tel: 407.650.0650
www.rviplanning.com

Digitally signed by Jack E Caldwell
Date: 2025.08.28 16:52:26-04'00'

JACK E. CALDWELL, P.L.A.
FL LICENSE NO. LA6667214

Sunshine811
Call 811 or visit sunshine811.com two full business days before digging to have buried facilities located and marked.
Check positive response codes before you dig!

TREE REMOVAL CHART

	DBH"	DBH"
TOTAL UPLAND TREES		59,761
PRESERVED UPLAND TREES		11,710
SPECIMEN TREES	3921	
HISTORIC TREES	424	
REMOVED UPLAND TREES*		**48,051**
SPECIMEN TREES	12870	
HISTORIC TREES	3762	

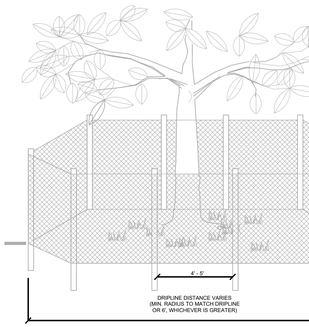
*NOTE: PRESERVATION OF AT LEAST 50% OF SPECIMEN TREES AND 100% OF HISTORIC TREES IS NOT REPRESENTED AS IT PROHIBITS THE ECONOMIC USE OF THE PROPERTY FOR PERMISSIBLE DEVELOPMENT. IN ADDITION, APPROXIMATELY ± 41.8 ACRES OF EXISTING WETLAND CANOPY HAVE BEEN PRESERVED ON THE PROJECT. REMOVED TREES WILL BE MITIGATED AS SET FORTH IN SECTION L.4 OF THE DEVELOPERS AGREEMENT AND SECTION 7.12.03 OF THE LDC.

TREE REPLACEMENT CHART

	CAL"	CAL"
TOTAL INCHES TO BE REPLACED*		14,415
PHASE 1 TREES PROVIDED		5245
RESIDENTIAL LOT TREES (157 LOTS)	3140	
COMMON AREA/OPEN SPACE/BUFFERS/AMENITIES	2105	
FUTURE PHASE TREES PROVIDED		9170
RESIDENTIAL LOT TREES (248 LOTS)	4960	
COMMON AREA/OPEN SPACE/BUFFERS/AMENITIES	4210	
TOTAL REPLACEMENT DEFICIT**		**0**

*NOTE: PER SECTION L.4 OF THE DEVELOPERS AGREEMENT - "THE DEVELOPER WILL REPLACE THE EQUIVALENT OF 30% OF TOTAL TREE-INCHES REMOVED."

*NOTE: TREE REPLACEMENT CHART SHALL BE UPDATED DURING EACH FUTURE PHASE SUBMITTAL. UPON COMPLETION OF THE FINAL PHASE, ANY REPLACEMENT DEFICIT ON THE PROJECT SHALL REQUIRE MITIGATION FEES AS STATED IN LDC 7.12.03(E).



A TREE BARRICADE DETAIL
N.T.S. RVI.ORL-250605-09

NOTE:
1. BARRICADE SHALL BE CONSTRUCTED WHEN CALLED FOR ON PLANS OR AS DIRECTED BY THE LANDSCAPE ARCHITECT AND/OR LICENSED ARBORIST. BARRIERS SHALL BE MAINTAINED UNTIL ALL CONSTRUCTION IS COMPLETED.
2. JBARRICADES ARE TO BE ERECTED AROUND ALL TREES 4" DBH AND GREATER THAT ARE LOCATED WITHIN 50' OF WORK TO BE DONE BEFORE CONSTRUCTION, GRADING, OR BEFORE ANY TREES ARE REMOVED.
3. ITREES 4" DBH AND GREATER THAT ARE LOCATED WITHIN 10' OF THE LOT UNDER CONSTRUCTION SHALL ALSO BE PROTECTED BY A BARRICADE.

PROJECT NO :	25006053
DATE :	07/07/2025
DRAWN:	CD/JH
REVIEWED:	JC

REVISIONS

MITIGATION SCHEDULE

LM602

MISSION RISE PHASE 1
PERMIT LANDSCAPE PLAN SET
TOWN OF HOWEY-IN-THE-HILLS

01_ORIGINAL ISSUE

L:\2025\25006053 - mission rise la design (set top fl)_ALL\06 landscape architecture\03 CD\01 phase 1 cmb\LM2 current plan\05 SHEETS\05_MITIGATION\25006053-LM101-4PLN_SERIES.dwg 8/26/2025 john harris

151175	402205.3	1597783.85	TREE OAK	16	REMOVE
151176	402234.4	1597775.203	TREE OAK	30	REMOVE
151177	402267.1	1597781.784	TREE OAK	13	REMOVE
151178	402268.5	1597796.225	TREE OAK	8	REMOVE
151179	402286.4	1597795.572	TREE OAK	9	REMOVE
151180	402295.5	1597768.544	TREE OAK	9	REMOVE
151181	402318.9	1597804.489	TREE OAK	33	REMOVE
151182	402347.8	1597823.279	TREE OAK	9	REMOVE
151183	402357.4	1597834.756	TREE OAK	9	REMOVE
151184	402362.6	1597881.224	TREE OAK	9	REMOVE
151185	402396.7	1597883.291	TREE OAK	9	REMOVE
151186	402396.8	1597904.489	TREE OAK	9	REMOVE
151187	402447.7	1597788.539	TREE OAK	8	REMOVE
151188	402465.1	1597798.843	TREE OAK	9	REMOVE
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151310	403013.1	1597984.738	TREE OAK	13	REMOVE
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151365	402906.4	1592060.38	TREE BIRCH	15	REMOVE
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151463	402462.8	1592067.464	TREE OAK	21	REMOVE
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151482	402331.1	1591968.831	TREE OAK	17	REMOVE
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151487	402280.1	1591984.342	TREE OAK	11	REMOVE
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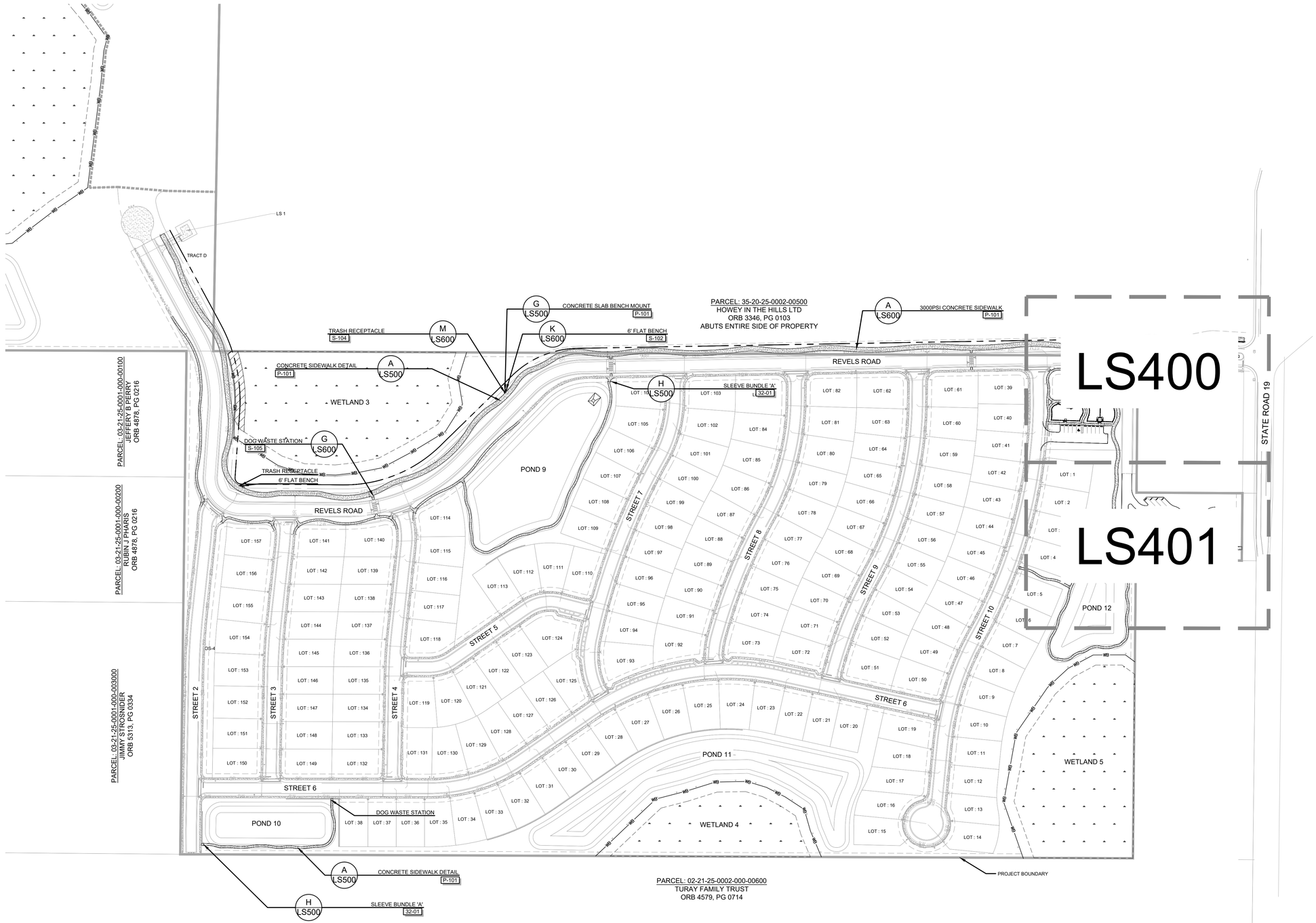
151794	402445.3	1588282.27	TREE OAK	19	REMOVE
151795	402445.3	1588282.27	TREE OAK	19	REMOVE
151796	402445.3	1588282.27	TREE OAK	19	REMOVE
151797	402445.3	1588282.27	TREE OAK	19	REMOVE
151798	402445.3	1588282.27	TREE OAK	19	REMOVE
151799	402445.3	1588282.27	TREE OAK	19	REMOVE
151800	402445.3	1588282.27	TREE OAK	19	REMOVE
151801	402445.3	1588282.27	TREE OAK	19	REMOVE
151802	402445.3	1588282.27	TREE OAK	19	REMOVE
151803	402445.3	1588282.27	TREE OAK	19	RE



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Date: 2025.08.28 16:52:29-04'00'

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FL LICENSE NO. LA6667214

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Check positive response codes before you dig!

MISSION RISE PHASE 1

PERMIT LANDSCAPE PLAN SET

TOWN OF HOWEY-IN-THE-HILLS

PROJECT NO :	25006053
DATE :	07/07/2025
DRAWN:	CD/JH
REVIEWED:	JC

REVISIONS

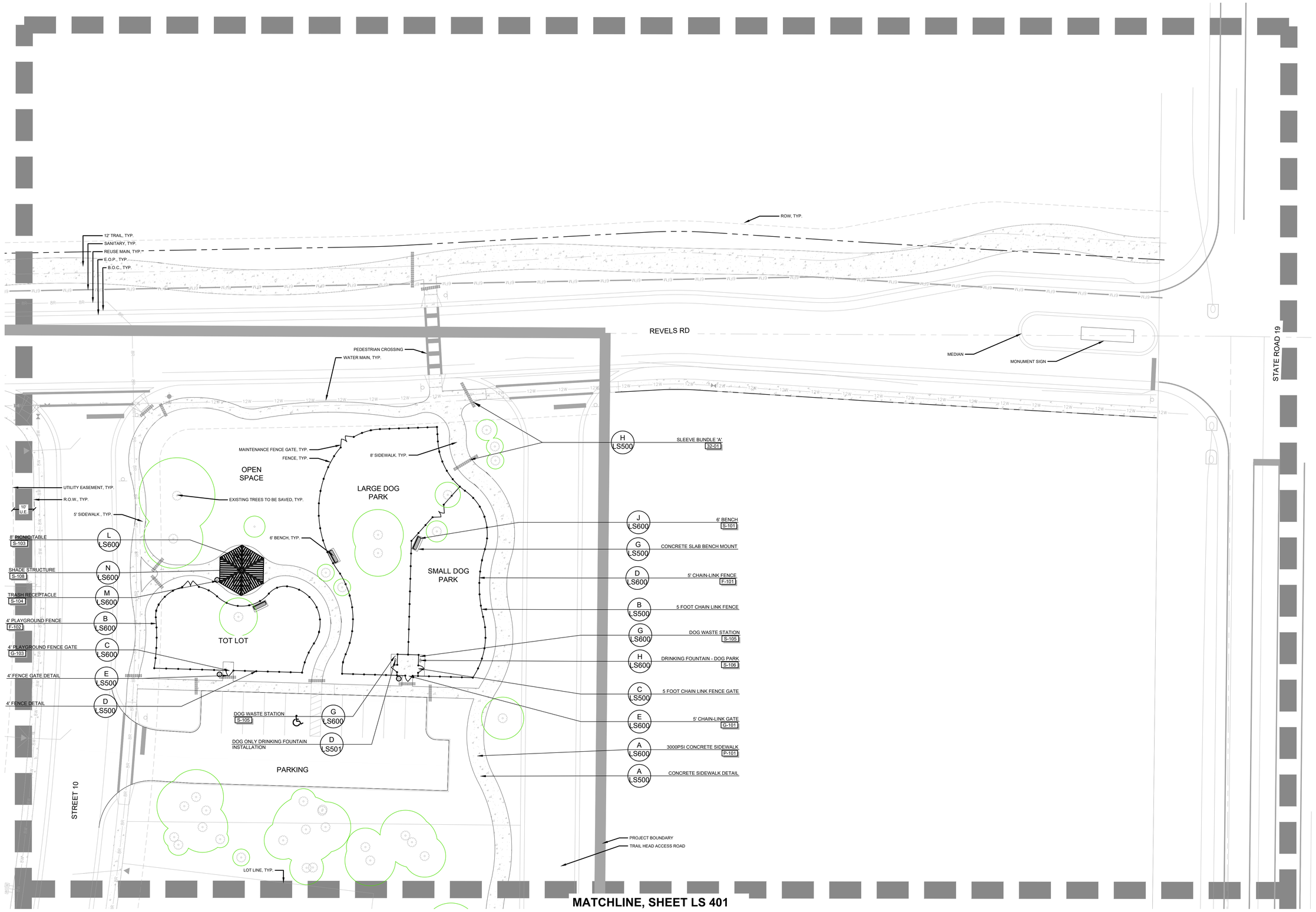
HARDSCAPE REF PLAN

LS100

01_ORIGINAL ISSUE

0 60' 120' 240'
SCALE: 1" = 120'-0"

L:\2025\25006053 - mission rise ta design (self tap ft\ 8\cd\06 landscape architecture\03 CD\01 phase 1 cmtal\02 current (dwn)\03 SHEETS\02_HARDSCAPE\25006053-LS100-REF_PLN.dwg 8/28/2025 john harre



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TOWN OF HOWEY-IN-THE-HILLS

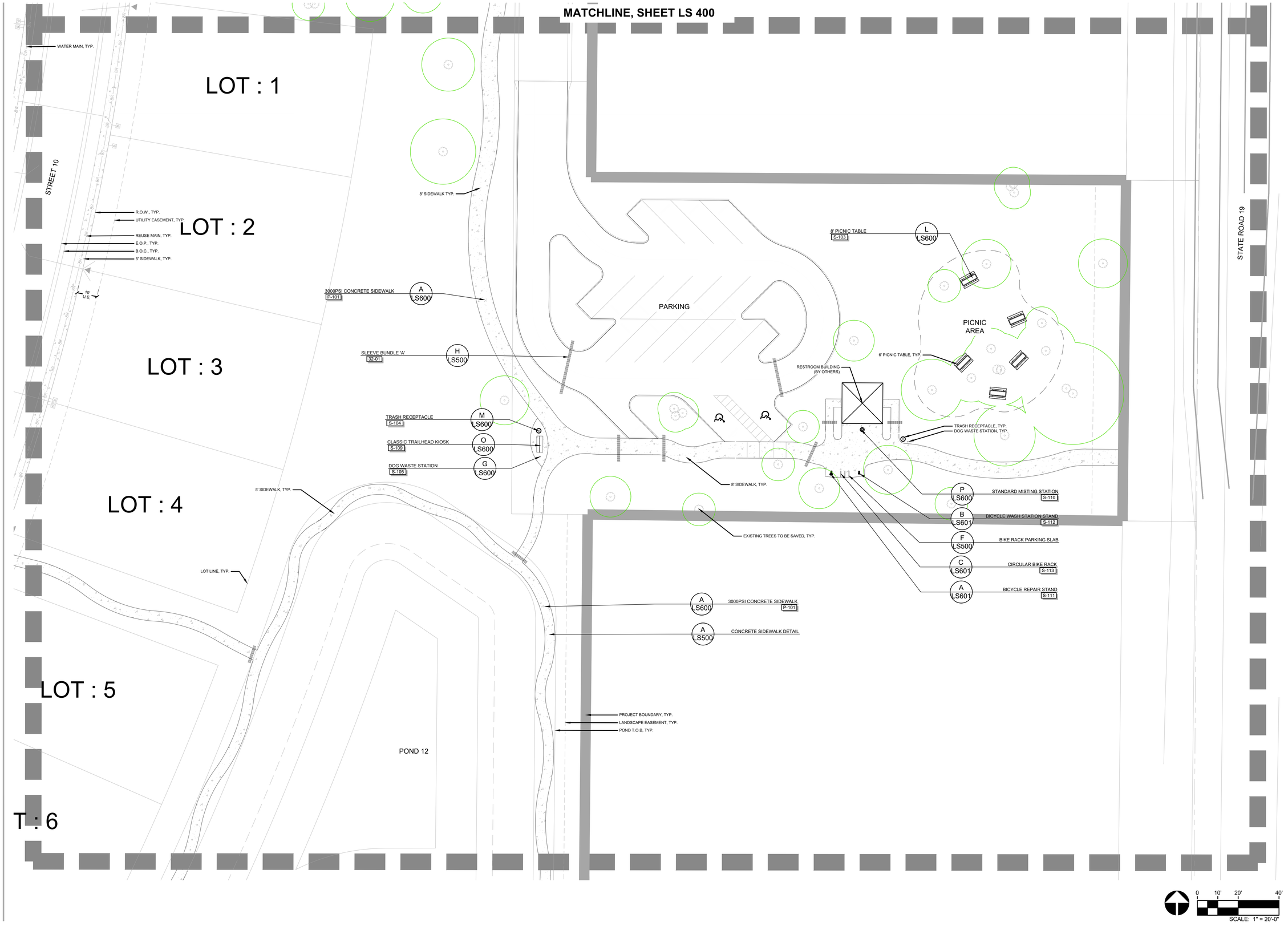
PROJECT NO :	25006053
DATE :	07/07/2025
DRAWN:	CD/JH
REVIEWED:	JC

REVISIONS

HARDSCAPE ENLARGEMENT

LS400

01_ORIGINAL ISSUE



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Check positive response codes before you dig!

MISSION RISE PHASE 1
PERMIT LANDSCAPE PLAN SET
TOWN OF HOWEY-IN-THE-HILLS

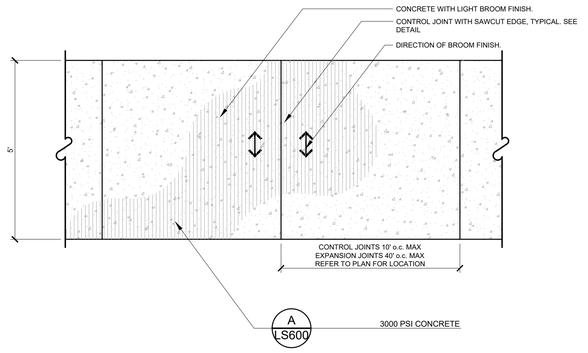
PROJECT NO :	25006053
DATE :	07/07/2025
DRAWN:	CD/JH
REVIEWED:	JC

REVISIONS

HARDSCAPE ENLARGEMENT

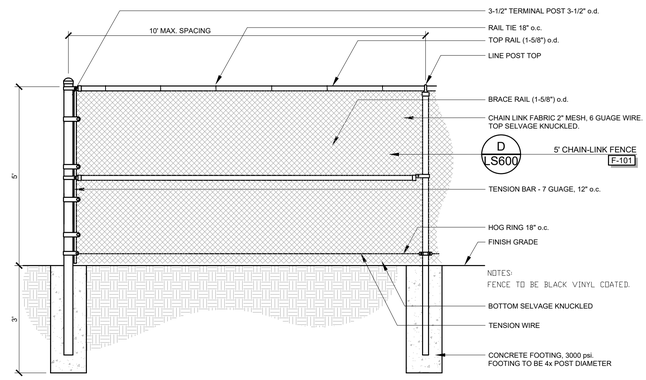
LS401

01_ORIGINAL ISSUE



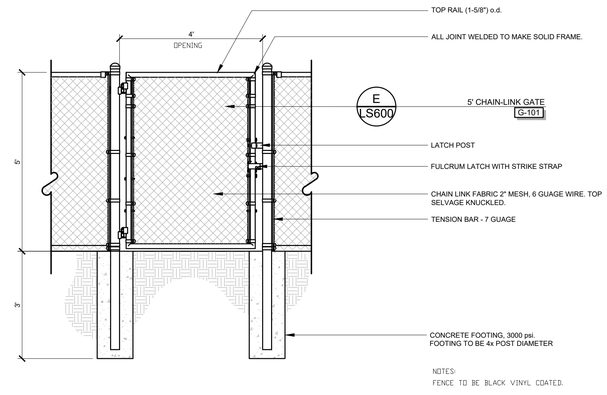
A CONCRETE SIDEWALK DETAIL

1/2" = 1'-0" RVI.ORL-2500605-169



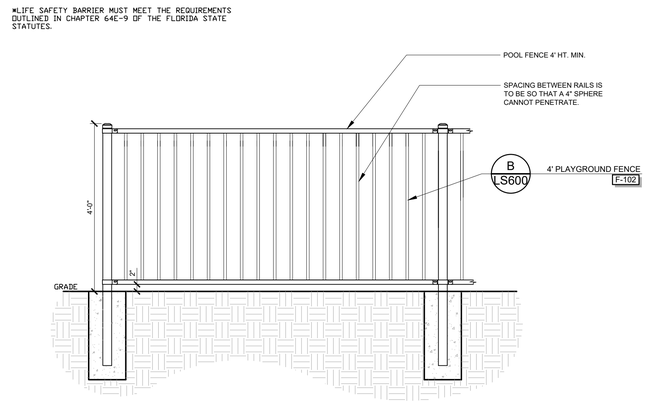
B 5 FOOT CHAIN LINK FENCE

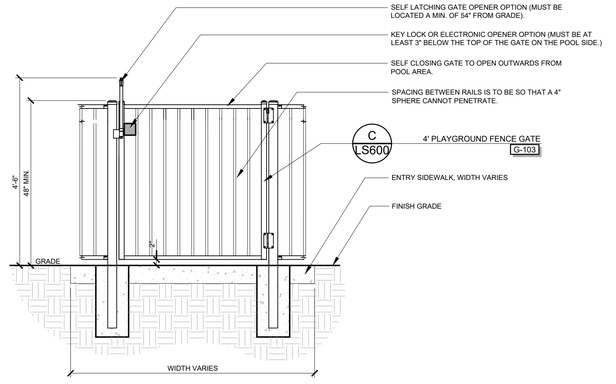
1/2" = 1'-0"

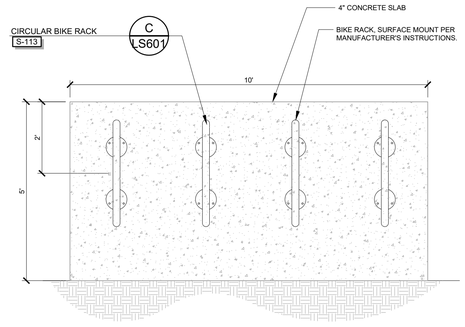


C 5 FOOT CHAIN LINK FENCE GATE

1/2" = 1'-0"







D 4' FENCE DETAIL

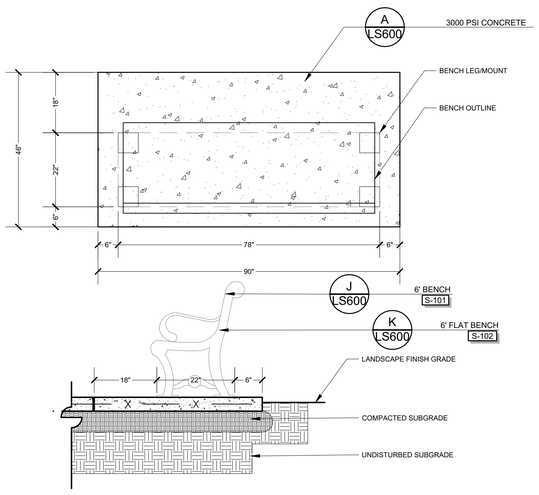
1" = 1'-0"

E 4' FENCE GATE DETAIL

1" = 1'-0"

F BIKE RACK PARKING SLAB

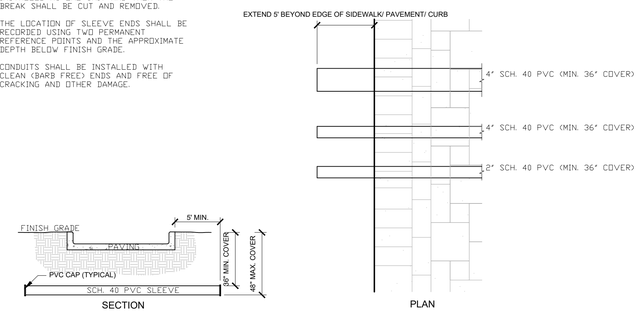
1/2" = 1'-0" RVI.ORL-22004433-314



G CONCRETE SLAB BENCH MOUNT

1/2" = 1'-0" RVI.ORL-2500605-323

NOTES:
1. TO FACILITATE FUTURE CABLE INSTALLATION, CONDUITS ARE PLACED AS STRAIGHT AS POSSIBLE WITHIN THE TRENCH.
2. WHERE CONDUIT BREAKS ARE ANTICIPATED (IE. AT ROAD CROSSINGS WITH MEDIAN ACCESS) THE ENTIRE LENGTH SHALL BE INSTALLED AS ONE UNIT AND THEN THE BREAK SHALL BE CUT AND REMOVED.
3. THE LOCATION OF SLEEVE ENDS SHALL BE RECORDED USING TWO PERMANENT REFERENCE POINTS AND THE APPROXIMATE DEPTH BELOW FINISH GRADE.
4. CONDUITS SHALL BE INSTALLED WITH CLEAN (BARB FREE) ENDS AND FREE OF CRACKING AND OTHER DAMAGE.



H SLEEVE BUNDLE 'A'

1/2" = 1'-0" RVI.ORL-2500605-158

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STATE OF FLORIDA LA 6667214 JACK E CALDWELL

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FL LICENSE NO. LA6667214

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MISSION ROAD RISE PHASE 1

PERMIT LANDSCAPE PLAN SET

TOWN OF HOWEY-IN-THE-HILLS

PROJECT NO :	25006053
DATE :	07/07/2025
DRAWN:	CD/JH
REVIEWED:	JC

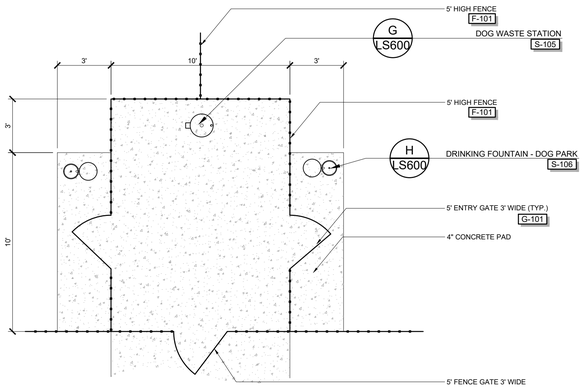
REVISIONS

HARDSCAPE DETAILS

LS500

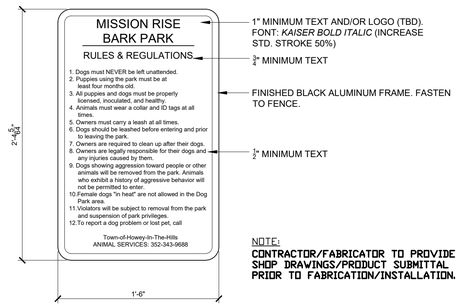
01_ORIGINAL ISSUE

L:\2025\25006053 - mission rise la design (ref fap ft, ocp)\06 landscape architecture\03 CD\01 phase 1 cert\02 current plans\03 SHEETS\02_HARDSCAPE\25006053-LS500-DETAILS_SERIES.dwg 8/28/2025 john hamr



A DOG PARK ENTRY DETAIL

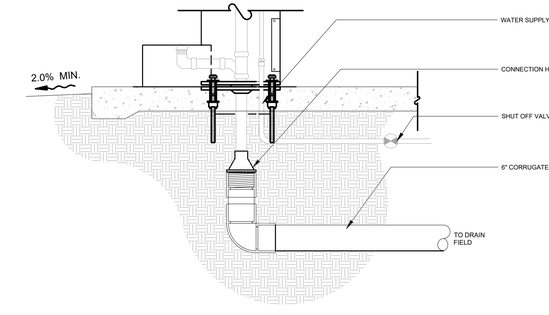
1/4" = 1'-0" RVI.ORL-2500605-327



NOTE:
CONTRACTOR/FABRICATOR TO PROVIDE SHOP DRAWINGS/PRODUCT SUBMITTAL PRIOR TO FABRICATION/INSTALLATION.

B FENCE SIGN WITH DOG PARK RULES DETAIL

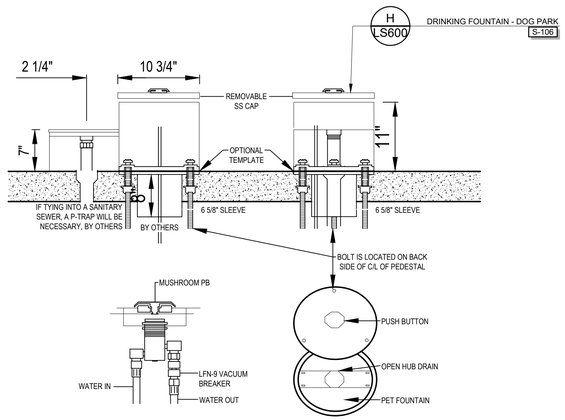
1 1/2" = 1'-0" RVI.ORL-2500605-326



C DOG FOUNTAIN WATER AND DRAIN CONNECTION

1" = 1'-0" RVI.ORL-24005471-284

MOST DEPENDABLE FOUNTAINS, INC.
5705 COMMANDER DR. P.O. BOX 587
ARLINGTON, TN 38002-0587
PHONE: (901) 867-0039
www.mostdependable.com



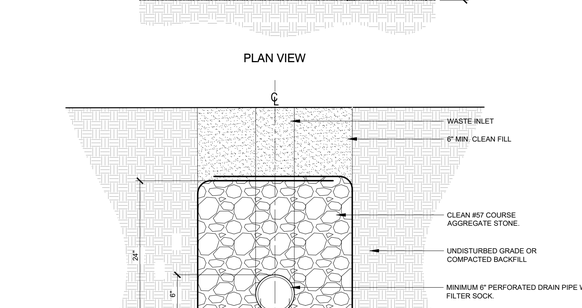
NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWING.
3. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY. THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION.
4. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.
5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 3354-9.5.

350 SM SS

SHOWN W/ OPTIONAL 10" SS SURFACE CARRIER

D DOG ONLY DRINKING FOUNTAIN INSTALLATION

1" = 1'-0" RVI.ORL-2500605-328



PLAN VIEW

SECTION VIEW

NOTE:
DRAIN FIELD BY GENERAL CONTRACTOR.

E TYPICAL DRAINFIELD FOR DOG FOUNTAIN DETAIL

1" = 1'-0" RVI.ORL-24005471-238

NOTE:
FINAL LOCATION/DIRECTION OF WATER SUPPLY LINE, TIE INS & WASTE LINE TO FIELD VERIFIED BY CONTRACTOR PRIOR TO INSTALLATION. CONDITIONS MAY VARY PER SITE PLAN. L.A. TO APPROVE FINAL LAYOUT.

F PLAN VIEW OF DOG FOUNTAIN DETAIL

1" = 1'-0" RVI.ORL-24005471-236

MOST DEPENDABLE FOUNTAINS, INC.
5705 COMMANDER DR. P.O. BOX 587
ARLINGTON, TN 38002-0587
PHONE: (901) 867-0039
www.mostdependable.com

NOTES:
1. OPTIONAL STAINLESS STEEL SURFACE CARRIER RECOMMENDED ON SURFACE MOUNT INSTALLATIONS.
2. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. DO NOT SCALE DRAWING.
4. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY. THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION.
5. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.
6. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 3354-10.35.

MODEL 505 SM RINSE STATION

SHOWN W/ OPTIONAL 8" SS SURFACE CARRIER

G DOG WASH STATION INSTALLATION

1" = 1'-0" RVI.ORL-2500605-329

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FL LICENSE NO. LA6667214

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MISSION RISE PHASE 1
PERMIT LANDSCAPE PLAN SET
TOWN OF HOWEY-IN-THE-HILLS

PROJECT NO :	25006053
DATE :	07/07/2025
DRAWN:	CD/JH
REVIEWED:	JC

REVISIONS

HARDSCAPE DETAILS

LS501

01_ORIGINAL ISSUE

L:\2025\25006053 - mission rise ta design (asf lisp fl, it)\04 landscape architecture\03 CD\01 phase 1 cmds\02 current plans\03 SHEETS\02_HARDSCAPE\25006053-LS500-DETAILS_SERIES.dwg 8/28/2025 john hare



PRODUCT INFORMATION:

MANUFACTURER: BY CONTRACTOR

MODEL: 4" CONCRETE, 3000 PSI AFTER 30 DAYS WITH LIGHT BROOM FINISH. SAW-CUT EVERY 5LF FOR PATHS (OR EQUAL TO WIDTH OF SIDEWALK)

COLOR: GREY

QUANTITY: BY CONTRACTOR

NOTES:

1. SEE PLAN FOR LAYOUT.

A 3000PSI CONCRETE SIDEWALK — P-101

1" = 1'-0"

RVI.ORL-2500605-138



PRODUCT INFORMATION:

SUPPLIER: BY CONTRACTOR
TYPE: 5' BLACK VINYL CHAIN LINK GATE
COLOR: BLACK VINYL COATING
QUANTITY: 3 (CONTRACTOR TO VERIFY)

NOTES:

1. INSTALL PER MANUFACTURERS SPECIFICATIONS AND FLORIDA BUILDING CODE. SHOP DRAWINGS SHALL BE SUBMITTED TO THE OWNER/ ARCHITECT FOR APPROVAL PRIOR TO FABRICATION. CONTRACTOR TO PROVIDE ALL REQUIRED HARDWARE.

E 5' CHAIN-LINK GATE — G-101

NOT TO SCALE



PRODUCT INFORMATION:

MANUFACTURER: MOST DEPENDABLE FOUNTAINS
MODEL: 595 SMSS TIMED HOSE BIBB/RINSE STATION

COLOR: TEXTURED EMERALD
QUANTITY: 1

https://www.mostdependable.com/product/505-smss-timed-hose-bibb-rinse-station/

NOTES:

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS

I DOG WASH STATION — S-107

NOT TO SCALE

PRODUCT INFORMATION:

MANUFACTURER: ANOVA
TYPE: 35 GALLON THERMORY TRASH RECEPTACLE OPEN TOP
SIZE: 32" H X 24" DIA.
COLOR: TEXTURED PEWTER LID & FRAME
QUANTITY: 6

https://www.anovafurnishings.com/collections/madison/madison-35-gallon-thermory-trash-receptacle-open-top

NOTES:

1. INSTALL PER MANUFACTURER'S SPECIFICATIONS AND FLORIDA BUILDING CODE. CONTRACTOR TO PROVIDE ALL REQUIRED HARDWARE.

M TRASH RECEPTACLE — S-104

1" = 1'-0"

RVI.ORL-2500605-338



PRODUCT INFORMATION:

MANUFACTURER: FLORIDA STATE FENCE
MODEL: 2-RAIL ALUMINUM
COLOR: BLACK
SIZE: 4' HT.
QUANTITY: 210 LF (CONTRACTOR TO VERIFY)

https://floridastatefence.com/commercial-services/commercial-aluminum-fencing/

NOTES:

INSTALL PER MANUFACTURER'S SPECIFICATIONS AND AS OUTLINED IN CHAPTER 64E-9 OF THE FLORIDA STATE STATUTES. 4" MAXIMUM OPENING BETWEEN RAILS, 2" MAXIMUM SPACE BETWEEN BOTTOM OF FENCE AND FINISHED GRADE.

B 4' PLAYGROUND FENCE — F-102

NOT TO SCALE



PRODUCT INFORMATION:

SUPPLIER: BY CONTRACTOR
TYPE: 5' BLACK VINYL CHAIN LINK GATE
COLOR: BLACK VINYL COATING
QUANTITY: 2 SETS (2 LEAFS EACH SET)

NOTES:

1. INSTALL PER MANUFACTURERS SPECIFICATIONS AND FLORIDA BUILDING CODE. SHOP DRAWINGS SHALL BE SUBMITTED TO THE OWNER/ ARCHITECT FOR APPROVAL PRIOR TO FABRICATION. CONTRACTOR TO PROVIDE ALL REQUIRED HARDWARE.

F 5' MAINTENANCE CHAIN-LINK GATE — G-102

NOT TO SCALE



PRODUCT INFORMATION:

MANUFACTURER: ANOVA
MODEL: MADISON 6' RECYCLED PLASTIC CONTOUR BENCH
SIZE: 35" H X 28" W X 79" L
COLOR: CEDAR SLATS TEXTURED PEWTER FRAME
QUANTITY: 3

https://www.anovafurnishings.com/collections/madison/madison-6-recycled-plastic-contour-bench

NOTES:

1. SEE PLAN FOR LOCATIONS. INSTALL PER MANUFACTURER'S SPECIFICATIONS.

J 6' BENCH — S-101

1" = 1'-0"



PRODUCT INFORMATION:

SUPPLIER: BY CONTRACTOR
TYPE: 24' SHADE STRUCTURE
COLOR: CONTRACTOR TO SUPPLY SAMPLE FOR APPROVAL BY THE CLIENT AND LANDSCAPE ARCHITECT
QUANTITY: 1 (CONTRACTOR TO VERIFY)

NOTES:

1. INSTALL PER MANUFACTURERS SPECIFICATIONS AND FLORIDA BUILDING CODE. SHOP DRAWINGS SHALL BE SUBMITTED TO THE OWNER/ ARCHITECT FOR APPROVAL PRIOR TO FABRICATION. CONTRACTOR TO PROVIDE ALL REQUIRED HARDWARE.

N SHADE STRUCTURE — S-108

NOT TO SCALE



METAL GATE

PRODUCT INFORMATION:

MANUFACTURER: AMERISTAR FENCE CORPORATION
MODEL: ALUMINUM 48" HT. GATE 5' WIDTH
COLOR: BLACK
SIZE: 4' HT., 5' WIDTH
QUANTITY: 2

HTTPS://WWW.AMERISTARPERIMETER.COM/US/EN

NOTES:

1. INSTALL PER MANUFACTURER'S SPECIFICATIONS AND FLORIDA BUILDING CODE. CONTRACTOR TO PROVIDE ALL REQUIRED HARDWARE.

C 4' PLAYGROUND FENCE GATE — G-103

1" = 1'-0"



PRODUCT INFORMATION:

MANUFACTURER: ANOVA
MODEL: UPBEAT DOG WASTE STATION
SIZE: 73" H X 13" W X 15" D
COLOR: GREEN
QUANTITY: 6

HTTPS://WWW.ANOVAFURNISHINGS.COM/CATEGORIES/PET-WASTE-SOLUTIONS/UPBEAT-DOG-WASTE-STATION-WITH-ROUND-PERFORATED-CAN-AND-ONEPUL-BAG-SYSTEM

NOTES:

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS

G DOG WASTE STATION — S-107

NOT TO SCALE



PRODUCT INFORMATION:

MANUFACTURER: ANOVA
MODEL: MADISON 6' RECYCLED PLASTIC FLAT BENCH
SIZE: 19" H X 20" W X 72" L
COLOR: CEDAR SLATS TEXTURED PEWTER FRAME
QUANTITY: 2

https://www.anovafurnishings.com/madison-6-recycled-plastic-flat-bench

NOTES:

1. SEE PLAN FOR LOCATIONS. INSTALL PER MANUFACTURER'S SPECIFICATIONS.

K 6' FLAT BENCH — S-102

1" = 1'-0"

PRODUCT INFORMATION:

SUPPLIER: BY CONTRACTOR
TYPE: CLASSIC TRAILHEAD KIOSK
COLOR: CONTRACTOR TO SUPPLY SAMPLE FOR APPROVAL BY THE CLIENT AND LANDSCAPE ARCHITECT
QUANTITY: 1 (CONTRACTOR TO VERIFY)

NOTES:

1. INSTALL PER MANUFACTURERS SPECIFICATIONS AND FLORIDA BUILDING CODE. SHOP DRAWINGS SHALL BE SUBMITTED TO THE OWNER/ ARCHITECT FOR APPROVAL PRIOR TO FABRICATION. CONTRACTOR TO PROVIDE ALL REQUIRED HARDWARE.

O CLASSIC TRAILHEAD KIOSK — S-109

NOT TO SCALE



PRODUCT INFORMATION:

SUPPLIER: BY CONTRACTOR
TYPE: 5' BLACK VINYL CHAIN-LINK FENCE
COLOR: BLACK
MOUNT TYPE: GROUND MOUNTED POST SET IN CONCRETE
QUANTITY: 445 LF (CONTRACTOR TO VERIFY)

NOTES:

1. INSTALL AS OUTLINED PER MANUFACTURER'S SPECIFICATIONS AND TO MEET OR EXCEED ALL STATE AND LOCAL BUILDING CODES. 4" MAXIMUM OPENING BETWEEN RAILS, 2" MAXIMUM SPACE BETWEEN BOTTOM OF FENCE AND FINISHED GRADE.

D 5' CHAIN-LINK FENCE — F-101

NOT TO SCALE



PRODUCT INFORMATION:

MANUFACTURER: MOST DEPENDABLE FOUNTAINS
MODEL: 350 SMSS
COLOR: GREEN
QUANTITY: 2

HTTPS://WWW.MOSTDEPENDABLE.COM/PRODUCT/350-SMSS/

NOTES:

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS

H DRINKING FOUNTAIN - DOG PARK — S-106

1" = 1'-0"



PRODUCT INFORMATION:

MANUFACTURER: ANOVA
MODEL: 8' RECTANGULAR PICNIC TABLE
SIZE: 34" H X 65" W X 96" L
COLOR: CEDAR SLATS, TEXTURED PEWTER FRAME
QUANTITY: 7 (CONTRACTOR TO VERIFY)

https://www.anovafurnishings.com/categories/picnic-tables/8-rectangular-recycled-plastic-picnic-table

NOTES:

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS

L 8' PICNIC TABLE — S-103

NTS

PRODUCT INFORMATION:

SUPPLIER: PLUMBING SUPPLY
TYPE: 535-SSS THE MISTER - STANDARD MISTING STATION
COLOR: BLUE
QUANTITY: 1 (CONTRACTOR TO VERIFY)

https://www.plumbingsupply.com/colorfulmisters.html

NOTES:

1. INSTALL PER MANUFACTURERS SPECIFICATIONS AND FLORIDA BUILDING CODE. SHOP DRAWINGS SHALL BE SUBMITTED TO THE OWNER/ ARCHITECT FOR APPROVAL PRIOR TO FABRICATION. CONTRACTOR TO PROVIDE ALL REQUIRED HARDWARE.

P STANDARD MISTING STATION — S-110

NOT TO SCALE

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MISSION RISE PHASE 1

PERMIT LANDSCAPE PLAN SET

TOWN OF HOWEY-IN-THE-HILLS

PROJECT NO :	25006053
DATE :	07/07/2025
DRAWN:	CD/JH
REVIEWED:	JC

REVISIONS

HARDSCAPE SPECIFICATIONS

LS600

01_ORIGINAL ISSUE

L:\2025\25006053 - mission rise la design (asf lap ft, ltr)\06 landscape architecture\05 CD\01 phase 1 cmts\02 current plans\03 SHEETS\02_HARDSCAPE\25006053-LS600-SPECS_SERIES.dwg 8/28/2025 john harre



PRODUCT INFORMATION:

SUPPLIER:	SARIS INFRASTRUCTURE
TYPE:	PUBLIC BIKE REPAIR STAND - 26302BLK
COLOR:	BLACK
SIZE:	8.5" W X 50" H X 16" D
QUANTITY:	1 (CONTRACTOR TO VERIFY)

https://sarisinfrastructure.com/products/public-work-stand?srsltid=AfmBOooOwuaf2V7dTVl0Sv6TgH7kaZgOrDesaQ3aXvlv2VL0YNQyQ2IS

NOTES:

1. INSTALL PER MANUFACTURERS SPECIFICATIONS AND FLORIDA BUILDING CODE. SHOP DRAWINGS SHALL BE SUBMITTED TO THE OWNER/ ARCHITECT FOR APPROVAL PRIOR TO FABRICATION. CONTRACTOR TO PROVIDE ALL REQUIRED HARDWARE.

A BICYCLE REPAIR STAND S-111

NOT TO SCALE



PRODUCT INFORMATION:

SUPPLIER:	SARIS INFRACTURE
TYPE:	PUBLIC BIKE WASH STATION 26702BLK
COLOR:	BLACK
SIZE:	10.2"W X 50" H X 16" D
QUANTITY:	1 (CONTRACTOR TO VERIFY)

https://cdn.shopify.com/s/files/1/0685/4662/5750/files/Wash_Station_Sell_Sheet_-_Draft_1.pdf?v=1727783302

NOTES:

1. INSTALL PER MANUFACTURERS SPECIFICATIONS AND FLORIDA BUILDING CODE. SHOP DRAWINGS SHALL BE SUBMITTED TO THE OWNER/ ARCHITECT FOR APPROVAL PRIOR TO FABRICATION. CONTRACTOR TO PROVIDE ALL REQUIRED HARDWARE.

B BICYCLE WASH STATION STAND S-112

NOT TO SCALE



PRODUCT INFORMATION:

MANUFACTURER:	THE PARK AND FACILITIES CATALOG www.theparkcatalog.com sales@theparkcatalog.com PHONE: 800.695.3503 FAX: 561-620-8668
MODEL:	2 BIKE CIRCULAR RACK
SIZE:	2-3/8" ROUND TUBING
COLOR:	STAINLESS STEEL
QUANTITY:	3 (CONTRACTOR TO VERIFY)

NOTES:

1. SEE PLAN FOR LOCATION. INSTALL PER MANUFACTURER'S SPECIFICATIONS.

C CIRCULAR BIKE RACK S-113

1" = 1'-0"

RVI.ORL-2500605-340

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MISSION RISE PHASE 1

PERMIT LANDSCAPE PLAN SET

TOWN OF HOWEY-IN-THE-HILLS

PROJECT NO :	25006053
DATE :	07/07/2025
DRAWN:	CD/JH
REVIEWED:	JC

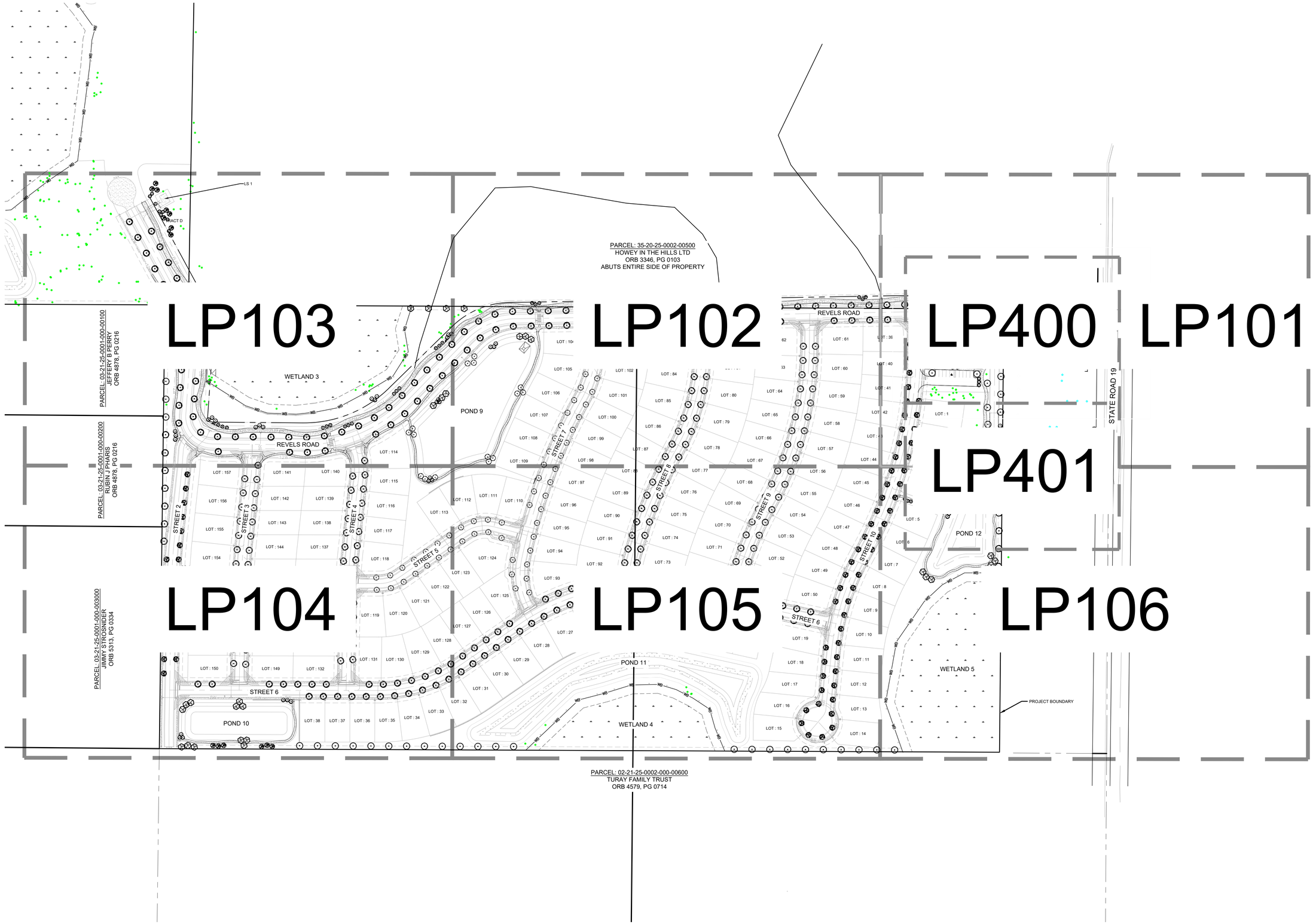
REVISIONS

HARDSCAPE SPECIFICATIONS

LS601

01_ORIGINAL ISSUE

L:\2025\25006053 - mission rise la design (asf tap fl, llc)\06 landscape architecture\03 CD\01 phase 1 cmla\02 current plans\03 SHEETS\02_HARDSCAPE\25006053-LS600-SPECS_SERIES.dwg 8/28/2025 john haire



0 60' 120' 240'
SCALE: 1" = 120'-0"

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MISSION RISE PHASE 1
PERMIT LANDSCAPE PLAN SET
TOWN OF HOWEY-IN-THE-HILLS

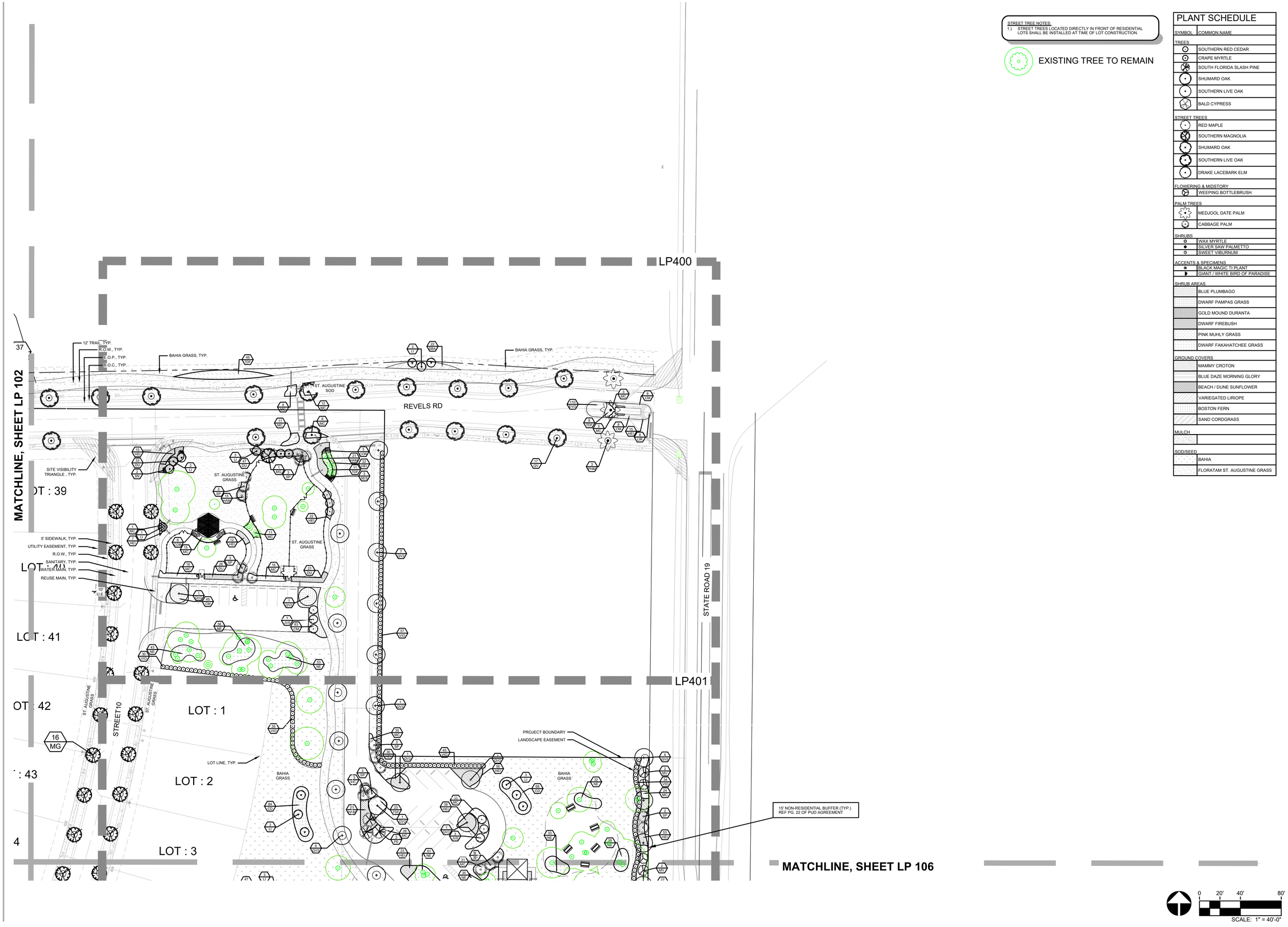
PROJECT NO :	25006053
DATE :	07/07/2025
DRAWN:	CD/JH
REVIEWED:	JC

REVISIONS

LANDSCAPE REF PLAN

LP100

01_ORIGINAL ISSUE



STREET TREE NOTES:
1.) STREET TREES LOCATED DIRECTLY IN FRONT OF RESIDENTIAL LOTS SHALL BE INSTALLED AT TIME OF LOT CONSTRUCTION.

EXISTING TREE TO REMAIN

PLANT SCHEDULE

SYMBOL	COMMON NAME
TREES	
	SOUTHERN RED CEDAR
	CRAPE MYRTLE
	SOUTH FLORIDA SLASH PINE
	SHUMARD OAK
	SOUTHERN LIVE OAK
	BALD CYPRESS
STREET TREES	
	RED MAPLE
	SOUTHERN MAGNOLIA
	SHUMARD OAK
	SOUTHERN LIVE OAK
	DRAKE LACEBARK ELM
FLOWERING & MIDSTORY	
	WEEPING BOTTLEBRUSH
PALM TREES	
	MEDJOOL DATE PALM
	CABBAGE PALM
SHRUBS	
	WAX MYRTLE
	SILVER SAW PALMETTO
	SWEET VIBURNUM
ACCENTS & SPECIMENS	
	BLACK MAGIC TI PLANT
	GIANT / WHITE BIRD OF PARADISE
SHRUB AREAS	
	BLUE PLUMBAGO
	DWARF PAMPAS GRASS
	GOLD MOUND DURANTA
	DWARF FIREBUSH
	PINK MUHLY GRASS
	DWARF FAKAHATCHEE GRASS
GROUND COVERS	
	MAMMY CROTON
	BLUE DAZE MORNING GLORY
	BEACH / DUNE SUNFLOWER
	VARIEGATED LIRIOPE
	BOSTON FERN
	SAND CORDGRASS
MULCH	
SOD/SEED	
	BAHIA
	FLORATAM ST. AUGUSTINE GRASS

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MISSION RISE PHASE 1
PERMIT LANDSCAPE PLAN SET
TOWN OF HOWEY-IN-THE-HILLS

PROJECT NO :	25006053
DATE :	07/07/2025
DRAWN:	CD/JH
REVIEWED:	JC

REVISIONS

LANDSCAPE PLAN

LP101

01_ORIGINAL ISSUE

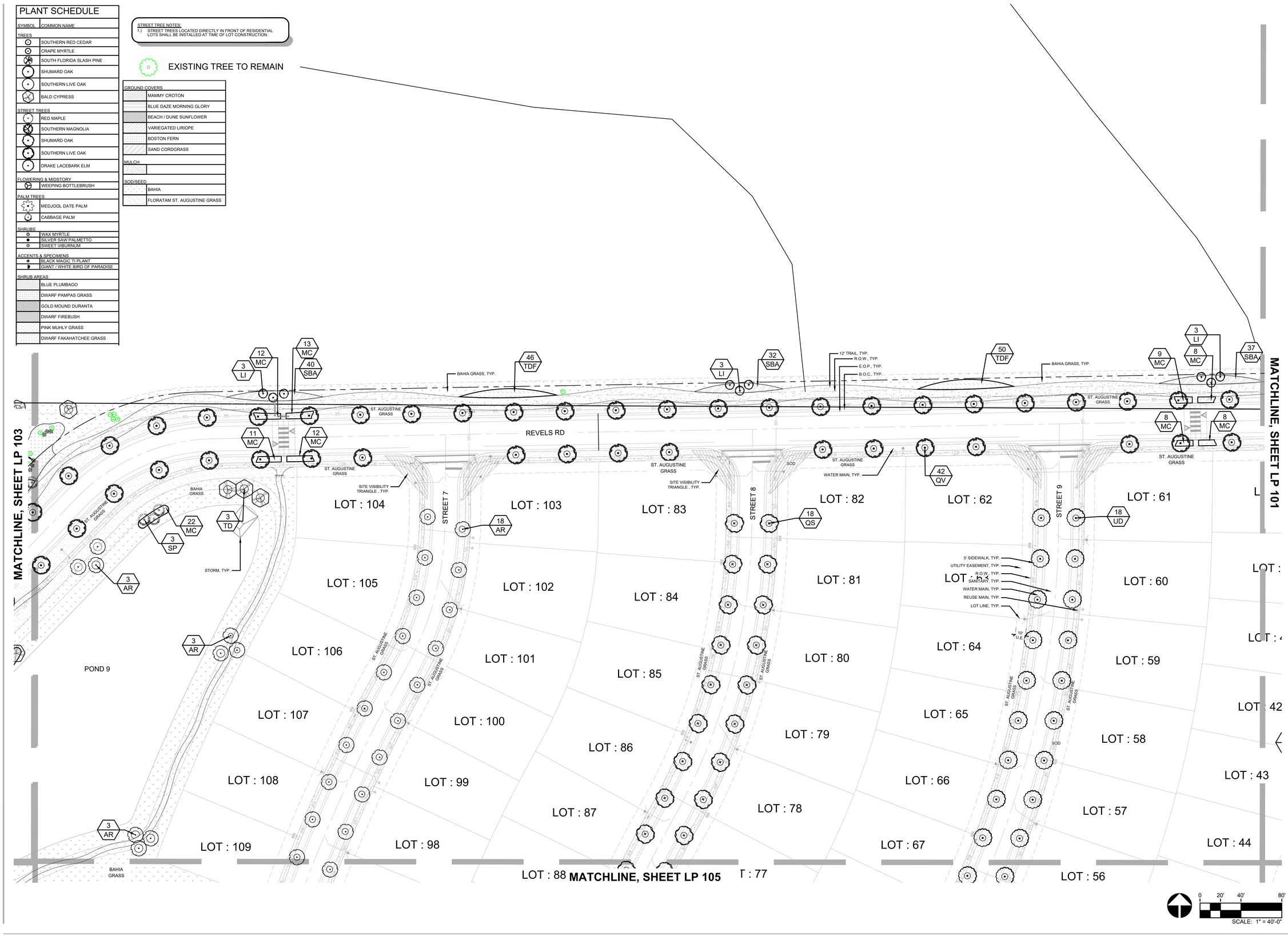
PLANT SCHEDULE

SYMBOL	COMMON NAME
TREES	
	SOUTHERN RED CEDAR
	CRAPE MYRTLE
	SOUTH FLORIDA SLASH PINE
	SHUMARD OAK
	SOUTHERN LIVE OAK
	BALD CYPRESS
STREET TREES	
	RED MAPLE
	SOUTHERN MAGNOLIA
	SHUMARD OAK
	SOUTHERN LIVE OAK
	DRAKE LACEBARK ELM
FLOWERING & MIDSTORY	
	WEEPING BOTTLEBRUSH
PALM TREES	
	MEDJOOL DATE PALM
	CABBAGE PALM
SHRUBS	
	WAX MYRTLE
	SILVER SAW PALMETTO
	SWEET VIBURNUM
ACCENTS & SPECIMENS	
	BLACK MAGIC TI PLANT
	GIANT / WHITE BIRD OF PARADISE
SHRUB AREAS	
	BLUE PLUMBAGO
	DWARF PAMPAS GRASS
	GOLD MOUND DURANTA
	DWARF FIREBUSH
	PINK MUHLY GRASS
	DWARF FAKAHATCHEE GRASS

STREET TREE NOTES:
1.) STREET TREES LOCATED DIRECTLY IN FRONT OF RESIDENTIAL LOTS SHALL BE INSTALLED AT TIME OF LOT CONSTRUCTION.

EXISTING TREE TO REMAIN

GROUND COVERS	
	MAMMY CROTON
	BLUE DAZE MORNING GLORY
	BEACH / DUNE SUNFLOWER
	VARIEGATED LIRIOPE
	BOSTON FERN
	SAND CORDGRASS
MULCH	
SOD/SEED	
	BAHIA
	FLORATAM ST. AUGUSTINE GRASS



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MISSION RISE PHASE 1

PERMIT LANDSCAPE PLAN SET

TOWN OF HOWEY-IN-THE-HILLS

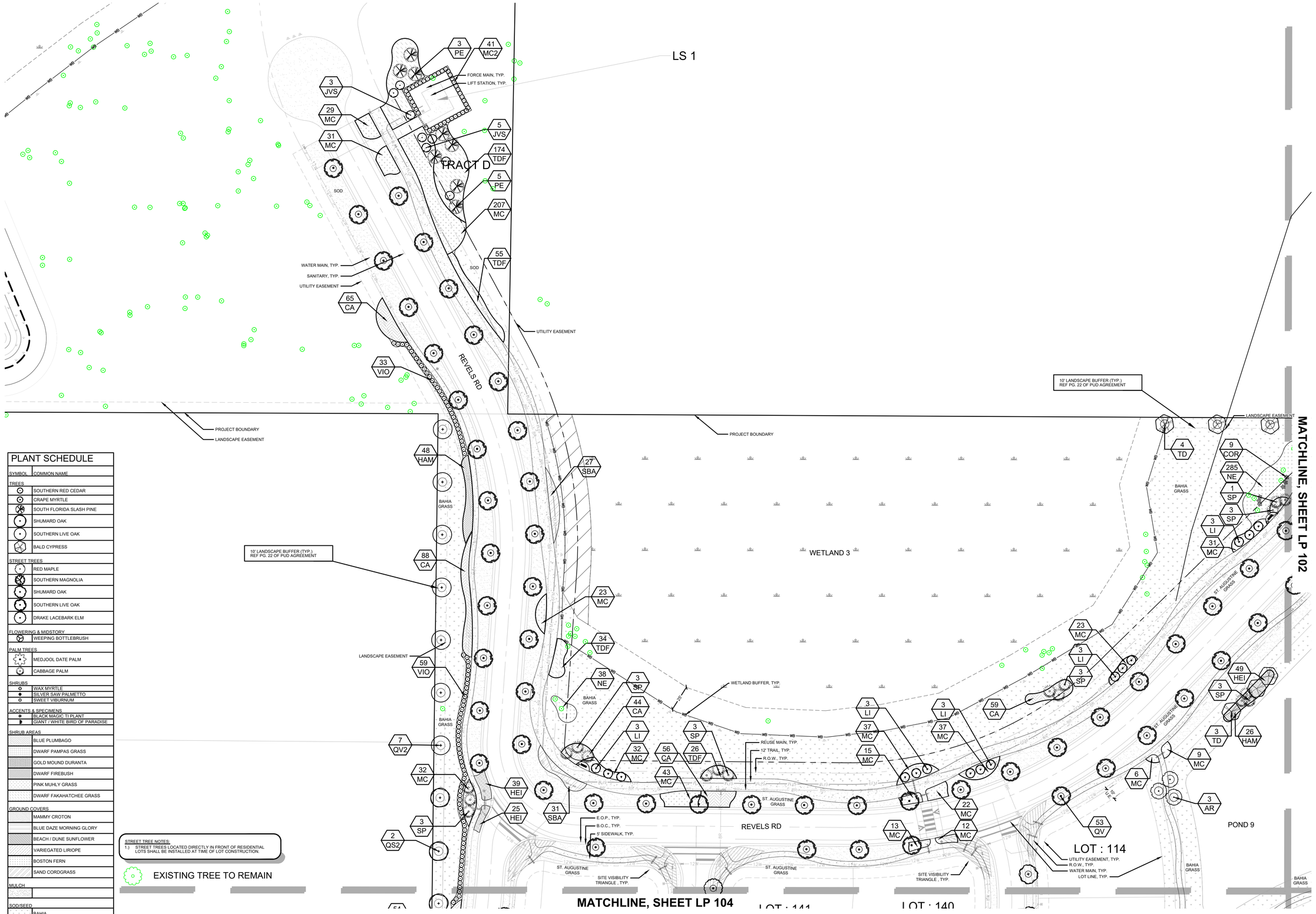
PROJECT NO :	25006053
DATE :	07/07/2025
DRAWN:	CD/JH
REVIEWED:	JC

REVISIONS

LANDSCAPE PLAN

LP102

01_ORIGINAL ISSUE



PLANT SCHEDULE

SYMBOL	COMMON NAME
TREES	
	SOUTHERN RED CEDAR
	CRAPE MYRTLE
	SOUTH FLORIDA SLASH PINE
	SHUMARD OAK
	SOUTHERN LIVE OAK
	BALD CYPRESS
STREET TREES	
	RED MAPLE
	SOUTHERN MAGNOLIA
	SHUMARD OAK
	SOUTHERN LIVE OAK
	DRAKE LACEBARK ELM
FLOWERING & MIDSTORY	
	WEEPING BOTTLEBRUSH
PALM TREES	
	MEDJOOL DATE PALM
	CABBAGE PALM
SHRUBS	
	WAX MYRTLE
	SILVER SAW PALMETTO
	SWEET VIBURNUM
ACCENTS & SPECIMENS	
	BLACK MAGIC TI PLANT
	GIANT / WHITE BIRD OF PARADISE
SHRUB AREAS	
	BLUE PLUMBAGO
	DWARF PAMPAS GRASS
	GOLD MOUND DURANTA
	DWARF FIREBUSH
	PINK MUHLY GRASS
	DWARF FAKAHATCHEE GRASS
GROUND COVERS	
	MAMMY CROTON
	BLUE DAZE MORNING GLORY
	BEACH / DUNE SUNFLOWER
	VARIEGATED LIRIOPE
	BOSTON FERN
	SAND CORDGRASS
MULCH	
SOD/SEED	
	BAHIA
	FLORATAM ST. AUGUSTINE GRASS

STREET TREE NOTES:
1.) STREET TREES LOCATED DIRECTLY IN FRONT OF RESIDENTIAL LOTS SHALL BE INSTALLED AT TIME OF LOT CONSTRUCTION.

EXISTING TREE TO REMAIN

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MISSION RISE PHASE 1
PERMIT LANDSCAPE PLAN SET
TOWN OF HOWEY-IN-THE-HILLS

PROJECT NO :	25006053
DATE :	07/07/2025
DRAWN:	CD/JH
REVIEWED:	JC

REVISIONS

LANDSCAPE PLAN

LP103

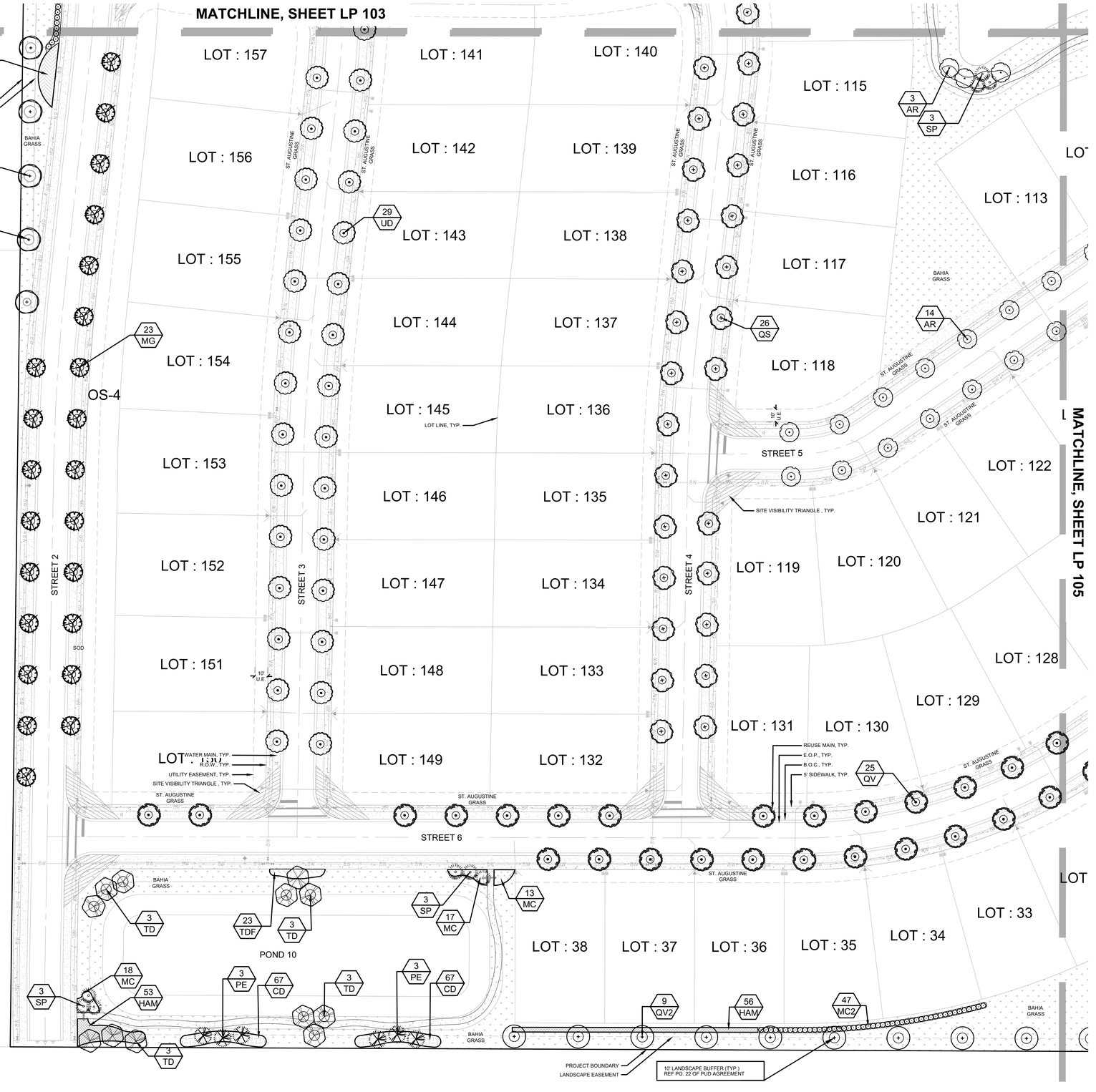
01_ORIGINAL ISSUE

PLANT SCHEDULE

SYMBOL	COMMON NAME
TREES	
	SOUTHERN RED CEDAR
	CRAPE MYRTLE
	SOUTH FLORIDA SLASH PINE
	SHUMARD OAK
	SOUTHERN LIVE OAK
	BALD CYPRESS
STREET TREES	
	RED MAPLE
	SOUTHERN MAGNOLIA
	SHUMARD OAK
	SOUTHERN LIVE OAK
	DRAKE LACEBARK ELM
FLOWERING & MIDSTORY	
	WEEPING BOTTLEBRUSH
PALM TREES	
	MEDJOOL DATE PALM
	CABBAGE PALM
SHRUBS	
	WAX MYRTLE
	SILVER SAW PALMETTO
	SWEET VIBURNUM
ACCENTS & SPECIMENS	
	BLACK MAGIC TI PLANT
	GIANT / WHITE BIRD OF PARADISE
SHRUB AREAS	
	BLUE PLUMBAGO
	DWARF PAMPAS GRASS
	GOLD MOUND DURANTA
	DWARF FIREBUSH
	PINK MUHLY GRASS
	DWARF FAKAHATCHEE GRASS
GROUND COVERS	
	MAMMY CROTON
	BLUE DAZE MORNING GLORY
	BEACH / DUNE SUNFLOWER
	VARIEGATED LIRIOPE
	BOSTON FERN
	SAND CORDGRASS
MULCH	
SOD/SEED	
	BAHIA
	FLORATAM ST. AUGUSTINE GRASS

STREET TREE NOTES:
1.) STREET TREES LOCATED DIRECTLY IN FRONT OF RESIDENTIAL LOTS SHALL BE INSTALLED AT TIME OF LOT CONSTRUCTION.

EXISTING TREE TO REMAIN



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MISSION RISE PHASE 1
PERMIT LANDSCAPE PLAN SET
TOWN OF HOWEY-IN-THE-HILLS

PROJECT NO :	25006053
DATE :	07/07/2025
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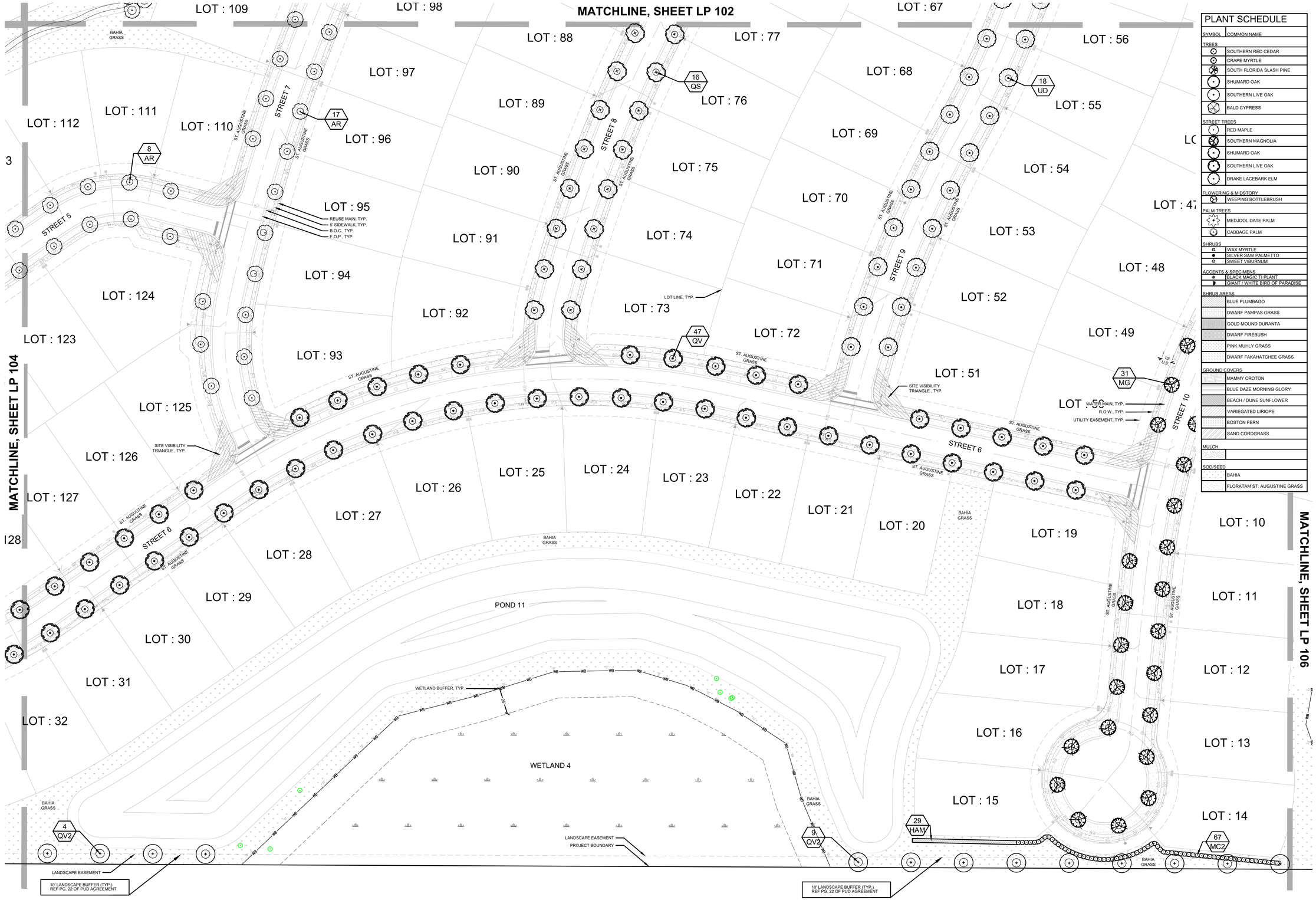
REVIEWED:	JC

REVISIONS

LANDSCAPE PLAN

LP104

01_ORIGINAL ISSUE



PLANT SCHEDULE

SYMBOL	COMMON NAME
TREES	
	SOUTHERN RED CEDAR
	CRAPE MYRTLE
	SOUTH FLORIDA SLASH PINE
	SHUMARD OAK
	SOUTHERN LIVE OAK
	BALD CYPRESS
STREET TREES	
	RED MAPLE
	SOUTHERN MAGNOLIA
	SHUMARD OAK
	SOUTHERN LIVE OAK
	DRAKE LACEBARK ELM
FLOWERING & MIDSTORY	
	WEEPING BOTTLEBRUSH
PALM TREES	
	MEDJOOL DATE PALM
	CABBAGE PALM
SHRUBS	
	WAX MYRTLE
	SILVER SAW PALMETTO
	SWEET VIBURNUM
ACCENTS & SPECIMENS	
	BLACK MAGIC TI PLANT
	GIANT / WHITE BIRD OF PARADISE
SHRUB AREAS	
	BLUE PLUMBAGO
	DWARF PAMPAS GRASS
	GOLD MOUND DURANTA
	DWARF FIREBUSH
	PINK MUHLY GRASS
	DWARF FAKAHATCHEE GRASS
GROUND COVERS	
	MAMMY CROTON
	BLUE DAZE MORNING GLORY
	BEACH / DUNE SUNFLOWER
	VARIEGATED LIRIOPE
	BOSTON FERN
	SAND CORDGRASS
MULCH	
SOD/SEED	
	BAHIA
	FLORATAM ST. AUGUSTINE GRASS

EXISTING TREE TO REMAIN

STREET TREE NOTES:
1.) STREET TREES LOCATED DIRECTLY IN FRONT OF RESIDENTIAL LOTS SHALL BE INSTALLED AT TIME OF LOT CONSTRUCTION.

0 20' 40' 80'
SCALE: 1" = 40'-0"

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MISSION RISE PHASE 1
PERMIT LANDSCAPE PLAN SET
TOWN OF HOWEY-IN-THE-HILLS

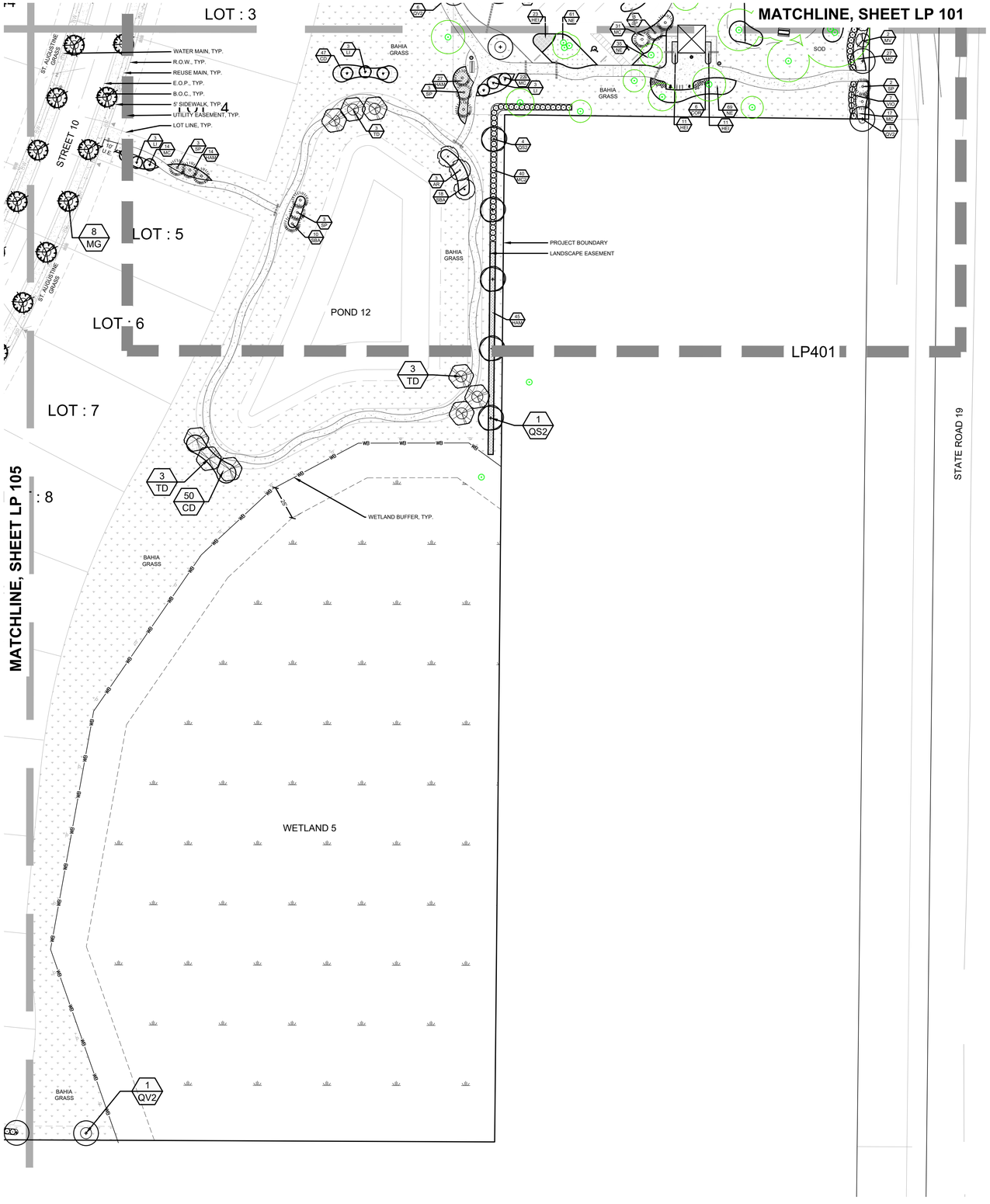
PROJECT NO :	25006053
DATE :	07/07/2025
DRAWN:	CD/JH
REVIEWED:	JC

REVISIONS

LANDSCAPE PLAN

LP105

01_ORIGINAL ISSUE



STREET TREE NOTES:
1.) STREET TREES LOCATED DIRECTLY IN FRONT OF RESIDENTIAL LOTS SHALL BE INSTALLED AT TIME OF LOT CONSTRUCTION.

EXISTING TREE TO REMAIN

PLANT SCHEDULE	
SYMBOL	COMMON NAME
TREES	
	SOUTHERN RED CEDAR
	CRAPE MYRTLE
	SOUTH FLORIDA SLASH PINE
	SHUMARD OAK
	SOUTHERN LIVE OAK
	BALD CYPRESS
STREET TREES	
	RED MAPLE
	SOUTHERN MAGNOLIA
	SHUMARD OAK
	SOUTHERN LIVE OAK
	DRAKE LACEBARK ELM
FLOWERING & MIDSTORY	
	WEEPING BOTTLEBRUSH
PALM TREES	
	MEDJOOL DATE PALM
	CABBAGE PALM
SHRUBS	
	WAX MYRTLE
	SILVER SAW PALMETTO
	SWEET VIBURNUM
ACCENTS & SPECIMENS	
	BLACK MAGIC TI PLANT
	GIANT / WHITE BIRD OF PARADISE
SHRUB AREAS	
	BLUE PLUMBAGO
	DWARF PAMPAS GRASS
	GOLD MOUND DURANTA
	DWARF FIREBUSH
	PINK MUHLY GRASS
	DWARF FAKAHATCHEE GRASS
GROUND COVERS	
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	BOSTON FERN
	SAND CORDGRASS
MULCH	
SOD/SEED	
	BAHIA
	FLORATAM ST. AUGUSTINE GRASS

0 20' 40' 80'
SCALE: 1" = 40'-0"

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MISSION RISE PHASE 1
PERMIT LANDSCAPE PLAN SET
TOWN OF HOWEY-IN-THE-HILLS

PROJECT NO :	25006053
DATE :	07/07/2025
DRAWN:	CD/JH
REVIEWED:	JC

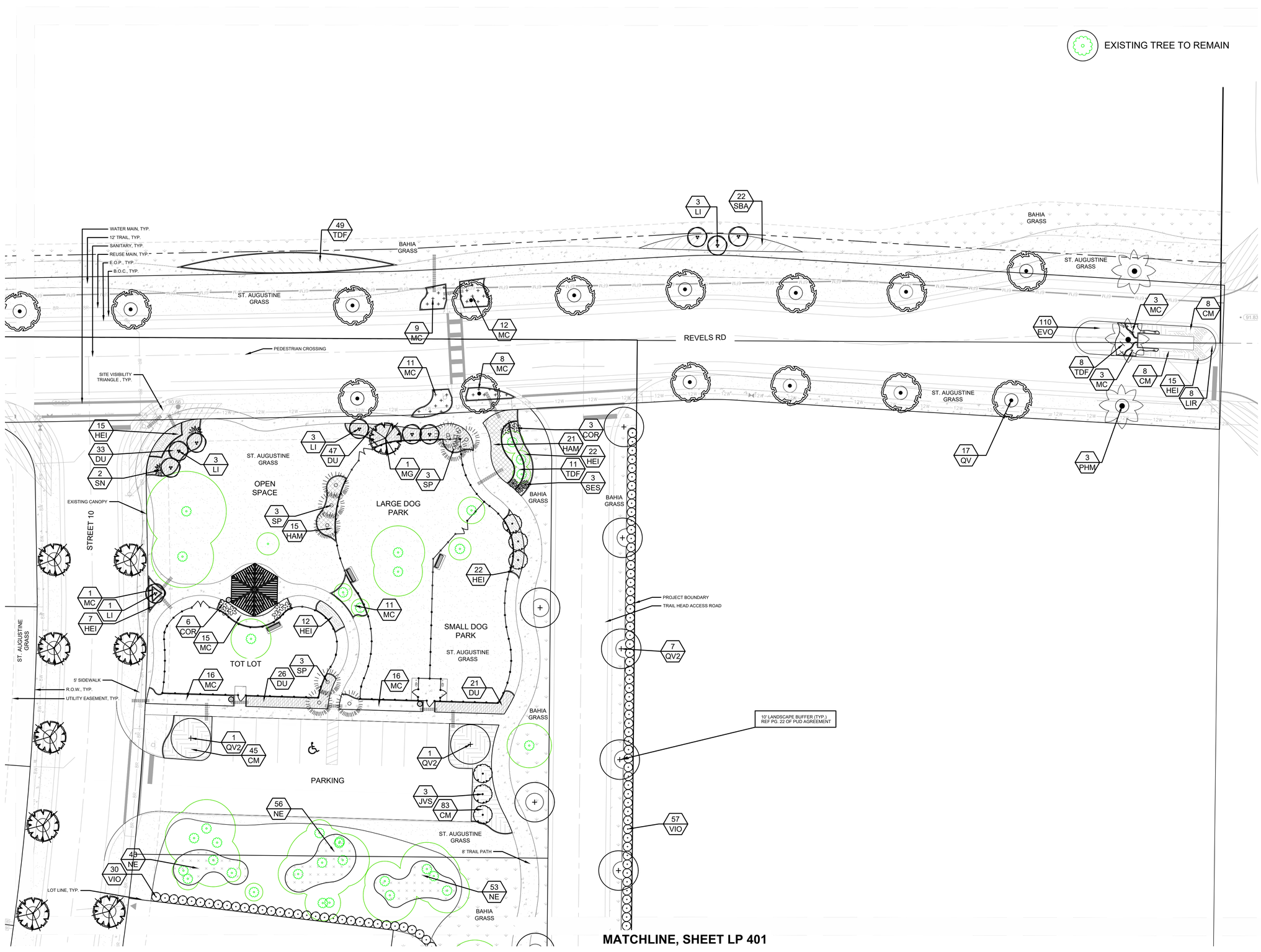
REVISIONS

LANDSCAPE PLAN

LP106

01_ORIGINAL ISSUE

L:\2025\25006053 - mission rise la design (def lap ft, lic)\06 landscape architecture\03 CD\01 phase 1 cmts\02 current plans\03 SHEETS\03_LANDSCAPE\25006053-LP101-PLN_SERIES.dwg 8/28/2025 john hamm



PLANT SCHEDULE

SYMBOL	COMMON NAME
TREES	
	SOUTHERN RED CEDAR
	CRAPE MYRTLE
	SOUTH FLORIDA SLASH PINE
	SHUMARD OAK
	SOUTHERN LIVE OAK
	BALD CYPRESS
STREET TREES	
	RED MAPLE
	SOUTHERN MAGNOLIA
	SHUMARD OAK
	SOUTHERN LIVE OAK
	DRAKE LACEBARK ELM
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	WEEPING BOTTLEBRUSH
PALM TREES	
	MEDJOOL DATE PALM
	CABBAGE PALM
SHRUBS	
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MISSION RISE PHASE 1
PERMIT LANDSCAPE PLAN SET
TOWN OF HOWEY-IN-THE-HILLS

PROJECT NO :	25006053
DATE :	07/07/2025
DRAWN:	CD/JH
REVIEWED:	JC

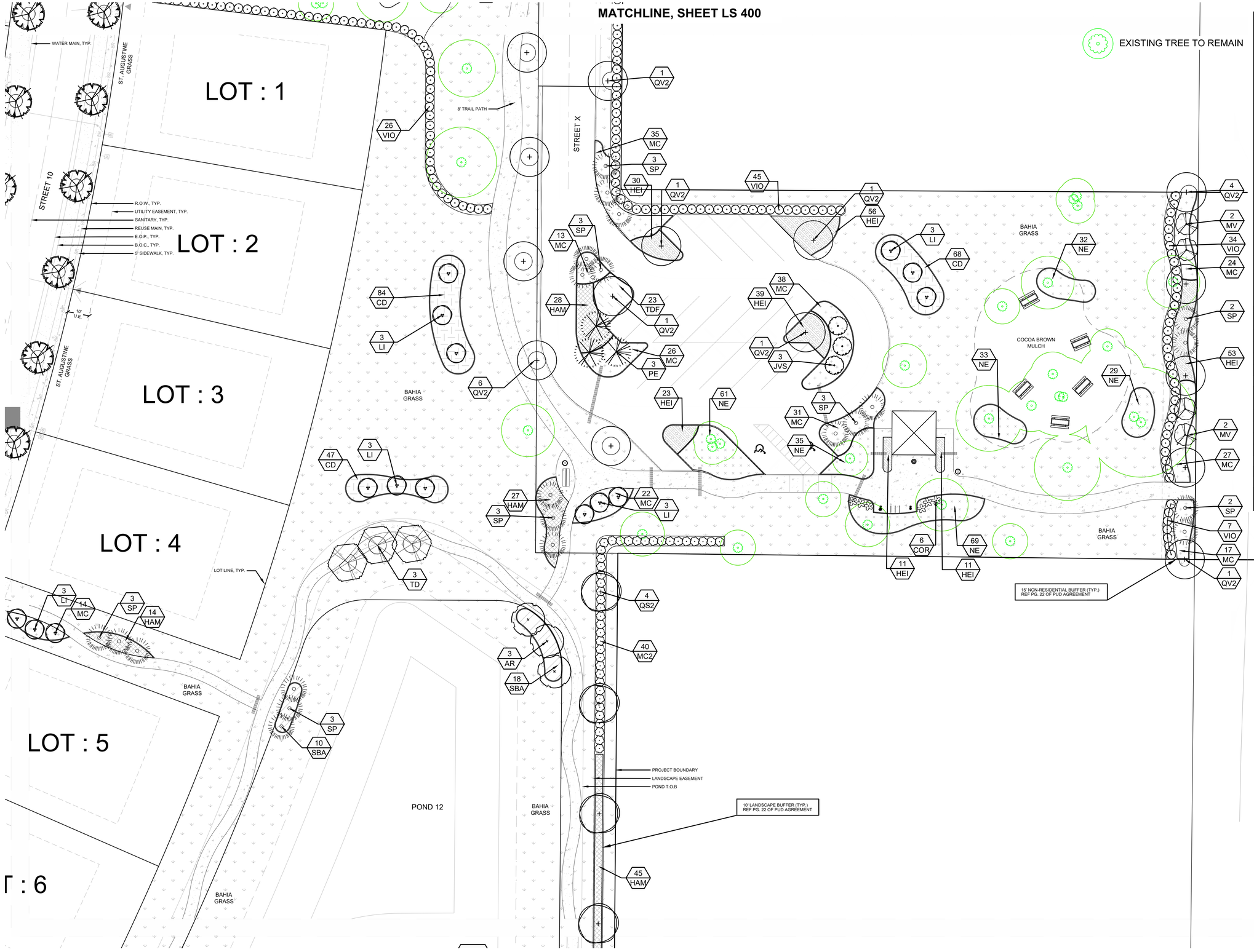
REVISIONS

LANDSCAPE ENLARGEMENT

LP400

01_ORIGINAL ISSUE

0 10' 20' 40'
SCALE: 1" = 20'-0"



PLANT SCHEDULE

SYMBOL	COMMON NAME
TREES	
	SOUTHERN RED CEDAR
	CRAPE MYRTLE
	SOUTH FLORIDA SLASH PINE
	SHUMARD OAK
	SOUTHERN LIVE OAK
	BALD CYPRESS
STREET TREES	
	RED MAPLE
	SOUTHERN MAGNOLIA
	SHUMARD OAK
	SOUTHERN LIVE OAK
	DRAKE LACEBARK ELM
FLOWERING & MIDSTORY	
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	DWARF FAKAHATCHEE GRASS
GROUND COVERS	
	MAMMY CROTON
	BLUE DAZE MORNING GLORY
	BEACH / DUNE SUNFLOWER
	VARIEGATED LIRIOPE
	BOSTON FERN
	SAND CORDGRASS
MULCH	
SOD/SEED	
	BAHIA
	FLORATAM ST. AUGUSTINE GRASS

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111 North Magnolia Avenue
Suite 1350
Orlando, Florida 32801
Tel: 407.680.0650
www.rviplanning.com

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JACK E. CALDWELL, P.L.A.
FL LICENSE NO. LA6667214

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MISSION RISE PHASE 1
PERMIT LANDSCAPE PLAN SET
TOWN OF HOWEY-IN-THE-HILLS

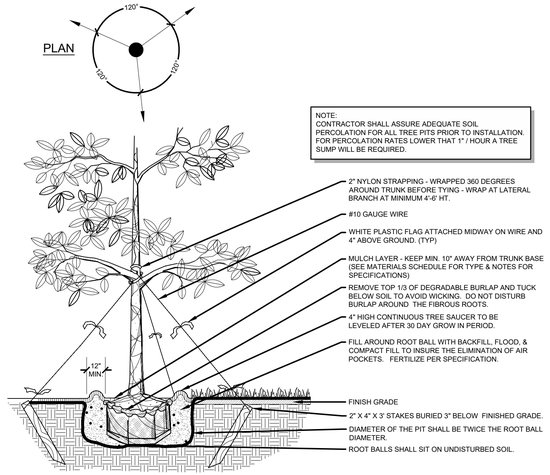
PROJECT NO :	25006053
DATE :	07/07/2025
DRAWN:	CD/JH
REVIEWED:	JC

REVISIONS

LANDSCAPE ENLARGEMENT

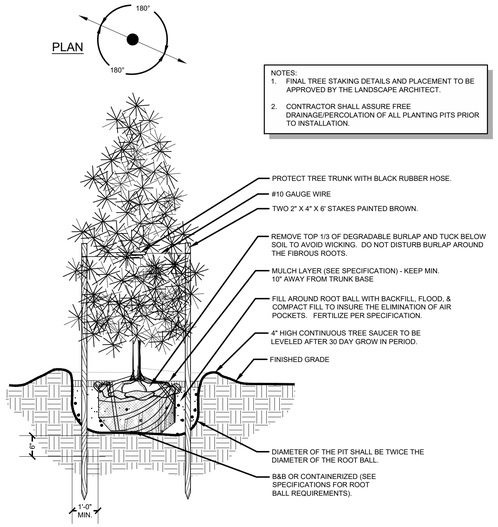
LP401

01_ORIGINAL ISSUE



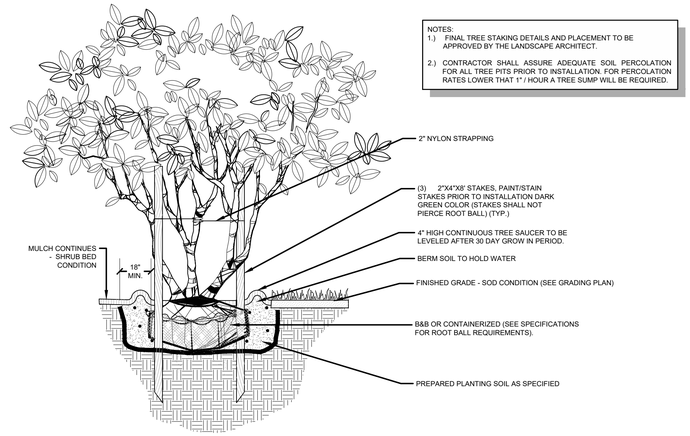
A LARGE TREE INSTALLATION & STAKING

N.T.S. RVI.ORL-2500605-124



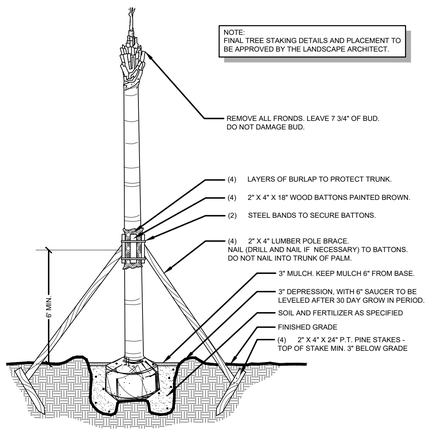
B SMALL TREE INSTALLATION

N.T.S. RVI.ORL-2500605-125



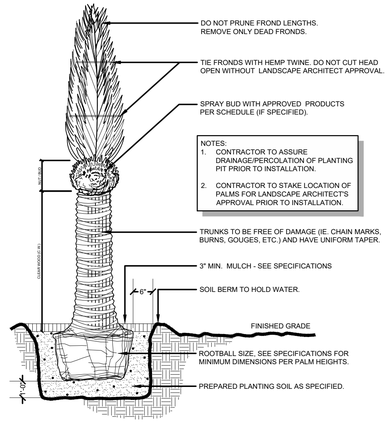
C MULTI-TRUNK TREE INSTALLATION & STAKING

N.T.S. RVI.ORL-2500605-128



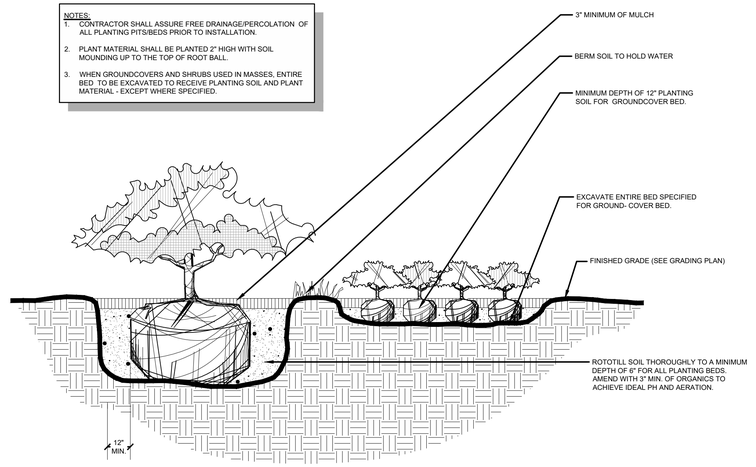
D CABBAGE PALM INSTALLATION

N.T.S. RVI.ORL-2500605-02



E SPECIMEN PALM INSTALLATION

N.T.S. RVI.ORL-2500605-127



F SHRUB AND GROUNDCOVER INSTALLATION

N.T.S. RVI.ORL-2500605-129

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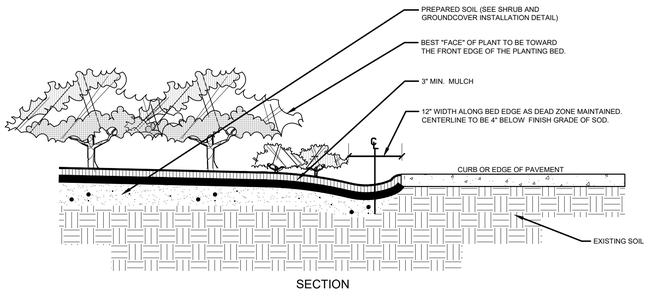
REVISIONS

LANDSCAPE DETAILS

LP500

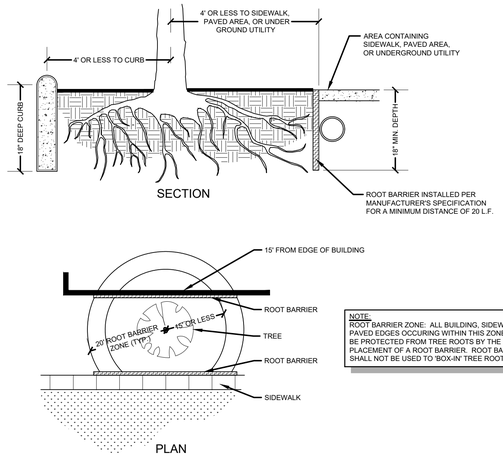
01_ORIGINAL ISSUE

L:\25025\25006053 - mission rise ta design (asf lisp ft, 4)\04 landscape architecture\03 CD\01 phase 1 cards\02 current plans\03 SHEETS\XA_LANDSCAPE\25006053-LP500-DETAILS_SERIES.dwg 8/28/2025 john harre



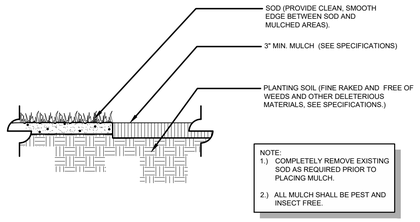
NOTE:
ALL SHRUBS AND GROUNDCOVER MASSES TO USE TRIANGULAR SPACING EXCEPT WHERE NOTED REFER TO PLANT LIST FOR INDIVIDUAL PLANT SPACING 'X'.

A TYPICAL PLANT SPACING DIAGRAM
N.T.S. RVI.ORL-2500605-130



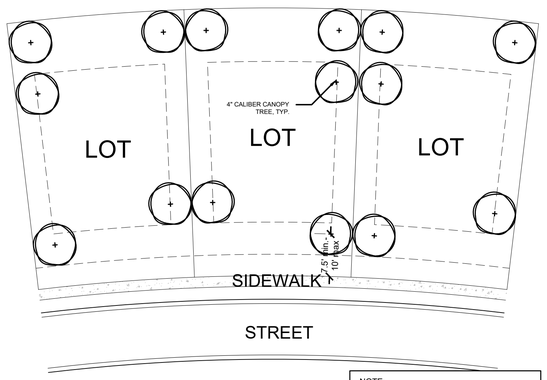
NOTE:
ROOT BARRIER ZONE: ALL BUILDING, SIDEWALK, OR PAVED EDGES OCCURING WITHIN THIS ZONE SHALL BE PROTECTED FROM TREE ROOTS BY THE PLACEMENT OF A ROOT BARRIER. ROOT BARRIERS SHALL NOT BE USED TO 'BOX-IN' TREE ROOTS.

B ROOT BARRIER DETAIL
N.T.S. RVI.ORL-2500605-08



NOTE:
1.) COMPLETELY REMOVE EXISTING SOD AS REQUIRED PRIOR TO PLACING MULCH.
2.) ALL MULCH SHALL BE PEST AND INSECT FREE.

C MULCH APPLICATION - TYPE 1
N.T.S. RVI.ORL-2500605-15



NOTE:
SEE CIVIL DRAWING FOR BUILDING FOOTPRINTS SETBACK RECRUITMENTS AND LOT DIMENSIONS.

D TYPICAL LOT CODE REQUIRED TREE LOCATIONS
N.T.S. RVI.ORL-2500605-343

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LANDSCAPE DETAILS

LP501

01_ORIGINAL ISSUE

GENERAL LANDSCAPE:

1. TREES AND SHRUBS SHALL NOT BE PLACED WITHIN THE MIDDLE TWO-THIRDS (⅔) OF ANY DRAINAGE SWALE OR WITHIN THREE (3) FEET MEASURED HORIZONTALLY FROM THE CENTERLINE OF THE DRAINAGE SWALE +/- WHICHEVER IS GREATER. SWALES MUST ALLOW FOR THE POSITIVE FLOW OF WATER WITHOUT OBSTRUCTION.
2. ACTIVITIES HAVE BEEN SHIFTED AWAY FROM EXISTING TREES WHERE POSSIBLE. ADDITIONAL TREES ARE NOT BEING SHOWN FOR REMOVAL. ANY TREES SHOWN NEAR LAKE CONSTRUCTION OR UTILITIES WILL BE AVOIDED AS POSSIBLE THROUGH THE USE OF RETAINING WALLS AND JACK AND BORING PROCEDURES. IF DURING INSTALLATION OF THESE ELEMENTS TREES ARE LOST THEY WILL BE REPLACED PER MANATEE COUNTY CODE.
3. LANDSCAPE PRACTICES FOR THIS PROJECT SHALL CONFORM TO ALL LANDSCAPE AND LAND DEVELOPMENT CODES OF LAKE COUNTY, FL.
4. THE CONTRACTOR SHALL NOTIFY ALL NECESSARY UTILITY COMPANIES 48 HOURS MINIMUM PRIOR TO DIGGING FOR VERIFICATION OF ALL UNDERGROUND UTILITIES. IRRIGATION AND ALL OTHER OBSTRUCTIONS AND COORDINATE WITH OWNER'S REPRESENTATIVE PRIOR TO INITIATING OPERATIONS. SHOULD THE LANDSCAPE CONTRACTOR CAUSE DAMAGE TO ANY UTILITIES, NECESSARY REPAIRS SHALL BE MADE AS QUICKLY AS PRACTICABLE. AT CONTRACTORS EXPENSE.
   "INVESTIGATE BEFORE YOU EXCAVATE"
   CALL SUNSHINE STATE ONE
   1-800-432-4770 TOLL FREE
   FL STATUTE 553.851 (1979) REQUIRES MIN. 2 DAYS NOTICE AND MAX. OF 5 DAYS NOTICE BEFORE YOU EXCAVATE
5. THE LIMITS OF CONSTRUCTION ARE DEFINED BY THE 'PROJECT BOUNDARY' (LIMITS, ETC...) NOTED ON THE DRAWINGS.
6. THE CONTRACTOR SHALL FIELD VERIFY ALL INFORMATION PRIOR TO INITIATING PLANTING INSTALLATION. ALL EXISTING PLANTING SHALL REMAIN INTACT AND UNDISTURBED UNLESS OTHERWISE NOTED ON THE PLANS. ALL EXISTING SITE FURNISHINGS, PAVING, LANDSCAPE AND OTHER ELEMENTS TO REMAIN SHALL BE PROTECTED FROM ANY DAMAGE UNLESS OTHERWISE NOTED.
7. SEE ALL GRADING PLANS, PAVEMENT, WALLS, AND SITE FURNISHINGS PLANS FOR ADDITIONAL NOTES, SITE PREPARATION, AND OTHER PERTINENT INFORMATION.
8. LANDSCAPE CONTRACTOR SHALL FIELD STAKE THE LOCATION OF ALL PLANT MATERIAL PRIOR TO INITIATING INSTALLATION FOR THE REVIEW AND APPROVAL OF THE LANDSCAPE ARCHITECT.
9. REPORT ANY DISCREPANCIES BETWEEN THE CONSTRUCTION DRAWINGS AND FIELD CONDITIONS TO THE OWNER'S REPRESENTATIVE IMMEDIATELY.
10. THE LANDSCAPE CONTRACTOR SHALL CLEAN THE WORK AREAS AT THE END OF EACH WORKING DAY. RUBBISH AND DEBRIS SHALL BE COLLECTED AND DEPOSITED OFF SITE DAILY. ALL MATERIALS, PRODUCTS, AND EQUIPMENT SHALL BE STORED IN AN ORGANIZED FASHION IN THE AREA DIRECTED BY THE OWNER'S REPRESENTATIVE.
11. THE LOCATION OF THE LANDSCAPE HOLDING AREA WILL BE IDENTIFIED BY THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL ADHERE TO THE ACCESS ROUTES TO AND FROM THE HOLDING AREA WITHOUT DISRUPTING OR IMPEDING ACCESS TO THE SITE BY OTHERS.
12. IN ORDER TO EXPEDITE THE PROGRESS OF THE WORK, THE LANDSCAPE CONTRACTOR SHALL COORDINATE ALL WORK WITH RELATED CONTRACTORS AND WITH THE GENERAL CONSTRUCTION OF THE PROJECT.
13. THE ATTACHED PLANTING PLANS ARE A GRAPHIC REPRESENTATION FOR THE AESTHETIC TREATMENT OF THE DESIGNATED SITE. ACTUAL PLANT MATERIAL LOCATIONS WILL VARY TO COMPLIMENT EXISTING VEGETATION, SITE CONDITION FEATURES, AND TO PROVIDE SAFETY. PLANT MATERIAL SELECTIONS MAY CHANGE BASED UPON AVAILABILITY, ON SITE SPECIFIC CONDITIONS; AND ARE NOT LIMITED TO THE PLANT MATERIAL LISTED IN THE PLANT SCHEDULE. MINIMUM QUANTITY AND QUALITY WILL BE MAINTAINED. THE LANDSCAPE ARCHITECT RETAINS THE RIGHT TO MAKE NECESSARY OR REQUIRED CHANGES AS DICTATED BY THE ABOVE ITEMS. NO SUBSTITUTIONS WILL BE ALLOWED WITHOUT PRIOR WRITTEN PERMISSION OF THE LANDSCAPE ARCHITECT.
21. FIRE HYDRANTS SHALL HAVE CLEARANCES OF SEVEN AND ONE HALF FEET (7'-6") IN FRONT AND TO THE SIDES OF THE FIRE HYDRANT, WITH A FOUR FEET (4') CLEARANCE TO THE REAR OF THE FIRE HYDRANT PER THE NATIONAL FIRE PREVENTION ASSOCIATION (NFPA).

PROJECT SUBMITTALS:

1. THE PROJECT SUBMITTALS LIST WILL BE GENERATED BY THE LANDSCAPE ARCHITECT AND MUST BE COMPLETED BY THE CONTRACTOR AND APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO PROJECT COMMENCEMENT.
2. ALL PROJECT SUBMITTALS MUST BE COMPLETED AND COMPLIED IN AN EASILY REPRODUCIBLE FORM. SUBMITTAL SHEETS THAT ARE NOT LEGIBLE AND REPRODUCIBLE WILL BE REJECTED. SUBMITTALS SHEETS THAT DO NOT CLEARLY IDENTIFY THE PRODUCTS OR MATERIALS SELECTED WILL BE REJECTED.
3. PRODUCTS INSTALLED ON THE PROJECT SITE THAT ARE NOT CONSISTENT WITH THE PROJECT SUBMITTALS WILL BE REMOVED AND REPLACED WITH THE PRODUCTS IDENTIFIED IN THE PROJECT SUBMITTAL PACKAGE AT THE CONTRACTORS EXPENSE.

REQUIRED SUBMITTAL FORM:

Submittals/Category	Submitted	Rejected	Re-submitted	Approved
General Submittals				
Emergency Numbers MOT index				
Video				
Locate Tickets				
Project Schedule				
Landscape Submittals				
Plant Nursery List All Nursery State Inspection Certification				
Mulch				
Pesticide License				
Staking Methods				
Soil Sample Analysis				
Fertilizer				
Irrigation Submittals				
Purple Class 200 PVC				
SCH 40 PVC Pipe Fittings				
Gasketed Class 200 PVC				
Ductile Iron Fittings				
Valve Boxes				
Valves				
Netafim Drip Tubing & Staples, and Fittings				
Netafim Disc Filter				
Netafim PRV Valve				
Netafim Flush Valve				
Magnetic Detector Tape				
Grounding Rod				
Wire				
Wire Connectors				
Primer and Glue				

SAMPLE

PROJECT SCHEDULE:

1. ALL WORK SHALL BE COMPLETED WITHIN THE TIME ALLOTTED IN THE PROJECT SCHEDULE.
2. WITHIN SEVEN (7) DAYS OF RECEIPT OF "NOTICE TO PROCEED" THE SUCCESSFUL BIDDER WILL FURNISH A CRITICAL PATH SCHEDULE REFLECTING THE ABOVE DATES. THIS SCHEDULE WILL INCLUDE VERIFIABLE MILESTONES TO ENABLE MONITORING OF THE PROJECT SCHEDULE DURING THE CONSTRUCTION PERIOD.

LIQUIDATED DAMAGES:

1. THE SUCCESSFUL BIDDER SHALL HAVE ITS WORK SUBSTANTIALLY COMPLETED BY THE RESPECTIVE TIMEFRAME. THE TERM "SUBSTANTIAL COMPLETION" SHALL REFER TO THE DATE OF COMPLETION FOR THE CONTRACTOR'S PORTION OF THE WORK, AS ESTABLISHED IN THE VARIOUS PHASES OF THE SCHEDULE.
2. BY SUBMITTING THE BID, THE BIDDER AGREES THAT THE PERIODS FOR PERFORMING THE WORK ARE REASONABLE, AND THAT THE BIDDERS WORK CAN BE SUBSTANTIALLY COMPLETE BY ITS APPLICABLE DATE(S) FOR SUBSTANTIAL COMPLETION.
3. IF THE SUCCESSFUL BIDDER DOES NOT HAVE THE WORK ON THE PROJECT SUBSTANTIALLY COMPLETE BY THE DATE(S) IDNETIFIED FOR SUBSTANTIAL COMPLETION AS ESTABLISHED IN THE PROJECT TIME SCHEDULE, THE SUCCESSFUL BIDDER WILL PAY THE OWNER (AND THE OWNER MAY SETOFF FROM SUMS COMING DUE THE SUCCESSFUL BIDDER) LIQUIDATED DAMAGES AT THE RATE OF $0.00 PER CALENDAR DAY BEYOND THE DATE OF SUBSTANTIAL COMPLETION.
4. THE BIDDER ACKNOWLEDGES BY SUBMITTING THE BID AND ENTERING INTO A CONTRACT WITH THE OWNER THAT SUCH AMOUNTS OF LIQUIDATED DAMAGES REPRESENT A REASONABLE ESTIMATE OF THE ACTUAL DAMAGES THAT THE OWNER WOULD INCUR IF THE WORK IS NOT SUBSTANTIALLY COMPLETE BY THE FOREGOING DATES. THESE LIQUIDATED DAMAGES ARE DAMAGES FOR LOSS OF USE OF THE PROJECT,AND THE SUCCESSFUL BIDDER IN ADDITION TO THE LIQUIDATED DAMAGES WILL BE OBLIGATED TO INDEMNIFY AND HOLD THE OWNER HARMLESS FROM ANY CLAIMS IF THE WORK ON THE PROJECT IS ACCELERATED BECAUSE OF DELAY.

SITE REQUIREMENTS:

1. ALL CONTRACTORS AND SUBCONTRACTORS SHALL HAVE A SET OF APPROVED CONSTRUCTION DOCUMENTS ON SITE AT ALL TIMES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATIONS AND PROTECTION OF ALL EXISTING UTILITIES SHOWN, ALL EXISTING UTILITIES NOT SHOWN, AND ALL PROPOSED UTILITIES ON THESE PLANS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ADJACENT IMPROVEMENTS FROM DAMAGE AND EROSION. ANY ADJACENT IMPROVEMENT DAMAGED DURING CONSTRUCTION SHALL, AT A MINIMUM, BE RESTORED TO A STATE EQUAL TO ITS PRE-CONSTRUCTION STATE.
4. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS TO COMPLETE WORK, AND SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
5. CONTRACTOR SHALL AGREE TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER, HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN THE CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER.
6. DURING CONSTRUCTION, CREWS ARE REQUIRED TO HAVE AT LEASE ONE (1) ENGLISH SPEAKING PERSON ON SITE.

EXISTING TREE CARE:

1.) FLAG ALL TREES AND PALMS TO BE SAVED IN PLACE. PROVIDE BARRICADING IN ACCORDANCE WITH LOCAL STANDARDS AROUND TREES TO BE SAVED IN PLACE PRIOR TO DEMOLITION.
2.) ALL WORK SHALL BE UNDERTAKEN IN THE PRESENCE OF A REGISTERED ARBORIST EMPLOYED BY THE LANDSCAPE CONTRACTOR. ALL TREES AND PALMS TO BE SAVED SHALL BE EXAMINED FOR DAMAGE, DISEASE AND INSECT INFESTATION. PARTS OF THE TREE SHOWING THESE CONDITIONS SHALL BE TREATED OR PRUNED IN ACCORDANCE WITH THE ARBORISTS RECOMMENDATIONS. REMOVE ALL DEAD LIMBS AND VINES.
3.) ROOT PRUNE ALL TREES TO BE SAVED PRIOR TO GRADING AROUND TREES. CUT ALONG LINES OFFSET FROM LINES OF DEVELOPMENT SURROUNDING THE TREE, IE. AT BUILDING FOUNDATIONS, PARKING LOTS, ETC.
4.) TREAT ALL CUTS WITH A FUNGICIDAL BARRIER. BACKFILL THE TRENCH, WITHIN 4 HOURS OF DIGGING, WITH A 1:1 MIXTURE OF SITE SOIL AND SAWDUST OR OTHER FINE ORGANIC MATERIAL. DO NOT COMPACT.
5.) FERTILIZE THE PLANT AS DIRECTED BY THE CONSULTING ARBORIST.
6.) THE ARBORIST SHALL VISIT THE SITE PERIODICALLY TO ASSESS THE HEALTH OF THE TREES AND ISSUE REPORTS ON THE RELATIVE HEALTH OF THE TREES AND MAKE RECOMMENDATIONS FOR FURTHER TREATMENTS IF NECESSARY.

SUBSTANTIAL COMPLETION

1. CONTRACTOR TO REQUEST INSPECTION OF PROJECT IN WRITING. IF ALL WORK IS SATISFACTORY AND COMPLETE IN ACCORDANCE WITH CONDITIONS OF CONTRACT DOCUMENTS, THEN THE OWNER AND LANDSCAPE ARCHITECT SHALL DECLARE SUBSTANTIALLY COMPLETE. SUBSTANTIAL COMPLETION CONSTITUTES THE BEGINNING OF THE GUARANTEE PERIOD AND THE 90 DAY ESTABLISHMENT PERIOD OF MAINTENANCE.
2. LANDSCAPE CONTRACTOR TO GUARANTEE PLANT MATERIAL FOR A ONE (1) YEAR PERIOD FOLLOWING DATE OF SUBSTANTIAL COMPLETION UNLESS A LONGER TIME HAS BEEN ESTABLISHED IN THE CONTRACT DOCUMENTS. PRIOR TO ISSUING SUBSTANTIAL COMPLETION NOTICE THE CONTRACTOR SHALL SUBMIT TO THE OWNER THREE (3) COPIES OF AS BUILT PLANS/DOCUMENTS AND THREE (3) COPIES OF AN ANNUALIZED MAINTENANCE AND OPERATION MANUAL DETAILING ALL SCHEDULES, NURSERY PRACTICES, WATERING REQUIREMENTS, FERTILIZATION, TRIMMING, ETC., FOR ALL PLANT MATERIALS AND PLANT AREAS OF THE PROJECT.
3. MAINTENANCE PERIOD - THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR COMPLETE MAINTENANCE OF ALL PLANTING AREAS (INCLUDING WATERING, SPRAYING, MULCHING, MOWING, FERTILIZING, ETC.) THROUGH THE COURSE OF THE PROJECT AND THROUGHOUT A 90 DAY ESTABLISHMENT PERIOD AFTER SUBSTANTIAL COMPLETION NOTICE BY THE OWNER. THE PROJECT WILL NOT BE ACCEPTED OR DEEMED SUBSTANTIALLY COMPLETE BY ZONES OR PHASES UNLESS OTHERWISE NOTED ON THE PLANS.

INSTALLATION:

PLANTING LAYOUT:

1.) THE LANDSCAPE CONTRACTOR SHALL FIELD STAKE THE LOCATION OF ALL PLANT MATERIAL PRIOR TO INITIATING INSTALLATION FOR THE REVIEW AND APPROVAL OF THE OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT.
2.) THE LANDSCAPE CONTRACTOR SHALL FIELD ADJUST LOCATION OF PLANT MATERIAL AS NECESSARY TO AVOID DAMAGE TO ALL EXISTING UNDERGROUND UTILITIES AND/OR EXISTING ABOVE GROUND ELEMENTS. ALL CHANGES REQUIRED SHALL BE COMPLETED AT THE CONTRACTOR'S EXPENSE AND SHALL BE COORDINATED WITH THE OWNER'S REPRESENTATIVE AND THE LANDSCAPE ARCHITECT.
3.) SHRUB AND GROUND COVER PLANTINGS ARE SHOWN AS MASS PLANTING BEDS. PLANTS SHALL BE PLACED ON A TRIANGULAR SPACING CONFIGURATION (STAGGERED SPACING). PLANT CENTER-TO-CENTER DIMENSIONS (O.C.) ARE LISTED ON THE PLANT LIST.
4.) PROVIDE A MINIMUM VERTICAL CLEARANCE ON ALL TREES OF 8.5' ABOVE THE SIDEWALK/CART PATHS.
5.) PROVIDE A MINIMUM HORIZONTAL OFFSET DISTANCE OF 2.5' FROM THE BACK OF CURB TO THE FUTURE MAXIMUM TRUNK DIAMETER OF PLANTED TREES.
6.) ALL SHRUB BEDLINE AREA DEFINITIONS TO BE DETAILED IN THE FIELD WITH THE LANDSCAPE ARCHITECT. UNAPPROVED BEDLINES WILL BE REJECTED AND IS THE RESPONSIBILITY OF THE CONTRACTOR TO REMEDY ALL DAMAGES AND MODIFICATIONS REQUIRED TO BRING THE AREAS TO SPECIFICATIONS.

TRANSPLANTING:

1.) APPROPRIATE CARE MUST BE TAKEN DURING TRANSPLANTING TO PREVENT CHAIN MARKS, GIRDLING OR BARK SLIPPAGE. TREES THAT ARE DAMAGED DURING THE TRANSPLANTING PROCESS WILL NOT BE ACCEPTED.

PLANTING:

1.) ALL PLANT MATERIAL SHALL BE INSTALLED IN A SOUND, WORKMANLIKE MANNER AND ACCORDING TO ACCEPTED GOOD PLANTING PROCEDURES WITH THE QUALITY OF PLANT MATERIALS AS HEREIN DESCRIBED. ALL ELEMENTS OF LANDSCAPING SHALL BE INSTALLED SO AS TO MEET ALL APPLICABLE ORDINANCES AND CODE REQUIREMENTS.
2.) CONTRACTOR SHALL ENSURE DRAINAGE AND PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION OF PLANT MATERIAL. CONTRACTOR SHALL FILL ALL TREE PITS WITH WATER BEFORE PLANTING TO ASSURE THAT PROPER DRAINAGE AND PERCOLATION IS AVAILABLE. CORRECT IF REQUIRED TO ENSURE PERCOLATION. CONTRACTOR IS RESPONSIBLE FOR REPLACEMENT OF ALL PLANTS LOST DUE TO INADEQUATE DRAINAGE CONDITIONS.
3.) TREES GROWN IN GROW BAGS OR GROW BAG TYPE MATERIAL MUST HAVE THE GROW BAG REMOVED ENTIRELY PRIOR TO PLANTING.
4.) BALLED AND BURLAPPED OR ANY BASKETED MATERIAL SHALL HAVE THE TOP ONE HALF (1/2) OF THE BURLAP AROUND THE BASE OF THE TRUNK CUT AND PULLED BACK. DO NOT REMOVE BURLAP. WIRE CAGES, STRAPS, ETC. MUST BE CUT AND REMOVED PRIOR TO INSTALLATION.
5.) CONTRACTOR TO REPLACE REJECTED PLANT MATERIAL WITHIN ONE WEEK (5 BUSINESS DAYS) OF NOTICE.
6.) CONTRACTOR SHALL REFER TO THE LANDSCAPE PLANTING DETAILS, PLANT LIST, GENERAL NOTES AND THE PLANTING SPECIFICATIONS FOR COMPLETE LANDSCAPE PLANTING INSTRUCTIONS. NOTIFY LANDSCAPE ARCHITECT OF ANY AND ALL DISCREPANCIES PRIOR TO CONSTRUCTION OR INSTALLATION.
7.) THE CONTRACTOR SHALL REFER TO THE LANDSCAPE PLANTING DETAILS, PLANT LIST, GENERAL NOTES AND THE PROJECT MANUAL AND/OR SPECIFICATIONS FOR FURTHER AND COMPLETE LANDSCAPE PLANTING INSTRUCTIONS.
8.) THE LANDSCAPE CONTRACTOR SHALL COORDINATE ALL PLANTING WORK WITH IRRIGATION WORK. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL HAND WATERING AS REQUIRED BY OWNER'S REPRESENTATIVE TO SUPPLEMENT IRRIGATION WATERING AND/OR RAINFALL. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR HAND WATERING IN ALL PLANTING AREAS, REGARDLESS OF THE STATUS OF EXISTING OR PROPOSED IRRIGATION.
9.) THE LANDSCAPE CONTRACTOR SHALL RE-GRADE ALL AREAS DISTURBED BY PLANT REMOVAL, RELOCATION, AND/OR INSTALLATION WORK. THE LANDSCAPE CONTRACTOR SHALL REPLACE (BY EQUAL SIZE AND QUALITY) ANY AND ALL EXISTING PLANT MATERIAL DISTURBED OR DAMAGED BY PLANT REMOVAL, RELOCATION, AND/OR INSTALLATION WORK.
10.) GUYING / STAKING PRACTICES SHALL NOT PERMIT NAILS, SCREWS, WIRES ETC. TO PENETRATE OUTER SURFACE OF TREES, PINES, OR PALMS. TREES, PINES, OR PALMS REJECTED DUE TO THIS PRACTICE SHALL BE REPLACED AT THE CONTRACTORS EXPENSE.
11.) ALL WOODEN STAKES, BOARDS, BRACES AND BATTENS SHALL BE PAINTED/SOLID STAINED DARK BROWN PRIOR TO THEIR USE. TOUCH UP ALL EXPOSED CUTS IN THE FIELD WITHOUT MARRING OR MARKING PLANT MATERIALS.
12.) THE CONTRACTOR SHALL MULCH ALL NEW PLANT MATERIAL THROUGHOUT AND COMPLETELY TO A 3 INCH MINIMUM DEPTH WITH CLEAN, WEED FREE, CLASS A, MULCH, OR ROCK MULCH AS SPECIFIED IN THE PLANT LEGEND.
13.) THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR COMPLETE MAINTENANCE OF ALL PLANTING AREAS (INCLUDING WATERING, SPRAYING, MULCHING, MOWING, FERTILIZING, ETC.) THROUGH THE COURSE OF THE PROJECT AND THROUGHOUT A 90 DAY ESTABLISHMENT PERIOD FOLLOWING NOTICE OF SUBSTANTIAL COMPLETION BY THE OWNER. THE PROJECT WILL NOT BE ACCEPTED OR DEEMED SUBSTANTIALLY COMPLETE BY ZONES OR PHASES (UNLESS OTHERWISE NOTED ON THE PLANS.)

SOIL PREPARATION AND SOIL MIX:

1.) THE CONTRACTOR SHALL BEAR ALL COSTS OF TESTING OF SOILS, AMENDMENTS, ETC., ASSOCIATED WITH THE WORK AND INCLUDED IN THE SPECIFICATIONS. PRIOR TO COMMENCEMENT OF THE LANDSCAPE PLANTING WORK, THE CONTRACTOR SHALL PROVIDE COMPLETE SOIL TESTS FOR THE INSTALLATION AREA.
   A.) APPLY ROUNDUP (MANUFACTURED BY MONSANTO CORP.) OR APPROVED HERBICIDE EQUAL ACCORDING TO MANUFACTURER'S RATE AND SPECIFICATION WITHIN LIMITS OF ALL AREAS TO BE PLANTED. PROTECT EXISTING PLANTS TO REMAIN FROM OVER SPRAY OR SPRAY WITHIN ROOT ZONE. CONTRACTOR TO ENSURE TOTAL WEED ERADICATION.
   B.) BEFORE REPLACING TOPSOIL, RAKE SUBSOIL SURFACE CLEAR OF STONES (1 INCH DIAMETER AND LARGER), DEBRIS, RUBBISH, DELETERIOUS MATERIALS AND ALL REMAINING CONSTRUCTION DEBRIS TO A DEPTH OF 6". CONTAMINATED SOILS SHALL BE REMOVED AND REPLACED TO THEIR FULL DEPTHS AND EXTENTS.
   C.) ESTABLISH OR REESTABLISH ROUGH GRADES INSURING POSITIVE FLOWS AND AESTHETIC LANDFORM SHAPES SHOWN IN THE GRADING PLANS. SCARIFY SUBSOIL TO A DEPTH OF 3 INCHES ONCE ROUGH GRADE HAS BEEN ESTABLISHED.
   D.) CONTRACTOR TO APPLY "RONSTAR" OR APPROVED PRE-EMERGENT HERBICIDE IN ACCORDANCE WITH MANUFACTURER'S RATE AND SPECIFICATIONS.
   E.) IF REQUIRED IN ORDER TO COMPLY WITH THE RECOMMENDATIONS OF THE SOIL TEST(S), PLANTING SOIL MIX FOR TREES, SHRUBS, AND GROUND COVERS SHALL CONSIST OF A THOROUGHLY BLENDED MIXTURE OF:
      1.) TREES
      70% CLEAN D.O.T. SAND
      30% APPROVED TOPSOIL MIX
      2.) PALMS
      90% CLEAN D.O.T. SAND
      10% APPROVED TOPSOIL MIX
      3.) SHRUBS, AND GROUND COVERS
      80% CLEAN D.O.T. SAND
      20% APPROVED TOPSOIL MIX
      4.) TOPSOIL
      30% APPROVED FLORIDA TOPSOIL
      10% APPROVED FLORIDA PEAT
      60% APPROVED SAND
      PEAT: FEDERAL SPECIFICATIONS Q-P-166
      TYPE 1, CLASS B, SPHAGNUM MOSS.
   CONTRACTOR TO SUBMIT LABORATORY SOIL TESTS AND ANALYSIS RECOMMENDATIONS FOR ORNAMENTAL LANDSCAPE USE OF ALL SOIL MIXTURES AND NO LESS THAN 4 TESTS OF EXISTING SOILS IN ANY ONE AREA FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT.
   F.) TOPSOIL MIX SHALL BE FREE OF DELETERIOUS MATERIALS THAT WOULD BE HARMFUL TO PLANT GROWTH, SHALL BE FREE OF NEMATODES, SHALL BE OF UNIFORM QUALITY AND SHALL HAVE A PH VALUE BETWEEN 5.5 AND 6.5 (AS DETERMINED IN ACCORDANCE WITH ASTM E70). PEAT SHALL BE STERILIZED TO MAKE FREE OF ALL VIABLE NUT GRASS AND OTHER UNDESIRABLE WEEDS.
   G.) TOPSOIL SHALL BE FREE OF STONES, LUMPS, LIVE PLANTS AND THEIR ROOTS, STICKS, CLAY, SILTS AND OTHER EXTRANEOUS MATTER. SPREAD TOPSOIL MIXTURE TO MINIMUM DEPTH OF 4 INCHES THROUGHOUT ALL TURF AREAS AND 6 INCHES IN ALL SHRUB AND GROUND COVER BEDS. REMOVE ALL ROCKS AND OTHER OBJECTS OVER 1 INCH IN DIAMETER.
   H.) SMOOTH ALL PREPARED SOIL MIXES TO WITHIN 3 INCHES BELOW TOP OF SURROUNDING PAVEMENT EDGES. CONTRACTOR TO PROVIDE SMOOTH AND UNIFORM DEPTH OF TOPSOIL MIXTURE.
   FINISH GRADE ALL PREPARED TOPSOIL AREAS TO A SMOOTH, EVEN SURFACE ENSURING A MINIMUM 3% POSITIVE DRAINAGE AWAY FROM STRUCTURES AND ELIMINATE ANY LOW AREAS WHICH MAY COLLECT WATER.
   TOPSOIL SHALL NOT BE EXTREMELY ACIDIC OR ALKALINE, NOR CONTAIN TOXIC SUBSTANCES WHICH MAY BE HARMFUL TO PLANT GROWTH. THE PH SHALL BE CORRECTED PRIOR TO DELIVERY IN THE RANGE OF 6.5 TO 7.5, OR AS APPROVED BY LANDSCAPE ARCHITECT. IF NECESSARY AFTER PLACEMENT THE CONTRACTOR SHALL APPLY APPROPRIATE APPROVED SOIL ADDITIVES ADJUSTING SOIL PH TO ENSURE A PH RANGE OF 6.5 TO 7.5.

2.) INITIAL INSTALLATION FERTILIZATION
ALL SHRUB AND GROUND COVER PLANTINGS SHALL RECEIVE AN APPROVED SLOW RELEASE FERTILIZER. ALL TREE PLANTINGS SHALL RECEIVE AN APPROVED MYCORRHIZA ADDITIVE.

PALMS
1-3-3.15 PLUS MINOR ELEMENTS - SLOW RELEASE
1/2 LB. FERTILIZER PER 1/2 INCH CALIPER

SHRUBS AND GROUND COVERS
8-10-10 PLUS MINOR ELEMENTS - SLOW RELEASE
1/2 LB. FERTILIZER PER 1/2 INCH CALIPER

TREES
8-10-10 PLUS MINOR ELEMENTS - SLOW RELEASE
1/2 LB. FERTILIZER PER 1/2 INCH CALIPER

TURF
16-4-8 PLUS MINOR ELEMENTS - SLOW RELEASE
1 LB. FERTILIZER PER 1000 SF.

PLANT MATERIAL:

1.) CONTRACTOR IS TO SUBMIT TO THE LANDSCAPE ARCHITECT THE GROWER'S AND/OR STATE INSPECTION CERTIFICATE FOR PLANT MATERIAL TWO (2) WEEKS BEFORE COMMENCEMENT OF WORK, IF APPLICABLE (SEE SUBMITTAL FORM).
2.) ALL PLANT MATERIAL SHALL BE PROTECTED DURING TRANSPORT AND DELIVERY TO JOB SITE WITH SHADE CLOTH OR OTHER ACCEPTABLE MEANS FOR WINDBURN PREVENTION.
3.) CONTRACTOR SHALL BE RESPONSIBLE FOR PLANTS MEETING SPECIFICATION AS NOTED PRIOR TO INSTALLATION. CONTRACTOR SHALL IMMEDIATELY REMOVE ALL PLANT MATERIAL FROM THE PROJECT THAT DOES NOT CONFORM TO SPECIFICATIONS.
4.) LANDSCAPE CONTRACTOR SHALL VERIFY ALL QUANTITIES OF PLANT MATERIAL FROM THE PLANT LEGEND TO THE DRAWINGS. QUANTITIES FROM DRAWINGS SHALL GOVERN UNLESS OTHERWISE NOTED.
5.) ALL PLANTS MUST BE HEALTHY, VIGOROUS MATERIAL, FREE OF PESTS, DISEASES, AND FOREIGN MATERIALS. ALL PLANT MATERIAL SHALL BE IN FULL AND STRICT ACCORDANCE TO FLORIDA NO. 1 GRADE, ACCORDING TO THE "GRADES AND STANDARDS FOR NURSERY PLANTS", PUBLISHED BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES. PLANT MATERIALS IN SOME INSTANCES SHALL EXCEED NO. 1 GRADE, IN ORDER TO MEET THE MINIMUM REQUIREMENTS OF THIS PROJECT. ALL PALMS TO BE SUN GROWN.
6.) ALL SIZES SHOWN FOR PLANT MATERIAL ON THE PLAN ARE TO BE CONSIDERED MINIMUM. ALL PLANT MATERIAL MUST MEET OR EXCEED THESE MINIMUM REQUIREMENTS FOR BOTH HEIGHT AND SPREAD. ANY OTHER REQUIREMENTS FOR SPECIFIC SHAPE OR EFFECT AS NOTED ON THE PLAN SHALL ALSO BE REQUIRED FOR ACCEPTANCE. ALL TREES TO BE SINGLE TRUNKED, UNLESS OTHERWISE NOTED ON PLANS.
7.) ANY SUBSTITUTIONS IN SIZE, QUANTITY, AND/OR PLANT MATERIAL MUST BE APPROVED BY THE LANDSCAPE ARCHITECT. ALL PLANTS WILL BE SUBJECT TO APPROVAL BY LANDSCAPE ARCHITECT BEFORE PLANTING CAN BEGIN.
8.) ALL TREES MUST BE STRAIGHT TRUNKED, FULL HEADED, AND MEET ALL REQUIREMENTS SPECIFIED, UNLESS OTHERWISE NOTED.
9.) ANY TREE WITH A TRUNK FORMED "V" SHAPE CROTCH WILL BE REJECTED.
10.) CANOPY TREES OF ALL SIZES ARE TO BE SELECTIVELY PRUNED AFTER PLANTING TO REMOVE INNER TWIGGY GROWTH, OPEN-UP THE CENTER AND EXPOSE MAJOR BRANCHES.
11.) ALL ROOTBALLS SHALL CONFORM TO THE SIZE STANDARDS SET FORTH IN "AMERICAN STANDARDS FOR NURSERY STOCK".
12.) SUBSTITUTION OF FIELD GROWN TREES FOR TREES THAT ARE SPECIFIED AS CONTAINER GROWN WILL NOT BE PERMITTED UNLESS OTHERWISE APPROVED BY LANDSCAPE ARCHITECT.
* ALL SPECIFICATIONS WILL STILL APPLY TO APPROVED B&B MATERIAL
13.) ALL PLANT MATERIAL SHALL BE MAINTAINED AT OR ABOVE THE SPECIFIED CONDITIONS THROUGH SUBSTANTIAL COMPLETION AND THE END OF THE ESTABLISHMENT PERIOD. DECLINE IN CONDITION OF PLANT MATERIAL DURING INSTALLATION, AND THE MAINTENANCE PERIOD, SHALL BE GROUNDS FOR REJECTION AND REPLACEMENT AT CONTRACTOR'S EXPENSE.
14.) MINIMUM THREE-INCH (3") THICK LAYER OF MULCH SHALL BE PLACED AROUND ALL NEW PLANT MATERIAL AND BARE GROUND THAT WILL NOT BE COVERED BY EXISTING VEGETATION, SOD, GRAVEL, PAVEMENT OR ANY OTHER GROUND COVER TREATMENT.
15.) ALL PLANTING BED AREAS TO HAVE 6" OF DARK, FRIABLE TOP SOIL OR BED MIXED CHURNED INTO EXISTING SOIL.
16.) NEW PLANT MATERIAL TO BE INSTALLED WILL BE FIELD ADJUSTED TO ACCOMMODATE EXISTING PLANT MATERIAL SUCH AS OVERHEAD CANOPY TREES, UNDERSTORY TREES AND SHRUBS OR GROUND COVER. THIS WILL INSURE EXISTING PLANT MATERIAL TO REMAIN IN ITS NATURAL STATE. THEREFORE, NO EXISTING PLANT MATERIAL WILL BE ALTERED BY REMOVING, CUTTING, TRIMMING OR DESTROYING IN ORDER TO INSTALL NEW PLANT MATERIAL.
17.) ALL LANDSCAPED AREAS TO BE IRRIGATED WITH A FULLY AUTOMATED IRRIGATION SYSTEM (UNLESS OTHERWISE NOTED).
18.) ALL TREES SHALL BE LOCATED AT LEAST SIX FEET AWAY FROM THE FLOWLINE OF PERIMETER PROPERTY SWALES AND PROPOSED STORMWATER INLETS.

PLANT SCHEDULE

| SYMBOL | CODE | QTY | BOTANICAL NAME | COMMON NAME | CONT | CALIPER | HEIGHT | SPR | NATIVE | REMARKS |
|---|---|---|---|---|---|---|---|---



MULCH & SOD EXHIBIT

MULCH

TAKEOFF: 85,358 SF

ST. AUGUSTINE GRASS

TAKEOFF: 357,742 SF

BAHIA GRASS

TAKEOFF: 176,649 SF

RVi
111 North Magnolia Avenue
Suite 1350
Orlando, Florida 32801
Tel: 407.680.0650
www.rviplanning.com

Digitally signed by Jack E Caldwell
Date: 2025.08.28 16:53:22-04'00'

JACK E. CALDWELL, P.L.A.
FL LICENSE NO. LA6667214

Sunshine811
Call 811 or visit sunshine811.com two full business days before digging to have buried facilities located and marked.
Check positive response codes before you dig!

MISSION RISE PHASE 1

PERMIT LANDSCAPE PLAN SET
TOWN OF HOWEY-IN-THE-HILLS

PROJECT NO :	25006053
DATE :	07/07/2025
DRAWN:	CD/JH
REVIEWED:	JC

REVISIONS

MULCH & SOD EXHIBIT

LP601

01_ORIGINAL ISSUE

September 10, 2025
Prepared for
Town of Howey-in-the-Hills
Attn: Sean O'Keefe, Town Manager

Esch Veterinary - Final Site Plan (State Road 19, South of Revels Road)

Applicant: Z Development Services

Planning staff reviewed the proposed Esch Veterinary final site plan. Review comments are provided below and will need to be addressed before the Planning and Zoning Board can consider the application.

1. Please provide the screening details for dumpsters.

   The applicant has provided the screening details for the dumpster, however the height needs to be revised on Sheet A0-3 to show and scale a 6-foot-high wall on the enclosure elevations, currently they show a five-foot tall wall. The landscaping details also need to be provided, compliant with LDC Sec. 7.04.03 (B).

2. A waiver from the 50% storefront window provision for the West and North elevations was approved by Town Council with the condition that the West and North elevations add the massing/articulation detail of awnings over the doors located on each of these elevations and incorporate the required second massing technique, such as building wall offsets on these two elevations. Please revise the elevations to comply with this condition.

3. Please indicate why the trees are being removed on a tree removal table and whether any proposed to be removed are on the Town's prohibited plant list. If they are plant species that are prohibited by the Florida Department of Environmental Protection or the Florida Department of Agriculture, or listed as invasive by the Florida Exotic Pest Control, this information needs to be provided on the tree removal table for each tree listed. Nine trees are listed for removal but fifteen are shown on the plan.

   A tree mitigation plan including the required replacement data will be required at Final Site Plan. A tree removal permit will be required, consistent with LDC Section 7.12.01.

4. Tree Protection Detail needs to be provided on the plans to comply with LDC Section 7.11.01.

5. Please provide the total number of trees on site and any replacement data consistent with the Land Development Code (LDC). Please indicate which are Specimen Trees and which are Heritage Trees and provide the replacement data in concert with the LDC. LDC Section 7.11.03 requires 50% of all specimen trees be preserved on a parcel. LDC Section 7.11.02 requires protection of all Historic Trees unless one of the following conditions is met:

   a. The tree is not suitable for preservation as determined by a certified arborist.
   b. The tree is a threat to a principal structure or otherwise constitutes a hazard requiring removal as determined by a qualified arborist or professional engineer.
   c. The placement of the tree prohibits the economic use of the property for permissible development.

   The applicant has provided that the one specimen tree to be removed is in conflict with the proposed building. Due to the flood zone area, this is the only area on the site that will support the building. Relocation of the building to save this tree is not feasible.

   A tree mitigation plan including the required replacement data will be required at Final Site Plan.

6. Please provide details on any hardscape elements consistent with LDC Section 7.07.00 as applicable. Examples would be dog park receptacles, fencing, benches.

7. Please provide wheel stop detail consistent with LDC Sec. 7.05.01(E)(2).

8. Mulch depth is required to be 3 inches.

9. Please provide buffer detail and plantings consistent with LDC Sec. 7.12.04.

10. Identify the percentage of the site to have sod, consistent with LDC Sec. 7.04.01 and how the plantings will be consistent with this section.

11. Winged Elm and Sweet Viburnum are not on the approved plant list.

12. Please demonstrate how the irrigation plan is consistent with LDC Sec. 7.06.00.

GRIFFEY ENGINEERING, INC.

September 9, 2025
Esch Veterinary - Final Site Plan
Engineering Review Comments
Page 1

1. Provide copies of FFWCC, SJRWMD, and FDOT Access permits before commencing work.

2. Provide an environmental report addressing potential endangered/threatened species and wetland areas.

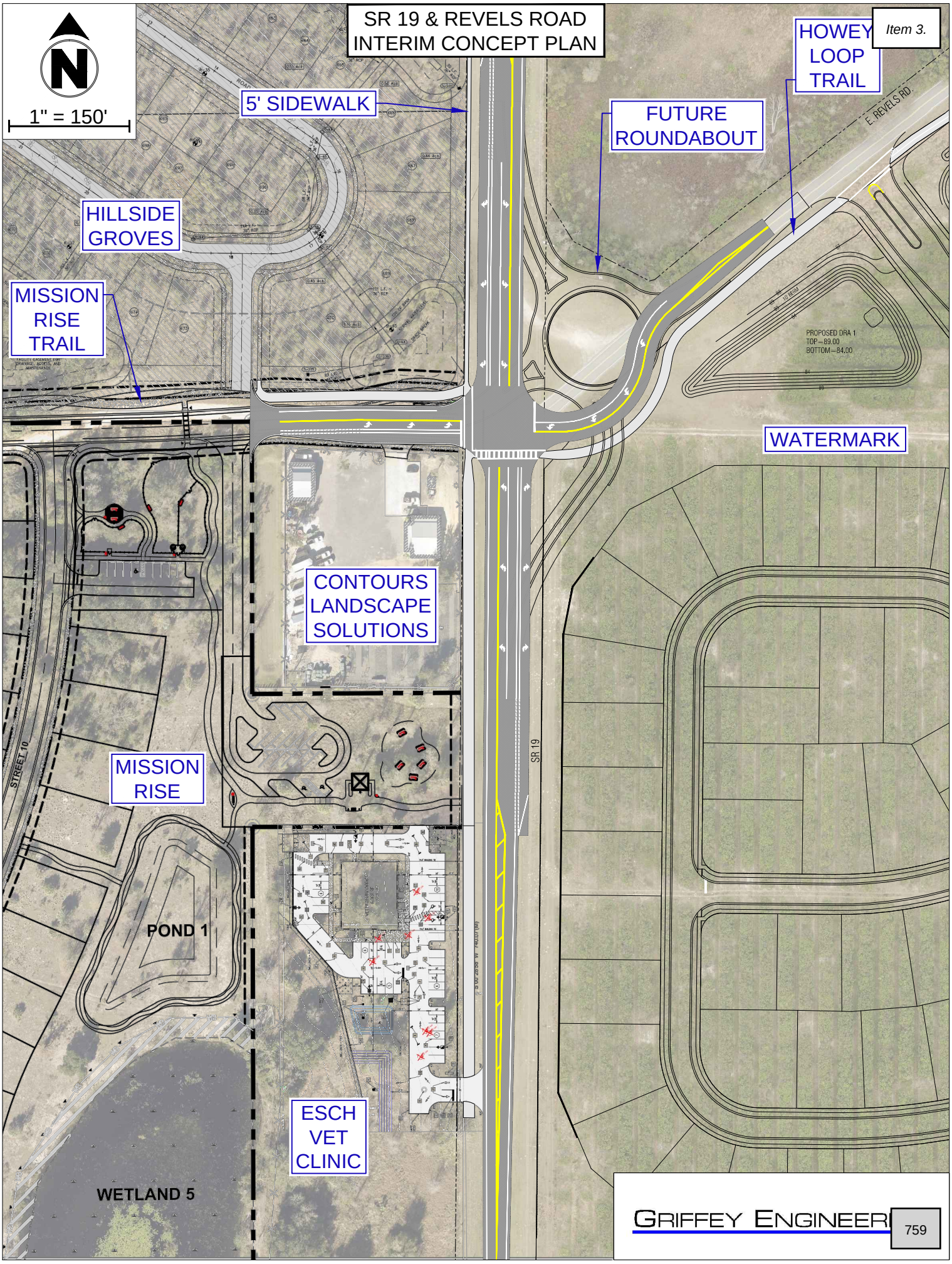
3. The town prohibits land disturbance within 25' of a wetland. However, the portion of the on-site flood prone area above the buffer line can be utilized for stormwater management. You might want to look into a wet detention pond in this area as opposed to dry retention further up the site. The primary requirement for using this area is that there be no net loss in on-site flood storage. This is what Mission Rise is proposing on the other side of the property line (see attached exhibit). This could possibly reduce the need for some of the proposed retaining walls.

4. Due to the proposed configuration of the trailhead to the north (see attached exhibit) the cross-access stub out is not needed.

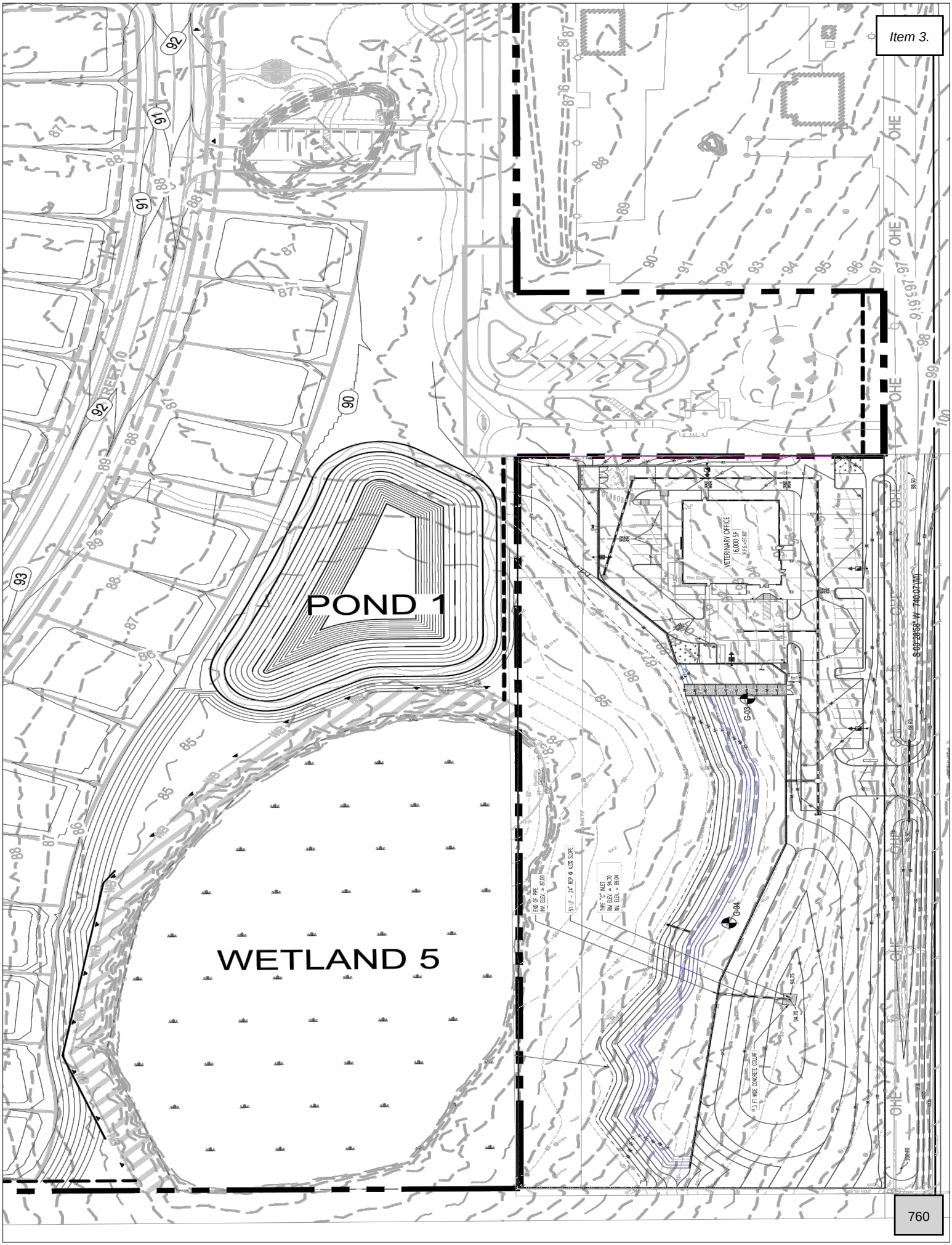
5. Per the town's Comp Plan and the Sidewalk and Bicycle Trail Master Plan, the site should include bicycle/pedestrian facilities across its frontage. The site improvements should include the segment of trail going from just south of the proposed driveway northward to the proposed trailhead.

6. The site should be designed with an ADA accessible route to the trail segment.

7. Mission Rise will be extending water and sewer service to the adjoining northern property (trailhead). This site will need to connect to those services when they are available. To minimize future disruption, it would be best to install piping for that future connection with this construction.



GRIFFEY ENGINEERI


POND 1
WETLAND 5
VETERINARY OFFICE
6,000 SF
F.F.E.=97.80'
END OF PIPE
INV. ELEV. = 87.00
51 LF - 24" RCP @ 4.0% SLOPE
TYPE "C" INLET
RIM ELEV. = 94.70
INV. ELEV. = 89.04
3 FT WIDE CONCRETE COLLAR
G-03
G-04
S 00°28'58" W 740.07'(M)
OHE
92
91
90
93

Lakeridge Animal Hospital
20180 US Hwy 27, STE 206
Clermont, FL 34715
Phone: 352-995-2002 – Fax: 352-995-2009

Date: 29 March 2024

Reference: Lakeridge Animal Hospital – SR 19, Howey in the Hills, FL 34737
Parcel i.d. 02-21-25-0002-000-00500

To Whom It May Concern:

Please accept this letter as authorization for Robert Ziegenfuss and/or Julie Farr of Z Development Services, to act as our authorized agent for the submittal of the required documents during the permitting process for the above referenced project.

They will act as agents in submitting applications and other related correspondence for the above-referenced project. They will also provide representation at meetings as required.

Sincerely,

Jeffrey Esch

STATE OF FL
COUNTY OF Lake

The foregoing instrument was acknowledged before me this 29 day of March 2024. by Jeffery Esch who is personally known to me or who produced FL DL License as identification and who did not take an oath.

Notary Public Haamawattie Mannie
Seal

My Commission Expires: 3/14/2027

Duplicate

HAAMAWATTIE S. MANNIE
Notary Public, State of Florida
Commission# HH 366975
My comm. expires March 14, 2027

TOWN OF HOWEY-IN-THE-HILLS, FLORIDA

GENERAL LAND DEVELOPMENT APPLICATION

101 N. Palm Avenue, Howey-in-the-Hills, Florida 34737
Phone: (352) 324-2290 • Fax: (352) 324-2126

Date Received: Application ID: Received By:

REQUESTED ACTION

- ☐ Comp Plan Amendment
- ☐ PUD
- ☐ Conditional Use
- ☐ Land Development Code Text
- ☐ Variance
- ☐ Rezoning
- ☐ Subdivision Minor
- ☐ Other
- ☒ Site Plan (check one below)
  - ☐ Preliminary
  - ☒ Final
- ☐ Subdivision (check one below)
  - ☐ Preliminary Subdivision
  - ☐ Final Subdivision
  - ☐ Final Plat

Describe Request: 7/02/25

APPLICANT INFORMATION:

Name: Z Development Services ~~Robert Ziegenfuss~~ and/or Julie Farr
Address: 1201 E Robinson Street Orlando, FL 32801
E-Mail: permits@zdevelopmentservices.com
Phone: 407-271-8910 Fax: _____

☐ Owner ☒ Agent for Owner ☐ Attorney for Owner

OWNER INFORMATION:

Name: Jeffrey S Esch
Address: 103 Blackstone Creek Road Groveland, FL 34736
E-Mail: jeschdvm@gmail.com
Phone: 336-314-7826
Fax: _____

PROPERTY INFORMATION:

Address: SR 19, Howey in the Hills, FL 34737

General Location: SR 19, South of Revels Road, Howey in the Hills

Current Zoning: PUD Current Land Use: VMU

Parcel Size: Tax Parcel #: 02-21-25-0002-000-00500

Legal Description Attached ☒ Yes ☐ No Survey Attached ☒ Yes ☐ No

Pre-Application Meeting Date: 11/02/23
(Attach Pre-Application Form)

Application Fee: $ $2,500.00 ($500 fee and $2,000 review deposit)

Applicant's Signature: _____ 7/24/25
(Signature) *(Date)*

Julie L. Fare
(Print)

Owner's Signature: _____ 11 July 2025
(Provide letter of Authorization) *(Signature)* *(Date)*

Jeffrey S. Esch
(Print)

Applications must be complete to initiate the review process.

Z DEVELOPMENT SERVICES
CIVIL ENGINEERING CONSULTANTS

Date: August 26, 2025

RE: Esch Veterinary
Final Site Plan Submittal

To:
Sean O'Keefe
Howey-in-the-Hills
101 N. Palm Avenue
Howey-in-the-Hills, FL 34737

From:
Julie Farr
Z Development Services
1201 E. Robinson Street
Orlando, FL 32801

Please find enclosed the following:

- 2 Sets Plans (Site Plan, Elevations, Dumpster Detail, Floor Plan and Tree Survey)
- Application
- Stormwater Report
- Fee Check $2,500 ($500.00 review fee and $2,000 review deposit)
- USB

THE PROFESSIONAL SERVICES OF THE DESIGNER AND/OR ARCHITECT ARE DISPENSED FOR AND ARE PERFORMED IN THE INTEREST OF THE PROJECT OWNER. NO CONTRACTUAL OBLIGATION IS ASSUMED BY THE DESIGNER AND/OR THE ARCHITECT FOR THE BENEFIT OF ANY OTHER ENTITY INVOLVED IN THIS PROJECT. EXISTING CONDITIONS, THE DESIGNER AND/OR ARCHITECT DISCLAIMS ANY RESPONSIBILITY FOR THE EXISTING BUILDING STRUCTURE, SITE CONDITIONS, EXISTING CONSTRUCTION ELEMENTS, OR ANY OTHER EXISTING CONDITIONS. THE DESIGNER AND/OR ARCHITECT ASSUMES NO RESPONSIBILITY FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, OR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE CONSTRUCTION OF THE PROJECT. THE DESIGNER AND/OR ARCHITECT SHALL NOT BE RESPONSIBLE FOR ANY CONTRACTOR'S FAILURE TO CARRY OUT THE CONSTRUCTION WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE DESIGNER AND/OR ARCHITECT SHALL NOT HAVE CONTROL OVER OR CHARGE OF AND SHALL NOT BE RESPONSIBLE FOR ACTS OR OMISSIONS OF THE CONTRACTOR OR ANY OTHER PERSONS OR AGENCIES PERFORMING PORTIONS OF THE CONSTRUCTION. ALL DRAWINGS, SPECIFICATIONS, IDEAS, AND DESIGNS, INCLUDING THE OVERALL FORM, ARRANGEMENT AND COMPOSITION OF THE SPACES AND ELEMENTS APPEARING HEREIN, CONSTITUTE THE ORIGINAL, COPYRIGHTED WORK OF THE ARCHITECT. NOT FOR CONSTRUCTION UNLESS ALL APPLICABLE PERMITS ARE OBTAINED AND REPRODUCTION OR USE OR DISCLOSURE OF INFORMATION CONTAINED HEREIN WITHOUT THE PRIOR WRITTEN CONSENT OF THE ARCHITECT IS STRICTLY PROHIBITED. (C) COPYRIGHT 2015 BY TREBARC, INC.

CONSTRUCTION STANDARDS

1. MINIMUM STANDARDS
THESE CONSTRUCTIONS DOCUMENTS REQUIRED LARGER SIZES, GREATER QUANTITIES, MORE PROTECTION AND REQUIREMENTS THAN THE GOVERNING BUILDING CODES. THE CONTRACTOR IS RESPONSIBLE FOR CARRYING OUT ALL OF THE PROVISIONS AND REQUIREMENTS INCLUDED IN THESE PLANS AND SPECIFICATIONS. SUBSTITUTIONS, ALTERNATES OR CHANGES REQUESTED TO MATCH LOWER STANDARDS PERMITTED BY THE BUILDING CODE WILL NOT BE ACCEPTED. NO ADDITIONAL PAYMENTS SHALL BE MADE TO THE CONTRACTOR TO CORRECT WORK THAT DOES NOT MEET ALL OF THE REQUIREMENTS SET FORTH IN THESE CONSTRUCTION DOCUMENTS.
2. SUBSTITUTIONS
SUBSTITUTIONS OR DEVIATIONS FROM THE PLANS AND SPECIFICATIONS DURING BIDDING OR CONSTRUCTION ARE NOT PERMITTED WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE OWNER AND/OR ARCHITECT. FAILURE TO COMPLY WITH THIS PROVISION WILL RESULT IN THE REJECTION OF THE WORK IN QUESTION. THE CONTRACTOR WILL NOT BE COMPENSATED FOR UNAUTHORIZED SUBSTITUTIONS OR DEVIATIONS FROM THE PLAN AND WILL HAVE TO TAKE CORRECTIVE MEASURES AT HIS OUN EXPENSE.
3. ALTERNATES
REQUEST FOR PRODUCT ALTERNATES OR SUBSTITUTIONS WILL ONLY BE CONSIDERED BY THE ARCHITECT WHEN SUBMITTED WITH A LETTER OF EXPLANATION. WHEN APPLICABLE THE REQUEST SHALL INCLUDE: A COST COMPARISON, DRAWINGS AND/OR BROCHURE CUT SHEET DEMONSTRATING THAT THE SUBSTITUTION OR ALTERNATE MEETS THE INTENDED PERFORMANCE AND QUALITY OF THE ORIGINAL SPECIFICATION.
4. CHANGE ORDERS
ALL CHANGE ORDERS SHALL BE SIGNED BY THE OUNER PRIOR TO COMMENCEMENT OF THE WORK TO BE CHANGED
5. DISCREPANCIES
WHEN IN THE OPINION OF THE CONTRACTOR A DISCREPANCY EXISTS, HE/SHE SHALL PROMPTLY REPORT IT IN WRITING TO THE ARCHITECT PRIOR TO THE COMMENCEMENT OF THE WORK IN THE AREA OF QUESTION. NO ADDITIONAL PAYMENT SHALL BE MADE FOR THE CONTRACTOR'S FAILURE TO CORRECT CONFLICTING FIELD CONDITIONS
6. CONSTRUCTION MEANS AND METHODS
ERIC TREBBIEN, ARCHITECT, AND/OR ENGINEER(S) SHALL NOT HAVE CHARGE, CONTROL OR BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, SEQUENCES, PROCEDURES OR SAFETY PRECAUTIONS AND PROGRAMS. IT IS UNDERSTOOD AND AGREED THAT THE ARCHITECT HAS NO CONSTRUCTIVE USE OF THE OUNER'S SITE. HAS NO CONTROL OR AUTHORITY OVER THE MEANS, METHODS, AND SEQUENCES OF CONSTRUCTION. AND THEREFORE HAS NO ONGOING RESPONSIBILITY WHATSOEVER FOR CONSTRUCTION SITE SAFETY. A RESPONSIBILITY WHICH IS SOLELY VESTED IN THE GENERAL CONTRACTOR. NOTWITHSTANDING THE ABOVE, THE ARCHITECT HAS A DUTY TO PRESERVE LIFE AND PROTECT PUBLIC HEALTH, SAFETY, AND WELFARE. ACCORDINGLY, IT IS ERIC TREBBIEN, ARCHITECT'S PROFESSIONAL RESPONSIBILITY TO TAKE WHAT HE BELIEVES ARE PRUDENT MEASURES SHOULD THE ARCHITECT ENCOUNTER SITUATIONS THAT HE BELIEVES CREATE A DANGER TO PUBLIC HEALTH, SAFETY, OR WELFARE. THE CLIENT/OUNER UNDERSTANDS THIS SITUATION AND AGREES TO DEFEND ERIC TREBBIEN, ARCHITECT AND HOLD THE ARCHITECT HARMLESS FROM THE ARCHITECT'S CLAIMS ARISING FROM THE ARCHITECT'S EXERCISE OF PROFESSIONAL RESPONSIBILITY IN THIS REGARD.

GENERAL CONSTRUCTION NOTES

1. WORK SHALL INCLUDE ALL ITEMS (BUILDING AND SITE) AS INDICATED ON THIS SET OF DRAWINGS UNLESS NOTED OTHERWISE.
2. DEPOSITS AND FEES: DEPOSITS FOR UTILITIES INCLUDING WATER METER, TELEPHONE AND ELECTRICAL SERVICE TO BE MADE BY THE GENERAL CONTRACTOR. PERMIT FEES, AS REQUIRED, SHALL BE PAID BY THE CONTRACTOR FOR THAT PORTION OF THE WORK.
3. GENERAL CONTRACTOR SHALL MAINTAIN TEMPORARY ELECTRICAL, WATER, AND SANITARY FACILITIES AS REQUIRED FOR THE DURATION OF CONSTRUCTION.
4. PRIOR TO STARTING WORK, THE GENERAL CONTRACTOR SHALL NOTIFY ARCHITECT OF ANY DISCREPANCIES IN THE PLANS. WRITTEN FIGURES INDICATING DIMENSIONS SHALL BE USED INSTEAD OF SCALING THE DRAWINGS. MEASUREMENTS BY SCALING SHALL NOT BE USED AS DIMENSIONS TO LAYOUT BY FIELD MEASUREMENTS ARE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. SHOP DRAWINGS MUST BE FIELD VERIFIED.
5. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL CODES, RULES AND REGULATIONS OR RESTRICTIONS HAVING JURISDICTION. GENERAL CONTRACTOR SHALL PROMPTLY NOTIFY ARCHITECT UPON THE OBSERVANCE OF ANY VARIATION BETWEEN THESE DOCUMENTS AND ANY APPLICABLE CODES OR ORDINANCES.
6. ALL CONSTRUCTION MATERIALS SHALL BE NEW AND SHALL BEAR UNDERWRITER'S LABELS WHERE APPLICABLE.
7. ALL PIERS, SUPPORTS, SHELVING, FOUNDATIONS, ANCHOR BOLTS, HANGERS, WHICH ARE REQUIRED BY A SUBCONTRACTORS FOR THE SUPPORT OR HANGING OF THEIR EQUIPMENT SHALL BE SUPPLIED BY THE CONTRACTOR REQUIRING SAME.
8. FOR CONVENIENCE IN DESCRIPTION 4 AS A STANDARD FOR GRADE, TYPE, QUALITY, AND PERFORMANCE CHARACTERISTICS, PROPRIETARY NAMES ARE INCLUDED WITH SOME DESCRIPTIONS. THIS DOES NOT IMPLY ANY PREFERENCE TO A PARTICULAR MANUFACTURER, BUT MINIMUM REQUIREMENTS, WITH FINAL DECISIONS BEING MADE BY THE OUNER AND ARCHITECT.
9. ARRANGE FOR SUITABLE STORAGE SPACE FOR MATERIALS TO PREVENT INCLUSION OF FOREIGN MATERIALS AND DELIVER AT SUCH TIMES AS NOT TO INTERFERE WITH OTHER OPERATIONS. MATERIALS ON SITE SHALL BE KEPT IN UNOPENED, ORIGINAL CONTAINERS OR PACKAGES THAT BEAR IDENTIFYING LABELS WHICH ARE NOT TO BE REMOVED UNTIL THEIR IMMEDIATE USE. PROTECT ALL MATERIALS FROM MINOR ABRASIONS AND HANDLE MASONRY PRODUCTS WITH CARE TO PREVENT CHIPPING AND DAMAGE.
10. GENERAL CONTRACTOR SHALL REMOVE ALL CONSTRUCTION DEBRIS FROM THE JOB SITE 4 LEAVE BUILDING BROOM CLEAN. ALL GLASS SHALL BE THOROUGHLY CLEANED AT COMPLETION OF WORK. ANY PAINT SPECKS 4 OTHER CONSTRUCTION MARKS SHALL BE REMOVED FROM ALL FINISHED SURFACES.
11. GENERAL CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP TO BE FREE OF DEFECTS FOR A PERIOD OF NOT LESS THAN (1) YEAR FROM THE DATE OF ACCEPTANCE. CORRECTION OF DEFECTS SHALL BE COMPLETED IN A TIMELY MANNER WITHOUT ADDITIONAL CHARGE. THIS SHALL INCLUDE ELEMENTS WHICH ARE DAMAGED BY SAID DEFECTS.
12. ALL LUMBER SHALL BE DOUGLAS FIR WITH A MINIMUM FIBER STRESS OF 1000 PSI, OR NO. 2 SOUTHERN PINE, UNLESS NOTED OTHERWISE. ALL LUMBER IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED.
13. ALL METAL USED FOR CONNECTING WOOD MEMBERS SHALL BE GALVANIZED. ALL NAILS, BOLTS OR OTHER METAL CONNECTORS SHALL BE GALVANIZED OR SHALL BE CORROSION RESISTANT.

GENERAL PROJECT NOTES

1. ALL EXISTING EXTERIOR WALLS 8" CMU W/ EXISTING 5/8" GWB OVER 1 1/2" METAL HAT CHANNEL @ 24" O.C. WITH R4.1 FOIL BACK INSULATION TO REMAIN AS IS. CONTRACTOR TO PATCH AS NECESSARY.
2. COMBUSTIBLE MATERIALS ARE PERMITTED ABOVE THE CEILING IN LIEU OF THE PLENUM.
3. PVC IS ALLOUED TO BE USED ABOVE THE CEILING IN LIEU OF THE PLENUM.
4. EXISTING BUILDING SHELL AND ENTRANCE SHALL COMPLY WITH NFPA 101 AND FACBC CURRENT ED. ALL NEW INTERIOR BUILD-OUT SHALL COMPLY WITH NFPA AND FACBC CURRENT ED.
5. ALL FLOOR LEVEL TO COMPLY WITH FBC. NO CHANGES OF LEVEL SHALL EXCEED 1/2" ON AN ACCESSIBLE ROUTE.
6. THE LAYOUT AND DESIGN OF SPACES DEPICTED IN THESE PLANS COMPLY WITH THE REQUIREMENTS OF THE FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION.
7. CONTRACTOR TO PROVIDE SUBMITTALS FOR ARCHITECTS AND 7. OUNERS APPROVAL PRIOR TO PURCHASING / INSTALLING ANY AND ALL HARDUARE
8. ALL DIMENSIONS ARE TO FINISHED FACE OF GWB UNLESS OTHERUISE NOTED. WHERE DIMENSIONS ARE NOTED TO BE "CLEAR" OR "MIN." THEY REFER TO THE FINISHED FACE OF WALL.
9. PROVIDE WOOD BLOCKING IN WALLS FOR SHELVING, MIRRORS, AND CABINET WORK AS REQUIRED TO ACCOMMODATE INSTALLATION. COORDINATE WITH CABINET MANUFACTURER AND OUNER PRIOR TO ANY CONSTRUCTION. SEE DETAIL ELSEWHERE.
10. ALL WOOD BLOCKING AND FURRING SHALL VERIFIED PRIOR TO INSTALLATION
11. FIRE EXTINGUISHERS SHALL BE LARSEN'S MODEL NO. MP-10, MULTI-PURPOSE ABC, COMPLETE WITH MOUNTING BRACKET, OR APPROVED SIMILAR.
12. CONTRACTOR TO VERIFY FIRE EXTINGUISHER LOCATIONS WITH FIRE MARSHAL BEFORE INSTALLATION.
13. FIELD VERIFY ALL CONDITIONS AND DIMENSIONS PRIOR TO FABRICATION OR INSTALLATION OF ANY ITEM.
14. BUILD OUT SHALL COMPLY WITH F.B.C. 2023 8TH EDITION FOR FABRICATION OR INSTALLATION OF ANY ITEM.
15. REFER TO PERMIT DRAWINGS ON FILE WITH THE CITY FOR SHELL BUILDING AND SITE INFORMATION.
16. EXIT DOORS SHALL COMPLY WITH FLORIDA FIRE PREVENTION CODE NFPA 101, SECTION 7.2.1.5 LOCKS, IF PROVIDED, SHALL NOT REQUIRE THE USE OF A KEY, A TOOL, OR SPECIAL KNOULEDGE OR EFFORT FOR OPERATION FROM THE EGRESS SIDE. VERIFY WITH BUILDING SHELL DESIGN.

GENERAL NOTES

1. GOVERNING CODE: FLORIDA BUILDING CODE (FBC 2023 8TH EDITION) 7TH EDITION OF THE FLORIDA FIRE PREVENTION CODE AS WELL AS THE ANSI / ASCE 7-16 FOR WIND LOADS. (175 MPH ULTIMATE WIND SPEED, RISK CATEGORY II)
2. REFERENCE STANDARDS: REFERENCE TO ASTM AND OTHER STANDARDS SHALL MEAN THE LATEST EDITION IN EFFECT ON THE BID DATE OR DATE OF OUNER-CONTRACTOR AGREEMENT UNLESS NOTED IN THESE DOCUMENTS OR DESIGNATED BY THE GOVERNING CODE.
3. NOTES: NOTES ON THE INDIVIDUAL STRUCTURAL DRAUINGS SHALL TAKE PRIORITY OVER STRUCTURAL NOTES ON THIS SHEET.
4. SPECIFICATIONS: REFER TO THE SPECIFICATIONS FOR INFORMATION IN ADDITION TO THESE NOTES AND THE STRUCTURAL DRAUINGS
5. ARCHITECTURAL: REFER TO THE ARCHITECTURAL DRAUINGS FOR ELEVATIONS, DOORS, UINDOUS, NONBEARING UALLS, CURTAIN UALLS, ELEVATORS, STAIRS, SLOPES, CURBS, DRAINS, DEPRESSIONS, RAILINGS, UATERPROOFING, FINISHES, ETC.
6. DISCREPANCIES: IN CASE OF DISCREPANCIES BETUEEN THE PLANS, SPECIFICATIONS, REFERENCE STANDARDS 4 GOVERNING CODE, THE MORE STRINGENT REQUIREMENTS SHALL GOVERN. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT BEFORE PROCEEDING UITH UORK.
7. SITE VERIFICATION: THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS AND SITE CONDITIONS BEFORE STARTING UORK, AND THE ARCHITECT SHALL BE IMMEDIATELY NOTIFIED, IN URITING, OF ANY DISCREPANCIES. IN NO CASE CASE SHALL DIMENSIONS BE SCALED FROM PLANS, SECTIONS, OR DETAILS ON THE STRUCTURAL DRAUINGS.
8. OMISSIONS/CONFLICTS: IN CASE OF OMISSIONS AND CONFLICTS BETUEEN THE PLANS, SPECIFICATIONS AND SITE CONDITIONS, THE ARCHITECT SHALL BE NOTIFIED BEFORE PROCEEDING UITH THE UORK.
9. CONTRACTOR RESPONSIBILITIES: THE CONTRACTOR IS RESPONSIBLE FOR SAFETY AT THE SITE AND FOR THE STRENGTH AND STABILITY OF ALL PARTLY COMPLETED STRUCTURES.
10. LOAD LIMITS: LOADS ON THE STRUCTURE SHALL NOT EXCEED THE DESIGN LOADS SHOUN UNDER "DESIGN CRITERIA".
11. SUBMITTALS: UHERE SHOP DRAUINGS, MILL TESTS, OR OTHER ITEMS ARE REQUESTED, SUBMITTAL SHALL BE MADE TO THE ARCHITECT PRIOR TO FABRICATION OR INSTALLATION IN THE STRUCTURE, UNLESS SPECIFICALLY NOTED.
12. ALTERNATES: ALTERNATES FOR SPECIFIED ITEMS SHALL BE SUBMITTED TO ARCHITECT FOR APPROVAL. CONTRACTOR SHALL BUDGET FOR ARCHITECTURAL/ENGINEERING FEES ASSOCIATED UITH THE REUIEU OF THESE MATERIALS.

2023 FBC, ACCESSIBILITY SECTION 611:

611 GENERAL.
WASHING MACHINES AND CLOTHES DRYERS SHALL COMPLY WITH 611.

611.2 CLEAR FLOOR SPACE.
A CLEAR FLOOR OR GROUND SPACE COMPLYING WITH 305 POSITIONED FOR PARALLEL APPROACH SHALL BE PROVIDED. THE CLEAR FLOOR OR GROUND SPACE SHALL BE CENTERED ON THE APPLIANCE.

611.3 OPERABLE PARTS.
OPERABLE PARTS, INCLUDING DOORS, LINT SCREENS, AND DETERGENT AND BLEACH COMPARTMENTS SHALL COMPLY WITH 309.

611.4 HEIGHT.
TOP LOADING MACHINES SHALL HAVE THE DOOR TO THE LAUNDRY COMPARTMENT LOCATED 36 INCHES (915 MM) MAXIMUM ABOVE THE FINISH FLOOR. FRONT LOADING MACHINES SHALL HAVE THE BOTTOM OF THE OPENING TO THE LAUNDRY COMPARTMENT LOCATED 15 INCHES (380 MM) MINIMUM AND 36 INCHES (915 MM) MAXIMUM ABOVE THE FINISH FLOOR.

WALL LEGEND/INFORMATION SEE ADDITIONAL WALL DETAILS ELSEWHERE

TYPICAL
NEW EXTERIOR WALL
ALL EXTERIOR WALLS SHALL HAVE 5/8" GUB OVER NOMINAL 1 5/8" METAL HAT CHANNEL FURRING WITH R-4.1 FOIL BACK INSULATION. SEE STRUCTURAL SHEETS FOR DETAILS.

1 **NEW FIRE RATED PARTITION**
EXISTING FULL HEIGHT PARTITION WALL TO EXTEND TO UNDERSIDE OF ROOF DECK OR TO FIRE RATED CEILING. SEE DETAIL ELSEWHERE

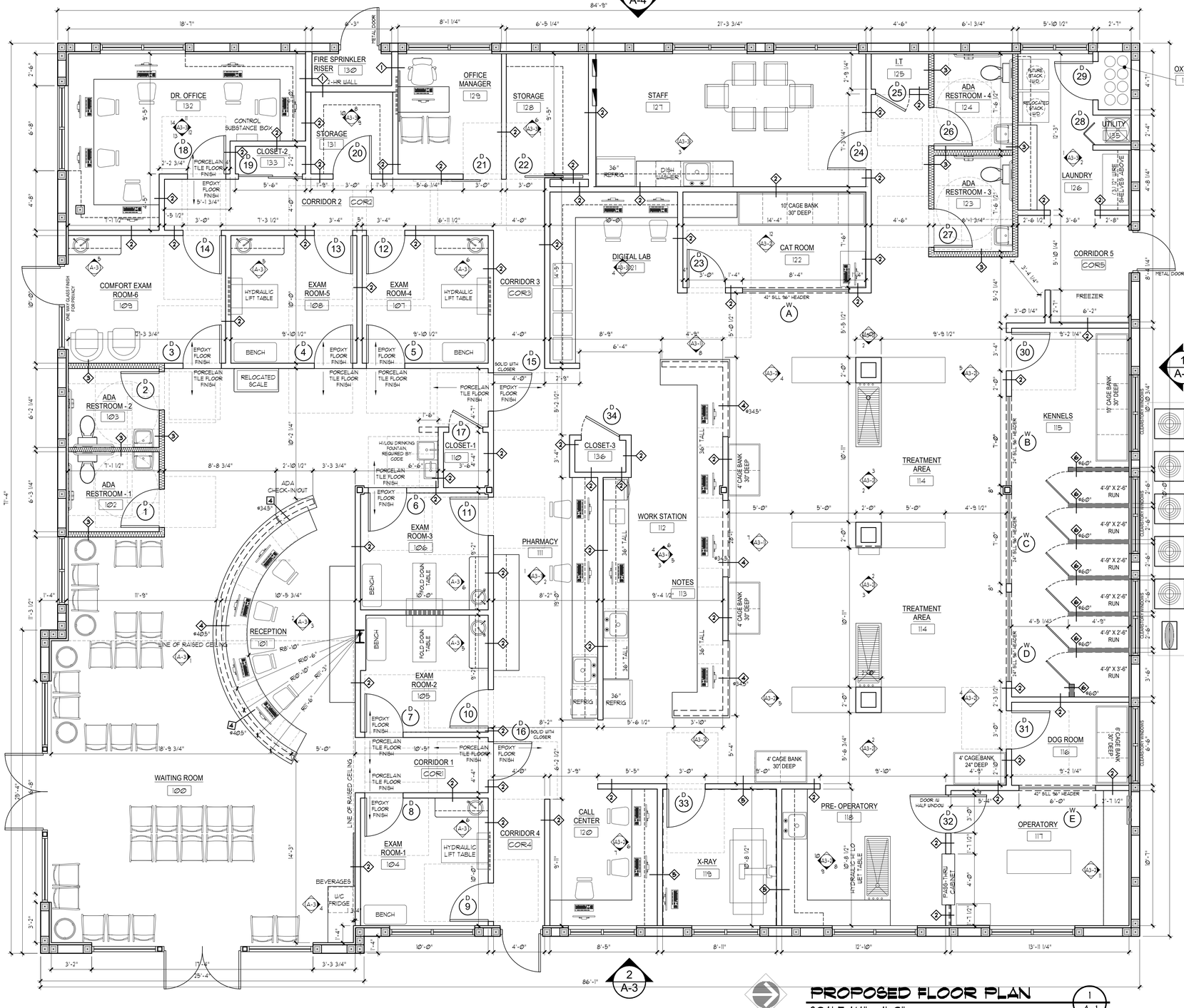
2 **NEW INTERIOR PARTITION**
NON-BEARING, NON FIRE RATED
NEW FULL HEIGHT PARTITION WALL TO EXTEND 6" ABOVE THE ACOUSTICAL CEILING. SEE DETAIL ELSEWHERE

3 **INSULATED INTERIOR PARTITION**
NON-BEARING, NON FIRE RATED
NEW FULL HEIGHT PARTITION WALL TO EXTEND 6" ABOVE THE ACOUSTICAL CEILING WITH BATT-18 SOUND INSULATION. SEE DETAIL ELSEWHERE

4 NON-BEARING, NON FIRE RATED
NEW LOW HEIGHT PARTITION. HEIGHT VARIES. SEE PLAN FOR ADDITIONAL HEIGHT INFO. SEE DETAIL ELSEWHERE FOR ADDITIONAL CONSTRUCTION INFO.

5 **NEW INTERIOR PARTITION**
NON-BEARING, NON FIRE RATED
NEW FULL HEIGHT PARTITION WALL TO EXTEND 6" ABOVE THE ACOUSTICAL CEILING. 1/16" LEAD SHIELDING TO A HEIGHT OF 7'-0" AFF. SEE DETAIL ELSEWHERE

6 NON-BEARING, NON FIRE RATED
NEW 9' HIGH PARTITION BETUEEN CANINE RUNS WITH STEEL FRAMEUORK AND CEMENT BOARD BOTH SIDES. EPOXY FLOOR FINISH TO ROLL UP UALLS AND OUER THE TOP. REAR UALL OF RUN SHALL HAVE SAME EPOXY FINISH UP TO 5'. SEE DETAIL ELSEWHERE FOR ADDITIONAL CONSTRUCTION INFO.



PROJECT NOTES
SCALE: N.T.S.
3 A-1

PROPOSED FLOOR PLAN
SCALE: 1/4" = 1'-0"
1 A-1

Item 3.
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STATE OF FLORIDA · ERIC R. TREBBIEN · AR94258 · REGISTERED ARCHITECT

Digitally signed by Eric R Trebbien
Date: 2025.08.25 14:47:04 -04'00'

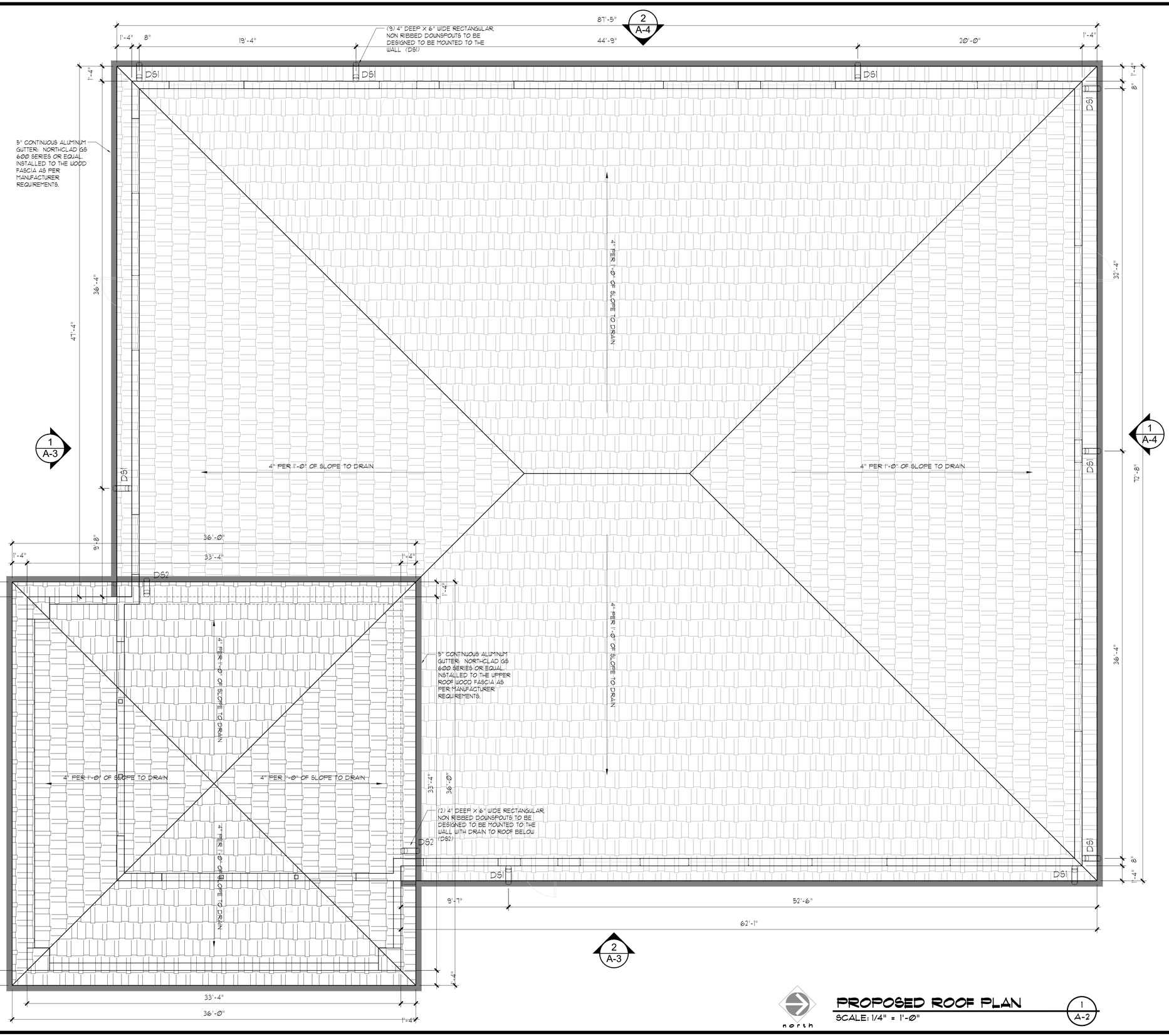
SHEET TITLE: Proposed Floor Plan, Wall Legend, and Notes

PROJECT NAME:
New Ground Up Building and Veterinary Facility for:
Dr Jeffery S. Esch, DVM
State Road 19
Howey in the Hills, Florida 34737
Parcel No.: 02-21-258-0002-000-00500

REVISIONS:

RELEASED FOR:	CIVIL PERMIT
DATE:	08/25/2025
PROJECT MGR.:	CEL
PROJECT NO.:	24114

A-1



PROPOSED ROOF PLAN

SCALE: 1/4" = 1'-0"

1
A-2

Item 3.

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Date: 2025.08.25 14:47:19 -04'00'

SHEET TITLE:

Proposed Roof Plan

PROJECT NAME:

New Ground Up Building and Veterinary Facility for:
Dr Jeffery S. Esch, DVM
State Road 19
Howey in the Hills, Florida 34737
Parcel No.: 02-21-258-0002-000-00500

REVISIONS:

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DATE:	08/25/2025
PROJECT MGR.:	CEL
PROJECT NO.:	24114

A-2

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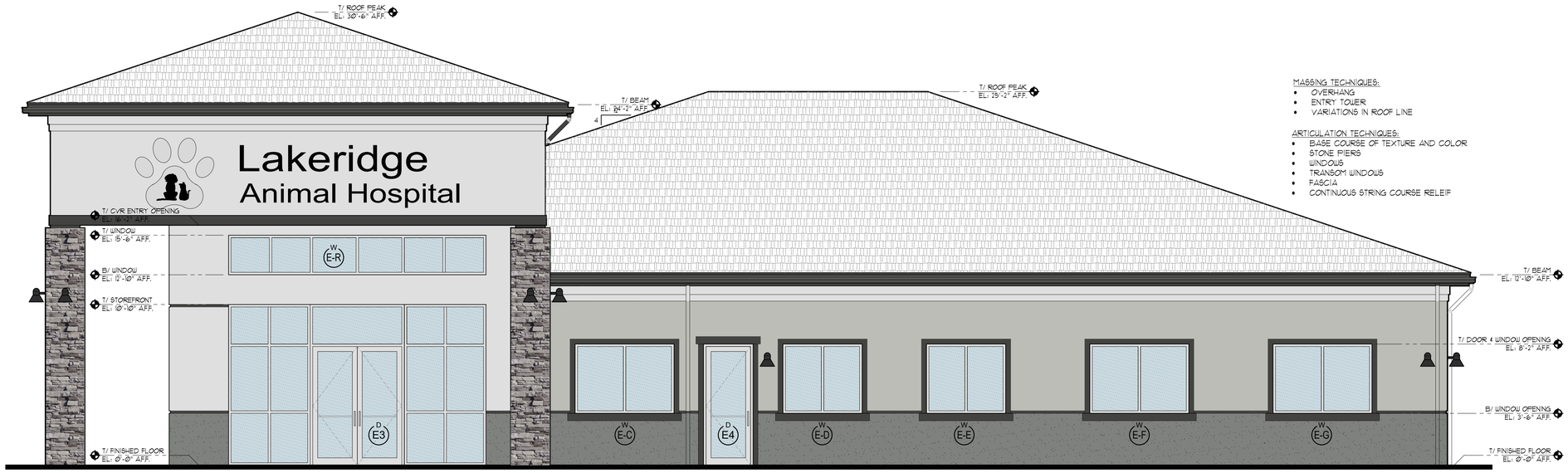

MASSING TECHNIQUES:
- OVERHANG
- ENTRY TOWER
- VARIATIONS IN ROOF LINE

ARTICULATION TECHNIQUES:
- BASE COURSE OF TEXTURE AND COLOR
- STONE PIERS
- WINDOWS
- TRANSOM WINDOWS
- FASCIA
- CONTINUOUS STRING COURSE RELEIF

EAST BUILDING ELEVATION

SCALE: 1/4 = 1'-0"

2 / A-3

1 SW 7063 NEBULOUS WHITE - OVER STUCCO

2 SW 7065 ARGOS - OVER STUCCO

3 SW 7067 CITY SCAPE - TEXTURED OVER STUCCO

4 SW 7069 IRON ORE - FASCIA TRIM

5 STONE TRIM: ELDORADO - SILVER LINING STACKED STONE

6 ASPHALT SHINGLE: TIMBERLINE AMERICAN HARVEST - COLOR: FOX HOLLOW GRAY



MASSING TECHNIQUES:
- OVERHANG
- ENTRY TOWER
- VARIATIONS IN ROOF LINE

ARTICULATION TECHNIQUES:
- BASE COURSE OF TEXTURE AND COLOR
- STONE PIERS
- WINDOWS
- TRANSOM WINDOWS
- FASCIA
- CONTINUOUS STRING COURSE RELEIF

SOUTH BUILDING ELEVATION

SCALE: 1/4 = 1'-0"

1 / A-3

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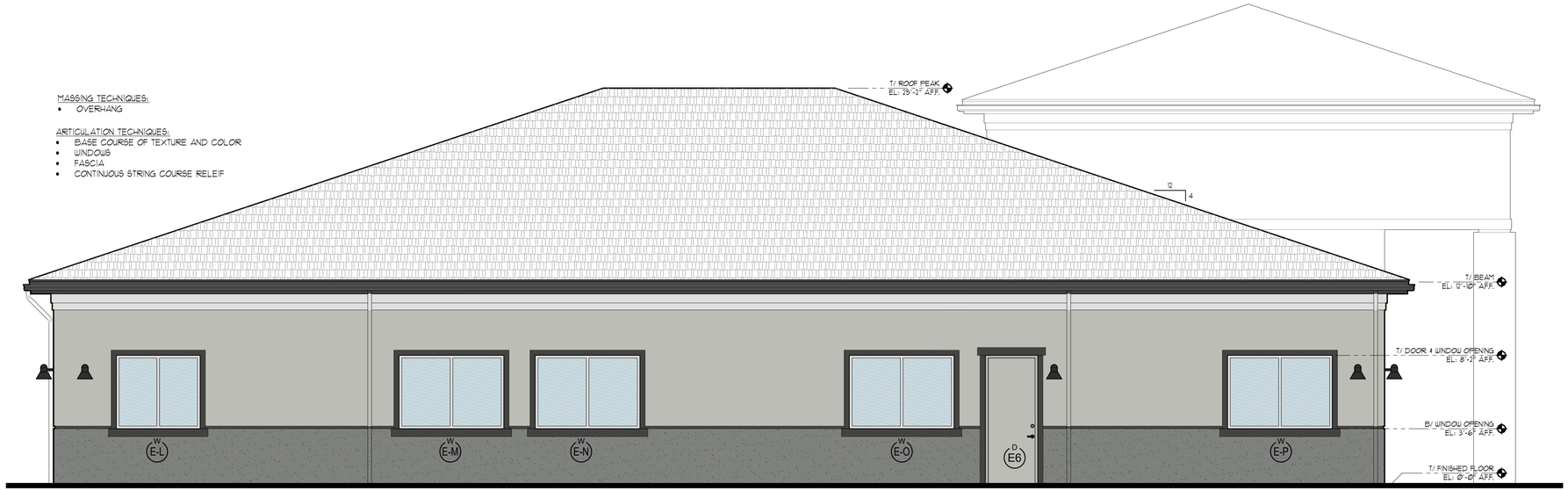
SHEET TITLE: Building Elevations

PROJECT NAME:
New Ground Up Building and Veterinary Facility for:
Dr Jeffery S. Esch, DVM
State Road 19
Howey in the Hills, Florida 34737
Parcel No.: 02-21-258-0002-000-00500

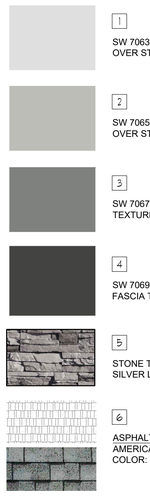
REVISIONS:

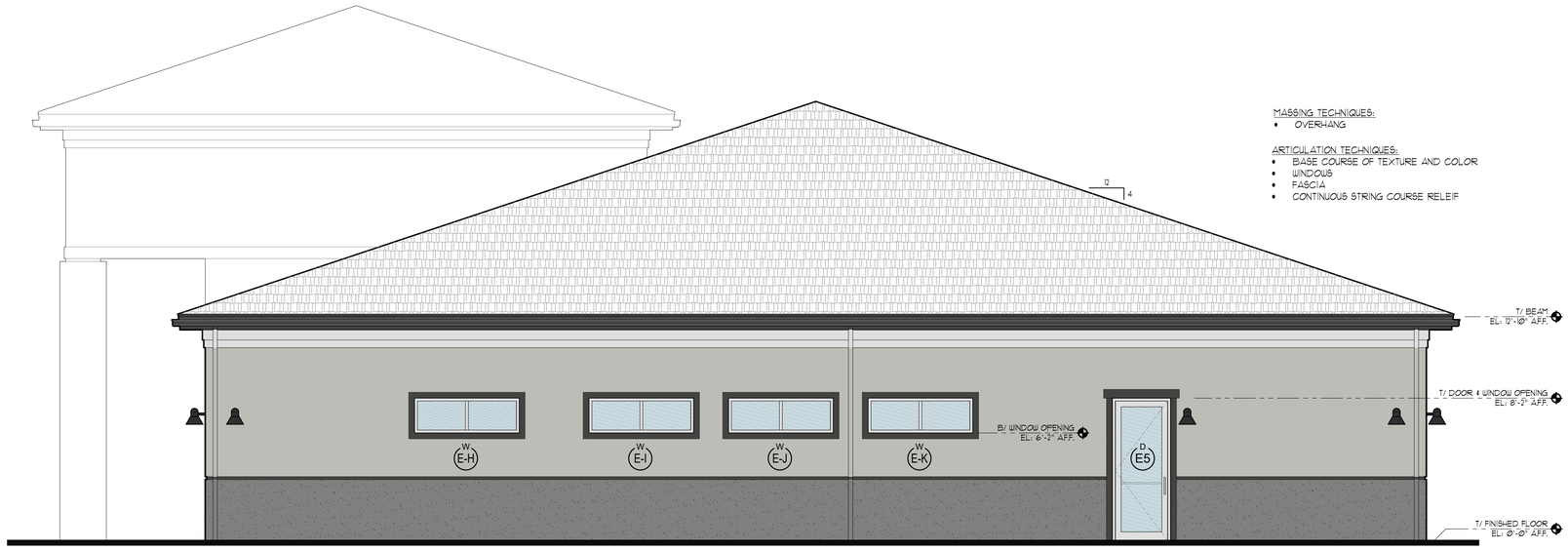
RELEASED FOR:	CIVIL PERMIT
DATE:	08/25/2025
PROJECT MGR.:	CEL
PROJECT NO.:	24114

A-3



WEST BUILDING ELEVATION
SCALE: 1/4 = 1'-0"
2
A-4





NORTH BUILDING ELEVATION
SCALE: 1/4 = 1'-0"
1
A-4

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Date: 2025.08.25 14:47:47 -04'00'

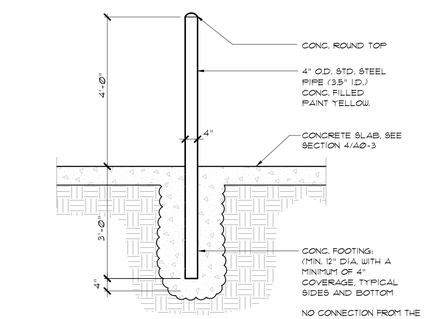
SHEET TITLE:
Building Elevations

PROJECT NAME:
New Ground Up Building and Veterinary Facility for:
Dr Jeffery S. Esch, DVM
State Road 19
Howey in the Hills, Florida 34737
Parcel No.: 02-21-258-0002-000-00500

REVISIONS:

RELEASED FOR:	CIVIL PERMIT
DATE:	08/25/2025
PROJECT MGR.:	CEL
PROJECT NO.:	24114

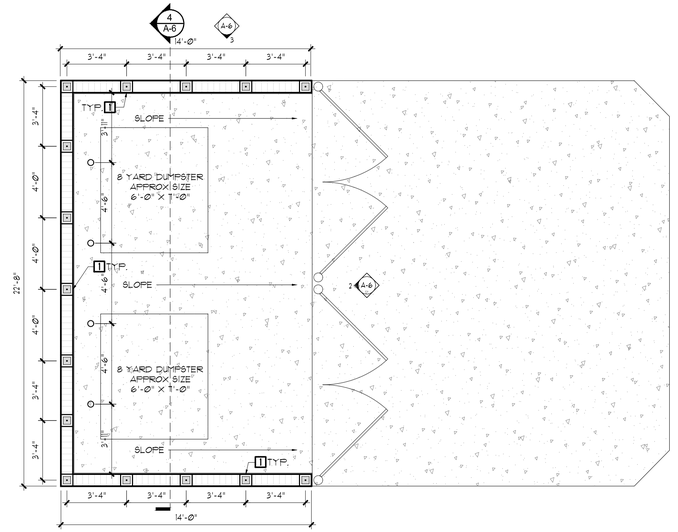
A-4



BOLLARD DETAIL

SCALE: N.T.C.

6 / A-5

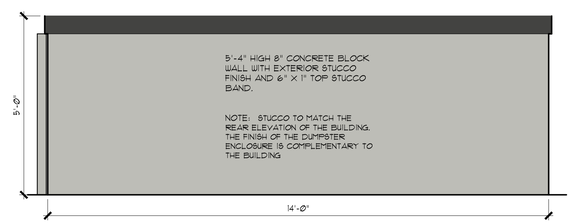


DUMPSTER ENCLOSURE PLAN

SCALE: 1/4" = 1'-Ø"

1 / A-5

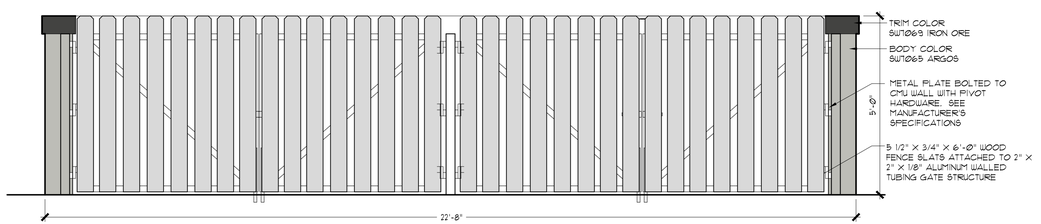
north



SIDE ELEVATION

SCALE: 1/2" = 1'-Ø"

3 / A-5



FRONT (GATE) ELEVATION

SCALE: 1/2" = 1'-Ø"

2 / A-5

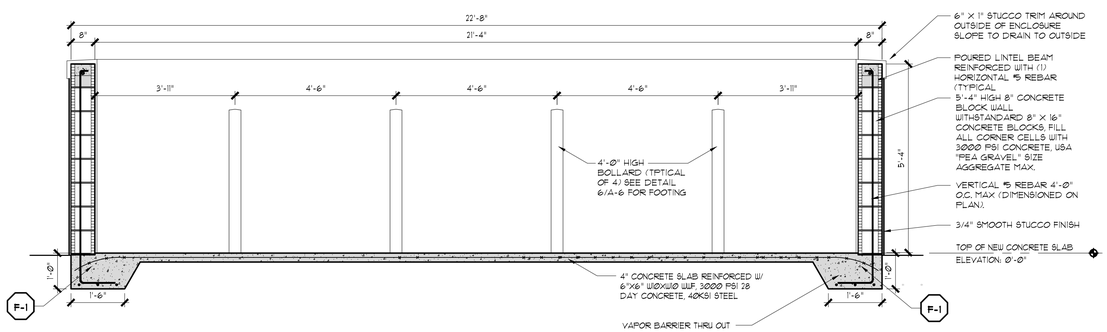
FOUNDATION SCHEDULE				
MARK	SIZE	DEPTH	TRANSVERSE REINF.	REMARKS
F-1	18"	12"	(3) #5 BOTTOM CONTINUOUS WITH #5 TRANSVERSE BARS AT MINIMUM 4'-0" OC.	POURED CONTINUOUS WITH FINISHED SLAB

COLUMN SCHEDULE					
MARK	SYMBOL	SIZE	MATERIAL	VERTICAL REINFORCEMENT	LOCATION
1		8" X 8"	FILLED CELL MASONRY	1 # 5	COORDINATE WITH FOUNDATION ON DUMPSTER ENCLOSURE PLAN

DUMPSTER ENCLOSURE SECTION

SCALE: N.T.S.

5 / A-5



DUMPSTER ENCLOSURE SECTION

SCALE: 1/2" = 1'-Ø"

4 / A-5

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SHEET TITLE: Dumpster Enclosure

PROJECT NAME:
New Ground Up Building and Veterinary Facility for:
Dr Jeffery S. Esch, DVM
State Road 19
Howey in the Hills, Florida 34737
Parcel No.: 02-21-258-0002-000-00500

REVISIONS:

RELEASED FOR:	CIVIL PERMIT
DATE:	08/25/2025
PROJECT MGR.:	CEL
PROJECT NO.:	24114

A-5

STORMWATER MANAGEMENT DESIGN

FOR

VETERINARY CLINIC

Howey in the Hills, Florida 33629
Project No. 2023.179

August 22nd, 2025

PREPARED BY

Z DEVELOPMENT SERVICES
CIVIL ENGINEERING CONSULTANTS

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Robert Ziegenfuss
c=US, o=Z Development Services, dnQualifier=A01410D00000190EA6802BC000371EF, cn=Robert Ziegenfuss
2025.08.26 11:59:24 -04'00'

ROBERT ZIEGENFUSS, P.E.
FL REG. #56752

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STORMWATER MANAGEMENT DESIGN

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I. PROJECT NARRATIVE

The proposed development includes the construction of a 6,000 SF, one-story veterinary clinic with associated parking and utilities. The proposed project drainage area is 3.06 acres in size. The stormwater management system will be a dry retention system. The stormwater management system is designed according to the City of Howey in the Hills and the St. Johns River Water Management District (SJRWMD) requirements.

II. EXISTING CONDITIONS

The site is currently undeveloped with ground cover consisting of short grass, vegetation and some trees. There are no buildings or other major improvements on the site. There is no existing stormwater management system on the subject site. This area has no outfall and is a closed basin.

A. 100-Year Flood Zone

The site lies in flood zone "X" based on flood insurance rate map number 12069C0485E, effective December 18th, 2012, for Lake County, FL. A small portion of the site in zone A, which is the edge of an existing flood line. There is a portion of the site within the 100-yr flood zone line, below an elevation of 87.30'. The property's point of outfall is the existing water body located on the west side of the site.

B. Wetlands

There is currently a water body located on the west side of the property. The current water level is at elevation 80.00' and has a flood zone elevation of 83.70', as determined by Pegasus Engineering. This flood zone line is what composes the post development drainage basin named Flood Zone Basin.

C. Existing Zoning and Land Use

The zoning is NC (Neighborhood Commercial Zoning). Current land use is vacant.

D. Soil and Groundwater Conditions

According to the NRCS Web Soils map, the site is composed of approximately 57.9% by #5 Apopka sand and 28.2% by #45 Tavares sand.

E. Existing Drainage Basins and Time of Concentration

All water sheet flows west over the site from the state road 19 right-of-way and discharges to the existing water body located west of the site. The site is divided into two existing basins, one is the Flood Zone basin that is delineated by the 100-year flood zone and the other is the undeveloped upland basin, composed by the usable land that will be constructed upon.

The pre-development time of concentration of 29 minutes (Section VIII, C) was determined using the TR-55 Manual. It was used 10 minutes as the post-development time of concentration.

F. Tailwater Conditions and Positive Outfall

The outfall condition is free discharge. The discharge occurs above the existing flood zone elevation.

III. PROPOSED DEVELOPMENT

A. Review and Permitting Agencies

- SJRWMD
- Town of Howey in the Hills

B. Stormwater Management System Design

While the flood zone basin remains the same in the pre and post development conditions. The developed portion of the site will be divided into three post development basins. These basins are as follows: Future Development Basin (parcel of land remaining for future development), Post Site Basin (current area for the veterinary office construction) and Direct Basin (portion of the constructed site that drains straight to the ultimate outfall). All three basins are ultimately discharged to the same outfall. The proposed condition will store the treatment volume using a dry retention system, and the point of discharge will be the existing flood zone area using a 0.7 ft x 0.3 ft rectangular weir to discharge overland through the flood zone basin which will ultimately discharge into the existing water body west of the site.

C. Water Quality Treatment Volume (WQTV) and Recovery

The nutrient loading treatment is achieving net improvement with 0.9 inches of treatment volume. The required treatment volume is 10,013 CF. This volume is met in the dry retention system at elevation 87.81'. The vertical weir is proposed at elevation 90.30', with a retained treatment volume of 48,547 CF, which recovers in 14 days.

D. Design Storm Attenuation

SWFWMD requires 2YRS-24 HRS, 10 YRS-24 HRS, 25 YRS-24 HRS, 100 YRS-24HRS. We have confirmed that there is no increase in rate or volume discharged from the pre to post development conditions.

Storm Event	Pre-Development Discharge (cfs)	Post-Development Discharge (cfs)	Post-Development Max Stage (ft)
2-Year 24-Hour	0.02	0.00	88.63
10-Year 24-Hour	0.27	0.14	89.56
25-Year 24-Hour	0.90	0.48	90.31
25-Year 96-Hour	2.34	0.79	90.76
100-Year 24-Hour	2.87	1.38	90.94

Storm Event	Pre-Development Volume Discharged (CF)	Post-Development Volume Discharged (CF)
2-Year 24-Hour	689	110
10-Year 24-Hour	4880	757
25-Year 24-Hour	10545	1626
25-Year 96-Hour	26006	24475
100-Year 24-Hour	25109	18343

IV. DESIGN CALULATIONS

A. Site Area and Drainage Basins

Existing Conditions

UNDEVELOPED BASIN

Site / Development Area (SF)	133,502
Total Basin Area (SF)	133,502
Weighted CN	39
Total Basin Impervious Areas (SF)	0
Directly Connected Impervious Area (DCIA), Percent	0
Time of Concentration, Tc (minutes)	29

For sheet flow of less than 300 feet, use Manning's kinematic solution (Overtop and Meadows 1976) to compute T_t:

$$T_t = \frac{0.007(nL)^{0.8}}{(P_2)^{0.5} s^{0.4}} \quad \text{[eq. 3-3]}$$

Tt = (0.007*(0.4*255)^0.8) / (4.18^0.5*0.044^0.4) = 0.483 hours = 29 minutes.

Proposed Conditions

FUTURE DEVELOPMENT BASIN

Site / Development Area (SF)	133,502
Total Basin Area (SF)	42,383
Weighted CN	86
Total Basin Impervious Areas (SF)	33,906
Directly Connected Impervious Area (DCIA), Percent	80
Time of Concentration, Tc (minutes)	10

POST SITE BASIN

Site / Development Area (SF)	133,502
Total Basin Area (SF)	70,960
Weighted CN	71
Total Basin Impervious Areas (SF)	38,725
Directly Connected Impervious Area (DCIA), Percent	54.6
Time of Concentration, Tc (minutes)	10

DIRECT BASIN

Site / Development Area (SF)	133,502
Total Basin Area (SF)	20,159
Weighted CN	39
Total Basin Impervious Areas (SF)	0
Directly Connected Impervious Area (DCIA), Percent	0
Time of Concentration, Tc (minutes)	10

The proposed minimum pavement elevation is 96.30'.
The proposed minimum finish floor elevation is 97.80'.

B. Nitrogen and Phosphorous Requirement

The proposed retention pond is designed for treatment and nutrient removal.
The detailed calculations for the phosphorous and nitrogen removal efficiencies are attached to this report under (Section VII, D).

V. MAINTENANCE INSTRUCTIONS FOR RETENTION/DETENTION PONDS

- ✓ Inlets and pipes shall be kept free of trash, silt, soil and leaves. Inspect the inlets at least annually, and jet/vacuum the system as needed.
- ✓ The outfall structure shall be kept free of trash and debris. The required skimmer shall be inspected annually to ensure it is free of debris. Repair the skimmer as needed.
- ✓ Oils, paints, or other harmful chemicals shall be kept from the facilities. Any such materials entering the system shall be immediately removed. Contact a qualified environmental company to dispose of any harmful chemicals.
- ✓ During the earthwork, erosion protection such as hay bale, turbidity curtains and others shall be placed at inlets and outlet pipes to control stormwater quality and turbidity. Any silt washed into the pond during the construction process should be removed and the pond bottom scarified prior to seeding.
- ✓ Inspections shall be made at least annually to check sump-type catch basins for major build-up of sedimentation or trash. The catch basins shall be cleaned if the sedimentation level in the sump is 6 inches or greater. The sediment may be vacuumed, pumped, or manually removed from the basin.
- ✓ Remove grate or lid and remove sediment that has entered the control structure.

VI. FIGURES

FIGURE A – AERIAL PHOTO



FIGURE B – USGS MAP


REVELS RD
3835990
1704171
65
60
85
90
100
105

FIGURE C – FEMA FIRMETTE

National Flood Hazard Layer FIRMette

FEMA

81°47'11"W 28°41'50"N



81°46'33"W 28°41'19"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

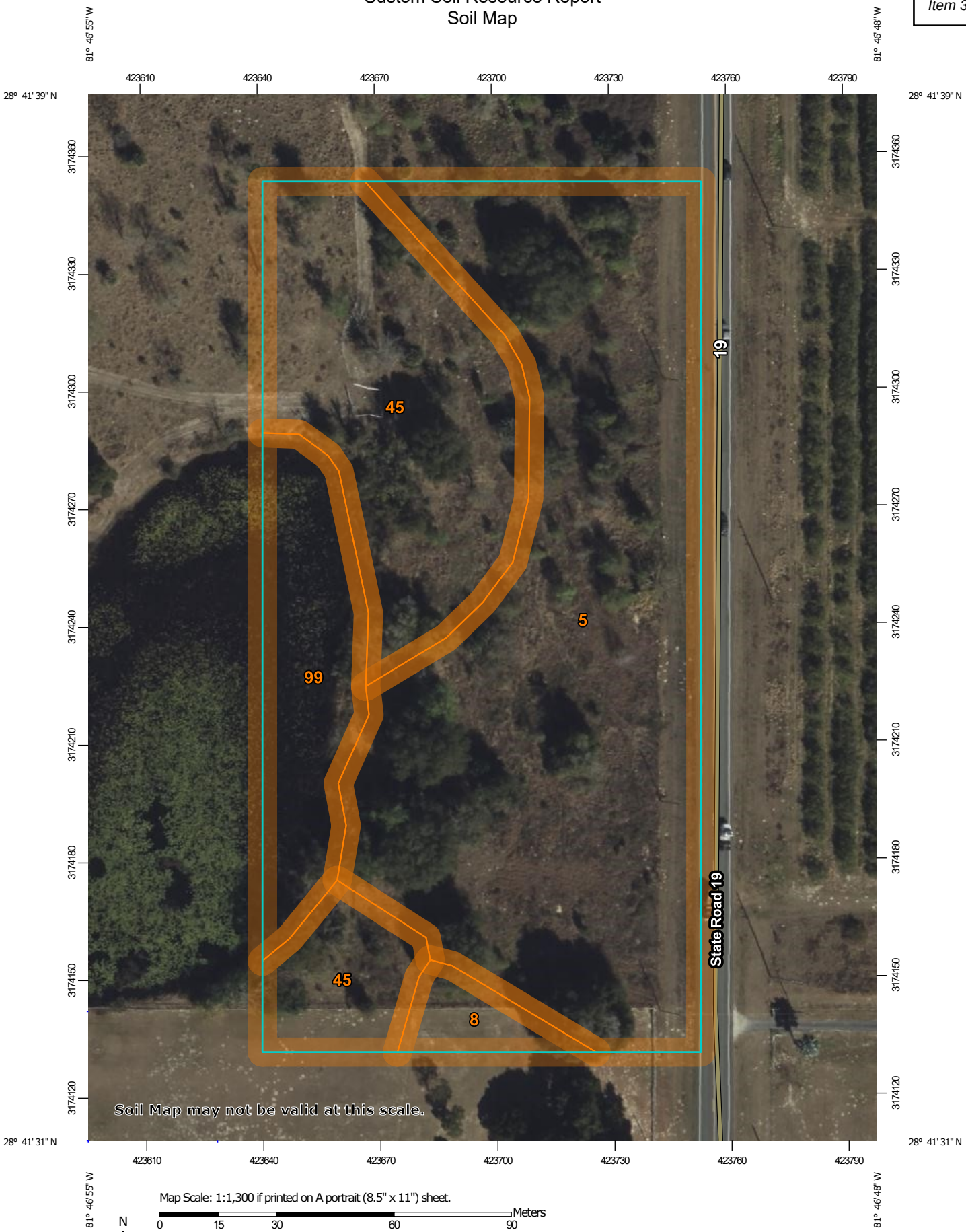
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 8/10/2023 at 2:38 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the follo elements do not appear: basemap imagery, flood zon legend, scale bar, map creation date, community ider FIRM panel number, and FIRM effective date. Map im unmapped and unmodernized areas cannot be used regulatory purposes.

Item 3.

FIGURE D – NRCS SOILS MAP

Custom Soil Resource Report
Soil Map



Map Scale: 1:1,300 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

FIGURE E – PRE DEVELOPMENT BASIN MAP

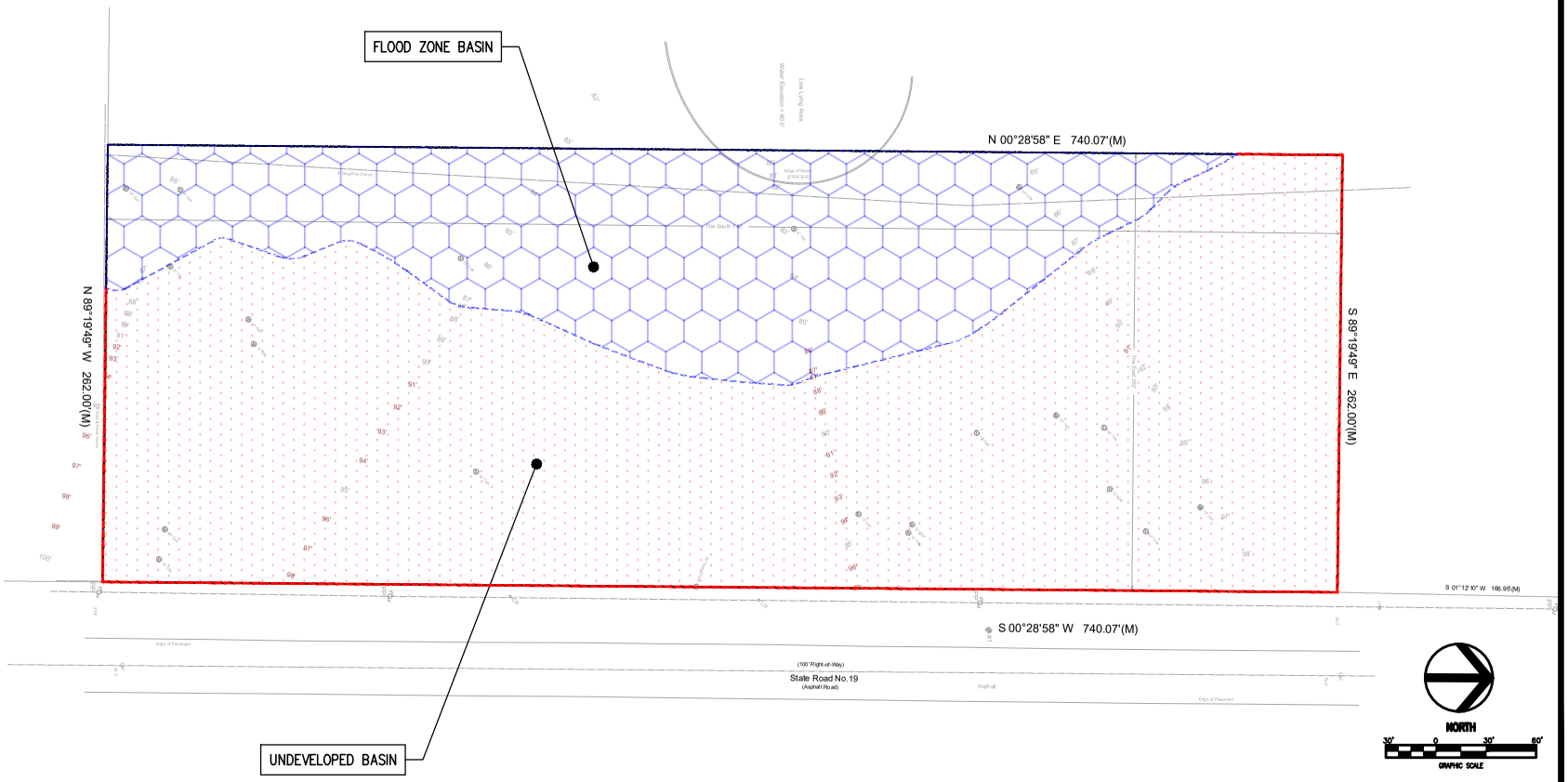
FLOOD ZONE BASIN

TOTAL AREA: 60,395 SF (±1.39)	
PERVIOUS	IMPERVIOUS
59,037 SF	1,358 SF
97.7 %	2.3 %
CN = 40	

UNDEVELOPED BASIN

TOTAL AREA: 133,502 SF (±3.06)	
PERVIOUS	IMPERVIOUS
133,502 SF	0 SF
100 %	0 %
CN = 39	

PRE-DEVELOPMENT



Z DEVELOPMENT SERVICES
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DATE

REVISION

ROBERT ZIEGENFUSS, P.E., LEED AP
FL REG. # 56752

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VETERINARY OFFICE & RETAIL
STATE ROAD 19
SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FL 34737

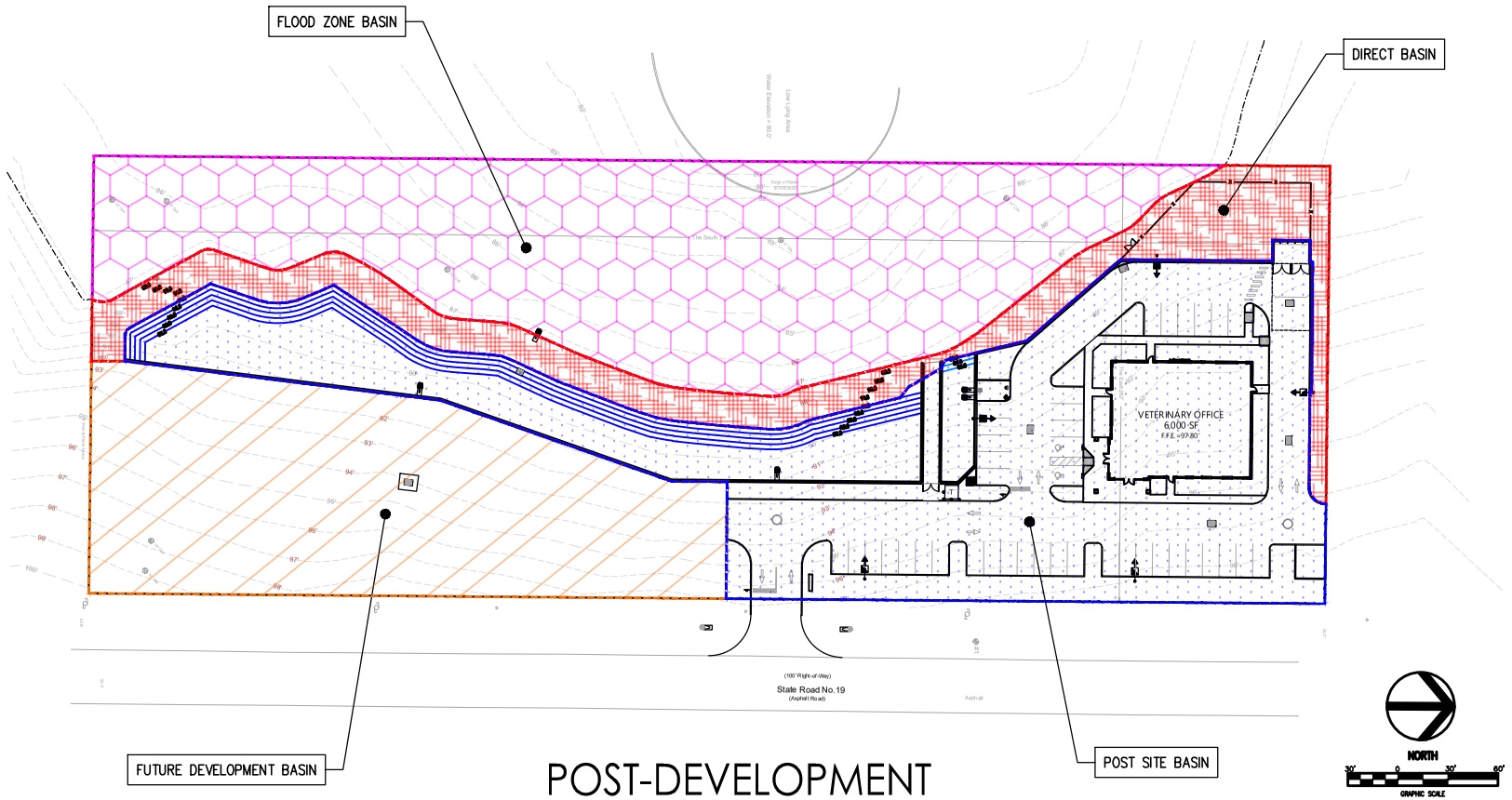
DATE: 08/28/24
DRAWN: LF
CHECKED: DL

PRE

PROJECT NO.: 2023.179

FIGURE F – POST DEVELOPMENT BASIN MAP

FLOOD ZONE BASIN		+	FUTURE DEVELOPMENT BASIN		+	POST SITE BASIN		+	DIRECT BASIN		=	TOTAL DEVELOPED	
TOTAL AREA: 60,395 SF (±1.38)			TOTAL AREA: 42,383 SF (±0.97)			TOTAL AREA: 70,960 SF (±1.63)			TOTAL AREA: 20,159 SF (±0.46)			TOTAL AREA: 133,502 SF (±3.06)	
PERVIOUS	IMPERVIOUS		PERVIOUS	IMPERVIOUS		PERVIOUS	IMPERVIOUS		PERVIOUS	IMPERVIOUS		PERVIOUS	IMPERVIOUS
59,037 SF	1,358 SF		8,477 SF	33,906 SF		32,235 SF	38,725 SF		20,159 SF	0 SF		60,204 SF	73,298 SF
97.7 %	2.3 %		20 %	80 %		45.4 %	54.6 %		100 %	0 %		45.1 %	54.9 %
CN = 40			CN = 86			CN = 71			CN = 39			CN = 71	



POST-DEVELOPMENT

Z DEVELOPMENT SERVICES
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PROJECT NO.: 2023.179

VII. COMPUTER MODELING RESULTS

A. WATER QUALITY TREATMENT VOLUME REQUIREMENTS

Treatment Volume

Veterinary Clinic

Howey in the Hills, FL # 2023.179

On-Line- SJRWMD

Site Information

133,502	Total Site Area, sf
51,907	Green Area, sf
81,595	Impervious with Road, sf
0.90	Runoff, in.
10,013	Treatment Volume, cf

Stage - Storage Summary

Elevation	POND 1	15in PIPE	18in PIPE	24in PIPE	Total Area (sf)	incr. volume cubic feet	cum. volume cubic feet	Area ACRES
		0	0	0	0	0	0	0.0000
		0	0	0	0	0	0	0.0000
		0	0	0	0	0	0	0.0000
		0	0	0	0	0	0	0.0000
		0	0	0	0	0	0	0.0000
87.00	11,516	0	0	0	11,516	0	0	0.2644
88.00	13,082	0	0	0	13,082	12,299	12,299	0.3003
89.00	14,683	0	0	0	14,683	13,883	26,182	0.3371
90.00	16,321	0	0	0	16,321	15,502	41,684	0.3747
91.00	17,994	0	0	0	17,994	17,158	58,841	0.4131

Required Treatment Volume, cf	10,013
is Available at Elevation	87.81

Weir @	90.3
Volume	46831 CF
Area	16823 SF

B. PONDS 3.3 MODELING FOR RECOVERY

PONDS Version 3.3.0265
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name: Veterinary Clinic

Simulation Description:
Project Number: 2023.179

Engineer : Leonardo

Supervising Engineer:

Date: 07-16-2025

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	80.00
Water Table Elevation, [WT] (ft datum):	85.50
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	10.80
Fillable Porosity, [n] (%):	25.00
Unsaturated Vertical Infiltration Rate, [Iv] (ft/day):	13.0
Maximum Area For Unsaturated Infiltration, [Av] (ft²):	16823.0

Geometry Data

Equivalent Pond Length, [L] (ft): 460.0

Equivalent Pond Width, [W] (ft): 40.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft²)
87.00	11516.0
88.00	13082.0
89.00	14683.0
90.00	16321.0
91.00	17994.0

PONDS Version 3.3.0265
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 :: 14 Day Recovery

Hydrograph Type: Slug Load
Modflow Routing: Routed with infiltration

Treatment Volume (ft^3) 46831

Initial ground water level (ft datum) 85.50 (default)

Time After Storm Event (days)	Time After Storm Event (days)	Time After Storm Event (days)	Time After Storm Event (days)
0.100	2.000	5.000	10.000
0.250	2.500	6.000	11.000
0.500	3.000	7.000	12.000
1.000	3.500	8.000	13.000
1.500	4.000	9.000	14.000

PONDS Version 3.3.0265
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Detailed Results *:: Scenario 1 :: 14 Day Recovery*

Elapsed Time	Instantaneous Inflow Rate	Outside Recharge	Stage Elevation	Infiltration Rate	Combined Instantaneous Discharge	Cumulative Inflow	Cumulative Infiltration	Combined Cumulative	
0.000	7805.1670	0.00000	85.50000	0.00000	0	0.000	0.00000	0	N.A.
0.002	7805.1670	0.00000	90.30955	2.53063	0	46831.000	15.18743	0	U/P
2.400	0.0000	0.00000	89.42386	1.10127	0	46831.000	14278.88000	0	U/S
6.000	0.0000	0.00000	89.18954	0.23163	0	46831.000	17837.11000	0	S
12.000	0.0000	0.00000	88.95593	0.13888	0	46831.000	21295.03000	0	S
24.000	0.0000	0.00000	88.66617	0.08238	0	46831.000	25461.96000	0	S
36.000	0.0000	0.00000	88.45511	0.06046	0	46831.000	28412.44000	0	S
48.000	0.0000	0.00000	88.28893	0.04762	0	46831.000	30685.37000	0	S
60.000	0.0000	0.00000	88.15184	0.03918	0	46831.000	32527.14000	0	S
72.000	0.0000	0.00000	88.03522	0.03318	0	46831.000	34070.15000	0	S
84.000	0.0000	0.00000	87.93386	0.02870	0	46831.000	35393.80000	0	S
96.000	0.0000	0.00000	87.84433	0.02502	0	46831.000	36549.51000	0	S
120.000	0.0000	0.00000	87.69797	0.01971	0	46831.000	38411.77000	0	S
144.000	0.0000	0.00000	87.57465	0.01649	0	46831.000	39954.86000	0	S
168.000	0.0000	0.00000	87.46868	0.01408	0	46831.000	41261.67000	0	S
192.000	0.0000	0.00000	87.37624	0.01221	0	46831.000	42387.47000	0	S
216.000	0.0000	0.00000	87.29456	0.01072	0	46831.000	43370.86000	0	S
240.000	0.0000	0.00000	87.22168	0.00951	0	46831.000	44239.70000	0	S
264.000	0.0000	0.00000	87.15607	0.00852	0	46831.000	45014.67000	0	S
288.000	0.0000	0.00000	87.09657	0.00769	0	46831.000	45711.66000	0	S
312.000	0.0000	0.00000	87.04228	0.00648	0	46831.000	46342.70000	0	S
336.000	0.0000	0.00000	86.98689	----	----	46831.000	46831.00000	0	N.A.

C. ICPR4 MODELING FOR PRE/POST

Simple Basin: DIRECT BASIN

Scenario:	Scenario1
Node:	POST OUTFALL
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	0.4600 ac
Curve Number:	39.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: FUTURE DEVELOPMENT BASIN

Scenario:	Scenario1
Node:	SITE POND
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	0.9700 ac
Curve Number:	39.0
% Impervious:	80.00
% DCIA:	80.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: POST SITE BASIN

Scenario:	Scenario1
Node:	SITE POND
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	1.6300 ac
Curve Number:	71.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: PRE SITE BASIN

Scenario:	Scenario1
Node:	PRE OUTFALL
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	29.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	3.0600 ac
Curve Number:	39.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Node: POST OUTFALL

Scenario:	Scenario1
Type:	Time/Stage
Base Flow:	0.00 cfs
Initial Stage:	80.00 ft
Warning Stage:	80.10 ft
Boundary Stage:	

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	80.00
0	0	0	100.0000	80.00

Comment:

Node: PRE OUTFALL

Scenario: Scenario1
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 80.00 ft
Warning Stage: 80.10 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	80.00
0	0	0	100.0000	80.00

Comment:

Node: SITE POND

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 87.00 ft
Warning Stage: 91.00 ft

Stage [ft]	Area [ac]	Area [ft2]
87.00	0.2644	11517
88.00	0.3003	13081
89.00	0.3371	14684
90.00	0.3747	16322
91.00	0.4131	17995

Comment:

Weir Link: WEIR

Scenario: Scenario1
From Node: SITE POND
To Node: POST OUTFALL
Link Count: 1
Flow Direction: Both
Damping: 0.0000 ft
Weir Type: Broad Crested Vertical
Geometry Type: Rectangular
Invert: 90.30 ft
Control Elevation: 90.30 ft
Max Depth: 0.70 ft
Max Width: 0.30 ft
Fillet: 0.00 ft

Bottom Clip
Default: 0.00 ft
Op Table:
Ref Node:

Top Clip
Default: 0.00 ft
Op Table:
Ref Node:

Discharge Coefficients
Weir Default: 2.800
Weir Table:
Orifice Default: 0.800
Orifice Table:

Comment:

Simulation: 002 Yrs - 24 Hrs

Scenario: Scenario1
Run Date/Time: 7/23/2025 11:08:31 AM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	24.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		30.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft

IA Recovery Time: 24.0000 hr
Smp/Man Basin Rain: Global

		Opt:	
Max dZ:	1.0000 ft		
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~SCSII-24
		Rainfall Amount:	4.18 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: 010 Yrs - 24 Hrs

Scenario: Scenario1
Run Date/Time: 7/23/2025 11:08:34 AM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	24.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		30.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources		Lookup Tables	
Rainfall Folder:		Boundary Stage Set:	
		Extern Hydrograph Set:	
Unit Hydrograph Folder:		Curve Number Set:	
		Green-Ampt Set:	
		Vertical Layers Set:	
		Impervious Set:	

Tolerances & Options			
Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6		
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft		
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~SCSII-24
		Rainfall Amount:	6.03 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: 025 Yrs - 24 Hrs

Scenario: Scenario1
Run Date/Time: 7/23/2025 11:08:39 AM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	24.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		30.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.0000 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic

IA Recovery Time: 24.0000 hr
Smp/Man Basin Rain Opt: Global
Rainfall Name: ~SCSII-24
Rainfall Amount: 7.55 in
Storm Duration: 24.0000 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 100 ft2
Energy Switch (1D): Energy

Comment:

Simulation: 025 Yrs - 96 Hrs

Scenario: Scenario1

Run Date/Time: 7/23/2025 11:08:46 AM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	96.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		30.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.0000 ft

IA Recovery Time: 24.0000 hr
Smp/Man Basin Rain Opt: Global

Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~SJRWMD-96
		Rainfall Amount:	10.50 in
Edge Length Option:	Automatic	Storm Duration:	96.0000 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: 100 Yrs - 24 Hrs

Scenario: Scenario1
Run Date/Time: 7/23/2025 11:09:05 AM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	24.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		30.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Lookup Tables

Boundary Stage Set:

		Extern Hydrograph Set:	
Unit Hydrograph Folder:		Curve Number Set:	
		Green-Ampt Set:	
		Vertical Layers Set:	
		Impervious Set:	

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6		
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft		
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~SCSII-24
		Rainfall Amount:	10.40 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Node Max Conditions [Scenario1]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
POST OUTFALL	002 Yrs - 24 Hrs	80.10	80.00	0.0000	0.00	0.00	0
PRE OUTFALL	002 Yrs - 24 Hrs	80.10	80.00	0.0000	0.02	0.00	0
SITE POND	002 Yrs - 24 Hrs	91.00	88.63	0.0010	6.94	0.00	14087
POST OUTFALL	010 Yrs - 24 Hrs	80.10	80.00	0.0000	0.14	0.00	0
PRE OUTFALL	010 Yrs - 24 Hrs	80.10	80.00	0.0000	0.27	0.00	0
SITE POND	010 Yrs - 24 Hrs	91.00	89.56	0.0010	11.69	0.00	15598
POST OUTFALL	025 Yrs - 24 Hrs	80.10	80.00	0.0000	0.48	0.00	0
PRE OUTFALL	025 Yrs - 24 Hrs	80.10	80.00	0.0000	0.90	0.00	0

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
SITE POND	025 Yrs - 24 Hrs	91.00	90.31	0.0010	15.87	0.00	16838
POST OUTFALL	025 Yrs - 96 Hrs	80.10	80.00	0.0000	0.79	0.00	0
PRE OUTFALL	025 Yrs - 96 Hrs	80.10	80.00	0.0000	2.34	0.00	0
SITE POND	025 Yrs - 96 Hrs	91.00	90.76	0.0010	12.15	0.26	17587
POST OUTFALL	100 Yrs - 24 Hrs	80.10	80.00	0.0000	1.38	0.00	0
PRE OUTFALL	100 Yrs - 24 Hrs	80.10	80.00	0.0000	2.87	0.00	0
SITE POND	100 Yrs - 24 Hrs	91.00	90.94	0.0010	23.97	0.43	17888

Node Mass Balance Condensed [Scenario1]

Node Name	Sim Name	Total Inflow [ft3]	Total Outflow [ft3]	Stored Volume (Flow Based) [ft3]
POST OUTFALL	002 Yrs - 24 Hrs	110	0	110
POST OUTFALL	010 Yrs - 24 Hrs	757	0	757
POST OUTFALL	025 Yrs - 24 Hrs	1626	0	1626
POST OUTFALL	025 Yrs - 96 Hrs	24475	0	24475
POST OUTFALL	100 Yrs - 24 Hrs	18343	0	18343

Node Mass Balance Condensed [Scenario1]

Node Name	Sim Name	Total Inflow [ft3]	Total Outflow [ft3]	Stored Volume (Flow Based) [ft3]
PRE OUTFALL	002 Yrs - 24 Hrs	689	0	689
PRE OUTFALL	010 Yrs - 24 Hrs	4880	0	4880
PRE OUTFALL	025 Yrs - 24 Hrs	10545	0	10545
PRE OUTFALL	025 Yrs - 96 Hrs	26006	0	26006
PRE OUTFALL	100 Yrs - 24 Hrs	25109	0	25109

D. NITROGEN & PHOSPHOUROUS REMOVAL MODELING

Complete Report (not including cost) Ver 4.2.3

Project: 2023.179 Veterinary Clinic
Date: 8/2/2025 11:44:56 AM

Site and Catchment Information

Analysis: Specified Removal Efficiency

Catchment Name	POST SITE
Rainfall Zone	Florida Zone 2
Annual Mean Rainfall	50.00

Pre-Condition Landuse Information

Landuse	Undeveloped - Scrubby Flatwoods: TN=1.155 TP=0.027
Area (acres)	3.06
Rational Coefficient (0-1)	0.01
Non DCIA Curve Number	39.00
DCIA Percent (0-100)	0.00
Nitrogen EMC (mg/l)	1.155
Phosphorus EMC (mg/l)	0.027
Runoff Volume (ac-ft/yr)	0.082
Nitrogen Loading (kg/yr)	0.116
Phosphorus Loading (kg/yr)	0.003

Post-Condition Landuse Information

Landuse	Low-Intensity Commercial: TN=1.13 TP=0.188
Area (acres)	3.06
Rational Coefficient (0-1)	0.45
Non DCIA Curve Number	39.00
DCIA Percent (0-100)	54.90
Wet Pond Area (ac)	0.00
Nitrogen EMC (mg/l)	1.130
Phosphorus EMC (mg/l)	0.188
Runoff Volume (ac-ft/yr)	5.699
Nitrogen Loading (kg/yr)	7.941
Phosphorus Loading (kg/yr)	1.321

Catchment Number: 1 Name: POST SITE

Project: 2023.179 Veterinary Clinic
Date: 8/2/2025

Retention Design

Retention Depth (in)	0.900
Retention Volume (ac-ft)	0.230

Watershed Characteristics

Catchment Area (acres)	3.06
Contributing Area (acres)	3.060
Non-DCIA Curve Number	39.00
DCIA Percent	54.90
Rainfall Zone	Florida Zone 2
Rainfall (in)	50.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	80
Provided TN Treatment Efficiency (%)	83
Required TP Treatment Efficiency (%)	55
Provided TP Treatment Efficiency (%)	83

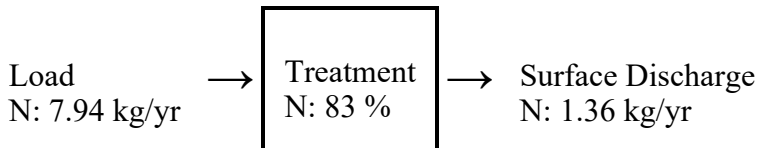
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	6.584
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	1.095
TP Concentration (mg/L)	0.000

Load Diagram for Retention (stand-alone)



P: 1.32 kg/yr | P: 83 % | P: 0.23 kg/yr

↓

Mass Reduction
N: 6.58 kg/yr
P: 1.10 kg/yr

Load Diagram for Retention (As Used In Routing)

Upstream Nodes
None

Load
N: 7.94 kg/yr
P: 1.32 kg/yr
Q: 5.70 ac-ft

→ Treatment
N: 82.9 %
P: 82.9 % →

Mass Discharged
N: 1.36 kg/yr
P: 0.23 kg/yr
Q: 0.97 ac-ft

↓

Mass Removed
N: 6.58 kg/yr
P: 1.10 kg/yr

Summary Treatment Report Version: 4.2.3

Project: 2023.179 Veterinary Clinic

Date:8/2/2025

Analysis Type: Specified Removal Efficiency

BMP Types:

Catchment 1 - (POST SITE) Retention
Based on % removal values to the nearest percent

Routing Summary
Catchment 1 Routed to Outlet

Total nitrogen target removal met? **Yes**
Total phosphorus target removal met? **Yes**

Summary Report

Nitrogen

Surface Water Discharge

Total N pre load	.12 kg/yr
Total N post load	7.94 kg/yr
Target N load reduction	80 %

Target N discharge load	1.59 kg/yr	
Percent N load reduction	83 %	
Provided N discharge load	1.36 kg/yr	2.99 lb/yr
Provided N load removed	6.58 kg/yr	14.52 lb/yr

Phosphorus

Surface Water Discharge

Total P pre load	.003 kg/yr	
Total P post load	1.321 kg/yr	
Target P load reduction	55 %	
Target P discharge load	.594 kg/yr	
Percent P load reduction	83 %	
Provided P discharge load	.226 kg/yr	.5 lb/yr
Provided P load removed	1.095 kg/yr	2.415 lb/yr

VIII. GEOTECHNICAL INVESTIGATION

GEOTECHNICAL ENGINEERING REPORT

Vet Clinic & Retail

Howey in the Hills, Lake County, Florida

August 28, 2024

Prepared for:
Z Development Services
708 East Colonial Drive, Suite 100
Orlando, FL 32803

Attn: Mr. Bob Ziegenfuss, P.E.

Prepared by:
Geo-Technology Associates, Inc.
Geotechnical and Environmental Consultants

4617 Parkbreeze Court
Orlando, Florida 32808
(321) 482-4239
www.gtaeng.com

GTA Project No: 31232169

GEO-TECHNOLOGY ASSOCIATES, INC.

GEOTECHNICAL AND
ENVIRONMENTAL CONSULTANTS

A Practicing Geoprofessional Business Association Member Firm

August 28, 2024

Z Development Services
708 East Colonial Drive, Suite 100
Orlando, FL 32803

Attn: Mr. Bob Ziegenfuss, P.E.
bob@zdevelopmentservices.com

Re: Geotechnical Engineering Report
Vet Clinic & Retail
Howey in the Hills, Lake County, Florida

In accordance with our revised subconsultant agreement dated July 26, 2024, Geo-Technology Associates, Inc. (GTA) has performed a geotechnical exploration for the proposed vet clinic and retail development planned in Lake County, Florida. The subject site is located west of US-19 and south of Revels Road in Howey in the Hills, Lake County, Florida.

The results of the field and laboratory testing and our findings and conclusions regarding the geotechnical implications of the existing site conditions within the subject property are included in this report. Please note that, unless you make other arrangements, GTA will discard all soil samples obtained from the explorations 10 days after the date of this report. If you have any questions or concerns about this report, or if you want additional information, please contact us at (321) 482-4239 or GPillappa@gtaeng.com.

Sincerely,

GEO-TECHNOLOGY ASSOCIATES, INC.
Certificate of Authorization No. 35088

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Florida. License No.: 82816, Expiration Date: 02/28/2025. GSP

Gautham S. Pillappa, P.E.
Vice President

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Important Information About This Geotechnical Engineering Report

Appendix A – Figures

Figure No. 1 Site Location Map (1 Sheet, color)
Figure No. 2 Site Aerial (1 Sheet, color)
Figure No. 3 Site Geologic Map (1 Sheet, color)
Figure No. 4 Exploration Location Plan (1 Sheet, 24”x36”)

Appendix B – Exploration Logs

Notes for Exploration Logs (1 Sheet)
SPT Boring Logs

1.0 SUMMARY OF FINDINGS AND RECOMMENDATIONS

We have prepared this summary for the user's convenience only. Do not rely on it exclusively for any decision-making purpose. Please review the full text of the report which addresses each topic in further detail.

TOPIC	DESCRIPTION
Site Attributes	
Existing Conditions	Undeveloped area with land cover consisting of short grass, vegetation and some trees.
Proposed Construction	Commercial/medical office building with associated parking/driveway and stormwater areas.
Conditions Encountered	
Topsoil	3 to 6 inches thick.
Existing Fills	No buried debris/organic material/deleterious material was observed in the borings.
Native Soils	Very loose to dense fine SAND with varying fines content [SP, SP-SC, SC].
Groundwater	Observed at about 9 feet bgs.
Recommendations	
Site Preparation	Mass grade site, including tree removal and root raking, grubbing and proof rolling.
Groundwater	• Observed at about 9 feet bgs during drilling. • Commonly used temporary dewatering techniques (e.g., sumps etc.) will be sufficient.
Fill Material Criteria	Most of the excavated soils will be suitable for reuse as fills [SP, SP-SC].
Fill Placement Requirements	• Place fill in maximum 12-inch (loose-measure) lifts. • Compact to minimum 95% of max. dry density (Modified Proctor) for structural fills. • Compact to minimum 98% of max. dry density (Modified Proctor) for top 12 in. of pavement subgrade.
Foundations	• Net allowable soil-bearing pressure: 2,500 psf. • Minimum widths: 12 inches (wall footings); 24 inches (column footings). • Maximum anticipated settlements: 1 inch total; ½ inch differential between columns.
Slabs	• Use of a sheet vapor barrier (in accordance with Florida Building Code requirements) is recommended. • Conventional floor slabs may be supported upon the compacted fill and should be structurally isolated from other foundation elements or adequately reinforced
Utilities	Firm natural soils or newly placed compacted fills are considered suitable for support of utility pipe systems.
Pavements	For flexible (asphalt) pavements, we recommend using a 3-layer section consisting of compacted subgrade (sub-base), base course and surface wearing course.
Stormwater Pond	We understand that the stormwater for this project will be managed by an underground exfiltration area.

*bgs = below existing ground surface

2.0 INTRODUCTION

Z Development Services ("Client") is in the design phase of development at the subject property as commercial/medical office building in Howey in the Hills, Lake County, Florida. GTA has performed a geotechnical study and prepared this report for Z Development Services in accordance with our sub consultant agreement, prepared in June 2023.

2.1 Study Purpose

GTA conducted this study to develop confirmation-dependent geotechnical engineering recommendations for the commercial development planned for the Vet Clinic & Retail project. The scope of GTA's study was limited to the property boundary and referred to as the "Project Site".

2.2 Referenced Documents

GTA was provided with an ALTA/NSPS Land Title Survey, dated July 29, 2023, prepared by Ireland & Associates Surveying, Inc and the Conceptual Plan, dated January 23, 2024, and prepared by Z Development Services (this plan also showed the boring locations). The plan indicates the site boundaries and conceptual site layout of the proposed development and associated improvement areas.

3.0 PROJECT DESCRIPTION

3.1 Site Location

The subject site is located west of US-19 and south of Revels Road in Howey in the Hills. Refer to the USGS Site Location Map and Site Aerial, which are Figures 1 and 2 in Appendix A of this report.

3.2 Existing Site Conditions

At the time of our field work, the subject property was undeveloped land with ground cover consisting of short grass, vegetation and some trees.

Based on our visual observations and review of ground surface topography (USGS Maps and Google Earth), the site elevations vary between +80 and +100 feet National Geodetic Vertical Datum (NGVD). Based on the survey provided, the water body adjacent west of the property has an elevation of +81 feet (NGVD).

3.3 Proposed Construction

We understand that the building will be 1-story. At the time of this report, we understand that the Finish Floor Elevation (FFE) has not been established and a Grading Plan was not available for our review.

The structure is assumed to be masonry construction and slab-on-grade. We assume that the structure will have maximum column loads of up to 30 kips, and bearing wall loads of up to about 5 kips per linear foot.

4.0 GEOTECHNICAL ENGINEERING STUDY

4.1 Geologic Review

The site, as shown on the Geologic Map of the USGS Orlando, Florida lies within the Cypresshead Formation. This is characterized by poorly consolidated, fine to coarse grained, clayey to clean sands with variable quartz. Refer to the Geologic Map, included as Figure No. 3, within Appendix A for further information on the site geology.

4.2 Subsurface Exploration Scope

As requested, GTA's geotechnical exploration consisted of a total of eight (8) borings; two (2) of the SPT borings were performed within the proposed building area to a depth of 20 feet, four (4) within the general vicinity of the proposed parking/pavement areas to a depth of 10 feet and the remaining two (2) SPT borings were performed within the pond area to a depth of 15 feet below the existing surface. The borings were performed by GTA in August 2024 using a truck drill rig and safety hammer. The exploration locations were selected by GTA and located in the field using a hand-held GPS unit and the existing site features as reference. No survey control was provided to us; hence the boring locations should be considered approximate to the degree of the methodologies used.

The approximate locations of the explorations performed for this study are shown on the Exploration Location Plan, which is included as Figure 4 in Appendix A. Detailed descriptions of the encountered subsurface conditions are indicated on the Boring Logs, which are included in Appendix B.

Standard Penetration Testing (SPT) was performed in the borings in accordance with procedures of ASTM D1586. Soil samples were obtained at two- to five-foot intervals within the boreholes. The SPT involves driving a 2-inch O.D., 1⅜-inch I.D. split-spoon sampler with a 140-pound hammer free-falling from a height of 30 inches. The number of blows required to drive the sampler was recorded in six-inch intervals. The SPT N-value, given as blows per foot, is defined as the total number of blows required to drive the sampler from the 6- to 18-inch interval.

The samples retrieved from the explorations were delivered to GTA's laboratory for visual classification by a geotechnical engineer and limited laboratory testing. The soil descriptions indicated on the logs are based on visual observations of the individual soil samples as summarized in the Notes for Exploration Logs included in Appendix B, supplemented by the laboratory test results.

We note that the recovered samples from the SPT borings were not evaluated for chemical composition, environmental hazards or karst concerns. GTA can provide you with a proposal for these services if needed.

4.3 Subsurface Conditions

The conditions encountered in GTA's subsurface explorations generally confirmed the descriptions presented in the Site Geology section of this report. The topsoil layer was encountered as short grasses extending 3- to 6-inches below grade. Below the topsoil, the borings encountered very loose to dense sandy soils with varying fines content [SP, SP-SC, SC]. Blow counts (SPT N-values) varied from 2 blows per foot (bpf) to 50 bpf.

4.3.1 Groundwater

Groundwater was encountered during drilling at a depth of approximately 9 feet below existing grades. We estimate that the seasonal high groundwater level may form at depths between 3.5 and 5.5 feet below grade, depending on location. Please note that the seasonal high is an estimate and does not provide any assurance that the groundwater will not exceed this level in the future. Changes in subsurface conditions, rainfall intensity and time durations, on-site or off-site changes etc. can all impact the seasonal high groundwater level.

4.4 Laboratory Testing

GTA performed laboratory testing for this study included gradation analyses for classification of the soils in accordance with the Unified Soil Classification System (USCS), fines content, and natural moisture content determinations. The results of our laboratory testing are shown on the boring logs.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based upon the results of the geotechnical engineering study, it is GTA's professional opinion that the subsurface conditions at the project site are generally suitable for construction of the proposed development, provided the following geotechnical engineering recommendations are adhered to, and that applicable standard of care is maintained during construction. GTA's recommendations for foundations, utilities, pavements, and other geotechnical considerations are presented in the following paragraphs.

5.1 Site Grading

Prior to the placement of any controlled, compacted fill, the area to receive fill should be stripped of any deleterious material (including trees, structures, existing utilities etc.). GTA anticipates greater stripping thicknesses may be required where tree roots extend several feet below the ground surface. The actual stripping thickness will be dependent on the season of construction, soil moisture, depth of topsoil development, and contractor care.

5.1.1 Groundwater

Groundwater was encountered during drilling at a depth of approximately 9 feet below existing grades. Depending on season, groundwater may slightly impact site grading activities depending on excavation depths. Groundwater levels may fluctuate with seasonal variations in precipitation. The contractor should be prepared to dewater and shore excavations during construction.

5.1.2 Fill Placement

Once grubbed, the entire site should then be proof-rolled to identify any loose, soft, wet, or otherwise unsuitable subgrade. Any surficial materials identified as unstable or unsuitable should be undercut to a stable stratum and backfilled with controlled, compacted fill as recommended in the field by the geotechnical engineer.

The on-site materials classified as SP and SP-SC, and to an extent SC, are considered suitable for use in structural fill construction. Structural fills should be placed and compacted in a controlled manner in accordance with project and county specifications. The proof rolling of fill subgrades, undercutting of any uncontrolled or unsuitable material, and the placement of controlled, compacted fill should be observed and tested by GTA or a qualified representative.

Fills on existing slopes steeper than 5 horizontal to 1 vertical (5H:1V) should be benched into the slope at 3- to 4-foot intervals to increase stability of the constructed fill. Cut and fill slopes should be graded to no steeper than 3H:1V unless specifically engineered. New slopes should be constructed with the most granular material available on site. Fills should be constructed in maximum 12-inch loose lifts and compacted to the following specifications:

COMPACTION SPECIFICATIONS

Structural/Fill Location	Compaction Specification
Below foundations or floor slabs, fills greater than 12 inches below private roadway/pavement subgrades and utility backfill	95% of ASTM D-1557
Top 12 inches of private roadway subgrades	98% of ASTM D-1557

Fills should generally be placed within 2 to 4% of the optimum moisture content. Earthwork should be observed/tested by an engineering technician working under the supervision of a registered professional engineer and all compactive effort should be verified by in-place density testing.

5.2 Foundations

Our analysis assumed that the structures may have maximum column loads of up to 30 kips, and bearing wall loads of up to about 5 kips per linear foot.

5.2.1 Foundation Design

Based on our analysis, the proposed buildings may be supported on conventional shallow spread foundations established on natural granular soils proportioned for a net allowable soil bearing pressure of 2,500 pounds per square foot (psf).

For continuous wall or slab on grade footings, the minimum footing width should comply with the current FLBC, but should not be less than 12 inches and column footings of 24 inches are recommended. Maximum settlement on the order of 1 inch total and ½ inch differential can be anticipated, based upon this design and assumed structural loads. These values are generally within the acceptable tolerance for similar structures. Exterior footings should be founded a minimum of 18 inches below final exterior grade.

5.2.2 Foundation Construction Considerations

Footings should be supported on soils which exhibit a density of at least 95 percent of the maximum dry density as determined by ASTM D 1557 (Modified Proctor) to a depth of at least 2 feet below grade.

Footing excavations should be observed by a professional engineer or his qualified representative prior to concrete placement. Density testing should be performed on exposed footing subgrade to confirm the degree of compaction. Footings should be concreted on the day they are excavated to prevent excessive disturbance and/or moisture increase.

5.2.3 Slab Design

For the slab design, we recommend using a subgrade modulus (k) of 125 pounds per cubic inch, which can be achieved by compacting the subgrade soils as recommended in this report. GTA recommends the use of a sheet vapor barrier (in accordance with Florida Building Code requirements) beneath the building slab-on-grade to help control moisture migration through the slab. Conventional floor slabs may be supported upon the compacted fill and should be structurally isolated from other foundation elements or adequately reinforced to prevent distress due to differential movements.

5.3 Utilities

Detailed utility plans showing utility invert elevations were not available at the time of this report. GTA assumes that the proposed sewer/storm lines are generally planned less than 15 feet below proposed roadway grades. Based on the results of the borings, excavations of 10 to 15 feet below existing grades can generally be accomplished using standard excavation techniques.

The firm natural soils or newly placed compacted fills are considered suitable for support of utility pipe systems. Any soft or unstable soils present at the utility subgrade should be over-excavated and replaced with controlled compacted fill. If groundwater or plastic soils are encountered at the invert elevation, a 6-inch granular bedding should be placed to provide more uniform support. The decision to place this granular bedding layer should be made by GTA in the field based on actual site conditions encountered during construction.

Groundwater may be encountered during utility excavations. The utility contractor should be prepared to provide adequate dewatering and earth support systems during utility construction. Utility pipe systems below pavements and other structural areas should be backfilled using controlled, compacted fill. The most granular available soils should be used as utility backfill. The backfill should be constructed as described in the Site Grading section of this report. Lift thicknesses must be reduced to 6 inches when compacting with lightweight equipment around structures. Due to the potential for encountering groundwater, proper compaction of the utility backfill may be difficult to achieve, especially during the rainy season. Moisture conditioning of the on-site soils maybe necessary. Therefore, GTA recommends that the Client establish a contingency for utility backfill.

5.4 Pavements

Detailed traffic-loading information was not available to GTA at the time this report was prepared. Based on experience with similar projects, GTA has assumed that traffic will mainly be typical light-duty with some heavy-duty traffic (garbage trucks, delivery/moving trucks, etc.). Hence, we assume that a combination of rigid and flexible pavement types will be built for this project.

For flexible (asphalt) pavements, GTA recommends using a 3-layer section consisting of compacted subgrade (sub-base), base course and surface wearing course. For a light-duty section, we recommend a 1.5-inch-thick asphalt layer, underlain by 6 inches of base and 12 inches of stabilized subgrade. For a heavy-duty section, we recommend a 2.5-inch-thick asphalt layer, underlain by 8 inches of base and 12 inches of stabilized subgrade. These thicknesses should be confirmed to meet local County/City requirements during design by the Civil Engineer.

GTA recommends that the stabilized subgrade beneath the base course exhibit a minimum Limerock Bearing Ratio (LBR) of 40 as specified by FDOT compacted to at least 98 percent of the Modified Proctor maximum dry density (ASTM D 1557) value. Stabilized subgrade can be imported materials or a blend of on-site and imported materials.

The base course can either be limerock, soil cement or Recycled Concrete Aggregate (RCA).

- Limerock – The limerock will need to comply with the latest edition of the FDOT Road and Bridge Construction specifications and should be compacted to 98 percent of the maximum dry density as determined by ASTM D 1557 (Modified Proctor) and should have a minimum LBR value of 100.
- Soil Cement – The mix design for soil cement should have a minimum 7-day strength of 300 to 500 psi. This material should be placed in 6-inch lifts and compacted to 95 percent of the maximum dry density in accordance with ASTM D-558 (Moisture Density Relations of Soil Cement Mixtures). Placing and finishing should be in accordance with Portland Cement Association requirements. Please note that shrinkage cracks may form in the long-term resulting in reflection cracking at the surface.
- Recycled Concrete Aggregate (RCA) – This base material should be sourced from a FDOT approved supplier. The minimum LBR requirement for this base is 150 and it should be compacted to 98 percent of the maximum dry density as determined by ASTM D 1557 (Modified Proctor).

For the wearing course, GTA recommends FDOT SuperPave (SP) asphalt. FDOT SP-9.5 should be used for light-duty areas and SP-12.5 with an overlay of SP-9.5 should be used for heavy-duty areas. The asphalt course should be in accordance with the latest edition of the FDOT Road and Bridge Construction specifications.

It is very critical to evaluate the separation between the pavement base course and the seasonal high groundwater level. Sufficient separation will need to be maintained between the bottom of base course and the anticipated seasonal high groundwater level in accordance with local County/City requirements. We recommend that the seasonal high groundwater and the bottom of the base course be separated by at least 18 to 24 inches (in accordance with jurisdictional requirements). The separation should be confirmed by reviewing the final grading plan.

5.5 Stormwater Pond

We understand that the stormwater for this project will be managed by a pond. GTA performed two (2) borings, designated as G-03 and G-04, within this area. Our design parameters are summarized in the following table. Appropriate factors of safety should be incorporated in the final design.

COMPACTION SPECIFICATIONS

Design Parameters	Estimated Values	
Boring Log	G-03	G-04
Ground Surface Elevation (ft, datum)	+ 91.0	+89.4
Depth to Base of Surficial Aquifer (ft)	8	4
Estimated Fillable Porosity (%)	25	25
Estimated Seasonal High GWT (ft)	5.5	3.5
Estimated Horizontal Saturated Hydraulic Conductivity, Kh (ft/day)	40	40
Estimated Vertical Unsaturated Hydraulic Conductivity, Kv (ft/day)	26	26

Please note that ground surface elevation above has been approximated from a partial topographic survey performed by Ireland & Associates Surveying, Inc. (dated July 29, 2023). If the above parameters do not provide adequate recovery, the clayey sand [SC] layer can be over-excavated and replaced with clean fine sand [SP] (fines less than 2 percent) to provide higher permeability and lower the depth to base of aquifer.

The slopes and bottom of the pond should be stabilized in accordance with applicable Water management District and County/City guidelines.

6.0 LIMITATIONS

This report, including all supporting boring logs, field data, field notes, laboratory test data, calculations, estimates and other documents prepared by GTA in connection with this project have been prepared for the exclusive use of Z Development Services pursuant to agreements between GTA

and Z Development Services in accordance with generally accepted engineering practice. All terms and conditions set forth in the Agreement and the General Provisions attached thereto are incorporated herein by reference. No warranty, express or implied, is made herein. Use and reproduction of this report by any other person without the expressed written permission of GTA and Z Development Services is unauthorized and such use is at the sole risk of the user.

The analysis and recommendations contained in this report are based on the data obtained from limited observation and testing of the encountered materials. Test borings indicate soil conditions only at specific locations and times and only at the depths penetrated. They do not necessarily reflect strata or variations that may exist between test boring locations. Consequently, the analysis and recommendations must be considered preliminary until the subsurface conditions can be verified by direct observation at the time of construction. If variations of subsurface conditions from those described in this report are noted during construction, recommendations in this report may need to be reevaluated.

In the event that any changes in the nature, design, or location of the facilities are planned, the conclusions and recommendations contained in this report should not be considered valid unless the changes are reviewed and conclusions of this report are verified in writing. GTA is not responsible for any claims, damages, or liability associated with interpretation of subsurface data or reuse of the subsurface data or engineering analysis without the expressed written authorization of Geo-Technology Associates, Inc.

The scope of our services for this geotechnical exploration did not include any environmental assessment or investigation for the presence or absence of wetlands, or hazardous or toxic materials in the soil, surface water, groundwater or air, on or below or around this site. Any statements in this report or on the logs regarding odors or unusual or suspicious items or conditions observed are strictly for the information of our client.

This report and the attached logs are instruments of service. The subject matter of this report is limited to the facts and matters stated herein. Absence of a reference to any other conditions or subject matter shall not be construed by the reader to imply approval by the writer.

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals' plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for information purposes only.* To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer's services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration. Confront the risk of moisture infiltration*** by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are not building-envelope or mold specialists.***

GEOPROFESSIONAL BUSINESS ASSOCIATION

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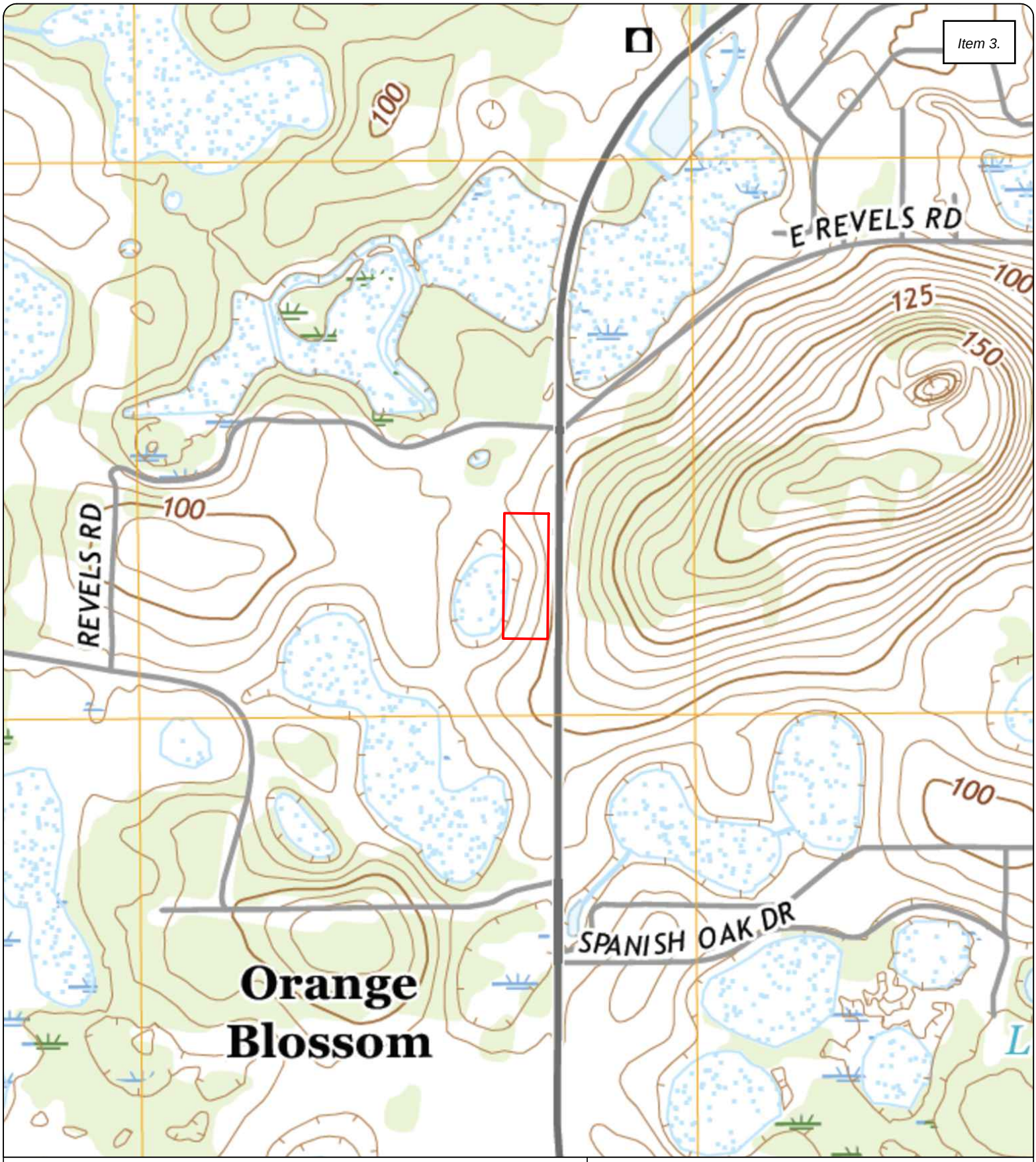
APPENDIX A

FIGURES



Legend

Approximate Subject Property Boundary

0 375 750 Feet

N

VET CLINIC & RETAIL

HOWEY–IN–THE–HILLS, LAKE COUNTY, FLORIDA

USGS SITE LOCATION MAP

GEO-TECHNOLOGY ASSOCIATES, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

4617 PARKBREEZE COURT ORLANDO, FLORIDA 328
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Base image was obtained from USGS US Topo 7.5-minute map for Howey in the Hills, FL 2021

PROJECT: 31242169	DATE: 8/5/2024	SCALE: 1":750'	DRAWN BY: KLJ	REVIEW BY: GSP	FIGURE: 1



Legend

Approximate Subject Property Boundary

0 75 150 Feet

N

Google Imagery ©2024 Airbus, Maxar Technologies, U.S. Geological Survey, Map data ©2024

VET CLINIC & RETAIL

HOWEY–IN–THE–HILLS, LAKE COUNTY, FLORIDA

SITE AERIAL

GEO-TECHNOLOGY ASSOCIATES, INC.
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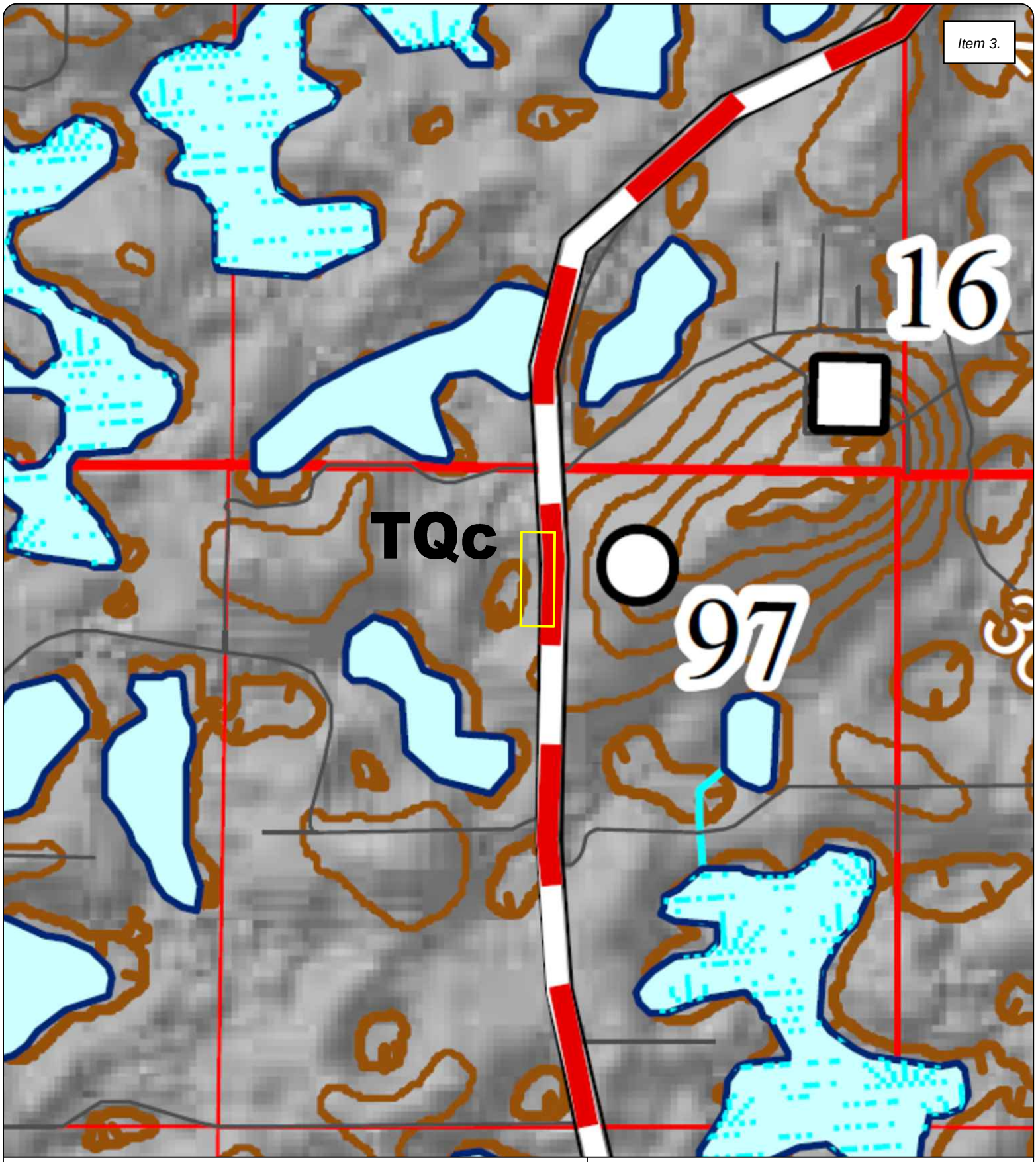
PROJECT: 31242169	DATE: 8/5/2024	SCALE: 1":150'	DRAWN BY: KLJ	REVIEW BY: GSP	FIGURE: 2



Legend

0 500 1000 Feet

Approximate Subject Property Boundary

Cypresshead Formation (TQc) - The Pliocene/Pleistocene Cypresshead Formation (TQc) is a mottled reddish-brown to reddish-orange to white, unconsolidated to poorly consolidated, fine to very coarse-grained, variably clayey to clean quartz sand. Crossbedded sands and bimodal sand size distributions are common within this formation. Discoid quartzite pebbles, heavy mineral grains, mica, and ghosts of nearshore marine molluscs are often present. The Cypresshead Formation is present throughout much of the study area and form s the core of the various ridges present in the region. In the northeastern portion of the study area, east of the St. Johns River, it typically becomes a more weathered, finergrained, well-sorted sand and silt. In cores, the unit is often characterized by beds of fine grained, well sorted sand with thin layers of clay dispersed through the sand.

Base map & legend obtained from the Florida Geologic Survey, Open File Map series 107, plate 1

VET CLINIC & RETAIL

HOWEY–IN–THE–HILLS, LAKE COUNTY, FLORIDA

GEOLOGIC MAP

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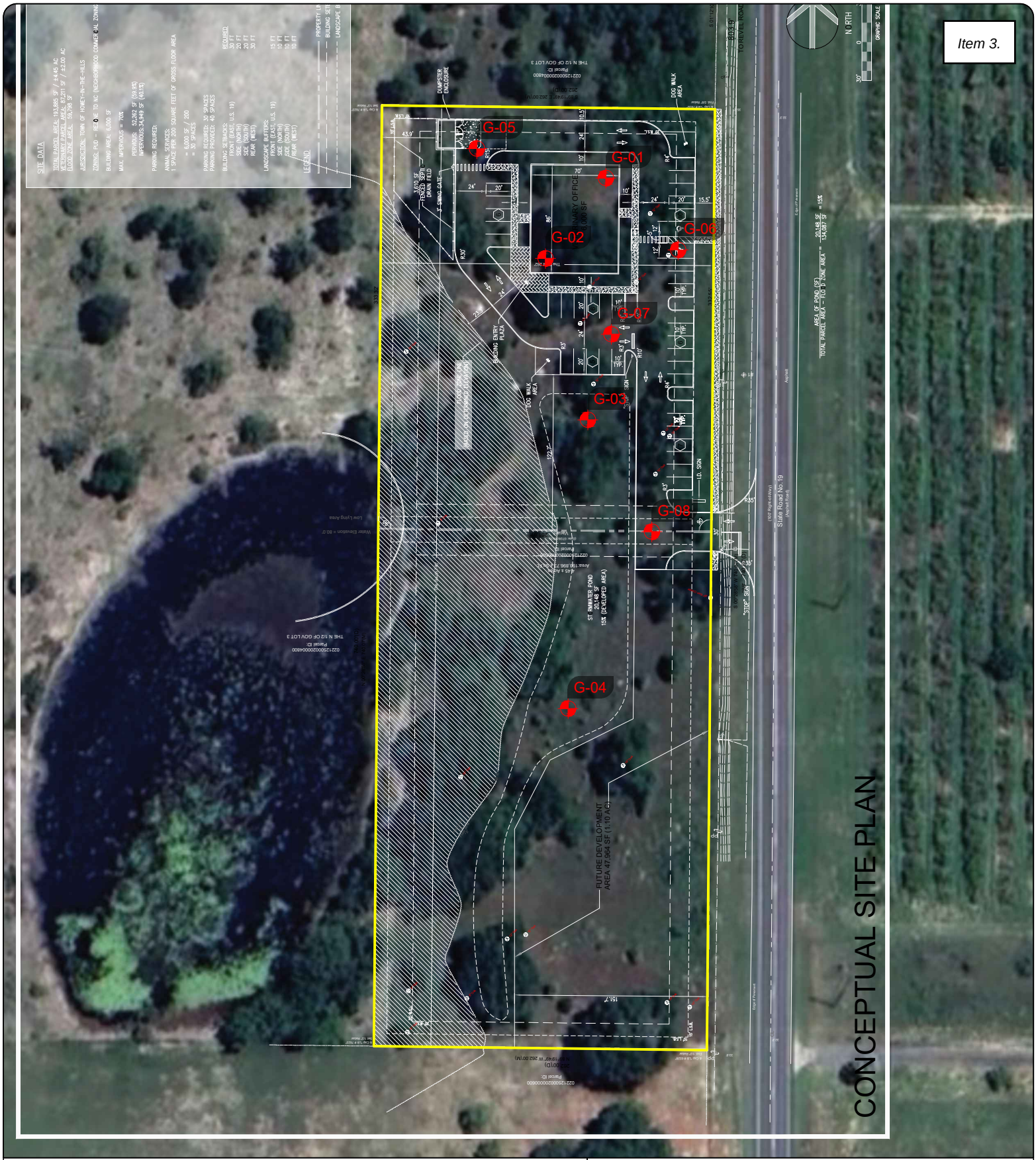
833

PROJECT: 31242169	DATE: 8/5/2024	SCALE: 1":1000'	DRAWN BY: KLJ	REVIEW BY: GSP	FIGURE: 3



Legend

0 50 100 Feet

G-01 Borings G-01 through G-08 were staked and drilled in Aug. 2024 using hand held GPS devices. No survey control was provided.

Approximate Subject Property Boundary

Google Imagery ©2024 Airbus, Maxar Technologies, U.S. Geological Survey, Map data ©2024

VET CLINIC & RETAIL

HOWEY–IN–THE–HILLS, LAKE COUNTY, FLORIDA

EXPLORATION LOCATION PLAN

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PROJECT: 31242169	DATE: 8/5/2024	SCALE: 1":100'	DRAWN BY: KLJ	REVIEW BY: GSP	FIGURE: 4

APPENDIX B

EXPLORATION LOGS

NOTES FOR EXPLORATION LOGS

KEY TO USCS TERMINOLOGY AND GRAPHIC SYMBOLS

MAJOR DIVISIONS (BASED UPON ASTM D 2488)				SYMBOLS GRAPHIC	SYMBOLS LETTER	
COARSE-GRAINED SOILS — MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS — MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LESS THAN 5% PASSING THE NO. 200 SIEVE)			GW	Well-Graded GRAVEL
					GP	Poorly Graded GRAVEL
		GRAVELS WITH FINES (MORE THAN 15% PASSING THE NO. 200 SIEVE)			GM	Silty GRAVEL
					GC	Clayey GRAVEL
	SAND AND SANDY SOILS — MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LESS THAN 5% PASSING THE NO. 200 SIEVE)			SW	Well-Graded SAND
					SP	Poorly Graded SAND
		SANDS WITH FINES (MORE THAN 15% PASSING THE NO. 200 SIEVE)			SM	Silty SAND
					SC	Clayey SAND
FINE-GRAINED SOILS — MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILT OR CLAY (<15% RETAINED ON THE NO. 200 SIEVE); SILT OR CLAY WITH SAND OR GRAVEL (15% TO 30% RETAINED ON THE NO. 200 SIEVE); SANDY OR GRAVELLY SILT OR CLAY (>30% RETAINED ON THE NO. 200 SIEVE)	SILTS AND LEAN CLAYS — LIQUID LIMIT LESS THAN 50			ML	SILT
					CL	Lean CLAY
					OL	
		ELASTIC SILTS AND FAT CLAYS — LIQUID LIMIT GREATER THAN 50			MH	Elastic SILT
					CH	Fat CLAY
					OH	
HIGHLY ORGANIC SOILS					PT	

NOTE: DUAL SYMBOLS ARE USED TO INDICATE COARSE-GRAINED SOILS WHICH CONTAIN AN ESTIMATED 5 TO 15% FINES BASED ON VISUAL CLASSIFICATION OR BETWEEN 5 AND 12% FINES BASED ON LABORATORY TESTING; AND FINE-GRAINED SOILS WHEN THE PLOT OF LIQUID LIMIT & PLASTICITY INDEX VALUES FALLS IN THE PLASTICITY CHART'S CROSS-HATCHED AREA. FINE-GRAINED SOILS ARE CLASSIFIED AS ORGANIC (OL OR OH) WHEN ENOUGH ORGANIC PARTICLES ARE PRESENT TO INFLUENCE ITS PROPERTIES. LABORATORY TEST RESULTS ARE USED TO SUPPLEMENT SOIL CLASSIFICATION BY THE VISUAL-MANUAL PROCEDURES OF ASTM D 2488.

ADDITIONAL TERMINOLOGY AND GRAPHIC SYMBOLS

	DESCRIPTION		GRAPHIC SYMBOLS
ADDITIONAL DESIGNATIONS	TOPSOIL		
	MAN MADE FILL		
	GLACIAL TILL		
	COBBLES AND BOULDERS		
RESIDUAL SOIL DESIGNATIONS	DESCRIPTION	"N" VALUE	
	HIGHLY WEATHERED ROCK	50 TO 50/1"	
	PARTIALLY WEATHERED ROCK	MORE THAN 50 BLOWS FOR LESS THAN 1" OF PENETRATION, AUGER PENETRABLE	

COARSE-GRAINED SOILS (GRAVEL AND SAND)

DESIGNATION	BLOWS PER FOOT (BPF) "N"
VERY LOOSE	0 - 4
LOOSE	5 - 10
MEDIUM DENSE	11 - 30
DENSE	31 - 50
VERY DENSE	>50

NOTE: "N" VALUE DETERMINED AS PER ASTM D 1586

FINE-GRAINED SOILS (SILT AND CLAY)

CONSISTENCY	BPF "N"
VERY SOFT	<2
SOFT	2 - 4
MEDIUM STIFF	5 - 8
STIFF	9 - 15
VERY STIFF	16 - 30
HARD	>30

NOTE: ADDITIONAL DESIGNATIONS TO ADVANCE SAMPLER INDICATED IN BLOW COUNT COLUMN:
WOH = WEIGHT OF HAMMER
WOR = WEIGHT OF ROD(S)

SAMPLE TYPE

DESIGNATION	SYMBOL
SOIL SAMPLE	S-
SHELBY TUBE	U-
ROCK CORE	R-

WATER DESIGNATION

DESCRIPTION	SYMBOL
ENCOUNTERED DURING DRILLING	▽
UPON COMPLETION OF DRILLING	▼
24 HOURS+ AFTER COMPLETION	▼

NOTE: WATER OBSERVATIONS WERE MADE AT THE TIME INDICATED. POROSITY OF SOIL STRATA, WEATHER CONDITIONS, SITE TOPOGRAPHY, ETC. MAY CAUSE WATER LEVEL CHANGES.

LOG OF BORING NO. G-01

PROJECT: **Vet Clinic & Retail**
PROJECT NO.: **31232169**
PROJECT LOCATION: **Howey in the Hills, Lake Country, FL**

WATER LEVEL (ft): **9.0**
DATE: **8/1/2024**
CAVED (ft):

DATE STARTED: **8/1/2024**
DATE COMPLETED: **8/1/2024**
DRILLING CONTRACTOR: **TG**
DRILLER: **TG**
DRILLING METHOD: **Mud Rotary**
SAMPLING METHOD: **Split Spoon/Manual Hammer**

WATER ENCOUNTERED DURING DRILLING (ft) **9.0**
GROUND SURFACE ELEVATION:
DATUM:
EQUIPMENT: **Beaver Truck**
LOGGED BY: **SHG**
CHECKED BY: **GSP**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
					0.0	0				
S-1	0.0		HA	HA			SP		Light brown, dry, poorly graded fine SAND.	
S-2	2.0		HA	HA						
					-4.0		SC			
S-3	4.0		2-3-10-14	13		5			Orange, wet, medium dense, poorly graded clayey fine SAND.	M/C= 16% F/C= 43%
S-4	6.0		15-23-27-31	50					Same, dense	
S-5	8.0		22-20-25-30	45						▼
						10				
S-6	13.5		5-7-6	13					Same, white, medium dense	
						15				
S-7	18.5		4-6-6	12						M/C= 26% F/C= 16%
					-20.0	20			Boring terminated at 20 feet.	
						25				
						30				

NOTES: **HA= Hand Auger**

GEO-TECHNOLOGY ASSOCIATES, INC.
4617 Parkbreeze Court
Orlando, FL 32808

LOG OF BORING NO. G-01

LOG OF BORING NO. G-02

PROJECT: **Vet Clinic & Retail**
PROJECT NO.: **31232169**
PROJECT LOCATION: **Howey in the Hills, Lake Country, FL**

WATER LEVEL (ft): **9.0**
DATE: **8/1/2024**
CAVED (ft):

DATE STARTED: **8/1/2024**
DATE COMPLETED: **8/1/2024**
DRILLING CONTRACTOR: **TG**
DRILLER: **TG**
DRILLING METHOD: **Mud Rotary**
SAMPLING METHOD: **Split Spoon/Manual Hammer**

WATER ENCOUNTERED DURING DRILLING (ft) **9.0**
GROUND SURFACE ELEVATION:
DATUM:
EQUIPMENT: **Beaver Truck**
LOGGED BY: **SHG**
CHECKED BY: **GSP**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
					0.0	0	SP		Gray, dry, poorly graded fine SAND.	
S-1	0.0		HA	HA						
S-2	2.0		HA	HA						
S-3	4.0		1-1-1-2	2		5			Same, light brown, very loose	
S-4	6.0		4-4-4-5	8	-6.0		SP-SC		Light brown, moist, loose, poorly graded fine SAND with clay.	
S-5	8.0		7-10-8-7	18	-8.0		SC		Light brown, moist, medium dense, poorly graded clayey fine SAND.	M/C= 9% F/C= 22%
						10				
S-6	13.5		6-10-8	18					Same, white, wet, medium dense	M/C= 14% F/C= 19%
						15				
S-7	18.5		11-14-17	31					Same, dense	
					-20.0	20			Boring terminated at 20 feet.	
						25				
						30				

NOTES: **HA= Hand Auger**

GEO-TECHNOLOGY ASSOCIATES, INC.
4617 Parkbreeze Court
Orlando, FL 32808

LOG OF BORING NO. G-02

LOG OF BORING NO. G-03

PROJECT: **Vet Clinic & Retail**
PROJECT NO.: **31232169**
PROJECT LOCATION: **Howey in the Hills, Lake Country, FL**

WATER LEVEL (ft): **9.0**
DATE: **8/1/2024**
CAVED (ft):

DATE STARTED: **8/1/2024**
DATE COMPLETED: **8/1/2024**
DRILLING CONTRACTOR: **TG**
DRILLER: **TG**
DRILLING METHOD: **Mud Rotary**
SAMPLING METHOD: **Split Spoon/Manual Hammer**

WATER ENCOUNTERED DURING DRILLING (ft) **9.0**
GROUND SURFACE ELEVATION:
DATUM:
EQUIPMENT: **Beaver Truck**
LOGGED BY: **SHG**
CHECKED BY: **GSP**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
					0.0	0	SP		Gray, dry, poorly graded fine SAND.	
S-1	0.0		HA	HA						
S-2	2.0		HA	HA						
S-3	4.0		1-1-3-3	4		5			Same, light brown, very loose	M/C= 4% F/C= 2% K= 40 ft/day
S-4	6.0		5-4-6-5	10					Same, loose	
S-5	8.0		6-7-8-7	15	-8.0	10	SC		Orange, moist, medium dense, poorly graded clayey fine SAND.	
S-6	13.5		4-5-7	12		15				
					-15.0				Boring terminated at 15 feet.	
						20				
						25				
						30				

NOTES: **HA= Hand Auger**

GEO-TECHNOLOGY ASSOCIATES, INC.
4617 Parkbreeze Court
Orlando, FL 32808

LOG OF BORING NO. G-03

LOG OF BORING NO. G-04

PROJECT: **Vet Clinic & Retail**
PROJECT NO.: **31232169**
PROJECT LOCATION: **Howey in the Hills, Lake Country, FL**

WATER LEVEL (ft): **9.0**
DATE: **8/1/2024**
CAVED (ft):

DATE STARTED: **8/1/2024**
DATE COMPLETED: **8/1/2024**
DRILLING CONTRACTOR: **TG**
DRILLER: **TG**
DRILLING METHOD: **Mud Rotary**
SAMPLING METHOD: **Split Spoon/Manual Hammer**

WATER ENCOUNTERED DURING DRILLING (ft) **9.0**
GROUND SURFACE ELEVATION:
DATUM:
EQUIPMENT: **Beaver Truck**
LOGGED BY: **SHG**
CHECKED BY: **GSP**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
					0.0	0	SP		Gray, dry, poorly graded fine SAND.	
S-1	0.0		HA	HA						
S-2	2.0		HA	HA						M/C= 3% F/C= 1% K= 40 ft/day
					-4.0		SP-SC		Orange, moist, very loose, poorly graded fine SAND with clay.	
S-3	4.0		1-1-1-2	2		5			Same, loose	
S-4	6.0		4-2-3-2	5						
S-5	8.0		3-4-2-3	6						▼
					-10.0	10			Boring terminated at 10 feet.	
						15				
						20				
						25				
						30				

NOTES: **HA= Hand Auger**

GEO-TECHNOLOGY ASSOCIATES, INC.
4617 Parkbreeze Court
Orlando, FL 32808

LOG OF BORING NO. G-04

LOG OF BORING NO. G-05

PROJECT: **Vet Clinic & Retail**
PROJECT NO.: **31232169**
PROJECT LOCATION: **Howey in the Hills, Lake Country, FL**

WATER LEVEL (ft): **9.0**
DATE: **8/1/2024**
CAVED (ft):

DATE STARTED: **8/1/2024**
DATE COMPLETED: **8/1/2024**
DRILLING CONTRACTOR: **TG**
DRILLER: **TG**
DRILLING METHOD: **Mud Rotary**
SAMPLING METHOD: **Split Spoon/Manual Hammer**

WATER ENCOUNTERED DURING DRILLING (ft) **9.0**
GROUND SURFACE ELEVATION:
DATUM:
EQUIPMENT: **Beaver Truck**
LOGGED BY: **SHG**
CHECKED BY: **GSP**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0		HA	HA	0.0	0	SP		Gray, dry, poorly graded fine SAND.	
S-2	2.0		HA	HA						
S-3	4.0		1-2-1-1	3		5			Same, light brown, very loose	
S-4	6.0		5-10-14-17	24	-6.0		SP-SC		Orange, moist, medium dense, poorly graded fine SAND with clay.	
S-5	8.0		24-15-19-22	34					Same, dense	▼
					-10.0	10			Boring terminated at 10 feet.	
						15				
						20				
						25				
						30				

NOTES: **HA= Hand Auger**

GEO-TECHNOLOGY ASSOCIATES, INC.
4617 Parkbreeze Court
Orlando, FL 32808

LOG OF BORING NO. G-05

LOG OF BORING NO. G-06

PROJECT: **Vet Clinic & Retail**
PROJECT NO.: **31232169**
PROJECT LOCATION: **Howey in the Hills, Lake Country, FL**

WATER LEVEL (ft): **9.0**
DATE: **8/1/2024**
CAVED (ft):

DATE STARTED: **8/1/2024**
DATE COMPLETED: **8/1/2024**
DRILLING CONTRACTOR: **TG**
DRILLER: **TG**
DRILLING METHOD: **Mud Rotary**
SAMPLING METHOD: **Split Spoon/Manual Hammer**

WATER ENCOUNTERED DURING DRILLING (ft) **9.0**
GROUND SURFACE ELEVATION:
DATUM:
EQUIPMENT: **Beaver Truck**
LOGGED BY: **SHG**
CHECKED BY: **GSP**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0		HA	HA	0.0	0	SP		Light brown, dry, poorly graded fine SAND.	
S-2	2.0		HA	HA						
S-3	4.0		1-2-1-2	3		5			Same, very loose	
S-4	6.0		1-2-2-2	4						
S-5	8.0		3-2-9-9	11	-8.0		SP-SC		Orange, moist, medium dense, poorly graded fine SAND with clay.	
					-10.0	10			Boring terminated at 10 feet.	
						15				
						20				
						25				
						30				

NOTES: **HA= Hand Auger**

GEO-TECHNOLOGY ASSOCIATES, INC.
4617 Parkbreeze Court
Orlando, FL 32808

LOG OF BORING NO. G-06

LOG OF BORING NO. G-07

PROJECT: **Vet Clinic & Retail**
PROJECT NO.: **31232169**
PROJECT LOCATION: **Howey in the Hills, Lake Country, FL**

WATER LEVEL (ft): **9.0**
DATE: **8/1/2024**
CAVED (ft):

DATE STARTED: **8/1/2024**
DATE COMPLETED: **8/1/2024**
DRILLING CONTRACTOR: **TG**
DRILLER: **TG**
DRILLING METHOD: **Mud Rotary**
SAMPLING METHOD: **Split Spoon/Manual Hammer**

WATER ENCOUNTERED DURING DRILLING (ft) **9.0**
GROUND SURFACE ELEVATION:
DATUM:
EQUIPMENT: **Beaver Truck**
LOGGED BY: **SHG**
CHECKED BY: **GSP**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
					0.0	0	SP		Gray, dry, poorly graded fine SAND.	
S-1	0.0		HA	HA					Same, light brown	
S-2	2.0		HA	HA					Same, very loose	
S-3	4.0		1-1-1-2	2		5			Same, loose	
S-4	6.0		2-3-3-3	6					Same, moist	▼
S-5	8.0		2-3-4-3	7	-10.0	10			Boring terminated at 10 feet.	
						15				
						20				
						25				
						30				

NOTES: **HA= Hand Auger**

GEO-TECHNOLOGY ASSOCIATES, INC.
4617 Parkbreeze Court
Orlando, FL 32808

LOG OF BORING NO. G-07

LOG OF BORING NO. G-08

PROJECT: **Vet Clinic & Retail**
PROJECT NO.: **31232169**
PROJECT LOCATION: **Howey in the Hills, Lake Country, FL**

WATER LEVEL (ft): **9.0**
DATE: **8/1/2024**
CAVED (ft):

DATE STARTED: **8/1/2024**
DATE COMPLETED: **8/1/2024**
DRILLING CONTRACTOR: **TG**
DRILLER: **TG**
DRILLING METHOD: **Mud Rotary**
SAMPLING METHOD: **Split Spoon/Manual Hammer**

WATER ENCOUNTERED DURING DRILLING (ft) **9.0**
GROUND SURFACE ELEVATION:
DATUM:
EQUIPMENT: **Beaver Truck**
LOGGED BY: **SHG**
CHECKED BY: **GSP**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
					0.0	0				
S-1	0.0		HA	HA			SP		Gray, dry, poorly graded fine SAND.	
S-2	2.0		HA	HA						
S-3	4.0		2-2-2-3	4		5			Same, light brown, very loose	
S-4	6.0		3-2-4-2	6	-6.0		SP-SC		Orange, moist, loose, poorly graded fine SAND with clay.	
S-5	8.0		5-1-4-4	5						▼
						10				
S-6	13.5		5-5-6	11	-13.5		SC		Orange, wet, medium dense, poorly graded clayey fine SAND.	
					-15.0	15			Boring terminated at 15 feet.	
						20				
						25				
						30				

NOTES: **HA= Hand Auger**

GEO-TECHNOLOGY ASSOCIATES, INC.
4617 Parkbreeze Court
Orlando, FL 32808

LOG OF BORING NO. G-08

VETERINARY OFFICE

FOR DR. JEFFREY ESCH, DVM

STATE ROAD 19
SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FLORIDA 34737

JURISDICTION: HOWEY IN THE HILLS
PARCEL ID: 02-21-25-0002-000-00500

DEVELOPER & CONSULTANTS

OWNER/DEVELOPER
DR. JEFFREY ESCH, DVM
EMAIL: JESCHDVM@GMAIL.COM
CONTACT: JEFFREY S. ESCH

CIVIL ENGINEER
Z DEVELOPMENT SERVICES
1201 E. ROBINSON STREET
ORLANDO, FLORIDA 32801
PHONE: 407-271-8910
EMAIL: BOB@ZDEVELOPMENTSERVICES.COM
CONTACT: ROBERT ZIENGENFUSS

LANDSCAPE
CADDSCAPES, INC.
432 NOWELL LOOP
DELAND, FL 32724
PHONE: 407-310-5567
EMAIL: JASONBRIDGEWATER@GMAIL.COM
CONTACT: JASON BRIDGEWATER

ARCHITECT
TREBARC ARCHITECTURE DESIGN STUDIO
7501 NW 4TH STREET, SUITE 212 E
PLANTATION, FLORIDA 33317
PHONE: 954-530-1765
EMAIL: ERIC@TREBARC.COM
CONTACT: ERIC TREBBIEN

SURVEYOR
IRELAND & ASSOCIATES SURVEYING, INC.
800 CURRENCY CIRCLE, SUITE 1020
LAKE MARY, FLORIDA 32746
PHONE: 407-678-3366
EMAIL: ORDERS@IRELANDSURVEYING.COM
CONTACT: BO DAVIS

GEOTECHNICAL ENGINEER
GEO-TECHNOLOGY ASSOCIATES, INC.
4617 PARKBREEZE COURT
ORLANDO, FLORIDA 32808
PHONE: 321-482-4239
EMAIL: GPILLAPPA@GTAENG.COM
CONTACT: GAUTHAM PILLAPPA

INDEX OF DRAWINGS

SHT. NO.	CIVIL DRAWINGS
CV	COVER SHEET
C0	CIVIL DATA AND NOTES
C1	DEMOLITION AND EROSION CONTROL NOTES
C2	MASTER SITE PLAN
C2.1	SITE DIMENSION PLAN
C3	UTILITY PLAN
C4	GRADING AND DRAINAGE PLAN
C4.1	MASS GRADING PLAN
C5	STORMWATER POLLUTION PREVENTION PLAN
C6	CONSTRUCTION DETAILS
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SL1	PHOTOMETRIC PLAN
SL2	LIGHTING CUT SHEETS
SHT. NO.	**CONSULTANT DRAWINGS**
–	LANDSCAPE PLAN
–	LANDSCAPE DETAILS
–	IRRIGATION PLAN
–	IRRIGATION DETAILS
	SURVEY

PROJECT REVISIONS

REV. NO.	DATE	DESCRIPTION	SHEETS	BY
–	–	–	–	–

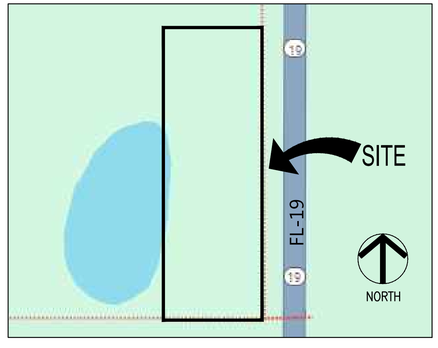
LEGAL DESCRIPTION

THE SOUTH 740 FEET OF THE EAST 262 FEET OF THE FOLLOWING DESCRIBED PROPERTY; NORTH HALF OF GOVERNMENT LOT 3, SECTION 2, TOWNSHIP 21 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA. LYING WEST OF THE RIGHT OF WAY FOR HIGHWAY NO. 19.

VICINITY MAP NTS



LOCATION MAP NTS



Z DEVELOPMENT SERVICES
CIVIL ENGINEERING CONSULTANTS
CA 29354
1201 E. ROBINSON STREET
ORLANDO, FL 32801
PH: (407) 271-8910

DATE

REVISION

ROBERT ZIEGENFUSS, P.E., LEED AP
FL. REG. # 56752

Robert Ziegenfuss
c=US, o=Z Development Services, dnQualifier=A01410D00000190EA6802BC000371EF, cn=Robert Ziegenfuss
2025.08.26 12:06:26 -04'00'

This item has been digitally signed and sealed by ROBERT ZIEGENFUSS on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VETERINARY OFFICE
STATE ROAD 19
SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FL 34737

DATE: 08/28/24
DRAWN: LF
CHECKED: DL

CV
COVER SHEET

PROJECT NO.: 2023.179

DEMOLITION NOTES

1. PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL COORDINATE ACTIVITIES WITH ALL UTILITY SERVICE PROVIDERS IN THE AREA. THE LOCATION OF ALL EXISTING UTILITIES SHOULD BE VERIFIED PRIOR TO ANY EXCAVATION ACTIVITIES.

2. THE CONTRACTOR SHALL COMPLETELY REMOVE AND DISPOSE OF ALL STRUCTURES AND OTHER IMPROVEMENTS AS NOTED ON THE PLANS. THIS INCLUDES FOUNDATIONS, TIMBER, BRUSH, STUMPS, ROOTS, PAVEMENT AND BASE MATERIAL AND OTHER STRUCTURES AS SHOWN OR REASONABLY IMPLIED IN THE DRAWINGS.

3. WHERE EXISTING BUILDINGS ARE TO BE DEMOLISHED, ALL TRACES OF FOUNDATIONS AND UNDERGROUND UTILITIES ARE TO BE REMOVED (UNLESS OTHERWISE NOTED ON PLANS). THE CONTRACTOR IS RESPONSIBLE FOR PROPER DISPOSAL OF ALL WASTE MATERIAL.

4. WHERE PAVING OR STRUCTURES ARE TO BE REMOVED WHICH ABUT OR ARE A PART OF CONNECTED FACILITIES (THAT ARE OFF-SITE), ANY DAMAGE THAT MIGHT RESULT FROM DEMOLITION IS TO BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN EXISTING UNLESS SPECIFICALLY EXEMPTED BY THE PLANS. THE COST FOR SUCH RESTORATION SHALL BE INCIDENTAL TO OTHER CONSTRUCTION AND NO EXTRA COMPENSATION WILL BE ALLOWED.

5. THE LOCATION OF ALL EXISTING UTILITIES AND TREES SHOWN ON THE PLANS HAVE BEEN DETERMINED BASED UPON THE BEST AVAILABLE INFORMATION. THE ENGINEER AND OWNER ASSUME NO RESPONSIBILITY FOR ACCURACY. ALL UTILITIES, SURFACE IMPROVEMENTS AND TREE LOCATIONS SHOULD BE VERIFIED BY THE CONTRACTOR.

6. THE CONTRACTOR SHALL COORDINATE THE RELOCATION OR REMOVAL OF ALL OVERHEAD/UNDERGROUND UTILITIES, UTILITY POLES, LIGHTS AND LINES IN THE RIGHT-OF-WAY AND ON THE PROPERTY WITH THE APPROPRIATE SERVICE PROVIDER.

7. THE CONTRACTOR SHALL REFERENCE AND RESTORE PROPERTY CORNERS AND LAND MARKERS DISTURBED DURING CONSTRUCTION. (UNDER THE DIRECTION OF A REGISTERED LAND SURVEYOR).

8. ALL EROSION CONTROL MEASURES NOTED BELOW AND IN THE PLANS SHOULD BE IN PLACE PRIOR TO THE START OF DEMOLITION.

EROSION CONTROL NOTES

ALL EROSION CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL COMPLETION OF CONSTRUCTION.

1. ALL EROSION AND SEDIMENT CONTROL WORK SHALL CONFORM WITH LOCAL CITY/COUNTY AND WATER MANAGEMENT DISTRICT SPECIFICATIONS, SUBJECT TO AUTHORIZED AND APPROVED VARIANCES, WAIVERS AND/OR CONDITIONAL CHANGES.

2. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PLACED PRIOR TO OR AS THE FIRST STEP IN, CONSTRUCTION. SEDIMENT CONTROL PRACTICES WILL BE APPLIED AS A PERIMETER DEFENSE AGAINST ANY TRANSPORTATION OF SILT OFF THE SITE.

3. ALL AREAS AFFECTED BY THIS WORK SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN EXISTING CONDITION, UNLESS SPECIFICALLY EXEMPTED BY THE PLANS. THE COST FOR SUCH RESTORATION SHALL BE INCIDENTAL TO OTHER CONSTRUCTION AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.

4. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN THESE PLANS AND FIELD CONDITIONS PRIOR TO CONSTRUCTION.

5. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL PROVIDE TREE PROTECTION BARRIERS TO MEET THE REQUIREMENTS OF LOCAL SPECIFICATIONS.

6. THE CONTRACTOR SHALL SELECTIVELY CLEAR ONLY THE AREAS REQUIRED FOR CONSTRUCTION AND STABILIZE ANY POTENTIAL EROSION AREAS IMMEDIATELY FOLLOWING COMPLETION OF CONSTRUCTION.

7. CONTRACTOR SHALL KEEP ANY AND ALL SAND, SILT OR OTHER DEBRIS FROM MOVING OFF-SITE. USE AND MAINTAIN SILT FENCE JUST INSIDE THE LIMITS OF CONSTRUCTION.

8. CONTRACTOR SHALL BLOCK INTRUSION OF SAND, SILT OR OTHER DEBRIS INTO ANY DRAINAGE OR SANITARY SEWER STRUCTURE OR PIPING ON OR ADJACENT TO THE SITE.

9. ALL CLEARED AREAS FOR IMPROVEMENT AND/OR CONSTRUCTION SHALL BE WATERED TO PREVENT WIND EROSION.

10. FOR ADDITIONAL INFORMATION AND DETAILS, SEE STATE OF FLORIDA EROSION AND SEDIMENT CONTROL MANUAL.

11. UNLESS SPECIFIED, SILT FENCES MAY BE USED IN LIEU OF SYNTHETIC BARRIERS.

12. ADDITIONAL POSTS AND RAILS MAY BE NECESSARY TO SECURE AND SUPPORT BARRIERS.

13. ADDITIONAL BARRIER LENGTHS MAY BE REQUIRED BY THE GOVERNING JURISDICTION OR BY OTHER REGULATORY AGENCIES.

14. FILTER FABRIC MUST BE INSTALLED UNDER ALL INLET GRATES, AT ALL TIMES WHEN INLETS ARE NOT PROTECTED BY SILT FENCE OR SYNTHETIC BALES/WATTLES, UNTIL THE LIMEROCK BASE IS FINISHED AND PRIMED.

15. THE BOTTOM AND SIDE SLOPES OF RETENTION PONDS SHALL BE UNDER EXCAVATED BY ROUGHLY 12 INCHES AT THE BEGINNING OF CONSTRUCTION. ONCE THE ENTIRE SITE IS STABILIZED, THE RETENTION POND SHALL BE EXCAVATED TO THE DESIGN DEPTH AND STABILIZED WITH SEED OR SOD AS SPECIFIED IN THE LANDSCAPING PLANS. NO MUCK GROWN SOD SHALL BE USED.

GC NOTES:

A COPY OF THIS SHEET C0 SHALL BE PROVIDED TO ALL BIDDERS AND SUB-CONTRACTORS.

GENERAL NOTES

THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE SITE CONDITIONS AND THESE PLANS PRIOR TO THE START OF CONSTRUCTION. ANY CONFLICTS BETWEEN CONDITIONS IN THE FIELD AND THESE PLANS SHALL BE REPORTED TO THE ENGINEER OF RECORD AT ONCE.

A. GENERAL

1. ALL INFRASTRUCTURE AND IMPROVEMENTS SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE LOCAL JURISDICTION AND WILL BE SUBJECT TO THEIR INSPECTION AND ACCEPTANCE.

2. SITE LOCATION: STATE ROAD 19, SOUTH OF REVELS ROAD, HOWEY IN THE HILLS, FLORIDA 34737.

3. THIS SITE LIES IN FLOOD ZONE X & A, F.I.R.M. PANEL NO. 120585, HOWEY IN THE HILLS, STATE. DATED DECEMBER 18, 2012.

4. BOUNDARY, TOPOGRAPHIC, AND TREE SURVEY BY IRELAND & ASSOCIATES SURVEYING, INC., 800 CURRENCY CIRCLE, SUITE 1020 LAKE MARY, FLORIDA 32746.

5. BENCHMARK – REFER TO TOPOGRAPHIC SURVEY BY IRELAND & ASSOCIATES SURVEYING, INC.

6. LEGAL DESCRIPTION SHOWN HEREIN IS FURNISHED BY SURVEYOR, AND IS INCLUDED FOR PERMITTING AND APPROVAL PURPOSES, AND AS A COURTESY FOR THE CONTRACTOR. THE ENGINEER ASSUMES NO LIABILITY FOR ITS ACCURACY OR COMPLETENESS.

7. SITE GEOTECHNICAL INVESTIGATION PERFORMED BY GEO-TECHNOLOGY ASSOCIATES, INC.. THE CIVIL ENGINEER ASSUMES NO RESPONSIBILITY FOR THE CORRECTNESS, ACCURACY AND COMPLETENESS OF THEIR WORK. THE CONTRACTOR SHALL OBTAIN A COPY OF THE GEOTECHNICAL ENGINEER'S REPORT FOR THIS SITE AND COMPLY WITH RECOMMENDATIONS CONTAINED THEREIN. IF ADDITIONAL SERVICES ARE REQUIRED, THE CONTRACTOR SHALL MAKE A REQUEST TO THE OWNER.

8. CONTRACTOR SHALL PROVIDE AND INSTALL EROSION CONTROL DEVICES (SILT FENCE OR OTHER METHODS) AT LIMITS OF CONSTRUCTION AND AROUND EACH STORM INLET PRIOR TO CONSTRUCTION, AND SHALL MAINTAIN SAID EROSION CONTROL DEVICES DURING CONSTRUCTION, ALL IN CONFORMANCE WITH CURRENT LOCAL, COUNTY AND STATE CRITERIA.

9. THE SITE SHALL BE CLEARED AS MAY BE NOTED ON THE PLANS, OF ALL OBSTRUCTIONS AND DELETERIOUS MATERIAL SUCH AS FENCES, WALLS, FOUNDATIONS, LOGS, SHRUBS, BRUSH, WEEDS, OTHER VEGETATION, AND ACCUMULATION OF RUBBISH OF WHATEVER NATURE. OFF-SITE DISPOSAL, INCLUDING ANY HAZARDOUS MATERIAL ENCOUNTERED, SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, AND FEDERAL RULES AND REGULATIONS.

10. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS PRIOR TO START OF CONSTRUCTION.

11. THE CONTRACTOR SHALL REMAIN SOLELY RESPONSIBLE FOR ANY DESIGN CHANGES WHICH HE MAY INCORPORATE INTO THE PLANS WITHOUT PRIOR WRITTEN CONSENT AND/OR APPROVAL FROM THE OWNER AND THE ENGINEER.

12. THE CONTRACTOR SHALL COORDINATE ALL WORK WITHIN EACH EXISTING RIGHT OF WAY WITH THE CITY OF HOWEY IN THE HILLS AND FLORIDA DEPARTMENT OF TRANSPORTATION.

13. THE CONTRACTOR SHALL RESTORE OFF-SITE AREAS TO A CONDITION EQUAL TO OR BETTER THAN THE CONDITION EXISTING PRIOR TO COMMENCEMENT OF CONSTRUCTION.

14. ALL DISTURBED AREAS SHALL BE SODDED.

15. AT LEAST 30 DAYS PRIOR TO ANTICIPATED COMPLETION OF SITE CONSTRUCTION, THE FINAL CERTIFICATION PROCESS WILL BEGIN. THE CONTRACTOR SHALL PROVIDE DOCUMENTS AND INFORMATION, IN A TIMELY MANNER, TO ENGINEER, INCLUDING, WITHOUT LIMITATION:
   a. SURVEYED "AS-BUILTS" MEETING THE REQUIREMENTS OF THE LOCAL JURISDICTION.
   b. COMPACTION AND DENSITY TEST REPORTS, AND
   c. PRESSURE TESTING AND BACTERIOLOGICAL TESTING RESULTS, AS REQUIRED, FOR WATER DISTRIBUTION AND/OR WASTEWATER COLLECTION/TRANSMISSION SYSTEMS.

THE CONTRACTOR SHALL HAVE TWO (2) SETS OF AS-BUILT PLANS, SIGNED AND SEALED BY SURVEYOR OF RECORD, ON SITE THE DAY OF THE CIVIL ENGINEERING FINAL PUNCH LIST INSPECTION. THE GENERAL CONTRACTOR IS TO GIVE THE TWO AS-BUILT PLANS TO THE REPRESENTATIVE FROM Z DEVELOPMENT SERVICES COMPLETING THE INSPECTION. IF ANY DEFICIENCIES ARE NOTED, ONE SET OF RED-LINED AS-BUILT PLANS WILL BE GIVEN TO THE GC FOR REVISIONS TO BE MADE. REVISED AS-BUILTS WILL NEED TO BE FORWARDED TO THE ENGINEER BEFORE ANY CERTIFICATIONS CAN BE INITIATED.

16. ALL TRAFFIC CONTROL DEVICES, EQUIPMENT AND INSTALLATION SHALL MEET THE REQUIREMENTS OF THE LOCAL JURISDICTION AND/OR FLORIDA DEPARTMENT OF TRANSPORTATION.

17. VEHICLE PARKING SPACES SHALL CONFORM WITH LOCAL CODE. ACCESSIBLE PARKING SPACES AND ACCESS ROUTES SHALL FURTHER CONFORM WITH CURRENT ADA REQUIREMENTS.

18. ACCESSIBLE PARKING PAVEMENT MARKINGS AND SIGNAGE SHALL CONFORM WITH CURRENT ADA REQUIREMENTS AND LOCAL ORDINANCE.

19. LANDSCAPE SHALL BE TRIMMED TO ENSURE SIGHT VISIBILITY OF TRAFFIC CONTROL DEVICES.

20. ALL PAVEMENT IS DIMENSIONED TO FACE OF CURB.

21. ALL BUILDING DIMENSIONS AND TIES ARE TO FACE OF BUILDING. SEE ARCHITECTURAL PLANS.

22. ALL PARKING LOT CURB RETURN RADII ARE 3' UNLESS OTHERWISE NOTED.

23. BUILDING AND SITE IMPROVEMENTS ARE PARALLEL AND PERPENDICULAR TO THE EAST PROPERTY LINE UNLESS OTHERWISE NOTED.

UTILITY NOTES

PRIOR TO COMMENCING ANY CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES, INCLUDING WITHOUT LIMITATION POTABLE WATER, RECLAIMED WATER, SANITARY SEWER, AND SERVICE UTILITIES, AT POINTS OF CONNECTION, POINTS OF CROSSING, AND/OR POTENTIAL CONFLICT. NOTIFY ENGINEER OF ANY DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS.

A. GENERAL

1. THE LOCATIONS OF EXISTING UTILITIES, SUCH AS WATER MAINS, SEWERS, GAS LINES, ETC., SHOWN ON THE PLANS ARE BASED ON THE BEST AVAILABLE INFORMATION AND ARE SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER AND OWNER ASSUME NO LIABILITY FOR ACCURACY AND COMPLETENESS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ALL UTILITY COMPANIES AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION OR DEMOLITION AND TO HAVE THEIR FACILITIES LOCATED IN THE FIELD PRIOR TO ANY WORK.

2. DUE TO GRAPHIC LIMITATIONS OF THE DRAWING SCALE, ALL STORM SEWER, DRAINAGE, WATER AND SANITARY SEWER MAINS, SERVICES, LATERALS, CONNECTIONS, AND APPURTENANCES DEPICTED HEREIN – UNLESS OTHERWISE LOCATED BY DIMENSIONS – REFLECT SCHEMATIC LOCATIONS ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FINAL LOCATIONS DURING THE CONSTRUCTION AND INSTALLATION OF THE PROPOSED IMPROVEMENTS, INCLUDING ANY REQUISITE COORDINATION WITH THE RESPECTIVE GOVERNING AGENCY/UTILITY PROVIDER.

3. ALL WATER AND SEWER CONSTRUCTION SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE CITY OF HOWEY IN THE HILLS, AND WILL BE SUBJECT TO THEIR INSPECTION AND ACCEPTANCE.

4. CONTRACTOR SHALL INSPECT PIPING AND MATERIALS BEFORE INSTALLATION TO DETECT APPARENT DEFECTS. MARK DEFECTIVE MATERIALS WITH WHITE PAINT AND PROMPTLY REMOVE FROM SITE.

5. LAY SEWER PIPING BEGINNING AT LOW POINT OF SYSTEM (CONNECTION TO OFF SITE SYSTEM OR PUMP STATION), TRUE TO GRADES AND ALIGNMENT INDICATED WITH UNBROKEN CONTINUITY OF INVERTS. PLACE BELL ENDS OR GROOVE ENDS OF PIPING FACING UPSTREAM.

6. CLEAR INTERIOR OF PIPE OF DIRT AND OTHER SUPERFLUOUS MATERIAL AS WORK PROGRESSES. MAINTAIN SWAB OR DRAG IN LINE AND PULL PAST EACH JOINT AS IT IS COMPLETED. PLACE PLUGS IN ENDS OF UNCOMPLETED CONDUIT WHENEVER WORK STOPS.

7. MAINTAIN 36" COVER OVER MAINS, AND 30" OVER SERVICES/LATERALS UNLESS OTHERWISE NOTED.

8. WHEN PROPOSED CONSTRUCTION OCCURS AT EXISTING MANHOLES, INLETS, VAULTS, AND OTHER STRUCTURES, THE CONTRACTOR SHALL MODIFY THE STRUCTURES, FRAMES, AND GRATES TO MEET THE PROPOSED GRADES UNLESS OTHERWISE DIRECTED.

9. INSTALL CONTINUOUS LOCATOR TAPE/WIRE, LOCATED DIRECTLY OVER POTABLE WATER MAINS AND SANITARY SEWER MAINS AT 6" TO 8" ABOVE PIPE.

10. WHERE APPLICABLE, UTILITY TRENCHES CROSSING PAVEMENT AREAS SHALL BE BACK FILLED WITH COMPACTED GRANULAR MATERIAL IN ACCORDANCE WITH A.A.S.H.T.O.-T-99.

11. CONTRACTOR SHALL PROVIDE SLEEVES FOR IRRIGATION LINES AND SITE LIGHTING UNDER PAVEMENT. COORDINATE WITH GENERAL CONTRACTOR.

12. ALL TRENCHES EXCAVATED FOR THE PURPOSES OF UTILITY/STORM INSTALLATION SHALL BE KEPT DRY FOR THE DURATION OF UTILITY/STORM CONSTRUCTION. DEWATERING OF UTILITY/STORM TRENCHES MAY BE REQUIRED TO PREVENT FLOATATION OF UTILITY/STORM PIPES DURING INSTALLATION.

13. THE CONTRACTOR SHALL NOTIFY THE ENGINEER WHEN CONSTRUCTION IS COMPLETE FOR WATER, WASTEWATER AND STORMWATER SYSTEMS SO TIMELY CERTIFICATIONS MAY BE INITIATED. SATISFACTORY BACTERIOLOGICAL TEST RESULTS, PRESSURE TEST RESULTS, AND AN AS BUILT SURVEY SHALL BE SUBMITTED TO ENGINEER PRIOR TO FINAL CERTIFICATION.

14. SUITABLE COUPLINGS COMPLYING WITH ASTM SPECIFICATIONS ARE REQUIRED FOR JOINING DISSIMILAR MATERIALS.

15. DEFLECTION TESTS ARE REQUIRED FOR ALL FLEXIBLE PIPE. TESTING REQUIREMENTS: 1) NO PIPE SHALL EXCEED A DEFLECTION OF 5%; 2) USING A RIGID BALL OR MANDREL FOR THE DEFLECTION TEST WITH A DIAMETER NOT LESS THAN 95% OF THE BASE INSIDE DIAMETER OR AVERAGE INSIDE DIAMETER OF THE PIPE; 3) PERFORMING THE TEST WITHOUT MECHANICAL PULLING DEVICES.

B. MATERIALS (WATER)

1. SERVICE PIPE SHALL BE POLYETHYLENE (PE) TUBING, DR9 MINIMUM.

2. **WATER MAINS SHALL BE PVC ASTM C900, DR 14 WITH INTEGRAL BELLS AND ELASTOMERIC JOINTS PER ASTM C3139 AND GASKETS PER ASTM F477.**

3. DUCTILE IRON PIPE (D.I.P.), IF REQUIRED, SHALL CONFORM TO ANSI/AWWA A21.51/C151, CLASS 50 (MIN.) PIPE FOR ALL SIZES.

4. CORPORATION STOPS SHALL BE BRASS, SIZED TO MATCH THE TAP DIAMETER, EQUIPPED WITH CONNECTIONS COMPATIBLE WITH SERVICE PIPE AND THREADED IN ACCORDANCE WITH SPECIFICATIONS IN AWWA C800. CURB STOPS SHALL BE SIZED TO MATCH THE METER SIZE AND CONFORM WITH AWWA C800 AND AWWA C901.

5. FITTINGS SHALL BE BRASS, CAST AND MACHINED IN ACCORDANCE WITH AWWA C800 AND AWWA C901, WITH COMPATIBLE PIPE CONNECTIONS.

6. TAPPING SADDLES SHALL BE USED FOR ALL SERVICE LINE TAPS. SERVICE SADDLES SHALL BE DOUBLE STRAP, ANCHORED BY A MINIMUM FOUR (4) BOLT PATTERN ON A DUCTILE IRON SADDLE BODY. FOR PVC PIPE, DOUBLE STRAPS SHALL BE CORROSION RESISTANT ALLOY STEEL, SIZED EXACTLY TO THE PIPE OUTSIDE DIAMETER. SEALING GASKETS SHALL BE BUNA-N RUBBER.

7. ALL POTABLE WATER PIPE AND PIPE FITTINGS INSTALLED UNDER THIS PROJECT SHALL BE BLUE IN COLOR VIA INTEGRAL PIPE COLOR, STRIPING, OR OTHER METHODS.

C. MATERIALS (SEWER)

1. ALL GRAVITY SEWER PIPE AND FITTINGS SHALL BE NON-PRESSURE POLYVINYL CHLORIDE PIPE (PVC) CONFORMING TO ASTM D 3034, SDR 26, WITH PUSH-ON RUBBER GASKET JOINTS.

2. ALL FITTINGS AND ACCESSORIES SHALL BE MANUFACTURED OR SUPPLIED BY THE PIPE MANUFACTURER OR PRIOR-APPROVED EQUAL.

3. BEDDING AND INITIAL BACK FILL OVER SEWER MAINS AND SERVICES SHALL BE SAND WITH NO ROCK LARGER THAN 1" IN DIAMETER.

D. MATERIALS (STORM)

1. REINFORCED CONCRETE PIPE (RCP): O-RING PIPE SHALL CONFORM TO ASTM C 76 (CLASS III, UNLESS OTHERWISE SPECIFIED) AND AASHTO M 170 STANDARD SPECIFICATIONS, AND ASTM C 443 STANDARD SPECIFICATION FOR JOINTS FOR RCP USING RUBBER GASKETS.

2. ELLIPTICAL RCP SHALL CONFORM TO ASTM C 507 (CLASS III) AND AASHTO M 207 STANDARD SPECIFICATIONS.

3. HDPE PIPE AND FITTINGS SHALL MEET THE REQUIREMENTS OF AASHTO M-252 (3"-10"), M-294 (12" AND LARGER), TYPE S (CORRUGATED OUTSIDE – SMOOTH INSIDE, 4"-60"), AND MP7 (60" TYPE S).

   A. BELL/SPIGOT GASKET FOR HDPE PIPE SHALL BE SOIL/SILT TIGHT PER AASHTO SECTION 26 WITH RUBBER GASKET MEETING ASTM F-477.

4. PVC STORM SEWER PIPE (12" OR LESS) AND FITTINGS SHALL BE NON-PRESSURE POLYVINYL CHLORIDE PIPE (PVC) CONFORMING TO ASTM D3034, SDR26, WITH PUSH-ON RUBBER GASKET JOINTS.

UTILITY DISINFECTING & TESTING NOTES

WATER MAINS THAT ARE INCLUDED IN THIS PROJECT THAT WILL BE CONSTRUCTED OF POLYVINYL CHLORIDE PIPE WILL BE PRESSURE AND LEAKAGE TESTED IN ACCORDANCE WITH AWWA STANDARD C605. ALL OTHER WATER MAINS INCLUDED IN THIS PROJECT WILL BE PRESSURE AND LEAKAGE TESTED IN ACCORDANCE WITH AWWA STANDARD C600.

LEAKAGE TESTS ARE REQUIRED AS FOLLOWS: 1) THE LEAKAGE EXFILTRATION OR INFILTRATION DOES NOT EXCEED 200 GALLONS PER INCH OF PIPE DIAMETER PER MILE PER DAY FOR ANY SECTION OF THE PIPE; 2) EXFILTRATION OR INFILTRATION TESTS BE PERFORMED WITH A MINIMUM POSITIVE HEAD OF 2 FEET; 3) AIR TESTS, AS A MINIMUM, CONFORM TO THE TEST PROCEDURE DESCRIBED IN ASTM C 828 FOR CLAY PIPE, ASTM C 924 FOR CONCRETE PIPE, ASTM F-1417 FOR PLASTIC PIPE, AND FOR OTHER MATERIALS APPROPRIATE TEST PROCEDURES.

DISINFECTION OF THE WATER DISTRIBUTION SYSTEM SHALL BE PERFORMED IN ACCORDANCE WITH AWWA C651 DISINFECTING WATER MAINS. SATISFACTORY BACTERIOLOGICAL TEST RESULTS SHALL BE SUBMITTED TO ENGINEER PRIOR TO FINAL CERTIFICATION.

THE CONTRACTOR SHALL MAKE PROVISIONS TO PROTECT THE ACTIVE EXISTING MAIN FROM BACKFLOW CONTAMINATION DURING FILLING, FLUSHING, AND TESTING OF THE NEW MAIN, AS SPECIFIED IN AWWA C651-92.

CONTRACTOR SHALL UTILIZE A JUMPER CONNECTION DURING WATER MAIN TESTING. ALTERNATE TYPES OF BACKFLOW PREVENTION MAY BE UTILIZED AS APPROVED BY INSPECTION STAFF AND ENGINEER.

UTILITY SEPARATION NOTES

1. NEW OR RELOCATED, UNDERGROUND WATER MAINS INCLUDED IN THIS PROJECT WILL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER, STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.; A HORIZONTAL DISTANCE OF AT LEAST SIX FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY-TYPE SANITARY SEWER (OR A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY-TYPE SANITARY SEWER IF THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER); A HORIZONTAL DISTANCE OF AT LEAST SIX FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.; AND A HORIZONTAL DISTANCE OF AT LEAST TEN FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM."

2. NEW OR RELOCATED, UNDERGROUND WATER MAINS THAT ARE INCLUDED IN THIS PROJECT AND THAT WILL CROSS ANY EXISTING OR PROPOSED GRAVITY – OR VACUUM – TYPE SANITARY SEWER OR STORM SEWER WILL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES ABOVE THE OTHER PIPELINE OR AT LEAST 12 INCHES BELOW THE OTHER PIPELINE; AND NEW OR RELOCATED, UNDERGROUND WATER MAINS THAT ARE INCLUDED IN THIS PROJECT AND THAT WILL CROSS ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER , WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER WILL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 12 INCHES ABOVE OR BELOW THE OTHER PIPELINE.

3. AT THE UTILITY CROSSINGS DESCRIBED ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE OR THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C., AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY – OR PRESSURE – TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

UTILITY CONTACTS

STORM DRAINAGE	ST. JOHNS RIVER WATER MANAGEMENT DISTRICT JACKSONVILLE SERVICE CENTER 7775 BAYMEADOWS WAY, SUITE 102 JACKSONVILLE, FL 32256 PHONE: (904) 730-6270
SEWER / WATER	TOWN OF HOWEY IN THE HILLS 316 W. CENTRAL AVENUE HOWEY-IN-THE-HILLS, FL 34737 352-805-0135 JAMES SOUTHALL NOTE: PUBLIC WATER AND SEWER SERVICE ARE NOT AVAILABLE TO THIS SITE
ELECTRIC	SUMTER ELECTRIC COOPERATIVE INC 390 N ORANGE AVENUE ORLANDO, FL 320801 352-569-9642 JANET COX
COMMUNICATION	UNITI FIBER LLC 805 EXECUTIVE CENTER DRIVE W SAINT PETERSBURG, FL 33702 251-214-7059 CHARLIE CROFT
PHONE / FIBER	CENTURY LINK 1806 WINTER PARK ROAD ORLANDO, FL 32789 850-599-1444 BILL MCCLOUD

SITE DATA

SITE AREA	193,897 SF	(±4.45 AC)
PERVIOUS AREA	154,395 SF	(79.6%) } (100%)
IMPERVIOUS AREA	39,502 SF	(20.4%) }
BUILDING AREA	6,000 SF	(3.1%)
PAVEMENT	33,502 SF	(17.3%)
ZONING	NC (NEIGHBORHOOD COMMERCIAL)	
BUILDING HEIGHT	30.5 FEET	

BUILDING SETBACKS	REQUIRED	PROVIDED
FRONT (EAST, U.S. 19)	30 FT	74.5 FT
SIDE (NORTH)	20 FT	44.7 FT
SIDE (SOUTH)	20 FT	609.4 FT
REAR (WEST)	30 FT	117.5 FT
LANDSCAPE BUFFER		
FRONT (EAST, U.S. 19)	15 FT	15 FT
SIDE (NORTH)	10 FT	10 FT
SIDE (SOUTH)	10 FT	N/A FT
REAR (WEST)	10 FT	N/A FT

PARKING REQUIRED

1 SPACE PER 200 S.F. OF GROSS FLOOR AREA
= 6,000 S.F./ 200 S.F.
= 30 PARKING SPACES

PARKING PROVIDED

REGULAR	38 SPACES
ACCESSIBLE	2 SPACES
TOTAL	40 SPACES

LEGEND

	PROPOSED
PROPOSED CONTOUR	73.50
MEET EXISTING GRADE	MEG
EDGE OF PAVEMENT	EOP
SIDEWALK	SW
GRADE BREAK	GB
SPOT ELEVATION	12.55
DIRECTION OF FLOW AND PERCENT SLOPE	1.0%
STORM SEWER & INLET	
DOWN SPOUT DRAINS	DSD
SANITARY SEWER & MANHOLE	SS
CLEANOUT	SS C.O.
WATER SERVICE	W
FIRE HYDRANT	W
WATER METER	W M W
BACKFLOW PREVENTION DEVICE	W RPZ W
GATE VALVE	W W
REDUCER	W W
UNDERGROUND TELEPHONE	UGT
UNDERGROUND ELECTRIC	UGE
SITE LIGHTING	
TRANSFORMER	T
AIR CONDITIONING UNIT	AC
PARKING SPACE TOTALS	8
6" CURBING WITH DIMENSION (TO FACE OF CURB U.N.O.)	12'
DETAIL NUMBER / SHEET NUMBER	3 / C4

Z DEVELOPMENT SERVICES
CIVIL ENGINEERING CONSULTANTS
CA 29354
1201 E. ROBINSON STREET
ORLANDO, FL 32801
PH: (407) 271-8910

DATE	REVISION

ROBERT ZIEGENFUSS, P.E., LEED AP
FL REG. # 56752

This item has been digitally signed and sealed by ROBERT ZIEGENFUSS on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VETERINARY OFFICE
STATE ROAD 19
SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FL 34737

DATE: 08/28/24
DRAWN: LF
CHECKED: DL

C0
CIVIL DATA AND NOTES

PROJECT NO.: 2023.179

REFER TO SHEET C0 FOR GENERAL NOTES, SPECIFICATIONS AND LEGENDS IN ADDITION TO SITE SPECIFIC NOTES AND REQUIREMENTS.

CONTRACTOR'S NOTE:
SEE LANDSCAPE PLANS FOR TREES TO REMAIN AND/OR BE REMOVED.

-Benchmark Information-
National Geodetic Survey Datum
Designation - Z 430
PID - AB5338
Elevation - 86.88'
(Elevations are based upon NAVD 88 Datum)

-Site Benchmark Information-
#1
Fnd. 1/2" Rebar & Cap "LB # 7623".
Elevation: 100.44'

#2
Fnd. 1/2" Rebar & Cap "LB # 7623".
Elevation: 97.21'

BEFORE YOU DIG !
CALL SUNSHINE STATE ONE CALL OF FLORIDA
AT LEAST TWO FULL BUSINESS DAYS BEFORE
DIGGING OR DISTURBING EARTH
811
Know what's below.
Call before you dig.

DEMOLITION NOTES

1. PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL COORDINATE ACTIVITIES WITH ALL UTILITY SERVICE PROVIDERS IN THE AREA. THE LOCATION OF ALL EXISTING UTILITIES SHOULD BE VERIFIED PRIOR TO ANY EXCAVATION ACTIVITIES.

2. THE CONTRACTOR SHALL COMPLETELY REMOVE AND DISPOSE OF ALL STRUCTURES AND OTHER IMPROVEMENTS AS NOTED ON THE PLANS. THIS INCLUDES FOUNDATIONS, TIMBER, BRUSH, STUMPS, ROOTS, PAVEMENT AND BASE MATERIAL AND OTHER STRUCTURES AS SHOWN OR REASONABLY IMPLIED IN THE DRAWINGS.

3. WHERE EXISTING BUILDINGS ARE TO BE DEMOLISHED, ALL TRACES OF FOUNDATIONS AND UNDERGROUND UTILITIES ARE TO BE REMOVED (UNLESS OTHERWISE NOTED ON PLANS). THE CONTRACTOR IS RESPONSIBLE FOR PROPER DISPOSAL OF ALL WASTE MATERIAL.

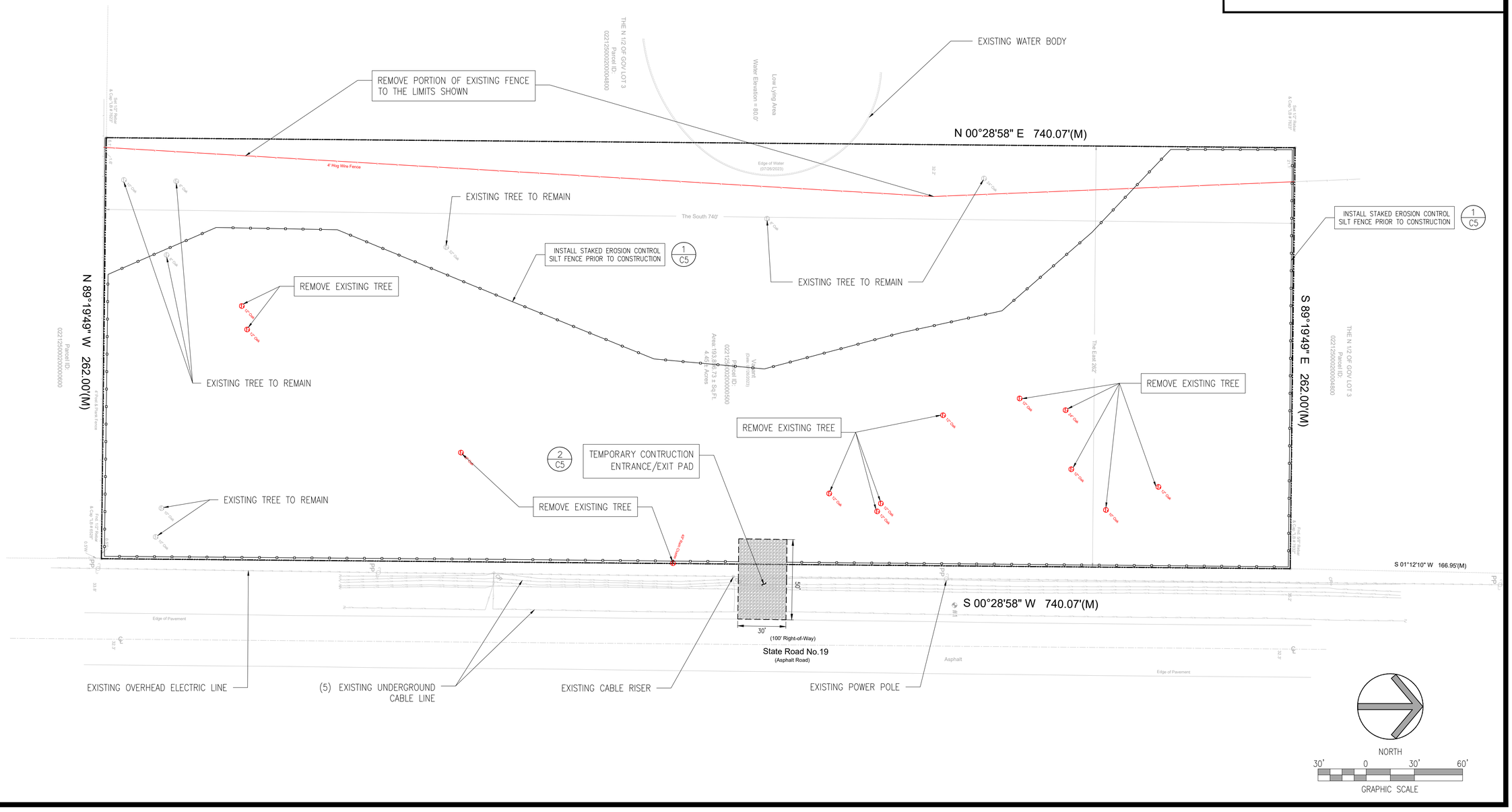
4. WHERE PAVING OR STRUCTURES ARE TO BE REMOVED WHICH ABUT OR ARE A PART OF CONNECTED FACILITIES (THAT ARE OFF-SITE), ANY DAMAGE THAT MIGHT RESULT FROM DEMOLITION IS TO BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN EXISTING UNLESS SPECIFICALLY EXEMPTED BY THE PLANS. THE COST FOR SUCH RESTORATION SHALL BE INCIDENTAL TO OTHER CONSTRUCTION AND NO EXTRA COMPENSATION WILL BE ALLOWED.

5. THE LOCATION OF ALL EXISTING UTILITIES AND TREES SHOWN ON THE PLANS HAVE BEEN DETERMINED BASED UPON THE BEST AVAILABLE INFORMATION. THE ENGINEER AND OWNER ASSUME NO RESPONSIBILITY FOR ACCURACY. ALL UTILITIES, SURFACE IMPROVEMENTS AND TREE LOCATIONS SHOULD BE VERIFIED BY THE CONTRACTOR.

6. THE CONTRACTOR IS TO COORDINATE THE RELOCATION OR REMOVAL OF ALL OVERHEAD/UNDERGROUND UTILITIES, UTILITY POLES, LIGHTS AND LINES IN THE RIGHT-OF-WAY AND ON THE PROPERTY WITH THE APPROPRIATE SERVICE PROVIDER.

7. THE CONTRACTOR SHALL REFERENCE AND RESTORE PROPERTY CORNERS AND LAND MARKERS DISTURBED DURING CONSTRUCTION (UNDER THE DIRECTION OF A REGISTERED LAND SURVEYOR).

8. ALL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO THE START OF DEMOLITION AND SHALL REMAIN IN PLACE UNTIL THE COMPLETION OF CONSTRUCTION.



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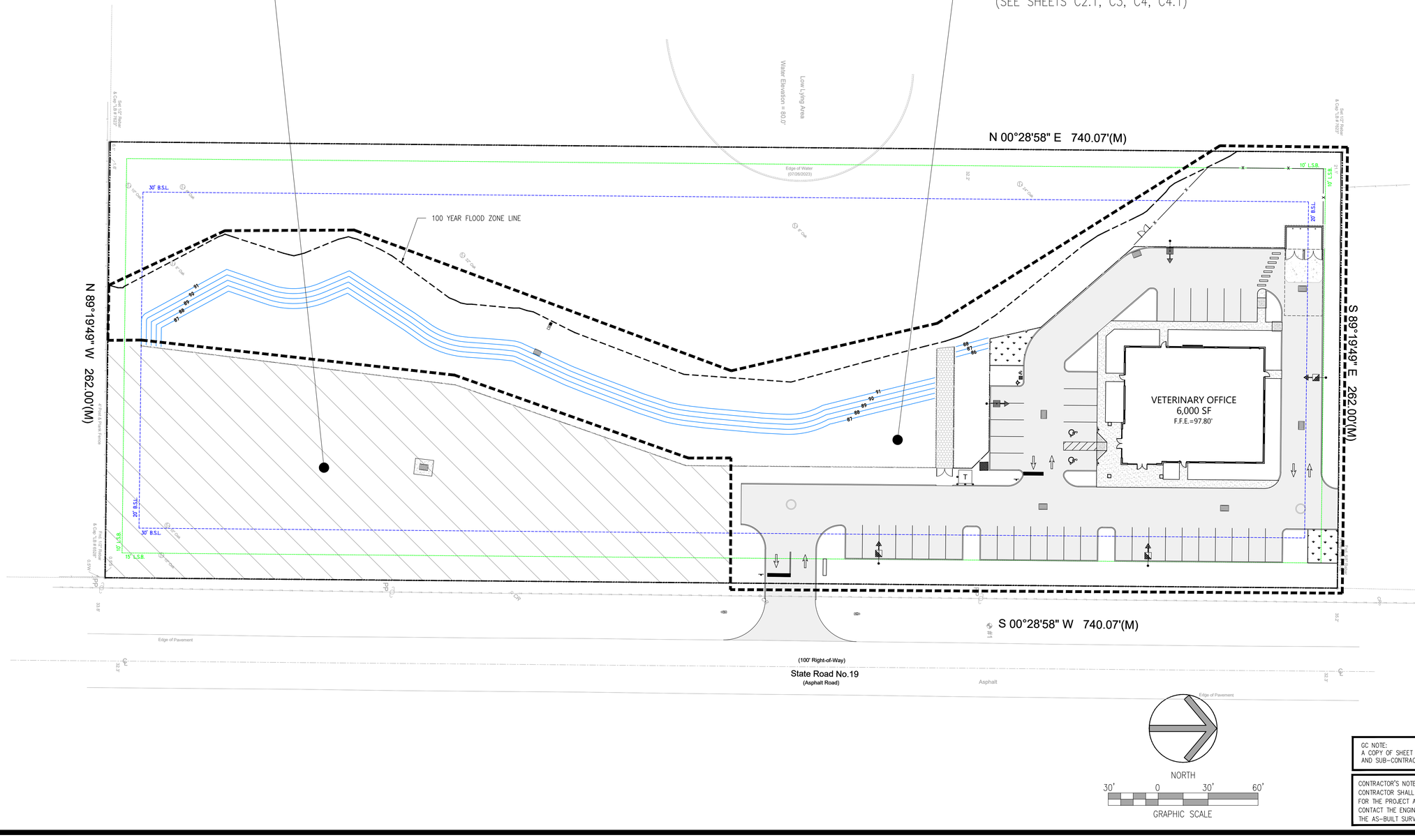
C1
DEMOLITION PLAN

PROJECT NO.: 2023.179

FUTURE DEVELOPMENT
APPROXIMATE AREA = 42,383 SF (±0.97 AC)

PORTION OF SITE DESIGNATED FOR VETERINARY OFFICE DEVELOPMENT (INCLUDING PROPOSED POND)
APPROXIMATE AREA = 133,502 SF (±3.06 AC)
(SEE SHEETS C2.1, C3, C4, C4.1)



NORTH

30' 0 30' 60'

GRAPHIC SCALE

BEFORE YOU DIG !
CALL SUNSHINE STATE ONE CALL OF FLORIDA
AT LEAST TWO FULL BUSINESS DAYS BEFORE DIGGING OR DISTURBING EARTH
811 Know what's below. Call before you dig.

GC NOTE:
A COPY OF SHEET C0 SHALL BE PROVIDED TO ALL BIDDERS AND SUB-CONTRACTORS

CONTRACTOR'S NOTE:
CONTRACTOR SHALL PROVIDE A COMPREHENSIVE ASBUILT SURVEY FOR THE PROJECT AS REQUIRED BY THE GOVERNING AGENCY. CONTACT THE ENGINEER OF RECORD FOR THE REQUIREMENTS OF THE AS-BUILT SURVEY.

Z DEVELOPMENT SERVICES
CIVIL ENGINEERING CONSULTANTS
1201 E. ROBINSON STREET
ORLANDO, FL 32801
PH: (407) 271-8910
CA 29354

REVISION	DATE

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DATE: 08/28/24
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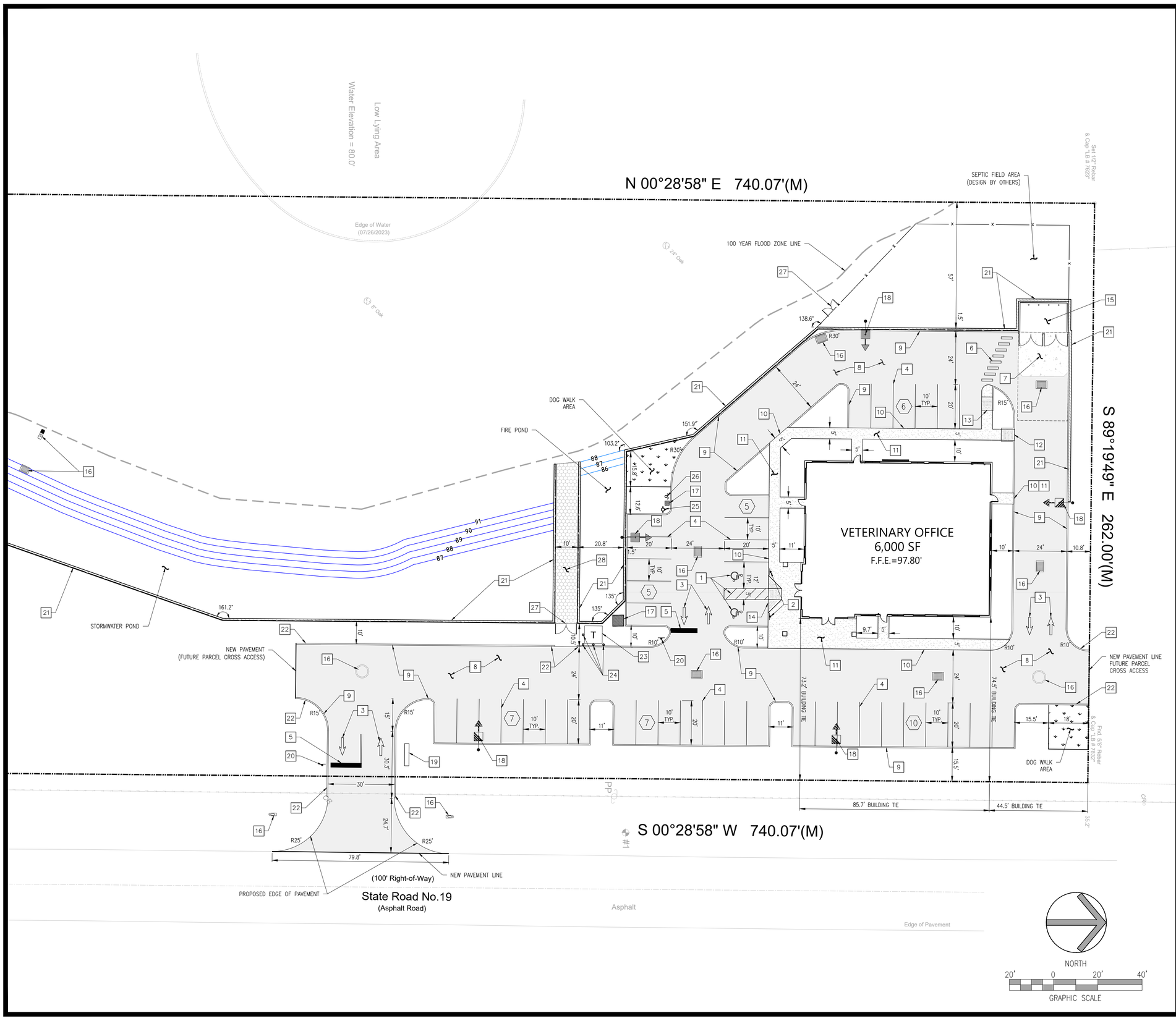
C2
MASTER SITE PLAN

PROJECT NO.: 2023.179



PLAN NOTES

1. ACCESSIBLE PARKING, STRIPING, & ACCESS AISLE (1/C6)
2. ACCESSIBLE PARKING SIGN – 2 SPACES (2/C6)
3. PAVEMENT MARKING (3/C6)
4. 4" WHITE STRIPING PAINT
5. 24" WHITE STOP BAR
6. CROSSWALK STRIPING
7. CONCRETE PAVEMENT (4/C6)
8. ASPHALT PAVEMENT (5/C6)
9. 6" CONCRETE CURB (11/C6)
10. MONOLITHIC CURB AND SIDEWALK (12/C6)
11. CONCRETE WALK W/ EXPANSION JOINTS (6/C6)
12. SIDEWALK END RAMP (8/C6)
13. ACCESSIBLE CORNER RAMP (9/C6)
14. FLARED RAMP (10/C6)
15. DUMPSTER ENCLOSURE (REFER TO ARCHITECTURAL PLANS)
16. STORM STRUCTURE (REFER TO SHEET C4)
17. WATER STRUCTURE (REFER TO SHEET C3)
18. SITE LIGHTING (REFER TO SITE LIGHTING PLANS FOR SPECIFICATIONS)
19. MONUMENT SIGN
20. "STOP" SIGN
21. RETAINING WALL (DESIGN BY OTHERS)
    42" ALUMINUM RAIL FENCE TO BE PROVIDED ALONG THE TOP OF THE ENTIRE WALL LENGTH (14/C6)
22. TRANSITION CURB (13/C6)
23. TRANSFORMER
24. BOLLARDS (7/C6)
25. FIRE HYDRANT (SEE SHEET C3)
26. FIRE DEPARTMENT CONNECTION (SEE SHEET C3)
27. DOUBLE GATE
28. GEOGRID MAT

BEFORE YOU DIG !
CALL SUNSHINE STATE ONE CALL OF FLORIDA
AT LEAST TWO FULL BUSINESS DAYS BEFORE DIGGING OR DISTURBING EARTH
811 Know what's below. Call before you dig.

GC NOTE:
A COPY OF SHEET C0 SHALL BE PROVIDED TO ALL BIDDERS AND SUB-CONTRACTORS

CONTRACTOR'S NOTE:
CONTRACTOR SHALL PROVIDE A COMPREHENSIVE ASBUILT SURVEY FOR THE PROJECT AS REQUIRED BY THE GOVERNING AGENCY. CONTACT THE ENGINEER OF RECORD FOR THE REQUIREMENTS OF THE AS-BUILT SURVEY.

Z DEVELOPMENT SERVICES
CIVIL ENGINEERING CONSULTANTS
CA 29354
1201 E. ROBINSON STREET
ORLANDO, FL 32801
PH: (407) 271-8910

DATE

REVISION

ROBERT ZIEGENFUSS, P.E., LEED AP
FL REG. # 56752

This item has been digitally signed and sealed by ROBERT ZIEGENFUSS on the date adjacent to the seal.

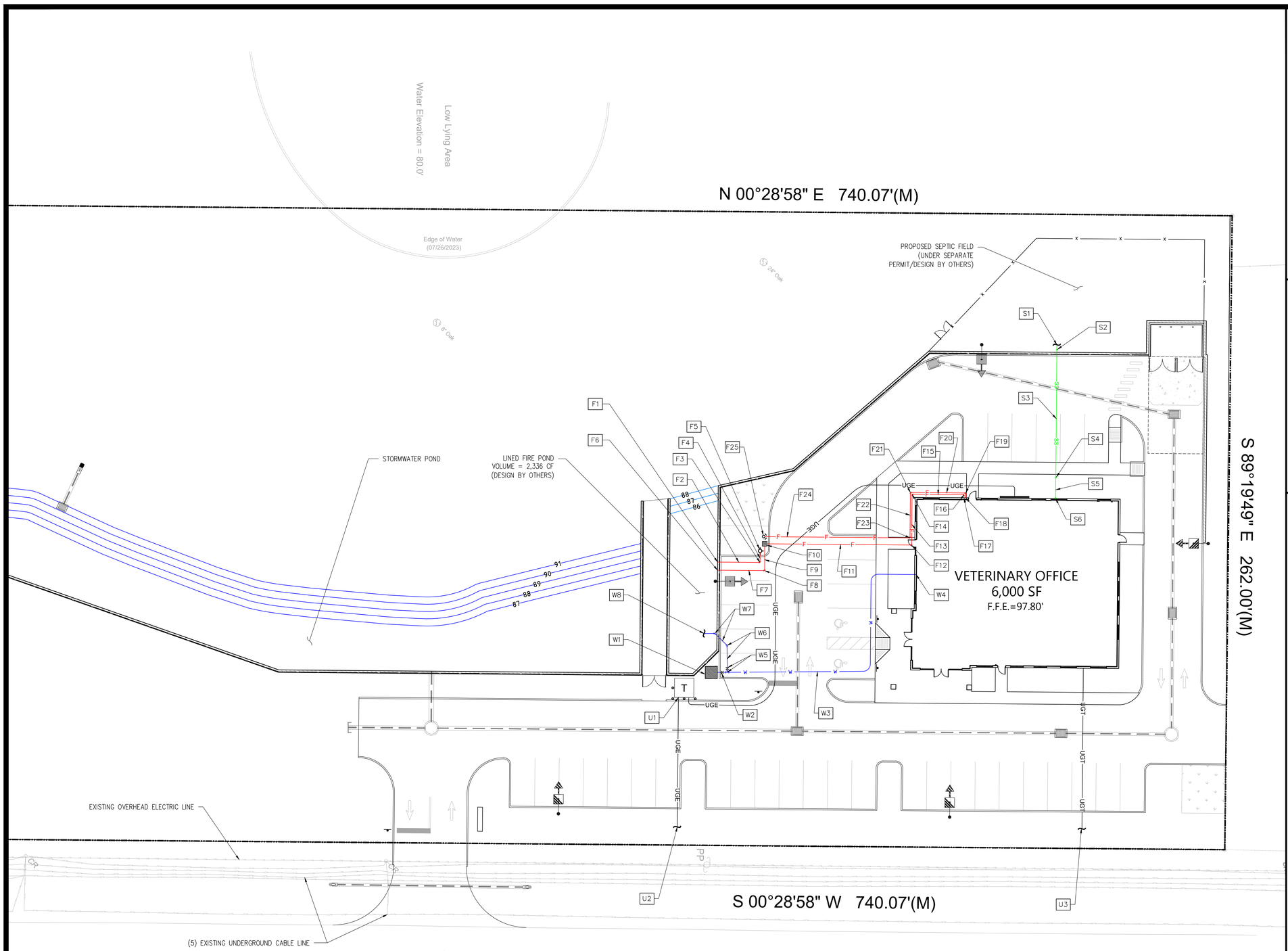
Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VETERINARY OFFICE
STATE ROAD 19
SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FL 34737

DATE: 08/28/24
DRAWN: LF
CHECKED: DL

C2.1
SITE DIMENSION PLAN

PROJECT NO.: 2023.179



UTILITY NOTES

CONTRACTOR SHALL REFER TO MEP PLANS & CONFIRM STUB-OUT SIZE, LOCATION, & INVERT & NOTIFY ENGINEER IF DISCREPANCIES EXIST.

SANITARY SEWER NOTES:

- S1 POINT OF DISCHARGE. COORDINATE WITH SEPTIC CONTRACTOR @ ELEV. = 88.90
- S2 DROP CLEANOUT (6/C7) (TYP.)
  INV. IN = 87.80
  INV. OUT = 85.80
- S3 58 LF – 6" PVC SDR26 @ 3.5% SLOPE (2/C7) (TYP.)
- S4 DROP CLEANOUT
  INV. IN = 91.83
  INV. OUT = 89.83
- S5 9 LF – 6" PVC SDR26 @ 3.5% SLOPE
- S6 CONTRACTOR SHALL CONNECT TO STUB-OUT FROM BUILDING USING A DROP CLEANOUT
  INV. IN. = 94.15
  INV. OUT. = 92.15

WATER NOTES:

- W1 POTABLE WATER WELL
- W2 2" GATE VALVE
- W3 81 LF – 2" BLUE PE POTABLE WATER LINE (2/C7) (TYP.)
- W4 POTABLE WATER POINT OF CONNECTION TO BUILDING
- W5 2" X 2" TEE AND 2" GATE VALVE
- W6 11 LF – 2" BLUE PE POTABLE WATER LINE AND 45° BEND
- W7 7 LF – 2" BLUE PE POTABLE WATER LINE AND 45° BEND
- W8 RECHARGE POINT OF FIRE POND

FIRE NOTES:

- F1 POINT OF COLLECTION
- F2 18 LF – 4" PVC C900 FIRE LINE (2/C7) (TYP.)
- F3 90° BEND (4/C7)
- F4 4 LF – 4" PVC C900 FIRE LINE
- F5 FIRE HYDRANT
- F6 POINT OF COLLECTION
- F7 20 LF – 4" PVC C900 FIRE LINE
- F8 90° BEND
- F9 10 LF – 4" PVC C900 FIRE LINE
- F10 FIRE PUMP
- F11 60 LF – 4" PVC C900 FIRE LINE
- F12 90° BEND
- F13 21 LF – 4" PVC C900 FIRE LINE
- F14 90° BEND
- F15 22 LF – 4" PVC C900 FIRE LINE
- F16 90° BEND AND 2 LF – 4" PVC C900 FIRE LINE
- F17 CONNECTION AT BUILDING FIRE ROOM
- F18 CONNECTION AT BUILDING FIRE ROOM
- F19 2 LF – 4" PVC C900 FIRE LINE AND 90° BEND
- F20 23 LF – 4" PVC C900 FIRE LINE
- F21 90° BEND
- F22 19 LF – 4" PVC C900 FIRE LINE
- F23 90° BEND
- F24 60 LF – 4" PVC C900 FIRE LINE
- F25 FDC (FIRE DEPARTMENT CONNECTION)

ELECTRIC, TELEPHONE AND GAS NOTES

- U1 PROPOSED TRANSFORMER PAD (CONTRACTOR SHALL COORDINATE WITH POWER COMPANY FOR EXACT SIZE, LOCATION AND DETAILS OF PAD)
- U2 CONTRACTOR SHALL COORDINATE WITH POWER COMPANY FOR EXACT NUMBER, SIZE AND DEPTH OF CONDUIT FOR UNDERGROUND ELECTRICAL SERVICE.
- U3 CONTRACTOR SHALL COORDINATE WITH TELEPHONE COMPANY FOR EXACT NUMBER, SIZE AND DEPTH OF CONDUIT FOR UNDERGROUND TELEPHONE SERVICE.

BEFORE YOU DIG?
CALL SUNSHINE STATE ONE CALL OF FLORIDA
AT LEAST 48 HOURS BUT NOT MORE THAN 14 DAYS BEFORE DIGGING OR DISTURBING EARTH
811
Know what's below. Call before you dig.

GC NOTE:
A COPY OF SHEET C0 SHALL BE PROVIDED TO ALL BIDDERS AND SUB-CONTRACTORS

CONTRACTOR'S NOTE:
* CONTRACTOR SHALL PROVIDE A COMPREHENSIVE ASBUILT SURVEY FOR THE PROJECT AS REQUIRED BY THE GOVERNING AGENCY. CONTACT THE ENGINEER OF RECORD FOR THE REQUIREMENTS OF THE AS-BUILT SURVEY.
* CONTRACTOR SHALL COORDINATE FIRE LANE STRIPING & FIRE SIGNAGE WITH THE FIRE INSPECTOR OR THROUGH A SEPARATE FIRE PERMITTING PROCESS.

NORTH
20' 0 20' 40'
GRAPHIC SCALE

Z DEVELOPMENT SERVICES
CIVIL ENGINEERING CONSULTANTS
1201 E. ROBINSON STREET
ORLANDO, FL 32801
CA 29354
PH: (407) 271-8910

DATE	REVISION

ROBERT ZIEGENFUSS, P.E., LEED AP
FL REG. # 56752

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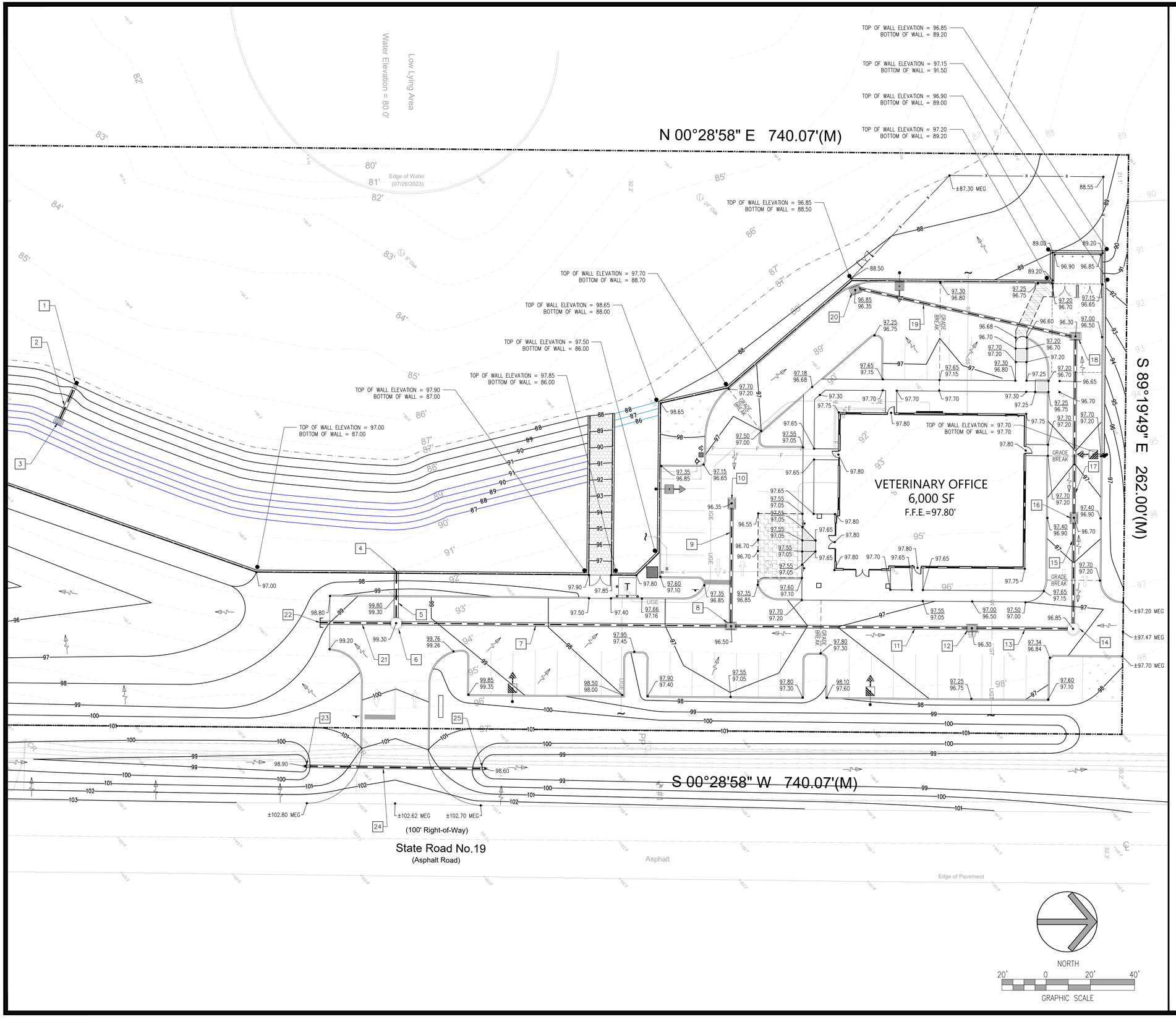
VETERINARY OFFICE
STATE ROAD 19
SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FL 34737

DATE: 08/28/24
DRAWN: LF
CHECKED: DL

C3
UTILITY PLAN

PROJECT NO.: 2023.179



DRAINAGE NOTES

1. MITERED END SECTION @ INV. ELEV. = 88.00 (POINT OF DISCHARGE)
2. 17 LF – 18" RCP @ 1.0% SLOPE
3. CONTROL STRUCTURE
   INV. ELEV. = 88.17
4. END OF PIPE @ INV. INV. = 87.00
5. 21 LF – 24" HDPE @ 1.0% SLOPE
6. STORMWATER MANHOLE #1
   TOP OF FRAME = 99.30
   W. INV. (OUT) = 87.21
   N. INV. (IN) = 90.56
   S. INV. (IN) = 91.00
7. 147 LF – 18" HDPE @ 0.5% SLOPE
8. TYPE "F" INLET #1
   TOP OF FRAME = 96.50
   S. INV. (OUT) = 91.30
   W. INV. (IN) = 93.04
   N. INV. (IN) = 91.42
9. 52 LF – 18" HDPE @ 0.5% SLOPE
10. TYPE "F" INLET #2
    TOP OF FRAME = 96.35
    W. INV. (OUT) = 93.30
11. 105 LF – 18" HDPE @ 0.5% SLOPE
12. TYPE "F" INLET #3
    TOP OF FRAME = 96.30
    S. INV. (OUT) = 91.95
    N. INV. (IN) = 92.07
13. 42 LF – 18" HDPE @ 0.5% SLOPE
14. STORMWATER MANHOLE #2
    TOP OF FRAME = 96.85
    S. INV. (OUT) = 91.85
    W. INV. (IN) = 91.97
15. 46 LF – 18" HDPE @ 0.5% SLOPE
16. TYPE "F" INLET #4
    TOP OF FRAME = 96.70
    E. INV. (OUT) = 92.20
    W. INV. (IN) = 92.30
17. 79 LF – 15" HDPE @ 0.5% SLOPE
18. TYPE "F" INLET #5
    TOP OF FRAME = 96.30
    E. INV. (OUT) = 92.70
    S. INV. (IN) = 92.81
19. 98 LF – 15" HDPE @ 0.5% SLOPE
20. TYPE "F" INLET #6
    TOP OF FRAME = 96.35
    N. INV. (OUT) = 93.30
21. 32 LF – 18" HDPE @ 0.5% SLOPE
22. 18" HDPE STUB–OUT FOR FUTURE STORMWATER CONNECTION
23. CULVERT #1
    TOP OF PIPE ELEV. = 100.15
    MITERED END SECTION @ INV. ELEV. = 98.90
24. 82 LF – 15" RCP @ 0.37% SLOPE
25. CULVERT #2
    TOP OF PIPE ELEV. = 99.85
    MITERED END SECTION @ INV. ELEV. = 98.60

GRADING

ADA ACCESSIBLE AREA, NOT TO EXCEED 2.0% SLOPE IN ANY DIRECTION.

ADA ACCESSIBLE ROUTE, NOT TO EXCEED 2.0% CROSS SLOPE AND/OR 5.0% RUNNING SLOPE.

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CONTRACTOR'S NOTE:
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ORLANDO, FL 32801
CA 29354
PH: (407) 271-8910

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VETERINARY OFFICE
STATE ROAD 19
SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FL 34737

DATE: 08/28/24
DRAWN: LF
CHECKED: DL

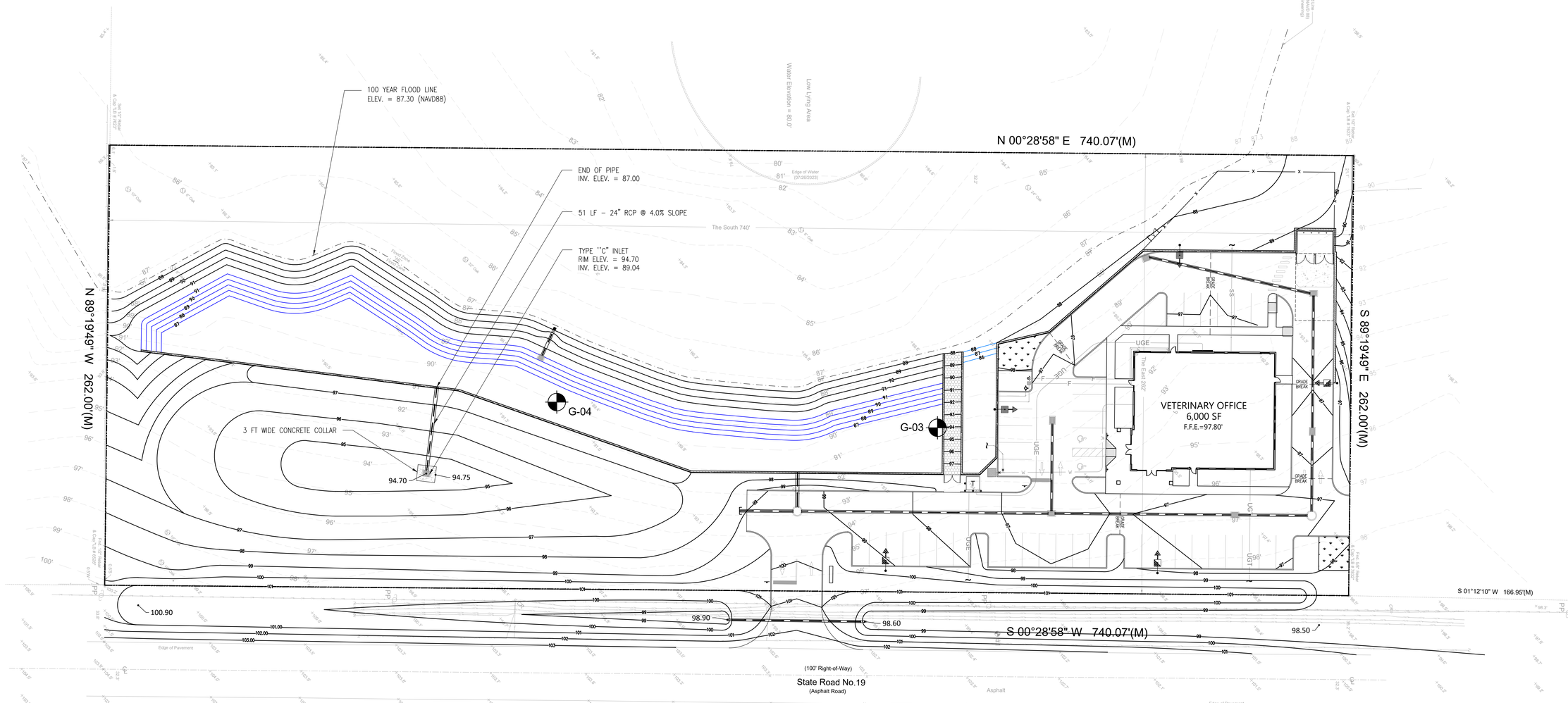
C4
GRADING AND DRAINAGE PLAN

PROJECT NO.: 2023.179

-Benchmark Information-
National Geodetic Survey Datum
Designation - Z 430
PID - AB5338
Elevation - 86.88'
(Elevations are based upon NAVD 88 Datum)

-Site Benchmark Information-
#1
Fnd. 1/2" Rebar & Cap "LB # 7623".
Elevation: 100.44'

#2
Fnd. 1/2" Rebar & Cap "LB # 7623".
Elevation: 97.21'



PER GEOTECHNICAL REPORT BY GEO-TECHNOLOGY ASSOCIATES, INC PERFORMED IN 08-28-24		
DESIGN PARAMETERS	ESTIMATED VALUES	
BORING LOG	G-03	G-04
GROUND SURFACE ELEVATION	91 FT	89.4 FT
ESTIMATED SEASONAL HIGH WATER TABLE	5.5 FT	3.5 FT

ALL DISTURBED AREA THAT WILL REMAIN UNDEVELOPED SHALL BE SODDED AND WATERED UNTIL ESTABLISHED

NORTH
30' 0 30' 60'
GRAPHIC SCALE

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HOWEY IN THE HILLS, FL 34737

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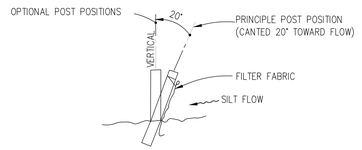
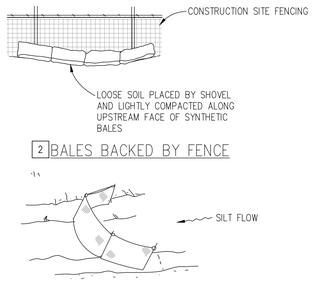
C4.1
MASS GRADING PLAN

PROJECT NO.: 2023.179

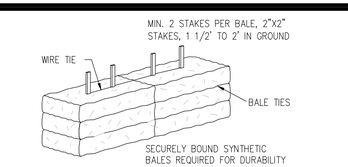


1 SILT FENCE

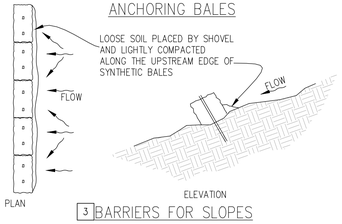
1 EROSION CONTROL DETAILS NTS



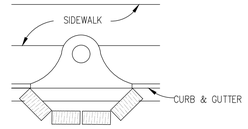
2 BALES BACKED BY FENCE



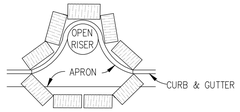
ANCHORING BALES



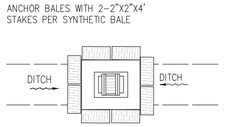
3 BARRIERS FOR SLOPES



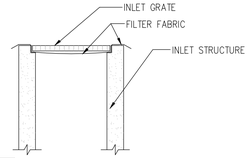
4 COMPLETED INLET



4 PARTIAL INLET



5 DITCH BOTTOM INLET



6 EROSION CONTROL SOCK

PROTECTION AROUND INLETS OR SIMILAR STRUCTURES

POLLUTION CONTROL NOTES

ALL EROSION CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL COMPLETION OF CONSTRUCTION.

1. ALL EROSION AND SEDIMENT CONTROL WORK SHALL CONFORM WITH LOCAL CITY/COUNTY AND WATER MANAGEMENT DISTRICT SPECIFICATIONS, SUBJECT TO AUTHORIZED AND APPROVED VARIANCES, WAIVERS AND/OR CONDITIONS OF SITE PERMITS.

2. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PLACED PRIOR TO OR AS THE FIRST STEP IN, CONSTRUCTION. SEDIMENT CONTROL PRACTICES WILL BE APPLIED AS A PERIMETER DEFENSE AGAINST ANY TRANSPORTATION OF SILT OFF THE SITE.

3. ALL AREAS AFFECTED BY THIS WORK SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN EXISTING CONDITION, UNLESS SPECIFICALLY EXEMPTED BY THE PLANS. THE COST FOR SUCH RESTORATION SHALL BE INCIDENTAL TO OTHER CONSTRUCTION AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.

4. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN THESE PLANS AND FIELD CONDITIONS PRIOR TO CONSTRUCTION.

5. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL PROVIDE TREE PROTECTION BARRIERS TO MEET THE REQUIREMENTS OF LOCAL SPECIFICATIONS.

6. THE CONTRACTOR SHALL SELECTIVELY CLEAR ONLY THE AREAS REQUIRED FOR CONSTRUCTION AND STABILIZE ANY POTENTIAL EROSION AREAS IMMEDIATELY FOLLOWING COMPLETION OF CONSTRUCTION.

7. CONTRACTOR SHALL KEEP ANY AND ALL SAND, SILT OR OTHER DEBRIS FROM MOVING OFF-SITE. USE AND MAINTAIN SILT FENCE JUST INSIDE OF PROPERTY LINE.

8. CONTRACTOR SHALL BLOCK INTRUSION OF SAND, SILT OR OTHER DEBRIS INTO ANY DRAINAGE OR SANITARY SEWER STRUCTURE OR PIPING ON OR ADJACENT TO SITE.

9. ALL CLEARED AREAS FOR IMPROVEMENT AND/OR CONSTRUCTION SHALL BE WATERED TO PREVENT WIND EROSION.

10. FOR ADDITIONAL INFORMATION AND DETAILS, SEE STATE OF FLORIDA EROSION AND SEDIMENT CONTROL MANUAL.

11. UNLESS SPECIFIED, SILT FENCES MAY BE USED IN LIEU OF HAY BARRIERS.

12. ADDITIONAL POSTS AND RAILS MAY BE NECESSARY TO SECURE AND SUPPORT BARRIERS.

13. ADDITIONAL BARRIER LENGTHS MAY BE REQUIRED BY THE COUNTY ENGINEER OR BY REGULATORY AGENCIES.

14. FILTER FABRIC MUST BE INSTALLED UNDER ALL INLET GRATES, AT ALL TIMES WHEN INLETS ARE NOT PROTECTED BY SILT FENCE OR HAY BALES, UNTIL THE LIMEROCK BASE IS FINISHED AND PRIMED.

15. THE CONTRACTOR IS REQUIRED TO HAVE THIS PLAN ALONG WITH A COPY OF THE NPDES NOTICE OF INTENT POSTED IN A VISIBLE LOCATION ON THE CONSTRUCTION SITE AT ALL TIMES.

16. "CONTRACTOR IS REQUIRED BY NPDES TO KEEP A LOG ON SITE FOR THE SOIL EROSION AND SEDIMENT CONTROL MEASURES INDICATED ON THE PLAN. THE LOG SHALL CONTAIN DATES FOR: INSTALLATION OF CONTROL MEASURES, MAJOR SITE CONSTRUCTION ACTIVITIES, INSPECTION ON AT LEAST A WEEKLY BASIS AND INSPECTION AFTER ANY RAINFALL EVENT THAT IS 1/2" OR GREATER".

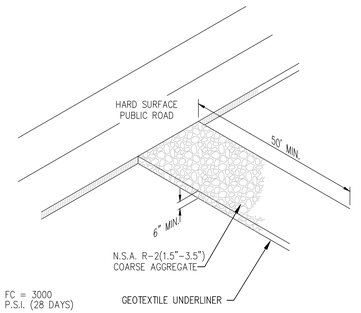
17. THE CONTRACTOR IS REQUIRED TO SUBMIT A NOTICE OF TERMINATION TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION UPON THE COMPLETION OF CONSTRUCTION.

18. CONTRACTOR SHALL RETAIN ALL RECORDS FOR A PERIOD OF THREE YEARS FOLLOWING THE NOTICE OF TERMINATION.

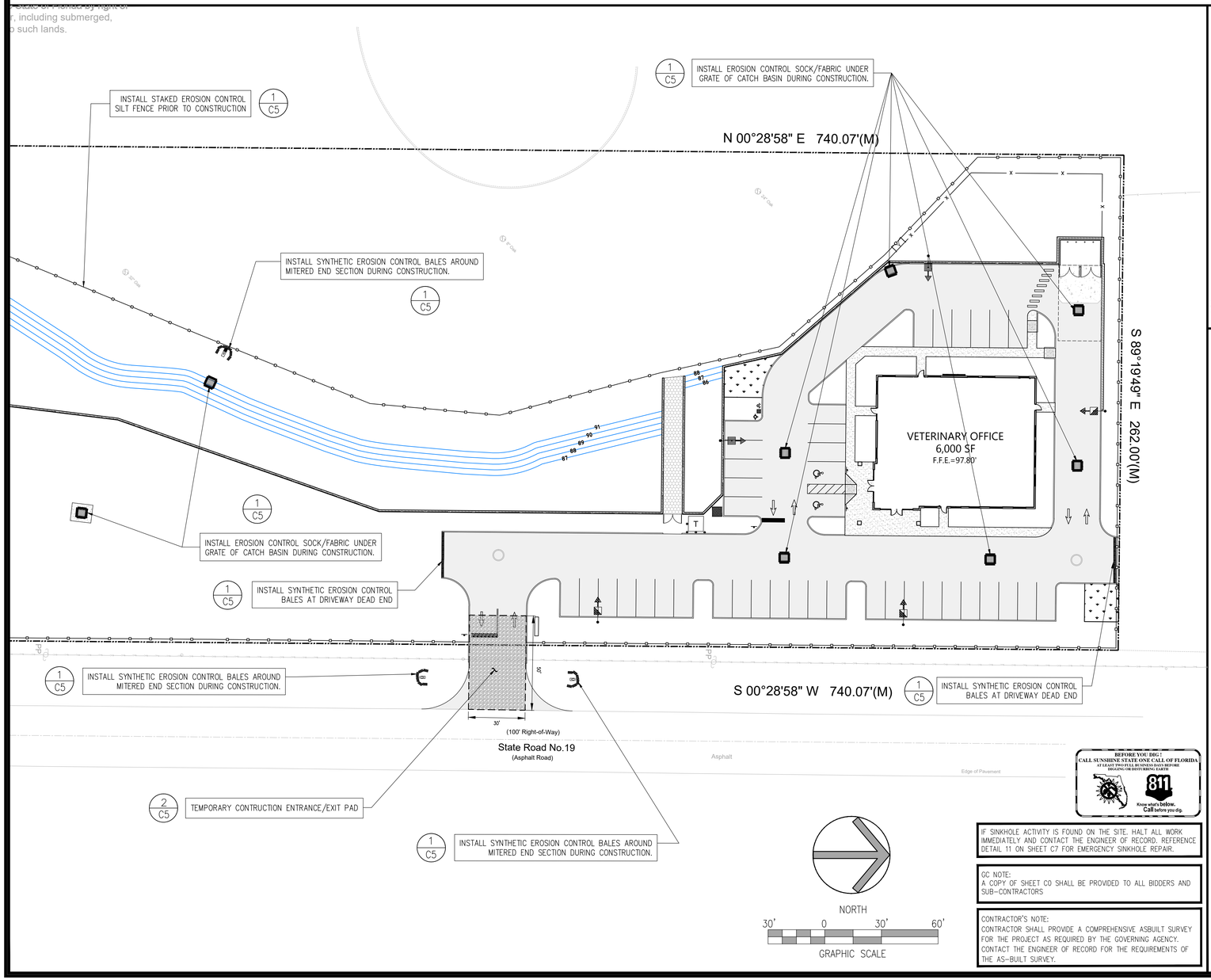
19. NON STORMWATER DISCHARGES SUCH AS FIRE HYDRANT FLUSHING, ETC SHALL BE DISCHARGED TO EXISTING UNDERGROUND STORMWATER FACILITY OR ON SITE RETENTION POND.

20. ANY POTENTIALLY HAZARDOUS CHEMICALS BROUGHT ONTO THE JOB SITE WILL BE LIMITED AND KEPT IN ORIGINAL CONTAINER WITH MSDS LABEL.

21. NO SILT SHALL BE TRACKED ONTO PUBLIC ROADWAYS. ANY SILT DEPOSITED ON PUBLIC ROADWAYS SHALL BE REMOVED BY THE END OF THE WORK DAY.



2 CRUSHED STONE CONSTRUCTION EXIT NTS



TOTAL AREA (SF) (AC)	*DISTURBED AREA (SF) AREA (AC)	UNDISTURBED AREA (SF) AREA (AC)	IMPERVIOUS* AREA (SF) AREA (AC)	PERVIOUS* AREA (SF) AREA (AC)
193,897 SF 4.45 AC	93,360 SF 2.14 AC	100,537 SF 2.31	38,144 SF 0.87 AC	55,216 SF 1.27 AC

*IMPERVIOUS + PERVIOUS = DISTURBED

Stormwater Pollution Prevention Plan Inspection Report Form

Inspections must occur at least once a week and within 24 hours of the end of a storm event that is 0.50 inches or greater.

Project
Name: _____
FDEP NPDES Stormwater Identification Number:

LOCATION	RAIN DATA	TYPE OF CONTROL	DATE INSTALLED	CURRENT CONDITION / CORRECTIVE ACTION

Condition Code:
G = Good M = Marginal, needs maintenance or replacement soon
P = Poor, needs immediate maintenance or replacement C = Needs to be cleaned
O = Other

Control Type Codes

1. Silt Fence	10. Storm drain inlet protection	19. Reinforced soil retaining system
2. Earth dikes	11. Vegetative buffer strip	
3. Structural diversion	12. Vegetative preservation area	20. Gabion
4. Swale	13. Retention Pond	21. Sediment Basin
5. Sediment Trap	14. Construction entrance stabilization	22. Temporary seed / sod
6. Check dam		23. Permanent seed / sod
7. Subsurface drain	15. Perimeter ditch	24. Mulch
8. Pipe slope drain	16. Curb and gutter	25. Hay Bales
9. Level spreaders	17. Paved road surface	26. Geotextile
	18. Rock outlet protection	27. Rip-rap
28. Tree protection	31. Waste disposal/housekeeping	33. Sand Bag
29. Detention pond	32. Dam	34. Other
30. Retention pond		

Inspector Information:

_____ _____
Name Date
Qualification
The above signature also shall certify that this facility is in compliance with the Stormwater Pollution Prevention Plan and the State of Florida Generic Permit for Stormwater Discharge from Large and Small Construction Activities if there are not any incidents of non-compliance identified above.

* * * * * *

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

_____ _____
Name (Responsible Authority) Date

NOTE: THIS EXAMPLE INSPECTION LOG IS GIVEN FOR REFERENCE PURPOSES. THIS OR A SIMILAR FORM IS REQUIRED PER NOTE 16.

CONTRACTOR(S) AND SUBCONTRACTOR(S) THAT IMPLEMENT ANY PART OF THE EROSION/POLLUTION CONTROL MEASURES REQUIRED BY THE NPDES PERMIT SHALL SIGN BELOW:

"I certify under penalty of law that I understand, and shall comply with, the terms and conditions of the State of Florida Generic Permit for Stormwater Discharge from Large and Small Construction Activities and this Stormwater Pollution Prevention Plan prepared thereunder."

Name	Title	Company Name, Address & phone number	Date

ENGINEER'S CERTIFICATION:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

_____
ROBERT ZIEGENFUSS, P.E. #56752 Date

OWNER/AGENT CERTIFICATIONS:

I HAVE REVIEWED THIS PLAN AND AGREE TO COMPLY WITH THE REQUIREMENTS SHOWN HEREON.

_____
OWNER/AUTHORIZED REPRESENTATIVE Date

BEFORE YOU DIG!
CALL SUNSHINE STATE ONE CALL OF FLORIDA
AT LEAST TWO FULL BUSINESS DAYS BEFORE
DIGGING OR DISTURBING EARTH
811
Know what's below.
Call before you dig.

IF SINKHOLE ACTIVITY IS FOUND ON THE SITE, HALT ALL WORK IMMEDIATELY AND CONTACT THE ENGINEER OF RECORD. REFERENCE DETAIL 11 ON SHEET C7 FOR EMERGENCY SINKHOLE REPAIR.

GC NOTE:
A COPY OF SHEET C0 SHALL BE PROVIDED TO ALL BIDDERS AND SUB-CONTRACTORS

CONTRACTOR'S NOTE:
CONTRACTOR SHALL PROVIDE A COMPREHENSIVE ASBUILT SURVEY FOR THE PROJECT AS REQUIRED BY THE GOVERNING AGENCY. CONTACT THE ENGINEER OF RECORD FOR THE REQUIREMENTS OF THE AS-BUILT SURVEY.

Z DEVELOPMENT SERVICES
CIVIL ENGINEERING CONSULTANTS
CA 29354
1201 E. ROBINSON STREET
ORLANDO, FL 32801
PH: (407) 271-8910

DATE	REVISION

ROBERT ZIEGENFUSS, P.E., LEED AP
FL. REG. # 56752

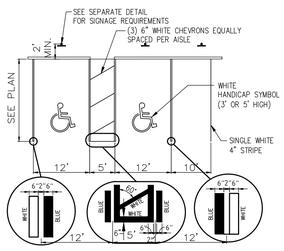
This item has been digitally signed and sealed by ROBERT ZIEGENFUSS on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VETERINARY OFFICE
STATE ROAD 19
SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FL 34737

DATE: 08/28/24
DRAWN: LF
CHECKED: DL

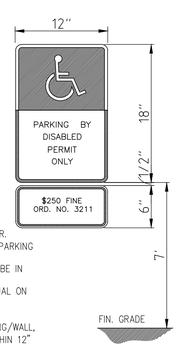
C5
STORMWATER POLLUTION PREVENTION PLAN
PROJECT NO.: 2023.179



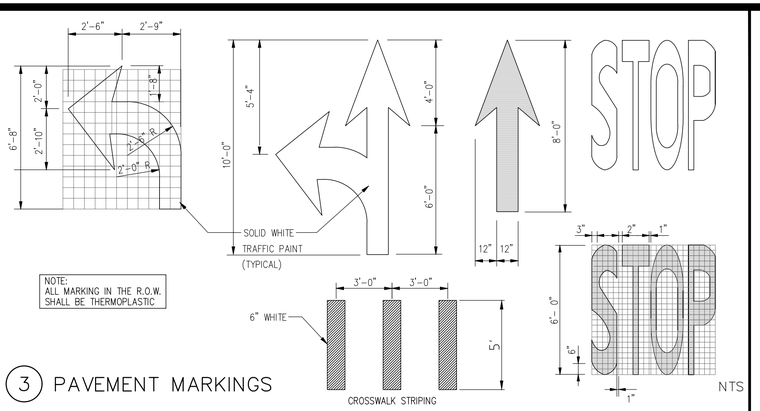
NOTE: 1. FINISHED GRADES OF PAVEMENT IN HC PARKING AND ACCESSIBILITY AISLE SHALL NOT EXCEED 1:50 SLOPE IN ANY DIRECTION. SEE PLANS FOR STYLE OF ACCESSIBLE RAMP.
2. HANDICAP STRIPING SHALL CONFORM TO FDOT INDEX 711-001, SHEET 12.

1 HANDICAP STRIPING NTS

NOTES:
1. ALL LETTERS ARE 1" SERIES "C" PER MUTCD.
2. TOP PORTION OF SIGN SHALL HAVE A REFLECTORIZED (ENGINEERING GRADE) BLUE BACKGROUND WITH WHITE REFLECTORIZED LEGEND AND BORDER.
3. BOTTOM PORTION OF SIGN SHALL HAVE A REFLECTORIZED (ENGINEERING GRADE) WHITE BACKGROUND WITH BLACK OPAQUE LEGEND AND BORDER.
4. FINE NOTIFICATION SIGN SHALL HAVE A REFLECTORIZED (ENGINEERING GRADE) WHITE BACKGROUND WITH BLACK OPAQUE LEGEND & BORDER. CONTRACTOR SHALL VERIFY FINE AMOUNT & ORDINANCE NUMBER.
5. ONE(1) SIGN REQUIRED FOR EACH PARKING SPACE.
6. INSTALLED HEIGHT OF SIGN SHALL BE IN ACCORDANCE WITH SECTION 24-23 OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
7. SIGN MAY BE MOUNTED ON BUILDING/WALL, AT PROPER HEIGHT, IF ALIGNED WITHIN 12" OF CENTER OF PARKING SPACE.

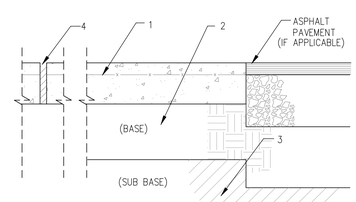


2 ACCESSIBLE SIGN NTS



NOTE:
ALL MARKING IN THE R.O.W. SHALL BE THERMOPLASTIC

3 PAVEMENT MARKINGS NTS



1. 8" – 4000 PSI CONCRETE WITH FIBERMESH REINFORCEMENT.
2. 6" WELL GRADED CLEAN SAND, HAVING 5% OR LESS PASSING THE NO. 200 SIEVE. ALTERNATELY, A GEOTECHNICAL FABRIC SUCH AS MIRAFI 140N, OR EQUAL, MAY BE USED BELOW ALL CONTROL JOINTS IN LIEU OF THE SAND.
3. 12" SUBBASE COMPACTED TO A MINIMUM DENSITY OF 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D-1557). DENSITY TESTS SHALL BE PERFORMED EVERY 5,000 S.F.
4. 1/4" PREMOLDED ASPHALT EXPANSION JOINT STRIP. SET 1/2" BELOW PAVEMENT TOP @ 20'-0" O.C. MAXIMUM.

PORTLAND CEMENT CONC. PAVEMENT

1. GENERAL
RIGID PAVEMENT CONSISTS OF CONSTRUCTING A SPECIFIED PORTLAND CEMENT CONCRETE PAVING ON A PREPARED SUBGRADE. THE UTILITIES AND OTHER ITEMS IN AND BENEATH THE STREET MUST BE PROPERLY COORDINATED WITH THE CONSTRUCTION OF RIGID PAVEMENT TO AVOID CONFLICTS. THE WORK TO BE DONE SHALL INCLUDE THE FURNISHINGS OF ALL SUPERVISION, LABOR, MATERIALS, EQUIPMENT AND INCIDENTAL NECESSARY FOR THE PROPOSED RIGID PAVEMENT CONSTRUCTION IN ACCORDANCE WITH THE APPROVED DRAWINGS AND SPECIFICATION.

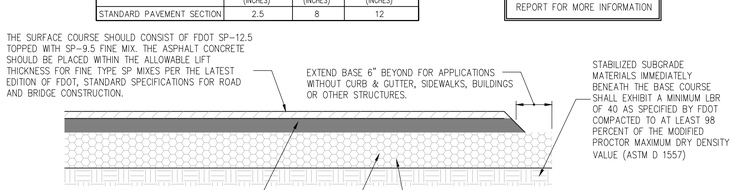
2. CONCRETE STRENGTH REQUIRED:
ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 (PCI) PSI AT 28 DAYS. CONFORMANCE TO STRENGTH REQUIREMENTS SHALL BE DETERMINED BY ACI STANDARD 318, LATEST EDITION, SECTIONS 4.8.2.3. AND 4.8.3.

4 CONCRETE PAVEMENT NTS

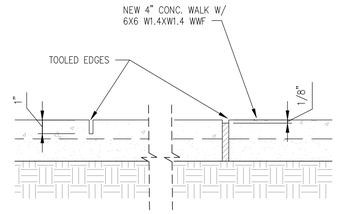
PAVEMENT THICKNESS

SERVICE LEVEL	LAYER COMPONENT		
	SURFACE COURSE (INCHES)	BASE COURSE (INCHES)	STABILIZED SUBGRADE (INCHES)
STANDARD PAVEMENT SECTION	2.5	8	12

NOTE:
PLEASE REFER TO GEOTECHNICAL REPORT FOR MORE INFORMATION.

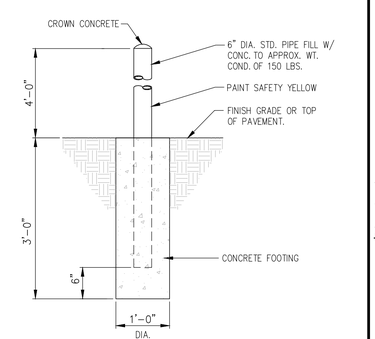


5 TYPICAL PAVEMENT SECTION NTS



NOTE:
1. EXPANSION JOINTS SHALL BE LOCATED AT ALL CONCRETE WALK INTERSECTIONS, AT ALL DOOR OPENINGS AND AT 12' O.C. MAXIMUM.
2. EXPANSION JOINT (1/4" PREMOLDED ASPHALT STRIP) SHALL BE SET 1/8" BELOW TOP OF WALK.

6 CONCRETE WALK NTS
(3,500 PSI (MIN)

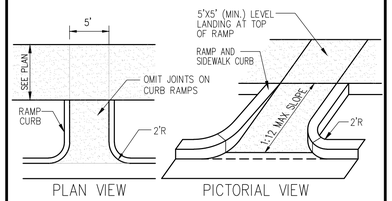


7 BOLLARD NTS

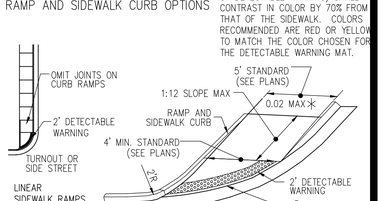
NOTE 1:
REFERENCE FDOT INDEX 522-002, GENERAL AND DESIGN NOTES FOR RAMPS IN R.O.W.

NOTE 2:
CONSTRUCT RAMP TO LEAST POSSIBLE SLOPE (MAX = 1:12). CROSS SLOPE OF RAMP AND LANDING SHALL NOT EXCEED 1:50.

NOTE 3:
RAMP GREATER THAN A 6" RISE REQUIRES HANDRAILS.



8 SIDEWALK END RAMP NTS
3500 PSI (MIN.) CONCRETE



RAMP AND SIDEWALK CURB OPTIONS

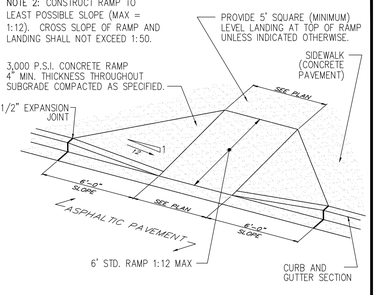
NOTES:
1. REFERENCE FDOT INDEX 304, PAGE 1, GENERAL AND DESIGN NOTES FOR RAMPS IN R.O.W.
2. CONSTRUCT RAMP TO LEAST POSSIBLE SLOPE (MAX. = 1:12). *CROSS-SLOPE OF RAMP AND LANDING SHALL NOT EXCEED 1:50.
3. RAMP WITH GREATER THAN A 6" RISE REQUIRES HANDRAILS.
4. ENTIRE RAMP SURFACE (OUTSIDE OF DETECTABLE WARNING) SHALL CONTRAST IN COLOR BY 70% FROM THAT OF THE SIDEWALK. COLORS RECOMMENDED ARE RED OR YELLOW TO MATCH THE COLOR CHOSEN FOR THE DETECTABLE WARNING MAT.

9 ACCESSIBLE CORNER RAMP NTS
3000 PSI (MIN.) CONCRETE

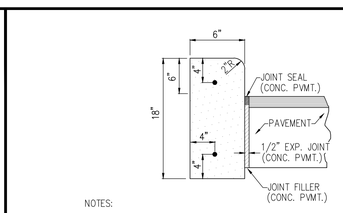
NOTE 1: REFERENCE FDOT INDEX 522-002, GENERAL AND DESIGN NOTES FOR RAMPS IN R.O.W.

NOTE 2: CONSTRUCT RAMP TO LEAST POSSIBLE SLOPE (MAX = 1:12). CROSS SLOPE OF RAMP AND LANDING SHALL NOT EXCEED 1:50.

NOTE 3: RAMP GREATER THAN A 6" RISE REQUIRES HANDRAILS.



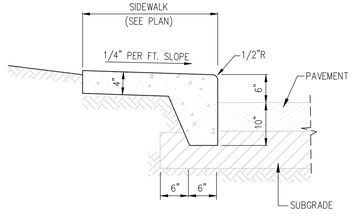
10 FLARED ACCESSIBLE RAMP NTS
3000 PSI (MIN.) CONCRETE



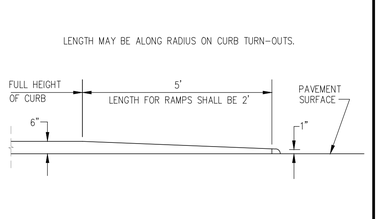
NOTES:
1. COST OF 2-#4 BARS (CONT.) SHALL BE INCLUDED.
2. PROVIDE 2-#6 SMOOTH BARS W/ EXPANSION CAPS AT EACH EXPANSION JOINT, 20'-0" O.C. MAX.
3. CONTRACTION JOINTS – CONTRACTION JOINTS SHALL BE PLACED AT EQUAL SPACES (10' MAX.) BETWEEN NORMAL EXPANSION JOINTS. CONTRACTION JOINTS SHALL BE SAW CUT IN THE UPPER 1/3 OF CURB AND GUTTER WITHIN 24 HOURS OF PLACEMENT.
4. ENDS OF VERTICAL CURB SHALL TRANSITION FROM FULL TO ZERO HEIGHTS IN 3 FEET.

PLAN SYMBOL

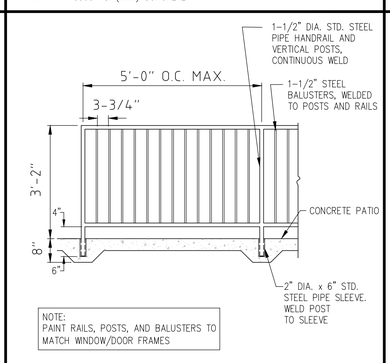
11 6" VERTICAL CURB NTS
3,500 PSI (MIN)



12 MONOLITHIC CURB & SIDEWALK NTS
3,500 PSI (MIN)



13 TRANSITION CURB NTS



NOTE:
PAINT RAILS, POSTS, AND BALUSTERS TO MATCH WINDOW/DOOR FRAMES

14 RAILING NTS

Z DEVELOPMENT SERVICES
CIVIL ENGINEERING CONSULTANTS
CA 29354
1201 E. ROBINSON STREET
ORLANDO, FL 32801
PH: (407) 271-8910

DATE	REVISION

ROBERT ZIEGENFUSS, P.E., LEED AP
FL REG. # 56752

This item has been digitally signed and sealed by ROBERT ZIEGENFUSS on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VETERINARY OFFICE
STATE ROAD 19
SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FL 34737

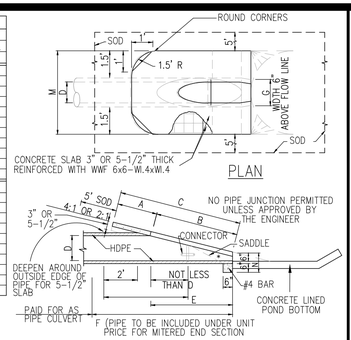
DATE: 08/28/24
DRAWN: LF
CHECKED: DL

C6
CONSTRUCTION DETAILS

PROJECT NO.: 2023.179

	DIMENSIONS AND QUANTITIES										
								M			
	D	A	B	C	E	F	G	SINGLE PIPE	DOUBLE PIPE	TRIPLE PIPE	QUAD.
2:1 SLOPE	15"	1.92'	2.18'	4.10'	2.06'	5'	1.22'	4.63'	7.21'	9.79'	
	18"	1.97'	2.74'	4.71'	2.56'	6'	1.41'	4.92'	7.75'	10.58'	
	24"	2.06'	3.85'	5.91'	3.56'	7'	1.73'	5.50'	8.92'	12.33'	
	30"	2.15'	4.95'	7.10'	4.56'	8'	2.00'	6.08'	10.33'	14.58'	
	36"	2.25'	6.08'	8.33'	5.56'	9'	2.24'	6.67'	11.75'	16.83'	
	42"	2.34'	7.21'	9.55'	6.56'	10'	2.45'	7.25'	13.25'	19.25'	
	48"	2.43'	8.33'	10.76'	7.56'	11'	2.65'	7.83'	14.58'	21.33'	
	54"	2.52'	9.44'	11.96'	8.56'	12'	2.83'	8.42'	16.08'	23.75'	
	60"	2.62'	10.56'	13.18'	9.56'	14'	3.00'	9.00'	17.50'	26.00'	
	66"	2.71'	11.68'	14.39'	10.56'	15'	3.18'	9.58'	18.75'	27.92'	
	72"	2.80'	12.80'	15.60'	11.56'	16'	3.40'	10.16'	20.16'	30.16'	
4:1 SLOPE	15"	2.27'	4.09'	6.36'	4.03'	8'	1.22'	4.63'	7.21'	9.79'	
	18"	2.36'	5.12'	7.48'	5.03'	9'	1.41'	4.92'	7.75'	10.58'	
	24"	2.53'	7.18'	9.71'	7.03'	11'	1.73'	5.50'	8.92'	12.33'	
	30"	2.70'	9.25'	11.95'	9.03'	13'	2.00'	6.08'	10.33'	14.58'	
	36"	2.87'	11.31'	14.18'	11.03'	15'	2.24'	6.67'	11.75'	16.83'	
	42"	3.05'	13.37'	16.42'	13.03'	17'	2.45'	7.25'	13.25'	19.25'	
	48"	3.22'	15.43'	18.65'	15.03'	19'	2.65'	7.83'	14.58'	21.33'	
	54"	3.39'	17.49'	20.88'	17.03'	21'	2.83'	8.42'	16.08'	23.75'	
	60"	3.56'	19.55'	23.11'	19.03'	23'	3.00'	9.00'	17.50'	26.00'	
	66"	3.73'	21.62'	25.35'	21.03'	25'	3.18'	9.58'	18.75'	27.92'	
	72"	3.91'	22.68'	26.59'	23.03'	27'	3.30'	10.16'	20.16'	30.16'	

* SLOPE- 4:1 MITER – TO ℄ PIPE FOR PIPES 18" AND SMALLER
2:1 FOR PIPES 24" AND LARGER
2:1 MITER – TO ℄ PIPE FOR PIPES 18" AND SMALLER
1:1 FOR PIPES 24" AND LARGER



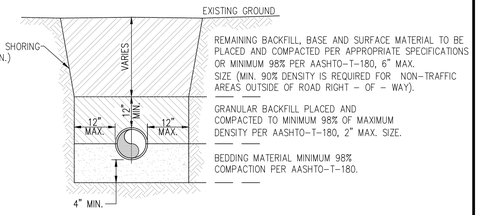
STORM SEWER PIPE LENGTHS NOTED IN THE DRAWINGS REFLECT ONLY THE PIPE ITSELF. WHERE A MITERED END SECTION IS INSTALLED ON SAID PIPE, ITS ADDITIONAL PIPE LENGTH SHALL BE INCLUDED IN THE COST OF THE MITERED END SECTION.

1 HDPE MITERED END SECTION

NTS

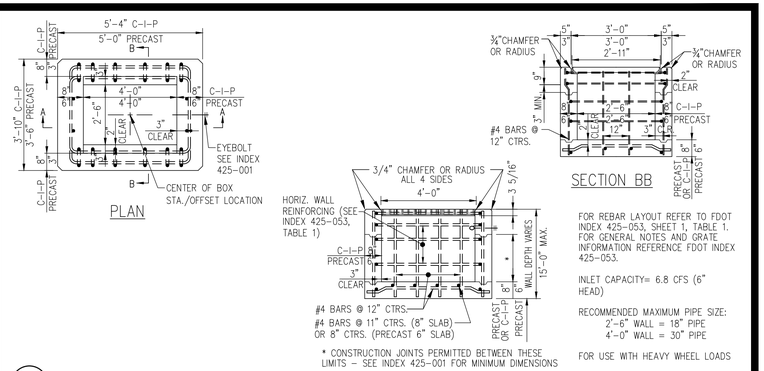
NOTES:

1. BEDDING MATERIAL SHALL CONSIST OF IN-SITU GRANULAR MATERIAL OF WASHED AND GRADED LIME ROCK 3/8"-7/8" SIZING. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED IN ACCORDANCE WITH ASTM D-2321.
2. THE PIPE SHALL BE FULLY SUPPORTED FOR ITS ENTIRE LENGTH WITH APPROPRIATE COMPACTION UNDER THE PIPE HAUNCHES.
3. THE PIPE SHALL BE PLACED IN A DRY TRENCH.
4. BACKFILL SHALL BE FREE OF UNSUITABLE MATERIAL SUCH AS LARGER ROCK, MUCK AND DEBRIS.
5. DENSITY TESTS ARE REQUIRED IN ONE (1) FOOT LIFTS ABOVE PIPE AT INTERVALS OF 400 FT. MAXIMUM.
6. THE DEVELOPER / CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH ALL APPLICABLE TRENCH-SAFETY LAWS AND REGULATIONS.
7. THE AFFECTED AREA SHALL BE RESTORED TO EQUAL OR BETTER CONDITION OR AS SPECIFIED IN PERMIT / CONTRACT DOCUMENTS.



2 TRENCH DETAIL

NTS



FOR REBAR LAYOUT REFER TO FDOT INDEX 425-053, SHEET 1, TABLE 1. FOR GENERAL NOTES AND GRATE INFORMATION REFERENCE FDOT INDEX 425-053.

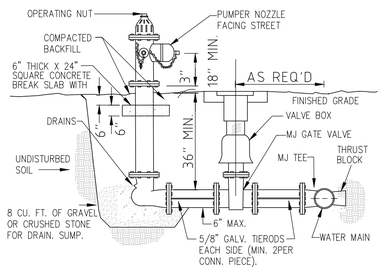
INLET CAPACITY= 6.8 CFS (6" HEAD)

RECOMMENDED MAXIMUM PIPE SIZE:
2'-6" WALL = 18" PIPE
4'-0" WALL = 30" PIPE

FOR USE WITH HEAVY WHEEL LOADS

3 TYPE "F" INLET

NTS

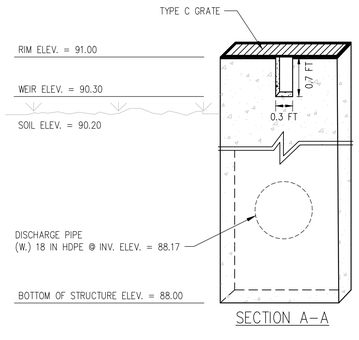


NOTES:

1. VALVE BOX SHALL BE SCREW TYPE ADJUSTABLE AND COVER SHALL BE MARKED "WATER"
2. FIRE HYDRANTS CANNOT BE LOCATED WITHIN THE RADIUS OF STREET CORNERS
3. HYDRANT SHALL BE LOCATED 4' TO 8' FROM EDGE OF PAVEMENT IN BETWEEN CURB AND SIDEWALK
4. HYDRANT SHALL BE PAINTED WITH DUPONT 7744A OR EQUAL

4 FIRE HYDRANT DETAIL

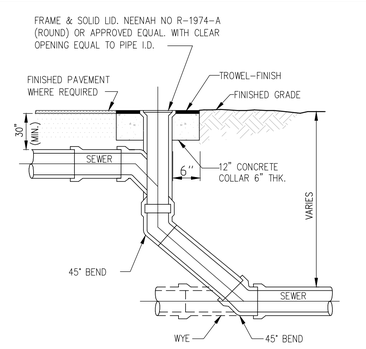
NTS



NOTE: CONTRACTOR SHALL SUBMIT SHOP DRAWINGS PRIOR TO FABRICATION

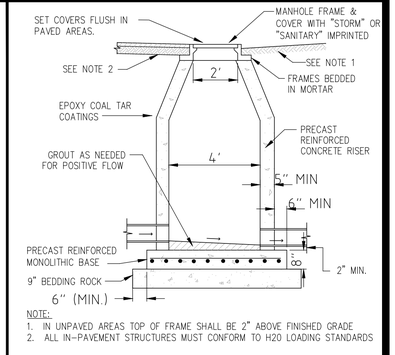
5 CONTROL STRUCTURE (MODIFIED TYPE C INLET)
(RECTANGULAR VERTICAL WEIR)

NTS



6 DROP CLEANOUT

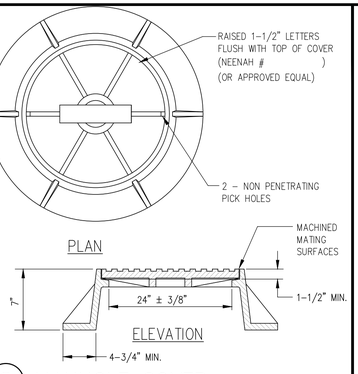
NTS



NOTE:
1. IN UNPAVED AREAS TOP OF FRAME SHALL BE 2" ABOVE FINISHED GRADE
2. ALL IN-PAVEMENT STRUCTURES MUST CONFORM TO H20 LOADING STANDARDS

7 MANHOLE

NTS



8 MANHOLE COVER

NTS

Z DEVELOPMENT SERVICES
CIVIL ENGINEERING CONSULTANTS
CA 29354
1201 E. ROBINSON STREET
ORLANDO, FL 32801
PH: (407) 271-8910

DATE	REVISION

ROBERT ZIEGENFUSS, P.E., LEED AP
FL. REG. # 56752

This item has been digitally signed and sealed by ROBERT ZIEGENFUSS on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VETERINARY OFFICE
STATE ROAD 19
SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FL 34737

DATE: 08/28/24
DRAWN: LF
CHECKED: DL

C7
CONSTRUCTION DETAILS

PROJECT NO.: 2023.179

REVISIONS		
Rev #	Date	BY:
1	7/28/25	J.P.
2	8/14/25	J.P.

Based on the information provided, all dimensions and luminaire locations shown represent recommended positions. The engineer and/or architect must determine applicability of the layout to existing or future field conditions.

This lighting pattern represents illumination levels calculated from laboratory data taken under controlled conditions utilizing current industry standard lamp ratings in accordance with Illuminating Engineering Society approved methods. Actual performance of any manufacturer's luminaire may vary due to variation in electrical voltage, tolerance in lamps and other variable field conditions.

Calculation Summary								
Label	Units	Avg	Max	Min	Avg/Min	Max/Min	PtSpcLr	PtSpcTb
ENTRANCE DRIVES	Fc	0.40	1.0	0.1	4.00	10.00	10	10
PARKING	Fc	0.95	3.6	0.2	4.75	18.00		
REAR & SIDE	Fc	0.98	3.3	0.2	4.90	16.50		

Luminaire Schedule						
WLS17710 VET CLINIC HOWEY IN THE HILLS, FL PM: KEN PLEASE EMAIL US FOR PRICING AT KBRONSTAD@WLSLIGHTING.COM						
Symbol	Qty	Label	Lum. Lumens	LLF	Description	Lum. Watts
	2	A	8307	0.950	WLS-NV-1-T4-3ZL-7-40K-SLW 25' MOUNTING HEIGHT	71
	3	B	8449	0.950	WLS-NV-1-T3-3ZL-7-40K-SLW 25' MOUNTING HEIGHT	71

6820 CORPORATION PKWY
FORT WORTH, TX 76126
WWW.WLSLIGHTING.COM

WLS LIGHTING
BRIGHT. SMART. SUSTAINABLE.
817-731-0020

SHEET 1 OF 1
BY: J.P.
PM:KEN

VET CLINIC
HOWEY IN THE HILLS, FL

WLS-17710
DATE -9/24/24
SCALE: 1"= 20'

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STATE ROAD 19
SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FL 34737

DATE: 08/28/24
DRAWN: LF
CHECKED: DL

SL1
PHOTOMETRIC PLAN

PROJECT NO.: 2023.179

WLS LIGHTING SYSTEMS

Type:

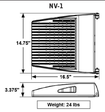
NV SERIES LED AREA





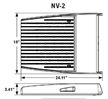
DIMENSIONS

NV-1



Weight: 24 lbs

NV-2



Weight: 42 lbs

Made in the U.S.A. of the U.S. and imported parts, Meets Buy American requirements for ARRA.

WLS LIGHTING SYSTEMS
6820 Corporation Pkwy
Fort Worth, TX 76126
800.633.8711
www.wlslighting.com

SPECIFICATIONS

FORM AND FUNCTION
- Sleek, low profile housing
- Spec grade performance
- Engineered for optimum thermal management
- Low depreciation rate
- Reduces energy consumption and costs up to 65%
- Exceeds IES foot candle levels utilizing the least number of poles and fixtures per project
- Optical system designed for:
  - Parking Lots
  - Auto Dealerships
  - General Area Lighting

CONSTRUCTION
- Die Cast Aluminum
- External cooling fins, Finite Element Analysis (FEA) designed
- Corrosion resistant external hardware
- One-piece silicone gasket ensures IP-65 seal for electronics compartment
- One-piece Optics Plate™ mounting silicone Micro Optics
- Two-piece silicone Micro Optic system ensures IP-67 level seal around each PCB
- Grade 2 Clear Anodized Optics Plate™ standard

FINISH
- 3-5 mils electrostatic powder coat.
- WLS standard high-quality finishes prevent corrosion protects against and extreme environmental conditions

ELECTRICAL
- 120-277 Volts (UNV) or 347-480 Volts (HV)
- 0-10V dimming driver by Philips Advance
- Driver power factor at maximum load is ≥ .95, THD maximum load is 15%
- All internal wiring UL certified for 600 VAC and 105°C.
- All drivers, controls, and sensors housed in enclosed IP-65 compartment
- Luminaire: Lumen MX LED's
- CRI >70
- Color temperatures: 3000K, 4000K, 5000K

OPTICS
- Silicone optics high photo thermal stability and light output provides higher powered LEDs with minimized lumen depreciation LED life, UV and thermal stability with scratch resistance increases exterior application durability.
- IES Types T2, T3, T4, TS AND N3

WARRANTY
- Five-year limited warranty for drivers and LEDs.

LISTINGS
- Certified to UL 1598
- UL 8750
- CSA C22.2 No. 250.0
- DesignLights Consortium® (DLC)
- DesignLights Consortium Premium® (DLCP)
- IP65/ IP67 Rated
- 3G Vibration Rated per ANSI C136.31-2010

Project Name: _____
Date: _____
Location: _____
Notes: _____

NV SERIES LED AREA

ORDERING INFORMATION SELECT APPROPRIATE CHOICE FROM EACH COLUMN TO FORMULATE ORDER CODE.

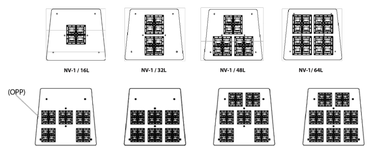
Refer to example Below.

PRODUCT	OPTIC	LED #	DRIVER	COLOR TEMPERATURE	VOLTAGE	MOUNTING	COLOR OPTIONS	OPTIONS
NV-1 **NV-2**	**T2** Type 2 **T3** Type 3 **T4** Type 4 **TS** Type 5 **N3** Nema 3 30° Narrow Beam	**16** 16L **32** 32L **48** 48L **64** 64L **80** 80L **96** 96L **112** 112L **128** 128L	**35** 350mA (16L ONLY) **53** 530mA (16L ONLY) **7** 700mA **1** 1050mA	**30K** 3000K **40K** 4000K **50K** 5000K	**UNV** 120-277 **HV** 347-480	**Direct Pole** **DP53** 3" (DM, TWL, TT2R, QD) **DP57** 7" (DM, TWL, TT2R, QD) **KM** Knuckle Mount **WM** Wall Mount **TM** Trunnion Mount Consult factory for other mounting configurations not listed here. **TA** Tennis Arm **ASA** Architectural Sweep Arm	**BRZ** Bronze **WHT** White **SVR** Silver **BLK** Black **GPH** Graphite **GRY** Grey **ASA** Architectural Sweep Arm	**BD** Bird Deterrent **MGF** Marine Grade Finish **OPP** Optic Plate Painted to Match Fixture **PEZ** Nema 7 Pin Receptacle **PCR** Photocell + Receptacle **PER** Receptacle + Shorting Cap **FSP-20** FSP-211 with Motion Sensor (UNV Voltage) 21'-40' Heights **FSP-40** FSP-211 with Motion Sensor (UNV Voltage) 21'-40' Heights **QSM** Quick Mount Bracket **RQM** Round Pole Adapter Bracket **RPA4** Round Pole Adapter 3"-4" Pole **RPA5** Round Pole Adapter 5"-6" Pole **BOL** Rotated Optic Left **ROR** Rotated Optic Right **AHS** Automotive House Side Shield **HSS** House Side Shield **10K** Surge Protector (NV-2 only) **NO** No Options

ORDER:

WLS-NV								

Example: WLS-NV-2-TS-96-1-40K-UNV-DP53-BRZ-NO



WLS LIGHTING SYSTEMS
6820 Corporation Pkwy
Fort Worth, TX
7612680,633.8711
www.wlslighting.com

Project Name: _____
Date: _____
Location: _____
Notes: _____

NV SERIES LED AREA

BUG Ratings						
Part Number	T2	T3	T3HSS	T4	T4HSS	TS
WLS-NV-1-16L-35-30K	B1 U0 G1	B1 U0 G1	B1 U0 G1	B1 U0 G2	B1 U0 G2	B2 U0 G0
WLS-NV-1-16L-35-40K	B1 U0 G1	B1 U0 G1	B0 U0 G0	B1 U0 G1	B1 U0 G1	B2 U0 G0
WLS-NV-1-16L-35-50K	B1 U0 G1	B1 U0 G1	B0 U0 G0	B1 U0 G1	B1 U0 G1	B2 U0 G0
WLS-NV-1-16L-53-30K	B1 U0 G1	B1 U0 G1	B1 U0 G1	B1 U0 G2	B1 U0 G2	B2 U0 G1
WLS-NV-1-16L-53-40K	B1 U0 G1	B1 U0 G1	B0 U0 G1	B1 U0 G1	B1 U0 G1	B2 U0 G1
WLS-NV-1-16L-53-50K	B1 U0 G1	B1 U0 G1	B0 U0 G1	B1 U0 G1	B1 U0 G1	B2 U0 G1
WLS-NV-1-16L-7-30K	B1 U0 G1	B1 U0 G1	B1 U0 G1	B1 U0 G1	B1 U0 G1	B3 U0 G1
WLS-NV-1-16L-7-40K	B1 U0 G1	B1 U0 G1	B0 U0 G1	B1 U0 G1	B1 U0 G1	B3 U0 G1
WLS-NV-1-16L-7-50K	B1 U0 G1	B1 U0 G1	B0 U0 G1	B1 U0 G1	B1 U0 G1	B3 U0 G1
WLS-NV-1-16L-1-30K	B1 U0 G1	B1 U0 G1	B0 U0 G1	B1 U0 G1	B1 U0 G1	B3 U0 G1
WLS-NV-1-16L-1-40K	B1 U0 G1	B2 U0 G2	B0 U0 G1	B2 U0 G2	B2 U0 G2	B3 U0 G2
WLS-NV-1-16L-1-50K	B1 U0 G2	B2 U0 G2	B0 U0 G1	B2 U0 G2	B2 U0 G2	B3 U0 G2
WLS-NV-1-32L-7-30K	B1 U0 G2	B2 U0 G2	B0 U0 G1	B2 U0 G2	B2 U0 G2	B3 U0 G2
WLS-NV-1-32L-7-40K	B1 U0 G2	B2 U0 G2	B0 U0 G1	B2 U0 G2	B2 U0 G2	B3 U0 G2
WLS-NV-1-32L-7-50K	B2 U0 G2	B2 U0 G2	B0 U0 G2	B2 U0 G2	B2 U0 G2	B4 U0 G2
WLS-NV-1-32L-1-30K	B2 U0 G2	B2 U0 G2	B0 U0 G2	B2 U0 G2	B2 U0 G2	B4 U0 G2
WLS-NV-1-32L-1-40K	B2 U0 G2	B2 U0 G2	B0 U0 G2	B3 U0 G2	B3 U0 G2	B4 U0 G2
WLS-NV-1-32L-1-50K	B2 U0 G2	B2 U0 G2	B0 U0 G2	B3 U0 G2	B3 U0 G2	B4 U0 G2
WLS-NV-1-48L-7-30K	B2 U0 G2	B2 U0 G2	B0 U0 G2	B2 U0 G2	B3 U0 G2	B4 U0 G2
WLS-NV-1-48L-7-40K	B2 U0 G2	B2 U0 G2	B0 U0 G2	B2 U0 G2	B3 U0 G2	B4 U0 G2
WLS-NV-1-48L-7-50K	B2 U0 G2	B3 U0 G3	B1 U0 G2	B3 U0 G3	B3 U0 G3	B4 U0 G3
WLS-NV-1-48L-1-30K	B3 U0 G3	B3 U0 G3	B1 U0 G2	B3 U0 G3	B3 U0 G3	B4 U0 G3
WLS-NV-1-48L-1-40K	B3 U0 G3	B3 U0 G4	B1 U0 G3	B3 U0 G4	B3 U0 G3	B5 U0 G3
WLS-NV-1-48L-1-50K	B3 U0 G3	B3 U0 G3	B1 U0 G3	B3 U0 G3	B3 U0 G3	B5 U0 G3
WLS-NV-1-64L-7-30K	B3 U0 G3	B3 U0 G3	B1 U0 G3	B3 U0 G3	B3 U0 G3	B4 U0 G2
WLS-NV-1-64L-7-40K	B3 U0 G3	B3 U0 G3	B1 U0 G3	B3 U0 G3	B3 U0 G3	B5 U0 G3
WLS-NV-1-64L-7-50K	B3 U0 G3	B3 U0 G3	B1 U0 G3	B3 U0 G3	B3 U0 G3	B5 U0 G3
WLS-NV-1-64L-1-30K	B3 U0 G3	B3 U0 G3	B1 U0 G3	B3 U0 G4	B3 U0 G3	B5 U0 G4
WLS-NV-1-64L-1-40K	B3 U0 G3	B3 U0 G4	B1 U0 G3	B3 U0 G4	B3 U0 G4	B5 U0 G4
WLS-NV-1-64L-1-50K	B3 U0 G3	B3 U0 G3	B1 U0 G3	B3 U0 G4	B3 U0 G3	B5 U0 G3

BUG Ratings						
Part Number	T2	T3	T3HSS	T4	T4HSS	TS
WLS-NV-2-80L-7-30K	B3 U0 G3	B3 U0 G3	B1 U0 G2	B3 U0 G3	B3 U0 G2	B5 U0 G3
WLS-NV-2-80L-7-40K	B3 U0 G3	B3 U0 G3	B1 U0 G2	B3 U0 G3	B3 U0 G2	B5 U0 G3
WLS-NV-2-80L-7-50K	B3 U0 G3	B3 U0 G3	B1 U0 G2	B3 U0 G3	B3 U0 G2	B5 U0 G3
WLS-NV-2-80L-1-30K	B3 U0 G3	B3 U0 G4	B1 U0 G3	B3 U0 G4	B3 U0 G3	B5 U0 G4
WLS-NV-2-80L-1-40K	B3 U0 G3	B3 U0 G4	B1 U0 G3	B3 U0 G4	B3 U0 G3	B5 U0 G4
WLS-NV-2-80L-1-50K	B3 U0 G3	B3 U0 G4	B1 U0 G3	B3 U0 G4	B3 U0 G3	B5 U0 G4
WLS-NV-2-96L-7-30K	B3 U0 G3	B3 U0 G3	B1 U0 G3	B3 U0 G4	B3 U0 G3	B5 U0 G4
WLS-NV-2-96L-7-40K	B3 U0 G3	B3 U0 G4	B1 U0 G3	B3 U0 G4	B3 U0 G3	B5 U0 G4
WLS-NV-2-96L-7-50K	B3 U0 G4	B3 U0 G4	B1 U0 G3	B3 U0 G4	B3 U0 G3	B5 U0 G4
WLS-NV-2-96L-1-30K	B3 U0 G4	B4 U0 G4	B1 U0 G3	B3 U0 G4	B3 U0 G3	B5 U0 G4
WLS-NV-2-96L-1-40K	B3 U0 G4	B4 U0 G4	B1 U0 G3	B3 U0 G4	B3 U0 G4	B5 U0 G4
WLS-NV-2-96L-1-50K	B3 U0 G4	B4 U0 G4	B1 U0 G4	B3 U0 G4	B3 U0 G4	B5 U0 G4
WLS-NV-2-112L-7-30K	B3 U0 G3	B3 U0 G3	B1 U0 G3	B3 U0 G4	B3 U0 G3	B5 U0 G3
WLS-NV-2-112L-7-40K	B3 U0 G3	B3 U0 G4	B1 U0 G3	B3 U0 G4	B3 U0 G3	B5 U0 G4
WLS-NV-2-112L-7-50K	B3 U0 G4	B3 U0 G4	B1 U0 G3	B3 U0 G4	B3 U0 G3	B5 U0 G4
WLS-NV-2-112L-1-30K	B4 U0 G4	B4 U0 G4	B1 U0 G4	B4 U0 G5	B1 U0 G4	B5 U0 G4
WLS-NV-2-112L-1-40K	B4 U0 G4	B4 U0 G4	B1 U0 G4	B4 U0 G5	B1 U0 G4	B5 U0 G4
WLS-NV-2-112L-1-50K	B4 U0 G4	B4 U0 G4	B1 U0 G4	B4 U0 G5	B1 U0 G4	B5 U0 G4
WLS-NV-2-128L-7-30K	B3 U0 G3	B3 U0 G3	B1 U0 G3	B3 U0 G4	B3 U0 G3	B5 U0 G4
WLS-NV-2-128L-7-40K	B3 U0 G3	B3 U0 G3	B1 U0 G3	B3 U0 G4	B3 U0 G3	B5 U0 G4
WLS-NV-2-128L-7-50K	B3 U0 G4	B3 U0 G4	B1 U0 G3	B3 U0 G4	B3 U0 G3	B5 U0 G4
WLS-NV-2-128L-1-30K	B4 U0 G4	B4 U0 G4	B1 U0 G4	B4 U0 G5	B1 U0 G4	B5 U0 G4
WLS-NV-2-128L-1-40K	B4 U0 G4	B4 U0 G4	B1 U0 G4	B4 U0 G5	B1 U0 G4	B5 U0 G4
WLS-NV-2-128L-1-50K	B4 U0 G4	B4 U0 G4	B1 U0 G4	B4 U0 G5	B1 U0 G4	B5 U0 G4

WLS LIGHTING SYSTEMS
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Fort Worth, TX 76126
800.633.8711
www.wlslighting.com

Project Name: _____
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Location: _____
Notes: _____

NV SERIES LED AREA

BIRD DETERRENT (BD) - offers effective and humane deterrent for larger bird species and provides cost-effective long-term solution to nuisance bird infestations and protect your property.

MARINE GRADE FINISH (MGF) - A multi-step process creating protective finishing coat against harsh environments.
- Chemically washed in a 5 stage cleaning system.
- Pre-baked
- Powder coated 3-5 mils of Zinc Rich Super Durable Polyester Primer.
- 1-2 feet inside pole coverage top and bottom.
- Oven Baked.
- Finished Powder Coating of Super Durable Polyester Powder Coat 3-5 mil thickness.

SHIELDS (HSS, AHS) - House Side Shield (HSS) is designed for full property line cut-off. Automotive House Side Shield (AHS) is a single-sided shield allowing partial cut-off on either side or front of luminaire.

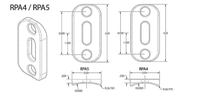
ROUND POLE ADAPTER (RPA) - When using round poles, specify Round Pole Adapter (RPA). Specify RPA4 when installing on 3"-4" round poles, and RPA5 when installing on 5"-6" round poles.

CONTROLS
FSP-211 (FSP-X)—Passive infrared (PIR) sensor providing multi-level control based on motion/daylight contribution.
- All control parameters adjustable via wireless configuration remote storing and transmitting sensor profiles.
- FSP-20 mounting heights 9-20 feet.
- FSP-40 mounting heights 21-40 feet.
- Includes 5 dimming event cycles, 0-10V dimming with motion sensing, reprogrammable in the field.

NEMA 7-PIN RECEPTACLE (PE7) - An ANSI C136.41-2013 receptacle provides electrical and mechanical interconnection between photo control cell and luminaire. Dimming receptacle available two or four dimming contacts supports 0-10 VDC dimming methods or Digital Addressable Lighting Interface (DALI), providing reliable power interconnect.

OPTICS - Silicone optics high photo thermal stability and light output provides higher powered LEDs with minimized lumen depreciation LED life, UV and thermal stability with scratch resistance increases exterior application durability, IES types 2 (T2), 3 (T3), 4 (T4), 5 (TS) and NEMA 3 (N3).

RPA4 / RPA5



HOUSE SIDE SHIELD



AUTOMOTIVE HOUSE SIDE SHIELD



FSP-211



WLS LIGHTING SYSTEMS
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Fort Worth, TX 76126
800.633.8711
www.wlslighting.com

Project Name: _____
Date: _____
Location: _____
Notes: _____

NV SERIES LED AREA

WLS NV-1 Lumens																				
Part Number	N3	LM/W	T2	LM/W	DLC	T3	LM/W	DLC	T3 HSS	LM/W	T4	LM/W	DLC	T4 AHS	LM/W	T4 HSS	LM/W	TS	LM/W	DLC	W
WLS-NV-1-16L-35-30K	2018	112	2106	117	P	2106	117	P	1134	63	2187	116	P	1206	72	1116	62	2221	118	P	18
WLS-NV-1-16L-35-40K	2088	116	2238	126	P	2286	127	P	1206	67	2250	125	P	1368	76	1188	66	2304	128	P	18
WLS-NV-1-16L-35-50K	2100	120	2378	132	P	2394	133	P	1278	71	2358	131	P	1440	80	1260	70	2412	134	P	18
WLS-NV-1-16L-53-30K	3236	112	3192	114	P	3220	115	P	1764	63	2119	113	P	2016	72	1736	62	3248	116	P	28
WLS-NV-1-16L-53-40K	3248	116	3472	124	P	3472	124	P	1876	67	3444	123	P	2128	76	1848	66	3500	125	P	28
WLS-NV-1-16L-53-50K	3360	120	3612	129	P	3640	130	P	1988	71	3584	128	P	2240	80	1960	70	3668	131	P	28
WLS-NV-1-16L-7-30K	4032	112	360	110	P	3960	110	P	2268	63	3973	109	P	2692	72	2232	62	3996	111	P	36
WLS-NV-1-16L-7-40K	4176	116	4428	123	P	4284	119	P	2912	67	4212	117	P	2736	76	2376	66	4320	120	P	36
WLS-NV-1-16L-7-50K	4320	12	4644	429	P	4500	125	P	2556	71	4428	123	P	2880	80	2520	70	4500	125	P	36
WLS-NV-1-16L-1-30K	6272	112	6160	110	S	6384	114	P	3528	63	6232	112	P	4032	72	3472	62	6440	115	P	56
WLS-NV-1-16L-1-40K	6496	116	6832	122	P	6888	123	P	3752	67	6776	121	P	4256	76	3696	66	6944	124	P	56
WLS-NV-1-16L-1-50K	6720	120	7168	128	P	7224	129	P	3976	71	7112	127	P	4480	80	3920	70	7280	130	P	56
WLS-NV-1-32L-7-30K	7952	112	7810	110	S	7810	110	S	4473	63	7739	109	S	5112	72	4402	62	7881	111	S	71
WLS-NV-1-32L-7-40K	8236	116	9017	127	P	8449	119	P	4757	67	8307	117	P	5396	73	4686	66	8520	120	P	70
WLS-NV-1-32L-7-50K	8520	120	9159	129	P	8873	125	P	5041	70	8733	123	P	5680	80	4970	70	8946	126	P	71
WLS-NV-1-32L-1-30K	11872	112	11660	110	S	12084	114	S	6678	63	11820	112	S	7632	72	6572	62	12190	115	S	106
WLS-NV-1-32L-1-40K	12296	116	12932	122	P	13038	123	P	7102	67	12826	121	P	8056	76	6996	66	13144	124	P	106
WLS-NV-1-32L-1-50K	12720	120	13548	128	P	13474	129	P	7526	71	13462	127	P	8480	80	7420	70	13760	130	P	106
WLS-NV-1-48L-7-30K	11448	112	11440	110	S	11440	110	S	6552	63	11336	109	S	7488	72	6448	62	11248	111	S	104
WLS-NV-1-48L-7-40K	12064	116	13208	127	P	12376	119	P	6968	67	12108	117	P	7904	76	6864	66	12480	120	P	104
WLS-NV-1-48L-7-50K	12480	120	13520	130	P	13000	125	P	7384	71	12992	123	P	8320	80	7280	70	13104	126	P	104
WLS-NV-1-48L-1-30K	17472	112	17160	110	S	17784	114	S	9828	63	17472	112	S	11232	72	9672	62	17940	115	S	156
WLS-NV-1-48L-1-40K	18096	116	19032	122	P	19188	123	P	10452	67	18876	121	P	11856	76	10296	66	19344	124	P	156
WLS-NV-1-48L-1-50K	18720	120	19968	128	P	20124	129	P	11076	71	19812	127	P	12480	80	10920	70	20280	130	P	156
WLS-NV-1-64L-7-30K	15232	112	14960	110	S	14960	110	S	8568	63	14820	109	S	9792	72	8432	62	15096	111	S	136
WLS-NV-1-64L-7-40K	15776	116	17272	127	P	16184	119	P	9112	67	15912	117	P	10336	76	8976	66	16320	120	P	136
WLS-NV-1-64L-7-50K	16320	120	17680	130	P	1700	125	P	9656	71	16728	123	P	10880	80	9520	70	17136	126	P	136
WLS-NV-1-64L-1-30K	22960	112	22550	110	S	23370	114	S	12915	63		112	S	14760	72	12710	62	23575	115	S	205
WLS-NV-1-64L-1-40K	23780	116	25910	122	P	25215	123	P	13735	67	24805	121	P	15580	76	13530	66	25420	124	P	205
WLS-NV-1-64L-1-50K	24600	120	26246	128	P	26441	129	P	14555	71	26035	127	P	16400	80	14350	70	26650	130	P	205

*DLC S= Standard P=Premium

WLS LIGHTING SYSTEMS
6820 Corporation Pkwy
Fort Worth, TX 76126
800.633.8711
www.wlslighting.com

Project Name: _____
Date: _____
Location: _____
Notes: _____

NV SERIES LED AREA

WLS NV-2 Lumens																				
Part Number	N3	LM/W	T2	LM/W	DLC	T3	LM/W	DLC	T3 HSS	LM/W	T4	LM/W	DLC	T4 AHS	LM/W	T4 HSS	LM/W	TS	LM/W	DLC	W
WLS-NV-2-80L-7-30K	18816	112	19744	116	S	19218	113	S	9144	58	18992	112	S	12096	72	9576	57	19713	117	P	168
WLS-NV-2-80L-7-40K	19488	116	21000	125	P	20328	121	P	10416	62	20160	120	P	12768	76	10248	61	21168	126	P	168
WLS-NV-2-80L-7-50K	20160	120	21672	129	P	21168	126	P	11088	66	21000	125	P	13440	80	10920	65	21840	130	P	168
WLS-NV-2-80L-1-30K	29463	112	23141	107	S	27552	104	S	15254	58	30240	115	S	19936	76	14993	57	29181	111	S	263
WLS-NV-2-80L-1-40K	30508	116	30245	114	S	29456	112	S	16306	62	32086	122	S	19988	76	16043	61	31297	119	S	263
WLS-NV-2-80L-1-50K	31560	120	31297	119	P	30508	116	S	17358	66	33664	128	P	21050	80	17095	65	33138	126	P	263
WLS-NV-2-96L-7-30K	22400	112	23200	116	S	22600	113	S	11600	58	22400	112	S	14400	72	11400	57	23400	117	S	200
WLS-NV-2-96L-7-40K	23200	116	25000	125	P	24200	121	P	12400	62	24000	120	P	15200	76	12200	61	25200	126	P	200
WLS-NV-2-96L-7-50K	24000	120	25800	129	P	25200	126	P	13200	66	25000	125	P	16000	80	13000	65	26000	130	P	200
WLS-NV-2-96L-1-30K	35392	112	33812	107	S	32864	104	S	18338	58	36340	115	S	22752	72	18012	57	35075	111	S	316
WLS-NV-2-96L-1-40K	36654	116	36340	115	S	35392	112	S	19592	62	38552	122	S	24016	76	19276	61	37694	119	S	316
WLS-NV-2-96L-1-50K	37920	120	37604	119	P	36656	116	S	20856	66	40498	128	P	25280	80	20540	65	39816	126	P	316
WLS-NV-2-112L-7-30K	27246	112	28188	116	S	27458	113	S	14094	58	27216	112	S	17496	72	13851	57	28431	117	P	243
WLS-NV-2-112L-7-40K	28188	116	30375	125	P	29403	121	P	15066	62	29160	120	P	18468	76	14823	61	30618	126	P	243
WLS-NV-2-112L-7-50K	29160	120	31347	129	P	30618	126	P	16038	66	30375	125	P	19440	80	15795	65	31590	130	P	243
WLS-NV-2-112L-1-30K	40982	112	39162	108	S	38081	104	S	21238	58	42090	115	S	26352	72	20862	57	40626	111	S	366
WLS-NV-2-112L-1-40K	42456	116	42090	115	S	40992	112	S	22692	62	44652	122	S	27816	76	22326	61	43554	119	S	366
WLS-NV-2-112L-1-50K	43920	120	43554	119	P	42458	116	S	24156	66	46848	128	P	29280	80	23790	65	46046	126	P	366
WLS-NV-2-128L-7-30K	29680	112	30740	116	S	29945	113	S	15375	58	29680	112	S	19080	72	15105	57	31005	117	P	265
WLS-NV-2-128L-7-40K	30740	116	33125	125	P	32065	121	P	16435	62	31800	120	P	20140	76	16165	61	33390	126	P	265
WLS-NV-2-128L-7-50K	31800	120	34185	129	P	33390	126	P	17496	66	33125	125	P	21200	80	17225	65	34452	130	P	265
WLS-NV-2-128L-1-30K	45808	112	43763	107	S	42536	104	S	23722	58	48035	115	S	29448	72	23313	57	45399	111	S	409
WLS-NV-2-128L-1-40K	47444	116	47035	115	S	45808	112	S	25358	62	49868	122	S	31074	76	24949	61	48671	119	S	409
WLS-NV-2-128L-1-50K	49080	120	48671	119	P	47443	116	S	26994	66	52312	128	P	33129	81	26585	65	51534	126	P	409

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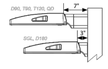
NV SERIES LED AREA

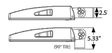
DIRECT POLE (DP) - Standard mounting arm is extruded aluminum in lengths of 3" and 7." *Arm lengths may vary depending on configuration



WALL MOUNT (WM) - Cast Aluminum Plate for direct wall mount. 3" extruded aluminum arm mounts directly to a cast wall mount box



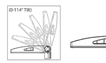
TRUNNION MOUNT (TM) - Steel, bolt-on-mounting for adjustable installation with a maximum uplift of 90 degrees.



TENNIS ARM (TA) - Steel fitter slips over 3.5" x 1.5" rectangular arm. *See Tennis Arm Spec Sheet for details*Unpainted stainless steel is standard mounts



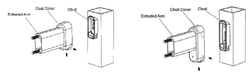
KNUCKLE MOUNT (KM) - Die Cast Knuckle great for adjustable installation on 2-3/4" OD vertical or horizontal tenon.
- Max Uptilt of 114 degrees
- Adjustable in 6 degree increments directly to a cast wall mount box



ARCHITECTURAL SWEEP ARM (ASA) - Cast Sweep Arm includes (as standard) Internal Quick Mount Bracket. Standard mounts directly to a cast wall mount box



OPTIONAL - Optional Cast Aluminum Bracket, Quick Mount Bracket (QMB) and Retrofit Quick Mount Bracket (RQMB), designed for quick mounting on Direct Square or Round Poles. Cleat mounts directly to pole for easily hung fixtures.



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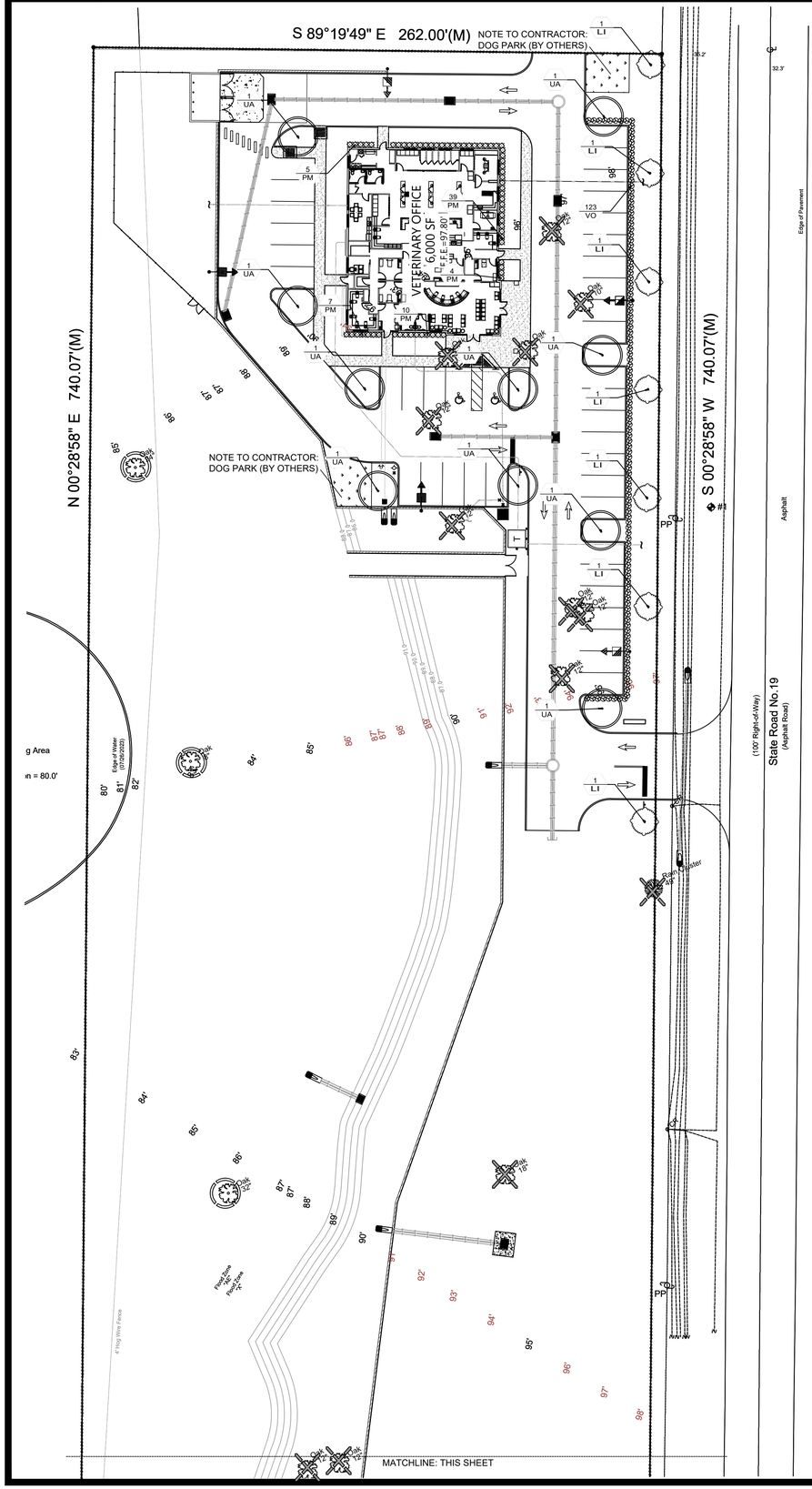
74 REV. 6/22



TREE TO REMAIN (TYP.)

TREE TO REMOVE (TYP.)

Existing Trees to Remove		
Count	SIZE	TYPE
1	10"	Oak
1	24"	Oak
7	12"	Oak

Existing Trees to Remain		
Count	SIZE	TYPE
1	49"	Rain Cluster
1	24"	Oak
2	8"	Oak
1	32"	Oak
2	12"	Oak
1	6"	Oak
3	10"	Oak
1	18"	Oak

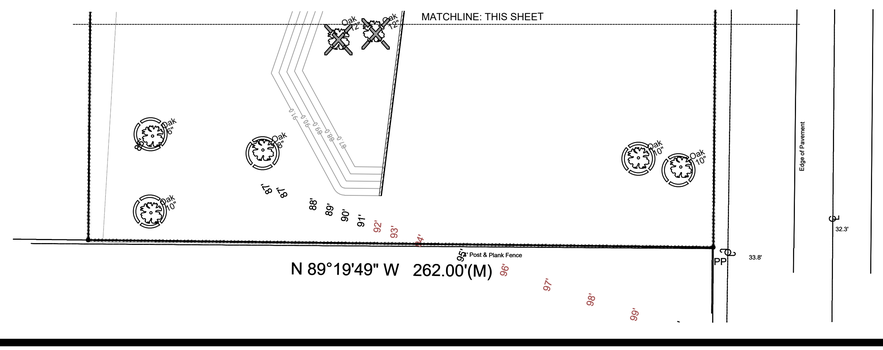
UNDERSTORY TREES PLANTED ON EAST SIDE OF PROPERTY DUE TO OVERHEAD UTILITIES.

NOTE TO CONTRACTOR: ALL DISTURBED AREAS TO RECEIVE SOD

GRAPHIC SCALE

30 0 15 30 60

(IN FEET)
1 inch = 30 ft.



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432 Nowell Loop
Deland, FL 32724
Office: 407 310-5567
Landscape Architect:
Jason Bridgewater, RLA
Florida Water Star AP
jasonbridgewater@gmail.com

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CA 29354
1201 E. ROBINSON STREET
ORLANDO, FL 32801
PH: (407) 271-8910

REVISION	DATE
REVISED BASE	8/7/25

DATE: 2025-08-12

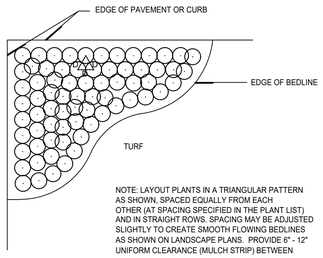
Jason P. Bridgewater
Registered Landscape Architect
FL. Registration -LA 6667308

VETERINARY OFFICE & RETAIL
STATE ROAD 19
SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FL 34737

DATE: 08/28/24
DRAWN: JB / JC
CHECKED: JB

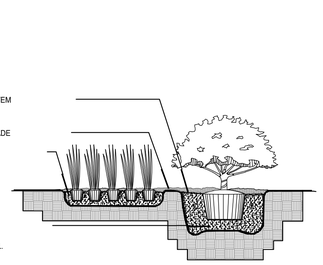
LANDSCAPE PLAN
L1

PROJECT NO.: 2023.179



SHRUB/GROUNDCOVER SPACING DETAIL

NOT TO SCALE

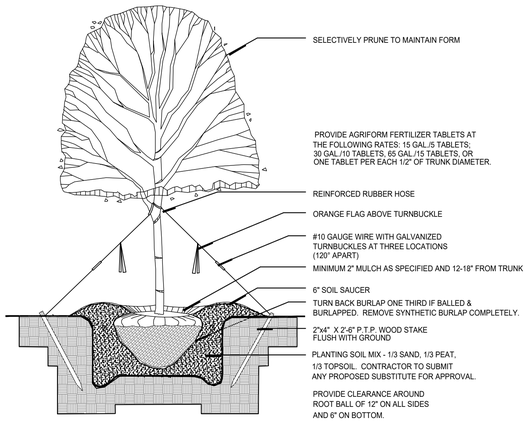


SHRUB AND GROUNDCOVER PLANTING DETAIL

NOT TO SCALE

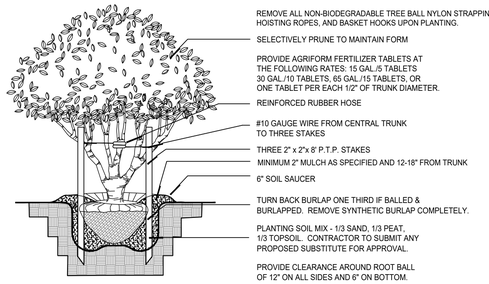
PLANT LIST

SYMBOL	QUANTITY	BOTANICAL NAME	COMMON NAME	DESCRIPTION	REMARKS
TREES					
LI	7	LAGERSTROEMIA INDICA	CRAPE MYRTLE	8 FT HEIGHT, 2.5" CALIPER MINIMUM, MULTI-TRUNK	SPACE AS SHOWN GUY
UA	10	ULMUS ALATA	WINGED ELM	4" CALIPER, MINIMUM	SPACE AS SHOWN GUY
SHRUBS					
PM	65	PODOCARPUS MACROPHYLLUS	PODOCARPUS HEDGE	18" HEIGHT, 3 GAL CAN FULL MINIMUM AT TIME OF PLANTING	30" O.C.
VO	123	VIBURNUM ODORATISSIMUM	SWEET VIBURNUM	18" HEIGHT, 3 GAL CAN FULL MINIMUM AT TIME OF PLANTING	30" O.C.
SOD					
	SEE PLANS	PASPALUM NOTATUM 'ARGENTINE'	ARGENTINE BAHIA	SOLID, FREE OF PESTS AND DISEASES	FIELD VERIFY QTY.
MULCH					
	SEE PLANS	MINI PINE BARK NUGGETS	MINI PINE BARK NUGGETS	FREE OF DIRT AND DEBRIS	FIELD VERIFY QTY.



TREE PLANTING DETAIL

NOT TO SCALE



MULTI-TRUNK TREE PLANTING DETAIL

NOT TO SCALE

LANDSCAPE PLANTING NOTES:

1. ALL PLANTS MUST BE HEALTHY, VIGOROUS MATERIAL FREE OF PESTS AND DISEASES.
2. ALL PLANTS SHALL BE FLORIDA FANCY, AS GRADED IN FLORIDA GRADES AND STANDARDS FOR NURSERY PLANTS.
3. ALL PLANTS ARE SUBJECT TO APPROVAL BY THE LANDSCAPE ARCHITECT AND OWNER BEFORE, DURING, AND AFTER INSTALLATION.
4. ALL SINGLE-TRUNKED TREES SHALL BE STRAIGHT TRUNKED WITH ONE CENTRAL LEADER AND HAVE A FULL, DENSE CROWN.
5. ALL TREES SHALL BE STAKED AND GUYED AS SHOWN IN PLANTING DETAILS.
6. ALL MULCH PLANTING AREAS SHALL BE A MINIMUM OF 2" IN DEPTH.
7. ALL PLANTING AREAS SHALL HAVE A MINIMUM OF 3" TOPSOIL.
8. ALL TREES SHALL BE FREE OF OPEN WOUNDS AND WOUND SCARS IN THE CLEAR TRUNK AREA.
9. ANY SYNTHETIC BURLAP AND/OR WIRE BASKETS MUST BE TOTALLY REMOVED PRIOR TO INSTALLATION OF PLANT MATERIAL. IF NATURAL BURLAP IS USED, IT MAY BE TURNED DOWN 1/3 OF THE ROOTBALL.
10. CALIPER TO BE MEASURED (6) SIX INCHES ABOVE ROOTBALL.

LANDSCAPE CONTRACTOR NOTES:

1. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING, IN FULL, ALL LANDSCAPE PLANTING AREAS, UNTIL THE JOB IS ACCEPTED IN FULL BY THE OWNER. "IN FULL" MEANS WATERING, PEST CONTROL, MULCHING, MOWING, FERTILIZING AND RESETTING TREES THAT ARE OUT OF PLUMB.
2. THE LANDSCAPE CONTRACTOR SHALL COMPLETELY GUARANTEE ALL INSTALLED PLANT MATERIAL FOR A PERIOD OF ONE CALENDAR YEAR BEGINNING ON THE DATE OF 100% COMPLETION. ANY AND ALL REQUIRED PLANT REPLACEMENTS SHALL BE MADE PROMPTLY AND AT NO ADDITIONAL COST TO THE OWNER.
3. THE LANDSCAPE CONTRACTOR SHALL STAKE THE LOCATIONS OF ALL PLANT MATERIAL AND PLANTING BED LINES FOR REVIEW BY THE LANDSCAPE ARCHITECT AND OWNER.
4. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL WRITTEN PLANT QUANITIES PRIOR TO INITIATION OF THE WORK. IN THE EVENT THAT THE PLANS CONTRADICT THE PLANT LIST, THE PLANS SHALL RULE.
5. THE LANDSCAPE CONTRACTOR SHALL BE FAMILIAR WITH AND ACCEPT THE EXISTING SITE CONDITIONS PRIOR TO INITIATION OF THE WORK. ANY VARIATION FROM THE SPECIFIED WORK SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR.
6. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES, DRAINAGE STRUCTURES, CURBS, SIDEWALKS, AND ANY OTHER OBJECTS WHICH MIGHT BE DAMAGED DURING THE WORK.
7. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE ANY AND ALL NECESSARY REPAIRS TO DAMAGE CAUSED BY HIS WORK AT NO ADDITIONAL COST TO THE OWNER OR LANDSCAPE ARCHITECT.
8. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, AND FOLLOWING ALL APPLICABLE LOCAL CODES PERTAINING TO THE PROJECT DURING THE COURSE. OF HIS WORK.

48 HOURS BEFORE YOU DIG
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PH: (407) 271-8910

REVISION	DATE
1 REVISED BASE	8/7/25

DATE: 2025-08-12

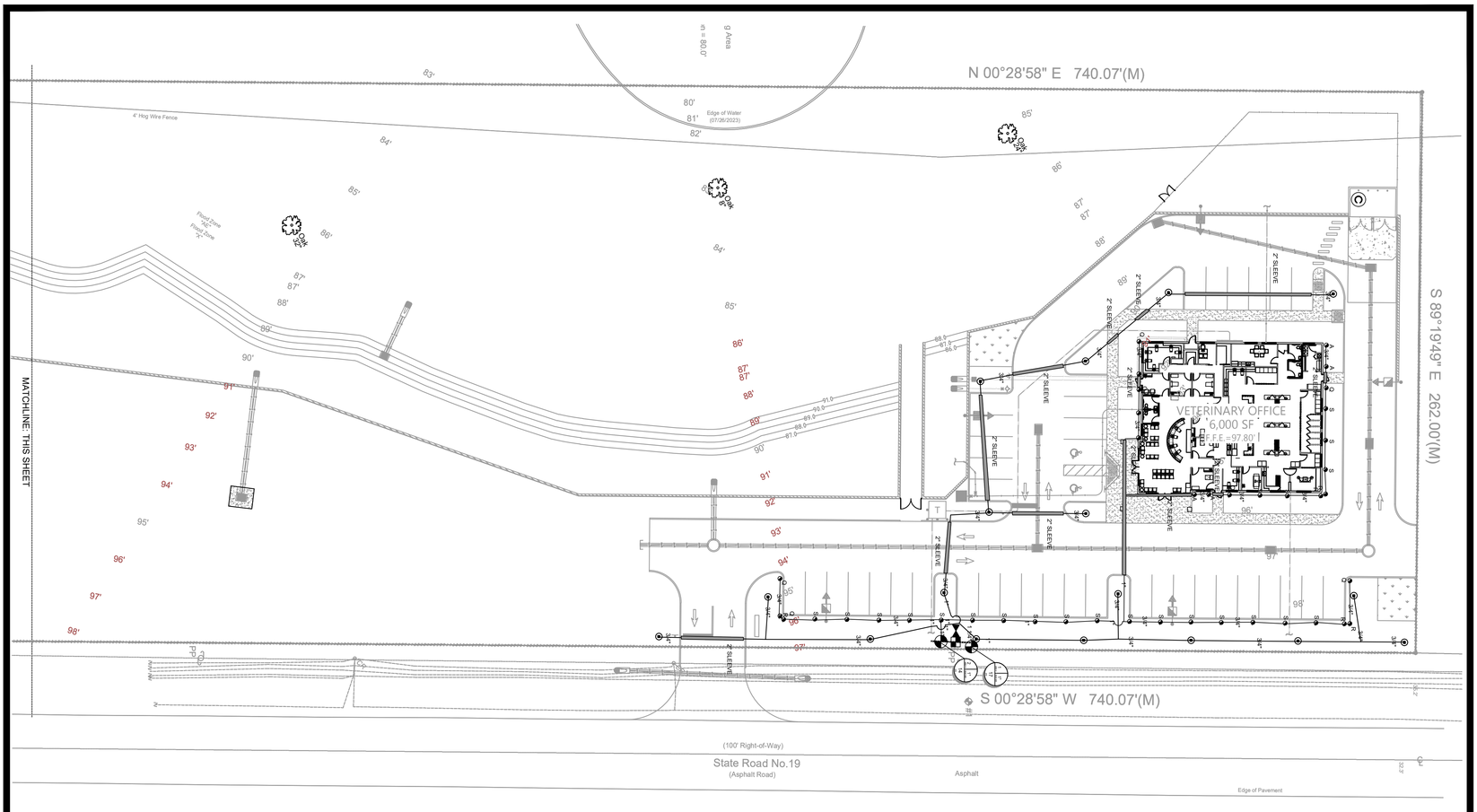
Jason P. Bridgewater
Registered Landscape Architect
FL. Registration -LA 6667308

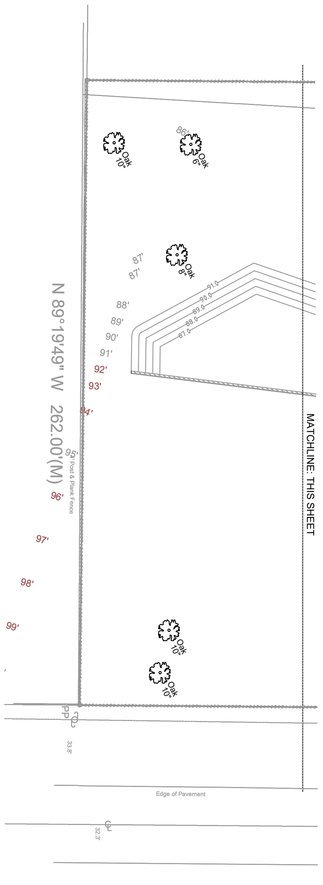
VETERINARY OFFICE & RETAIL
STATE ROAD 19
SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FL 34737

DATE: 08/28/24
DRAWN: JB/JC
CHECKED: JB

LANDSCAPE DETAILS
L2

PROJECT NO.: 2023.179





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Landscape Architect:
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Florida Water Star AP
jasonbridgewater@gmail.com

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GRAPHIC SCALE
(IN FEET)
1 inch = 30 ft.
30 0 15 30 60

DATE: 08/28/24
DRAWN: JB / JC
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PROJECT NO.: 2023.179

IRRIGATION PLAN
L3

VETERINARY OFFICE & RETAIL
STATE ROAD 19
SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FL 34737

Jason P. Bridgewater
Registered Landscape Architect
FL Registration -LA 6667208

DATE: 2025-08-12

REVISION	DATE
1 REVISED BASE	8/7/25

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CA 29354
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ORLANDO, FL 32801
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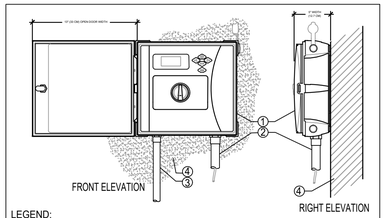
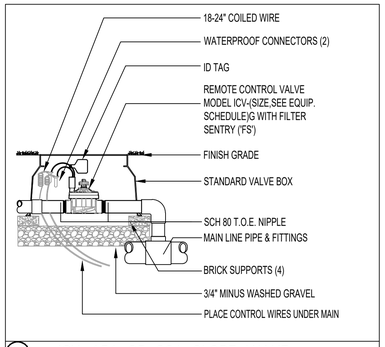
860

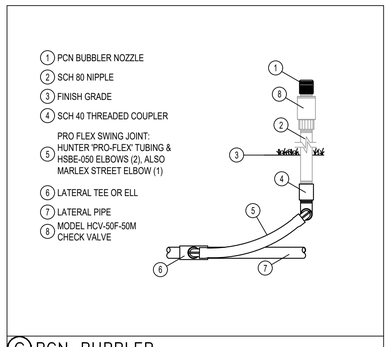
IRRIGATION DETAILS



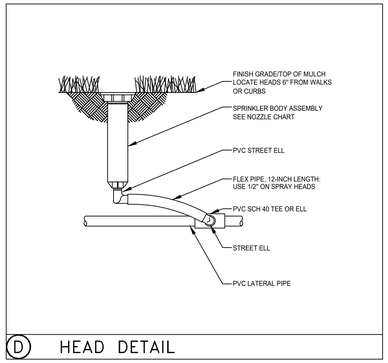
A ICC2 WALL MOUNT CONTROLLER



B ICV-151 OR 201 GLOBE VALVE



C PCN BUBBLER



D HEAD DETAIL

IRRIGATION NOTES

1) REFER TO THE LANDSCAPE PLANS WHEN TRENCHING TO AVOID TREES AND SHRUBS.

2) ALL MAINLINE PIPING SHALL BE BURIED TO A MINIMUM DEPTH OF 18" OF COVER. ALL LATERAL PIPING SHALL BE BURIED TO A MINIMUM DEPTH OF 12" OF COVER.

3) ALL POP-UP ROTORS AND SPRAY HEADS SHALL BE INSTALLED USING AN 18" P.V.C. FLEX PIPE CONNECTION. DO NOT USE FUNNY PIPE.

4) ADJUST ALL NOZZLES TO REDUCE WATER WASTE ON HARD SURFACES AND BUILDING WALLS.

5) THROTTLE ALL VALVES ON SHRUB LINES AS REQUIRED TO PREVENT FOGGING.

6) ALL RISERS SHALL BE PAINTED BLACK.

7) ALL RISERS SHALL BE STAKED WITH A STEEL ANGLE AND SECURED WITH ULTRA-VIOLET LIGHT PROTECTED P.V.C. CLAMPS.

8) ALL CONTROL WIRE SPLICES SHALL BE MADE IN VALVE BOXES USING SNAP-TITE CONNECTORS AND SEALANT.

9) THE CONTRACTOR SHALL PREPARE AN AS-BUILT DRAWING ON A REPRODUCIBLE PAPER (SEPIA OR MYLAR) SHOWING ALL INSTALLED IRRIGATION. A MYLAR OR SEPIA OF THE ORIGINAL PLAN MAY BE OBTAINED FROM THE LANDSCAPE ARCHITECT FOR A FEE. THE DRAWING SHALL LOCATE ALL MAINLINE AND VALVES BY SHOWING EXACT MEASUREMENTS FROM HARD SURFACES.

10) ALL VALVES, GATE VALVES AND QUICK COUPLERS SHALL BE INSTALLED IN VALVE BOXES.

11) ANY PIPING SHOWN OUTSIDE THE PROPERTY LINE OR RUNNING OUTSIDE A LANDSCAPE AREA IS SHOWN THERE FOR CLARITY ONLY. ALL LINES SHALL BE INSTALLED ON THE PROPERTY AND INSIDE THE LANDSCAPE AREAS.

12) ALL RISERS SHALL BE INSTALLED 12" FROM ANY WALL AND A MINIMUM OF 36" FROM ANY SIDEWALK, PATIO OR ROAD.

13) THE EXACT HEIGHT OF ANY 12" POP-UP THAT IS SHOWN IN A SHRUB BED SHALL BE DETERMINED BY THE LANDSCAPE ARCHITECT IN THE FIELD.

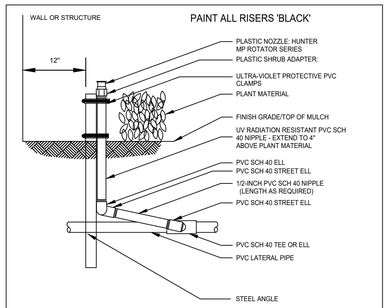
14) THE CONTRACTOR SHALL EXERCISE CARE SO AS NOT TO DAMAGE ANY EXISTING UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE REPAIRS AND COST OF ANY DAMAGE CAUSED BY HIS WORK.

15) ALL WORK SHALL BE GUARANTEED FOR ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE AGAINST ALL DEFECTS IN EQUIPMENT AND WORKMANSHIP.

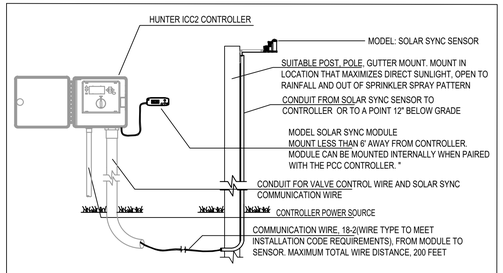
16) CONTRACTOR TO USE MIN. OF 12 GAUGE WIRE FOR ALL COMMON WIRES AND 14 GAUGE WIRE FOR ALL CONTROL WIRES. CONTRACTOR ALSO TO PROVIDE 3 SPARE CONTROL WIRES FOR ANY FUTURE USE.

17) CONCRETE THRUST BLOCKS ARE TO BE UTILIZED AT ALL MAINLINE DIRECTION CHANGES.

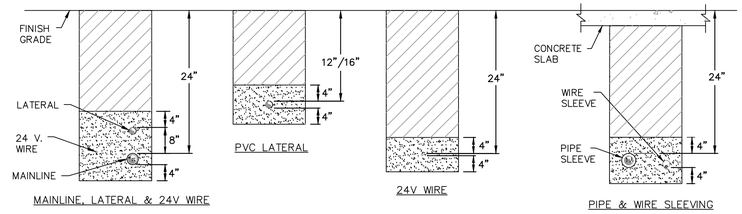
18) ALL IRRIGATION SHOWN ON PLANS IS SCHEMATIC AND DOES NOT REFLECT ALL FITTINGS AND APPURTENANCES WHICH SHALL BE INCLUDED TO PROVIDE A FULLY FUNCTIONAL IRRIGATION SYSTEM CAPABLE OF PROVIDING 100 PERCENT COVERAGE WITH A 50 PERCENT OVERLAP.



E SHRUB RISER DETAIL



F HUNTER SOLAR SYNC SYSTEM



NOTES:
1. BEDDING SHALL BE PLACED AND LEVELED PRIOR TO INSTALLATION OF BURY ITEM.
2. BACKFILL SHALL BE PLACED IN MAXIMUM 6" LIFTS.
3. SLEEVE ALL PIPE AND WIRE SEPARATELY. SLEEVE 2 X DIA. OF PIPE (MIN 2"). ONE PIPE PER SLEEVE. SLEEVES TO BE PRIMED AND SOLVENT WELDED.
4. ALL PIPE TO BE INSTALLED PER MANUFACTURES SPECIFICATIONS WITH PIPE LABELING FACING UP FOR INSPECTION PURPOSES. PROVIDE A MINIMUM OF 2" CLEARANCE TO SIDE OF TRENCH AND BETWEEN PIPES.
5. ALL 120 V. WIRING SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.
6. TAPE AND BUNDLE IRRIGATION CONTROL WIRES EVERY 10'. PROVIDE LOOSE 20" LOOP AT ALL CHANGES OF DIRECTION OVER 30°.
7. ALL REMOTE CONTROL VALVE WIRING NOT INSTALLED WITH MAINLINE PIPE SHALL BE INSTALLED IN A MINIMUM 2" SCHEDULE 40 GREY ELECTRICAL CONDUIT OR AS APPROVED.
8. "NON-POTABLE" WARNING TAPE TO BE INSTALLED ON ALL PRESSURIZED MAINLINES 12" ABOVE THE PIPE.
9. INSTALL ONE ADDITIONAL SLEEVE SIZED TO MATCH THE LARGEST REQUIRED SLEEVE WITH ENDS TAPED FOR FUTURE USE.
10. SLEEVES TO EXTEND A MINIMUM OF 12" PAST HARDSCAPE PLANTERS, CURBS, SIDEWALKS, ETC. SLEEVES TO BE STAGGERED/OFFSET SO THAT SLEEVE USE IS NOT OBSTRUCTED BY OTHER PIPES.
11. WHERE PRESSURE SUPPLY PIPING IS INSTALLED WITHOUT CONTROL WIRING, A 14 GA. TRACKING WIRE SHALL BE INSTALLED.

G TRENCHING DETAILS

SPRAY NOZZLE CHART

	SYM	NOZZLE	NOZZLE PATTERN	GPM
MP1000 8'-15' radius	A	MAROON	90° ADJUSTABLE ARC	.19
	B	MAROON	180° ADJUSTABLE ARC	.37
	C	LT. BLUE	210° ADJUSTABLE ARC	.43
	D	LT. BLUE	270° ADJUSTABLE ARC	.57
	E	OLIVE	360° ARC	.75
MP2000 13'-21' radius	F	BLACK	90° ADJUSTABLE ARC	.40
	G	BLACK	180° ADJUSTABLE ARC	.74
	H	GREEN	210° ADJUSTABLE ARC	.86
	I	GREEN	270° ADJUSTABLE ARC	1.10
	J	RED	360° ARC	1.47
MP3000 22'-30' radius	K	BLUE	90° ADJUSTABLE ARC	.86
	L	BLUE	180° ADJUSTABLE ARC	1.82
	M	YELLOW	210° ADJUSTABLE ARC	2.12
	N	YELLOW	270° ADJUSTABLE ARC	2.73
	O	GRAY	360° ARC	3.64
STRIPS & CORNERS	P	TURQOUISE	45°-105° ADJUSTABLE ARC	.45
	Q	IVORY	5'x15' LEFT STRIP	.22
	R	COPPER	5'x15' RIGHT STRIP	.22
	S	BROWN	5'x30' SIDE STRIP	.44
BUBBLERS AND MICRO-SPRAYS	T	PCN10	1.00 GPM FLOOD BUBBLER	1.00
	U	PCN50	.50 GPM FLOOD BUBBLER	.50
	V	SR-2Q	90° 2' RADIUS	.11
	W	SR-2H	180° 2' RADIUS	.16
	X	MS-F	360° 5' RADIUS	.50

EQUIPMENT LIST

SYMBOL	DESCRIPTION	QUANTITY
◉	0.50 GPM BUBBLER (2 PER TREE)	34
○	6" POP-UP SPRAY - HUNTER INDUSTRIES MPR40 W/MP2000 NOZZELS	0
●	12" POP-UP SPRAY - HUNTER INDUSTRIES MPR40 W/MP2000 NOZZELS	0
◔	SPRAY ON RISER - HUNTER INDUSTRIES INST-00-CV-MP2000	41
▲	HUNTER INDUSTRIES - 4" POP-UP PGP ROTORS- PART RADIUS	0
◭	HUNTER INDUSTRIES - 4" POP-UP PGP ROTORS- FULL RADIUS	0
◮	HUNTER INDUSTRIES - I-40 ROTORS - PART 60' RADIUS	0
◍	HUNTER 'ICV' SERIES ELECTRIC VALVE WITH ACCU-SET PRESSURE REGULATOR 1"	2
◍	HUNTER 'ICV' SERIES ELECTRIC VALVE WITH ACCU-SET PRESSURE REGULATOR 1 1/2"	0
Ⓒ	HUNTER ICC2 8 STATION CONTROLLER, 120VOLT INSTALL WITH A SOLAR SYNC (WITH EVAPOTRANSPIRATION SENSOR AND RAIN SENSOR AND BY-PASS BOX.) GROUND WITH AN 8' COPPER CLAD ROD.	1
◩	1" POTABLE IRRIGATION METER TO PROVIDE 30 GPM AT 40 PSI	1
⋈	1" DOUBLE CHECK VALVE BACKFLOW PREVENTOR	1
———	LATERAL LINE SIZE PER PLAN	SEE PLAN
———	1-1/2" MAINLINE CLASS 200 P.V.C. SIZE PER PLAN	SEE PLAN
▭	SLEEVING - SCH. 40 P.V.C. MIN. DEPTH OF 24" (ALL 3" SLEEVES TO HAVE ACCOMPANYING 2" SLEEVE FOR WIRES)	SEE PLAN

48 HOURS BEFORE YOU DIG
CALL SUNSHINE
1-800-432-4770 or 811
IT'S THE LAW IN FLORIDA
FLORIDA LAW REQUIRES EXCAVATORS TO NOTIFY OWNERS OF UNDERGROUND FACILITIES NO LESS THAN TWO (2) DAYS PRIOR TO EXCAVATION

CADDSCAPES, INC.
Florida Landscape Architecture Firm
432 Nowell Loop
Deland, FL 32724
Office: 407 310-5567
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Florida Water Star AP
jasonbridgewater@gmail.com

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Z DEVELOPMENT SERVICES
CIVIL ENGINEERING CONSULTANTS
CA 29354
1201 E. ROBINSON STREET
ORLANDO, FL 32801
PH: (407) 271-8910

REVISION	DATE
1 REVISED BASE	8/7/25

DATE: 2025-08-12

Jason P. Bridgewater
Registered Landscape Architect
FL. Registration -LA 6667308

VETERINARY OFFICE & RETAIL
STATE ROAD 19
SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FL 34737

DATE: 08/28/24
DRAWN: JB/JC
CHECKED: JB

IRRIGATION DETAILS
L4

PROJECT NO.: 2023.179

Item 3.

ALTA/NSPS Land Title Survey

Boundary Survey

Legal Description:

THE SOUTH 740 FEET OF THE EAST 262 FEET OF THE FOLLOWING DESCRIBED PROPERTY; NORTH HALF OF GOVERNMENT LOT 3, SECTION 2, TOWNSHIP 21 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA. LYING WEST OF THE RIGHT OF WAY FOR HIGHWAY NO. 19.

FLOOD DISCLAIMER:
BY PERFORMING A SEARCH WITH THE LOCAL GOVERNING MUNICIPALITY OR WWW.FEMA.GOV, THE PROPERTY APPEARS TO BE LOCATED IN ZONES X & A. THIS PROPERTY WAS FOUND IN LAKE COUNTY, COMMUNITY NUMBER 120586, DATED 2012-12-18.

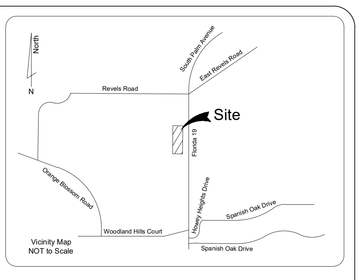
-Benchmark Information-
National Geodetic Survey Datum
Designation - Z 430
PID - AB5339
Elevation - 86.88'
(Elevations are based upon NAVD 88 Datum)

-Site Benchmark Information-
#1
Fnd. 1/2" Rebar & Cap "LB # 7623".
Elevation: 100.44'

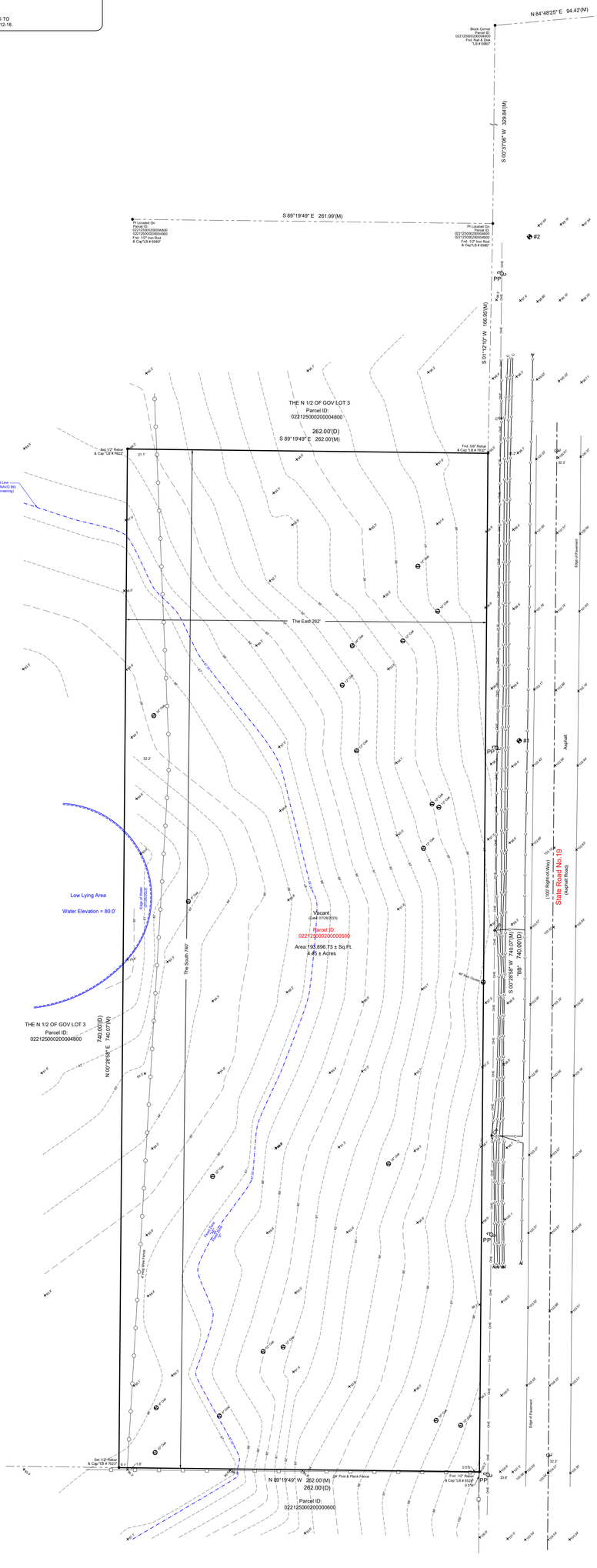
#2
Fnd. 1/2" Rebar & Cap "LB # 7623".
Elevation: 97.31'

Survey Notes:
No Wetland Flags Located at Time of Survey.

Prior Survey Provided by Client by Bishman Surveying & Mapping Inc. used for Reference.

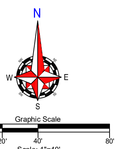


Vicinity Map
NOT to Scale



Schedule B - II
Issued by: Old Republic National Title Insurance Company,
Issuing Agent: - 3728801,
Commitment Number: 1422098,
Issuing Office File Number: 22325 Chon,
Effective Date: June 27, 2023 at 11:00 P.M.

1. Any defect, lien, encumbrance, adverse claim, or other matter that appears for the first time in the Public Records or is created, attaches, or is disclosed between the Commitment Date and the date on which all of the Schedule B, Part I - Requirements are met.
No Adverse Claims Provided.
2. a. General or special taxes and assessments required to be paid in the year 2023 and subsequent years.
Not a Survey Matter.
b. Rights or claims of parties in possession not recorded in the Public Records.
None Provided at Time of Survey.
c. Any encroachment, encumbrance, violation, variation, or adverse circumstance that would be disclosed by an inspection or an accurate and complete land survey of the Land and inspection of the Land.
No Visible Encroachments at Time of Surćey.
d. Easements or claims of easements not recorded in the Public Records.
None Provided at Time of Survey.
e. Any lien, or right to a lien, for services, labor or material furnished, imposed by law and not recorded in the Public Records.
Not a Survey Matter.
3. Any Owner's Policy issued pursuant hereto will contain under Schedule B the following exception: Any adverse ownership claim by the State of Florida by right of sovereignty to any portion of the Land insured hereunder, including submerged, filled and artificially exposed lands, and lands accreted to such lands.
Not on a State Body of Water.
4. Any lien provided by County Ordinance or by Chapter 159, F.S., in favor of any city, town, village or port authority, for unpaid service charges for services by any water systems, sewer systems or gas systems serving the land described herein; and any lien for waste fees in favor of any county or municipality.
Not a Survey Matter.
5. Right of Way Easement in favor of Sumter Electric Cooperative, Inc. recorded in O.R. Book 612, Page 1497, as affected by Quit Claim Deed recorded in O.R. Book 1282, Page 595, Public Records of Lake County, Florida.
Does Not Affect Subject Property. Poles Located Within Right-of-Way.
6. Rights of the lessees under unrecorded leases.
Not a Survey Matter.
7. Coverage is excepted as to riparian and littoral rights; the possible right of the public to use beach area and/or waterways; and any Land insured herein that was formerly or is currently submerged, including any filled lands, artificially exposed lands, and lands accreted to such lands, for the rights of the United States Government and the State of Florida. If the Navigational Servitude Endorsement is attached to this policy and made a part hereof, the coverage afforded thereby shall not extend to any portion of the Land subject to a claim of ownership by the State of Florida by right of sovereignty. Commitment exception #3 is hereby deleted in its entirety.
Not a Survey Matter.



Graphic Scale
0' 20' 40' 80'
Scale: 1"=40'
Note: Assumed Bearings.

Tree Note:
Oak (18") - Denotes Tree Type
- Diameter of Tree measured at Chest Height

- Underground Cable Line
- Cable Riser
- Wood Power Pole

ALTA/NSPS CERTIFICATION

Certified to: JEFFREY S. ESCH, HUNT ABA FIRMA, P.A., OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY,

This is to certify that this map or plat and the survey on which it is based were made in accordance with the "Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes items 1, 2, 3, 4(b), 7(a), 7(b)(1), 8, 9, 10(b),13, 16, and 18 of Table A thereof.

The fieldwork was completed on 07/26/2023.

Date of Plat or Map: 10/10/2023.

Patrick K. Ireland, PSM 6637

Gross Land Area: 193,896.73 ± Square Feet or 4.45 ± Acres more or less.

Setback Requirements: Front: UNDEFINED
Side: UNDEFINED
Rear: UNDEFINED

Zoning: PUD

Square footage of Buildings: 0.00 Square Feet ±
Parking Space Size: (Standard): 00 Parking Stripes found at time of Survey
(Handicap): 00 Parking Stripes found at time of Survey

In the process of conducting the fieldwork, no of earth moving work, building construction or building additions within recent months was observed.
In the process of conducting the fieldwork, no evidence of recent street or sidewalk construction or repairs were observed.
In the process of conducting the fieldwork, no evidence of site use as a solid waste dump, sump or sanitary landfill were observed.
In the process of conducting the fieldwork, no evidence of cemeteries and/or burial grounds were observed.
In the process of conducting the fieldwork, no evidence of any water features were observed.
In the process of conducting the fieldwork, no evidence of wetland delineation markers were observed.
Vehicular Access to Subject Property is from State Road No.19

Field Date: 07/26/23	Date Completed: 07/29/23
Drawn By: SD	File Number: IS-120206

-Legend-

C	- Calculated	PC	- Point of Curvature
C/L	- Centerline	PCP	- Point
CB	- Concrete Block	POI	- Point of Intersection
Conc.	- Concrete Monument	P.O.B.	- Point of Beginning
D	- Deed	P.O.C.	- Point of Curve
Desc.	- Description	PP	- Power Pole
D/E	- Drainage Easement	PRM	- Permanent Reference Monument
Encl.	- Enclosure	PT	- Point of Tangency
F.E.M.A.	- Federal Emergency Management Agency	R	- Radius
FFE	- Finished Floor Elevation	Rad.	- Radial
Fnd.	- Found	R&C	- Rebar & Cap
IP	- Iron Pipe	Rec.	- Recovered
IR	- Iron Rod (5/8")	Rebar	- Rebar
M	- Measured	Set	- Set 1/2" Rebar & Cap "LB 7623"
N&D	- Nail & Disk	Rebar	- Rebar
NTS	- Not To Scale	UE	- Utility Easement
ORB	- Official Records Book	WM	- Water Meter
P	- Plat	Δ	- Delta (Central Angle)
P.B.	- Plat Book	-o-	- Chain Link Fence
-/-	- Wood Fence		

Revisions
100 Year Flood Line - 10/10/23 - TCK
Trees and Utility Lines - 12/28/23 - BMJ

Ireland & Associates Surveying, Inc.
800 Currency Circle Suite 1020
Lake Mary, Florida 32746
www.irelandsurveying.com
Office-407.678.3366
Fax-407.320.8165

Notes:
- Survey is Based upon the Legal Description Supplied by Client.
- Abutting Properties Deeds have NOT been Researched for Gaps, Overlaps and/or Hiatus.
- Subject to any Easements and/or Restrictions of Record.
- Bearing Basis shown hereon, is Assumed and Based upon the Line Shown as S 89°19'49" E.
- Building Ties are NOT to be used to reconstruct Property Lines.
- Fence Ownership is NOT determined.
- Roof Overhangs, Underground Utilities and/or Footers have NOT been located UNLESS otherwise noted.
- Septic Tanks and/or Drainfield locations are approximate and MUST be verified by appropriate Utility Location Companies.
- Use of this Survey for any purpose other than Closing, Without Written Verification, Will be at the User's Sole Risk and Without Liability to the Surveyor. Nothing Hereon shall be Construed to give ANY Rights or Benefits to Anyone Other than those Certified.
- Flood Zone Determination Shown Hereon is Given as a Courtesy, and is Based Solely on Graphic Scaling. This Property may or may not be affected by Flood Factors and/or other information.NEITHER known by NOR given to this Surveying Company at the time of this Endeavor. Ireland & Associates Surveying Inc. and the signing surveyor assume NO Liability for the Accuracy of this Determination.

VETERINARY OFFICE

FOR DR. JEFFREY ESCH, DVM

STATE ROAD 19
SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FLORIDA 34737

JURISDICTION: HOWEY IN THE HILLS
PARCEL ID: 02-21-25-0002-000-00500

DEVELOPER & CONSULTANTS

OWNER/DEVELOPER
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CONTACT: JEFFREY S. ESCH

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PHONE: 954-530-1765
EMAIL: ERIC@TREBARC.COM
CONTACT: ERIC TREBBIEN

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EMAIL: ORDERS@IRELANDSURVEYING.COM
CONTACT: BO DAVIS

GEOTECHNICAL ENGINEER
GEO-TECHNOLOGY ASSOCIATES, INC.
4617 PARKBREEZE COURT
ORLANDO, FLORIDA 32808
PHONE: 321-482-4239
EMAIL: GPILLAPPA@GTAENG.COM
CONTACT: GAUTHAM PILLAPPA

INDEX OF DRAWINGS

SHT. NO.	CIVIL DRAWINGS
CV	COVER SHEET
C0	CIVIL DATA AND NOTES
C1	DEMOLITION AND EROSION CONTROL NOTES
C2	MASTER SITE PLAN
C2.1	SITE DIMENSION PLAN
C3	UTILITY PLAN
C4	GRADING AND DRAINAGE PLAN
C4.1	MASS GRADING PLAN
C5	STORMWATER POLLUTION PREVENTION PLAN
C6	CONSTRUCTION DETAILS
C7	CONSTRUCTION DETAILS

SHT. NO.	CONSULTANT DRAWINGS
SL1	PHOTOMETRIC PLAN
SL2	LIGHTING CUT SHEETS
L-1	LANDSCAPE PLAN
L-2	LANDSCAPE DETAILS
L-3	IRRIGATION PLAN
L-4	IRRIGATION DETAILS
	SURVEY

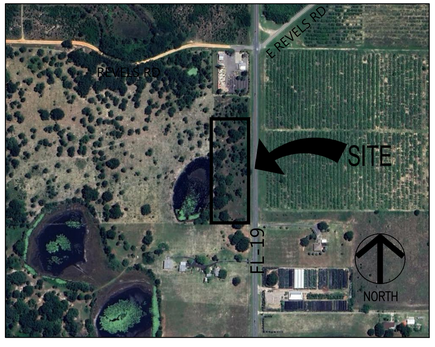
PROJECT REVISIONS

REV. NO.	DATE	DESCRIPTION	SHEETS	BY
–	–	–	–	–

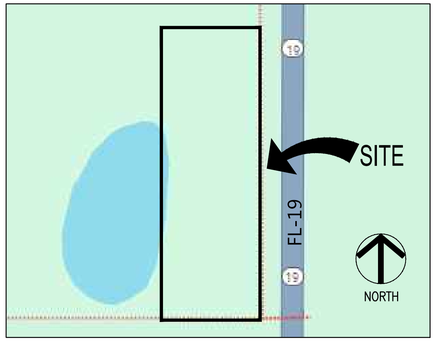
LEGAL DESCRIPTION

THE SOUTH 740 FEET OF THE EAST 262 FEET OF THE FOLLOWING DESCRIBED PROPERTY; NORTH HALF OF GOVERNMENT LOT 3, SECTION 2, TOWNSHIP 21 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA. LYING WEST OF THE RIGHT OF WAY FOR HIGHWAY NO. 19.

VICINITY MAP NTS



LOCATION MAP NTS



Z DEVELOPMENT SERVICES
CIVIL ENGINEERING CONSULTANTS
CA 29354
1201 E. ROBINSON STREET
ORLANDO, FL 32801
PH: (407) 271-8910

DATE

REVISION

ROBERT ZIEGENFUSS, P.E., LEED AP
FL. REG. # 56752

obert Ziegenfuss
=US, o=Z Development Services,
nQualifier=A01410D0000019DF
,6802BC000371EF, cn=Robert
iegenfuss
025.08.28 11:02:44 -04'00'

This item has been digitally signed and sealed by ROBERT ZIEGENFUSS on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VETERINARY OFFICE
STATE ROAD 19
SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FL 34737

DATE: 08/28/24
DRAWN: LF
CHECKED: DL

CV
COVER SHEET

PROJECT NO.: 2023.179

DEMOLITION NOTES

1. PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL COORDINATE ACTIVITIES WITH ALL UTILITY SERVICE PROVIDERS IN THE AREA. THE LOCATION OF ALL EXISTING UTILITIES SHOULD BE VERIFIED PRIOR TO ANY EXCAVATION ACTIVITIES.

2. THE CONTRACTOR SHALL COMPLETELY REMOVE AND DISPOSE OF ALL STRUCTURES AND OTHER IMPROVEMENTS AS NOTED ON THE PLANS. THIS INCLUDES FOUNDATIONS, TIMBER, BRUSH, STUMPS, ROOTS, PAVEMENT AND BASE MATERIAL AND OTHER STRUCTURES AS SHOWN OR REASONABLY IMPLIED IN THE DRAWINGS.

3. WHERE EXISTING BUILDINGS ARE TO BE DEMOLISHED, ALL TRACES OF FOUNDATIONS AND UNDERGROUND UTILITIES ARE TO BE REMOVED (UNLESS OTHERWISE NOTED ON PLANS). THE CONTRACTOR IS RESPONSIBLE FOR PROPER DISPOSAL OF ALL WASTE MATERIAL.

4. WHERE PAVING OR STRUCTURES ARE TO BE REMOVED WHICH ABUT OR ARE A PART OF CONNECTED FACILITIES (THAT ARE OFF-SITE), ANY DAMAGE THAT MIGHT RESULT FROM DEMOLITION IS TO BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN EXISTING UNLESS SPECIFICALLY EXEMPTED BY THE PLANS. THE COST FOR SUCH RESTORATION SHALL BE INCIDENTAL TO OTHER CONSTRUCTION AND NO EXTRA COMPENSATION WILL BE ALLOWED.

5. THE LOCATION OF ALL EXISTING UTILITIES AND TREES SHOWN ON THE PLANS HAVE BEEN DETERMINED BASED UPON THE BEST AVAILABLE INFORMATION. THE ENGINEER AND OWNER ASSUME NO RESPONSIBILITY FOR ACCURACY. ALL UTILITIES, SURFACE IMPROVEMENTS AND TREE LOCATIONS SHOULD BE VERIFIED BY THE CONTRACTOR.

6. THE CONTRACTOR SHALL COORDINATE THE RELOCATION OR REMOVAL OF ALL OVERHEAD/UNDERGROUND UTILITIES, UTILITY POLES, LIGHTS AND LINES IN THE RIGHT-OF-WAY AND ON THE PROPERTY WITH THE APPROPRIATE SERVICE PROVIDER.

7. THE CONTRACTOR SHALL REFERENCE AND RESTORE PROPERTY CORNERS AND LAND MARKERS DISTURBED DURING CONSTRUCTION. (UNDER THE DIRECTION OF A REGISTERED LAND SURVEYOR).

8. ALL EROSION CONTROL MEASURES NOTED BELOW AND IN THE PLANS SHOULD BE IN PLACE PRIOR TO THE START OF DEMOLITION.

EROSION CONTROL NOTES

ALL EROSION CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL COMPLETION OF CONSTRUCTION.

1. ALL EROSION AND SEDIMENT CONTROL WORK SHALL CONFORM WITH LOCAL CITY/COUNTY AND WATER MANAGEMENT DISTRICT SPECIFICATIONS, SUBJECT TO AUTHORIZED AND APPROVED VARIANCES, WAIVERS AND/OR CONDITIONAL CHANGES.

2. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PLACED PRIOR TO OR AS THE FIRST STEP IN, CONSTRUCTION. SEDIMENT CONTROL PRACTICES WILL BE APPLIED AS A PERIMETER DEFENSE AGAINST ANY TRANSPORTATION OF SILT OFF THE SITE.

3. ALL AREAS AFFECTED BY THIS WORK SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN EXISTING CONDITION, UNLESS SPECIFICALLY EXEMPTED BY THE PLANS. THE COST FOR SUCH RESTORATION SHALL BE INCIDENTAL TO OTHER CONSTRUCTION AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.

4. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN THESE PLANS AND FIELD CONDITIONS PRIOR TO CONSTRUCTION.

5. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL PROVIDE TREE PROTECTION BARRIERS TO MEET THE REQUIREMENTS OF LOCAL SPECIFICATIONS.

6. THE CONTRACTOR SHALL SELECTIVELY CLEAR ONLY THE AREAS REQUIRED FOR CONSTRUCTION AND STABILIZE ANY POTENTIAL EROSION AREAS IMMEDIATELY FOLLOWING COMPLETION OF CONSTRUCTION.

7. CONTRACTOR SHALL KEEP ANY AND ALL SAND, SILT OR OTHER DEBRIS FROM MOVING OFF-SITE. USE AND MAINTAIN SILT FENCE JUST INSIDE THE LIMITS OF CONSTRUCTION.

8. CONTRACTOR SHALL BLOCK INTRUSION OF SAND, SILT OR OTHER DEBRIS INTO ANY DRAINAGE OR SANITARY SEWER STRUCTURE OR PIPING ON OR ADJACENT TO THE SITE.

9. ALL CLEARED AREAS FOR IMPROVEMENT AND/OR CONSTRUCTION SHALL BE WATERED TO PREVENT WIND EROSION.

10. FOR ADDITIONAL INFORMATION AND DETAILS, SEE STATE OF FLORIDA EROSION AND SEDIMENT CONTROL MANUAL.

11. UNLESS SPECIFIED, SILT FENCES MAY BE USED IN LIEU OF SYNTHETIC BARRIERS.

12. ADDITIONAL POSTS AND RAILS MAY BE NECESSARY TO SECURE AND SUPPORT BARRIERS.

13. ADDITIONAL BARRIER LENGTHS MAY BE REQUIRED BY THE GOVERNING JURISDICTION OR BY OTHER REGULATORY AGENCIES.

14. FILTER FABRIC MUST BE INSTALLED UNDER ALL INLET GRATES, AT ALL TIMES WHEN INLETS ARE NOT PROTECTED BY SILT FENCE OR SYNTHETIC BALES/WATTLES, UNTIL THE LIMEROCK BASE IS FINISHED AND PRIMED.

15. THE BOTTOM AND SIDE SLOPES OF RETENTION PONDS SHALL BE UNDER EXCAVATED BY ROUGHLY 12 INCHES AT THE BEGINNING OF CONSTRUCTION. ONCE THE ENTIRE SITE IS STABILIZED, THE RETENTION POND SHALL BE EXCAVATED TO THE DESIGN DEPTH AND STABILIZED WITH SEED OR SOD AS SPECIFIED IN THE LANDSCAPING PLANS. NO MUCK GROWN SOD SHALL BE USED.

GC NOTES:

A COPY OF THIS SHEET C0 SHALL BE PROVIDED TO ALL BIDDERS AND SUB-CONTRACTORS.

GENERAL NOTES

THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE SITE CONDITIONS AND THESE PLANS PRIOR TO THE START OF CONSTRUCTION. ANY CONFLICTS BETWEEN CONDITIONS IN THE FIELD AND THESE PLANS SHALL BE REPORTED TO THE ENGINEER OF RECORD AT ONCE.

A. GENERAL

1. ALL INFRASTRUCTURE AND IMPROVEMENTS SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE LOCAL JURISDICTION AND WILL BE SUBJECT TO THEIR INSPECTION AND ACCEPTANCE.

2. SITE LOCATION: STATE ROAD 19, SOUTH OF REVELS ROAD, HOWEY IN THE HILLS, FLORIDA 34737.

3. THIS SITE LIES IN FLOOD ZONE X & A, F.I.R.M. PANEL NO. 120585, HOWEY IN THE HILLS, STATE. DATED DECEMBER 18, 2012.

4. BOUNDARY, TOPOGRAPHIC, AND TREE SURVEY BY IRELAND & ASSOCIATES SURVEYING, INC., 800 CURRENCY CIRCLE, SUITE 1020 LAKE MARY, FLORIDA 32746.

5. BENCHMARK – REFER TO TOPOGRAPHIC SURVEY BY IRELAND & ASSOCIATES SURVEYING, INC.

6. LEGAL DESCRIPTION SHOWN HEREIN IS FURNISHED BY SURVEYOR, AND IS INCLUDED FOR PERMITTING AND APPROVAL PURPOSES, AND AS A COURTESY FOR THE CONTRACTOR. THE ENGINEER ASSUMES NO LIABILITY FOR ITS ACCURACY OR COMPLETENESS.

7. SITE GEOTECHNICAL INVESTIGATION PERFORMED BY GEO-TECHNOLOGY ASSOCIATES, INC.. THE CIVIL ENGINEER ASSUMES NO RESPONSIBILITY FOR THE CORRECTNESS, ACCURACY AND COMPLETENESS OF THEIR WORK. THE CONTRACTOR SHALL OBTAIN A COPY OF THE GEOTECHNICAL ENGINEER'S REPORT FOR THIS SITE AND COMPLY WITH RECOMMENDATIONS CONTAINED THEREIN. IF ADDITIONAL SERVICES ARE REQUIRED, THE CONTRACTOR SHALL MAKE A REQUEST TO THE OWNER.

8. CONTRACTOR SHALL PROVIDE AND INSTALL EROSION CONTROL DEVICES (SILT FENCE OR OTHER METHODS) AT LIMITS OF CONSTRUCTION AND AROUND EACH STORM INLET PRIOR TO CONSTRUCTION, AND SHALL MAINTAIN SAID EROSION CONTROL DEVICES DURING CONSTRUCTION, ALL IN CONFORMANCE WITH CURRENT LOCAL, COUNTY AND STATE CRITERIA.

9. THE SITE SHALL BE CLEARED AS MAY BE NOTED ON THE PLANS, OF ALL OBSTRUCTIONS AND DELETERIOUS MATERIAL SUCH AS FENCES, WALLS, FOUNDATIONS, LOGS, SHRUBS, BRUSH, WEEDS, OTHER VEGETATION, AND ACCUMULATION OF RUBBISH OF WHATEVER NATURE. OFF-SITE DISPOSAL, INCLUDING ANY HAZARDOUS MATERIAL ENCOUNTERED, SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, AND FEDERAL RULES AND REGULATIONS.

10. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS PRIOR TO START OF CONSTRUCTION.

11. THE CONTRACTOR SHALL REMAIN SOLELY RESPONSIBLE FOR ANY DESIGN CHANGES WHICH HE MAY INCORPORATE INTO THE PLANS WITHOUT PRIOR WRITTEN CONSENT AND/OR APPROVAL FROM THE OWNER AND THE ENGINEER.

12. THE CONTRACTOR SHALL COORDINATE ALL WORK WITHIN EACH EXISTING RIGHT OF WAY WITH THE CITY OF HOWEY IN THE HILLS AND FLORIDA DEPARTMENT OF TRANSPORTATION.

13. THE CONTRACTOR SHALL RESTORE OFF-SITE AREAS TO A CONDITION EQUAL TO OR BETTER THAN THE CONDITION EXISTING PRIOR TO COMMENCEMENT OF CONSTRUCTION.

14. ALL DISTURBED AREAS SHALL BE SODDED.

15. AT LEAST 30 DAYS PRIOR TO ANTICIPATED COMPLETION OF SITE CONSTRUCTION, THE FINAL CERTIFICATION PROCESS WILL BEGIN. THE CONTRACTOR SHALL PROVIDE DOCUMENTS AND INFORMATION, IN A TIMELY MANNER, TO ENGINEER, INCLUDING, WITHOUT LIMITATION:
   a. SURVEYED "AS-BUILTS" MEETING THE REQUIREMENTS OF THE LOCAL JURISDICTION.
   b. COMPACTION AND DENSITY TEST REPORTS, AND
   c. PRESSURE TESTING AND BACTERIOLOGICAL TESTING RESULTS, AS REQUIRED, FOR WATER DISTRIBUTION AND/OR WASTEWATER COLLECTION/TRANSMISSION SYSTEMS.

THE CONTRACTOR SHALL HAVE TWO (2) SETS OF AS-BUILT PLANS, SIGNED AND SEALED BY SURVEYOR OF RECORD, ON SITE THE DAY OF THE CIVIL ENGINEERING FINAL PUNCH LIST INSPECTION. THE GENERAL CONTRACTOR IS TO GIVE THE TWO AS-BUILT PLANS TO THE REPRESENTATIVE FROM Z DEVELOPMENT SERVICES COMPLETING THE INSPECTION. IF ANY DEFICIENCIES ARE NOTED, ONE SET OF RED-LINED AS-BUILT PLANS WILL BE GIVEN TO THE GC FOR REVISIONS TO BE MADE. REVISED AS-BUILTS WILL NEED TO BE FORWARDED TO THE ENGINEER BEFORE ANY CERTIFICATIONS CAN BE INITIATED.

16. ALL TRAFFIC CONTROL DEVICES, EQUIPMENT AND INSTALLATION SHALL MEET THE REQUIREMENTS OF THE LOCAL JURISDICTION AND/OR FLORIDA DEPARTMENT OF TRANSPORTATION.

17. VEHICLE PARKING SPACES SHALL CONFORM WITH LOCAL CODE. ACCESSIBLE PARKING SPACES AND ACCESS ROUTES SHALL FURTHER CONFORM WITH CURRENT ADA REQUIREMENTS.

18. ACCESSIBLE PARKING PAVEMENT MARKINGS AND SIGNAGE SHALL CONFORM WITH CURRENT ADA REQUIREMENTS AND LOCAL ORDINANCE.

19. LANDSCAPE SHALL BE TRIMMED TO ENSURE SIGHT VISIBILITY OF TRAFFIC CONTROL DEVICES.

20. ALL PAVEMENT IS DIMENSIONED TO FACE OF CURB.

21. ALL BUILDING DIMENSIONS AND TIES ARE TO FACE OF BUILDING. SEE ARCHITECTURAL PLANS.

22. ALL PARKING LOT CURB RETURN RADII ARE 3' UNLESS OTHERWISE NOTED.

23. BUILDING AND SITE IMPROVEMENTS ARE PARALLEL AND PERPENDICULAR TO THE EAST PROPERTY LINE UNLESS OTHERWISE NOTED.

UTILITY NOTES

PRIOR TO COMMENCING ANY CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES, INCLUDING WITHOUT LIMITATION POTABLE WATER, RECLAIMED WATER, SANITARY SEWER, AND SERVICE UTILITIES, AT POINTS OF CONNECTION, POINTS OF CROSSING, AND/OR POTENTIAL CONFLICT. NOTIFY ENGINEER OF ANY DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS.

A. GENERAL

1. THE LOCATIONS OF EXISTING UTILITIES, SUCH AS WATER MAINS, SEWERS, GAS LINES, ETC., SHOWN ON THE PLANS ARE BASED ON THE BEST AVAILABLE INFORMATION AND ARE SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER AND OWNER ASSUME NO LIABILITY FOR ACCURACY AND COMPLETENESS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ALL UTILITY COMPANIES AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION OR DEMOLITION AND TO HAVE THEIR FACILITIES LOCATED IN THE FIELD PRIOR TO ANY WORK.

2. DUE TO GRAPHIC LIMITATIONS OF THE DRAWING SCALE, ALL STORM SEWER, DRAINAGE, WATER AND SANITARY SEWER MAINS, SERVICES, LATERALS, CONNECTIONS, AND APPURTENANCES DEPICTED HEREIN – UNLESS OTHERWISE LOCATED BY DIMENSIONS – REFLECT SCHEMATIC LOCATIONS ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FINAL LOCATIONS DURING THE CONSTRUCTION AND INSTALLATION OF THE PROPOSED IMPROVEMENTS, INCLUDING ANY REQUISITE COORDINATION WITH THE RESPECTIVE GOVERNING AGENCY/UTILITY PROVIDER.

3. ALL WATER AND SEWER CONSTRUCTION SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE CITY OF HOWEY IN THE HILLS, AND WILL BE SUBJECT TO THEIR INSPECTION AND ACCEPTANCE.

4. CONTRACTOR SHALL INSPECT PIPING AND MATERIALS BEFORE INSTALLATION TO DETECT APPARENT DEFECTS. MARK DEFECTIVE MATERIALS WITH WHITE PAINT AND PROMPTLY REMOVE FROM SITE.

5. LAY SEWER PIPING BEGINNING AT LOW POINT OF SYSTEM (CONNECTION TO OFF SITE SYSTEM OR PUMP STATION), TRUE TO GRADES AND ALIGNMENT INDICATED WITH UNBROKEN CONTINUITY OF INVERTS. PLACE BELL ENDS OR GROOVE ENDS OF PIPING FACING UPSTREAM.

6. CLEAR INTERIOR OF PIPE OF DIRT AND OTHER SUPERFLUOUS MATERIAL AS WORK PROGRESSES. MAINTAIN SWAB OR DRAG IN LINE AND PULL PAST EACH JOINT AS IT IS COMPLETED. PLACE PLUGS IN ENDS OF UNCOMPLETED CONDUIT WHENEVER WORK STOPS.

7. MAINTAIN 36" COVER OVER MAINS, AND 30" OVER SERVICES/LATERALS UNLESS OTHERWISE NOTED.

8. WHEN PROPOSED CONSTRUCTION OCCURS AT EXISTING MANHOLES, INLETS, VAULTS, AND OTHER STRUCTURES, THE CONTRACTOR SHALL MODIFY THE STRUCTURES, FRAMES, AND GRATES TO MEET THE PROPOSED GRADES UNLESS OTHERWISE DIRECTED.

9. INSTALL CONTINUOUS LOCATOR TAPE/WIRE, LOCATED DIRECTLY OVER POTABLE WATER MAINS AND SANITARY SEWER MAINS AT 6" TO 8" ABOVE PIPE.

10. WHERE APPLICABLE, UTILITY TRENCHES CROSSING PAVEMENT AREAS SHALL BE BACK FILLED WITH COMPACTED GRANULAR MATERIAL IN ACCORDANCE WITH A.A.S.H.T.O.-T-99.

11. CONTRACTOR SHALL PROVIDE SLEEVES FOR IRRIGATION LINES AND SITE LIGHTING UNDER PAVEMENT. COORDINATE WITH GENERAL CONTRACTOR.

12. ALL TRENCHES EXCAVATED FOR THE PURPOSES OF UTILITY/STORM INSTALLATION SHALL BE KEPT DRY FOR THE DURATION OF UTILITY/STORM CONSTRUCTION. DEWATERING OF UTILITY/STORM TRENCHES MAY BE REQUIRED TO PREVENT FLOATATION OF UTILITY/STORM PIPES DURING INSTALLATION.

13. THE CONTRACTOR SHALL NOTIFY THE ENGINEER WHEN CONSTRUCTION IS COMPLETE FOR WATER, WASTEWATER AND STORMWATER SYSTEMS SO TIMELY CERTIFICATIONS MAY BE INITIATED. SATISFACTORY BACTERIOLOGICAL TEST RESULTS, PRESSURE TEST RESULTS, AND AN AS BUILT SURVEY SHALL BE SUBMITTED TO ENGINEER PRIOR TO FINAL CERTIFICATION.

14. SUITABLE COUPLINGS COMPLYING WITH ASTM SPECIFICATIONS ARE REQUIRED FOR JOINING DISSIMILAR MATERIALS.

15. DEFLECTION TESTS ARE REQUIRED FOR ALL FLEXIBLE PIPE. TESTING REQUIREMENTS: 1) NO PIPE SHALL EXCEED A DEFLECTION OF 5%; 2) USING A RIGID BALL OR MANDREL FOR THE DEFLECTION TEST WITH A DIAMETER NOT LESS THAN 95% OF THE BASE INSIDE DIAMETER OR AVERAGE INSIDE DIAMETER OF THE PIPE; 3) PERFORMING THE TEST WITHOUT MECHANICAL PULLING DEVICES.

B. MATERIALS (WATER)

1. SERVICE PIPE SHALL BE POLYETHYLENE (PE) TUBING, DR9 MINIMUM.

2. **WATER MAINS SHALL BE PVC ASTM C900, DR 14 WITH INTEGRAL BELLS AND ELASTOMERIC JOINTS PER ASTM C3139 AND GASKETS PER ASTM F477.**

3. DUCTILE IRON PIPE (D.I.P.), IF REQUIRED, SHALL CONFORM TO ANSI/AWWA A21.51/C151, CLASS 50 (MIN.) PIPE FOR ALL SIZES.

4. CORPORATION STOPS SHALL BE BRASS, SIZED TO MATCH THE TAP DIAMETER, EQUIPPED WITH CONNECTIONS COMPATIBLE WITH SERVICE PIPE AND THREADED IN ACCORDANCE WITH SPECIFICATIONS IN AWWA C800. CURB STOPS SHALL BE SIZED TO MATCH THE METER SIZE AND CONFORM WITH AWWA C800 AND AWWA C901.

5. FITTINGS SHALL BE BRASS, CAST AND MACHINED IN ACCORDANCE WITH AWWA C800 AND AWWA C901, WITH COMPATIBLE PIPE CONNECTIONS.

6. TAPPING SADDLES SHALL BE USED FOR ALL SERVICE LINE TAPS. SERVICE SADDLES SHALL BE DOUBLE STRAP, ANCHORED BY A MINIMUM FOUR (4) BOLT PATTERN ON A DUCTILE IRON SADDLE BODY. FOR PVC PIPE, DOUBLE STRAPS SHALL BE CORROSION RESISTANT ALLOY STEEL, SIZED EXACTLY TO THE PIPE OUTSIDE DIAMETER. SEALING GASKETS SHALL BE BUNA-N RUBBER.

7. ALL POTABLE WATER PIPE AND PIPE FITTINGS INSTALLED UNDER THIS PROJECT SHALL BE BLUE IN COLOR VIA INTEGRAL PIPE COLOR, STRIPING, OR OTHER METHODS.

C. MATERIALS (SEWER)

1. ALL GRAVITY SEWER PIPE AND FITTINGS SHALL BE NON-PRESSURE POLYVINYL CHLORIDE PIPE (PVC) CONFORMING TO ASTM D 3034, SDR 26, WITH PUSH-ON RUBBER GASKET JOINTS.

2. ALL FITTINGS AND ACCESSORIES SHALL BE MANUFACTURED OR SUPPLIED BY THE PIPE MANUFACTURER OR PRIOR-APPROVED EQUAL.

3. BEDDING AND INITIAL BACK FILL OVER SEWER MAINS AND SERVICES SHALL BE SAND WITH NO ROCK LARGER THAN 1" IN DIAMETER.

D. MATERIALS (STORM)

1. REINFORCED CONCRETE PIPE (RCP): O-RING PIPE SHALL CONFORM TO ASTM C 76 (CLASS III, UNLESS OTHERWISE SPECIFIED) AND AASHTO M 170 STANDARD SPECIFICATIONS, AND ASTM C 443 STANDARD SPECIFICATION FOR JOINTS FOR RCP USING RUBBER GASKETS.

2. ELLIPTICAL RCP SHALL CONFORM TO ASTM C 507 (CLASS III) AND AASHTO M 207 STANDARD SPECIFICATIONS.

3. HDPE PIPE AND FITTINGS SHALL MEET THE REQUIREMENTS OF AASHTO M-252 (3"-10"), M-294 (12" AND LARGER), TYPE S (CORRUGATED OUTSIDE – SMOOTH INSIDE, 4"-60"), AND MP7 (60" TYPE S).

   A. BELL/SPIGOT GASKET FOR HDPE PIPE SHALL BE SOIL/SILT TIGHT PER AASHTO SECTION 26 WITH RUBBER GASKET MEETING ASTM F-477.

4. PVC STORM SEWER PIPE (12" OR LESS) AND FITTINGS SHALL BE NON-PRESSURE POLYVINYL CHLORIDE PIPE (PVC) CONFORMING TO ASTM D3034, SDR26, WITH PUSH-ON RUBBER GASKET JOINTS.

UTILITY DISINFECTING & TESTING NOTES

WATER MAINS THAT ARE INCLUDED IN THIS PROJECT THAT WILL BE CONSTRUCTED OF POLYVINYL CHLORIDE PIPE WILL BE PRESSURE AND LEAKAGE TESTED IN ACCORDANCE WITH AWWA STANDARD C605. ALL OTHER WATER MAINS INCLUDED IN THIS PROJECT WILL BE PRESSURE AND LEAKAGE TESTED IN ACCORDANCE WITH AWWA STANDARD C600.

LEAKAGE TESTS ARE REQUIRED AS FOLLOWS: 1) THE LEAKAGE EXFILTRATION OR INFILTRATION DOES NOT EXCEED 200 GALLONS PER INCH OF PIPE DIAMETER PER MILE PER DAY FOR ANY SECTION OF THE PIPE; 2) EXFILTRATION OR INFILTRATION TESTS BE PERFORMED WITH A MINIMUM POSITIVE HEAD OF 2 FEET; 3) AIR TESTS, AS A MINIMUM, CONFORM TO THE TEST PROCEDURE DESCRIBED IN ASTM C 828 FOR CLAY PIPE, ASTM C 924 FOR CONCRETE PIPE, ASTM F-1417 FOR PLASTIC PIPE, AND FOR OTHER MATERIALS APPROPRIATE TEST PROCEDURES.

DISINFECTION OF THE WATER DISTRIBUTION SYSTEM SHALL BE PERFORMED IN ACCORDANCE WITH AWWA C651 DISINFECTING WATER MAINS. SATISFACTORY BACTERIOLOGICAL TEST RESULTS SHALL BE SUBMITTED TO ENGINEER PRIOR TO FINAL CERTIFICATION.

THE CONTRACTOR SHALL MAKE PROVISIONS TO PROTECT THE ACTIVE EXISTING MAIN FROM BACKFLOW CONTAMINATION DURING FILLING, FLUSHING, AND TESTING OF THE NEW MAIN, AS SPECIFIED IN AWWA C651-92.

CONTRACTOR SHALL UTILIZE A JUMPER CONNECTION DURING WATER MAIN TESTING. ALTERNATE TYPES OF BACKFLOW PREVENTION MAY BE UTILIZED AS APPROVED BY INSPECTION STAFF AND ENGINEER.

UTILITY SEPARATION NOTES

1. NEW OR RELOCATED, UNDERGROUND WATER MAINS INCLUDED IN THIS PROJECT WILL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER, STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.; A HORIZONTAL DISTANCE OF AT LEAST SIX FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY-TYPE SANITARY SEWER (OR A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY-TYPE SANITARY SEWER IF THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER); A HORIZONTAL DISTANCE OF AT LEAST SIX FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.; AND A HORIZONTAL DISTANCE OF AT LEAST TEN FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM."

2. NEW OR RELOCATED, UNDERGROUND WATER MAINS THAT ARE INCLUDED IN THIS PROJECT AND THAT WILL CROSS ANY EXISTING OR PROPOSED GRAVITY – OR VACUUM – TYPE SANITARY SEWER OR STORM SEWER WILL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES ABOVE THE OTHER PIPELINE OR AT LEAST 12 INCHES BELOW THE OTHER PIPELINE; AND NEW OR RELOCATED, UNDERGROUND WATER MAINS THAT ARE INCLUDED IN THIS PROJECT AND THAT WILL CROSS ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER , WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER WILL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 12 INCHES ABOVE OR BELOW THE OTHER PIPELINE.

3. AT THE UTILITY CROSSINGS DESCRIBED ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE OR THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C., AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY – OR PRESSURE – TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

UTILITY CONTACTS

STORM DRAINAGE	ST. JOHNS RIVER WATER MANAGEMENT DISTRICT JACKSONVILLE SERVICE CENTER 7775 BAYMEADOWS WAY, SUITE 102 JACKSONVILLE, FL 32256 PHONE: (904) 730-6270
SEWER / WATER	TOWN OF HOWEY IN THE HILLS 316 W. CENTRAL AVENUE HOWEY-IN-THE-HILLS, FL 34737 352-805-0135 JAMES SOUTHALL NOTE: PUBLIC WATER AND SEWER SERVICE ARE NOT AVAILABLE TO THIS SITE
ELECTRIC	SUMTER ELECTRIC COOPERATIVE INC 390 N ORANGE AVENUE ORLANDO, FL 320801 352-569-9642 JANET COX
COMMUNICATION	UNITI FIBER LLC 805 EXECUTIVE CENTER DRIVE W SAINT PETERSBURG, FL 33702 251-214-7059 CHARLIE CROFT
PHONE / FIBER	CENTURY LINK 1806 WINTER PARK ROAD ORLANDO, FL 32789 850-599-1444 BILL MCCLOUD

SITE DATA

SITE AREA	193,897 SF	(±4.45 AC)
PERVIOUS AREA	154,395 SF	(79.6%) } (100%)
IMPERVIOUS AREA	39,502 SF	(20.4%) }
BUILDING AREA	6,000 SF	(3.1%)
PAVEMENT	33,502 SF	(17.3%)
ZONING	NC (NEIGHBORHOOD COMMERCIAL)	
BUILDING HEIGHT	30.5 FEET	

BUILDING SETBACKS	REQUIRED	PROVIDED
FRONT (EAST, U.S. 19)	30 FT	74.5 FT
SIDE (NORTH)	20 FT	44.7 FT
SIDE (SOUTH)	20 FT	609.4 FT
REAR (WEST)	30 FT	117.5 FT
LANDSCAPE BUFFER		
FRONT (EAST, U.S. 19)	15 FT	15 FT
SIDE (NORTH)	10 FT	10 FT
SIDE (SOUTH)	10 FT	N/A FT
REAR (WEST)	10 FT	N/A FT

PARKING REQUIRED

1 SPACE PER 200 S.F. OF GROSS FLOOR AREA
= 6,000 S.F./ 200 S.F.
= 30 PARKING SPACES

PARKING PROVIDED

REGULAR	38 SPACES
ACCESSIBLE	2 SPACES
TOTAL	40 SPACES

LEGEND

	PROPOSED
PROPOSED CONTOUR	73.50
MEET EXISTING GRADE	MEG
EDGE OF PAVEMENT	EOP
SIDEWALK	SW
GRADE BREAK	GB
SPOT ELEVATION	12.55
DIRECTION OF FLOW AND PERCENT SLOPE	1.0%
STORM SEWER & INLET	
DOWN SPOUT DRAINS	DSD
SANITARY SEWER & MANHOLE	SS
CLEANOUT	SS C.O.
WATER SERVICE	W
FIRE HYDRANT	W
WATER METER	W M W
BACKFLOW PREVENTION DEVICE	W RPZ W
GATE VALVE	W W
REDUCER	W W
UNDERGROUND TELEPHONE	UGT
UNDERGROUND ELECTRIC	UGE
SITE LIGHTING	
TRANSFORMER	T
AIR CONDITIONING UNIT	AC
PARKING SPACE TOTALS	8
6" CURBING WITH DIMENSION (TO FACE OF CURB U.N.O.)	12'
DETAIL NUMBER / SHEET NUMBER	3 / C4

Z DEVELOPMENT SERVICES
CIVIL ENGINEERING CONSULTANTS
CA 29354
1201 E. ROBINSON STREET
ORLANDO, FL 32801
PH: (407) 271-8910

DATE

REVISION

ROBERT ZIEGENFUSS, P.E., LEED AP
FL REG. # 56752

This item has been digitally signed and sealed by ROBERT ZIEGENFUSS on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VETERINARY OFFICE
STATE ROAD 19
SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FL 34737

DATE: 08/28/24
DRAWN: LF
CHECKED: DL

C0
CIVIL DATA AND NOTES

PROJECT NO.: 2023.179

REFER TO SHEET C0 FOR GENERAL NOTES, SPECIFICATIONS AND LEGENDS IN ADDITION TO SITE SPECIFIC NOTES AND REQUIREMENTS.

CONTRACTOR'S NOTE:
SEE LANDSCAPE PLANS FOR TREES TO REMAIN AND/OR BE REMOVED.

-Benchmark Information-
National Geodetic Survey Datum
Designation - Z 430
PID - AB5338
Elevation - 86.88'
(Elevations are based upon NAVD 88 Datum)

-Site Benchmark Information-
#1
Fnd. 1/2" Rebar & Cap "LB # 7623".
Elevation: 100.44'

#2
Fnd. 1/2" Rebar & Cap "LB # 7623".
Elevation: 97.21'

BEFORE YOU DIG !
CALL SUNSHINE STATE ONE CALL OF FLORIDA
AT LEAST TWO FULL BUSINESS DAYS BEFORE
DIGGING OR DISTURBING EARTH
811
Know what's below.
Call before you dig.

DEMOLITION NOTES

1. PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL COORDINATE ACTIVITIES WITH ALL UTILITY SERVICE PROVIDERS IN THE AREA. THE LOCATION OF ALL EXISTING UTILITIES SHOULD BE VERIFIED PRIOR TO ANY EXCAVATION ACTIVITIES.

2. THE CONTRACTOR SHALL COMPLETELY REMOVE AND DISPOSE OF ALL STRUCTURES AND OTHER IMPROVEMENTS AS NOTED ON THE PLANS. THIS INCLUDES FOUNDATIONS, TIMBER, BRUSH, STUMPS, ROOTS, PAVEMENT AND BASE MATERIAL AND OTHER STRUCTURES AS SHOWN OR REASONABLY IMPLIED IN THE DRAWINGS.

3. WHERE EXISTING BUILDINGS ARE TO BE DEMOLISHED, ALL TRACES OF FOUNDATIONS AND UNDERGROUND UTILITIES ARE TO BE REMOVED (UNLESS OTHERWISE NOTED ON PLANS). THE CONTRACTOR IS RESPONSIBLE FOR PROPER DISPOSAL OF ALL WASTE MATERIAL.

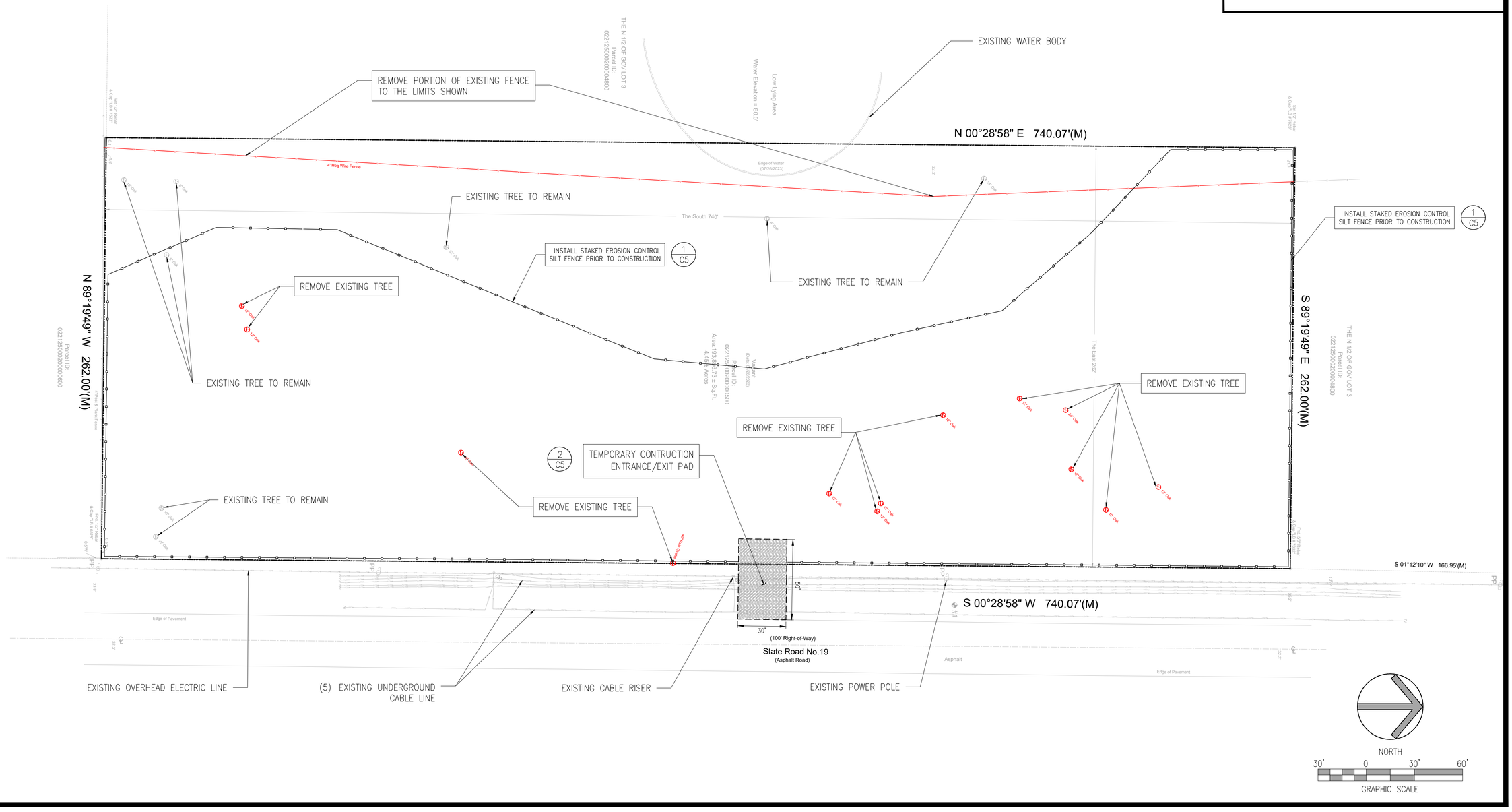
4. WHERE PAVING OR STRUCTURES ARE TO BE REMOVED WHICH ABUT OR ARE A PART OF CONNECTED FACILITIES (THAT ARE OFF-SITE), ANY DAMAGE THAT MIGHT RESULT FROM DEMOLITION IS TO BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN EXISTING UNLESS SPECIFICALLY EXEMPTED BY THE PLANS. THE COST FOR SUCH RESTORATION SHALL BE INCIDENTAL TO OTHER CONSTRUCTION AND NO EXTRA COMPENSATION WILL BE ALLOWED.

5. THE LOCATION OF ALL EXISTING UTILITIES AND TREES SHOWN ON THE PLANS HAVE BEEN DETERMINED BASED UPON THE BEST AVAILABLE INFORMATION. THE ENGINEER AND OWNER ASSUME NO RESPONSIBILITY FOR ACCURACY. ALL UTILITIES, SURFACE IMPROVEMENTS AND TREE LOCATIONS SHOULD BE VERIFIED BY THE CONTRACTOR.

6. THE CONTRACTOR IS TO COORDINATE THE RELOCATION OR REMOVAL OF ALL OVERHEAD/UNDERGROUND UTILITIES, UTILITY POLES, LIGHTS AND LINES IN THE RIGHT-OF-WAY AND ON THE PROPERTY WITH THE APPROPRIATE SERVICE PROVIDER.

7. THE CONTRACTOR SHALL REFERENCE AND RESTORE PROPERTY CORNERS AND LAND MARKERS DISTURBED DURING CONSTRUCTION (UNDER THE DIRECTION OF A REGISTERED LAND SURVEYOR).

8. ALL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO THE START OF DEMOLITION AND SHALL REMAIN IN PLACE UNTIL THE COMPLETION OF CONSTRUCTION.



Z DEVELOPMENT SERVICES
CIVIL ENGINEERING CONSULTANTS
CA 29354
1201 E. ROBINSON STREET
ORLANDO, FL 32801
PH: (407) 271-8910

DATE	REVISION

ROBERT ZIEGENFUSS, P.E., LEED AP
FL. REG. # 56752

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VETERINARY OFFICE
STATE ROAD 19
SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FL 34737

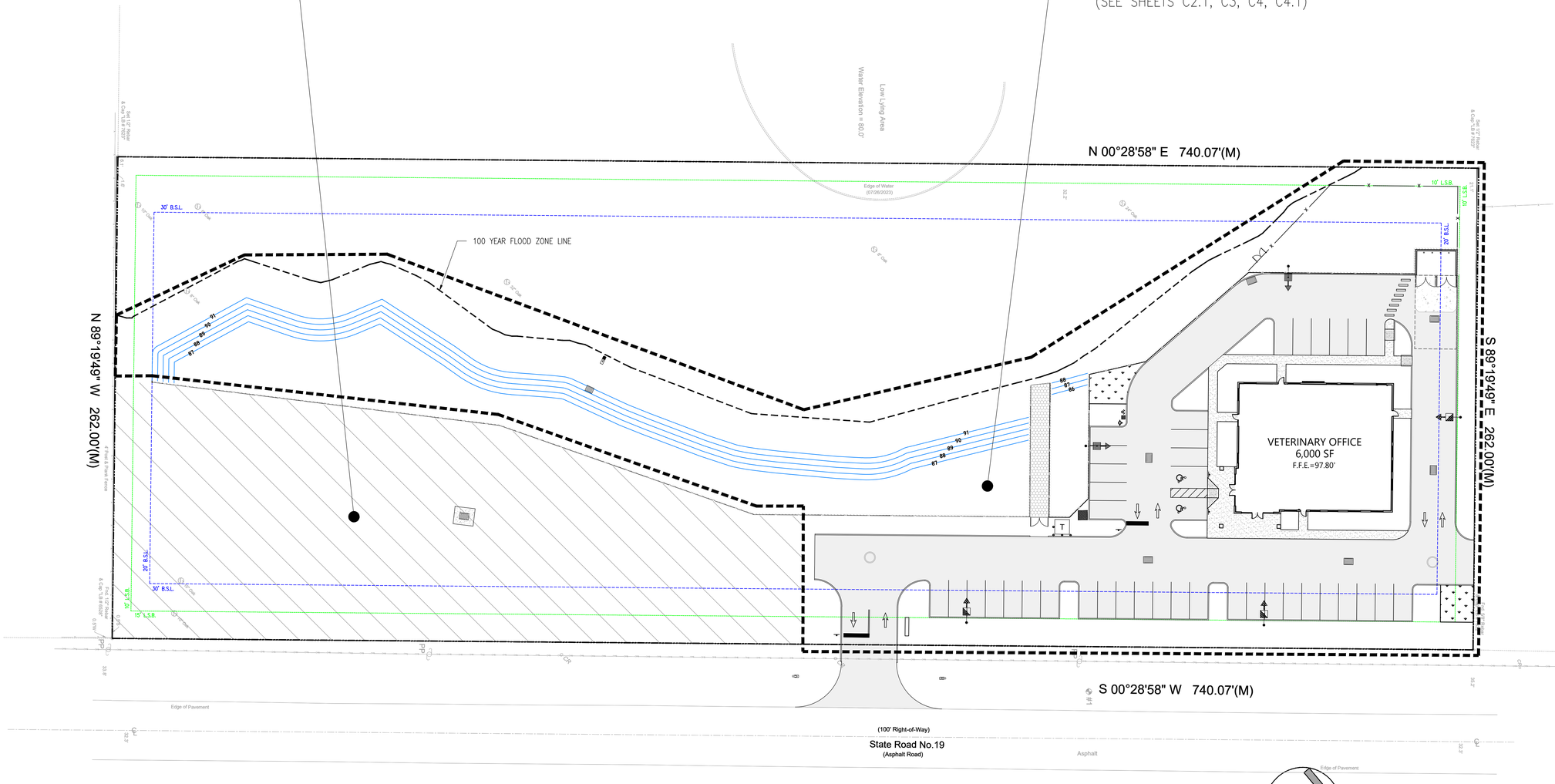
DATE: 08/28/24
DRAWN: LF
CHECKED: DL

C1
DEMOLITION PLAN

PROJECT NO.: 2023.179

FUTURE DEVELOPMENT
APPROXIMATE AREA = 42,383 SF (±0.97 AC)

PORTION OF SITE DESIGNATED FOR VETERINARY OFFICE DEVELOPMENT (INCLUDING PROPOSED POND)
APPROXIMATE AREA = 133,502 SF (±3.06 AC)
(SEE SHEETS C2.1, C3, C4, C4.1)



NORTH

30' 0 30' 60'

GRAPHIC SCALE

BEFORE YOU DIG !
CALL SUNSHINE STATE ONE CALL OF FLORIDA
AT LEAST TWO FULL BUSINESS DAYS BEFORE DIGGING OR DISTURBING EARTH
811 Know what's below. Call before you dig.

GC NOTE:
A COPY OF SHEET C0 SHALL BE PROVIDED TO ALL BIDDERS AND SUB-CONTRACTORS

CONTRACTOR'S NOTE:
CONTRACTOR SHALL PROVIDE A COMPREHENSIVE ASBUILT SURVEY FOR THE PROJECT AS REQUIRED BY THE GOVERNING AGENCY. CONTACT THE ENGINEER OF RECORD FOR THE REQUIREMENTS OF THE AS-BUILT SURVEY.

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CA 29354

REVISION	DATE

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SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FL 34737

DATE: 08/28/24
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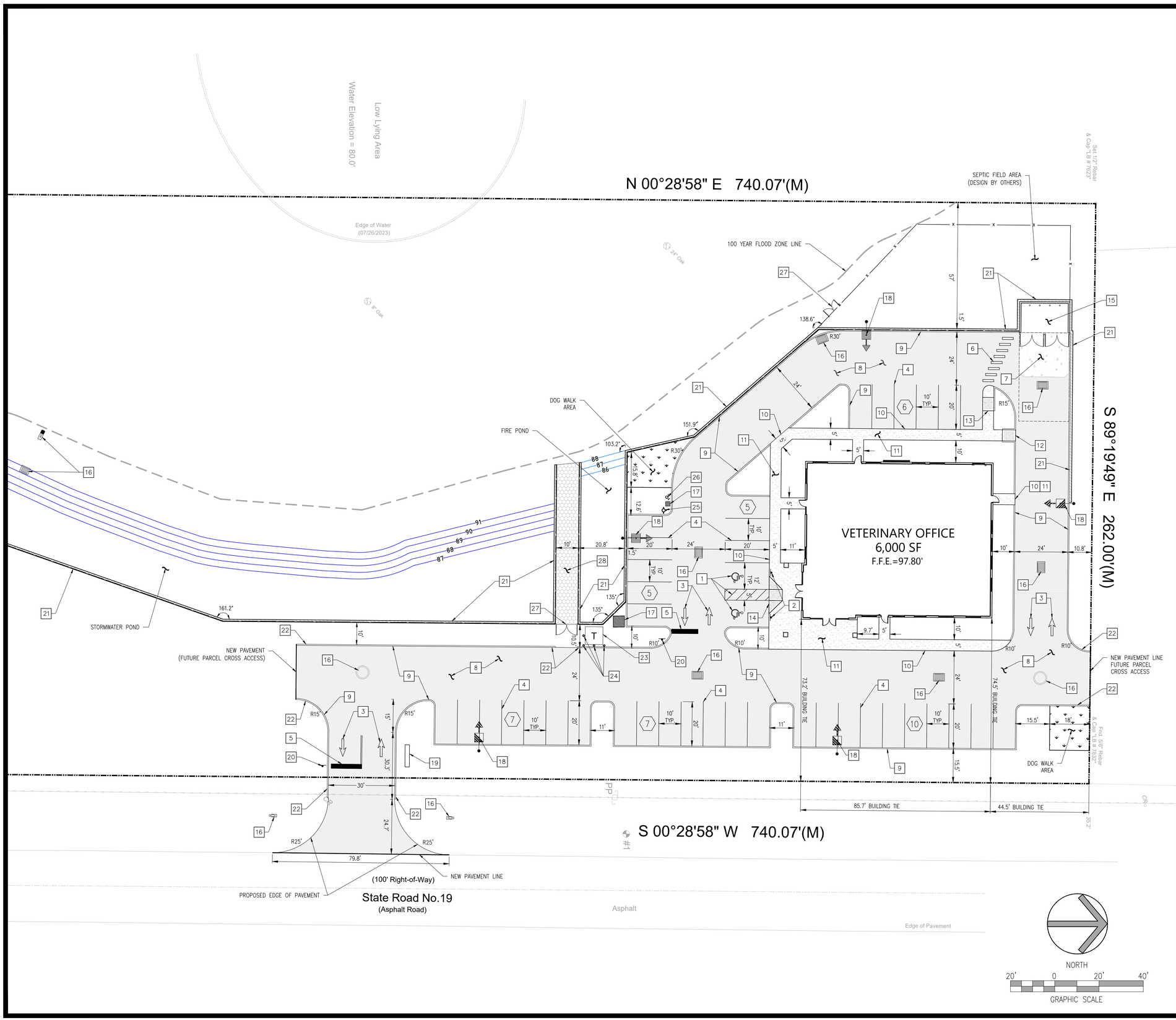
CHECKED: DL

C2
MASTER SITE PLAN

PROJECT NO.: 2023.179



PLAN NOTES

1. ACCESSIBLE PARKING, STRIPING, & ACCESS AISLE (1/C6)
2. ACCESSIBLE PARKING SIGN – 2 SPACES (2/C6)
3. PAVEMENT MARKING (3/C6)
4. 4" WHITE STRIPING PAINT
5. 24" WHITE STOP BAR
6. CROSSWALK STRIPING
7. CONCRETE PAVEMENT (4/C6)
8. ASPHALT PAVEMENT (5/C6)
9. 6" CONCRETE CURB (11/C6)
10. MONOLITHIC CURB AND SIDEWALK (12/C6)
11. CONCRETE WALK W/ EXPANSION JOINTS (6/C6)
12. SIDEWALK END RAMP (8/C6)
13. ACCESSIBLE CORNER RAMP (9/C6)
14. FLARED RAMP (10/C6)
15. DUMPSTER ENCLOSURE (REFER TO ARCHITECTURAL PLANS)
16. STORM STRUCTURE (REFER TO SHEET C4)
17. WATER STRUCTURE (REFER TO SHEET C3)
18. SITE LIGHTING (REFER TO SITE LIGHTING PLANS FOR SPECIFICATIONS)
19. MONUMENT SIGN
20. "STOP" SIGN
21. RETAINING WALL (DESIGN BY OTHERS)
    42" ALUMINUM RAIL FENCE TO BE PROVIDED ALONG THE TOP OF THE ENTIRE WALL LENGTH (14/C6)
22. TRANSITION CURB (13/C6)
23. TRANSFORMER
24. BOLLARDS (7/C6)
25. FIRE HYDRANT (SEE SHEET C3)
26. FIRE DEPARTMENT CONNECTION (SEE SHEET C3)
27. DOUBLE GATE
28. GEOGRID MAT

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CONTRACTOR'S NOTE:
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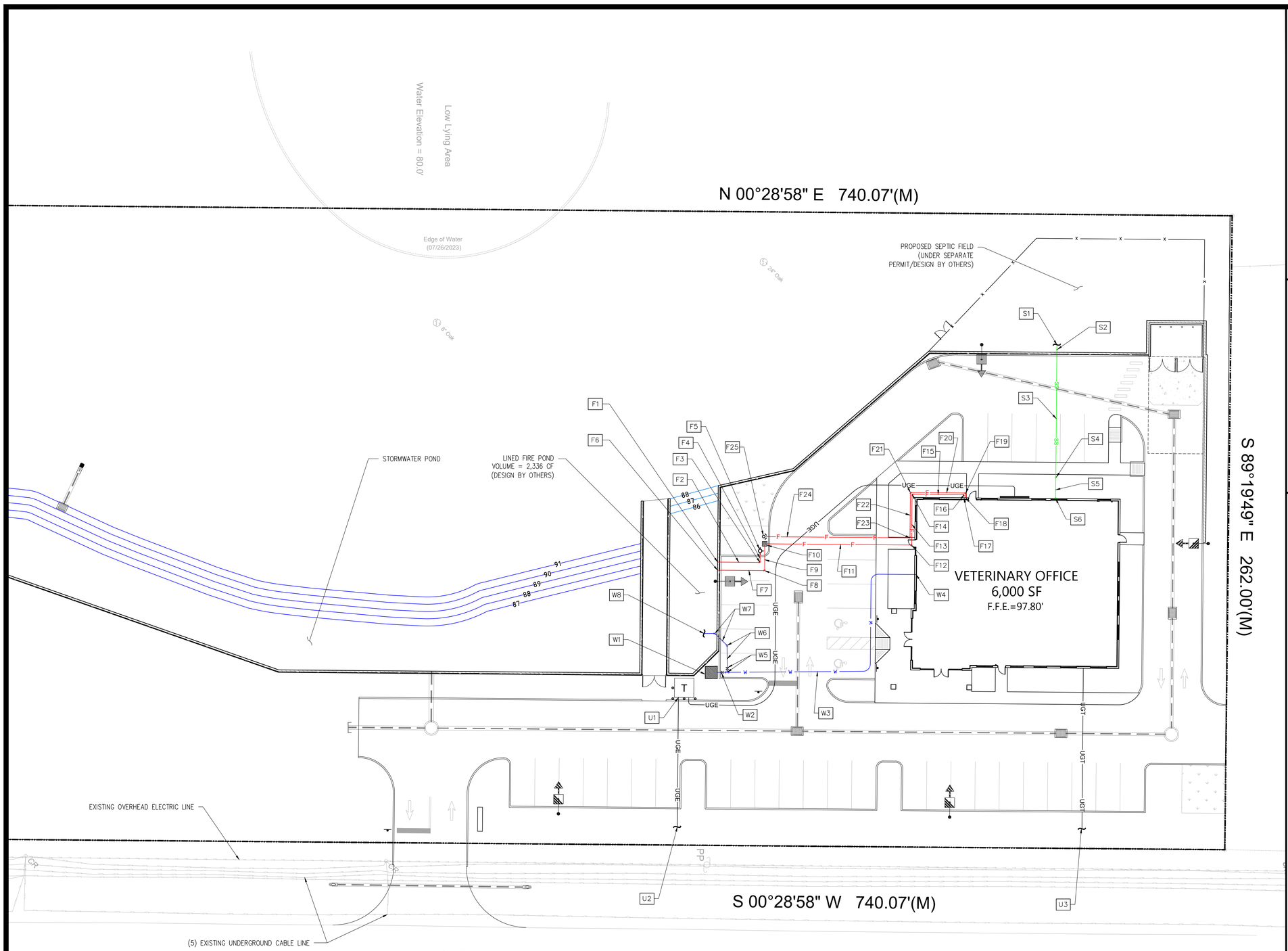
HOWEY IN THE HILLS, FL 34737

DATE: 08/28/24
DRAWN: LF
CHECKED: DL

C2.1
SITE DIMENSION PLAN

PROJECT NO.: 2023.179



ELECTRIC, TELEPHONE AND GAS NOTES

- U1 PROPOSED TRANSFORMER PAD (CONTRACTOR SHALL COORDINATE WITH POWER COMPANY FOR EXACT SIZE, LOCATION AND DETAILS OF PAD)
- U2 CONTRACTOR SHALL COORDINATE WITH POWER COMPANY FOR EXACT NUMBER, SIZE AND DEPTH OF CONDUIT FOR UNDERGROUND ELECTRICAL SERVICE.
- U3 CONTRACTOR SHALL COORDINATE WITH TELEPHONE COMPANY FOR EXACT NUMBER, SIZE AND DEPTH OF CONDUIT FOR UNDERGROUND TELEPHONE SERVICE.

BEFORE YOU DIG ?
CALL SUNSHINE STATE ONE CALL OF FLORIDA
AT LEAST 48 HOURS BUT NOT MORE THAN 10 DAYS BEFORE
DIGGING OR DISTURBING EARTH
811
Know what's below.
Call before you dig.

GC NOTE:
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CONTRACTOR'S NOTE:
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* CONTRACTOR SHALL COORDINATE FIRE LANE STRIPING & FIRE SIGNAGE WITH THE FIRE INSPECTOR OR THROUGH A SEPARATE FIRE PERMITTING PROCESS.

NORTH
20' 0 20' 40'
GRAPHIC SCALE

UTILITY NOTES

CONTRACTOR SHALL REFER TO MEP PLANS & CONFIRM STUB-OUT SIZE, LOCATION, & INVERT & NOTIFY ENGINEER IF DISCREPANCIES EXIST.

SANITARY SEWER NOTES:

- S1 POINT OF DISCHARGE. COORDINATE WITH SEPTIC CONTRACTOR @ ELEV. = 88.90
- S2 DROP CLEANOUT (6/C7) (TYP.)
  INV. IN = 87.80
  INV. OUT = 85.80
- S3 58 LF – 6" PVC SDR26 @ 3.5% SLOPE (2/C7) (TYP.)
- S4 DROP CLEANOUT
  INV. IN = 91.83
  INV. OUT = 89.83
- S5 9 LF – 6" PVC SDR26 @ 3.5% SLOPE
- S6 CONTRACTOR SHALL CONNECT TO STUB-OUT FROM BUILDING USING A DROP CLEANOUT
  INV. IN. = 94.15
  INV. OUT. = 92.15

WATER NOTES:

- W1 POTABLE WATER WELL
- W2 2" GATE VALVE
- W3 81 LF – 2" BLUE PE POTABLE WATER LINE (2/C7) (TYP.)
- W4 POTABLE WATER POINT OF CONNECTION TO BUILDING
- W5 2" X 2" TEE AND 2" GATE VALVE
- W6 11 LF – 2" BLUE PE POTABLE WATER LINE AND 45° BEND
- W7 7 LF – 2" BLUE PE POTABLE WATER LINE AND 45° BEND
- W8 RECHARGE POINT OF FIRE POND

FIRE NOTES:

- F1 POINT OF COLLECTION
- F2 18 LF – 4" PVC C900 FIRE LINE (2/C7) (TYP.)
- F3 90° BEND (4/C7)
- F4 4 LF – 4" PVC C900 FIRE LINE
- F5 FIRE HYDRANT
- F6 POINT OF COLLECTION
- F7 20 LF – 4" PVC C900 FIRE LINE
- F8 90° BEND
- F9 10 LF – 4" PVC C900 FIRE LINE
- F10 FIRE PUMP
- F11 60 LF – 4" PVC C900 FIRE LINE
- F12 90° BEND
- F13 21 LF – 4" PVC C900 FIRE LINE
- F14 90° BEND
- F15 22 LF – 4" PVC C900 FIRE LINE
- F16 90° BEND AND 2 LF – 4" PVC C900 FIRE LINE
- F17 CONNECTION AT BUILDING FIRE ROOM
- F18 CONNECTION AT BUILDING FIRE ROOM
- F19 2 LF – 4" PVC C900 FIRE LINE AND 90° BEND
- F20 23 LF – 4" PVC C900 FIRE LINE
- F21 90° BEND
- F22 19 LF – 4" PVC C900 FIRE LINE
- F23 90° BEND
- F24 60 LF – 4" PVC C900 FIRE LINE
- F25 FDC (FIRE DEPARTMENT CONNECTION)

Z DEVELOPMENT SERVICES
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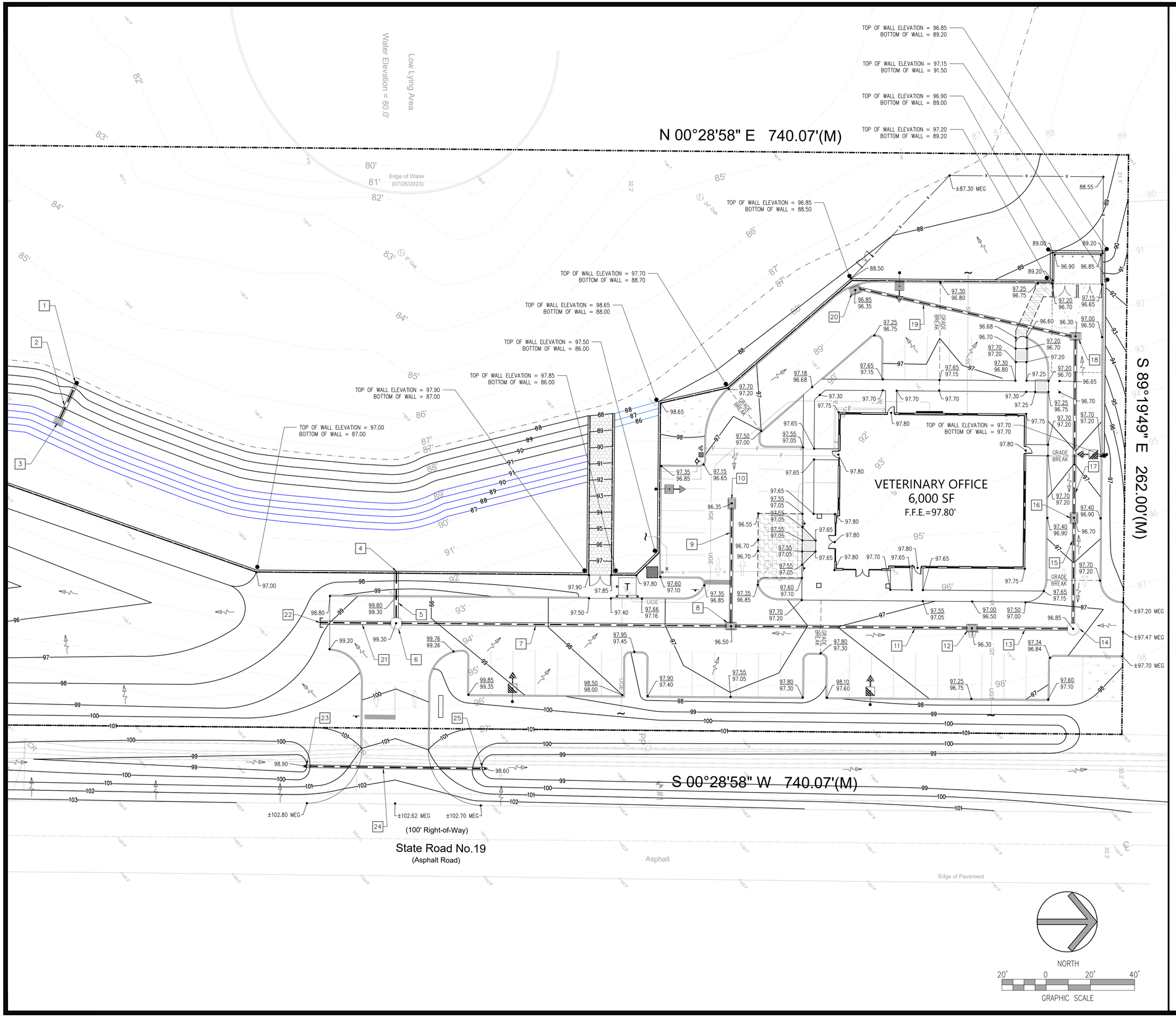
VETERINARY OFFICE
STATE ROAD 19
SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FL 34737

DATE: 08/28/24
DRAWN: LF
CHECKED: DL

C3
UTILITY PLAN

PROJECT NO.: 2023.179



DRAINAGE NOTES

1. MITERED END SECTION @ INV. ELEV. = 88.00 (POINT OF DISCHARGE)
2. 17 LF – 18" RCP @ 1.0% SLOPE — (2/C7 (TYP.)) (1/C7 (TYP.))
3. CONTROL STRUCTURE INV. ELEV. = 88.17 — (5/C7 (TYP.))
4. END OF PIPE @ INV. INV. = 87.00
5. 21 LF – 24" HDPE @ 1.0% SLOPE
6. STORMWATER MANHOLE #1
   TOP OF FRAME = 99.30
   W. INV. (OUT) = 87.21
   N. INV. (IN) = 90.56
   S. INV. (IN) = 91.00
   — (7/C7) (8/C7 (TYP.))
7. 147 LF – 18" HDPE @ 0.5% SLOPE
8. TYPE "F" INLET #1
   TOP OF FRAME = 96.50
   S. INV. (OUT) = 91.30
   W. INV. (IN) = 93.04
   N. INV. (IN) = 91.42
   — (3/C7 (TYP.))
9. 52 LF – 18" HDPE @ 0.5% SLOPE
10. TYPE "F" INLET #2
    TOP OF FRAME = 96.35
    W. INV. (OUT) = 93.30
11. 105 LF – 18" HDPE @ 0.5% SLOPE
12. TYPE "F" INLET #3
    TOP OF FRAME = 96.30
    S. INV. (OUT) = 91.95
    N. INV. (IN) = 92.07
13. 42 LF – 18" HDPE @ 0.5% SLOPE
14. STORMWATER MANHOLE #2
    TOP OF FRAME = 96.85
    S. INV. (OUT) = 91.85
    W. INV. (IN) = 91.97
15. 46 LF – 18" HDPE @ 0.5% SLOPE
16. TYPE "F" INLET #4
    TOP OF FRAME = 96.70
    E. INV. (OUT) = 92.20
    W. INV. (IN) = 92.30
17. 79 LF – 15" HDPE @ 0.5% SLOPE
18. TYPE "F" INLET #5
    TOP OF FRAME = 96.30
    E. INV. (OUT) = 92.70
    S. INV. (IN) = 92.81
19. 98 LF – 15" HDPE @ 0.5% SLOPE
20. TYPE "F" INLET #6
    TOP OF FRAME = 96.35
    N. INV. (OUT) = 93.30
21. 32 LF – 18" HDPE @ 0.5% SLOPE
22. 18" HDPE STUB–OUT FOR FUTURE STORMWATER CONNECTION
23. CULVERT #1
    TOP OF PIPE ELEV. = 100.15
    MITERED END SECTION @ INV. ELEV. = 98.90 — (1/C7 (TYP.))
24. 82 LF – 15" RCP @ 0.37% SLOPE
25. CULVERT #2
    TOP OF PIPE ELEV. = 99.85
    MITERED END SECTION @ INV. ELEV. = 98.60

GRADING

ADA ACCESSIBLE AREA, NOT TO EXCEED 2.0% SLOPE IN ANY DIRECTION.

ADA ACCESSIBLE ROUTE, NOT TO EXCEED 2.0% CROSS SLOPE AND/OR 5.0% RUNNING SLOPE.

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Z DEVELOPMENT SERVICES
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VETERINARY OFFICE
STATE ROAD 19
SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FL 34737

DATE: 08/28/24
DRAWN: LF
CHECKED: DL

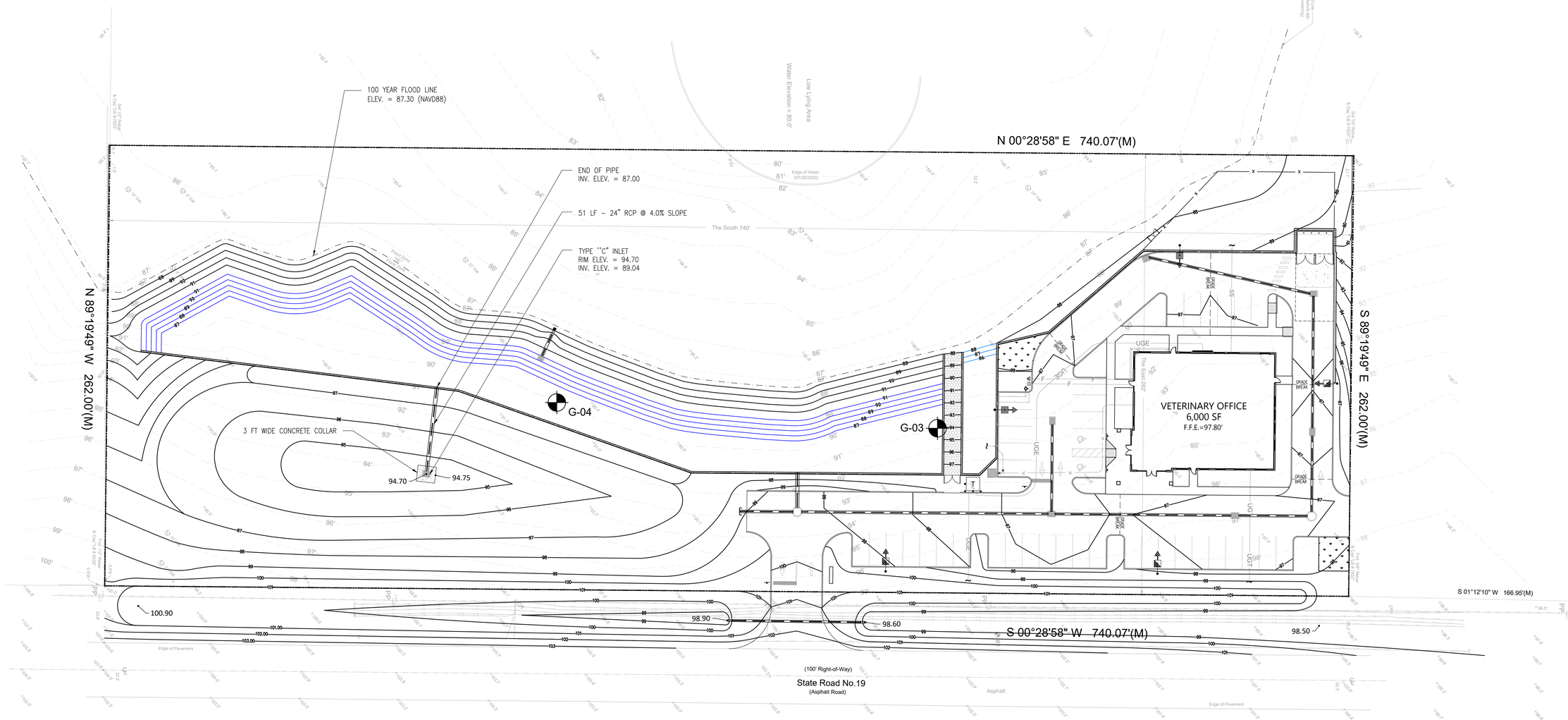
C4
GRADING AND DRAINAGE PLAN

PROJECT NO.: 2023.179

-Benchmark Information-
National Geodetic Survey Datum
Designation - Z 430
PID - AB5338
Elevation - 86.88'
(Elevations are based upon NAVD 88 Datum)

-Site Benchmark Information-
#1
Fnd. 1/2" Rebar & Cap "LB # 7623".
Elevation: 100.44'

#2
Fnd. 1/2" Rebar & Cap "LB # 7623".
Elevation: 97.21'



PER GEOTECHNICAL REPORT BY GEO-TECHNOLOGY ASSOCIATES, INC PERFORMED IN 08-28-24		
DESIGN PARAMETERS	ESTIMATED VALUES	
BORING LOG	G-03	G-04
GROUND SURFACE ELEVATION	91 FT	89.4 FT
ESTIMATED SEASONAL HIGH WATER TABLE	5.5 FT	3.5 FT

ALL DISTURBED AREA THAT WILL REMAIN UNDEVELOPED SHALL BE SODDED AND WATERED UNTIL ESTABLISHED

NORTH
30' 0 30' 60'
GRAPHIC SCALE

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HOWEY IN THE HILLS, FL 34737

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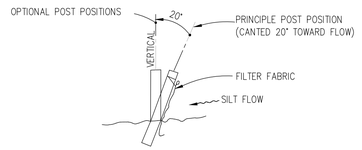
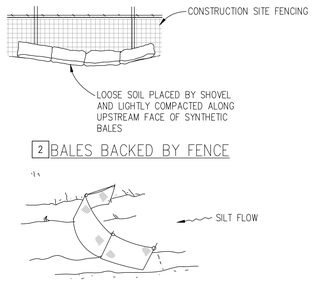
CHECKED: DL

C4.1
MASS GRADING PLAN

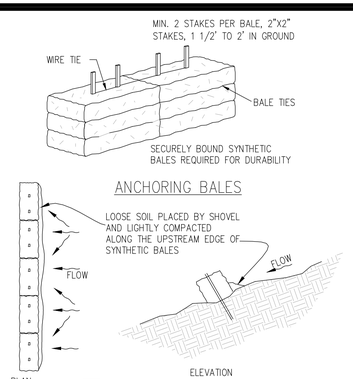
PROJECT NO.: 2023.179



1 SILT FENCE

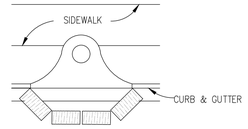


2 BALES BACKED BY FENCE

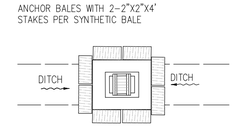


ANCHORING BALES

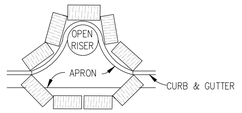
3 BARRIERS FOR SLOPES



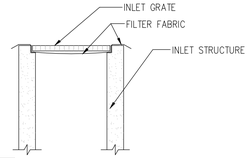
4 COMPLETED INLET



5 DITCH BOTTOM INLET



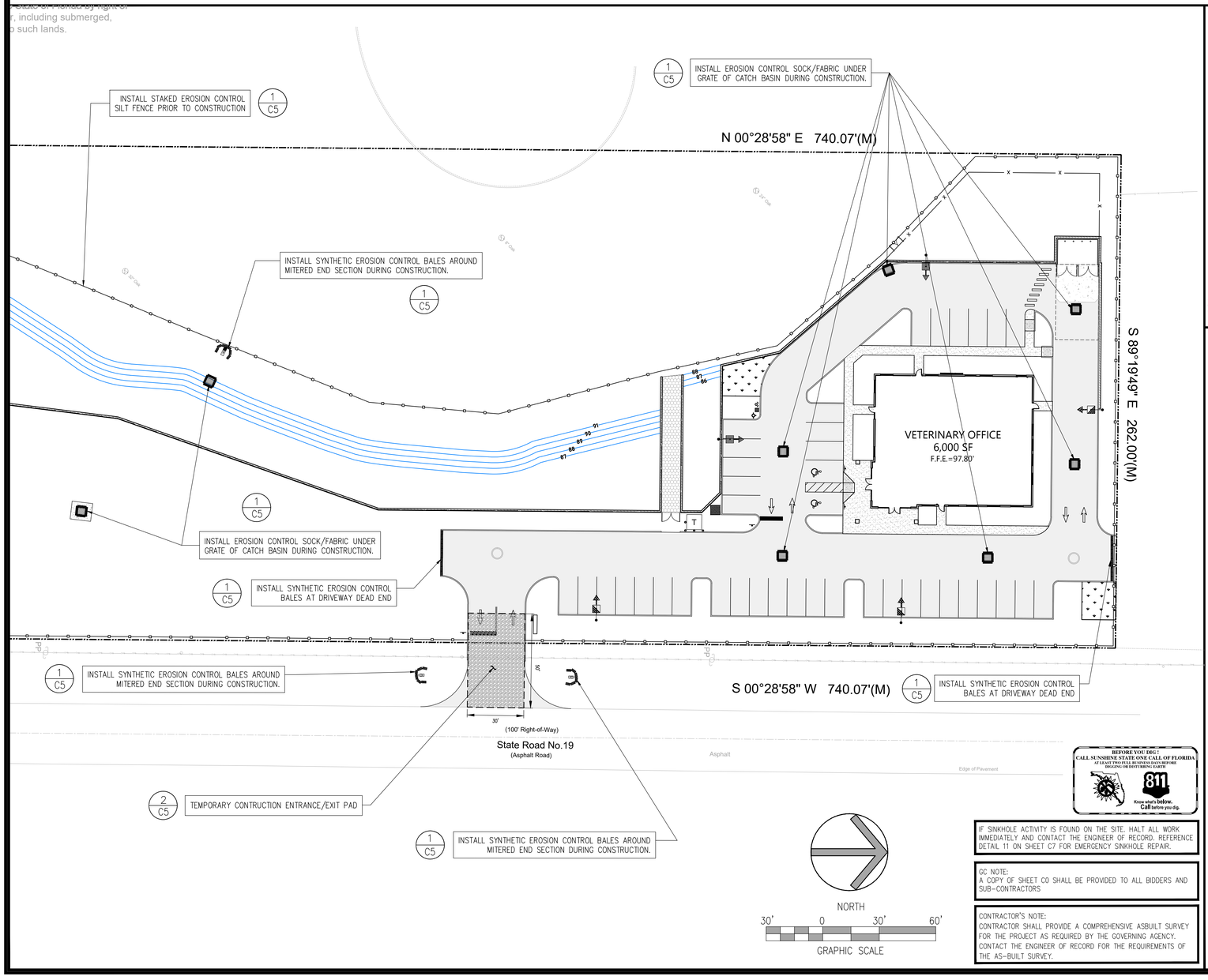
4 PARTIAL INLET



6 EROSION CONTROL SOCK

PROTECTION AROUND INLETS OR SIMILAR STRUCTURES

1 EROSION CONTROL DETAILS NTS



IF SINKHOLE ACTIVITY IS FOUND ON THE SITE, HALT ALL WORK IMMEDIATELY AND CONTACT THE ENGINEER OF RECORD. REFERENCE DETAIL 11 ON SHEET C7 FOR EMERGENCY SINKHOLE REPAIR.

GC NOTE:
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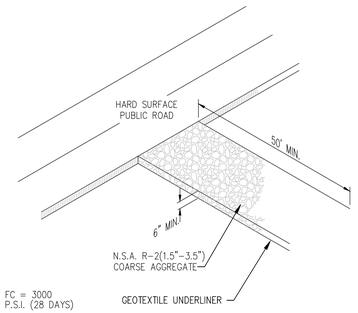


2 CRUSHED STONE CONSTRUCTION EXIT NTS

TOTAL AREA (SF) (AC)	*DISTURBED AREA (SF) AREA (AC)	UNDISTURBED AREA (SF) AREA (AC)	IMPERVIOUS* AREA (SF) AREA (AC)	PERVIOUS* AREA (SF) AREA (AC)
193,897 SF 4.45 AC	93,360 SF 2.14 AC	100,537 SF 2.31	38,144 SF 0.87 AC	55,216 SF 1.27 AC

*IMPERVIOUS + PERVIOUS = DISTURBED

Stormwater Pollution Prevention Plan Inspection Report Form

Inspections must occur at least once a week and within 24 hours of the end of a storm event that is 0.50 inches or greater.

Project
Name: _____
FDEP NPDES Stormwater Identification Number:

LOCATION	RAIN DATA	TYPE OF CONTROL	DATE INSTALLED	CURRENT CONDITION / CORRECTIVE ACTION

Condition Code:
G = Good M = Marginal, needs maintenance or replacement soon
P = Poor, needs immediate maintenance or replacement C = Needs to be cleaned
O = Other

Control Type Codes

1. Silt Fence	10. Storm drain inlet protection	19. Reinforced soil retaining system
2. Earth dikes	11. Vegetative buffer strip	
3. Structural diversion	12. Vegetative preservation area	20. Gabion
4. Swale	13. Retention Pond	21. Sediment Basin
5. Sediment Trap	14. Construction entrance stabilization	22. Temporary seed / sod
6. Check dam		23. Permanent seed / sod
7. Subsurface drain	15. Perimeter ditch	24. Mulch
8. Pipe slope drain	16. Curb and gutter	25. Hay Bales
9. Level spreaders	17. Paved road surface	26. Geotextile
	18. Rock outlet protection	27. Rip-rap

28. Tree protection	31. Waste disposal/housekeeping	33. Sand Bag
29. Detention pond	32. Dam	34. Other
30. Retention pond		

Inspector Information:

_____ _____
Name Date
Qualification
The above signature also shall certify that this facility is in compliance with the Stormwater Pollution Prevention Plan and the State of Florida Generic Permit for Stormwater Discharge from Large and Small Construction Activities if there are not any incidents of non-compliance identified above.

* * * * * *

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

_____ _____
Name (Responsible Authority) Date

NOTE: THIS EXAMPLE INSPECTION LOG IS GIVEN FOR REFERENCE PURPOSES. THIS OR A SIMILAR FORM IS REQUIRED PER NOTE 16.

POLLUTION CONTROL NOTES

ALL EROSION CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL COMPLETION OF CONSTRUCTION.

1. ALL EROSION AND SEDIMENT CONTROL WORK SHALL CONFORM WITH LOCAL CITY/COUNTY AND WATER MANAGEMENT DISTRICT SPECIFICATIONS, SUBJECT TO AUTHORIZED AND APPROVED VARIANCES, WAIVERS AND/OR CONDITIONS OF SITE PERMITS.

2. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PLACED PRIOR TO OR AS THE FIRST STEP IN, CONSTRUCTION. SEDIMENT CONTROL PRACTICES WILL BE APPLIED AS A PERIMETER DEFENSE AGAINST ANY TRANSPORTATION OF SILT OFF THE SITE.

3. ALL AREAS AFFECTED BY THIS WORK SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN EXISTING CONDITION, UNLESS SPECIFICALLY EXEMPTED BY THE PLANS. THE COST FOR SUCH RESTORATION SHALL BE INCIDENTAL TO OTHER CONSTRUCTION AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.

4. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN THESE PLANS AND FIELD CONDITIONS PRIOR TO CONSTRUCTION.

5. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL PROVIDE TREE PROTECTION BARRIERS TO MEET THE REQUIREMENTS OF LOCAL SPECIFICATIONS.

6. THE CONTRACTOR SHALL SELECTIVELY CLEAR ONLY THE AREAS REQUIRED FOR CONSTRUCTION AND STABILIZE ANY POTENTIAL EROSION AREAS IMMEDIATELY FOLLOWING COMPLETION OF CONSTRUCTION.

7. CONTRACTOR SHALL KEEP ANY AND ALL SAND, SILT OR OTHER DEBRIS FROM MOVING OFF-SITE. USE AND MAINTAIN SILT FENCE JUST INSIDE OF PROPERTY LINE.

8. CONTRACTOR SHALL BLOCK INTRUSION OF SAND, SILT OR OTHER DEBRIS INTO ANY DRAINAGE OR SANITARY SEWER STRUCTURE OR PIPING ON OR ADJACENT TO SITE.

9. ALL CLEARED AREAS FOR IMPROVEMENT AND/OR CONSTRUCTION SHALL BE WATERED TO PREVENT WIND EROSION.

10. FOR ADDITIONAL INFORMATION AND DETAILS, SEE STATE OF FLORIDA EROSION AND SEDIMENT CONTROL MANUAL.

11. UNLESS SPECIFIED, SILT FENCES MAY BE USED IN LIEU OF HAY BARRIERS.

12. ADDITIONAL POSTS AND RAILS MAY BE NECESSARY TO SECURE AND SUPPORT BARRIERS.

13. ADDITIONAL BARRIER LENGTHS MAY BE REQUIRED BY THE COUNTY ENGINEER OR BY REGULATORY AGENCIES.

14. FILTER FABRIC MUST BE INSTALLED UNDER ALL INLET GRATES, AT ALL TIMES WHEN INLETS ARE NOT PROTECTED BY SILT FENCE OR HAY BALES, UNTIL THE LIMEROCK BASE IS FINISHED AND PRIMED.

15. THE CONTRACTOR IS REQUIRED TO HAVE THIS PLAN ALONG WITH A COPY OF THE NPDES NOTICE OF INTENT POSTED IN A VISIBLE LOCATION ON THE CONSTRUCTION SITE AT ALL TIMES.

16. "CONTRACTOR IS REQUIRED BY NPDES TO KEEP A LOG ON SITE FOR THE SOIL EROSION AND SEDIMENT CONTROL MEASURES INDICATED ON THE PLAN. THE LOG SHALL CONTAIN DATES FOR: INSTALLATION OF CONTROL MEASURES, MAJOR SITE CONSTRUCTION ACTIVITIES, INSPECTION ON AT LEAST A WEEKLY BASIS AND INSPECTION AFTER ANY RAINFALL EVENT THAT IS 1/2" OR GREATER".

17. THE CONTRACTOR IS REQUIRED TO SUBMIT A NOTICE OF TERMINATION TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION UPON THE COMPLETION OF CONSTRUCTION.

18. CONTRACTOR SHALL RETAIN ALL RECORDS FOR A PERIOD OF THREE YEARS FOLLOWING THE NOTICE OF TERMINATION.

19. NON STORMWATER DISCHARGES SUCH AS FIRE HYDRANT FLUSHING, ETC SHALL BE DISCHARGED TO EXISTING UNDERGROUND STORMWATER FACILITY OR ON SITE RETENTION POND.

20. ANY POTENTIALLY HAZARDOUS CHEMICALS BROUGHT ONTO THE JOB SITE WILL BE LIMITED AND KEPT IN ORIGINAL CONTAINER WITH MSDS LABEL.

21. NO SILT SHALL BE TRACKED ONTO PUBLIC ROADWAYS. ANY SILT DEPOSITED ON PUBLIC ROADWAYS SHALL BE REMOVED BY THE END OF THE WORK DAY.

CONTRACTOR(S) AND SUBCONTRACTOR(S) THAT IMPLEMENT ANY PART OF THE EROSION/POLLUTION CONTROL MEASURES REQUIRED BY THE NPDES PERMIT SHALL SIGN BELOW:

"I certify under penalty of law that I understand, and shall comply with, the terms and conditions of the State of Florida Generic Permit for Stormwater Discharge from Large and Small Construction Activities and this Stormwater Pollution Prevention Plan prepared thereunder."

Name	Title	Company Name, Address & phone number	Date

ENGINEER'S CERTIFICATION:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

_____
ROBERT ZIEGENFUSS, P.E. #56752 Date

OWNER/AGENT CERTIFICATIONS:

I HAVE REVIEWED THIS PLAN AND AGREE TO COMPLY WITH THE REQUIREMENTS SHOWN HEREON.

_____
OWNER/AUTHORIZED REPRESENTATIVE Date

Z DEVELOPMENT SERVICES
CIVIL ENGINEERING CONSULTANTS
CA 29354
1201 E. ROBINSON STREET
ORLANDO, FL 32801
PH: (407) 271-8910

DATE	REVISION

ROBERT ZIEGENFUSS, P.E., LEED AP
FL. REG. # 56752

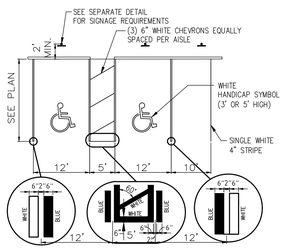
This item has been digitally signed and sealed by ROBERT ZIEGENFUSS on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VETERINARY OFFICE
STATE ROAD 19
SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FL 34737

DATE: 08/28/24
DRAWN: LF
CHECKED: DL

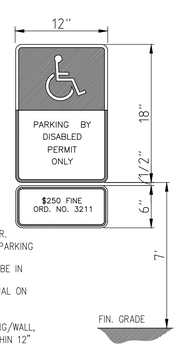
C5
STORMWATER POLLUTION PREVENTION PLAN
PROJECT NO.: 2023.179



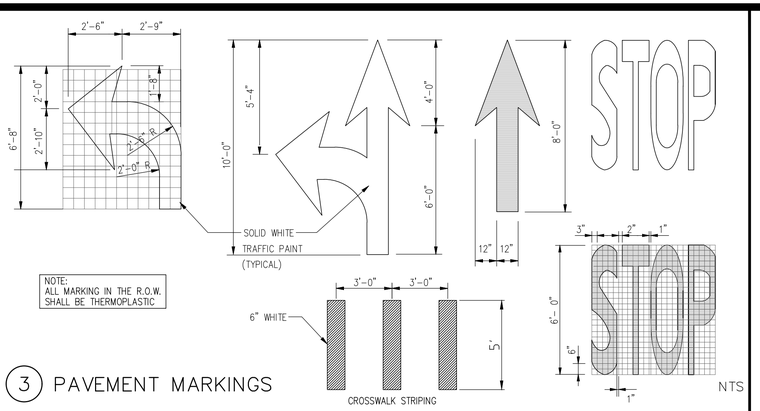
NOTE: 1. FINISHED GRADES OF PAVEMENT IN HC PARKING AND ACCESSIBILITY AISLE SHALL NOT EXCEED 1:50 SLOPE IN ANY DIRECTION. SEE PLANS FOR STYLE OF ACCESSIBLE RAMP.
2. HANDICAP STRIPING SHALL CONFORM TO FDOT INDEX 711-001, SHEET 12.

1 HANDICAP STRIPING NTS

NOTES:
1. ALL LETTERS ARE 1" SERIES "C" PER MUTCD.
2. TOP PORTION OF SIGN SHALL HAVE A REFLECTORIZED (ENGINEERING GRADE) BLUE BACKGROUND WITH WHITE REFLECTORIZED LEGEND AND BORDER.
3. BOTTOM PORTION OF SIGN SHALL HAVE A REFLECTORIZED (ENGINEERING GRADE) WHITE BACKGROUND WITH BLACK OPAQUE LEGEND AND BORDER.
4. FINE NOTIFICATION SIGN SHALL HAVE A REFLECTORIZED (ENGINEERING GRADE) WHITE BACKGROUND WITH BLACK OPAQUE LEGEND & BORDER. CONTRACTOR SHALL VERIFY FINE AMOUNT & ORDINANCE NUMBER.
5. ONE(1) SIGN REQUIRED FOR EACH PARKING SPACE.
6. INSTALLED HEIGHT OF SIGN SHALL BE IN ACCORDANCE WITH SECTION 24-23 OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
7. SIGN MAY BE MOUNTED ON BUILDING/WALL, AT PROPER HEIGHT, IF ALIGNED WITHIN 12" OF CENTER OF PARKING SPACE.

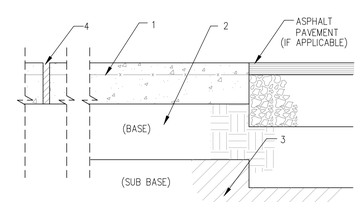


2 ACCESSIBLE SIGN NTS



NOTE:
ALL MARKING IN THE R.O.W. SHALL BE THERMOPLASTIC

3 PAVEMENT MARKINGS NTS



1. 8" – 4000 PSI CONCRETE WITH FIBERMESH REINFORCEMENT.
2. 6" WELL GRADED CLEAN SAND, HAVING 5% OR LESS PASSING THE NO. 200 SIEVE. ALTERNATELY, A GEOTECHNICAL FABRIC SUCH AS MIRAFI 140N, OR EQUAL, MAY BE USED BELOW ALL CONTROL JOINTS IN LIEU OF THE SAND.
3. 12" SUBBASE COMPACTED TO A MINIMUM DENSITY OF 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D-1557). DENSITY TESTS SHALL BE PERFORMED EVERY 5,000 S.F.
4. 1/4" PREMOLDED ASPHALT EXPANSION JOINT STRIP. SET 1/2" BELOW PAVEMENT TOP @ 20'-0" O.C. MAXIMUM.

PORTLAND CEMENT CONC. PAVEMENT

1. GENERAL
RIGID PAVEMENT CONSISTS OF CONSTRUCTING A SPECIFIED PORTLAND CEMENT CONCRETE PAVING ON A PREPARED SUBGRADE. THE UTILITIES AND OTHER ITEMS IN AND BENEATH THE STREET MUST BE PROPERLY COORDINATED WITH THE CONSTRUCTION OF RIGID PAVEMENT TO AVOID CONFLICTS. THE WORK TO BE DONE SHALL INCLUDE THE FURNISHINGS OF ALL SUPERVISION, LABOR, MATERIALS, EQUIPMENT AND INCIDENTAL NECESSARY FOR THE PROPOSED RIGID PAVEMENT CONSTRUCTION IN ACCORDANCE WITH THE APPROVED DRAWINGS AND SPECIFICATION.

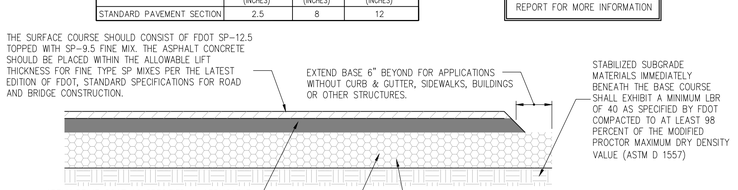
2. CONCRETE STRENGTH REQUIRED:
ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 (PCI) PSI AT 28 DAYS. CONFORMANCE TO STRENGTH REQUIREMENTS SHALL BE DETERMINED BY ACI STANDARD 318, LATEST EDITION, SECTIONS 4.8.2.3. AND 4.8.3.

4 CONCRETE PAVEMENT NTS

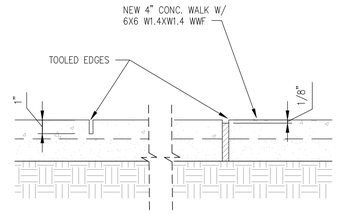
PAVEMENT THICKNESS

SERVICE LEVEL	LAYER COMPONENT		
	SURFACE COURSE (INCHES)	BASE COURSE (INCHES)	STABILIZED SUBGRADE (INCHES)
STANDARD PAVEMENT SECTION	2.5	8	12

NOTE:
PLEASE REFER TO GEOTECHNICAL REPORT FOR MORE INFORMATION.

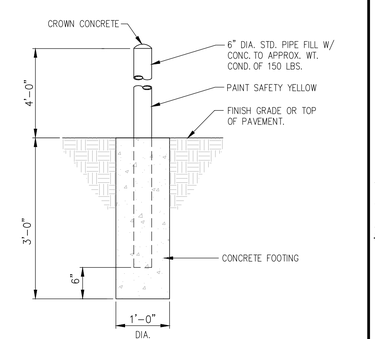


5 TYPICAL PAVEMENT SECTION NTS



NOTE:
1. EXPANSION JOINTS SHALL BE LOCATED AT ALL CONCRETE WALK INTERSECTIONS, AT ALL DOOR OPENINGS AND AT 12' O.C. MAXIMUM.
2. EXPANSION JOINT (1/4" PREMOLDED ASPHALT STRIP) SHALL BE SET 1/8" BELOW TOP OF WALK.

6 CONCRETE WALK NTS
(3,500 PSI (MIN)

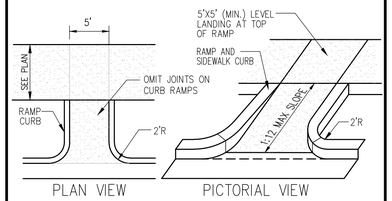


7 BOLLARD NTS

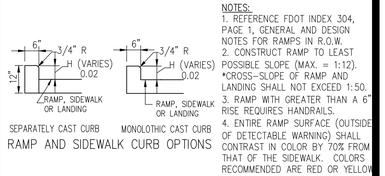
NOTE 1:
REFERENCE FDOT INDEX 522-002, GENERAL AND DESIGN NOTES FOR RAMPS IN R.O.W.

NOTE 2:
CONSTRUCT RAMP TO LEAST POSSIBLE SLOPE (MAX = 1:12). CROSS SLOPE OF RAMP AND LANDING SHALL NOT EXCEED 1:50.

NOTE 3:
RAMP GREATER THAN A 6" RISE REQUIRES HANDRAILS.

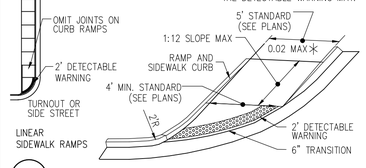


8 SIDEWALK END RAMP NTS
3500 PSI (MIN.) CONCRETE



RAMP AND SIDEWALK CURB OPTIONS

NOTES:
1. REFERENCE FDOT INDEX 304, PAGE 1, GENERAL AND DESIGN NOTES FOR RAMPS IN R.O.W.
2. CONSTRUCT RAMP TO LEAST POSSIBLE SLOPE (MAX. = 1:12). *CROSS-SLOPE OF RAMP AND LANDING SHALL NOT EXCEED 1:50.
3. RAMP WITH GREATER THAN A 6" RISE REQUIRES HANDRAILS.
4. ENTIRE RAMP SURFACE (OUTSIDE OF DETECTABLE WARNING) SHALL CONTRAST IN COLOR BY 70% FROM THAT OF THE SIDEWALK. COLORS RECOMMENDED ARE RED OR YELLOW TO MATCH THE COLOR CHOSEN FOR THE DETECTABLE WARNING MAT.

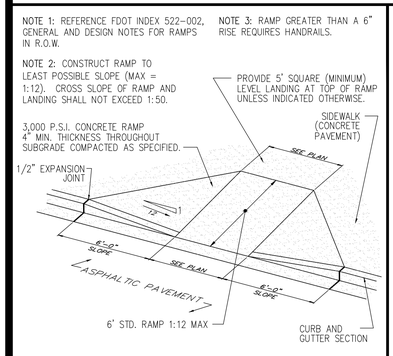


9 ACCESSIBLE CORNER RAMP NTS
3000 PSI (MIN.) CONCRETE

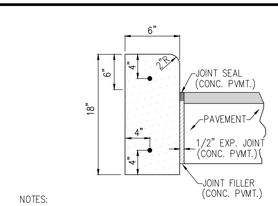
NOTE 1: REFERENCE FDOT INDEX 522-002, GENERAL AND DESIGN NOTES FOR RAMPS IN R.O.W.

NOTE 2: CONSTRUCT RAMP TO LEAST POSSIBLE SLOPE (MAX = 1:12). CROSS SLOPE OF RAMP AND LANDING SHALL NOT EXCEED 1:50.

NOTE 3: RAMP GREATER THAN A 6" RISE REQUIRES HANDRAILS.



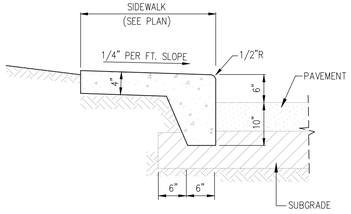
10 FLARED ACCESSIBLE RAMP NTS
3000 PSI (MIN.) CONCRETE



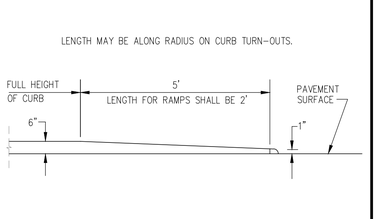
NOTES:
1. COST OF 2-#4 BARS (CONT.) SHALL BE INCLUDED.
2. PROVIDE 2-#6 SMOOTH BARS W/ EXPANSION CAPS AT EACH EXPANSION JOINT, 20'-0" O.C. MAX.
3. CONTRACTION JOINTS – CONTRACTION JOINTS SHALL BE PLACED AT EQUAL SPACES (10' MAX.) BETWEEN NORMAL EXPANSION JOINTS. CONTRACTION JOINTS SHALL BE SAW CUT IN THE UPPER 1/3 OF CURB AND GUTTER WITHIN 24 HOURS OF PLACEMENT.
4. ENDS OF VERTICAL CURB SHALL TRANSITION FROM FULL TO ZERO HEIGHTS IN 3 FEET.

PLAN SYMBOL

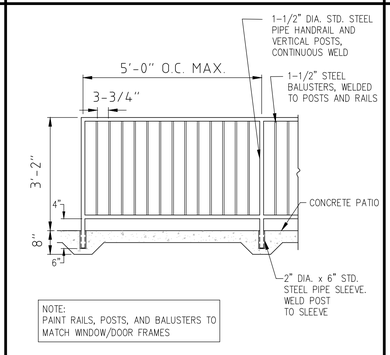
11 6" VERTICAL CURB NTS
3,500 PSI (MIN)



12 MONOLITHIC CURB & SIDEWALK NTS
3,500 PSI (MIN)



13 TRANSITION CURB NTS



NOTE:
PAINT RAILS, POSTS, AND BALUSTERS TO MATCH WINDOW/DOOR FRAMES

14 RAILING NTS

Z DEVELOPMENT SERVICES
CIVIL ENGINEERING CONSULTANTS
CA 29354
1201 E. ROBINSON STREET
ORLANDO, FL 32801
PH: (407) 271-8910

DATE	REVISION

ROBERT ZIEGENFUSS, P.E., LEED AP
FL REG. # 56752

This item has been digitally signed and sealed by ROBERT ZIEGENFUSS on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VETERINARY OFFICE
STATE ROAD 19
SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FL 34737

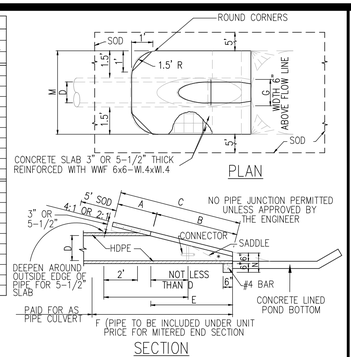
DATE: 08/28/24
DRAWN: LF
CHECKED: DL

C6
CONSTRUCTION DETAILS

PROJECT NO.: 2023.179

	DIMENSIONS AND QUANTITIES										
								M			
	D	A	B	C	E	F	G	SINGLE PIPE	DOUBLE PIPE	TRIPLE PIPE	QUAD.
2:1 SLOPE	15"	1.92'	2.18'	4.10'	2.06'	5'	1.22'	4.63'	7.21'	9.79'	
	18"	1.97'	2.74'	4.71'	2.56'	6'	1.41'	4.92'	7.75'	10.58'	
	24"	2.06'	3.85'	5.91'	3.56'	7'	1.73'	5.50'	8.92'	12.33'	
	30"	2.15'	4.95'	7.10'	4.56'	8'	2.00'	6.08'	10.33'	14.58'	
	36"	2.25'	6.08'	8.33'	5.56'	9'	2.24'	6.67'	11.75'	16.83'	
	42"	2.34'	7.21'	9.55'	6.56'	10'	2.45'	7.25'	13.25'	19.25'	
	48"	2.43'	8.33'	10.76'	7.56'	11'	2.65'	7.83'	14.58'	21.33'	
	54"	2.52'	9.44'	11.96'	8.56'	12'	2.83'	8.42'	16.08'	23.75'	
	60"	2.62'	10.56'	13.18'	9.56'	14'	3.00'	9.00'	17.50'	26.00'	
	66"	2.71'	11.68'	14.39'	10.56'	15'	3.18'	9.58'	18.75'	27.92'	
	72"	2.80'	12.80'	15.60'	11.56'	16'	3.40'	10.16'	20.16'	30.16'	
4:1 SLOPE	15"	2.27'	4.09'	6.36'	4.03'	8'	1.22'	4.63'	7.21'	9.79'	
	18"	2.36'	5.12'	7.48'	5.03'	9'	1.41'	4.92'	7.75'	10.58'	
	24"	2.53'	7.18'	9.71'	7.03'	11'	1.73'	5.50'	8.92'	12.33'	
	30"	2.70'	9.25'	11.95'	9.03'	13'	2.00'	6.08'	10.33'	14.58'	
	36"	2.87'	11.31'	14.18'	11.03'	15'	2.24'	6.67'	11.75'	16.83'	
	42"	3.05'	13.37'	16.42'	13.03'	17'	2.45'	7.25'	13.25'	19.25'	
	48"	3.22'	15.43'	18.65'	15.03'	19'	2.65'	7.83'	14.58'	21.33'	
	54"	3.39'	17.49'	20.88'	17.03'	21'	2.83'	8.42'	16.08'	23.75'	
	60"	3.56'	19.55'	23.11'	19.03'	23'	3.00'	9.00'	17.50'	26.00'	
	66"	3.73'	21.62'	25.35'	21.03'	25'	3.18'	9.58'	18.75'	27.92'	
	72"	3.91'	22.68'	26.59'	23.03'	27'	3.30'	10.16'	20.16'	30.16'	

* SLOPE– 4:1 MITER – TO Ø PIPE FOR PIPES 18" AND SMALLER
2:1 FOR PIPES 24" AND LARGER
2:1 MITER – TO Ø PIPE FOR PIPES 18" AND SMALLER
1:1 FOR PIPES 24" AND LARGER



1 HDPE MITERED END SECTION NTS

STORM SEWER PIPE LENGTHS NOTED IN THE DRAWINGS REFLECT ONLY THE PIPE ITSELF. WHERE A MITERED END SECTION IS INSTALLED ON SAID PIPE, ITS ADDITIONAL PIPE LENGTH SHALL BE INCLUDED IN THE COST OF THE MITERED END SECTION.

NOTES:

1. BEDDING MATERIAL SHALL CONSIST OF IN–SITU GRANULAR MATERIAL OF WASHED AND GRADED LIME ROCK 3/8"–7/8" SIZING. UNSUITABLE IN–SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED IN ACCORDANCE WITH ASTM D–2321.

2. THE PIPE SHALL BE FULLY SUPPORTED FOR ITS ENTIRE LENGTH WITH APPROPRIATE COMPACTION UNDER THE PIPE HAUNCHES.

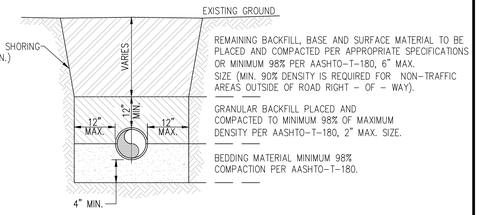
3. THE PIPE SHALL BE PLACED IN A DRY TRENCH.

4. BACKFILL SHALL BE FREE OF UNSUITABLE MATERIAL SUCH AS LARGER ROCK, MUCK AND DEBRIS.

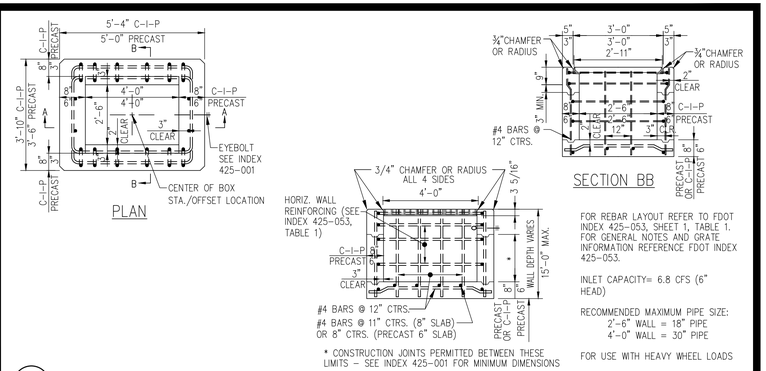
5. DENSITY TESTS ARE REQUIRED IN ONE (1) FOOT LIFTS ABOVE PIPE AT INTERVALS OF 400 FT. MAXIMUM.

6. THE DEVELOPER / CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH ALL APPLICABLE TRENCH–SAFETY LAWS AND REGULATIONS.

7. THE AFFECTED AREA SHALL BE RESTORED TO EQUAL OR BETTER CONDITION OR AS SPECIFIED IN PERMIT / CONTRACT DOCUMENTS.



2 TRENCH DETAIL NTS



* CONSTRUCTION JOINTS PERMITTED BETWEEN THESE LIMITS – SEE INDEX 425–001 FOR MINIMUM DIMENSIONS

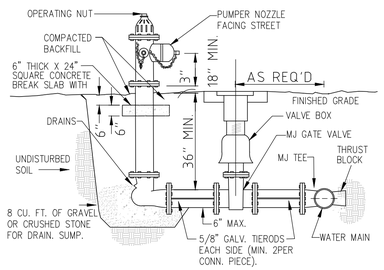
FOR REBAR LAYOUT REFER TO FDOT INDEX 425–053, SHEET 1, TABLE 1. FOR GENERAL NOTES AND GRATE INFORMATION REFERENCE FDOT INDEX 425–053.

INLET CAPACITY= 6.8 CFS (6" HEAD)

RECOMMENDED MAXIMUM PIPE SIZE:
2'–6" WALL = 18" PIPE
4'–0" WALL = 30" PIPE

FOR USE WITH HEAVY WHEEL LOADS

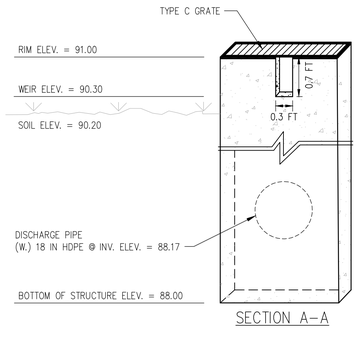
3 TYPE "F" INLET NTS



NOTES:

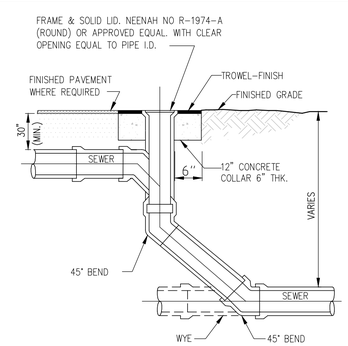
1. VALVE BOX SHALL BE SCREW TYPE ADJUSTABLE AND COVER SHALL BE MARKED "WATER"
2. FIRE HYDRANTS CANNOT BE LOCATED WITHIN THE RADIUS OF STREET CORNERS
3. HYDRANT SHALL BE LOCATED 4' TO 8' FROM EDGE OF PAVEMENT IN BETWEEN CURB AND SIDEWALK
4. HYDRANT SHALL BE PAINTED WITH DUPONT 7744A OR EQUAL

4 FIRE HYDRANT DETAIL NTS

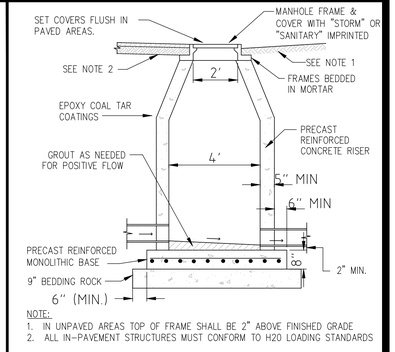


NOTE: CONTRACTOR SHALL SUBMIT SHOP DRAWINGS PRIOR TO FABRICATION

5 CONTROL STRUCTURE (MODIFIED TYPE C INLET)
(RECTANGULAR VERTICAL WEIR) NTS

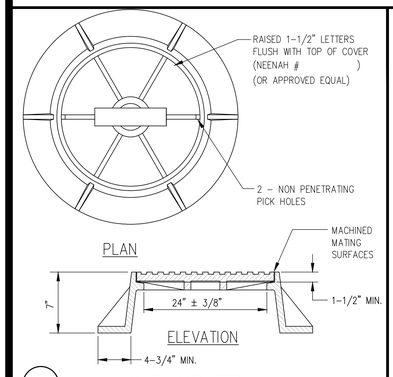


6 DROP CLEANOUT NTS



NOTE:
1. IN UNPAVED AREAS TOP OF FRAME SHALL BE 2" ABOVE FINISHED GRADE
2. ALL IN–PAVEMENT STRUCTURES MUST CONFORM TO H20 LOADING STANDARDS

7 MANHOLE NTS



8 MANHOLE COVER NTS

Z DEVELOPMENT SERVICES
CIVIL ENGINEERING CONSULTANTS
CA 29354
1201 E. ROBINSON STREET
ORLANDO, FL 32801
PH: (407) 271-8910

DATE

REVISION

ROBERT ZIEGENFUSS, P.E., LEED AP
FL REG. # 56752

This item has been digitally signed and sealed by ROBERT ZIEGENFUSS on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VETERINARY OFFICE
STATE ROAD 19
SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FL 34737

DATE: 08/28/24
DRAWN: LF
CHECKED: DL

C7
CONSTRUCTION DETAILS

PROJECT NO.: 2023.179

REVISIONS		
Rev #	Date	BY:
1	7/28/25	J.P.
2	8/14/25	J.P.

Based on the information provided, all dimensions and luminaire locations shown represent recommended positions. The engineer and/or architect must determine applicability of the layout to existing or future field conditions.

This lighting pattern represents illumination levels calculated from laboratory data taken under controlled conditions utilizing current industry standard lamp ratings in accordance with Illuminating Engineering Society approved methods. Actual performance of any manufacturer's luminaire may vary due to variation in electrical voltage, tolerance in lamps and other variable field conditions.

Calculation Summary								
Label	Units	Avg	Max	Min	Avg/Min	Max/Min	PtSpcLr	PtSpcTb
ENTRANCE DRIVES	Fc	0.40	1.0	0.1	4.00	10.00	10	10
PARKING	Fc	0.95	3.6	0.2	4.75	18.00		
REAR & SIDE	Fc	0.98	3.3	0.2	4.90	16.50		

Luminaire Schedule						
WLS17710 VET CLINIC HOWEY IN THE HILLS, FL PM: KEN PLEASE EMAIL US FOR PRICING AT KBRONSTAD@WLSLIGHTING.COM						
Symbol	Qty	Label	Lum. Lumens	LLF	Description	Lum. Watts
	2	A	8307	0.950	WLS-NV-1-T4-32L-7-40K-SLW 25' MOUNTING HEIGHT	71
	3	B	8449	0.950	WLS-NV-1-T3-32L-7-40K-SLW 25' MOUNTING HEIGHT	71

6820 CORPORATION PKWY
FORT WORTH, TX 76126
WWW.WLSLIGHTING.COM

WLS LIGHTING
BRIGHT. SMART. SUSTAINABLE.
817-731-0020

SHEET 1 OF 1
BY: J.P.
PM:KEN
DATE -9/24/24
SCALE: 1"=20'

WLS-17710

VET CLINIC
HOWEY IN THE HILLS, FL

Z DEVELOPMENT SERVICES
CIVIL ENGINEERING CONSULTANTS
CA 29354
1201 E. ROBINSON STREET
ORLANDO, FL 32801
PH: (407) 271-8910

DATE	REVISION

VETERINARY OFFICE
STATE ROAD 19
SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FL 34737

DATE: 08/28/24
DRAWN: LF
CHECKED: DL

SL1
PHOTOMETRIC PLAN

PROJECT NO.: 2023.179

WLS LIGHTING SYSTEMS

Type:

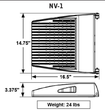
NV SERIES LED AREA





DIMENSIONS

NV-1



Weight: 24 lbs

NV-2



Weight: 43 lbs

Made in the U.S.A. of the U.S. and imported parts. Meets Buy American requirements for ARRA.

WLS LIGHTING SYSTEMS
6820 Corporation Pkwy
Fort Worth, TX 76126
800.633.8711
www.wlslighting.com

SPECIFICATIONS

FORM AND FUNCTION
- Sleek, low profile housing
- Spec grade performance
- Engineered for optimum thermal management
- Low depreciation rate
- Reduces energy consumption and costs up to 65%
- Exceeds IES foot candle levels utilizing the least number of poles and fixtures per project
- Optical system designed for:
  - Parking Lots
  - Auto Dealerships
  - General Area Lighting

CONSTRUCTION
- Die Cast Aluminum
- External cooling fins, Finite Element Analysis (FEA) designed
- Corrosion resistant external hardware
- One-piece silicone gasket ensures IP-65 seal for electronics compartment
- One-piece Optics Plate™ mounting silicone Micro Optics
- Two-piece silicone Micro Optic system ensures IP-67 level seal around each PCB
- Grade 2 Clear Anodized Optics Plate™ standard

FINISH
- 3-5 mils electrostatic powder coat.
- WLS standard high-quality finishes prevent corrosion protects against and extreme environmental conditions

ELECTRICAL
- 120-277 Volts (UNV) or 347-480 Volts (HV)
- 0-10V dimming driver by Philips Advance
- Driver power factor at maximum load is ≥ .95, THD maximum load is 15%
- All internal wiring UL certified for 600 VAC and 105°C.
- All drivers, controls, and sensors housed in enclosed IP-65 compartment
- Luminaire Lumen MX LED's
- CRI>70
- Color temperatures: 3000K, 4000K, 5000K

OPTICS
- Silicone optics high photo thermal stability and light output provides higher powered LEDs with minimized lumen depreciation LED life, UV and thermal stability with scratch resistance increases exterior application durability.
- IES Types T2, T3, T4, T5 AND N3

WARRANTY
- Five-year limited warranty for drivers and LEDs.

LISTINGS
- Certified to UL 1598
- UL 8750
- CSA C22.2 No. 250.0
- DesignLights Consortium® (DLC)
- DesignLights Consortium Premium® (DLCP)
- IP65/ IP67 Rated
- 3G Vibration Rated per ANSI C136.31-2010

Project Name: _____
Date: _____
Location: _____
Notes: _____

NV SERIES LED AREA

ORDERING INFORMATION SELECT APPROPRIATE CHOICE FROM EACH COLUMN TO FORMULATE ORDER CODE.

Refer to example Below.

PRODUCT	OPTIC	LED #	DRIVER	COLOR TEMPERATURE	VOLTAGE	MOUNTING	COLOR OPTIONS	OPTIONS
NV-1 **NV-2**	**T2** Type 2 **T3** Type 3 **T4** Type 4 **T5** Type 5 **N3** Nema 3 30° Narrow Beam	**16** 16L **32** 32L **48** 48L **64** 64L **80** 80L **96** 96L **112** 112L **128** 128L	**35** 350mA (16L ONLY) **53** 530mA (16L ONLY) **7** 700mA **1** 1050mA **7** 700mA **1** 1050mA	**30K** 3000K **40K** 4000K **50K** 5000K	**UNV** 120-277 **HV** 347-480	**Direct Pole** **DP53** 3" (DM, TM, T120, QD) **DP57** 3" (DM) TM), **KM** Knuckle Mount **WM** Wall Mount **TM** Trunnion Mount Comes standard with Internal Universal Arm Mount **TA** Tennis Arm **ASA** Architectural Sweep Arm	**BRZ** Bronze **WHT** White **SVR** Silver **BLK** Black **GPH** Graphite **GRY** Grey **ASA** Architectural Sweep Arm	**BD** Bird Deterrent **MGF** Marine Grade Finish **OPP** Optic Plate Painted to Match Fixture **PEP** Nema 7 Pin Receptacle **PCR** Photocell + Receptacle **PER** Receptacle + Shorting Cap **FSP-20** FSP-211 with Motion Sensor (UNV Voltage) 9'-20' Heights **FSP-40** FSP-211 with Motion Sensor (UNV Voltage) 21'-40' Heights **QSM** Quick Mount Bracket **RQM** Round Pole Adapter Bracket **RPA4** Round Pole Adapter 3"-4" Pole **RPA5** Round Pole Adapter 5"-6" Pole **RDL** Rotated Optic Left **ROR** Rotated Optic Right **AHS** Automotive House Side Shield **HSS** House Side Shield **10K** Surge Protector (NV-2 only) **NO** No Options

ORDER:

WLS-NV								

Example: WLS-NV-2-T5-96-1-40K-UNV-DP53-BRZ-NO



NV-1 / 16L



NV-1 / 32L

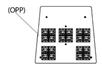


NV-1 / 48L

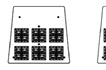


NV-1 / 64L

(OPP)



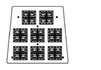
NV-2 / 80L



NV-2 / 96L



NV-2 / 112L



NV-2 / 128L

WLS LIGHTING SYSTEMS
6820 Corporation Pkwy
Fort Worth, TX
7612680,633.8711
www.wlslighting.com

Project Name: _____
Date: _____
Location: _____
Notes: _____

NV SERIES LED AREA

BUG Ratings						
Part Number	T2	T3	T3HSS	T4	T4HSS	T5
WLS-NV-1-16L-35-30K	B1 U0 G1	B1 U0 G1	B1 U0 G1	B1 U0 G2	B1 U0 G2	B2 U0 G0
WLS-NV-1-16L-35-40K	B1 U0 G1	B1 U0 G1	B0 U0 G0	B1 U0 G1	B1 U0 G1	B2 U0 G0
WLS-NV-1-16L-35-50K	B1 U0 G1	B1 U0 G1	B0 U0 G0	B1 U0 G1	B1 U0 G2	B2 U0 G2
WLS-NV-1-16L-53-30K	B1 U0 G1	B1 U0 G1	B0 U0 G1	B1 U0 G2	B2 U0 G2	B2 U0 G3
WLS-NV-1-16L-53-40K	B1 U0 G1	B1 U0 G1	B0 U0 G1	B1 U0 G1	B2 U0 G2	B2 U0 G1
WLS-NV-1-16L-53-50K	B1 U0 G1	B1 U0 G1	B0 U0 G1	B1 U0 G2	B2 U0 G2	B2 U0 G1
WLS-NV-1-16L-7-30K	B1 U0 G1	B1 U0 G1	B0 U0 G1	B1 U0 G1	B2 U0 G1	B3 U0 G1
WLS-NV-1-16L-7-40K	B1 U0 G1	B1 U0 G1	B0 U0 G1	B1 U0 G1	B2 U0 G1	B3 U0 G1
WLS-NV-1-16L-7-50K	B1 U0 G1	B1 U0 G1	B0 U0 G1	B1 U0 G1	B2 U0 G1	B3 U0 G1
WLS-NV-1-16L-1-30K	B1 U0 G1	B1 U0 G1	B0 U0 G1	B1 U0 G1	B2 U0 G1	B3 U0 G1
WLS-NV-1-16L-1-40K	B1 U0 G1	B2 U0 G2	B0 U0 G1	B2 U0 G2	B3 U0 G2	B3 U0 G2
WLS-NV-1-16L-1-50K	B1 U0 G2	B2 U0 G2	B0 U0 G1	B2 U0 G2	B3 U0 G2	B3 U0 G2
WLS-NV-1-32L-7-30K	B1 U0 G2	B2 U0 G2	B0 U0 G1	B2 U0 G2	B3 U0 G2	B3 U0 G2
WLS-NV-1-32L-7-40K	B1 U0 G2	B2 U0 G2	B0 U0 G1	B2 U0 G2	B3 U0 G2	B3 U0 G2
WLS-NV-1-32L-7-50K	B2 U0 G2	B2 U0 G2	B1 U0 G2	B3 U0 G2	B3 U0 G2	B3 U0 G2
WLS-NV-1-32L-1-30K	B2 U0 G2	B2 U0 G2	B0 U0 G2	B2 U0 G2	B3 U0 G2	B4 U0 G2
WLS-NV-1-32L-1-40K	B2 U0 G2	B2 U0 G2	B0 U0 G2	B3 U0 G2	B3 U0 G2	B4 U0 G2
WLS-NV-1-32L-1-50K	B2 U0 G2	B2 U0 G2	B1 U0 G2	B3 U0 G2	B3 U0 G2	B4 U0 G2
WLS-NV-1-48L-7-30K	B2 U0 G2	B2 U0 G2	B0 U0 G2	B2 U0 G2	B3 U0 G2	B4 U0 G2
WLS-NV-1-48L-7-40K	B2 U0 G2	B2 U0 G2	B0 U0 G2	B2 U0 G2	B3 U0 G2	B4 U0 G2
WLS-NV-1-48L-7-50K	B2 U0 G2	B3 U0 G3	B1 U0 G2	B3 U0 G3	B4 U0 G3	B4 U0 G3
WLS-NV-1-48L-1-30K	B3 U0 G3	B3 U0 G3	B1 U0 G2	B3 U0 G3	B4 U0 G3	B4 U0 G3
WLS-NV-1-48L-1-40K	B3 U0 G3	B3 U0 G3	B1 U0 G2	B3 U0 G3	B4 U0 G3	B5 U0 G3
WLS-NV-1-48L-1-50K	B3 U0 G3	B3 U0 G3	B1 U0 G3	B3 U0 G3	B5 U0 G3	B5 U0 G3
WLS-NV-1-64L-7-30K	B3 U0 G3	B3 U0 G3	B1 U0 G2	B3 U0 G3	B4 U0 G3	B4 U0 G3
WLS-NV-1-64L-7-40K	B3 U0 G3	B3 U0 G3	B1 U0 G3	B3 U0 G3	B4 U0 G3	B5 U0 G3
WLS-NV-1-64L-7-50K	B3 U0 G3	B3 U0 G3	B1 U0 G3	B3 U0 G4	B5 U0 G3	B5 U0 G3
WLS-NV-1-64L-4-50K	B3 U0 G3	B3 U0 G3	B1 U0 G3	B3 U0 G4	B5 U0 G3	B5 U0 G3

BUG Ratings						
Part Number	T2	T3	T3HSS	T4	T4HSS	T5
WLS-NV-2-80L-7-30K	B3 U0 G3	B3 U0 G3	B1 U0 G2	B3 U0 G3	B4 U0 G2	B5 U0 G3
WLS-NV-2-80L-7-40K	B3 U0 G3	B3 U0 G3	B1 U0 G2	B3 U0 G3	B5 U0 G3	B5 U0 G3
WLS-NV-2-80L-7-50K	B3 U0 G3	B3 U0 G3	B1 U0 G2	B3 U0 G3	B5 U0 G3	B5 U0 G3
WLS-NV-2-80L-1-30K	B3 U0 G3	B3 U0 G3	B1 U0 G4	B3 U0 G4	B5 U0 G4	B5 U0 G3
WLS-NV-2-80L-1-40K	B3 U0 G3	B3 U0 G4	B1 U0 G3	B3 U0 G4	B5 U0 G4	B5 U0 G4
WLS-NV-2-80L-1-50K	B3 U0 G4	B4 U0 G4	B1 U0 G3	B3 U0 G4	B5 U0 G4	B5 U0 G4
WLS-NV-2-96L-7-30K	B3 U0 G3	B3 U0 G3	B1 U0 G2	B3 U0 G3	B5 U0 G3	B5 U0 G3
WLS-NV-2-96L-7-40K	B3 U0 G3	B3 U0 G3	B1 U0 G3	B3 U0 G4	B5 U0 G3	B5 U0 G3
WLS-NV-2-96L-7-50K	B3 U0 G4	B4 U0 G4	B1 U0 G3	B3 U0 G4	B5 U0 G3	B5 U0 G3
WLS-NV-2-96L-1-30K	B3 U0 G4	B4 U0 G4	B1 U0 G3	B3 U0 G4	B5 U0 G4	B5 U0 G4
WLS-NV-2-96L-1-40K	B3 U0 G4	B4 U0 G4	B1 U0 G4	B3 U0 G4	B5 U0 G4	B5 U0 G4
WLS-NV-2-96L-1-50K	B3 U0 G4	B4 U0 G4	B1 U0 G4	B3 U0 G4	B5 U0 G4	B5 U0 G4
WLS-NV-2-112L-7-30K	B3 U0 G3	B3 U0 G3	B1 U0 G3	B3 U0 G4	B5 U0 G3	B5 U0 G3
WLS-NV-2-112L-7-40K	B3 U0 G3	B3 U0 G4	B1 U0 G3	B3 U0 G4	B5 U0 G3	B5 U0 G3
WLS-NV-2-112L-7-50K	B3 U0 G4	B4 U0 G4	B1 U0 G3	B3 U0 G4	B5 U0 G4	B5 U0 G4
WLS-NV-2-112L-1-30K	B4 U0 G4	B4 U0 G4	B1 U0 G4	B4 U0 G5	B5 U0 G4	B5 U0 G4
WLS-NV-2-112L-1-40K	B4 U0 G4	B4 U0 G4	B1 U0 G4	B4 U0 G5	B5 U0 G4	B5 U0 G4
WLS-NV-2-112L-1-50K	B4 U0 G4	B4 U0 G4	B1 U0 G4	B4 U0 G5	B5 U0 G4	B5 U0 G4
WLS-NV-2-128L-7-30K	B3 U0 G3	B3 U0 G3	B1 U0 G3	B3 U0 G4	B5 U0 G3	B5 U0 G3
WLS-NV-2-128L-7-40K	B3 U0 G3	B3 U0 G4	B1 U0 G3	B3 U0 G4	B5 U0 G3	B5 U0 G3
WLS-NV-2-128L-7-50K	B3 U0 G4	B4 U0 G4	B1 U0 G3	B3 U0 G4	B5 U0 G4	B5 U0 G4
WLS-NV-2-128L-1-30K	B4 U0 G4	B4 U0 G4	B1 U0 G4	B4 U0 G5	B5 U0 G4	B5 U0 G4
WLS-NV-2-128L-1-40K	B4 U0 G4	B4 U0 G4	B1 U0 G4	B4 U0 G5	B5 U0 G4	B5 U0 G4
WLS-NV-2-128L-1-50K	B4 U0 G4	B4 U0 G4	B1 U0 G4	B4 U0 G5	B5 U0 G4	B5 U0 G4

WLS LIGHTING SYSTEMS
6820 Corporation Pkwy
Fort Worth, TX 76126
800.633.8711
www.wlslighting.com

Project Name: _____
Date: _____
Location: _____
Notes: _____

NV SERIES LED AREA

BIRD DETERRENT (BD) - offers effective and humane deterrent for larger bird species and provides cost-effective long-term solution to nuisance bird infestations and protect your property.

MARINE GRADE FINISH (MGF) - A multi-step process creating protective finishing coat against harsh environments.
- Chemically washed in a 5 stage cleaning system.
- Pre-baked
- Powder coated 3-5 mils of Zinc Rich Super Durable Polyester Primer.
- 1-2 feet inside pole coverage top and bottom.
- Oven Baked.
- Finished Powder Coating of Super Durable Polyester Powder Coat 3-5 mil thickness.

SHIELDS (HSS, AHS) - House Side Shield (HSS) is designed for full property line cut-off. Automotive House Side Shield (AHS) is a single-sided shield allowing partial cut-off on either side or front of luminaire.

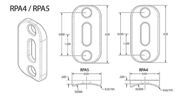
ROUND POLE ADAPTER (RPA) - When using round poles, specify Round Pole Adapter (RPA). Specify RPA4 when installing on 3"-4" round poles, and RPA5 when installing on 5"-6" round poles.

CONTROLS
FSP-211 (FSP-X)—Passive infrared (PIR) sensor providing multi-level control based on motion/daylight contribution.
- All control parameters adjustable via wireless configuration remote storing and transmitting sensor profiles.
- FSP-20 mounting heights 9-20 feet.
- FSP-40 mounting heights 21-40 feet.
- Includes 5 dimming event cycles, 0-10V dimming with motion sensing, reprogrammable in the field.

NEMA 7-PIN RECEPTACLE (PET) - An ANSI C136.41-2013 receptacle provides electrical and mechanical interconnection between photo control cell and luminaire. Dimming receptacle available two or four dimming contacts supports 0-10 VDC dimming methods or Digital Addressable Lighting Interface (DALI), providing reliable power interconnect.

OPTICS - Silicone optics high photo thermal stability and light output provides higher powered LEDs with minimized lumen depreciation LED life, UV and thermal stability with scratch resistance increases exterior application durability. IES types 2 (T2), 3 (T3), 4 (T4), 5 (T5) and NEMA 3 (N3).

RPA4 / RPA5



HOUSE SIDE SHIELD



AUTOMOTIVE HOUSE SIDE SHIELD



FSP-211



WLS LIGHTING SYSTEMS
6820 Corporation Pkwy
Fort Worth, TX 76126
800.633.8711
www.wlslighting.com

Project Name: _____
Date: _____
Location: _____
Notes: _____

NV SERIES LED AREA

WLS NV-1 Lumens																							
Part Number	N3	LM/W	T2	LM/W	DLC	T3	LM/W	DLC	T3 HSS	LM/W	T4	LM/W	DLC	T4 HSS	LM/W	T4 HSS	LM/W	T5	LM/W	DLC	W
WLS-NV-1-16L-35-30K	2016	112	2106	117	P	2106	117	P	1134	63	2187	116	P	1298	72	1116	62	2231	118	P	18
WLS-NV-1-16L-35-40K	2088	116	2238	126	P	2286	127	P	1296	67	2259	125	P	1368	76	1188	66	2304	128	P	18
WLS-NV-1-16L-35-50K	2160	120	2378	132	P	2394	133	P	1278	71	2338	131	P	1440	80	1260	70	2412	134	P	18
WLS-NV-1-16L-53-30K	3236	112	3150	114	P	3230	115	P	1764	63	3139	113	P	3016	72	1736	62	3246	116	P	28
WLS-NV-1-16L-53-40K	3248	116	3472	124	P	3472	124	P	1876	67	3444	123	P	3128	76	1848	66	3500	125	P	28
WLS-NV-1-16L-53-50K	3360	120	3612	129	P	3640	130	P	1988	71	3584	128	P	3240	80	1960	70	3668	131	P	28
WLS-NV-1-16L-7-30K	4032	112	360	110	P	3960	110	P	2268	63	3973	109	P	2892	72	2232	62	3996	111	P	36
WLS-NV-1-16L-7-40K	4176	116	4428	423	P	4284	119	P	2412	67	4312	117	P	2736	76	2376	66	4320	120	P	36
WLS-NV-1-16L-7-50K	4320	12	4644	429	P	4500	125	P	2556	71	4428	123	P	2880	80	2520	70	4500	125	P	36
WLS-NV-1-16L-1-30K	4272	112	4160	110	S	4284	114	P	3528	63	4232	112	P	4032	72	3472	62	4440	113	P	56
WLS-NV-1-16L-1-40K	4496	116	4832	122	P	4848	123	P	3752	67	4776	121	P	4256	76	3696	66	4984	124	P	56
WLS-NV-1-16L-1-50K	4720	120	7168	128	P	7224	129	P	3976	71	7112	127	P	4480	80	3920	70	7280	130	P	56
WLS-NV-1-32L-7-30K	7952	112	7810	110	S	7810	110	S	4473	63	7739	109	S	5112	72	4402	62	7881	111	S	71
WLS-NV-1-32L-7-40K	8236	116	8017	127	P	8449	119	P	4757	67	8307	117	P	5396	73	4686	66	8520	120	P	70
WLS-NV-1-32L-7-50K	8520	120	9139	129	P	8875	125	P	5041	70	8733	123	P	5680	80	4970	70	8940	126	P	71
WLS-NV-1-32L-1-30K	11872	112	11660	110	S	12084	114	S	6678	63	11820	112	S	7632	72	6572	62	12190	115	S	106
WLS-NV-1-32L-1-40K	12296	116	12932	122	P	13038	123	P	7102	67	12826	121	P	8056	76	6996	66	13144	124	P	106
WLS-NV-1-32L-1-50K	12720	120	13508	128	P	13674	129	P	7526	71	13462	127	P	8480	80	7420	70	13780	130	P	106
WLS-NV-1-48L-7-30K	11848	112	11440	110	S	11440	110	S	6552	63	11336	109	S	7488	72	6448	62	11244	111	S	104
WLS-NV-1-48L-7-40K	12064	116	13208	127	P	12376	119	P	6968	67	12198	117	P	7904	76	6864	66	12480	120	P	104
WLS-NV-1-48L-7-50K	12480	120	13520	130	P	13000	125	P	7384	71	12792	123	P	8320	80	7280	70	13104	126	P	104
WLS-NV-1-48L-1-30K	17472	112	17160	110	S	17784	114	S	9828	63	17472	112	S	11232	72	9672	62	17940	115	S	156
WLS-NV-1-48L-1-40K	18096	116	19832	122	P	19188	123	P	10452	67	18876	121	P	11856	76	10296	66	19344	124	P	156
WLS-NV-1-48L-1-50K	18720	120	19968	128	P	20124	129	P	11076	71	19812	127	P	12480	80	10920	70	20280	130	P	156
WLS-NV-1-64L-7-30K	15232	112	14960	110	S	14960	110	S	8588	63	14823	109	S	9792	72	8432	62	15096	111	S	136
WLS-NV-1-64L-7-40K	15776	116	17272	127	P	16184	119	P	9112	67	15912	117	P	10336	76	8976	66	16320	120	P	136
WLS-NV-1-64L-7-50K	16320	120	17680	130	P	1700	125	P	9656	71	16728	123	P	10880	80	9520	70	17136	126	P	136
WLS-NV-1-64L-1-30K	22960	112	22530	110	S	23370	114	S	12915	63				15192	74	12710	62	23575	115	S	205
WLS-NV-1-64L-1-40K	23780	116	25010	122	P	25215	123	P	13735	67	24805	121	P	15580	76	13530	66	25420	124	P	205
WLS-NV-1-64L-1-50K	24600	120	26240	128	P	26445	129	P	14555	71	26035	127	P	16400	80	14350	70	26650	130	P	205

*DLC S= Standard P=Premium

WLS LIGHTING SYSTEMS
6820 Corporation Pkwy
Fort Worth, TX 76126
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www.wlslighting.com

Project Name: _____
Date: _____
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Notes: _____

NV SERIES LED AREA

WLS NV-2 Lumens																							
Part Number	N3	LM/W	T2	LM/W	DLC	T3	LM/W	DLC	T3 HSS	LM/W	T4	LM/W	DLC	T4 AHS	LM/W	T4 HSS	LM/W	T5	LM/W	DLC	W
WLS-NV-2-80L-7-30K	18816	112	19744	116	S	19218	113	S	9744	58	18992	112	S	12096	72	9576	57	19713	117	P	168
WLS-NV-2-80L-7-40K	19488	116	21000	125	P	20328	121	P	10416	62	20160	120	P	12768	76	10248	61	21168	126	P	168
WLS-NV-2-80L-7-50K	20160	120	21672	129	P	21168	126	P	11088	66	21000	125	P	13440	80	10920	65	21840	130	P	168
WLS-NV-2-80L-1-30K	29465	112	23141	107	S	27312	104	S	15254	58	30245	115	S	18936	72	14901	57	29191	111	S	263
WLS-NV-2-80L-1-40K	30508	116	30245	114	S	29456	112	S	16306	62	32086	122	S	19988	76	16043	61	31397	119	S	263
WLS-NV-2-80L-1-50K	31560	120	31297	119	P	30508	116	S	17358	66	33664	128	P	21050	80	17095	65	33138	126	P	263
WLS-NV-2-96L-7-30K	23400	112	23200	116	S	22600	113	S	11600	58	22400	112	S	14400	72	11400	57	23400	117	S	200
WLS-NV-2-96L-7-40K	23200	116	25000	125	P	24200	121	P	12400	62	24000	120	P	15200	76	12200	61	25200	126	P	200
WLS-NV-2-96L-7-50K	24000	120	25800	129	P	25200	126	P	13200	66	25000	125	P	16000	80	13000	65	26000	130	P	200
WLS-NV-2-96L-1-30K	35392	112	33812	107	S	32864	104	S	18328	58	36340	115	S	22752	72	18012	57	35075	111	S	316
WLS-NV-2-96L-1-40K	36656	116	36340	115	S	35392	112	S	19592	62	38552	122	S	24016	76	19276	61	37604	119	S	316
WLS-NV-2-96L-1-50K	37920	120	37604	119	P	36656	116	S	20856	66	40448	128	P	25280	80	20540	65	39816	126	P	316
WLS-NV-2-112L-7-30K	27248	112	28188	116	S	27428	113	S	14504	58	27216	112	S	17496	72	13851	57	28431	117	P	243
WLS-NV-2-112L-7-40K	28188	116	30375	125	P	29403	121	P	15066	62	29160	120	P	18468	76	14823	61	30618	126	P	243
WLS-NV-2-112L-7-50K	29100	120	31347	129	P	30618	126	P	16038	66	30375	125	P	19440	80	15795	65	31590	130	P	243
WLS-NV-2-112L-1-30K	40992	112	39162	108	S	38061	104	S	21228	58	42090	115	S	26352	72	20862	57	40626	111	S	366
WLS-NV-2-112L-1-40K	42456	116	42090	115	S	40992	112	S	22692	62	44652	122	S	27816	76	22326	61	43554	119	S	366
WLS-NV-2-112L-1-50K	43920	120	43554	119	P	42456	116	S	24156	66	46848	128	P	29280	80	23790	65	46446	126	P	366
WLS-NV-2-128L-7-30K	29680	112	30740	116	S	29945	113	S	15370	58	29680	112	S	19080	72	15105	57	31005	117	P	265
WLS-NV-2-128L-7-40K	30740	116	33135	125	P	32065	121	P	16430	62	31800	120	P	20140	76	16165	61	33390	126	P	265
WLS-NV-2-128L-7-50K	31800	120	34185	129	P	33390	126	P	17490	66	33125	125	P	21200	80	17225	65	34450	130	P	265
WLS-NV-2-128L-1-30K	45808	112	43763	107	S	42536	104	S	23728	58	48035	115	S	29448	72	23313	57	45399	111	S	409
WLS-NV-2-128L-1-40K	47444	116	47035	115	S	45808	112	S	25338	62	49898	122	S	31074	76	24949	61	48671	119	S	409
WLS-NV-2-128L-1-50K	49080	120	48671	119	P	47445	116	S	26984	66	52352	128	P	33129	81	26585	65	51534	126	P	409

*DLC S= Standard P=Premium

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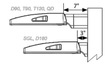
NV SERIES LED AREA

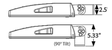
DIRECT POLE (DP) - Standard mounting arm is extruded aluminum in lengths of 3" and 7." Arm lengths may vary depending on configuration



WALL MOUNT (WM) - Cast Aluminum Plate for direct wall mount. 3" extruded aluminum arm mounts directly to a cast wall mount box



TRUNNION MOUNT (TM) - Steel, bolt-on-mounting for adjustable installation with a maximum uplift of 90 degrees.



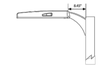
TENNIS ARM (TA) - Steel fitter slips over 3.5" x 1.5" rectangular arm. *See Tennis Arm Spec Sheet for details*Unpainted stainless steel is standard mounts



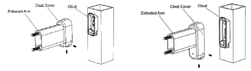
KNUCKLE MOUNT (KM) - Die Cast Knuckle great for adjustable installation on 2-3/8" OD vertical or horizontal tenon.
- Max Uptilt of 114 degrees
- Adjustable in 6 degree increments directly to a cast wall mount box



ARCHITECTURAL SWEEP ARM (ASA) - Cast Sweep Arm includes (as standard) Internal Quick Mount Bracket. Standard mounts directly to a cast wall mount box



OPTIONAL - Optional Cast Aluminum Bracket, Quick Mount Bracket (QMB) and Retrofit Quick Mount Bracket (RQMB), designed for quick mounting on Direct Square or Round Poles. Cleat mounts directly to pole for easily hung fixtures.



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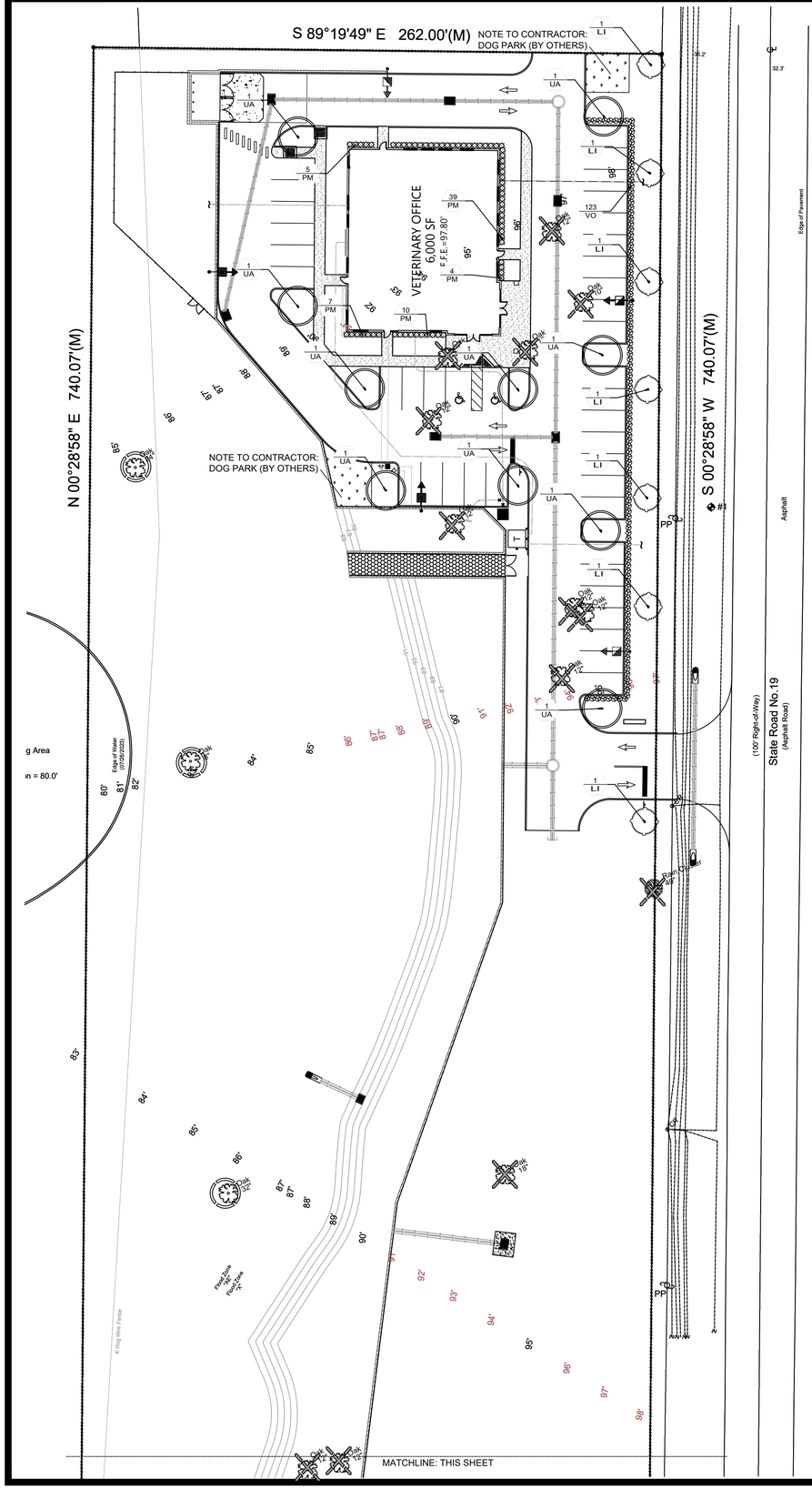
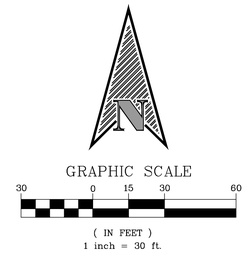


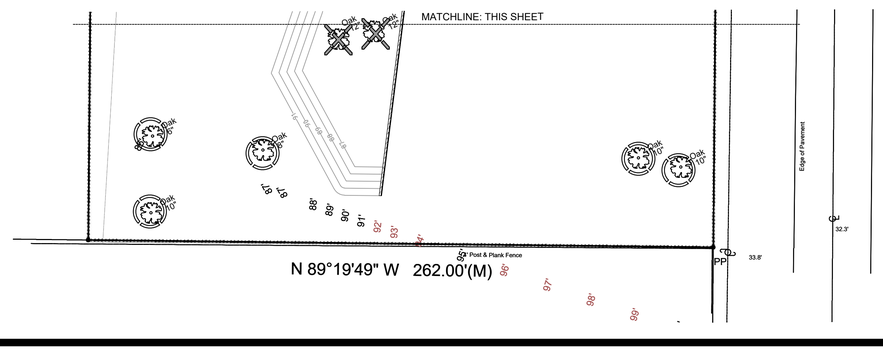
Existing Trees to Remove		
Count	SIZE	TYPE
1	10"	Oak
1	24"	Oak
7	12"	Oak

Existing Trees to Remain		
Count	SIZE	TYPE
1	49"	Rain Cluster
1	24"	Oak
2	8"	Oak
1	32"	Oak
2	12"	Oak
1	6"	Oak
3	10"	Oak
1	18"	Oak

UNDERSTORY TREES PLANTED ON EAST SIDE OF PROPERTY DUE TO OVERHEAD UTILITIES.

NOTE TO CONTRACTOR: ALL DISTURBED AREAS TO RECEIVE SOD





48 HOURS BEFORE YOU DIG
CALL SUNSHINE
1-800-432-4770 or 811
IT'S THE LAW IN FLORIDA
FLORIDA LAW REQUIRES EXCAVATORS TO NOTIFY OWNERS OF UNDERGROUND FACILITIES NO LESS THAN TWO (2) DAYS PRIOR TO EXCAVATION

CADDSCAPES, INC.
Florida Landscape Architecture Firm
432 Nowell Loop
Deland, FL 32724
Office: 407 310-5567
Landscape Architect:
Jason Bridgewater, RLA
Florida Water Star AP
jasonbridgewater@gmail.com

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Z DEVELOPMENT SERVICES
CIVIL ENGINEERING CONSULTANTS
CA 29354
1201 E. ROBINSON STREET
ORLANDO, FL 32801
PH: (407) 271-8910

REVISION	DATE
1 REVISED BASE	8/7/25

DATE: 2025-08-28

REGISTERED LANDSCAPE ARCHITECT
JASON BRIDGEWATER
LA 6667308
STATE OF FLORIDA

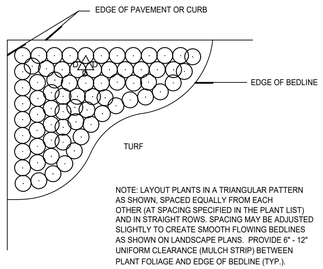
Jason P. Bridgewater
Registered Landscape Architect
FL. Registration -LA 6667308

VETERINARY OFFICE & RETAIL
STATE ROAD 19
SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FL 34737

DATE: 08/28/24
DRAWN: JB/JC
CHECKED: JB

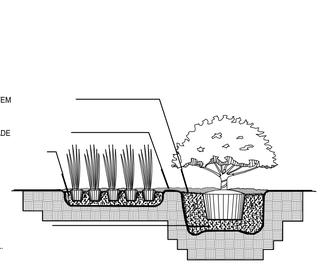
1 LANDSCAPE PLAN L1

PROJECT NO.: 2023.179



SHRUB/GROUNDCOVER SPACING DETAIL

NOT TO SCALE

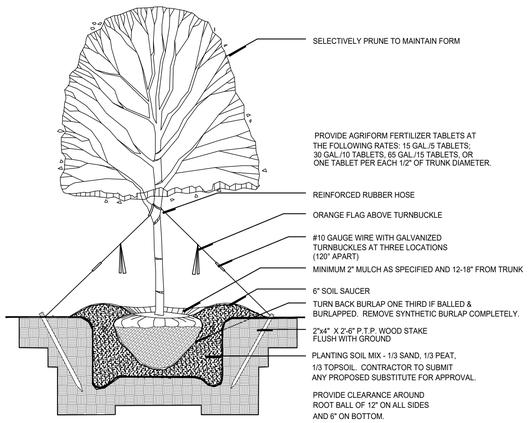


SHRUB AND GROUNDCOVER PLANTING DETAIL

NOT TO SCALE

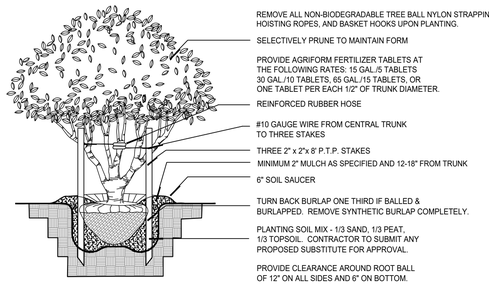
PLANT LIST

SYMBOL	QUANTITY	BOTANICAL NAME	COMMON NAME	DESCRIPTION	REMARKS
TREES					
LI	7	LAGERSTROEMIA INDICA	CRAPE MYRTLE	8 FT HEIGHT, 2.5" CALIPER MINIMUM, MULTI-TRUNK	SPACE AS SHOWN GUY
UA	10	ULMUS ALATA	WINGED ELM	4" CALIPER, MINIMUM	SPACE AS SHOWN GUY
SHRUBS					
PM	65	PODOCARPUS MACROPHYLLUS	PODOCARPUS HEDGE	18" HEIGHT, 3 GAL CAN FULL MINIMUM AT TIME OF PLANTING	30" O.C.
VO	123	VIBURNUM ODORATISSIMUM	SWEET VIBURNUM	18" HEIGHT, 3 GAL CAN FULL MINIMUM AT TIME OF PLANTING	30" O.C.
SOD					
	SEE PLANS	PASPALUM NOTATUM 'ARGENTINE'	ARGENTINE BAHIA	SOLID, FREE OF PESTS AND DISEASES	FIELD VERIFY QTY.
MULCH					
	SEE PLANS	MINI PINE BARK NUGGETS	MINI PINE BARK NUGGETS	FREE OF DIRT AND DEBRIS	FIELD VERIFY QTY.



TREE PLANTING DETAIL

NOT TO SCALE



MULTI-TRUNK TREE PLANTING DETAIL

NOT TO SCALE

LANDSCAPE PLANTING NOTES:

1. ALL PLANTS MUST BE HEALTHY, VIGOROUS MATERIAL FREE OF PESTS AND DISEASES.
2. ALL PLANTS SHALL BE FLORIDA FANCY, AS GRADED IN FLORIDA GRADES AND STANDARDS FOR NURSERY PLANTS.
3. ALL PLANTS ARE SUBJECT TO APPROVAL BY THE LANDSCAPE ARCHITECT AND OWNER BEFORE, DURING, AND AFTER INSTALLATION.
4. ALL SINGLE-TRUNKED TREES SHALL BE STRAIGHT TRUNKED WITH ONE CENTRAL LEADER AND HAVE A FULL, DENSE CROWN.
5. ALL TREES SHALL BE STAKED AND GUYED AS SHOWN IN PLANTING DETAILS.
6. ALL MULCH PLANTING AREAS SHALL BE A MINIMUM OF 2" IN DEPTH.
7. ALL PLANTING AREAS SHALL HAVE A MINIMUM OF 3" TOPSOIL.
8. ALL TREES SHALL BE FREE OF OPEN WOUNDS AND WOUND SCARS IN THE CLEAR TRUNK AREA.
9. ANY SYNTHETIC BURLAP AND/OR WIRE BASKETS MUST BE TOTALLY REMOVED PRIOR TO INSTALLATION OF PLANT MATERIAL. IF NATURAL BURLAP IS USED, IT MAY BE TURNED DOWN 1/3 OF THE ROOTBALL.
10. CALIPER TO BE MEASURED (6) SIX INCHES ABOVE ROOTBALL.

LANDSCAPE CONTRACTOR NOTES:

1. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING, IN FULL, ALL LANDSCAPE PLANTING AREAS, UNTIL THE JOB IS ACCEPTED IN FULL BY THE OWNER. "IN FULL" MEANS WATERING, PEST CONTROL, MULCHING, MOWING, FERTILIZING AND RESETTING TREES THAT ARE OUT OF PLUMB.
2. THE LANDSCAPE CONTRACTOR SHALL COMPLETELY GUARANTEE ALL INSTALLED PLANT MATERIAL FOR A PERIOD OF ONE CALENDAR YEAR BEGINNING ON THE DATE OF 100% COMPLETION. ANY AND ALL REQUIRED PLANT REPLACEMENTS SHALL BE MADE PROMPTLY AND AT NO ADDITIONAL COST TO THE OWNER.
3. THE LANDSCAPE CONTRACTOR SHALL STAKE THE LOCATIONS OF ALL PLANT MATERIAL AND PLANTING BED LINES FOR REVIEW BY THE LANDSCAPE ARCHITECT AND OWNER.
4. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL WRITTEN PLANT QUANITIES PRIOR TO INITIATION OF THE WORK. IN THE EVENT THAT THE PLANS CONTRADICT THE PLANT LIST, THE PLANS SHALL RULE.
5. THE LANDSCAPE CONTRACTOR SHALL BE FAMILIAR WITH AND ACCEPT THE EXISTING SITE CONDITIONS PRIOR TO INITIATION OF THE WORK. ANY VARIATION FROM THE SPECIFIED WORK SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR.
6. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES, DRAINAGE STRUCTURES, CURBS, SIDEWALKS, AND ANY OTHER OBJECTS WHICH MIGHT BE DAMAGED DURING THE WORK.
7. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE ANY AND ALL NECESSARY REPAIRS TO DAMAGE CAUSED BY HIS WORK AT NO ADDITIONAL COST TO THE OWNER OR LANDSCAPE ARCHITECT.
8. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, AND FOLLOWING ALL APPLICABLE LOCAL CODES PERTAINING TO THE PROJECT DURING THE COURSE. OF HIS WORK.

48 HOURS BEFORE YOU DIG
CALL SUNSHINE
1-800-432-4770 or 811
IT'S THE LAW IN FLORIDA
FLORIDA LAW REQUIRES EXCAVATORS TO NOTIFY OWNERS OF UNDERGROUND FACILITIES NO LESS THAN TWO (2) DAYS PRIOR TO EXCAVATION

CADDSCAPES, INC.
Florida Landscape Architecture Firm
432 Nowell Loop
Deland, FL 32724
Office: 407 310-5567
Landscape Architect:
Jason Bridgewater, RLA
Florida Water Star AP
jasonbridgewater@gmail.com
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Z DEVELOPMENT SERVICES
CIVIL ENGINEERING CONSULTANTS
1201 E. ROBINSON STREET
ORLANDO, FL 32801
CA 29354
PH: (407) 271-8910

REVISION	DATE
1 REVISED BASE	8/7/25

DATE: 2025-08-28

REGISTERED LANDSCAPE ARCHITECT JASON BRIDGEWATER 6667308 STATE OF FLORIDA

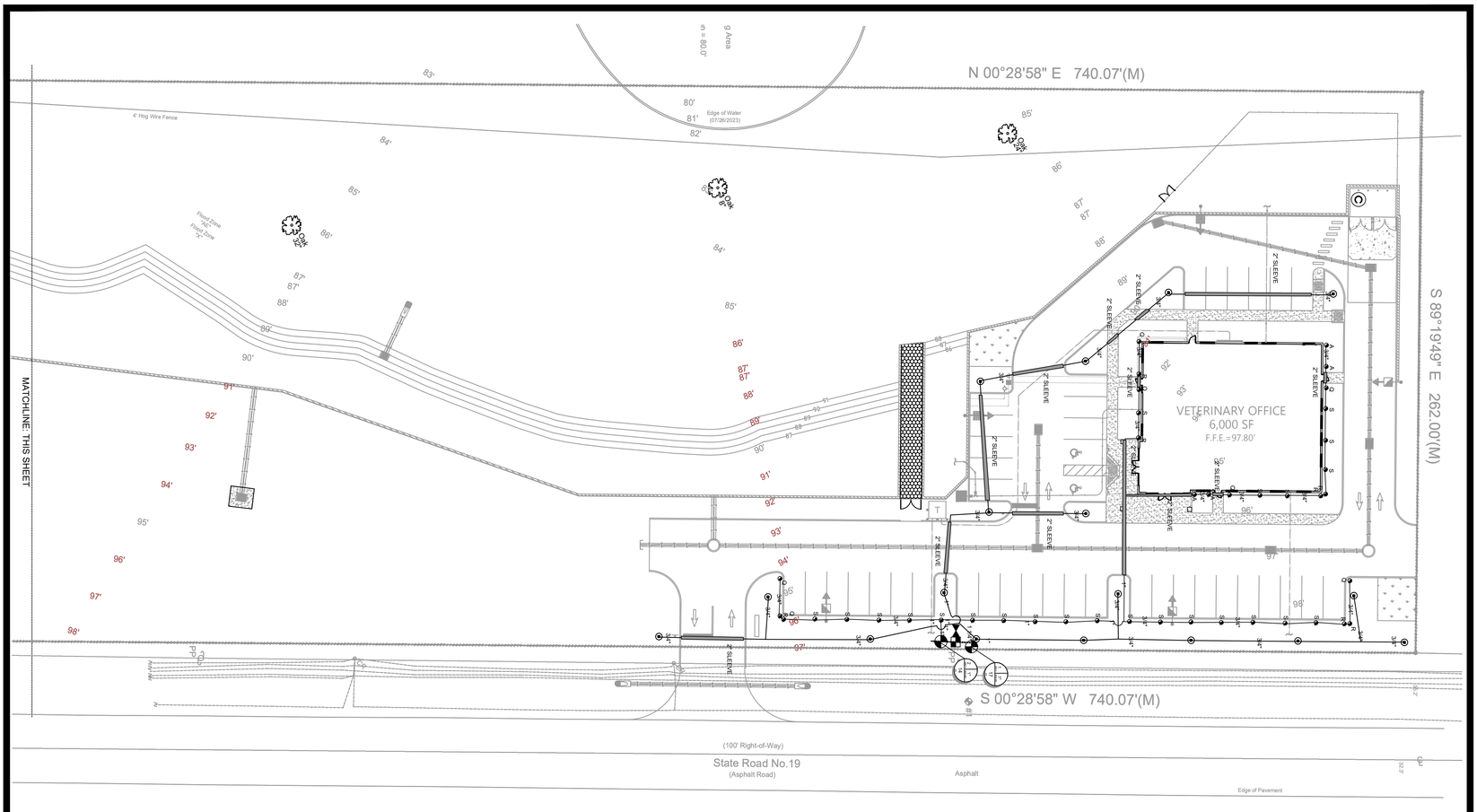
Jason P. Bridgewater
Registered Landscape Architect
FL. Registration -LA 6667308

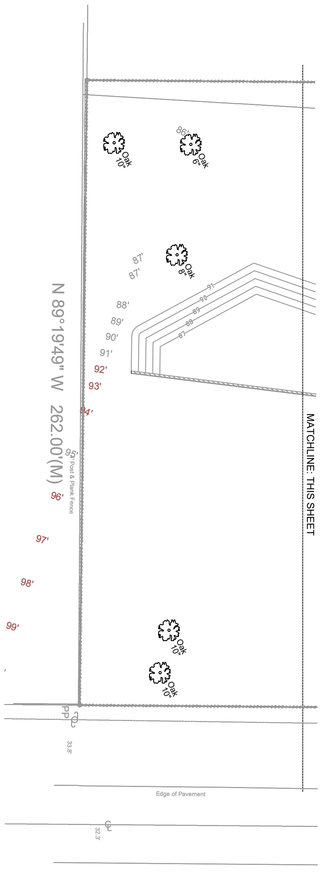
VETERINARY OFFICE & RETAIL
STATE ROAD 19
SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FL 34737

DATE: 08/28/24
DRAWN: JB/JC
CHECKED: JB

LANDSCAPE DETAILS
L2

PROJECT NO.: 2023.179





48 HOURS BEFORE YOU DIG
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FLORIDA LAW REQUIRES
EXCAVATORS TO NOTIFY
ONE-CALL NOTIFICATION
FACILITIES NO LESS THAN TWO
(2) DAYS PRIOR TO EXCAVATION

GRAPHIC SCALE
(IN FEET)
1 inch = 30 ft.
30 0 15 30 60

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DATE: 08/28/24
DRAWN: JB / JC
CHECKED: JB
IRRIGATION PLAN
L3
PROJECT NO.: 2023.179

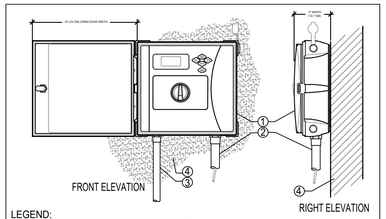
VETERINARY OFFICE & RETAIL
STATE ROAD 19
SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FL 34737

Jason P. Bridgewater
Registered Landscape Architect
FL Registration -LA 6667208
DATE: 2025-08-28

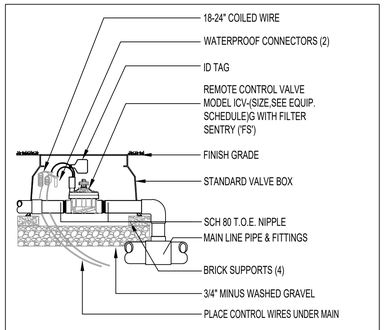
REVISION	DATE
1 REVISED BASE	8/7/25

Z DEVELOPMENT SERVICES
CIVIL ENGINEERING CONSULTANTS
CA 29354
1201 E. ROBINSON STREET
ORLANDO, FL 32801
PH: (407) 271-8910

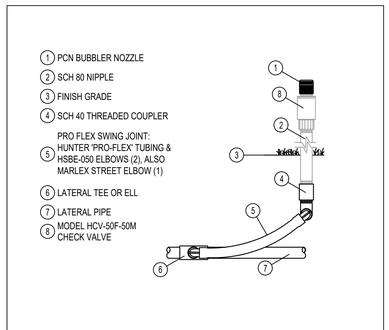
IRRIGATION DETAILS



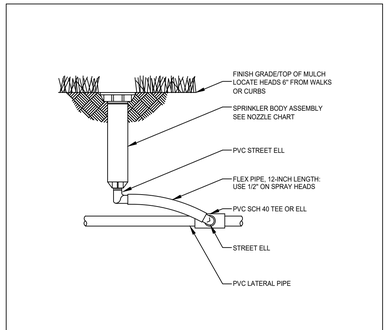
A ICC2 WALL MOUNT CONTROLLER



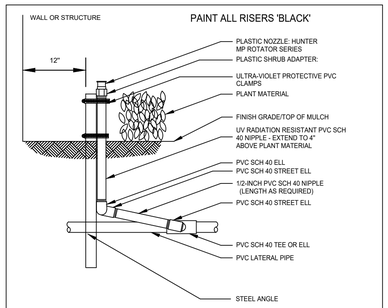
B ICV-151 OR 201 GLOBE VALVE



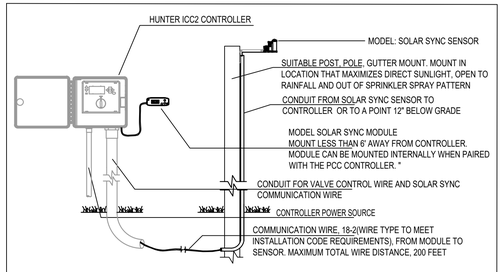
C PCN BUBBLER



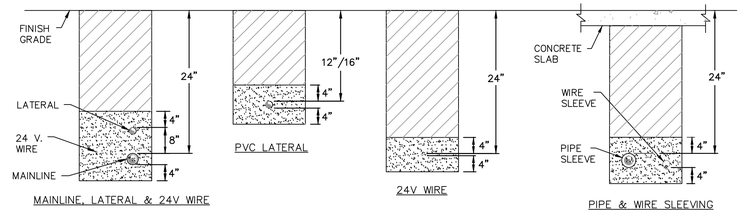
D HEAD DETAIL



E SHRUB RISER DETAIL



F HUNTER SOLAR SYNC SYSTEM



NOTES:
1. BEDDING SHALL BE PLACED AND LEVELED PRIOR TO INSTALLATION OF BURY ITEM.
2. BACKFILL SHALL BE PLACED IN MAXIMUM 6" LIFTS.
3. SLEEVE ALL PIPE AND WIRE SEPARATELY. SLEEVE 2 X DIA. OF PIPE (MIN 2"). ONE PIPE PER SLEEVE. SLEEVES TO BE PRIMED AND SOLVENT WELDED.
4. ALL PIPE TO BE INSTALLED PER MANUFACTURES SPECIFICATIONS WITH PIPE LABELING FACING UP FOR INSPECTION PURPOSES. PROVIDE A MINIMUM OF 2" CLEARANCE TO SIDE OF TRENCH AND BETWEEN PIPES.
5. ALL 120 V. WIRING SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.
6. TAPE AND BUNDLE IRRIGATION CONTROL WIRES EVERY 10'. PROVIDE LOOSE 20" LOOP AT ALL CHANGES OF DIRECTION OVER 30°.
7. ALL REMOTE CONTROL VALVE WIRING NOT INSTALLED WITH MAINLINE PIPE SHALL BE INSTALLED IN A MINIMUM 2" SCHEDULE 40 GREY ELECTRICAL CONDUIT OR AS APPROVED.
8. "NON-POTABLE" WARNING TAPE TO BE INSTALLED ON ALL PRESSURIZED MAINLINES 12" ABOVE THE PIPE.
9. INSTALL ONE ADDITIONAL SLEEVE SIZED TO MATCH THE LARGEST REQUIRED SLEEVE WITH ENDS TAPED FOR FUTURE USE.
10. SLEEVES TO EXTEND A MINIMUM OF 12" PAST HARDSCAPE PLANTERS, CURBS, SIDEWALKS, ETC. SLEEVES TO BE STAGGERED/OFFSET SO THAT SLEEVE USE IS NOT OBSTRUCTED BY OTHER PIPES.
11. WHERE PRESSURE SUPPLY PIPING IS INSTALLED WITHOUT CONTROL WIRING, A 14 GA. TRACKING WIRE SHALL BE INSTALLED.

G TRENCHING DETAILS

IRRIGATION NOTES

1) REFER TO THE LANDSCAPE PLANS WHEN TRENCHING TO AVOID TREES AND SHRUBS.

2) ALL MAINLINE PIPING SHALL BE BURIED TO A MINIMUM DEPTH OF 18" OF COVER. ALL LATERAL PIPING SHALL BE BURIED TO A MINIMUM DEPTH OF 12" OF COVER.

3) ALL POP-UP ROTORS AND SPRAY HEADS SHALL BE INSTALLED USING AN 18" P.V.C. FLEX PIPE CONNECTION. DO NOT USE FUNNY PIPE.

4) ADJUST ALL NOZZLES TO REDUCE WATER WASTE ON HARD SURFACES AND BUILDING WALLS.

5) THROTTLE ALL VALVES ON SHRUB LINES AS REQUIRED TO PREVENT FOGGING.

6) ALL RISERS SHALL BE PAINTED BLACK.

7) ALL RISERS SHALL BE STAKED WITH A STEEL ANGLE AND SECURED WITH ULTRA-VIOLET LIGHT PROTECTED P.V.C. CLAMPS.

8) ALL CONTROL WIRE SPLICES SHALL BE MADE IN VALVE BOXES USING SNAP-TITE CONNECTORS AND SEALANT.

9) THE CONTRACTOR SHALL PREPARE AN AS-BUILT DRAWING ON A REPRODUCIBLE PAPER (SEPIA OR MYLAR) SHOWING ALL INSTALLED IRRIGATION. A MYLAR OR SEPIA OF THE ORIGINAL PLAN MAY BE OBTAINED FROM THE LANDSCAPE ARCHITECT FOR A FEE. THE DRAWING SHALL LOCATE ALL MAINLINE AND VALVES BY SHOWING EXACT MEASUREMENTS FROM HARD SURFACES.

10) ALL VALVES, GATE VALVES AND QUICK COUPLERS SHALL BE INSTALLED IN VALVE BOXES.

11) ANY PIPING SHOWN OUTSIDE THE PROPERTY LINE OR RUNNING OUTSIDE A LANDSCAPE AREA IS SHOWN THERE FOR CLARITY ONLY. ALL LINES SHALL BE INSTALLED ON THE PROPERTY AND INSIDE THE LANDSCAPE AREAS.

12) ALL RISERS SHALL BE INSTALLED 12" FROM ANY WALL AND A MINIMUM OF 36" FROM ANY SIDEWALK, PATIO OR ROAD.

13) THE EXACT HEIGHT OF ANY 12" POP-UP THAT IS SHOWN IN A SHRUB BED SHALL BE DETERMINED BY THE LANDSCAPE ARCHITECT IN THE FIELD.

14) THE CONTRACTOR SHALL EXERCISE CARE SO AS NOT TO DAMAGE ANY EXISTING UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE REPAIRS AND COST OF ANY DAMAGE CAUSED BY HIS WORK.

15) ALL WORK SHALL BE GUARANTEED FOR ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE AGAINST ALL DEFECTS IN EQUIPMENT AND WORKMANSHIP.

16) CONTRACTOR TO USE MIN. OF 12 GAUGE WIRE FOR ALL COMMON WIRES AND 14 GAUGE WIRE FOR ALL CONTROL WIRES. CONTRACTOR ALSO TO PROVIDE 3 SPARE CONTROL WIRES FOR ANY FUTURE USE.

17) CONCRETE THRUST BLOCKS ARE TO BE UTILIZED AT ALL MAINLINE DIRECTION CHANGES.

18) ALL IRRIGATION SHOWN ON PLANS IS SCHEMATIC AND DOES NOT REFLECT ALL FITTINGS AND APPURTENANCES WHICH SHALL BE INCLUDED TO PROVIDE A FULLY FUNCTIONAL IRRIGATION SYSTEM CAPABLE OF PROVIDING 100 PERCENT COVERAGE WITH A 50 PERCENT OVERLAP.

EQUIPMENT LIST

SYMBOL	DESCRIPTION	QUANTITY
◉	0.50 GPM BUBBLER (2 PER TREE)	34
○	6" POP-UP SPRAY - HUNTER INDUSTRIES MPR40 W/MP2000 NOZZELS	0
●	12" POP-UP SPRAY - HUNTER INDUSTRIES MPR40 W/MP2000 NOZZELS	0
◔	SPRAY ON RISER - HUNTER INDUSTRIES INST-00-CV-MP2000	41
▲	HUNTER INDUSTRIES - 4" POP-UP PGP ROTORS- PART RADIUS	0
◭	HUNTER INDUSTRIES - 4" POP-UP PGP ROTORS- FULL RADIUS	0
◮	HUNTER INDUSTRIES - I-40 ROTORS - PART 60' RADIUS	0
◍	HUNTER 'ICV' SERIES ELECTRIC VALVE WITH ACCU-SET PRESSURE REGULATOR 1"	2
◍	HUNTER 'ICV' SERIES ELECTRIC VALVE WITH ACCU-SET PRESSURE REGULATOR 1 1/2"	0
Ⓒ	HUNTER ICC2 8 STATION CONTROLLER, 120VOLT INSTALL WITH A SOLAR SYNC (WITH EVAPOTRANSPIRATION SENSOR AND RAIN SENSOR AND BY-PASS BOX.) GROUND WITH AN 8' COPPER CLAD ROD.	1
▞	1" POTABLE IRRIGATION METER TO PROVIDE 30 GPM AT 40 PSI	1
⋈	1" DOUBLE CHECK VALVE BACKFLOW PREVENTOR	1
———	LATERAL LINE SIZE PER PLAN	SEE PLAN
———	1-1/2" MAINLINE CLASS 200 P.V.C. SIZE PER PLAN	SEE PLAN
▭	SLEEVING - SCH. 40 P.V.C. MIN. DEPTH OF 24" (ALL 3" SLEEVES TO HAVE ACCOMPANYING 2" SLEEVE FOR WIRES)	SEE PLAN

SPRAY NOZZLE CHART

	SYM	NOZZLE	NOZZLE PATTERN	GPM
MP1000 8'-15' radius	A	MAROON	90° ADJUSTABLE ARC	.19
	B	MAROON	180° ADJUSTABLE ARC	.37
	C	LT. BLUE	210° ADJUSTABLE ARC	.43
	D	LT. BLUE	270° ADJUSTABLE ARC	.57
	E	OLIVE	360° ARC	.75
MP2000 13'-21' radius	F	BLACK	90° ADJUSTABLE ARC	.40
	G	BLACK	180° ADJUSTABLE ARC	.74
	H	GREEN	210° ADJUSTABLE ARC	.86
	I	GREEN	270° ADJUSTABLE ARC	1.10
	J	RED	360° ARC	1.47
MP3000 22'-30' radius	K	BLUE	90° ADJUSTABLE ARC	.86
	L	BLUE	180° ADJUSTABLE ARC	1.82
	M	YELLOW	210° ADJUSTABLE ARC	2.12
	N	YELLOW	270° ADJUSTABLE ARC	2.73
	O	GRAY	360° ARC	3.64
STRIPS & CORNERS	P	TURQOUISE	45°-105° ADJUSTABLE ARC	.45
	Q	IVORY	5'x15' LEFT STRIP	.22
	R	COPPER	5'x15' RIGHT STRIP	.22
	S	BROWN	5'x30' SIDE STRIP	.44
BUBBLERS AND MICRO-SPRAYS	T	PCN10	1.00 GPM FLOOD BUBBLER	1.00
	U	PCN50	.50 GPM FLOOD BUBBLER	.50
	V	SR-2Q	90° 2' RADIUS	.11
	W	SR-2H	180° 2' RADIUS	.16
	X	MS-F	360° 5' RADIUS	.50

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PH: (407) 271-8910

REVISION	DATE
1 REVISED BASE	8/7/25

DATE: 2025-08-28

REGISTERED LANDSCAPE ARCHITECT JASON P. BRIDGEWATER 6667308 STATE OF FLORIDA

Jason P. Bridgewater
Registered Landscape Architect
FL. Registration -LA 6667308

VETERINARY OFFICE & RETAIL
STATE ROAD 19
SOUTH OF REVELS ROAD
HOWEY IN THE HILLS, FL 34737

DATE: 08/28/24
DRAWN: JB/JC
CHECKED: JB

IRRIGATION DETAILS
L4

PROJECT NO.: 2023.179

ALTA/NSPS Land Title Survey

Boundary Survey

Legal Description:

THE SOUTH 740 FEET OF THE EAST 262 FEET OF THE FOLLOWING DESCRIBED PROPERTY; NORTH HALF OF GOVERNMENT LOT 3, SECTION 2, TOWNSHIP 21 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA. LYING WEST OF THE RIGHT OF WAY FOR HIGHWAY NO. 19.

FLOOD DISCLAIMER:
BY PERFORMING A SEARCH WITH THE LOCAL GOVERNING MUNICIPALITY OR WWW.FEMA.GOV, THE PROPERTY APPEARS TO BE LOCATED IN ZONES X & A. THIS PROPERTY WAS FOUND IN LAKE COUNTY, COMMUNITY NUMBER 120586, DATED 2012-12-18.

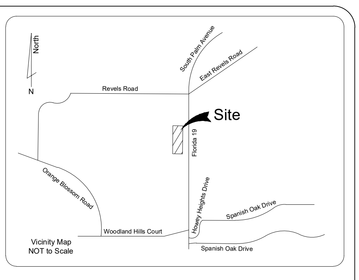
-Benchmark Information-
National Geodetic Survey Datum
Designation - Z 430
PID - AB5339
Elevation - 86.88'
(Elevations are based upon NAVD 88 Datum)

-Site Benchmark Information-
#1
Fnd. 1/2" Rebar & Cap "LB # 7623".
Elevation: 100.44'

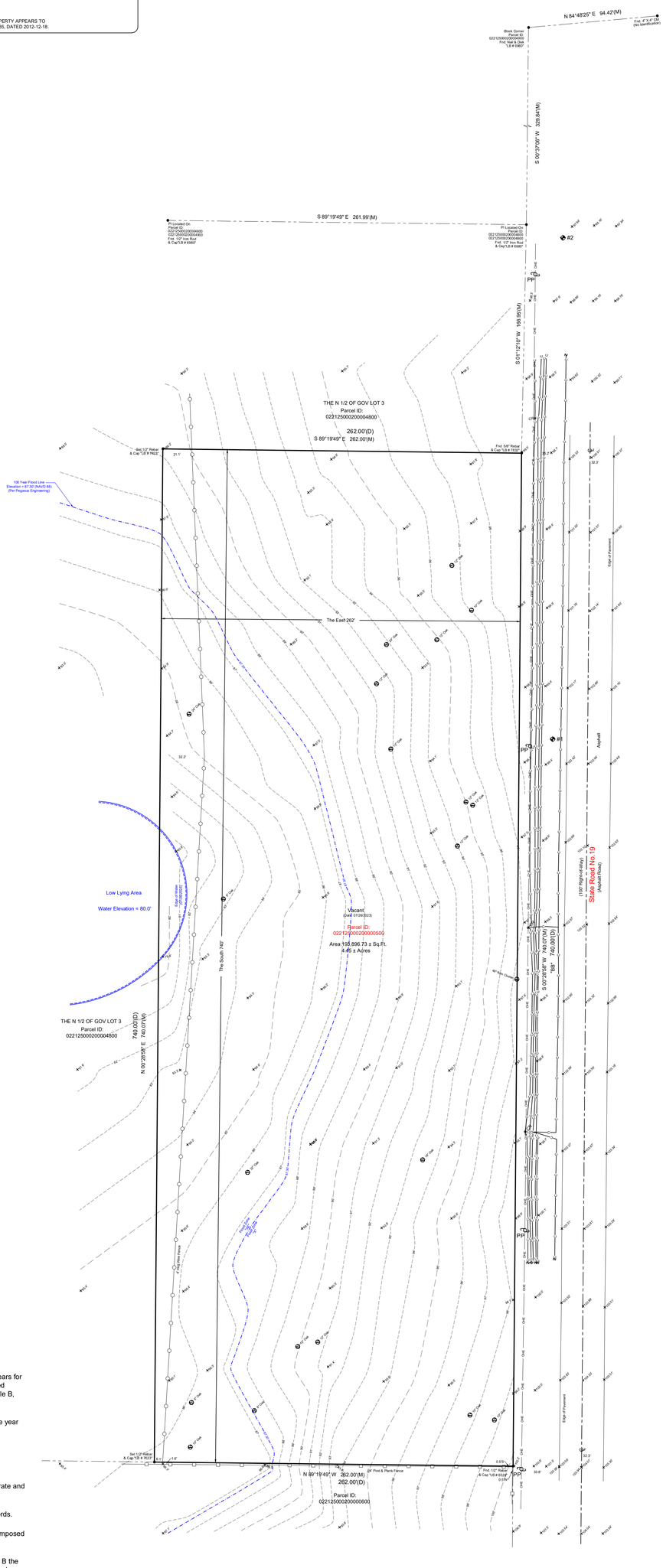
#2
Fnd. 1/2" Rebar & Cap "LB # 7623".
Elevation: 97.31'

Survey Notes:
No Wetland Flags Located at Time of Survey.

Prior Survey Provided by Client by Bishman Surveying & Mapping Inc. used for Reference.



Vicinity Map
NOT to Scale

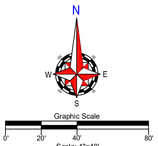


Schedule B - II
Issued by: Old Republic National Title Insurance Company,
Issuing Agent: - 3728801,
Commitment Number: 1422098,
Issuing Office File Number: 22325 Chon,
Effective Date: June 27, 2023 at 11:00 P.M.

1. Any defect, lien, encumbrance, adverse claim, or other matter that appears for the first time in the Public Records or is created, attaches, or is disclosed between the Commitment Date and the date on which all of the Schedule B, Part I - Requirements are met.
No Adverse Claims Provided.
2. a. General or special taxes and assessments required to be paid in the year 2023 and subsequent years.
Not a Survey Matter.
b. Rights or claims of parties in possession not recorded in the Public Records.
None Provided at Time of Survey.
c. Any encroachment, encumbrance, violation, variation, or adverse circumstance that would be disclosed by an inspection or an accurate and complete land survey of the Land and inspection of the Land.
No Visible Encroachments at Time of Surŷey.
d. Easements or claims of easements not recorded in the Public Records.
None Provided at Time of Survey.
e. Any lien, or right to a lien, for services, labor or material furnished, imposed by law and not recorded in the Public Records.
Not a Survey Matter.
3. Any Owner's Policy issued pursuant hereto will contain under Schedule B the following exception: Any adverse ownership claim by the State of Florida by right of sovereignty to any portion of the Land insured hereunder, including submerged, filled and artificially exposed lands, and lands accreted to such lands.
Not on a State Body of Water.
4. Any lien provided by County Ordinance or by Chapter 159, F.S., in favor of any city, town, village or port authority, for unpaid service charges for services by any water systems, sewer systems or gas systems serving the land described herein; and any lien for waste fees in favor of any county or municipality.
Not a Survey Matter.
5. Right of Way Easement in favor of Sumter Electric Cooperative, Inc. recorded in O.R. Book 612, Page 1497, as affected by Quit Claim Deed recorded in O.R. Book 1282, Page 595, Public Records of Lake County, Florida.
Does Not Affect Subject Property. Poles Located Within Right-of-Way.
6. Rights of the lessees under unrecorded leases.
Not a Survey Matter.
7. Coverage is excepted as to riparian and littoral rights; the possible right of the public to use beach area and/or waterways; and any Land insured herein that was formerly or is currently submerged, including any filled lands, artificially exposed lands, and lands accreted to such lands, for the rights of the United States Government and the State of Florida. If the Navigational Servitude Endorsement is attached to this policy and made a part hereof, the coverage afforded thereby shall not extend to any portion of the Land subject to a claim of ownership by the State of Florida by right of sovereignty. Commitment exception #3 is hereby deleted in its entirety.
Not a Survey Matter.

Tree Note:
Oak - Denotes Tree Type
(18") - Diameter of Tree measured at Chest Height

- Underground Cable Line
- Cable Riser
- Wood Power Pole



Graphic Scale
0' 20' 40' 80'
Scale: 1"=40'
Note: Assumed Bearings.

ALTA/NSPS CERTIFICATION

Certified to: JEFFREY S. ESCH, HUNT ASH FIRM, P.A., OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY

This is to certify that this map or plat and the survey on which it is based were made in accordance with the "Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes items 1, 2, 3, 4(b), 7(a), 7(b)(1), 8, 9, 10(b), 13, 16, and 18 of Table A thereof.

The fieldwork was completed on 07/26/2023.

Date of Plat or Map: 10/10/2023.

Patrick K. Ireland, PSM 6637

Gross Land Area: 193,896.73 ± Square Feet or 4.45 ± Acres more or less.

Setback Requirements: Front: UNDEFINED
Side: UNDEFINED
Rear: UNDEFINED

Zoning: PUD

Square footage of Buildings: 0.00 Square Feet ±
Parking Space Size: (Standard): 00 Parking Stripes found at time of Survey
(Handicap): 00 Parking Stripes found at time of Survey

In the process of conducting the fieldwork, no of earth moving work, building construction or building additions within recent months was observed.
In the process of conducting the fieldwork, no evidence of recent street or sidewalk construction or repairs were observed.
In the process of conducting the fieldwork, no evidence of site use as a solid waste dump, sump or sanitary landfill were observed.
In the process of conducting the fieldwork, no evidence of cemeteries and/or burial grounds were observed.
In the process of conducting the fieldwork, no evidence of any water features were observed.
In the process of conducting the fieldwork, no evidence of wetland delineation markers were observed.
Vehicular Access to Subject Property is from State Road No.19

Field Date: 07/26/23	Date Completed: 07/29/23
Drawn By: SD	File Number: IS-120206

-Legend-

C	- Calculated	PC	- Point of Curvature
C/L	- Centerline	PCP	- Point
CB	- Concrete Block	POI	- Point of Intersection
CM	- Concrete Monument	P.O.B.	- Point of Beginning
Conc.	- Concrete	P.O.C.	- Point of Cone
D	- Description	PP	- Power Pole
DE	- Drainage Easement	PRM	- Permanent Reference Monument
Elev.	- Elevation	PT	- Point of Tangency
F.E.M.A.	- Federal Emergency Management Agency	R	- Radius
FFE	- Finished Floor Elevation	Rad.	- Radial
Fnd.	- Found	R&C	- Rebar & Cap
IP	- Iron Pipe	Rec.	- Recovered
IR	- Iron Rod (5/8")	Rebar	- Rebar
M	- Measured	Set	- Set 1/2" Rebar & Cap "LB 7623"
N&D	- Nail & Disk	Rebar	- Rebar
NTS	- Not To Scale	UE	- Utility Easement
ORB	- Official Records Book	WM	- Water Meter
P	- Plat	Δ	- Delta (Central Angle)
P.B.	- Plat Book	-o-	- Chain Link Fence
-/-	- Wood Fence		

Notes:
•Survey is Based upon the Legal Description Supplied by Client.
•Abutting Properties Deeds have NOT been Researched for Gaps, Overlaps and/or Hiatus.
•Subject to any Easements and/or Restrictions of Record.
•Bearing Basis shown hereon, is Assumed and Based upon the Line Shown as S 89°19'49" E.
•Building Ties are NOT to be used to reconstruct Property Lines.
•Fence Ownership is NOT determined.
•Roof Overhangs, Underground Utilities and/or Footers have NOT been located UNLESS otherwise noted.
•Septic Tanks and/or Drainfield locations are approximate and MUST be verified by appropriate Utility Location Companies.
•Use of this Survey for anything other than Closing, Without Written Verification, Will be at the User's Sole Risk and Without Liability to the Surveyor. Nothing Hereon shall be Construed to give ANY Rights or Benefits to Anyone Other than those Certified.
•Flood Zone Determination Shown Hereon is Given as a Courtesy, and is Taken from Publications of FEMA. The Surveyor is not qualified as affected by Flood Factors and/or other information.NEITHER known by NOR given to this Surveying Company at the time of this Endeavor. Ireland & Associates Surveying Inc. and the signing surveyor assume NO Liability for the Accuracy of this Determination.

Revisions
100 Year Flood Line - 10/10/23 - TCK
Trees and Utility Lines - 12/28/23 - BMJ

Ireland & Associates Surveying, Inc.
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Lake Mary, Florida 32746
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Office-407.678.3366
Fax-407.320.8165