Development Review Committee

February 13, 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/86790722180?pwd=4yPXUqDRj9iGtbS7z9fm21akS3O68s.1
Meeting ID: 867 9072 2180 | **Passcode:** 647206

AGENDA

CALL TO ORDER
ATTENDANCE

NEW BUSINESS

1. Discussion: **Mission Rise Pre-Application Meeting**

2. Discussion: **Lake Hills Shopping Complex - Final Site Plan Submission**

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.

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: **Feb 13, 2025 02:00 PM Eastern Time** (US and Canada)
Join Zoom Meeting
https://us06web.zoom.us/j/86790722180?pwd=4yPXUqDRj9iGtbS7z9fm21akS3O68s.1
Meeting ID: 867 9072 2180
Passcode: 647206
Dial by your location

+1 646 558 8656 US (New York)
+1 346 248 7799 US (Houston)
Meeting ID: 867 9072 2180
Passcode: 647206
Find your local number: https://us06web.zoom.us/u/kbz1cg2LMu

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.

ZONING MEMORANDUM

February 12, 2025
Prepared for
Town of Howey-in-the-Hills
Attn: Sean O'Keefe, Town Manager

Mission Rise: Pre-Application Subdivision Plan Review Comments

Applicant: ASF TAP FL I LLC c/o Jason Humm

Planning staff reviewed the proposed Mission Rise Preliminary Subdivision Plans for pre-application. The following will be needed before the subdivision plans can be scheduled for consideration by the Planning and Zoning Board and Town Council. Please provide a response to each item and revise the Plan Set accordingly.

1. Please show Phasing consistent with the Mission Rise PUD Development Agreement dated September 4, 2024 and recorded in Lake County Official Records OR Book 6406, Page 1267. A copy of this Agreement is attached for reference.
2. Please provide a table identifying which lots and the total number of lots that are 9600 square feet and the percentage of lots that total equals. Identify these on the plans.
3. Please demonstrate the widths at building line for each lot consistent with the Mission Rise PUD Development Agreement dated September 4, 2024 and recorded in Lake County Official Records OR Book 6406, Page 1267.
4. Please provide maximum lot coverage data consistent with the Mission Rise PUD Development Agreement dated September 4, 2024 and recorded in Lake County Official Records OR Book 6406, Page 1267.
5. Provide the total acreage and percentage of residential and nonresidential acreage and identify locations consistent with the Mission Rise PUD Development Agreement dated September 4, 2024 and recorded in Lake County Official Records OR Book 6406, Page 1267.
6. Identify the specific amenities in the areas called out on the plan.
7. Additional items are required per Town LDC Section 4.05.12 and 4.05.21. Please revise the plans to accommodate these requirements. A copy of this LDC Chapter is attached for reference and so that the applicant will have the opportunity to review the approval processes outlined in the LDC.
8. The applicant will need to make an application for concurrency review to the School District. Please provide documentation once this has been completed.

INSTRUMENT#: 2024114796 OR BK 6406 PG 1267 PAGES: 23 9/30/2024 3:12:06 PM
GARY J. COONEY, CLERK OF THE CIRCUIT COURT & COMPTROLLER, LAKE COUNTY, FLORIDA
REC FEES: $197.00

This instrument prepared by and should be returned to:
Thomas J. Wilkes
GrayRobinson
301 East Pine Street, Suite 1400
Orlando, Florida 32801

MISSION RISE PUD
DEVELOPMENT AGREEMENT

This **MISSION RISE PUD DEVELOPMENT AGREEMENT** ("Agreement") is made as of the 4th day of September, 2024 ("Effective Date"), between the **Town of Howey-in-the-Hills**, Florida, a Florida municipal corporation (the "Town"), and **ASF TAP FL I, LLC,** a Delaware limited liability company (the "Owner").

RECITALS

A. The Owner owns approximately 243 acres of property more particularly described in Attachment A to this Agreement ("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. To be developed the Property must be zoned PUD - Planned Unit Development.

C. The Property was zoned PUD in or about 2010, but the PUD zoning and its related development agreement expired.

D. The Owner intends to develop and use the Property as a mixed-use planned development consisting of single-family residential, civic and public uses more specifically set forth herein ("the Project"), to be known as the "Mission Rise PUD."

E. In connection with the Owner's request for Village Mixed Use PUD zoning, the Town and the Owner now enter into this Agreement to set forth the terms and conditions of approval negotiated between them for the development and use of the Property as the Mission Rise PUD.

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

Section 1. Land development and uses. Development and use of the Property is subject to the following conditions, requirements, restrictions, and terms:

(a) **General.** Development of the Project and use of the Property shall be governed by this Agreement, the Town's Comprehensive Plan, the Town's Land Development Code ("LDC") and Code of Ordinances ("Town Code"), and all other applicable state laws and regulations and Town ordinances and rules.

Unless otherwise noted, the definition of terms in this Agreement shall be the same as the definitions set forth in the LDC. Where in conflict, the terms of this Agreement shall supersede and prevail over the LDC and Town Code, but only to the extent of the conflict.

The Conceptual Land Use Plan, or Conceptual Plan, is contained in Attachment B to this Agreement and consists of seven pages of the following graphics:

i. Conceptual Plan;

ii. Phasing Plan;

iii. Parks, Trails & Open Space Plan;

iv. Non-Residential Areas;

v. Buffer Typicals; and

vi. Street Cross Sections.

In the Conceptual Land Use Plan for the Project the term "conceptual" means the location of land uses on the site, including areas for residential development, open space, stormwater management, parks, and roads in relation to the site area and other uses on the site. Subsequent plan development may refine the details based on detailed engineering design. "Conceptual" does not mean or contemplate the modification of proposed housing types or the relocation of land uses and roads other than minor adjustments dictated by engineering needs and best practices.

(b) **Phasing**. The Project will be developed in three phases, as shown on the Conceptual Land Use Plan or "Conceptual Plan" in Attachment B to this Agreement. Each phase must be designed and built to operate independently with all necessary public services and utilities infrastructure, including roads, multimodal trails, and master stormwater systems, consistent with Conceptual Land Use Plan. Building permits for residential units in Phase 2 will not be issued until permits for residential units have been issued for Phase 1. Building permits for residential units in Phase 3 will not be issued until permits for residential units have been issued for Phase 2. Revisions to the phasing schedule shall be considered as minor amendments to this Agreement that may be approved by Town Council with no formal amendment to this Agreement required.

(c) **Purpose**. The purpose of the Mission Rise PUD is to:

1. Create an attractive and high-quality single-family housing development compatible with the scale and character of existing residential development and land uses in the Town;
2. Develop a residential area that is safe, comfortable and attractive for and to pedestrians;
3. Create a community with direct visual and physical access to open land, with a strong community identity, and with amenities in the form of community open space;
4. Provide a network of open space for future homeowners; and

5. Provide a variety of lot sizes and housing choices for diverse age and income groups and residential preferences.

(d) **Land uses**. The Conceptual Land Use Plan for the Project in Attachment B is an integral part of the approval of the Project. Elements in the Concept Plan include single-family detached homes, civic uses, multimodal trails and approximately 90 acres of open space and preserved wetlands. Based on the lot-size requirements in this Agreement, the Owner expects to develop a total of 410 single-family homes in the Project. No manufactured or modular homes are allowed. Uses that would be prohibited under the LDC for SFR, MDR-1, or MDR-2 zoning are likewise prohibited in residential areas of the Project.

(e) **Development standards.**

Lot Size
A range of lot sizes shall be provided in order to create variety and offer opportunity for different income households. The minimum lot size of at least 20% of the total number of lots developed in the Project shall be at least 9,600 square feet. The minimum lot size of the remaining lots in the Project shall be at least 8,400 square feet. The minimum frontage for all lots shall be 50 feet on a street or an alley.

Setbacks
The setbacks for single family residential lots shall be as follows:

Front:	25 feet (excluding front porch, which shall be 19 feet)
Rear:	25 feet
Side:	10 feet
Corner:	12.5 feet
Pool / Accessory	10 feet

Dwelling Size
The minimum dwelling size for all single-family residences shall be 1,600 square feet of heated/air-conditioned space under roof plus a two-car garage with a minimum of 400 square feet. Maximum dwelling size shall be 4,600 square feet of heated/air-conditioned space under roof.

Lot Width
The minimum lot width at building line shall be 60 feet with a minimum street frontage for all lots of 50 feet.

Lot Coverage
Lots may have a maximum impervious lot coverage of 55%, to include principal dwelling, all paved areas, and swimming pools.

Height of Structures
No residential structure may exceed 35 feet in height or two (2) stories.

Building Design
If and to the extent not inconsistent with Florida law, building design shall be in accordance with the Architectural Requirements of the Town's LDC and will comply specifically with the design requirements of LDC Sections 4.06.02 and 4.06.03.

The following principles seek to promote a high-quality development that will create a sense of place and community through the development of the site.

- If and to the extent not inconsistent with Florida law, housing styles, shapes and materials shall meet the Towns Land Development Regulations.
- The different housing types shall be integrated architecturally in order to give the development a harmonious appearance.
- The creation of visual richness shall be considered when choosing materials and details. Local characteristics are encouraged.
- Side entrances for garages are encouraged.
- A variety of roof heights, pitches and materials are encouraged.
- Landscaping shall be incorporated into the overall design as a means of linking the development areas with the open spaces.
- Each exterior wall for a single-family home must be a minimum of two materials and a minimum of two colors. Primary facades must have one base color and a complementary wall material may be used to meet the second color requirement.
- Block face restrictions may be reduced to 300 linear feet. The same house model may not be used more than two times within a single block face. For purposes of this requirement, a different house model is a different floor plan, not the same floor plan flipped in a different direction and not the same floor plan with a different exterior treatment.

(f) **Wetlands**. Impacts to wetlands, if any, and wetland buffering shall be subject to the Town's Land Development Regulations, as well as St. Johns River Water Management District regulations.

(g) **Potable water, wastewater, and reclaimed water**. For potable water and wastewater service, well and septic systems are not allowed. The Project must be connected to and served by the Town's potable-water and wastewater systems prior to a certificate of occupancy being issued for a structure in the Project (except temporary construction uses).

Except as may be set forth otherwise in this Agreement, the Owner must install all on-site potable-water, wastewater, and reclaimed-water infrastructure and connect to central water and wastewater systems, and to the Town's reclaimed-water system when available at the Property boundary, all at no cost to the Town. Upon installation, the ownership of all potable water, wastewater and reclaimed-water infrastructure shall be dedicated to the Town. The Owner must pay potable-water, wastewater, and reclaimed-water capital and connection charges, impact fees, and other Town rates, fees, and charges, either applicable currently or in the future.

1. *Potable Water*. The Town will provide potable water, and may in the future provide reclaimed water, to the Project in accordance with its applicable ordinances, resolutions, operating regulations, policies and procedures. The Town will provide potable water to the

Property in sufficient quantities for development of the Project as contemplated herein, subject to the limitations and requirements of permits issued to the Town from time to time by the St. John's River Water Management District in connection with water consumption.

The Owner shall construct, at no expense to the Town, all off-site potable-water-system facilities, lines, pumps, valves, control structures, and appurtenances (other than water-treatment plants) necessary to serve the Project. The construction and route of off-site lines and other structures shall be done according to engineering plans prepared by the Owner and approved by the Town Manager. Potable water shall not be used for irrigation.

2. *Wastewater.* The Town will provide wastewater-collection and transmission service to the Project, transmitting Project wastewater either to the Central Lake Community Development District ("CDD") or to another wastewater utility service provider of the Town's choosing with available capacity to treat and dispose the Project's wastewater ("Wastewater Utility"). The Owner must obtain from the CDD or Wastewater Utility a contract right for the Project to receive treatment and disposal of its wastewater at such provider's treatment and disposal facilities.

The Owner shall construct, at no expense to the Town, all off-site wastewater-system transmission and disposal facilities, lines, lift stations, pumps, valves, control structures, and appurtenances (other than wastewater-treatment plants) necessary to serve the Project. The construction and route of off-site lines, lift stations, pumps, and other structures shall be done according to engineering plans prepared by the Owner and approved by the Town Manager.

3. *Town Option to Oversize Water and Wastewater Lines.* In its review and processing of the preliminary subdivision plans for each phase of the Project, the Town may elect to oversize the off-site lines, pumps, improvements, or other facilities or appurtenances for the Town's water or wastewater system, or for both, necessary to serve such phase. If the Town elects to oversize one or both systems, it must inform the Owner in writing of the specifications for the oversizing(s) prior to or as part of the Town's first round of review comments on the preliminary subdivision plan application. The Town shall reimburse the Owner for the difference in the increase in cost of design, materials and construction to oversize the improvements based on plans and cost estimates provided by the Owner to the Town and approved by the Town Manager, which approval shall not be unreasonably withheld, conditioned or delayed. The Town shall reimburse the Owners for the difference in the costs within 60 days following (i) completion of the improvements and (ii) receipt by the Town of documentation reasonably demonstrating that the Owner has completed the work and has incurred the costs attributable to the over-sizing, all in keeping with the plans and cost estimate previously approved by the Town Manager.

4. *Permit-Induced Costs, Restrictions, Requirements, and Risks.* Under state and federal laws and regulations, the Town may provide its potable-water and wastewater services to the Property and the Owner and its successors only if the Town first has been issued certain required permits. The Owner acknowledges that the permits are inevitably conditioned with requirements and restrictions that typically impose costs and risks. The Owner further acknowledges that, for the Town to operate its potable-water and wastewater systems in an orderly, dependable, and cost-effective manner, the Town must have the ability legally to spread the costs and risks among customers and property owners benefiting from the services. The Owner

acknowledges, therefore, that (i) from time to time the Town may impose rates, fees, and charges and may issue potable-water system and wastewater-system regulations and policies that impose restrictions and requirements on its customers and benefiting property owners, such as the Owner and it successors, and (ii) so long as the Owner or successors are required to pay only their fair share for such rates, fees, and charges, then the imposition of such rates, fees, and charges and the issuance of such system regulations are not prohibited by or otherwise a breach of this Agreement.

5. *Reclaimed Water*. The Owner must install reclaimed water lines, both on-site and off-site as directed by the Town and as required by the Town's Code of Ordinances. Until such time as reclaimed water is available to the Property the Owner and its successors shall use the reclaimed water lines to irrigate properties within the Project boundaries, but only with stormwater from on-site stormwater-retention ponds or with sources other than potable water as may be approved by the Town and St. John's River Water Management District. Except for installation of reclaimed lines at the time of development as noted above, connection to reclaimed water after the development of the Project may not result in additional costs to the Owner or developer.

(h) **Solid Waste**. Solid Waste collection shall be pursuant to Town regulations.

(i) **Drainage**. The maintenance, repair, and replacement of the drainage system shall be the responsibility of the homeowners association(s).

(j) **Transportation**

1. Roadways

A. The Project must have a connected street system that serves vehicles, pedestrians and bicycles and that connects to recreation facilities and adjacent residential/community areas.

B. There must be ingress and egress points at Revels Road, County Number Two Road and Orange Blossom Road in the approximate location shown on the Conceptual Land Use Plan.

C. The access at County Road Number Two must be a full intersection, with dedication of right-of-way sufficient for both (i) construction of turn lanes and (ii) reconstruction of No. 2 Road lanes along the Project frontage with 12-foot travel lanes, 4-foot curb lanes, and 2-foot curb and gutter. Otherwise, design of the No. 2 Road improvements are subject to review and approval by Lake County.

D. Ingress and egress points at the western and eastern boundaries of the Property must also be provided, as shown on the Conceptual Land Use Plan. On the west the Project internal roads must connect to Silverwood Lane. On the east the internal roads must connect to Road DD shown on the Master Site Plan for The Reserve at Howey-in-the-Hills PUD that is to be stubbed to the boundary of the Property. If for whatever reason the internal roads cannot be connected by the Owner to Silverwood Lane on the west or to Road DD in The Reserve

on the east, the Owner must stub the Project roads to the Property boundary for future connection.

E. Revels Road and the north-south Spine Road must be constructed in phases consistent with the phasing plan shown on the Conceptual Land Use Plan. Revels Road and the Spine Road must be public, dedicated to and maintained by the Town. Revels Road and the Spine Road must have a minimum 90-foot right-of-way, 2-foot curb and gutter, and a minimum 32-foot-wide pavement with minimum 12-foot travel lanes and 4-foot curb lanes.

F. All other internal neighborhood roads must have a minimum 50-foot right-of-way, curb and gutter, and a minimum 24-foot-wide pavement with minimum 12-foot travel lanes. All alley roads must have a minimum 24-foot right-of-way, curb and gutter, and a minimum 22-foot-wide pavement. Provision must be made in the rights-of-way for underground utilities.

2. Sidewalks and trails.

All portions of the development must be accessible by a direct, convenient, attractive, safe, and comfortable system of pedestrian facilities. The development must provide appropriate pedestrian amenities. A multimodal trail with minimum width of twelve feet must be constructed within each phase of the Project consistent with Conceptual Land Use Plan and the Town's bicycle/pedestrian plan. The multimodal trail and all sidewalks within rights-of-way must be dedicated to and will be maintained by the Town.

3. Intersection Improvements in Lieu of Proportionate Fair Share Mitigation

The Owner has offered, and the Town accepts the Owner's offer , (i) to undertake and complete at no cost to the Town the reconstruction of the intersection at Revels Road and State Road 19 as a roundabout facility, in return for (ii) the Town waiving its customary transportation-concurrency review and a proportionate fair-share payment by the Owner. The intersection and its design are subject to required approval and permits from the Florida Department of Transportation (FDOT).

The intersection construction must be complete before the issuance of the 51st residential building permit in Phase 2 of the Project.

If the Owner cannot obtain required state permits for an intersection roundabout, the Owner shall undertake and complete construction of the intersection with a traffic signal if allowed by FDOT. For either intersection type both Revels Road and State Road 19 must be constructed in the intersection as four-lane roads.

If the Owner obtains the required state permits for the roundabout intersection or, alternatively, the signalized intersection, the Town will be deemed to have waived its transportation-concurrency review. If the Owner cannot obtain required state permits for reconstruction of the intersection in either configuration, the Project must undergo transportation-concurrency review. The Owner must complete and submit for review prior to final development order a traffic-impact analysis.

If the results of the traffic-impact analysis require any mitigation for traffic generation, the Town and the Owner will work together and with any other applicable jurisdiction as required by applicable law to address such mitigation requirements through Owner's funding of its proportionate fair share of traffic improvements. Payment of the Owner's fair share must be made in pro-rata amounts upon the issuance of each building permit.

(k) **Schools**. The Project must apply for concurrency review at Lake County Public Schools. The school district has a specific application process. The Project must be shown to have appropriate school concurrency before building permits are issued.

(l) **Landscaping Requirements**. All landscaping and buffer requirements shall be in accordance with the LDC and as illustrated on the Conceptual Land Use Plan with the exception of the following:

1. All canopy trees planted at the Project will be a minimum of a 3" caliper;
2. All other buffer and street trees planted at the Project will be a minimum of a 2" caliper;
3. the Owner shall require homebuilders to plant at least one canopy tree for each single-family lot of at least 3" DBH; and
4. the developer will replace the equivalent of 30% of total tree-inches removed.

All trees planted at the Project shall adhere to the current guidelines established by the Florida Grades and Standards for nursery-grown trees and must be Florida grade #1 or better.

Developer must install street trees along each roadway where a common area abuts the road as required by the LDC.

(m) **Tree Protection**. Under no circumstances may any tree, regardless of size or species, be removed from any designated wetland or conservation easement. Trees proposed to be maintained on-site must comply with LDC requirements. No construction activity, equipment or material is permitted inside a tree protection barrier.

(n) **Lighting**. Decorative street lighting (Sanibel fixture, a Duke Energy standard fixture) must be installed (i) at every intersection, (ii) at the end of each cul-de-sac, and (iii) at intervals of 250 feet or as approved otherwise by the Town Manager. Street lighting must be installed by the Owner. All lighting must be directional, shielded lighting designed to minimize light pollution. All lighting must be maintained by the HOA.

(o) **Utilities**. All utilities must be underground.

(p) **Signage**. Entrance signs and informational signage may be located in buffers, setbacks/and or signage easements as approved by the Planning and Zoning Board. Unless stated otherwise in this Agreement all signage must comply with requirements and restrictions in the LDC. The Owner shall present a sign plan for review and approval by the Planning and Zoning Board with the final site plan for each phase of the Project.

The Owner and/or builder(s) may erect temporary vertical marketing flags, also known as feather banners, with the following stipulations:

1. Feather banners must be placed no less than 200 feet apart.
2. A maximum of 10 feather banners, in total.
3. Feather banners cannot be placed within the right of way.
4. Feather banners cannot be located offsite of PUD property.
5. Feather banners cannot exceed 12 feet in height.
6. Feather banners must be replaced or removed if they become faded, torn, or tattered.
7. Feather banners must be removed when 90% of the homes in the development have received building permit approval.

Billboards and pole signs are prohibited. Unless defined differently in the LDC, a pole sign is a permanent sign supported by at least one upright pole, pylon, or post secured to the ground, with the bottom of the sign face four feet or higher above the finished grade.

(q) **Maintenance of Common Areas**. Maintenance of each common area within the Project is the responsibility of the homeowners' association(s) for the affected subdivision.

(r) **Parks, Trails, and Open Spaces.** Each phase of the Project must include (i) the recreation and civic facilities for the phase and (ii) an integrated bicycle network that ties into the bicycle facilities in The Reserve PUD so as to loop the system to connect cyclists from both developments. Structures, facilities, and other improvements to be constructed and installed at the sites designated on the Conceptual Land Use Plan as parks, trails and open spaces must be included for review and approval as part of the final site plan approval for each phase or subdivision of each phase. Plans submitted must be in sufficient detail to provide reasonable understanding and certainty of the improvements, facilities, and uses to be made at each such site.

Section 2. Amendments. Amendments to this Agreement, including minor changes hereto and to the Conceptual Land Use Plan that occur after the effective date of this Agreement shall take effect only if and when approved by the Town Council in the manner required by law or otherwise as determined by Town Council, which may include public notice(s) and hearing(s). Unless waived by Town Council, all such amendments must be reviewed by the Planning and Zoning Board for its recommendation prior to Town Council action.

Section 3. Notices. All notices or payments required to be made hereunder shall be made at the following addresses:

To Town:

Sean O'Keefe, Town Manager
Town of Howey-in-the-Hills
101 North Palm Avenue
Howey-in-the-Hills, FL 34737
sokeefe@howey.org

With copies to:

John Brock, CMC, Town Clerk
Town of Howey-in-the-Hills
101 North Palm Avenue
Howey-in-the-Hills, FL 34737
jbrock@howey.org

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

To Owner:

Jason Humm
1170 Peachtree Street NE, Suite 1150
Atlanta, GA 30309
jhumm@turnstonegroup.com

With copies to:

Rhea Lopes, AICP
RVI Planning + Landscape Architecture
10150 Highland Manor Dr, Suite 450
Tampa FL 33610
rlopes@rviplanning.com

Mike Ripley
Land Advisors
399 Carolina Ave, Suite 200
Winter Park, Florida 32789
MRipley@landadvisors.com

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

Section 4. Severability. If any provision or portion of this Agreement is declared by a court of competent jurisdiction to be void, unconstitutional, or unenforceable, then all remaining provisions and portions of this Agreement shall remain in full force and effect. To that end, this Agreement is declared to be severable.

Section 5. Binding Effect. This Agreement runs with the land and is binding on and enforceable by and against the parties hereto and all their successors in interest. However, no Lot Owner shall have the obligations imposed on the Owner as the developer of the Project 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.

Section 6. Negotiated Agreement. The land uses, densities, intensities, and other conditions of approval of the Project have been negotiated and agreed to by the Owner and the Town. The Conceptual Land Use Plan and this Agreement together constitute an agreement between the parties with the knowledge that the Owner's successors in title, the future homeowners, and other landowners within the Property, as well as the Town and its affected property owners and residents, all will rely justifiably on the agreed-to land uses, densities, and intensities authorized hereby for the Property. For that reason, the Owner and the Owner's 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 set forth in this Agreement. Neither the Owner (and its 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 negotiated and approved by the Town Council and the owner or owners of the then-subject parcel or parcels. This section shall survive the termination and expiration of this Agreement.

Section 7. Homeowners' Association(s).

(a) **Association Responsibilities.** A homeowner's association and/or a property owner's association ("HOA") must be created by the Owner. Membership in the HOA shall be mandatory for all property owners within the Project. The HOA, not the Town, must maintain, repair, and replace all parks, open-space and buffer areas, streetlights, stormwater-management areas and drainage systems, entrance features, boundary walls and/or fences, access tracts, and landscaped tracts within the Project. The Town may opt, however, to undertake any such project of maintenance, repair, and replacement of those structures, facilities and systems. If the Town exercises its option, it may charge or assess either the HOA or its homeowners and property owners to recover the cost of the project.

(b) **Requirement for Plat Recording.** Before a plat may be recorded for the Property and the Project, the Owner shall furnish to the Town copies of the pertinent documents for the homeowners' or property owners' association or associations, which documents must contain the covenants, conditions and restrictions for the Property and must set forth the requirements and restrictions imposed on the HOA and its homeowners and property owners as enumerated in this section 7 and other applicable parts of this Agreement.

Section 8. Additional Requirements.

(a) **Letter of credit**. Construction and dedication to the Town of the public facilities and improvements required under this Agreement and the LDC for each phase of the Project is a condition precedent to final plat approval for such phase. In lieu of construction and dedication, however, the Owner may post a letter of credit or performance bond with the Town for 125% of the cost of such improvements not completed at the time of plat, in which event this condition precedent to final plat approval (but not the requirement to complete construction and to dedicate the public facilities and improvements required under this Agreement and the LDC) will be deemed satisfied.

(b) **Conveyances to the Town**. Property dedicated or otherwise conveyed to the Town under this Agreement must be free and clear of encumbrances unless and to the extent an encumbrance is acceptable to the Town. Encumbrances discovered after the Effective Date of this Agreement must be removed or resolved by the Owner or its successor developer prior to dedication or conveyance of the affected property to the Town.

(c) **Changes in status of land**. Until completion of the Project, the Owner or its successor developer of the Project has a continuing duty (i) to disclose promptly to the Town all changes in ownership, encumbrances, and other matters of record affecting the Property and (ii) to resolve all issues, title or otherwise, that may be identified by the Town as a result of such changes. Failure to disclose such changes or to resolve resulting issues may result in delay in issuance of building and other development permits.

(d) **Developer representations binding**. If at Town Council hearings on the approval of the Project the Owner makes a written or oral promise or representation, and if the promise or representation was relied upon by Town Council in approving the Project or otherwise acted to induce or materially influence Town Council in its vote to approve the Project, the promise or representation is a condition of approval of the Project. The promise or representation is binding on the Owner and its successors and enforceable by the Town against the Owner and its successors as if set forth fully in this Agreement.

Section 9. Governing Law. This Agreement shall be governed by the laws 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.

Section 10. Effective Date; Termination.

(a) **Effective Date**. This Agreement shall take effect upon the Effective Date above, or on the date when it has been executed by both the Town Council and the Owner, whichever is later.

(b) **Termination**. This Agreement shall remain in effect unless and until terminated under one of the following conditions:

1. If as of the second anniversary of the Effective Date of this Agreement an Owner's contract right to treatment and disposal services by the CDD or Wastewater Utility, as required under Section 1(g) above, has not taken effect, the Town may terminate this Agreement by vote of its Town Council. The vote must occur no later than (i) the third anniversary of the Effective Date or (ii) the CDD or Wastewater Utility Contract Date, whichever occurs first. The "Contract Date" is the date on which the Owner's contract right to treatment and disposal services by the CDD or Wastewater Utility takes effect.

2. If as of the second anniversary of the Contract Date no building permit for a residential unit in the Project has been issued, the Town may terminate this Agreement by vote of its Town Council. The vote must occur no later than (i) the third anniversary of the Contract Date or (ii) the date a building permit is issued, whichever occurs first.

3. If as of the fifth anniversary of the Contract Date no building permit for a residential unit in the second phase of the Project has been issued, the Town may terminate this Agreement by vote of its Town Council, but only as it applies to development of the second phase. The vote must occur no later than (i) the sixth anniversary of the Contract Date or (ii) the date a building permit is issued for a residential unit in the second phase, whichever occurs first. Termination of the Agreement for this reason will not act to preclude the Owner or its successor from completing the first phase of the Project.

4. If as of the tenth anniversary of the Contract Date no building permit for a residential unit in the third phase of the Project has been issued, the Town may terminate this Agreement by vote of its Town Council, but only as it applies to development of the third phase. The vote must occur no later than (i) the eleventh anniversary of the Contract Date or (ii) the date a building permit is issued for a residential unit in the third phase, whichever occurs first. Termination of the Agreement for this reason will not act to preclude the Owner or its successor from completing the first or second phase of the Project.

Termination of this Agreement, in whole or in part, under this section shall be without prejudice to the Owner or its successor to apply for Town approvals to undertake or continue development of the Property in light of the circumstances and subject to the land-development regulations then existing in the Town.

Section 11. Recording. This Agreement shall be recorded by the Town, at the Owner's expense, in the Public Records of Lake County, Florida, and shall constitute a covenant running with the land.

Section 12. Authority. This Agreement is entered into by the Town under the home-rule powers granted to it by the Florida constitution (including specifically Article VIII, Section 2(b) thereof), the home-rule powers granted municipalities by statute (including specifically Chapter 166, Florida Statutes), and the Town's Charter. This Agreement does not constitute a "development agreement" under the Florida Local Government Development Agreement Act.

Section 13. Entire Agreement. This Agreement constitutes the entire agreement of the parties with respect to the transactions contemplated herein. It supersedes all prior understandings or agreements between the parties relating to the Property and the Project. No amendment to the terms of this Agreement shall be effective unless 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.

Section 14. Waiver. The failure of a 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. However, any party may waive in writing 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 LDC will be valid and binding against the Town only if approved by a vote of the Town Council.

[Signature pages follow]

IN WITNESS WHEREOF, the parties are signing this Agreement as of the Effective Date or, if later, the date by which both parties have fully executed this Agreement.

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

By: _____
Hon. Martha McFarlane, Mayor

Attest:

By: _____
John Brock, ~~CMC~~, Town Clerk

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

_____
Thomas J. Wilkes, Town Attorney

STATE OF FLORIDA
COUNTY OF LAKE

The foregoing instrument was executed, sworn to and acknowledged before me this 4th day of September, 2024, by Martha McFarlane, personally known to me to be the Mayor of the Town of Howey in the Hills.

(SEAL)

_____
Signature of Notary

John Morgan Brock
Name of Notary Public
(Typed, Printed or stamped)

John Morgan Brock
Notary Public
State of Florida
Comm# HH080696
Expires 1/13/2025

Signed, sealed and delivered
in the presence of:

WITNESSES

Printed Name: Sam Levere

Printed Name: Ignacio Nunez

"OWNER"

ASF TAP FL I, LLC, a Delaware limited liability company

By: _____
Printed Name: TODD TERWILLIGER
As its: VP

STATE OF ~~FLORIDA~~ Georgia
COUNTY OF Cobb

The foregoing instrument was executed, sworn to and acknowledged before me by means of X physical presence or _____ online notarization, this 21 day of August, 2024, by Todd Terwilliger, as Vice President of **ASF TAP FL I, LLC.**, a Delaware limited liability company, on its behalf.

(SEAL)

HUGO FREWIN
Notary Public - State of Georgia
Cobb County
My Commission Expires Jun 22, 2028

_____
Signature of Notary Public

Hugo Frewin
Name of Notary Public
(Typed, Printed or stamped)

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

Attachment A
To
MISSION RISE PUD DEVELOPMENT AGREEMENT

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

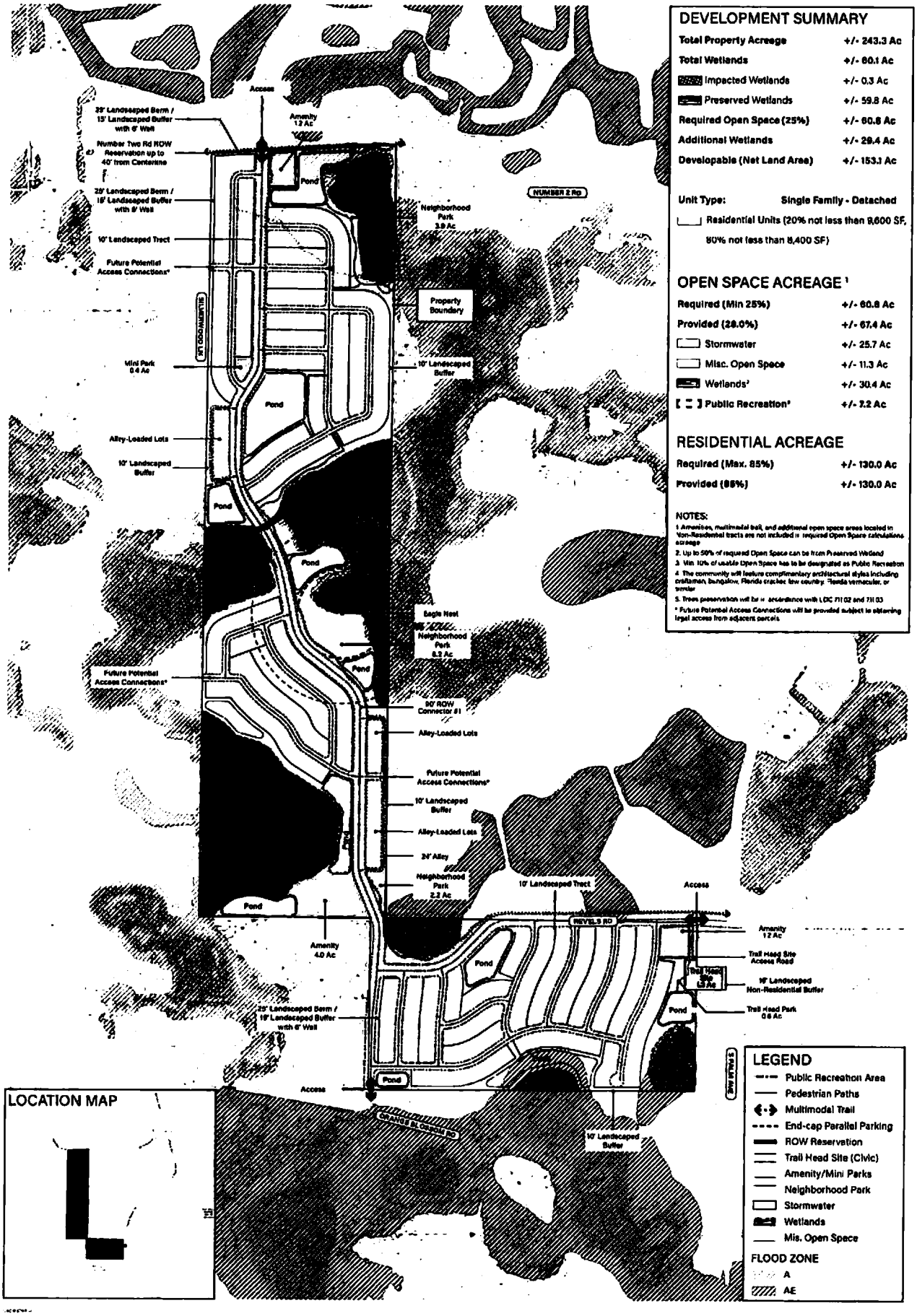
LESS: THE SOUTH 740 FEET OF THE EAST 262 FEET OF THE FOLLOWING DESCRIBED PROPERTY: NORTH HALF OF GOVERNMENT LOT 3, SECTION 2, TOWNSHIP 21 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA, LYING WEST OF ROAD RIGHT-OF-WAY FOR HIGHWAY 19.a

Attachment B
To
MISSION RISE PUD DEVELOPMENT AGREEMENT

CONCEPTUAL LAND USE PLAN

Including the following graphics:

1. Conceptual Plan;
2. Phasing Plan;
3. Parks, Trails & Open Space Plan;
4. Non-Residential Areas;
5. Buffer Typicals; and
6. Street Cross Sections.



RVi

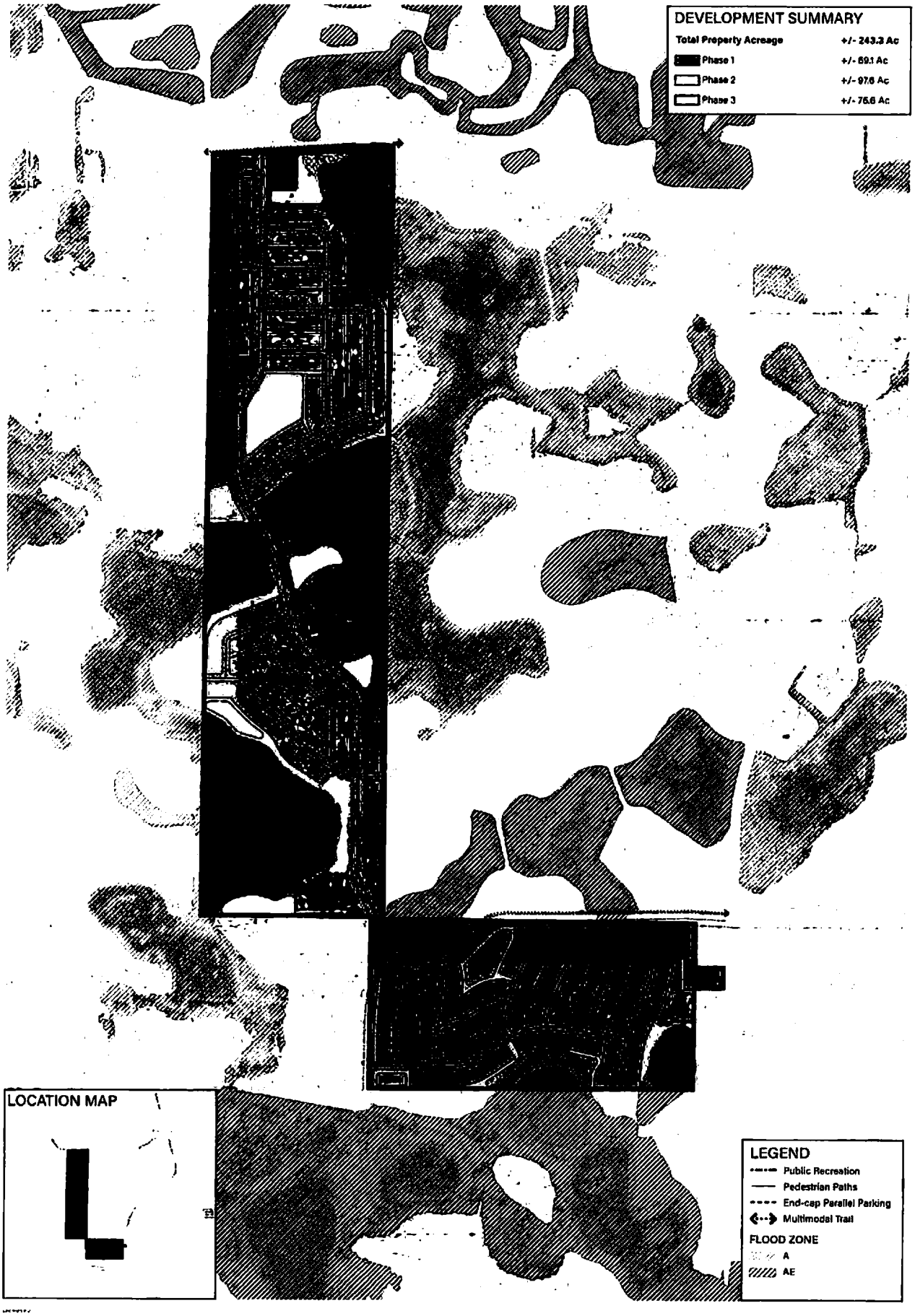
MISSION RISE • **CONCEPTUAL PLAN**

Town of Howey Hills, FL

June 18, 2024

22003786

Turnstone Group / ASF TAP FL I LLC



RVi

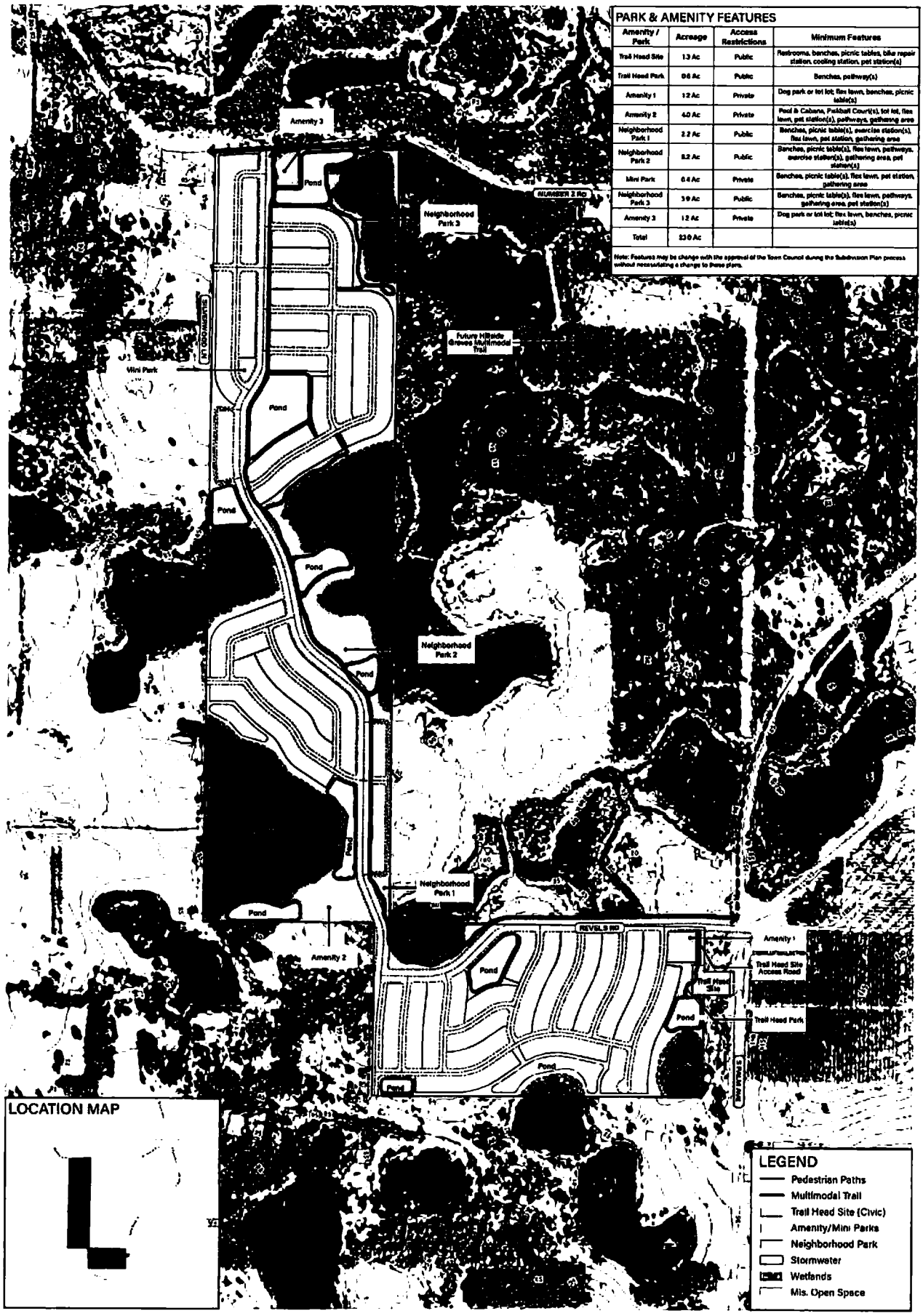
MISSION RISE • PHASING PLAN

Town of Howey Hills, FL

June 18, 2024

22003786

Turnstone Group / ASF TAP FL I LLC.



PARK & AMENITY FEATURES

Amenity / Park	Acreage	Access Restrictions	Minimum Features
Trail Head Site	1.3 Ac	Public	Restrooms, benches, picnic tables, bike repair station, cooling station, pet station(s)
Trail Head Park	0.6 Ac	Public	Benches, pathway(s)
Amenity 1	1.2 Ac	Private	Dog park or tot lot; flex lawn, benches, picnic table(s)
Amenity 2	4.0 Ac	Private	Pool & Cabana, Pickball Court(s), tot lot, flex lawn, pet station(s), pathways, gathering area
Neighborhood Park 1	2.2 Ac	Public	Benches, picnic table(s), exercise station(s), flex lawn, pet station, gathering area
Neighborhood Park 2	8.2 Ac	Public	Benches, picnic table(s), flex lawn, pathways, exercise station(s), gathering area, pet station(s)
Mini Park	0.4 Ac	Private	Benches, picnic table(s), flex lawn, pet station, gathering area
Neighborhood Park 3	3.9 Ac	Public	Benches, picnic table(s), flex lawn, pathways, gathering area, pet station(s)
Amenity 3	1.2 Ac	Private	Dog park or tot lot; flex lawn, benches, picnic table(s)
Total	23.0 Ac		

Note: Features may be change with the approval of the Town Council during the Subdivision Plan process without necessitating a change to these plans.

RVi

MISSION RISE • PARKS, TRAILS & OPEN SPACE PLAN

Town of Howey Hills, FL

June 18, 2024

22003788

Turnstone Group / ASF TAP FL I LLC.

RVi

MISSION RISE • NON-RESIDENTIAL AREAS

Town of Howey Hills, FL

June 18, 2024

22003786

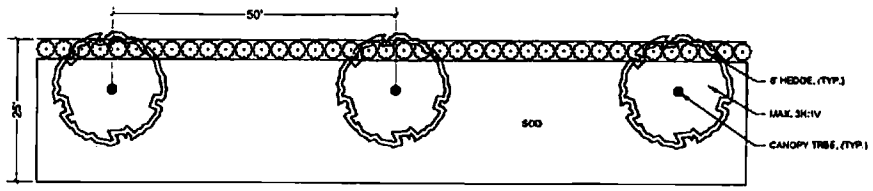
Turnstone Group / ASF TAP FL I LLC

RESIDENTIAL BUFFERS

25' LANDSCAPE BUFFER, TYPICAL

A landscaped berm with a total depth of at least 25 feet and no steeper than 3H:1V. The berm shall be at least three feet (3') in height and the berm together with the landscaping, shall comprise a continuous screen of at least 5 and one half feet (5.5') at time of planting and six feet (6') within one year of planting. Canopy trees shall also be planted every 50 feet along the berm.

For single family subdivisions, these buffers shall be on common property and dedicated to the homeowners' association for ownership and maintenance responsibilities.

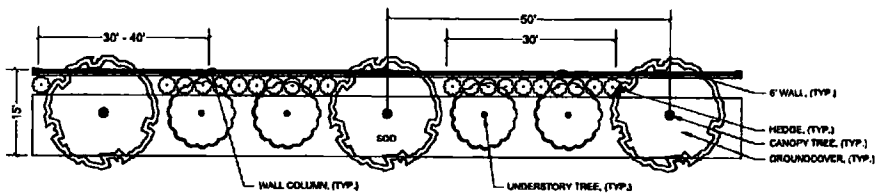


15' LANDSCAPE BUFFER, TYPICAL

A landscaped wall buffer with a minimum depth of 15 feet. The wall shall maintain a height of six feet (6') from grade on highest side and all walls shall have a decorative exterior (no exposed block). Acceptable materials for wall faces are brick, stucco or stone or a combination of those materials. Wall columns shall have a maximum spacing of thirty feet (30') on walls up to two hundred feet (200') in length and forty feet (40') on walls more than two hundred feet (200') in length. Wall columns may extend up to two feet (2') above the height of the wall.

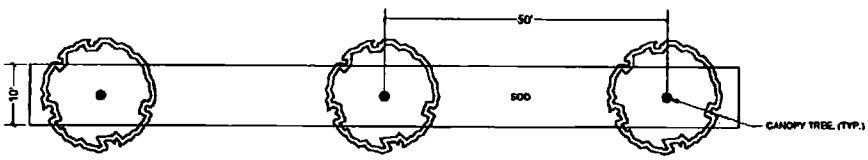
Within each fifty-foot (50') increment along the wall, two (2) canopy trees, two (2) understory trees, and 30 linear feet of shrubs shall be planted. The trees shall not be closer than five feet (5') to a walk or wall. The shrubs shall be at least 30" in height at time of planting.

For single family subdivisions, these buffers shall be on common property and dedicated to the homeowners' association for ownership and maintenance responsibilities.



10' LANDSCAPE BUFFER, TYPICAL

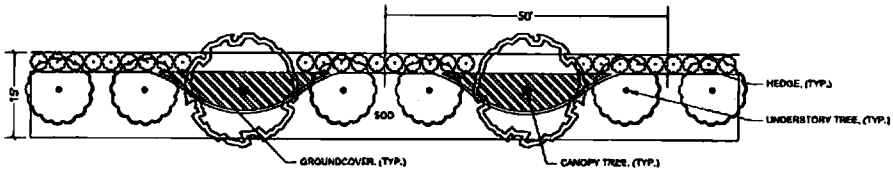
Ten-foot-wide (10') landscaped buffer with trees spaced no more than 50 feet on center.



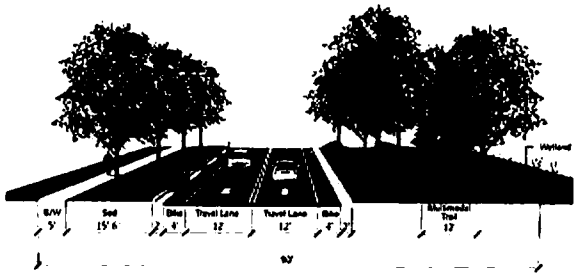
NON-RESIDENTIAL BUFFERS

15' LANDSCAPE BUFFER, TYPICAL

The landscaped buffer shall contain at least one (1) canopy tree, two understory trees and 30 linear feet of shrubs and ground cover for each 50 linear feet of buffer. Canopy trees shall be located no less than five feet (5') and no more than eight feet (8') from sidewalks and other walkways in order to provide shade while minimizing conflicts between tree roots and sidewalks. Similarly, canopy trees shall be used to shade parking areas that adjoin buffers. Understory trees may be planted in groupings and palms may be planted in place of understory trees when clustered in groupings of three or more trees.

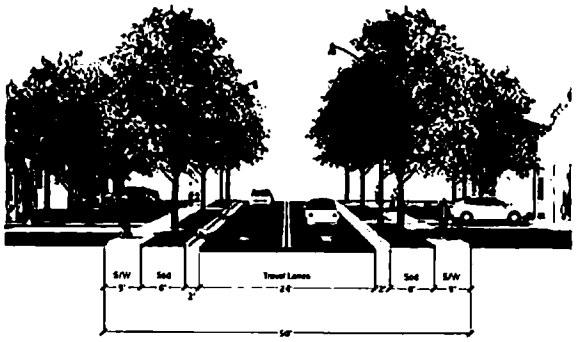


SPINE ROAD
90' ROW WITH BIKE LANE & 12' MULTIMODAL TRAIL

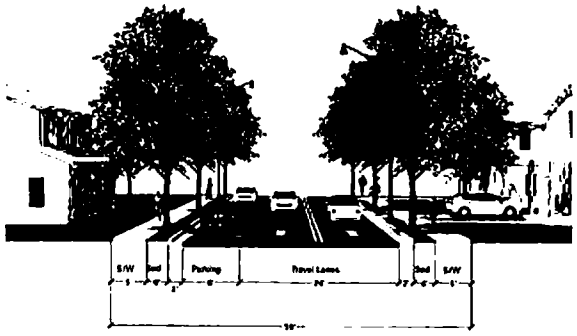


NOTE:
Multimodal Trail is intended to meander in and out of the proposed ROW. Final location may vary based on grading, utilities & final engineering.

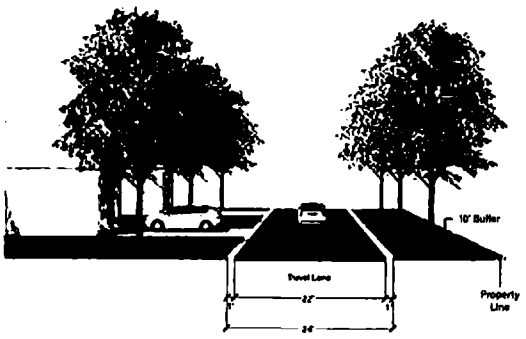
NEIGHBORHOOD ROAD
OPTION 1 - 50' ROW



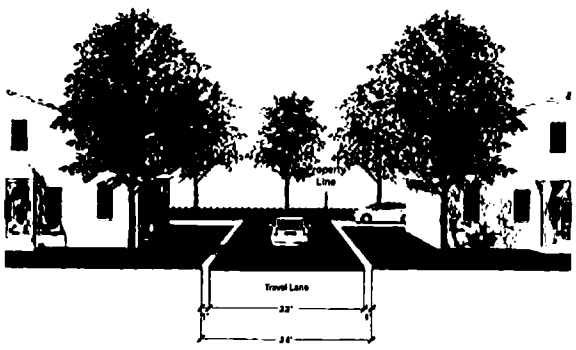
OPTION 2 - 50' ROW WITH PARKING ON ONE SIDE



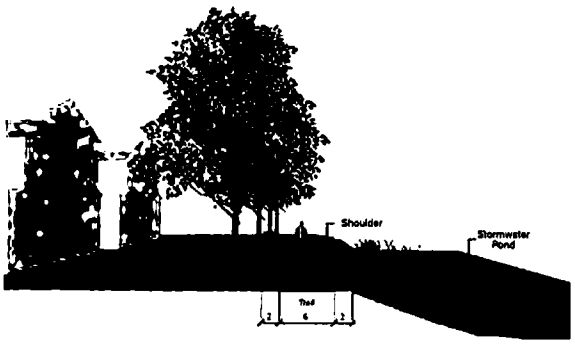
ALLEY ROAD
OPTION 1 - PARALLEL 24' ROW



OPTION 2 - PAIRED 24' ROW



PEDESTRIAN PATH
6' TRAIL



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MISSION RISE • STREET CROSS SECTIONS

Town of Howey Hills, FL
June 18, 2024
22003786
Turnstone Group / ASF TAP FL I LLC

CHAPTER 4

Development Review Procedures

4.00.00 PURPOSE AND INTENT

The public health, safety, comfort, and welfare require the harmonious, orderly, and progressive development of land within the incorporated areas of the Town of Howey in the Hills. Once land has been shaped into lots, blocks and streets, correction of defects is costly and difficult. Substantial public responsibility is created by each new subdivision or development, involving the maintenance of streets, drainage systems, water and wastewater utilities, and other improvements. As the general welfare, health, safety and convenience of the community are directly affected by the new use of land, it is in the interest of the public that subdivisions and other developments are designed and constructed in accordance with sound rules.

4.00.01 The Purpose and Intent of this Chapter is as Follows

A. To establish reasonable and equitable standards of site and subdivision design that will encourage stable communities and the creation of healthy living environments which preserve the natural beauty and topography of Howey in the Hills and ensure appropriate development with regard to these natural features.
B. To ensure public facilities and utilities are available and will have a sufficient capability and capacity to service land developments and their occupants.
C. To prevent traffic hazards and to require the provision of safe and convenient vehicular and pedestrian traffic circulation in land developments, having particular regard to the avoidance of congestion in the streets, providing for the proper location, widths, and design of streets, driveways, and other transportation-related improvements.
D. To coordinate the provision of streets, drainage, and other utilities in an orderly planned manner to ensure protection of the environment and promotion of the general welfare.
E. To lessen the impact from fire, flood, and other dangers.
F. To provide for adequate light, air, and privacy, and to prevent overcrowding of the land.
G. To prevent or reduce the pollution of air and waterways, and to safeguard the water supply and encourage wise use and management of natural resources.
H. To preserve the integrity, stability, beauty and sustainability of the community and the natural value of the land.
I. To guide growth and development in accordance with the Comprehensive Plan.

4.01.00 GENERAL REQUIREMENTS AND ENFORCEMENT

Within the Town of Howey in the Hills, no subdivision or other development shall be made or platted, nor shall any building permit be issued, unless such development meets all the requirements of this Code and has been approved in accordance with the requirements of this Code. The Town Council or any aggrieved person may have recourse to such remedies in law and equity as may be necessary to insure compliance with the provisions of this Code, including injunctive relief to enjoin and restrain any

person violating the provisions of this Code, and any rules and regulations adopted under this Code.

Applications for development approval shall be submitted under the appropriate processes as presented in the following sections. Time frames for processing and review of applications shall commence when the Town Clerk has determined that an application is complete. A complete application includes all required application forms, all required data and plans, and any application and processing fee has been paid. An application where no activity occurs for six (6) consecutive months shall be deemed abandoned.

4.02.00 COMPREHENSIVE PLAN AMENDMENTS

From time to time the Town Council may decide it is appropriate to amend the Town's adopted comprehensive plan either by direction of the Town Council or in response to an application for amendment. In addition to the review and approval process for comprehensive plan amendments as required by Florida Statute, the Town and any applicant proposing amendment of the comprehensive plan shall conform to the following procedure.

4.02.01 Approval Process for Amending the Comprehensive Plan

Proposed amendments to the comprehensive plan are submitted to the Town Clerk and must be accompanied by a Development Review Application and the appropriate fees and review deposit. Approval of the amendment to the comprehensive plan shall be done by ordinance and follow the review procedures for comprehensive plan amendments as set forth in Florida Statue.

4.02.02 Pre-Application Conference

Each applicant shall meet with the Town staff at a pre-application conference before preparing an application for comprehensive plan amendment. In this way, the applicant can become familiar with the requirements and development policies of the Town, and the staff may develop an understanding of the proposed amendment.

4.02.03 Submission of Application for Amendment of the Comprehensive Plan

The applicant shall submit to the Town Clerk, eight (8) copies of the proposed amendment along with the Development Review Application, submittal fee, and review deposit.

4.02.04 Review Process

A The Town Clerk shall distribute copies of the proposed amendment to Lake County, the Lake County School Board, the wastewater treatment provider, and any adjacent cities. The notice shall include the proposed amendment and the

anticipated date for hearing before the Planning and Zoning Board. The Town Planner will then prepare a report to the applicant outlining all the issues.

B The Town Clerk shall schedule a public hearing scheduled before the Planning and Zoning Board. The Planning and Zoning Board shall be provided with copies of the Town Planner's report and any comments received from outside reviewing agencies. Following the public hearing the Planning and Zoning Board shall provide a recommendation on the proposed amendment to the Town Council.

C After the Planning and Zoning Board public hearing, a public hearing is scheduled before the Town Council. The Town Council shall be provided a copy of the information considered by the Planning and Zoning Board along with the recommendation from that Board.

D Following the initial public hearing and action by the Town Council the proposed amendment shall be submitted to the appropriate State agencies for review and comment if this review is required by State statute.

E Following the completion of any required review period for State agency comments, the Town Council shall schedule a public hearing for final action on the proposed amendment. The Town Council may adopt the amendment; adopt the amendment with revisions; or reject the amendment. If the amendment is adopted as proposed or as amended, the amendment shall be provided to the required State agencies as set forth in State Statute.

4.02.05 Notice Procedures

The procedures for notice of proposed amendments to the comprehensive plan future land use map shall be as follows:

A. Notice to property owners. The Town shall send notice via certified mail of the proposed amendment to the owners of all properties within 300 feet of the subject property. Such notice shall be sent no later than 10 days prior to the scheduled public hearing and shall include the date, time, and place of the public hearing along with a clear and concise description of the proposed plan.

B. Posted of property. No later than 10 days prior to the scheduled public hearing, the Town shall post the property that is the subject of the public hearing with signs notifying the public of the proposed amendment, date of public hearing, and person to contact for further information. Signs shall be placed, at a minimum, along all public road frontages, with a least one sign located every 500 feet along any frontage.

C. Publication of notice. Notice of public hearing shall be published in a newspaper of general circulation at least 10 days prior to the public hearing. Notice shall also be posted at Town Hall and on the Town's website. For amendments to the comprehensive plan not involving amendment of the future land use map, only the publication of notice meeting the standards set forth by State Statute is required.

4.02.06 Comprehensive Plan Amendment Application Requirements

The request to amend the comprehensive plan, consisting of properly identified exhibits and support materials, shall include the following:

A. Application forms
B. Application fee
C. Proof of Ownership or authorization from the owner to submit the application
D. Boundary Survey. Must be signed and dated within the last two years.
E. Legal Description**.** Provide paper and digital (disk or email) word format.
F. Vicinity Map**.** Show the property location in relation to major roads and area within 2-mile radius of the proposed amendment site. 8 ½ x 11.
G. Statement of Justification**.** Attach a narrative describing the justification for the request, using support material, including but not limited to the Town's Comprehensive Plan adopted Goals, Objectives, and Policies.
H. School Impact Analysis**.** (If Residential) Contact the Lake County School Board.
I. Transportation Analysis**.** A transportation impact analysis conforming to the standards of Section 8.02.10.
J. Environmental Impact Analysis**.** (Required for all sites 1 acre or greater) The analysis shall be conducted by a qualified biologist and dated less than one year old. The analysis shall document the types of habitat found on site; identify vegetation types, soils types, wetlands, floodplain; and must identify the presence of any threatened or endangered species and/or species of special concern.

4.03.00 SITE PLAN PROCESS

4.03.01 Site Plan Review for Development Not Classified as a Subdivision

A. Site plans shall be submitted to the Town Clerk for review and recommendation by the Development Review Committee (DRC). The DRC recommendation is forwarded to the Planning and Zoning Board for its recommendation to the Town Council. Then both the DRC and Planning and Zoning Board recommendations are forwarded to the Town Council.
B. The applicant has the option of submitting a Preliminary Site Plan as described below or proceeding with a final site plan meeting the standards established in this code.
C. All development subject to site plan approval shall be consistent with the policies of the Town of Howey in the Hills Comprehensive Plan and shall comply with all provisions of this Code and all applicable Town ordinances and regulations.

4.03.02 Approval Process for Preliminary Site Plan

Preliminary Site Plans are submitted to the Town Clerk and must be accompanied by a Development Review Application and the appropriate fees and review deposit. Approval of the Preliminary Site Plan shall be construed as authority for submitting the Final Site Plan. Approval of the Preliminary Site Plan shall not be construed as authority for the issuance of permits to construct improvements or for the issuance of building permits.

A. Pre-Application Conference. Each applicant shall meet with the DRC at a pre-application conference before preparing a Preliminary Site Plan. In this way, the applicant can become familiar with the requirements and development policies of the Town, which may affect the proposed development.
B. Submission of Preliminary Site Plan. The applicant shall submit to the Town Clerk, eight (8) copies of the Preliminary Site Plan along with the Development Review Application, a traffic impact analysis, submittal fee, and review deposit.
C. Review Process
    1. The Town Clerk shall distribute copies of the Preliminary Site Plan and application to the DRC members, the Lake County School Board (for residential development), and the Florida Department of Transportation (FDOT), if applicable. The DRC members and the Lake County School Board and FDOT, where applicable, shall individually review the Preliminary Site Plan and meet to discuss their comments. The Town Planner will then prepare a report to the applicant outlining all the issues. The applicant shall make the changes necessary and submit a revised Preliminary Site Plan.
    2. Once the applicant receives comments from the DRC and any outside agencies on the submitted plans, the applicant has 90 calendar days to submit a response, including a revised set of plans. If the applicant needs more time, a formal request for an extension should be submitted by the applicant at least 30 days prior to the expiration of the 90 days. Failure of the applicant to respond in a timely fashion shall result in the need to resubmit with a new application, including all applicable documents as if being submitted for the first time, including any fees.
    3. After the DRC is satisfied with the Preliminary Site Plan, a public hearing is scheduled before the Planning and Zoning Board. The Preliminary Site Plan and supporting data, and a report from the DRC shall be submitted by the Town Planner to the Planning and Zoning Board at its public hearing.
    4. After the Planning and Zoning Board public hearing, a public hearing is scheduled before the Town Council. The Preliminary Site Plan and supporting data, and a report from the DRC shall be submitted by the Town Planner to the Town Council at its public hearing. This information shall also include the Planning and Zoning Board's recommendation.

4.03.03 Notice Procedures

The procedures for notice of Preliminary Site Plan requests shall be as follows:

A. Notice to property owners. The Town shall send notice via certified mail of the proposed preliminary site plan to the owners of all properties within 300 feet of the subject property. Such notice shall be sent no later than 10 days prior to the scheduled public hearing and shall include the date, time, and place of the public hearing along with a clear and concise description of the proposed plan.
B. Posted of property. No later than 10 days prior to the scheduled public hearing, the Town shall post the property that is the subject of the public hearing with signs notifying the public of the proposed preliminary plan, date of public hearing, and person to contact for further information. Signs shall be placed, at a minimum,

along all public road frontages, with a least one sign located every 500 feet along any frontage.

C. Publication of notice. Notice of public hearing shall be published in a newspaper of general circulation at least 10 days prior to the public hearing. Notice shall also be posted at Town Hall and on the Town's website.

4.03.04 Review and Action by Planning and Zoning Board

The Planning and Zoning Board shall review and recommend approval, approval subject to conditions, or disapproval of the Preliminary Site Plan at the advertised public hearing. In recommending disapproval of any Preliminary Site Plan, the Planning and Zoning Board shall provide reasons for such action.

4.03.05 Action by the Town Council

After the Planning and Zoning Board reviews the Preliminary Site Plan, the public hearing scheduled before the Town Council shall be held. The Town Council shall approve, approve subject to conditions, or disapprove the Preliminary Site Plan. In disapproving any Preliminary Site Plan, the Town Council shall provide reasons for such action.

4.03.06 Preliminary Site Plan Approval by the Town Council

Preliminary site plan approval by the Town Council shall be automatically voided if the Final Site Plan (for either the entire project or the approved first phase) is not approved within one (1) year of the date of approval of the Preliminary Site Plan. The Town Council may grant a time extension, for a maximum of one (1) year, upon written request by the developer to the Town Clerk. The written request must be received by the Town Clerk at least forty-five (45) days prior to the scheduled site plan expiration.

4.03.07 Preliminary Site Plan Extensions

The Town Council, at its sole discretion, may extend for a period of twelve (12) months the date when a site development order would otherwise expire if it concludes that:

A. The site development order has not yet expired,
B. The site development order recipient has proceeded with due diligence and in good faith, and
C. Conditions, including but not limited to LDC changes, have not changed so substantially as to warrant a new application.

4.03.08 Preliminary Site Plan Requirements

The Preliminary Site Plan shall include the information as outlined below. Notes should be used whenever possible, on the preliminary plan, to explain, verify or identify additional information that is important to the understanding of the site and the plan of development.

4.03.09 Preliminary Site Plan Drawings

The plan sheet size shall be 24" x 36". Plans including more than one sheet shall provide a map key relating sheets to the entire planned area. The plan shall include the following information

A. Title Block: The title or name of the proposed development and the name and address of the property owner and the engineer and surveyor engaged in preparing the plan.
B. Legend: Date, scale of plan (no smaller than 1" = 100'), north arrow, current zoning, size of the property (in acres), and total square footage of buildings proposed.
C. Legal Description: A full and detailed legal description of the property and its approximate acreage.
D. Vicinity Map: A vicinity map, at scale, showing the proposed site in relation to the abutting streets and other community identifiers.
E. Rights-of-Way: The location, name, and width of any streets on and immediately contiguous to the property.
F. Ingress/Egress: Proposed locations of access to and from the property.
G. Parking Areas: Proposed areas for parking and number of spaces.
H. Open Space: Total open space required and total open space provided. Include a table to outline what tracts are open space including their purpose and size.
I. Dedications and Reservations: All tracts proposed to be dedicated or reserved for public or private use such as roads, easements, buffers, parks, and utilities.
J. Stormwater Layout: The location of retention ponds and other stormwater facilities. Stormwater calculations are not required at this time; however, the applicant should show an arrow indicating the direction of flow of surface drainage.
K. Phase Lines: The boundary lines of each phase of the site plan.
L. Proposed Building Locations: Location of buildings and proposed square footage of the buildings.
M. Tree Survey: Location, size, and species of all trees with a DBH of 6" or greater, prepared by a Florida licensed land surveyor. The tree survey should be shown as a layer on the Preliminary Site Plans to show the relation of the trees to the proposed improvements. The plans should also include a table indicating which trees are proposed to be saved and which are proposed to be removed. Clear cutting is not allowed.

4.03.10 Approval Process for Final Site Plan

The Final Site Plan shall conform substantially to the approved Preliminary Site Plan. The plans shall also conform to all requirements of these or other adopted Town regulations.

4.03.11 Submission of Final Site Plan

The applicant shall submit to the Town Clerk, ten (10) copies of the Final Site Plan, two (2) copies of architectural plans (signed and sealed by a licensed Florida architect), two (2) copies of the water system hydraulic model (if applicable), two (2) copies of

the sanitary sewer lift station calculations (if applicable), two (2) copies of the stormwater management calculations, two (2) copies of the landscaping, hardscaping, and irrigation plans (signed and sealed by a licensed Florida landscape architect), a concurrency application, and copies of any agency-required permit applications along with the Development Review Application, submittal fee, and review deposit.

4.03.12 Final Site Plan Review Process

The Town Clerk shall distribute copies of the Final Site Plan and application to the DRC members, the Lake County School Board (for residential development), the St. Johns River Water Management District (SJRWMD), the Florida Department of Environmental Protection (FDEP), and FDOT, if applicable. The DRC members, SJRWMD, FDEP, and the Lake County School Board and FDOT, where applicable, shall individually review the Final Site Plan, then meet to discuss their comments. The Town Planner will then prepare a report to the applicant outlining all the issues. The applicant shall make the changes necessary and submit a revised Final Site Plan.

Once the applicant receives comments from the DRC and any outside agencies on the submitted plans, the applicant has 90 calendar days to submit a response, including a revised set of plans. If the applicant needs more time, a formal request for an extension should be submitted by the applicant at least 30 days prior to the expiration of the 90 days. Failure of the applicant to respond in a timely fashion shall result in the need to resubmit with a new application, including all applicable documents as if being submitted for the first time, including any fees.

After the DRC is satisfied with the Final Site Plan and all applicable fees have been paid to the Town, the Plan and supporting data, and a report from the DRC shall be submitted by the Town Planner to the Planning and Zoning Board. The item shall be placed on a regular Planning and Zoning Board meeting agenda for consideration. Final Site Plans do not require a public hearing.

4.03.13 Review and Action by Planning and Zoning Board

The Planning and Zoning Board shall review and recommend approval, approval subject to conditions, or disapproval of the Final Site Plan. In recommending disapproval of any Final Site Plan, the Planning and Zoning Board shall provide reasons for such action.

4.03.14 Review and Action by the Town Council

After the Planning and Zoning Board reviews the Final Site Plan, the item shall be scheduled for a regular Town Council meeting. Final Site Plans do not require a public hearing. The Town Planner shall submit a report to the Town Council outlining the recommendations of both the DRC and the Planning and Zoning Board. The Town Council shall approve, approve subject to conditions, or disapprove the Final Site Plan. In disapproving any Final Site Plan, the Town Council shall provide reasons for such action.

4.03.15 Final Site Plan Approval by the Town Council

Final Site Plan Approval by the Town Council shall be automatically voided if construction on the infrastructure (for either the entire project or the approved first phase) is not started within eighteen (18) months of approval of the Final Site Plan. The Town Council may grant a time extension, for a maximum of one (1) year, upon written request by the developer to the Town Clerk. The written request must be received by the Town Clerk at least forty-five (45) days prior to the scheduled site plan expiration.

4.03.16 Final Site Plan Extensions

The Town Council, at its sole discretion, may extend for a period of up to twelve (12) months the date when a site development order would otherwise expire if it concludes that:

A. The site development order has not yet expired,
B. The site development order recipient has proceeded with due diligence and in good faith, and
C. Conditions, including but not limited to LDC changes, have not changed so substantially as to warrant a new application.

4.03.17 Final Site Plan Requirements

The Final Site Plan shall include the information as outlined below. Notes should be used whenever possible on the final plan, to explain, verify or identify additional information that is important to the understanding of the site and the plan of development.

4.03.18 Final Site Plan Drawings

The plan sheet size shall be 24" x 36". Plans including more than one sheet shall provide a map key relating sheets to the entire planned area. The plans shall include the following information:

A. The title page shall include the name of the project/development, the name and address of the property owner, and the name and address of the engineer preparing the plan. All plans and support documents shall bear the date, seal, and signature of the project engineer.
B. The plans shall include a location map that shows the project in relation to the broad context of the Town.
C. The plans shall include a date, north arrow, and legend.
D. Plans shall be drawn to scale (no smaller than 1"=100').
E. The plans shall include a legal description of the property and the acreage or square footage. The property boundaries should be clearly outlined.
F. If the project is to be phased, the phases should be clearly indicated on the plan. The developer may need to provide additional information to document that the first phase can stand on its own as well as subsequent phases and their reliance only on the proceeding phases.
G. The plans should show property lines with dimensions.

H. Setbacks.
   1. All setbacks from streets and highways shall be illustrated.
   2. The applicable setbacks for the zoning district shall be indicated by the use of notes.
   3. All setbacks on irregular shaped lots shall be illustrated.

I. The line of natural water bodies shall be illustrated.

J. The plans should show street right-of-way lines of adjacent roads.

K. Topographic information. Existing contours at one (1) foot intervals based on field surveys or photogrammetric survey extending a minimum one hundred (100) feet beyond the tract boundary. The topographic survey shall be certified by a land surveyor, registered in the State of Florida.

L. Soils information. Identification of on-site soils shall be drawn on the face of the plan using the Soil Survey of Lake County Area, Florida. An applicant may challenge this determination by demonstrating (through the testing of a geotechnical engineer) that the identified soils are not classified correctly. If the above determination is concurred with by the Town Engineer, then these alternative soil determinations will be used in preparing the plans.

M. Wetlands Survey. Stake and survey of environmentally sensitive areas shall be shown on the plans. An environmental impact assessment will be required for significant or ecologically fragile areas.

N. 100 Year Flood Elevation Information. Where the 100-year flood elevation is shown on the Lake County Flood Insurance Rate Maps (F.I.R.M.), the applicant shall show the location of the one hundred (100) year flood elevation. Data shall be shown for all areas within the 100-year flood zone, as indicated on the F.I.R.M. maps. In this circumstance, the developer will be responsible for the necessary drainage basin studies to establish the 100-year flood elevation. This work will be prepared to the satisfaction of the Town Engineer. If the proposed development will create a change to the existing 100-year flood elevation, this change will be reflected in an amendment to the F.I.R.M. maps. The applicant shall submit a letter of map amendment to FEMA and will need to provide evidence to the Town that FEMA has agreed to the amendment prior to receiving Final Site Plan approval.

O. The tree survey submitted at the Preliminary Site Plan phase should again be overlaid on the Final Site Plans to show trees in relation to proposed improvements. The plans should also include a table indicating which trees are proposed to be saved and which are proposed to be removed. Clear cutting is not allowed.

P. Any existing improvements on the property should be shown on the Final Site Plan and whether those improvements will remain.

Q. The Plans shall show location and dimension of all proposed buildings. Setbacks shall be called out.

R. Open Space. All areas to be counted as Open Space shall be clearly indicated on the plan and summarized in a table by tract, acreage, and use.

S. All streets shall be shown, labeled by street name, showing where curb and gutters, sidewalks, and utility easements are to be provided and indicating street pavement widths.

T. Curbs and gutters, curb inlets and drainage grates shall all be identified on the plan in addition to other stormwater or drainage facilities including manholes, pipes, drainage ditches, retention ponds, etc.
U. All sidewalks or other walkways or trails shall be identified, showing widths and surface material as well as cross sections in the detail pages.
V. The water system including the location of mains, valves and hydrants shall be shown on the plans with submittal of profile sheets.
W. The wastewater system shall be shown on the plans indicating the location of lines and lift stations, where applicable, with the submittal of profile sheets where required.
X. All underground and above-ground utility lines, streetlights, and other facilities shall be shown.
Y. All dumpster pads shall be located with details on enclosures.
Z. New contour lines resulting from earth movement (shown as solid lines) with no larger than one (1) foot intervals, or detailed profiles and cross sections.
AA. The location, dimensions, and materials of all signs, fencing, and walls shall be shown.
BB. Vehicle accommodation areas (including parking areas, loading areas and circulation areas); all designated by surface material and showing dimensions and layout of proposed parking spaces and the dimensions and direction of travel lanes, aisles, and driveways. Also include the number of spaces, including the required handicapped spaces, and the calculations for determining parking demand.
CC. Street signs (according to the Town's Manual of Standards).
DD. Traffic signs and markings, i.e., stop signs, stop bars, speed limit signs, etc. (according to the Town's Manual of Standards).
EE. Proposed vacation of rights-of-way and/or easements are to be addressed.
FF. Any additional information deemed necessary by the Town of Howey-in-the-Hills.

4.04.00 CONSTRUCTION OF INFRASTRUCTURE

Following Final Site Plan approval by the Town Council, the applicant shall file the applicable documents and request a Pre-Construction Conference, as outlined in Section 4.08.01 of this Chapter.

4.05.00 SUBDIVISION PLAN PROCESS

4.05.01 Subdivision Plan Review

A Subdivision plans must first be submitted in Preliminary Subdivision Plan form to the Town Clerk for review and recommendation by the Development Review Committee (DRC). The DRC recommendation is forwarded to the Planning and Zoning Board for its recommendation to the Town Council. Then both the DRC and Planning and Zoning Board recommendations are forwarded to the Town Council. Once the Town Council grants Preliminary Subdivision Plan approval, the next step in the process is Final Subdivision Plan review.

B For subdivisions that have fewer than twenty (20) lots and 10 acres, the applicant has the option of combining the Preliminary and Final Subdivision Plans into one submittal.

C A lot split, which is the division of a single, legally created lot of record into two separate lots, is permitted within platted subdivisions provided the following conditions are met:
1. Only two lots are created from the original legally created lot of record. The original parcel shall be known as the parent parcel and those lots created out of it shall not be entitled to another lot split.
2. A lot split shall not be approved within a platted subdivision when it would change the character of the subdivision.
3. All other requirements of the LDC and the Comprehensive Plan shall still apply.
4. Lot splits shall not result in a flag lot being created.

D All development subject to subdivision plan approval shall be consistent with the policies of the Town of Howey in the Hills Comprehensive Plan and shall comply with all provisions of this Code and all applicable Town ordinances and regulations.

4.05.02 Approval Process for Preliminary Subdivision Plan

Preliminary Subdivision Plans are submitted to the Town Clerk and must be accompanied by a Development Review Application and the appropriate fees and review deposit. Approval of the Preliminary Subdivision Plan shall be construed as authority for submitting the Final Subdivision Plan. Approval of the Preliminary Subdivision Plan shall not be construed as authority for the issuance of permits to construct improvements or for the issuance of building permits.

4.05.03 Pre-Application Conference

Each applicant shall meet with the DRC at a pre-application conference before preparing a Preliminary Subdivision Plan. In this way, the applicant can become familiar with the requirements and development policies of the Town, which may affect the proposed development.

4.05.04 Submission of Preliminary Subdivision Plan

The applicant shall submit to the Town Clerk, eight (8) copies of the Preliminary Subdivision Plan along with the Development Review Application, a traffic impact analysis, submittal fee, and review deposit.

4.05.05 Preliminary Subdivision Plan Review Process

A. The Town Clerk shall distribute copies of the Preliminary Subdivision Plan and application to the DRC members, the Lake County School Board (for residential development), and FDOT, if applicable. The DRC members and the Lake County School Board and FDOT, where applicable, shall individually review the Preliminary Subdivision Plan and meet to discuss their comments. The Town Planner will then prepare a report to the applicant outlining all the issues. The

applicant shall make the changes necessary and submit a revised Preliminary Subdivision Plan.

B. Once the applicant receives comments from the DRC and any outside agencies on the submitted plans, the applicant has 90 calendar days to submit a response, including a revised set of plans. If the applicant needs more time, a formal request for an extension should be submitted by the applicant at least 30 days prior to the expiration of the 90 days. Failure of the applicant to respond in a timely fashion shall result in the need to resubmit with a new application, including all applicable documents as if being submitted for the first time, including any fees.

C. After the DRC is satisfied with the Preliminary Subdivision Plan, a public hearing is scheduled before the Planning and Zoning Board. The Preliminary Subdivision Plan and supporting data, and a report from the DRC shall be submitted by the Town Planner to the Planning and Zoning Board at its public hearing.

~~D.~~ After the Planning and Zoning Board public hearing, a public hearing is scheduled before the Town Council. The Preliminary Subdivision Plan and supporting data, and a report from the DRC shall be submitted by the Town Planner to the Town Council at its public hearing. This information shall also include the Planning and Zoning Board's recommendation.

4.05.06 Notice Procedures

The procedures for notice of Preliminary Subdivision Plans shall be as follows:

A. Notice to property owners. The Town shall send notice via certified mail of the proposed preliminary subdivision plan to the owners of all properties within 300 feet of the subject property. Such notice shall be sent no later than 10 days prior to the scheduled public hearing and shall include the date, time, and place of the public hearing along with a clear and concise description of the proposed plan.

B. Posted of property. No later than 10 days prior to the scheduled public hearing, the Town shall post the property that is the subject of the public hearing with signs notifying the public of the proposed preliminary plan, date of public hearing, and person to contact for further information. Signs shall be placed, at a minimum, along all public road frontages, with a least one sign located every 500 feet along any frontage.

C. Publication of notice. Notice of public hearing shall be published in a newspaper of general circulation at least 10 days prior to the public hearing. Notice shall also be posted at Town Hall and on the Town's website.

4.05.07 Review and Action by Planning and Zoning Board

The Planning and Zoning Board shall review and recommend approval, approval subject to conditions, or denial of the Preliminary Subdivision Plan at the advertised public hearing. In recommending disapproval of any Preliminary Subdivision Plan, the Planning and Zoning Board shall provide reasons for such action.

4.05.08 Action by the Town Council

After the Planning and Zoning Board reviews the Preliminary Subdivision Plan, the public hearing scheduled before the Town Council shall be held. The Town Council shall approve, approve subject to conditions, or deny the Preliminary Subdivision Plan. In disapproving any Preliminary Subdivision Plan, the Town Council shall provide reasons for such action.

4.05.09 Preliminary Subdivision Plan Approval by the Town Council

Preliminary subdivision plan approval by the Town Council shall be automatically voided if the Final Subdivision Plan (for either the entire project or the approved first phase) is not approved within one (1) year of the approval of the Preliminary Subdivision Plan. The Town Council may grant a time extension, for a maximum of one (1) year, upon written request by the developer to the Town Clerk. The written request must be received by the Town Clerk at least forty-five (45) days prior to the scheduled site plan expiration.

4.05.10 Preliminary Subdivision Plan Extensions

The Town Council, at its sole discretion, may extend for a period of twelve (12) months the date when a subdivision development order would otherwise expire if it concludes that:

A. The subdivision development order has not yet expired,
B. The subdivision development order recipient has proceeded with due diligence and in good faith, and
C. Conditions, including but not limited to LDC changes, have not changed so substantially as to warrant a new application.

4.05.11 Preliminary Subdivision Plan Requirements

The Preliminary Subdivision Plan shall include the information as outlined below. Notes should be used whenever possible, on the preliminary plan, to explain, verify or identify additional information that is important to the understanding of the site and the plan of development.

4.05.12 Preliminary Subdivision Plan Drawings

The plan sheet size shall be 24" x 36". Plans including more than one sheet shall provide a map key relating sheets to the entire planned area. The plan shall include the following information:

A. Title Block: The title or name of the proposed development and the name and address of the property owner and the engineer and surveyor engaged in preparing the plan.
B. Legend: Date, scale of plan (no smaller than 1" = 100'), north arrow, current zoning, size of the property (in acres), and total number of lots.
C. Legal Description: A full and detailed legal description of the property and its approximate acreage.

D. Vicinity Map: A vicinity map, at scale, showing the proposed site in relation to the abutting streets and other community identifiers.
E. Rights-of-Way: The location, name, and width of any streets on and immediately contiguous to the property.
F. Ingress/Egress: Proposed locations of access to and from the property.
G. Lot layout: Proposed layout of lots to be created by the new subdivision.
H. Parking Areas: Proposed areas for parking and number of spaces, if applicable.
I. Open Space: Total open space required and total open space provided. Include a table to outline what tracts are open space including their purpose and size.
J. Dedications and Reservations: All tracts proposed to be dedicated or reserved for public or private use such as roads, easements, buffers, parks, and utilities.
K. Stormwater Layout: The location of retention ponds and other stormwater facilities. Stormwater calculations are not required at this time; however, the applicant should show an arrow indicating the direction of flow of surface drainage.
L. Phase Lines: The boundary lines of each phase of the subdivision plan.
M. Tree Survey: Location, size, and species of all trees with a DBH of 6" or greater, prepared by a Florida licensed land surveyor. The tree survey should be shown as a layer on the Preliminary Subdivision Plans to show the relation of the trees to the proposed improvements. The plans should also include a table indicating which trees are proposed to be saved and which are proposed to be removed.

4.05.13 Approval Process for Final Subdivision Plan

The Final Subdivision Plan shall conform substantially to the approved Preliminary Subdivision Plan. The plans shall also conform to all requirements of these or other adopted Town regulations.

4.05.14 Submission of Final Subdivision Plan

The developer shall submit to the Town Clerk, ten (10) copies of the Final Subdivision Plan, two (2) copies of architectural plans (signed and sealed by a licensed Florida architect), two (2) copies of the water system hydraulic model (if applicable), two (2) copies of the sanitary sewer lift station calculations (if applicable), two (2) copies of the stormwater management calculations, two (2) copies of the landscaping, hardscaping, and irrigation plans (signed and sealed by a licensed Florida landscape architect), a concurrency application, and copies of any agency-required permit applications along with the Development Review Application, submittal fee, and review deposit.

4.05.15 Final Subdivision Plan Review Process

A. The Town Clerk shall distribute copies of the Final Subdivision Plan and application to the DRC members, the Lake County School Board (for residential development), the SJRWMD, FDEP, and FDOT, if applicable. The DRC members and the other agencies shall individually review the Final Subdivision Plan, then meet to discuss their comments. The Town Planner will then prepare a report to

the developer outlining all the issues. The developer shall make the changes necessary and submit a revised Final Subdivision Plan.

B. Once the applicant receives comments from the DRC and any outside agencies on the submitted plans, the applicant has 90 calendar days to submit a response, including a revised set of plans. If the applicant needs more time, a formal request for an extension should be submitted by the applicant at least 30 days prior to the expiration of the 90 days. Failure of the applicant to respond in a timely fashion shall result in the need to resubmit with a new application, including all applicable documents as if being submitted for the first time, including any fees.

C. After the DRC is satisfied with the Final Subdivision Plan and all applicable fees have been paid to the Town, the Plan and supporting data, and a report from the DRC shall be submitted by the Town Planner to the Planning and Zoning Board. The item shall be placed on a regular Planning and Zoning Board meeting agenda for consideration. Final Subdivision Plans do not require a public hearing.

4.05.16 Review and Action by Planning and Zoning Board

The Planning and Zoning Board shall review and recommend approval, approval subject to conditions, or disapproval of the Final Subdivision Plan. In recommending disapproval of any Final Subdivision Plan, the Planning and Zoning Board shall provide reasons for such action.

4.05.17 Review and Action by the Town Council

After the Planning and Zoning Board reviews the Final Subdivision Plan, the item shall be scheduled for a regular Town Council meeting. Final Subdivision Plans do not require a public hearing. The Town Planner shall submit a report to the Town Council outlining the recommendations of both the DRC and the Planning and Zoning Board. The Town Council shall approve, approve subject to conditions, or disapprove the Final Subdivision Plan. In disapproving any Final Subdivision Plan, the Town Council shall provide reasons for such action.

4.05.18 Final Subdivision Plan Approval by the Town Council

Final subdivision plan approval by the Town approval by the Town Council shall be automatically voided if construction on the infrastructure (for either the entire project or the approved first phase) is not started within eighteen (18) months of approval of the Final Subdivision Plan. The Town Council may grant a time extension, for a maximum of one (1) year, upon written request by the developer to the Town Clerk. The written request must be received by the Town Clerk at least forty-five (45) days prior to the scheduled subdivision plan expiration.

4.05.19 Final Subdivision Plan Extensions

The Town Council, at its sole discretion, may extend for a period of twelve (12) months the date when a subdivision development order would otherwise expire if it concludes that:

A. The subdivision development order has not yet expired,

B. The subdivision development order recipient has proceeded with due diligence and in good faith, and
C. Conditions, including but not limited to LDC changes, have not changed so substantially as to warrant a new application.

4.05.20 Final Subdivision Plan Requirements

The Final Subdivision Plan shall include the information as outlined below. Notes should be used whenever possible on the final plan, to explain, verify or identify additional information that is important to the understanding of the site and the plan of development.

4.05.21 Final Subdivision Plan Drawings

A. The plan sheet size shall be 24" x 36". Plans including more than one sheet shall provide a map key relating sheets to the entire planned area. The plans shall include the following information:
B. The title page shall include the name of the project/development, the name and address of the property owner, and the name and address of the engineer preparing the plan. All plans and support documents shall bear the date, seal, and signature of the project engineer.
C. The plans shall include a location map that shows the project in relation to the broad context of the Town.
D. The plans shall include a date, north arrow, and legend.
E. Plans shall be drawn to scale (no smaller than 1"=100').
F. The plans shall include a legal description of the property and the acreage or square footage. The property boundaries should be clearly outlined.
G. Subdivision Name.
    1. Every subdivision shall be given a name by which it shall be legally known. All subdivision signage must be consistent with its legally assigned name. Such name shall not be the same, phonetically, or visually similar to any name appearing on any recorded plat in the County so as to confuse the records or to mislead the public as to the identity or location of the subdivision, except when the subdivision is subdivided as an additional unit or section by the same developer or his successors in title. No subdivision name shall mislead the public as to the municipality or geographic area in which the subdivision is located. The name of the subdivision shall be determined by the developer, and subject to review by the DRC, and approval by the Town Council as part of the Preliminary Subdivision Plan.
    2. If at any time, the developer intends to change the name of the subdivision, the developer shall request the name change in writing. All correspondence regarding a name change shall be sent to the Town Manager who shall make a recommendation to the DRC, who shall make a recommendation to the Town Council. The decision of the Town Council is final. After approval by the Town Council, it shall be the responsibility of the developer to make the appropriate changes to all applicable documents. The provision of this subsection shall be applicable in all zoning districts, including planned unit

developments. Once the Town approves the subdivision name, it must then be submitted to the Lake County for approval.

H. The plans shall show all proposed lots to be created. The lots should be numbered sequentially. All lots shall show all dimensions and the building envelope.

I. If the project is to be phased, the phases should be clearly indicated on the plan. The developer may need to provide additional information to document that the first phase can stand on its own as well as subsequent phases and their reliance only on the proceeding phases.

J. The plans should show property lines with dimensions.

K. Setbacks.
   1. All setbacks from streets and highways shall be illustrated.
   2. The applicable setbacks for the zoning district shall be indicated by the use of notes.
   3. All setbacks on irregular shaped lots shall be illustrated.

L. The line of natural water bodies shall be illustrated.

M. The plans should show street right-of-way lines of adjacent roads.

N. Topographic information. Existing contours at one (1) foot intervals based on field surveys or photogrammatic survey extending a minimum one hundred (100) feet beyond the tract boundary. The topographic survey shall be certified by a land surveyor, registered in the State of Florida.

O. Soils information. Identification of on-site soils shall be drawn on the face of the plan using the Soil Survey of Lake County Area, Florida. An applicant may challenge this determination by demonstrating (through the testing of a geotechnical engineer) that the identified soils are not classified correctly. If the above determination is concurred with by the Town Engineer, then these alternative soil determinations will be used in preparing the plans.

P. Wetlands Survey. Stake and survey of environmentally sensitive areas shall be shown on the plans. An environmental impact assessment will be required for significant or ecologically fragile areas.

Q. 100 Year Flood Elevation Information. Where the 100-year flood elevation is shown on the Lake County Flood Insurance Rate Maps (F.I.R.M.), the applicant shall show the location of the one hundred (100) year flood elevation. Data shall be shown for all areas within the 100-year flood zone, as indicated on the F.I.R.M. maps. In this circumstance, the developer will be responsible for the necessary drainage basin studies to establish the 100-year flood elevation. This work will be prepared to the satisfaction of the Town Engineer. If the proposed development will create a change to the existing 100-year flood elevation, this change will be reflected in an amendment to the F.I.R.M. maps. The applicant shall submit a letter of map amendment to FEMA and will need to provide evidence to the Town that FEMA has agreed to the amendment prior to receiving Final Subdivision Plan approval.

R. The tree survey submitted at the Preliminary Subdivision Plan phase should again be overlaid on the Final Subdivision Plans to show trees in relation to proposed improvements. The plans should also include a table indicating which trees are proposed to be saved and which are proposed to be removed.

S. Any existing improvements on the property should be shown on the Final Subdivision Plan and whether those improvements will remain.
T. Open Space. All areas to be counted as Open Space shall be clearly indicated on the plan and summarized in a table by tract, acreage, and use.
U. All streets shall be shown, labeled by street name, showing where curb and gutters, sidewalks, and utility easements are to be provided and indicating street pavement widths.
V. Curbs and gutters, curb inlets and drainage grates shall all be identified on the plan in addition to other stormwater or drainage facilities including manholes, pipes, drainage ditches, retention ponds, etc.
W. All sidewalks or other walkways or trails shall be identified, showing widths and surface material as well as cross sections in the detail pages.
X. The water system including the location of mains, valves and hydrants shall be shown on the plans with submittal of profile sheets.
Y. The wastewater system shall be shown on the plans indicating the location of lines and lift stations, where applicable, with the submittal of profile sheets where required.
Z. All underground and above-ground utility lines, streetlights, and other facilities shall be shown.
AA. All dumpster pads shall be located, if applicable, with details on enclosures.
BB. New contour lines resulting from earth movement (shown as solid lines) with no larger than one (1) foot intervals, or detailed profiles and cross sections.
CC. The location, dimensions, and materials of all signs, fencing, and walls shall be shown.
DD. Vehicle accommodation areas, if applicable, including parking areas, loading areas and circulation areas; all designated by surface material and showing dimensions and layout of proposed parking spaces and the dimensions and direction of travel lanes, aisles, and driveways. Also include the number of spaces, including the required handicapped spaces, and the calculations for determining parking demand.
EE. Street signs (according to the Town's Manual of Standards).
FF. Traffic signs and markings, i.e., stop signs, stop bars, speed limit signs, etc. (according to the Town's Manual of Standards).
GG. Proposed vacation of rights-of-way and/or easements are to be addressed.
HH. Any additional information deemed necessary by the Town of Howey-in-the Hills.

4.06.00 ARCHITECTURAL PLAN REQUIREMENTS

4.06.01 Purpose and Intent

A. Architectural requirements are an integral part of the LDC in order to ensure quality development, create a sense of place and community, and to enhance the physical environment. All architectural plans submitted under this Chapter must be signed and sealed by a licensed architect registered in the State of Florida.
B. These standards are intended to:

1. Encourage a diversity in housing styles, shapes, and materials in order to create variety in the streetscape,
2. Encourage richness in design through materials and details,
3. Maximize the positive impact of development,
4. Ensure that non-residential building facades are designed to a human scale, for esthetic appeal, pedestrian comfort, and compatibility with adjacent development,
5. Ensure that larger non-residential buildings are designed to reduce their apparent bulk and volume through design and landscaping,
6. Encourage sustainable architecture.

4.06.02 Residential Developments

To promote architectural character to the fullest extent allowed by Florida law, the Town shall require new housing developments to offer a variety of architectural styles and elevations. These regulations promote both diversity in the exterior elevations of neighboring homes, as well as individual character in the design of each residence.

A. For new single-family residential developments or infill single family development with six (6) or more adjacent lots:
   1. The same house model may not be used more than two times within a single block face. For purposes of this requirement, a different house model is a different floor plan, not the same floor plan flipped in a different direction and not the same floor plan with a different exterior treatment. When fewer than ten (10%) percent of the lots in a subdivision remain to be developed, the Planning Board may approve a home design to be used three times within a single block face. This option is intended to provide some flexibility in finishing the subdivision development while maintaining diversity in building design.
   2. Front porches shall be a required component on at least one quarter of the house models offered in a development. These porches shall be at least 6 feet deep and 10 feet wide.
      a. Front porches may be screened, provided that the screen is located behind the railings.
   3. Recessed garages or side entry garages shall be a required component on at least one quarter of the house models offered in a development. To be considered recessed, the garage shall be set back a minimum of ten (10) feet from the main building face, or five (5) feet if the house has a front porch.

B. For all new residential development
   1. Residential building walls shall be wood clapboard, wood shingle, wood drop siding, Hardie board siding, brick, stone, stucco, approved vinyl siding, or similar material.
   2. Residential roofs shall be wood, synthetic, or fiberglass shingles, solar shingles, tile or metal. Eaves are an important component of the roof design; they not only provide architectural character, but they help to protect building walls and reduce cooling costs.

3. Fencing or decorative walls in residential front yards shall be a maximum of three (3) feet tall. Fencing in side and rear yards shall be a maximum of six (6) feet tall. Fences shall be wood, vinyl, wrought iron, or aluminum that is designed to resemble wrought iron. The architectural style and color of walls shall match the primary dwelling unit. Fences shall be erected so that the finished side is towards adjacent lots or the public right-of-way. Chain link fencing is permitted along the sides and rear lot lines of residential lots that back up to either a lake or wetland. Residential development in Agricultural and Rural Estates zoning districts may also propose special purpose fencing in conjunction with farm animals and horses.
4. Perimeter fences or walls are permitted around a residential development up to a maximum of six (6) feet, provided that the fence and/or wall has architectural features compatible with the neighborhood. Fences and walls shall also include details such as banding, capping, columns (which may be up to 8 feet tall), and other elements to add interest. To enhance design, perimeter fences and walls are required to incorporate landscaping with breaks in the fence or wall (or change in direction). Perimeter fences shall be wrought iron, or aluminum that is designed to resemble wrought iron. Perimeter walls shall be faced with stucco, brick, or stone or a combination of those materials.

4.06.03 Single Family Residential Development Architectural Plans

To the extent not prohibited by law, at the time of Final Plan submittal (or at building permit for infill development), the applicant shall submit a complete set of the residential design plans. This shall include the front, side, and rear elevations for each model that will be constructed within the development. The building elevations shall include the following:

A. Roof plan: Residential homes shall have variations in roof lines and use dormers, wide eaves, and other architectural elements to add interest and sustainability.
B. Wall materials and color options: See Section 4.06.02(B)(1) above for material options. Walls cannot be all one material and/or all one color. Primary facades shall have one base color and a minimum of one complementary accent color. A complementary wall material may be used to meet the second color requirement.
C. Exterior architectural details: Each home shall incorporate architectural details to add interest to all sides of the building. To the extent not prohibited by law, primary facades shall incorporate a minimum of four (4) architectural details and secondary facades shall incorporate a minimum of two (2) architectural details. These include, but are not limited to:
    1. Windows
    2. Shutters
    3. Porches
    4. Decorative elements
    5. Doors
    6. Columns
    7. Window boxes
    8. Porticos

9. Cupolas
10. Chimneys
11. Enhanced landscape treatment which provides for one additional planting area with a minimum size of 400 square feet
12. Other elements approved by the Town

4.06.04 Other Residential Development

Townhome development shall follow the same architectural standards as single-family development.

4.06.05 Non-Residential Development

A. For non-residential buildings, the scale and design should be compatible with surrounding development and the Town's overall character. Non-residential building walls shall be finished with wood clapboard, wood shingle, wood drop siding, Hardie board siding, brick, stone, stucco, approved vinyl siding, or similar material. Exposed concrete block or metal finishes shall not be permitted except when determined to be an integral feature of a recognized architectural style.
B. Non-residential roofs shall be wood, synthetic, or fiberglass shingles or tile. Metal roofs may be permitted if determined to be an integral feature of a recognized architectural style. Flat roofing is permitted, as long as the rooftop is not visible from the right of way. False facades may be used as long as the treatment is used for all sides of the building.

4.06.06 Non-Residential Development Architectural Plans

A. At the time of Final Plan submittal, the applicant shall submit a complete set of the building design plans. This shall include the front, side, and rear elevations. The plans shall include the roof design and show all pertinent details (windows, shutters, porches, decorative finishes, doors, colors, materials). The plans shall be drawn to scale, and dimensions shall be clearly delineated. All elevations must be signed and sealed by a licensed architect registered in the State of Florida.
B. Architectural plans shall also include screening details for service areas and mechanical equipment as well as site furnishings, lighting fixtures, and any other information necessary to ensure consistency with the intent of this section.
C. Architectural plans are required for any new non-residential developments, and additions or alterations to previously approved non-residential developments. Alterations may include, but are not limited to, changes in color, material, roof finishes, awnings, and other exterior features.
D. Non-Residential Architectural Plans should also ensure the following:
    1. Facades should be designed to reduce the scale and uniform appearance of the building and provide visual interest. Each façade shall incorporate one massing technique and one articulation technique from the following list or other technique proposed by the project architect and approved by the Town Council. For every fifty (50) feet of wall that exceeds fifty (50) feet in length one

additional massing technique and one additional articulation technique shall be applied to the entire wall length.

Massing Techniques	Articulation Techniques
Building wall offsets	Base course or plinth course
Colonnades	Windows
Cupolas	Facia
Towers	Cornice
Pavilions	Piers
Arcades	Arches
Building recesses and projections	Bays
Clock or bell towers	Brackets
Variations in roof lines	Balconies
Verandas	Portals
Overhangs	Wings
	Porches
	Stoops
	String courses
	Lintels
	Bay windows and oriels
	Show cases
	Transoms

2. Fences that are visible from the public right-of-way shall not be chain link unless the land use requires security fencing.
3. Variations in roof lines should be used to add building interest consistent with the designated building style. Roof mounted equipment is also required to be shielded from view. Flat roofing is encouraged if the roof can be utilized (i.e., rooftop terrace), especially where such use can take advantage of views (i.e., for residential units above non-residential uses).
4. Large storefront windows are encouraged in retail areas as pedestrian-friendly components. At least 50 percent of the first floor of all buildings with a retail component shall be comprised of storefront windows, unless a waiver is specifically granted by the Town Council.
5. Non-residential buildings shall be painted with earth tone or pastel colors consistent with the designated building styles. Fluorescent and visually overwhelming colors which call undo attention to the property shall not be permitted. The fact that certain colors are "corporate" shall not be grounds for waiver from this provision. Where color schemes are used on non-residential buildings that commonly identify the business on site, those areas shall be considered signage and shall be included in the calculation of sign area.
6. Awnings, arcades, colonnades, arbors, trellises, and other similar architectural components should be a component of non-residential building design to add interest to the physical character of the area as well as afford a way for pedestrians to get out of the weather.
7. The main building entrance shall face the public right-of-way unless it is determined during the site plan approval process that such configuration is not practical. When parking is located on the side or rear of the building, the placement of a suitably large building entrance facing the parking area is permitted, but it shall not displace the main building entrance. Main building entrances shall be articulated in a manner consistent with the architectural style of the building.

4.07.00 LANDSCAPING, HARDSCAPING, AND IRRIGATION PLAN

A. Landscaping, hardscaping, and irrigation plans are required to be submitted with Final Site Plans and Final Subdivision Plans. These plans shall be signed and sealed by a licensed landscape architect registered in the State of Florida.
B. See Chapter 7 for requirements for landscaping, hardscaping, and irrigation.

4.08.00 SITE IMPROVEMENTS

4.08.01 Pre-Construction Conference

Following approval of the Final Site Plan or Final Subdivision Plan, the applicant shall submit a completed pre-construction checklist and the applicant and applicant's contractor shall have a formal meeting with the DRC, Town inspector, and utility company representatives. Upon acceptance by the Town of all applicable permits, fees and related documents, the Town Engineer will issue the developer a set of the Final Plans stamped "Approved for Construction". If there are vertical components included in the improvements (fencing, walls, etc.), building permits will also need to be applied for and issued as part of the process before those improvements may be installed. Following approval of a Final Site Plan or Final Subdivision Plan, there shall be no deviation from the approved plan unless a revised plan is submitted, reviewed, and approved as provided in this Section.

4.08.02 The Installation of All Site Improvements

The installation of all site improvements shall be subject at all times to inspection by the Town. The developer shall pay an inspection fee to the Town as part of the Pre-Construction Conference to cover the costs of the Town Inspector and Town Engineer for site inspections.

4.08.03 Certificate of Completion

Upon completion of the site improvements, a formal walk-through inspection shall be scheduled by the Town Engineer. The developer must also submit the following documents:

A. Engineer's certification letter (signed and sealed by a professional engineer)
B. Surveyor's certification letter (signed and sealed by a professional land surveyor)
C. Two sets of as-built drawings (signed and sealed)
D. A 2-year maintenance guarantee covering all site improvements. This maintenance guarantee shall be either cash, a letter of credit or a maintenance bond in the amount of 20% of the cost of the improvements.
E. Certified utility cost (signed and sealed by a professional engineer)
F. "Bill of Sale" – water system
G. "Bill of Sale" – wastewater system
H. Copy of signed contract for site work
I. Letter from DEP indicating acceptance of permitted work
J. Letter from SJRWMD indicating acceptance of permitted work
K. Certification for back flow preventer

4.08.04 Letter of Acceptance

Once all improvements are deemed acceptable to the Town and all required documents have been submitted by the applicant, a letter of acceptance shall be issued by the Town. The date on the letter shall be used as the start date for the 2-year maintenance period covered by the maintenance guarantee.

4.08.05 Two-Year Maintenance Period

Periodically throughout the 2-year maintenance time period, the Town shall inspect the improvements and notify the applicant if any deficiencies are found. Ninety (90) days prior to the expiration of the maintenance guarantee, a formal walkthrough inspection will be conducted to determine whether any deficiencies exist. If deficiencies are found, a letter will be issued to the applicant. The Town will notify the maintenance guarantee holder if deficiencies still exist toward the end of the maintenance guarantee period. If deficiencies are found, the Town may require an extension of the maintenance period for that particular issue.

4.09.00 FINAL PLAT REQUIREMENTS

4.09.01 Final Plat

The applicant shall provide the Town Clerk with six (6) paper copies of the Final Plat for review. These sheets shall be twenty-four (24) inches by thirty-six (36) inches. Plats shall meet all of the requirements of Chapter 177 Florida Statutes and shall be so certified by a land surveyor registered in the State of Florida.

If a government survey corner is used to conduct the surveys for the plats, a copy of the corner record shall be resubmitted along with the plats for approval. All plats to be recorded shall contain the required plat certificates. When previously platted lands are proposed for replatting, it will be necessary that the existing plat, or portion thereof, be vacated pursuant to Chapter 177 Florida Statutes, subsequent to recordation of the new plat.

4.09.02 Required Information

A plat may be submitted for which all subdivision improvements have not been completed, installed and/or accepted by the Town; however, a performance bond or letter of credit in the amount of 120% of the cost of any improvements that have not been accepted by the Town, must accompany the plat submittal. The final plat application shall comply with the requirements of Chapter 177, Florida Statutes, as amended from time to time, and shall include the following:

A. The Plat cover sheet shall include a vicinity map drawn to scale and including orientating features, a complete legal description including the section, township and range, the name, address, and telephone number of the owner or the name and address of the president and secretary if the owner is a corporation, and the area of the property in both square footage and acreage.
B. The Plat shall include any and all Joinder and Consents.
C. Title Opinion. The Plat application shall include a title opinion of an attorney licensed in Florida or a certification by a title company dated no earlier than thirty (30) days prior to the submittal.
D. The Plat shall include the dedication of any improvements to the Town of Howey in the Hills.
E. The Plat shall include a note on the cover sheet that "No amendments shall be made to the Declaration of Covenants, Conditions and Restrictions without prior approval

of the Town of Howey in the Hills with regard to changes to or transfer of any portion or component of the subdivision infrastructure and any change in ownership or maintenance provisions of the common areas."

F. The Final Plat shall contain sufficient data to determine readily and locate accurately on the ground, the location, bearing and length of every right of way line, lot line, easement boundary line and block line, including the radii, arcs and central angles of all curves.

G. Each permanent reference monument shall be shown on the plat by appropriate designation.

H. All permanent control points shall be shown on the plat by an appropriate designation. It is the land surveyor's responsibility to furnish to the Town Clerk his certificate that the permanent control points have been set and the dates they were set.

I. The Plat application shall include Proposed Homeowners' or Property Owners' Association (HOA or POA) Documents. Prior to recordation of the final plat, a homeowners' or property owners' association shall be established. The applicant shall provide six (6) copies of all proposed HOA or POA documents related to the subdivision. The HOA or POA documents shall include language regarding ownership and/or maintenance responsibilities for improvements including, but not limited to, upgraded streetlights and all common areas including stormwater management facilities, parks, entranceways, and buffers. These documents shall be submitted to and reviewed by the DRC and the Town Attorney prior to review by the Town Council.

J. Proposed Deed Restrictions and Covenants. The applicant shall provide six (6) copies of all proposed deed restrictions effecting the subdivision. These deed restrictions shall be recorded in the official records of Lake County along with the plat. These documents shall be submitted to and reviewed by the DRC and the Town Attorney prior to review by the Town Council.

K. Private Subdivisions. A subdivision, requesting to have private streets, must have enforceable legal documents establishing the owner's association, and creating binding restrictive covenants. These documents must provide for a means of enforcing any and all assessments levied by the association, in order to financially provide for the continuing care and maintenance of the streets. These documents shall be submitted to and reviewed by the DRC and Town Attorney prior to review by the Town Council. Appropriate provisions must be made for the uncontested use of the private streets by those governmental agencies, such as the Howey in the Hills Police Department and Public Works Department and other governmental agencies, which may, from time-to-time need to travel over or across said private streets. In addition, the HOA or POA shall enter into an agreement with the Town for enforcement of traffic laws on the private streets if the HOA or POA seeks those services.

L. Surety for Improvements. This is only required if platting is requested prior to installation of all improvements and acceptance of same by the Town. Prior to the recordation of any Final Plat, the applicant shall file with the Town Council an adequate performance guarantee such as a performance bond or escrow agreement

funded by cash, cashier's check or a certified check upon a local bank, conditioned to secure the construction of the required improvements in a satisfactory manner to the Town and within a time period specified by the Town Council. No such performance guarantee shall be accepted unless it is enforceable by or payable to the Town in a sum at least equal to one hundred twenty percent (120%) of the cost of all improvements required to be installed by the applicant. The amount of the performance guarantee shall be based on the project engineer's certified estimate of the cost of improvements or upon actual contract costs for installing the improvements as referenced by a signed contract between the developer and the site contractor. This performance guarantee should be reviewed and approved by both the Town Engineer and the Town Attorney.

M. Warranty Deed. For public site dedications (i.e. school site or park site).

4.09.03 Review Process

After the DRC, Town surveyor and Town Manager are satisfied with the Final Plat and all applicable documents, a report from the Town Attorney shall be submitted to the Town Council.

4.09.04 Review and Action by the Town Council

The Final Plat shall be scheduled for a regular Town Council meeting. A Final Plat does not require a public hearing. The Town Manager shall submit a report to the Town Council outlining the recommendations of the DRC, the Town surveyor, and the Town Attorney. The Town Council shall approve, approve subject to conditions, or deny the Final Plat. In denying any Final Plat, the Town Council shall provide reasons for such action.

Once the Town Council approves the Final Plat and the applicant provides a copy of the recorded HOA and/or POA documents and the recorded deed restrictions to the Town, the Town Clerk shall record the plat in the records of Lake County, Florida. A copy of the plat shall be provided by the Town to the applicant.

The Town Clerk shall also forward a copy of the recorded Final Plat to the appropriate Lake County office for verification of street addresses for the new lots.

4.10.00 PLANNED UNIT DEVELOPMENTS (PUDs)

The Town Council may allow Planned Unit Developments for planned residential communities with 100 acres or and containing a variety of housing; with complementary and compatible non-residential uses. PUD zoning is to be the product of negotiation between the Town and an applicant. The requirements, restrictions and parameters in this Section 4.10.00, however, are starting points for negotiation below which the Town my not agree and approve.

4.10.01 Planned Unit Developments serve a variety of purposes

A. To allow for diverse uses in close proximity and more open space.

B. To reduce energy costs through a more efficient use of land design and smaller network of utilities and streets than is typically possible in conventional zoning districts.
C. To preserve the natural amenities and environmental assets of the land by allowing for clustering of development.
D. To increase the amount of useable open space areas by permitting a more economical and concentrated use of building areas than would be possible through conventional zoning districts.
E. To provide maximum opportunity for application of innovative concepts of site planning in the creation of aesthetically pleasing living, shopping, and working environments on properties of adequate size, shape, and location.
F. To provide a flexible zoning district which is intended to encourage an appropriate balance between the intensity of development and the preservation of open space.

4.10.02 Approval Process for Conceptual Land Use Plan

Conceptual Land Use Plans are submitted to the Town Clerk and must be accompanied by a Development Review Application and the appropriate fees and review deposit. Approval of the Conceptual Land Use Plan is done by ordinance and conveys zoning to the property. Approval of the ordinance and Conceptual Land Use Plan shall be construed as authority for submitting the Preliminary Subdivision Plan. Approval of the Conceptual Land Use Plan shall not be construed as authority for the issuance of permits to construct improvements or for the issuance of building permits.

4.10.03 Pre-Application Conference

Each applicant shall meet with the DRC at a pre-application conference before preparing a Conceptual Land Use Plan. In this way, the applicant can become familiar with the requirements and development policies of the Town, which may affect the proposed development.

4.10.04 Submission of Conceptual Land Use Plan

The applicant shall submit to the Town Clerk, eight (8) copies of the Conceptual Land Use Plan along with the Development Review Application, submittal fee, and review deposit.

4.10.05Review Process

A. The Town Clerk shall distribute copies of the Conceptual Land Use Plan and application to the DRC members and the Lake County School Board (for residential development). The DRC members and the Lake County School Board, where applicable, shall individually review the Conceptual Land Use Plan and meet to discuss their comments. The Town Planner will then prepare a report to the applicant outlining all the issues. The applicant shall make the changes necessary and submit a revised Conceptual Land Use Plan.

B. Once the applicant receives comments from the DRC, the applicant has 90 calendar days to submit a response, including a revised set of plans. If the applicant needs more time, a formal request for an extension should be submitted by the applicant at least 30 days prior to the expiration of the 90 days. Failure of the applicant to respond in a timely fashion shall result in the need to resubmit with a new application, including all applicable documents as if being submitted for the first time, including any fees.
C. After the DRC is satisfied with the Conceptual Land Use Plan, a public hearing is scheduled before the Planning and Zoning Board. The zoning ordinance, to include the Conceptual Land Use Plan as an exhibit, and supporting data, and a report from the DRC shall be submitted by the Town Planner to the Planning and Zoning Board at its public hearing.
~~D.~~ After the Planning and Zoning Board public hearing, a public hearing is scheduled before the Town Council. The zoning ordinance, to include the Conceptual Land Use Plan as an exhibit, and supporting data, and a report from the DRC shall be submitted by the Town Planner to the Town Council at its public hearing. This information shall also include the Planning and Zoning Board's recommendation.

4.10.06Notice Procedures

The procedures for notice of Zoning to PUD including a Conceptual Land Use Plan shall be as follows:

A. Notice to property owners. The Town shall send notice via certified mail of the proposed PUD/Conceptual Land Use Plan to the owners of all properties within 300 feet of the subject property. Such notice shall be sent no later than 10 days prior to the scheduled public hearing and shall include the date, time, and place of the public hearing along with a clear and concise description of the proposed plan.
B. Posted of property. No later than 10 days prior to the scheduled public hearing, the Town shall post the property that is the subject of the public hearing with signs notifying the public of the proposed zoning, date of public hearing, and person to contact for further information. Signs shall be placed, at a minimum, along all public road frontages, with a least one sign located every 500 feet along any frontage.
C. Publication of notice. Notice of public hearing shall be published in a newspaper of general circulation at least 10 days prior to the public hearing. Notice shall also be posted at Town Hall and on the Town's website.

4.10.07 Review and Action by Planning and Zoning Board

A. The Planning and Zoning Board shall review and recommend approval, approval subject to conditions, or denial of the zoning ordinance and Conceptual Land Use Plan at the advertised public hearing. In recommending denial of any zoning ordinance and Conceptual Land Use Plan, the Planning and Zoning Board shall provide reasons for such action.

B. Conditions of approval may be memorialized in the Town Council's motion, the zoning ordinance, the Conceptual Land Use Plan, or a development agreement. Conditions of approval are negotiable. Action by the applicant or its successor consistent with the approved conditions shall be deemed acceptance of and agreement to the conditions set by Town Council. In all PUD's the conditions of approval shall include a date at which the PUD zoning and its related Conceptual Land Use Plan and development agreement may be revoked by the Town Council if substantial development is not undertaken within two years after Town Council approval of the PUD zoning. Substantial development shall be defined in the conditions of approval or the development agreement based on the circumstances of the proposed development.

4.10.08 Action by the Town Council

After the Planning and Zoning Board reviews the zoning ordinance and Conceptual Land Use Plan, the first reading of the ordinance is scheduled before the Town Council. At the following Town Council meeting, the second reading and public hearing is held. At that meeting, the Town Council shall approve, approve subject to conditions, or disapprove the zoning ordinance and Conceptual Land Use Plan. In disapproving any zoning ordinance and Conceptual Land Use Plan, the Town Council shall provide reasons for such action.

4.10.09 Conceptual Land Use Plan Requirements

The Conceptual Land Use Plan, consisting of properly identified exhibits and support materials, shall clearly indicate at a minimum of following:

A. Project Name
B. Developer Name, Address, telephone number
C. Name, Address, telephone number of firm that prepared conceptual plan
D. Location Map insert
E. Legal Description
F. Boundary Survey
G. Total Acreage (gross land area)
H. Water bodies acreage
I. Wetland acreage
J. Net land area (Gross land area less any water bodies, less open space requirements, less any remaining wetlands.)
K. Open Space required (25% of gross land area. Gross land area includes wetlands but excludes water bodies.) See Policy 1.1.4 in the Future Land Use Element (FLUE) for open space info. The applicant does not need to show where specifically the open space will come from on the conceptual land use plan; however, the applicant is required to show the acreage that will be needed.
L. Percentage of uses (residential, commercial, public/civic) – See FLUE
M. Proposed land uses: (Note that densities are determined by the Net Land Area.)

N. Residential: max. number of units, type of units, minimum lot sizes, minimum living areas, typical lot sketch (width and depth of lot; setbacks; for sf residential, two spaces in the driveway that provide a min. of 20 feet on the lot side of the sidewalk), max. building heights, min. parking required,
O. Non-residential: Types of uses permitted (retail, office, etc – See FLUE Policy 1.4.8), conditional uses, prohibited uses, gross floor area, floor area ratio, max. building height, setbacks from perimeter property lines,
P. Open Space: retention ponds, parks, plazas, buffers,
Q. Public or civic space: types of uses, gross floor area, max. building height,
R. The conceptual land use plan should show where on the property the above land uses are proposed to be located.
S. Phasing schedule
T. Plan in relation to existing and proposed collector and arterial streets (i.e., proposed access points to existing; general layout of internal roadway system)
U. Whether any portion of the development will be gated/private access only.
V. Proposed architectural style of buildings (both residential and non-residential), with proposed elevations that include sufficient detail to show intent [i.e., building materials, roof materials and style (minimum eaves), recessed garages, architectural elements (front porches, bay windows, arches, dormers, brick/stone/masonry design elements, window and door trim, shutters, etc), and for non-residential buildings, display windows first floor, decorative features to break up massing, arcades, cupolas, balconies, cornice treatment, etc..]
W. Buffer treatments and entranceway treatments (viewed from the public right of way).
X. Notes on the plan indicating how the development will be served for potable water and sanitary sewer.
Y. Identify general areas for stormwater management.
Z. Identify general wetland areas.
AA. Any other information deemed necessary by the Town.

4.10.10 Amendments to the Conceptual Land Use Plan

A. Alterations to the approved Conceptual Land Use Plan shall be classified as either substantial or non-substantial amendments. The following criteria shall be used to identify a substantial amendment.
    1. A change which would include a land use not previously permitted under the approved Planned Unit Development zoning.
    2. A change which would alter the land use type adjacent to a property boundary.
    3. A change which would increase the land use intensity within a development phase without a corresponding decrease in some other portion of the overall Planned Unit Development.
    4. An amendment to the phasing which would propose a land use in advance of another land use differing from the approved Plan.
    5. A change of similar nature, complexity or scope as identified by the Town Manager.

B. The determination of a substantial or non-substantial amendment shall be made by the Town Manager with input from the DRC.
C. Amendments to the Conceptual Land Use Plan determined to be substantial will require a new Conceptual Land Use Plan application and a full review by the DRC. After review by the DRC, the Conceptual Land Use Plan will then be submitted to the Planning and Zoning Board and the Town Council and shall be an exhibit to an amended zoning ordinance. The amended zoning ordinance shall go through the same public hearing process as the original ordinance.
D. Amendments determined to be non-substantial amendments must be submitted (including plans and support data) and approved first to the DRC and then to the Town Council for final approval. A new ordinance is not required for non-substantial amendments.

4.10.11 Subsequent Process for PUDs

Upon adoption of the zoning ordinance, applicants shall then follow the procedures for approval of subdivisions as outlined in Section 4.05.00 of this Chapter.

4.11.00 SPECIAL OVERLAY DISTRICTS

A. Special Overlay Areas may be created by the Town of Howey in the Hills to facilitate unique development activities where there is need for coordination between different land owners in the development of projects where there are special issues of infrastructure, environmental protection, employment activities, protection of historic resources, or other public issues deemed by the Town Council to be appropriate for special treatment. There is one current Special Overlay Area called the Town Center Mixed Use Overlay. (See Map 4.11.00)
B. It is the intent of the Town that the designation of a Special Overlay District shall put landowners, developers, and the general public on notice that special opportunities exist for the development of the area and, concurrently, that special provisions or limitations may be placed on projects within the area; identify specific standards to be followed in the development of the area, which standards shall supersede conflicting general standards of this Code, but which shall not be inconsistent with the Comprehensive Plan.

4.11.01 Establishment Procedures

The Town Council may, from time to time by ordinance, create, dissolve, and/or modify Special Overlay Areas. The following procedures shall be applicable to the adoption of any such ordinance:
A. The proposal to create or modify a Special Overlay Area shall include a statement of intent, specific boundaries, and a special development plan identifying the proposed special regulations to be applicable therein. Maps and diagrams, in addition to text, to explain the general intent and the specific regulations being adopted shall also be included with the Plan to delineate the conceptual spatial and aesthetic aspects pertaining to each Special Overlay Area.

B. Special development plans formulated for all Special Overlay Areas shall, at a minimum, identify specific standards pertaining to potential uses of the property, setbacks, size/height/bulk of buildings, provision for mixed- and multi-use development, including housing options, master infrastructure requirement, stormwater management, vehicular access provisions, architectural compatibility, historic preservation, signage, landscaping, pedestrian access, parking, lighting, and the protection of natural resources including trees, lakes and wetland areas. In order to promote flexibility and design innovations, each special development plan shall identify areas where the strict application of standard land development regulations may be waived in return for alternative development options which promote the intents of each Special Overlay Area.
C. All notices regarding public hearings to consider the creation or modification of the Special Overlay Area shall include reference to the plan and to the location where it can be reviewed. All notices shall also explain that the plan can be modified at the time of adoption of the ordinance, within the limitations of Chapter 166, Florida Statutes. All owners having properties situated within the proposed boundaries of each Special Overlay Area shall also be notified by mail at least (10) days prior to the public hearings before the Planning and Zoning and Town Council.
D. The boundaries of the Special Overlay Area shall be shown on the Official Zoning Map.

4.11.02 Administration of a Special Overlay Area

A. The designation of a Special Overlay Area shall not establish any special requirements for development review procedures except as may be contained within this Section. Before any change of zoning, subdivision approval, or site plan approval is granted within a Special Overlay Area, the approving authority shall review this Section and shall find that the approval is consistent with this Section, as well as with all other applicable requirements of this Code. No approval shall be granted which would violate the provisions of this Section and the special regulations contained within the individual special development plans.
B. It is the intent of this Section that there be substantial coordination between the Town and the different landowners within the Special Overlay Area. To accomplish this, the Town Manager shall have primary oversight responsibility for each area and, from time to time, convene meetings between the various landowners within the Special Overlay Area and interested governmental agencies to implement the provisions of this section.
C. Additionally, it shall be the primary responsibility of the Town Manager to recommend to the Town Council each special development plan in consultation with area landowners.

4.12.00 CONDITIONAL USES

A Conditional Use, as used in connection with the provisions of this LDC, means a use that would not be appropriate generally without restriction throughout the particular zoning district, but which, if controlled as to number, area, location or relation to the

neighborhood, would not adversely affect the public health, safety, appearance or general welfare.

4.12.01 Filing of Petition for a Conditional Use

A request for a conditional use permit pursuant to the specific provisions of this Code may be initiated at any time by the landowner including his duly authorized agent, of the land for which the conditional use is requested. An application shall be made and submitted with the appropriate fee to the Town Clerk. The application shall be signed by the applicant and his agent, if one exists, such signature being verified under oath. The application shall contain the following information:

A. The name, address, and telephone number of the applicant and owner of the property.
B. A survey of the lot showing the dimensions and location of all existing and proposed buildings, signs, driveways, off-street parking areas, and other improvements both on site and adjacent to the property,
C. A description of the proposed use, in sufficient detail to set forth its nature and extent,
D. Any other important information in the consideration of the request.

4.12.02 Standards in Granting a Conditional Use

The Town Council may grant a conditional use if the Council finds that:

A. The proposed use is desirable at the particular location,
B. Such use will not be detrimental to the health, safety, or general welfare of persons residing or working in the vicinity,
C. The proposed use will comply with the regulations and conditions specified in the codes for such use,
D. The granting of the conditional use will not circumvent or adversely impact compliance with the requirements of the Comprehensive Plan.
E. In granting such conditional use, the Town Council may impose such conditions as it deems necessary and desirable to protect the public health, safety, or general welfare in accordance with the purpose and intent of the zoning code. One condition shall be a date by which the approved conditional use must be implemented or expire.

4.12.03 Review of Application

A. After the application is determined to be complete, it shall be forwarded to the Development Review Committee (DRC) for review. After individual review by the DRC members, the DRC shall meet to discuss the application. The Town Planner shall then make a report containing a recommended determination of facts which are relevant to consideration of the proposal and a recommended determination of the consistency of the proposal with the adopted Comprehensive Plan.
B. The proposal shall be considered by the Planning and Zoning Board at a public hearing after due public notice, along with the report of the DRC. The Planning

and Zoning Board will include reasons for its decision in its recommendation. Following completion of the public hearing, the Town Clerk shall forward the DRC's recommendation as well as the Planning and Zoning Board's recommendation to the Town Council for its public hearing.

C. The application for conditional use permit shall be considered by the Town Council at a public hearing after due public notice, along with the report of the DRC and the recommendation of the Planning and Zoning Board. Following completion of the public hearing, the Town Council shall approve, disapprove, amend, and approve the proposal, or approve the proposal with conditions. Any action taken shall be accompanied by the findings of the Town Council upon which the action was based.

D. In approving a conditional use, the Town Council may attach appropriate conditions to ensure compliance with the provisions of this Code. Such conditions may limit the uses, size of uses or structure, or characteristics of the operation of a use, or may require buffers, landscaping, or other improvements not normally required. Conditions may also require the periodic review of the use.

4.12.04 Notice Procedures

The procedures for notices of conditional uses shall be as follows:

A. Notice to property owners. The Town shall send notice via certified mail of the proposed conditional use to the owners of all properties within 300 feet of the subject property. Such notice shall be sent no later than 10 days prior to the scheduled public hearing and shall include the date, time, and place of the public hearing along with a clear and concise description of the proposed conditional use.

B. Posted of property. No later than 10 days prior to the scheduled public hearing, the Town shall post the property that is the subject of the public hearing with signs notifying the public of the proposed conditional use, date of public hearing, and person to contact for further information. Signs shall be placed, at a minimum, along all public road frontages, with a least one sign located every 500 feet along any frontage.

C. Publication of notice. Notice of public hearing shall be published in a newspaper of general circulation at least 10 days prior to the public hearing. Notice shall also be posted at Town Hall and on the Town's website.

4.13.00 VARIANCES

The Town Council, acting as the Board of Adjustment (BOA), may grant a variance from the terms of these regulations when such variance will not be contrary to the public interest and where, owing to special conditions, a literal enforcement of the provisions of these regulations would result in unnecessary hardship. Such variance shall not be granted if it has the effect of nullifying the intent and purpose of these regulations. In approving any variance, the BOA may prescribe appropriate conditions and safeguards in conformity with these regulations. Violation of such conditions and safeguards when made a part of the terms under which the variance is granted, shall be deemed a violation of these regulations.

4.13.01 Filing of Petition for a Variance

The owner of the property shall file an application, along with the appropriate fee, with the Town Clerk providing the following information:

A. The applicant's full name, mailing address, and telephone number,
B. The address of the property,
C. The legal description of the property,
D. A survey of the property, showing the location of existing buildings or structures and the location of proposed buildings or structures,
E. The purpose for which the property will be used,
F. A concise statement as to why the present regulations create a hardship to the applicant.

4.13.02 Notice; Hearing; Notification of Property Owners

The application shall be forwarded to the Town Planner for review and recommendation to the Planning and Zoning Board and the Board of Adjustment. The Town Clerk shall place the item first on a regular meeting of the Planning and Zoning Board. The Planning and Zoning Board shall make a recommendation to the Board of Adjustment as to whether to approve, approve with changes, or deny the variance.

4.13.03 Notice Procedures

The procedures for notice of Variance requests shall be as follows:

A. Notice to property owners. The Town shall send notice via certified mail of the proposed variance to the owners of all properties within 300 feet of the subject property. Such notice shall be sent no later than 10 days prior to the scheduled public hearing and shall include the date, time, and place of the public hearing along with a clear and concise description of the proposed variance.
B. Posted of property. No later than 10 days prior to the scheduled public hearing, the Town shall post the property that is the subject of the public hearing with signs notifying the public of the proposed variance, date of public hearing, and person to contact for further information. Signs shall be placed, at a minimum, along all public road frontages, with a least one sign located every 500 feet along any frontage.
C. Publication of notice. Notice of public hearing shall be published in a newspaper of general circulation at least 10 days prior to the public hearing. Notice shall also be posted at Town Hall and on the Town's website.

After the public hearing, the Board of Adjustment shall approve, approve with changes, or deny the variance.

4.13.04 Standards in Granting a Variance

The Board of Adjustment may authorize a variance from the terms of this LDC as will not be contrary to the public interest where, owing to special conditions, a literal enforcement of the provisions of this Code will result in unnecessary and undue

hardship. As a condition to authorizing a variance from the terms of this LDC, the Board of Adjustment must find:

A. That special conditions and circumstances exist which are peculiar to the land, structure or building involved, and which are not applicable to other lands, structures, or buildings in the same zoning district,
B. That the special conditions and circumstances do not result from the actions of the applicant,
C. That literal interpretation of the provisions of this LDC would deprive the applicant of rights commonly enjoyed by other properties in the same zoning district under the terms of this LDC and would work unnecessary and undue hardship on the applicant,
D. That the variance created is the minimum variance that will make possible the reasonable use of the land, building or structure, and
E. That the granting of the variance will be in harmony with the general intent and purpose of this LDC and that such variance will not be injurious to the area involved or otherwise detrimental to the public welfare.
F. In granting any variance, the Board of Adjustment may prescribe appropriate conditions and safeguards in conformity with this LDC. Violation of such conditions and safeguards, when made a part of the terms under which the variance is granted, shall be deemed a violation of this LDC.

4.13.05 Conditions of Approval

A. When a variance is granted for residentially zoned property, construction, installation, and initiation of the approved structure or use must occur on or before the first anniversary of the date the variance is granted. The owner must file written notice with the Town Manager that the owner has begun the approved construction, installation, or use at the subject property. If no such notice is filed on or before the first anniversary, and if the Town Council determines that construction, installation, or initiation of the approved structure has not been initiated the Town Council may terminate the approved variance.
B. A variance runs with the land.
C. Granting the variance must not cause or allow interference with the reasonable enjoyment of adjacent or nearby property owners and must not negatively impact to a material degree the standard of living of neighboring homes.
D. A variance may allow reasonable use of property not out of character with other properties with the same zoning.

4.13.06Commencement of Construction

When a variance is granted, construction of the structure must be initiated within 18 months from the date of granting of the variance, or by such time as determined by the Board of Adjustment in their approval.

4.14.00 DEVELOPMENT AGREEMENTS

4.14.01 General Requirements

A. A development agreement may be entered into by an applicant and the Town Council to provide for matters that relate to the unique conditions of the real property to be developed, the relationship between the public and private aspects of the development, or other terms and conditions that promote the intent and purposes of this Code or the Comprehensive Plan. A proposal for a Development Agreement shall be submitted in conjunction with the submission of an application for a Preliminary Plan approval, or with PUDs, in conjunction with the submission of a Conceptual Land Use Plan for a PUD zoning approval. Development authorized by a development agreement may be phased. The development agreement must provide that the entire development or any phase thereof shall be commenced or completed within a specific period of time.

B. Statutory Development Agreements may be entered into under the authority of the Development Agreement Act as codified in Chapter 163, Florida Statutes, and processed in accordance with the requirements of State Law.

C. Non-Statutory Development Agreements may be entered into under the authority of the home rule powers of the Town under Article VIII, Section 2 of the Constitution of the State of Florida and Chapter 166, Florida Statutes.

D. A Development Agreement is transferable. However, so long as the land or structure or any portion thereof covered under the development agreement continues to be used for the purposes for which it was issued, then no person (including successors and assigns of the person who obtained the development agreement) may make use of the land except in accordance with the conditions and requirements of the development agreement. The provisions of the development agreement run with and burden the real property to which it relates until release or amended in accordance with formal action of the Town.

4.14.02 Review and Recommendation by the Development Review Committee (DRC) and Town Attorney

The DRC and the Town Attorney shall review the proposed development agreement for compliance with the Comprehensive Plan and the Land Development Code, formulate recommendations on the proposed development agreement, and forward such recommendations to the Planning and Zoning Board and Town Council.

4.14.03 Review and Recommendation by the Planning and Zoning Board

The Planning and Zoning Board shall review the proposed development agreement and the recommendations of the DRC and Town Attorney and hear from the applicant and the public. The Planning and Zoning Board shall make a recommendation to the Town Council to approve, approve with revisions, or deny the proposed development agreement.

4.14.04 Action by the Town Council

The Town Council shall review the proposed development agreement and the recommendations of the DRC, Town Attorney and Planning and Zoning Board, and hear from the applicant and the public. The Town Council shall then make a decision to approve, approve with revisions, or deny the proposed development agreement. The Town Clerk shall record the development agreement with Lake County upon proper execution of the document.

4.14.05 Amendment or Termination of a Development Agreement

A development agreement may be amended or terminated by mutual consent of the parties to the agreement or their successors in interest. Approval of an amendment to a development agreement shall follow the same process as the approval of the executed development agreement. In addition, an agreement may be revoked by the Town Council upon a finding that there has been a failure to comply with the terms of the agreement.

4.14.06 Subsequently Adopted Laws or Policies

A. An agreement shall be modified as is necessary to comply with relevant state or federal laws enacted after the execution of the agreement where the effect of such laws is to preclude the parties' compliance with its terms.
B. The Town may apply subsequently adopted local regulations and policies to a development that is subject to a development agreement and a finding that the subsequently adopted regulations or policies meet one or more of the following conditions:
    1. Are not in conflict with the laws and policies governing the development agreement and do not prevent development of land uses, intensities, or densities specified in the development agreement.
    2. Are essential to protect the public health, safety, or welfare, and expressly state that they shall apply to development that is subject to a development agreement.
    3. Are specifically anticipated and provided for in the development agreement.
    4. The Town demonstrates that substantial changes have occurred in pertinent conditions existing at the time of approval of the development agreement.
    5. The development agreement was based on substantially inaccurate information or misrepresentations.

4.15.00 LAND DEVELOPMENT CODE AMENDMENTS

Amendments to this Land Development Code must be enacted pursuant to requirements under Florida law for the enactment of ordinances. In addition, the following requirements must also be met:

4.15.01 Review process

The Town Clerk shall schedule a public hearing on the proposed amendment before the Planning and Zoning Board. The Planning and Zoning Board must be provided with copies of the town planner's report and comments, if any, received from outside reviewing agencies. If the proposed amendment will result in a material change in residential density, notice of the hearing and a copy of the proposed amendment must be transmitted to Lake County Public Schools. Also, if the proposed amendment will require treatment of wastewater, notice of the hearing and a copy of the proposed amendment must be transmitted to the Central Lake Community Development District and other providers, if any, of wastewater-treatment services. Following the public hearing the Planning and Zoning Board shall provide a recommendation to the Town Council on whether to enact the proposed amendment.

The hearing before the Planning and Zoning Board must be held before the final hearing to be held by the Town Council on whether to enact the amendment to this LDC. The Town Council may enact the amendment as proposed, enact the amendment with changes, or reject the amendment.

4.15.02 Zoning map amendments – additional notice requirements

In addition to notice required by Florida law, notice of proposed amendments to the official zoning map shall be provided as follows:

A. Notice to property owners. The Town must send via certified mail notice of the proposed amendment to the owners of all properties within 300 feet of the subject property. The notice must be sent no later than 10 days prior to the public hearing scheduled before Town Council and shall include the date, time, and place of the hearing along with a clear and concise description of the proposed amendment.

B. Posting of the subject property. No later than 10 days prior to the public hearing before Town Council, the Town shall cause the property subject to the hearing to be posted with signs notifying the public of the proposed amendment, the date, time and place of the hearing, and the person to contact for further information. Signs shall be placed, at a minimum, along all public road frontages, with one sign located at least every 500 feet along each frontage.

C. Publication of notice. Notice of the public hearing before Town Council shall be published in a newspaper of general circulation at least 10 days prior to the hearing. Notice shall also be posted at Town Hall and on the Town's website.

For amendments to this Land Development Code not involving amendment of the official zoning map, only notice meeting the requirements of state statute for the enactment of ordinances is required.

TOWN OF HOWEY-IN-THE-HILLS, FLORIDA

PRE-APPLICATION MEETING FORM

You must set up a pre-application meeting **before** submitting your application. Please submit a completed form to the Town Clerk at Town Hall, 101 N. Palm Avenue, Howey-in-the-Hills, Florida 34737.

The following background information is required to schedule a pre-application meeting. Staff will use this to research the project site in preparation for the meeting. Although this is the minimal amount of background material required, more information is welcome. Please attach additional sheets or plans as needed.

APPLICANT

Name: ASF TAP FL I LLC c/o Jason Humm
Address: 3565 Piedmont Rd NE Bldg. One, #200
City/State/Zip: Atlanta, GA 30305
Phone: 630.816.7002 Fax: _____
E-Mail Address: jhumm@turnstonegroup.com
Contact Person: Jason Humm

OWNER

Name: ASF TAP FL I LLC
Address: 3565 Piedmont Rd NE Bldg. One, #200
City/State/Zip: Atlanta, GA 30305
Phone: 630.816.7002 Fax: _____
E-Mail Address: jhumm@turnstonegroup.com
Contact Person: Jason Humm

Application Type: (Please check)

___ Site Plan Review _x_ Subdivision ___ Rezoning ___ Comprehensive Plan Amendment ___ Other

PROJECT INFORMATION

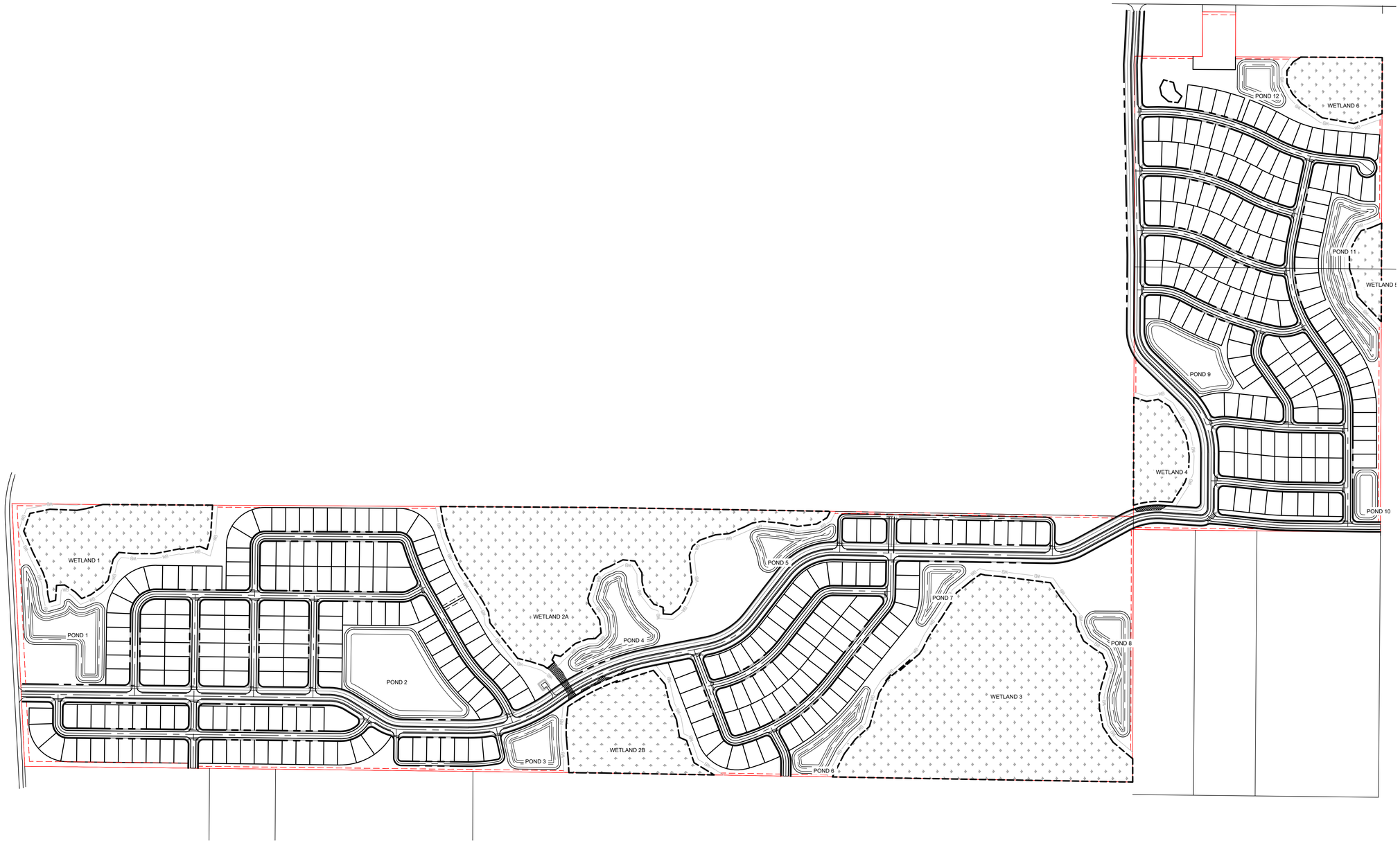
Tax parcel number(s): 27-20-25-0004-000-01200, 34-20-25-0001-000-00100, 34-20-25-0004-000-01003, and 02-21-25-0002-000-04800
Address of parcel: Revels Rd / Silverwood Ln / 9842 Number Two Rd Howey in the Hills FL, 34737
Size of parcel: 241.3 +/- acres Existing Use: Vacant PD
General Project Summary: The residential project consists of 410 single family and amenities areas. Road, drainage and utilities will be provide.

STAFF USE ONLY

Planner's Comments/Notes: _____

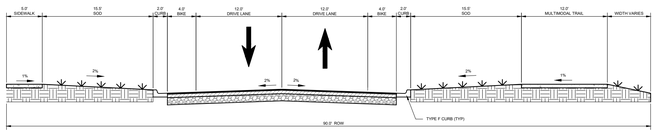
□ Notifications Discussed

Date Submitted: _____ Taken By: _____ Time: _____ a.m./p.m.


POND 12
WETLAND 6
POND 11
WETLAND 5
POND 9
WETLAND 4
POND 10
WETLAND 1
POND 1
POND 2
POND 3
WETLAND 2A
WETLAND 2B
POND 4
POND 5
POND 6
POND 7
POND 8
WETLAND 3

0 125' 250'

TYPICAL SECTIONS



SPINE ROAD
90' ROW WITH BIKE LANE & 12' MULTIMODAL TRAIL

OPT 1 - NEIGHBORHOOD ROAD
50' ROW

OPT 2 - NEIGHBORHOOD ROAD
58' ROW

TRACT AREA TABLE

TRACT NAME	USE DESCRIPTION	AREA	OWNERSHIP
90' ROW	PUBLIC RIGHT-OF-WAY	16.86 Ac.	TOWN OF HOWEY-IN-THE-HILLS (PUBLIC)
ROW (OFFSITE)	PUBLIC RIGHT-OF-WAY	1.75 Ac.	TOWN OF HOWEY-IN-THE-HILLS (PUBLIC)
ROW A	PRIVATE RIGHT-OF-WAY	2.30 Ac.	H.O.A. (PRIVATE)
ROW B	PRIVATE RIGHT-OF-WAY	6.02 Ac.	H.O.A. (PRIVATE)
ROW C	PRIVATE RIGHT-OF-WAY	0.41 Ac.	H.O.A. (PRIVATE)
ROW D	PRIVATE RIGHT-OF-WAY	3.52 Ac.	H.O.A. (PRIVATE)
ROW E	PRIVATE RIGHT-OF-WAY	0.83 Ac.	H.O.A. (PRIVATE)
ROW F	PRIVATE RIGHT-OF-WAY	9.47 Ac.	H.O.A. (PRIVATE)
TRACT A	OPEN SPACE	0.95 Ac.	H.O.A. (PRIVATE)
TRACT B	OPEN SPACE	0.14 Ac.	H.O.A. (PRIVATE)
TRACT C	AMENITY, OPEN SPACE, POND AREAS, & WETLANDS	43.40 Ac.	H.O.A. (PRIVATE)
TRACT D	OPEN SPACE & MINI PARK	0.56 Ac.	H.O.A. (PRIVATE)
TRACT E	POND AREA	5.25 Ac.	H.O.A. (PRIVATE)
TRACT F	POND & WETLAND AREA	10.66 Ac.	H.O.A. (PRIVATE)
TRACT G	OPEN SAPCE	0.25 Ac.	H.O.A. (PRIVATE)
TRACT H	AMENITY, OPEN SPACE, POND AREAS, & WETLANDS	34.88 Ac.	H.O.A. (PRIVATE)
TRACT I	OPEN SPACE & WETLANDS	4.49 Ac.	H.O.A. (PRIVATE)
TRACT J	OPEN SPACE	0.36 Ac.	H.O.A. (PRIVATE)
TRACT K	OPEN SPACE & POND AREA	2.73 Ac.	H.O.A. (PRIVATE)
TRACT L	AMENITY, OPEN SPACE, POND AREAS, & WETLANDS	13.83 Ac.	H.O.A. (PRIVATE)
TRACT M	TRAIL HEAD SITE	1.19 Ac.	H.O.A. (PRIVATE)

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: 243.3 AC

NUMBER OF LOTS: 409 TOTAL

UNIT TYPE: SINGLE FAMILY - DETACHED

LOT SIZES: 9,600 SQ.FT. (20% OF TOTAL # OF LOTS)
8,400 SQ.FT.

RESIDENTIAL DENSITY (DU/A): 4 DU/ACRE

OPEN SPACE:
REQUIRED: 60.8 AC
PROVIDED: 67.4 AC

WETLAND AREA: 60.03 AC (TOTAL)
IMPACTED: 0.45 AC
SECONDARY IMPACT: 0.29 AC
PRESERVED: 59.29 AC

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)

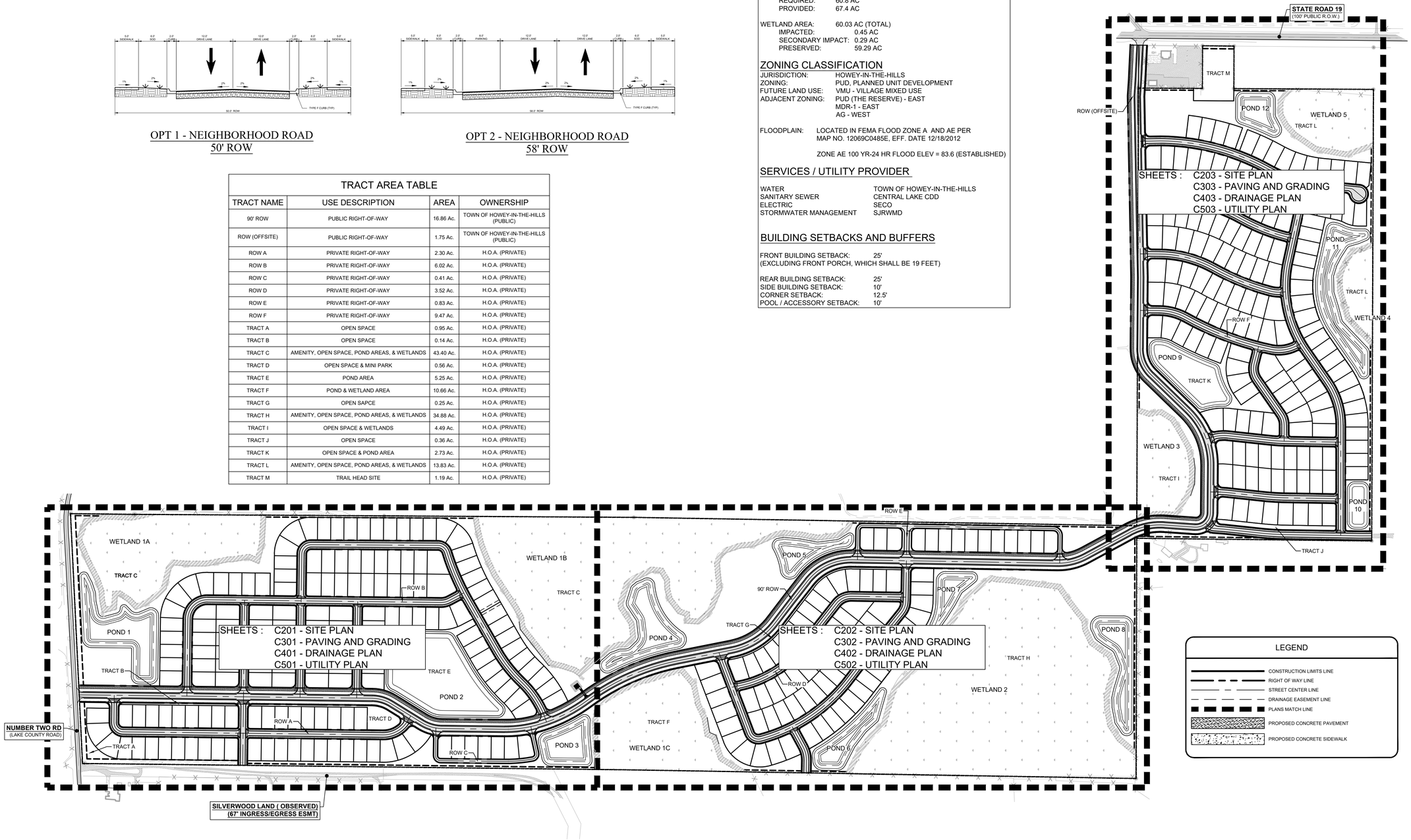
SERVICES / UTILITY PROVIDER

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'



LEGEND

- CONSTRUCTION LIMITS LINE
- RIGHT OF WAY LINE
- STREET CENTER LINE
- DRAINAGE EASEMENT LINE
- PLANS MATCH LINE
- PROPOSED CONCRETE PAVEMENT
- PROPOSED CONCRETE SIDEWALK

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.

24 HOUR EMERGENCY CONTACT

ATWELL
866.850.4200 www.atwell-group.com
111 N. MAGNOLIA AVENUE, SUITE 1350
ORLANDO, FL 32801
FL COA # 29361
COA# 29361

SEC 27,34 TWP 20 S RGE 25 E | -- | HOWEY-IN-THE-HILLS | LAKE COUNTY , FLORIDA

MISSION RISE
TURNSTONE GROUP
PRELIMINARY SUBDIVISION PLAT
OVERALL SITE PLAN

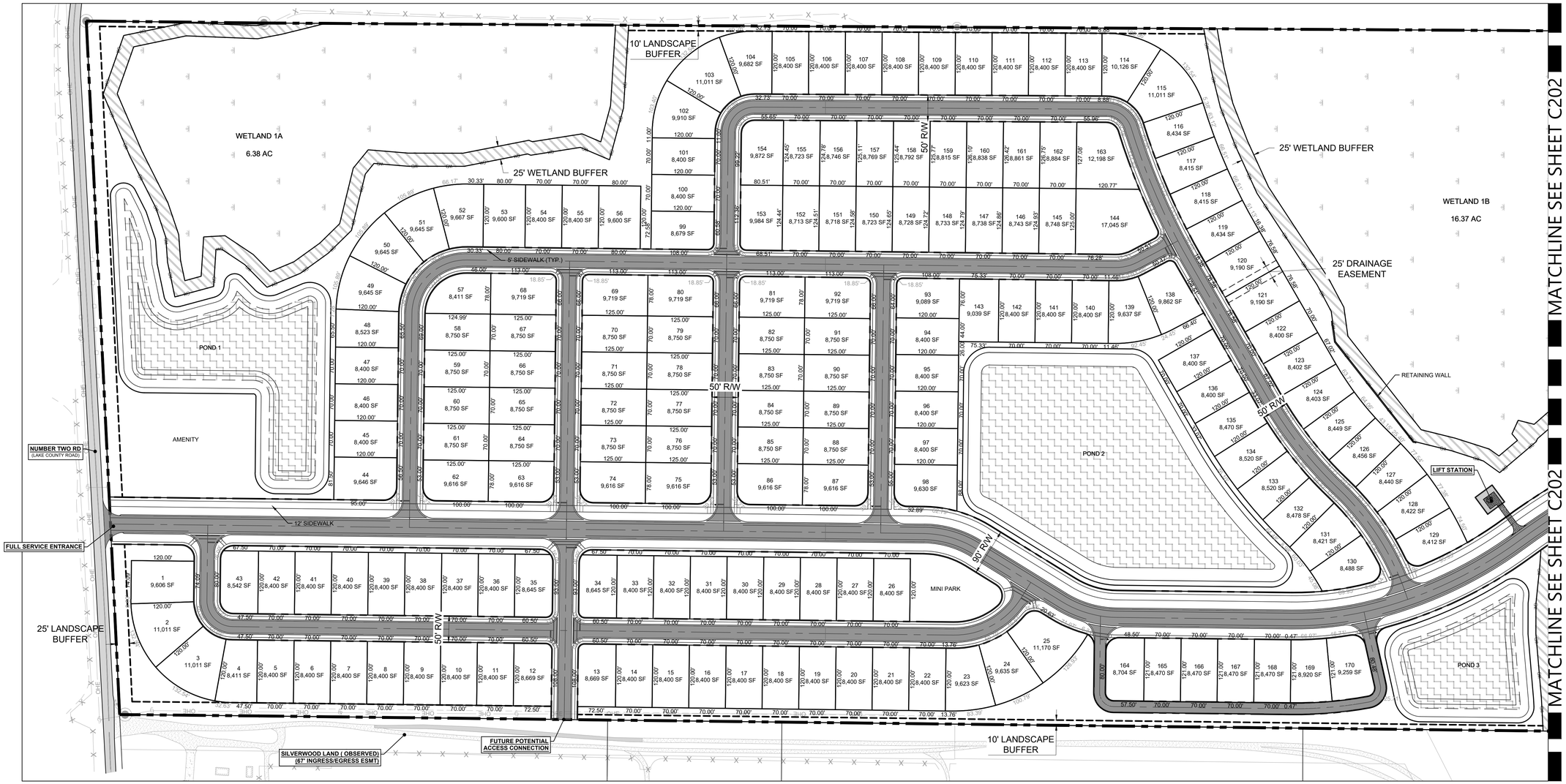
DATE 11/25/2024

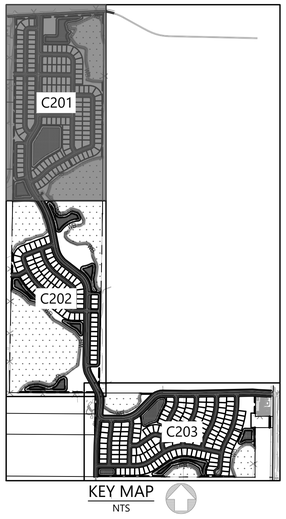
REVISIONS

0 125' 250'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C200

CAD FILE: 0180-C200 OVERALL SITE PLAN





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

PSPXX-XXXX

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24 HOUR EMERGENCY CONTACT

ATWELL
866.850.4200 www.atwell-group.com
111 N. MAGNOLIA AVENUE, SUITE 1350
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
PRELIMINARY SUBDIVISION PLAT
SITE PLAN

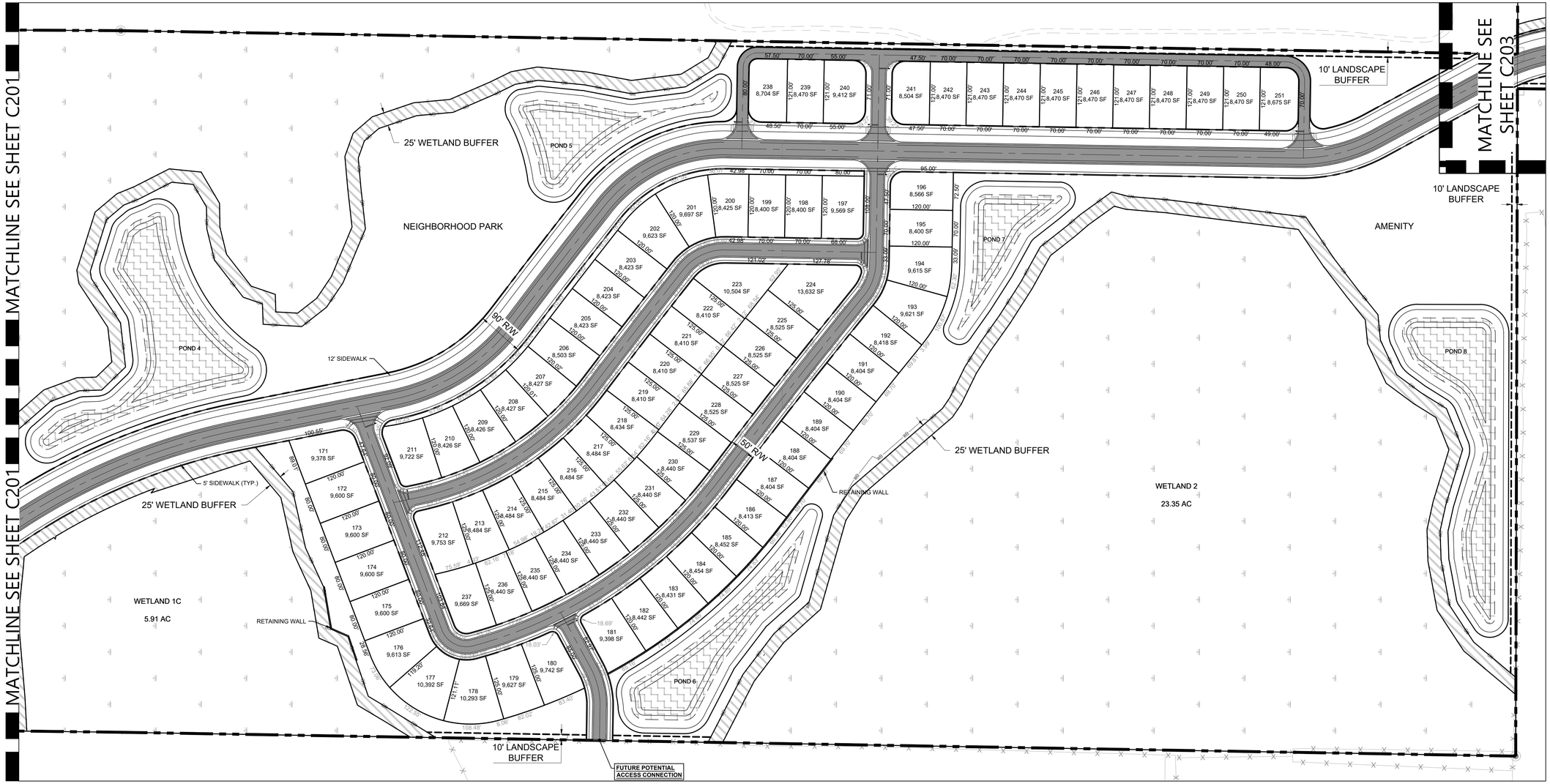
DATE 11/25/2024

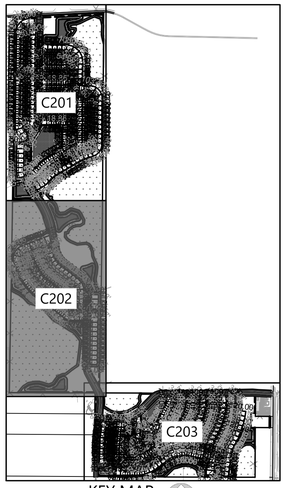
REVISIONS

0 50' 100'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C201

CAD FILE: 0180-C201 SITE PLAN





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

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.

24 HOUR EMERGENCY CONTACT

ATWELL
866.850.4200 www.atwell-group.com
111 N. MAGNOLIA AVENUE, SUITE 1350
ORLANDO, FL 32801
4C-27159
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
SITE PLAN

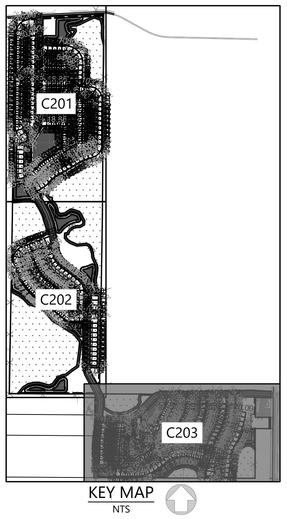
DATE 11/25/2024

REVISIONS

0 50' 100'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C202

CAD FILE: 0180-C201 SITE PLAN



LEGEND

- CONSTRUCTION LIMITS LINE
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- PROPOSED ASPHALT PAVEMENT
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PSPXX-XXXX

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ATWELL
866.850.4200 www.atwell-group.com
111 N. MAGNOLIA AVENUE, SUITE 1350
ORLANDO, FL 32801
407.843.1514
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
SITE PLAN

DATE 11/25/2024

REVISIONS

0 50' 100'

DRAWN BY: AP
CHECKED BY: ZOR
PROJECT MANAGER: KC
JOB #: 23000180
FILE CODE: --
SHEET NO. C203

CAD FILE: 0180-C201 SITE PLAN

ZONING MEMORANDUM

February 5, 2025
Prepared for
Town of Howey-in-the-Hills
Attn: Sean O'Keefe, Town Manager

Lake Hills Shopping Center: Final Site Plan Review Comments

Applicant: Windcrest Development Group, Inc.

Planning staff has reviewed the proposed Final Site Plans for Lake Hills Shopping Center. The following revisions and information will be needed before the final site plan can be scheduled for consideration by Town Council. Please provide a response to each item and revise the Plan Set accordingly.

1. Please provide all of the applicable Parcel ID numbers on the Construction Plans Master Site Plan, Sheet C009. The one provided is not correct.

2. Please provide details of the design of the commercial entrances and buffer walls consistent with the Development Agreement Section 5(h), and LDC Section 7.07.00, as provided in the Preliminary Site Plan DRC review comments from October 18, 2023. Please note the requirements from the language in the Development Agreement:

   Section 5(h)-The Commercial Pod 1, entranceway features and the buffer wall to be constructed along CR 48 shall be designed in a theme complimentary of similar architectural characters and styles in the area, as depicted on the CLUP. Non-residential development shall incorporate one of the Town's approved design styles and will exhibit a stucco finish in earth tones or pastels. Walls may incorporate stone accents as depicted in the CLUP.

   A copy of the CLUP Building Style and Landscape Buffers details are attached to this review document.

3. Please provide the updated design details for the commercial buildings per the Development Agreement, which requires:

Section 5(h)- Roofs will be screened flat roofs or barrel tiles, and walls will have horizontal and vertical treatments meeting the massing and articulation techniques as set forth in Sections 4.06.05 and 4.06.06 of the Land Development Code. Entrance architecture will model the architectural styles listed in Section 4.06.05 of the Land Development Code and will feature a design using stucco treatment, earth tone or pastel colors, barrel tile accents and landscaping. Screening walls shall be masonry with stucco treatment in earth tone or pastel colors. Walls will have variation in horizontal plane using columns, bump outs or recesses on frequent intervals and variation in vertical plane with a change in elevation with terrain, column caps or similar treatment.

And as provided in the Preliminary Site Plan DRC review comments from October 18, 2023, and as indicated in the review comments provided December 11, 2024. Please see these review comments below:

a. The Southeast elevation shows rooftop equipment. LDC Sec. 4.06.06 (D) (3) requires screening to shield this from view.
b. There are paint colors shown on the building that are not defined on the plan sheets: a yellow, white, and chocolate brown. Please identify these colors on the plans.
c. Please identify materials of the building, including the materials used for the window and door areas.
d. Provide data showing compliance with LDC Sec. 4.06.06 that at least 50% the storefront is comprised of windows.
e. The Eldorado Stone Rustic Ledge should be continued along all columns of the total storefront across the Southeast Elevation for design consistency and completeness.
f. Only three elevations are provided- the Southwest Elevation is not shown. Please revise.
g. The pharmacy drive-thru detail is not provided on any of the elevation sheets. Please provide this detail.
h. Please provide the screening details for dumpsters.
i. Please call out how LDC Sec. 4.06.06 (D) is being met with respect to massing techniques and architectural technique requirements based on building size/length.
j. Please provide the site plan layout sheet demonstrating how each elevation relates to surrounding properties, parking area, and the right-of-way.

A copy of the CLUP Building Style and Landscape Buffers details are attached to this review document.

4. The following items are conditions of approval of the March 11, 2024 Town Council approval of the Preliminary Site Plan:
    a. In areas where existing trees are to be retained, no grade change or only minor grade change be allowed to support the tree preservation. Tree preservation areas are along the east side of Outparcel A and the south property line of Outparcel C, so preservation should be reasonably completed. The applicant is proposing removal of seven trees to allow for the driveway construction alongside Outparcel C. The applicant has agreed to this condition.

    b. The sidewalk on SR 19 in front of Outparcel C be constructed with any improvements to Outparcel C. The sidewalk is required of the applicant, but the timing is being adjusted to allow for the final resolution of the SR-19 and CR 48 intersection. The applicant has agreed to this condition.

    c. The applicant needs to calculate the "fair share" cost of its impact on the SR-19 and CR- 48 intersection and provide the payment for use in intersection improvements. Design and construction will be coordinated with FDOT and Lake County.

    d. The applicant needs to provide an adequate guarantee for improvements to the east entrance of the project from SR 19. This guarantee can be done in conjunction with the residential development component. These improvements are solely project related and the funding contributions need to be assured if the intersection upgrades do not occur with the initial construction. The traffic study recommendations suggest signalization may not be warranted with the initial project phases. The minutes from the March 11, 2024 Town Council approval of the Preliminary Site Plan indicate that this is to be resolved during the Final Site Plan submittal.

    e. The applicant will provide at its cost the access controls required by FDOT for SR-19 and Lake County for CR-48 as part of their respective permitting process. These items will include turn lanes, deceleration lanes, and other access controls and, if necessary, right-of-way required by the permitting agencies.

5. The open space data on the Master Site Plan, Sheet C009, of the Construction Plans identifies that 25% Open Space is required and states that 2.0 acres of the total 18.43 acres is being provided as open space. This would only be about 11%. Please clarify on the Master Site Plan how the open space requirement is achieved.

6. Please revise the Landscape Plans Cover Sheet to read "Town of Howey-in-the-Hills, Florida".

7. Please confirm that the tree survey has been overlayed with the Landscape Plans tree mitigation plans so that all onsite and ROW trees are accounted.

8. Based on the Table of Existing Trees on the Landscape Plans Sheet T-500, it appears that 62 of the 101 trees on site or in the ROW are planned to be removed. This includes 4 of the onsite Specimen Trees (7 are onsite or in the ROW) and the one Heritage Tree. Please identify why Specimen Trees 264 and 265 are being removed. They are near trees that are being kept that are not Specimen Trees. LDC Section 7.11.03 requires 50% of all specimen trees be preserved on a parcel.

9. There are other trees identified on Landscape Plan Sheet T-500 that are proposed to be removed but there is no indication why (examples are trees 264-268). None of these trees 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 T-500 for each tree listed in the Table of Existing Tree List.

10. Tree 213 is identified as a Heritage Tree at 42 inches DBH, the only Heritage Tree identified on the site. It is listed as being in the ROW. Based on Landscape Plan Sheet T-103, it appears that this Heritage Tree is not located in proposed roadway, but in a proposed sidewalk area with greenspace on all sides of the tree. Please evaluate, consistent with LDC Section 7.11.04, if this tree can be saved by redesigning the sidewalk to go around the tree. 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.

11. On Landscape Plan Sheet T-500, it shows that there is a total of 1198 inches of DBH on site. Please identify why there are "out of property" trees listed and why those trees are being counted towards preserved DBH totals as "Inches Saved." Please revise so that only onsite trees/ROW are identified and the calculations revised accordingly.

12. The Tree Protection Detail on Landscape Plan Sheet T-500 needs to be revised to comply with LDC Section 7.11.01.

13. Tree 21 is a Camphor tree, why is it not being removed?

14. The notes under the Table of Existing Trees on Landscape Plan Sheet T-500 should reference Town Code not County Code.

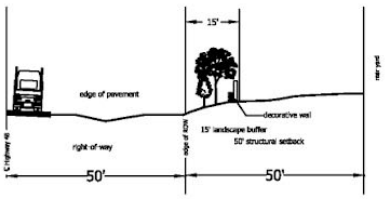
15. Please provide details on any hardscape elements consistent with LDC Section 7.07.00

    Please provide cross-sections and a data table of the proposed buffers and landscaping demonstrating and listing how they are consistent with the requirements of the Development Agreement Conceptual Land Use Plan (CLUP) and the LDC requirements in Chapter 7. A copy of the CLUP Building Style and Landscape Buffers details are attached to this review document.

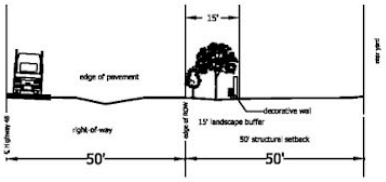
16. Please revise the Irrigation Plans to demonstrate how irrigation complies with LDC Section 7.06.02 and 7.06.03.

17. A separate sign permit application will be required consistent with LDC Section 5.03.00.

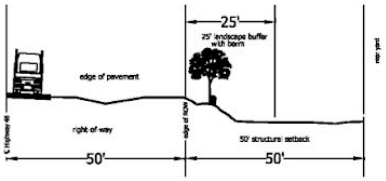

Typical Commercial Architecture
architectural details
barrel tile
stucco
architectural details
Typical Commercial Architecture
Typical Commercial Architecture
barrel tile
stucco
architectural details
Typical Commercial Architecture
architectural details
stucco
Housing types illustrated are conceptual only and are intended to portray typical housing. Actual housing product may vary from those examples, however, the minimum lot size, setbacks and lot coverage amounts shown for each housing product below shall not be reduced.
4 and 6 Unit Townhome Lots
Paired Home Lot (duplex)
50' Cottage Home Lot
70' Village Home Lot
90' Estate Home Lot
December 03, 2015
Conceptual Development Plan For:
LakeHills PUD
Howey-In-The-Hills, Florida
Urban & Regional Planners, Inc.
Proj. : 1383/4 File: Architecture Typicals 12-03-2015.dwg
2 of 3



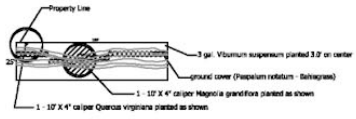
Buffer Section 1 - Highway 48



Buffer Section 2 - Highway 48

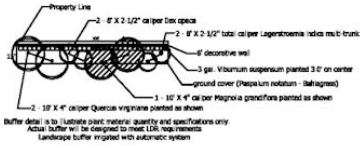


Buffer Section 3 - Highway 19



100 Feet of

Typical Road Frontage Landscape Buffer With Berm



100 Feet of

Typical Road Frontage Landscape Buffer With Wall

Note:
The Commercial Pod 1, entranceway features and the buffer wall to be constructed along CR 48 and Hwy 19 shall be designed in a theme complimentary of similar architectural characters and styles in the area.

1

2

3

Typical Entrance Architecture

Typical Wall Detail

December 03, 2015

Landscape Buffer Sections

LakeHills PUD

Howey-In-The-Hills, Florida

Urban & Regional Planners, Inc.
1162 CAMP AVENUE · MT. DORA, FL 32757
(352)385-1940 / FAX (352)383-4824
Proj.: 1383/4 File: landscape buffers 12-03-2015 sheet 3.dwg

3 of 3

Traffic

The intersection on SR 19 created by this shopping center, Lake Hills, and Thompson Grove will most likely require a traffic signal in the future. The need for the signal is fully due to the traffic generated by these developments. Accordingly, the costs for the construction and the ongoing operation and maintenance of the traffic signal should be the responsibility of the developments.

Provide a proportionate share calculation toward the construction of the roundabout at the intersection of SR 19 & CR 48. The town has been working with Lake County Public Works to establish the roundabout as an impact fee project. They have indicated that the cost of designing the roundabout could be part of a proportionate share contribution.

Site Plan

Provide a site assessment for endangered & threatened species. Has the property been evaluated for sand skinks?

The development will need to provide to the town an easement to allow traffic from the water treatment plant to access SR 19. Identify this on the plan (either graphically, with a note, or both).

Provide crosswalks for the pedestrian route sidewalk at the SW side of the building.

Why is the sidewalk discontinued along the frontage of Outparcel C?

Provide a plan & details for the access connections to SR 19 on the north and south ends of the project.

Provide a structural analysis for the retaining wall adjacent to the water storage tank.

Provide an additional sewer lateral at the north corner of Outparcel C for a future connection from the water plant site.

The water main from the system tie-in point to the site is to be 12”.

Construct a 12” water main along the SR 19 frontage.

Provide backflow preventers at the site boundary where the on-site water mains connect to the town’s system in the right-of-way.

How is the water to the site going to be metered?

Landscape & Irrigation Plan

The landscaping in the main boulevard right-of-way along the frontage of Outparcel B needs to be adjusted to reflect the sidewalk changes discussed in the Main Boulevard & Mass Grading DRC comments (Dec 12, 2024).

Modify the median landscaping at the location of the raised pedestrian crossing to reflect the pedestrian refuge area in the median. The median landscaping should not obscure the motorist's view of pedestrians in the median.

Do not put irrigation lines under the CR 48 access road.

Clearly identify on the irrigation plan the tie-in point to the supply main.

Will the irrigation water be metered?

Extend the irrigation line at the raised pedestrian crossing to the other side of the main boulevard to provide for a connection to Outparcel A.

LEGAL DESCRIPTION

A TRACT OF LAND BEING PART OF SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS;

COMMERCIAL 1

A PORTION OF GOVERNMENT LOTS 2, 8, AND 9 LYING WESTERLY OF HIGHWAY 19, ALL LYING IN SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: AS A POINT OF REFERENCE COMMENCE AT SOUTHWEST CORNER OF THE SOUTHWEST ¼ OF SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA AND PROCEED N 00°53'14" E, ALONG THE WEST BOUNDARY OF THE SOUTHWEST 1/4 OF SAID SECTION 23, A DISTANCE OF 1171.08 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY LINE OF COUNTY ROAD 48 SAID POINT LYING ON A CURVE CONCAVE NORTHEASTERLY HAVING A RADIUS OF 5679.58 FEET AND A CHORD BEARING AND DISTANCE OF S 69°35'43" E, A DISTANCE OF 1186.12 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT AND SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 1188.29 FEET; THENCE S 75°35'20" E, ALONG SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 1460.31 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 2341.83 FEET AND A CHORD BEARING AND DISTANCE OF S 72°35'58" E, A DISTANCE OF 223.25 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE RIGHT AND ALONG SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 223.33 FEET; THENCE LEAVING SAID NORTHERLY RIGHT OF WAY LINE, N 15°36'38" E, A DISTANCE OF 52.62 FEET; THENCE N 75°08'12" E, A DISTANCE OF 258.80 FEET TO THE POINT OF BEGINNING; THENCE N 15°36'16" E, A DISTANCE OF 306.32 FEET; THENCE N 60°15'03" E, A DISTANCE OF 218.37 FEET; THENCE N 46°59'01" E, A DISTANCE OF 705.92 FEET; THENCE S 43°00'59" E, A DISTANCE OF 404.25 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 100.00 FEET AND A CHORD BEARING AND DISTANCE OF S 27°52'48" E, A DISTANCE OF 52.22 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE RIGHT, A DISTANCE OF 52.84 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE CONCAVE NORTHEASTERLY HAVING A RADIUS OF 120.00 FEET AND A CHORD BEARING AND DISTANCE OF S 27°52'48" E, A DISTANCE OF 62.67 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT, A DISTANCE OF 63.40 FEET; THENCE S 43°00'59" E, A DISTANCE OF 125.00 FEET TO A POINT ON THE WESTERLY RIGHT OF WAY LINE OF STATE ROAD 19; THENCE S 46°59'01" W, ALONG SAID WESTERLY RIGHT OF WAY LINE, A DISTANCE OF 650.20 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY LINE OF STATE ROAD 19; THENCE S 75°06'54" W, ALONG SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 210.88; THENCE LEAVING SAID NORTHERLY RIGHT OF WAY LINE, N 41°20'52" W, A DISTANCE OF 270.98 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE NORTHWESTERLY HAVING A RADIUS OF 133.42 FEET AND A CHORD BEARING AND DISTANCE OF S 62°15'27" W, A DISTANCE OF 62.77 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE RIGHT, A DISTANCE OF 63.36 FEET; THENCE S 75°51'45" W, A DISTANCE OF 298.03 FEET; THENCE S 75°08'12" W, A DISTANCE OF 229.89 FEET; THENCE S 15°36'38" W, A DISTANCE OF 28.52 FEET TO A POINT ON THE AFOREMENTIONED NORTHERLY RIGHT OF WAY LINE OF COUNTY ROAD 48 AND A POINT ON A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 2341.83 FEET AND A CHORD BEARING AND DISTANCE OF N 69°15'12" W, A DISTANCE OF 50.20 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT AND ALONG SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 50.20 FEET TO THE POINT OF BEGINNING.

SAID PARCEL CONTAINING 630854 SQUARE FEET OR 14.48 ACRES MORE OR LESS.

TOGETHER WITH

COMMERCIAL 2

A PORTION OF GOVERNMENT LOT 9 LYING WESTERLY OF HIGHWAY 19, ALL LYING IN SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: AS A POINT OF REFERENCE COMMENCE AT SOUTHWEST CORNER OF THE SOUTHWEST ¼ OF SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA AND PROCEED N 00°53'14" E, ALONG THE WEST BOUNDARY OF THE SOUTHWEST 1/4 OF SAID SECTION 23, A DISTANCE OF 1171.08 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY LINE OF COUNTY ROAD 48 SAID POINT LYING ON A CURVE CONCAVE NORTHEASTERLY HAVING A RADIUS OF 5679.58 FEET AND A CHORD BEARING AND DISTANCE OF S 69°35'43" E, A DISTANCE OF 1186.12 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT AND SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 1188.29 FEET; THENCE S 75°35'20" E, ALONG SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 1460.31 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 2341.83 FEET AND A CHORD BEARING AND DISTANCE OF S 68°56'00" E, A DISTANCE OF 521.94 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE RIGHT AND ALONG SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 523.03 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY LINE OF STATE ROAD 19; THENCE N 75°06'54" E, ALONG SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 742.75 FEET TO A POINT ON THE WESTERLY RIGHT OF WAY LINE OF STATE ROAD 19; THENCE N 46°59'01" E, ALONG SAID WESTERLY RIGHT OF WAY LINE, A DISTANCE OF 1328.28 TO THE POINT OF BEGINNING; THENCE LEAVING SAID WESTERLY RIGHT OF WAY LINE, N 89°48'40" W, A DISTANCE OF 738.20; THENCE S 46°59'01" W, A DISTANCE OF 50.00 FEET; THENCE S 43°00'59" E, A DISTANCE OF 269.48 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE NORTHEASTERLY HAVING A RADIUS OF 100.00 FEET AND A CHORD BEARING AND DISTANCE OF S 58°09'10" E, A DISTANCE OF 52.22 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT, A DISTANCE OF 52.84 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 120.00 FEET AND A CHORD BEARING AND DISTANCE OF S 58°09'10" E, A DISTANCE OF 62.67 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE RIGHT, A DISTANCE OF 63.40 FEET; THENCE S 43°00'59" E, A DISTANCE OF 125.00 FEET TO A POINT ON THE AFOREMENTIONED WESTERLY RIGHT OF WAY OF STATE ROAD 19; THENCE N 46°59'01" E, ALONG SAID RIGHT OF WAY LINE, A DISTANCE OF 558.08 FEET TO THE POINT OF BEGINNING.

SAID PARCEL CONTAINING 155,772 SQUARE FEET OR 3.58 ACRES MORE OR LESS.

TOGETHER WITH

ACCESS EASEMENT

COMMENCE AT THE NORTHEAST CORNER OF THE SOUTHEAST 1/4 SECTION 23-20-25; THENCE SOUTH 00°28'42" WEST ALONG THE EAST LINE OF THE SOUTHEAST 1/4 OF SECTION 25, A DISTANCE OF 765.11 FEET TO THE NORTHERLY RIGHT OF WAY OF STATE ROAD 19; THENCE SOUTH 46°59'01" WEST ALONG THE NORTHERLY RIGHT OF WAY, A DISTANCE OF 1,350.12 FEET TO THE POINT OF BEGINNING; THENCE CONTINUE SOUTH 46°59'01" WEST, A DISTANCE OF 120.00 FEET; THENCE NORTH 43°00'59" WEST, A DISTANCE OF 125.00 FEET; TO A POINT OF CURVATURE OF A CURVE CONCAVE NORTHEASTERLY, HAVING A RADIUS OF 120.00 FEET AND A CHORD WHICH BEARS NORTH 27°52'48" WEST, A DISTANCE 62.67 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE RIGHT, A DISTANCE OF 63.40 FEET; TO A POINT OF REVERSE CURVATURE OF A CURVE HAVING A RADIUS OF 100.00 FEET AND A CHORD WHICH BEARS NORTH 27°52'48" WEST, AND A DISTANCE OF 52.22 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT, A DISTANCE OF 52.84 FEET; THENCE NORTH 43°00'59" WEST, A DISTANCE OF 404.25 FEET; THENCE NORTH 46°59'01" EAST, A DISTANCE OF 60.00 FEET; THENCE SOUTH 43°00'59" EAST, A DISTANCE OF 404.25 FEET; TO A POINT OF CURVATURE OF A CURVE CONCAVE NORTHEASTERLY, HAVING A RADIUS OF 100.00 FEET AND A CHORD WHICH BEARS SOUTH 58°09'10" EAST, A DISTANCE 52.22 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT, A DISTANCE OF 52.84 FEET; TO A POINT OF REVERSE CURVATURE OF A CURVE HAVING A RADIUS OF 120.00 FEET AND A CHORD WHICH BEARS SOUTH 58°09'10" EAST, AND A DISTANCE OF 62.67 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE RIGHT, A DISTANCE OF 63.40 FEET; THENCE SOUTH 43°00'59" EAST, A DISTANCE OF 125.00 FEE; TO THE POINT OF BEGINNING.

CONTAINING 49,343.34 SQUARE FEET OR 1.13 ACRES, MORE OR LESS.

PARCEL ID

- 23-20-25-0004-000-01600
- 23-20-25-0004-000-01700
- 23-20-25-0004-000-01800

ZONING
PLANNED UNIT DEVELOPMENT (PUD)

FUTURE LAND USE
PLANNED UNIT DEVELOPMENT (PUD)

AGENCIES TO BE NOTIFIED / UTILITY PROVIDERS

HOWEY IN THE HILLS
101 N. PALM AVENUE
HOWEY-IN-THE-HILLS, FL 34737
P: (352) 324-2290

WATER & WASTE WATER
HOWEY- IN-THE-HILLS
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WILLIAM COPPINGER
150 PROGRESS ENERGY WAY
LONGWOOD, FL 32750

QUANTUM
JOSTIN BURBIDGE
P: (941) 815-6317

CABLE- COMCAST
THOMAS OSEBOLD

CONSTRUCTION PLANS

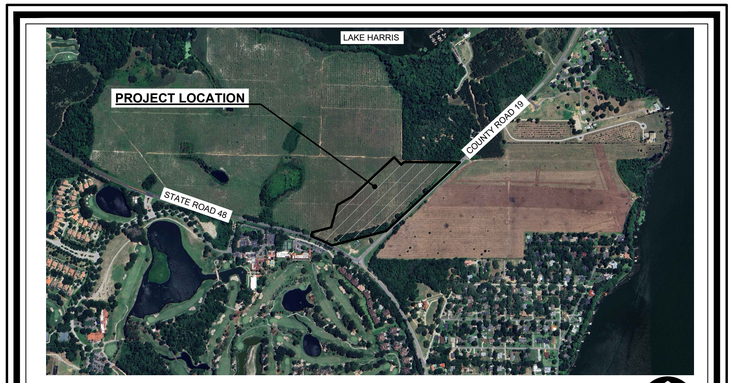
FOR:

LAKE HILLS SHOPPING CENTER

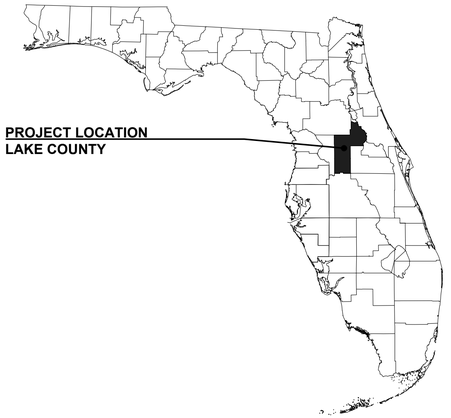
TOWN OF HOWEY IN THE HILLS, FL

SECTIONS 23, TOWNSHIP 20S, RANGE 25E

OCTOBER 2024



VICINITY MAP
1" = 1000'



SHEET LIST	
SHEET #	SHEET TITLE
C001	COVER SHEET
C002	GENERAL NOTES
C007-C008	SWPPP AND DEMO PLAN
C009	MASTER SITE PLAN
C101-C102	GEOMETRY PLAN
C200-C201	UTILITY PLAN
C300-C301	DRAINAGE PLAN
C400-C402	GRADING PLAN
C410	ADA ACCESSIBILITY PLAN
C411	TEMPORARY SITE ACCESS AND STAGING PLAN
C500-C501	ROADWAY PLAN & PROFILES
C710	OFFSITE IMPROVEMENTS PLAN
C711	OFFSITE DRAINAGE AND GRADING PLAN
C712	OFFSITE CROSS SECTIONS
C800-C801	VEHICLE CIRCULATION PLAN
C900-C901	CONSTRUCTION DETAILS
C910-C913	CITY DETAILS
C920-C921	FDOT DETAILS

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MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue, Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

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SURVEYOR
HAMILTON ENGINEERING
& SURVEYING, LLC.
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OWNER
PUBLIX SUPER MARKETS, INC
3300 PUBLIX CORPORATE PARKWAY
LAKELAND, FL 33802

APPLICANT
WINDCREST ACQUISITIONS, LLC
605 E. ROBINSON ST. SUITE 340
ORLANDO, FL 32801
PHONE: (407) 219-3540 X.3

BENJAMIN S. BECKHAM LICENSE NO. 79452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by Benjamin S. Beckham, PE 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.

BENJAMIN S. BECKHAM LICENSE No. 79452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Benjamin S. Beckham, P.E. using a digital signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Digitally signed by Benjamin S Beckham
Date: 2025.01.10 14:55:42 -05'00'

SUBMITTAL LOG		
DATE	SUBMITTAL	BY

GENERAL NOTES

1. ALL CONSTRUCTION WORK SHALL BE IN ACCORDANCE WITH THE LATEST LOCAL AGENCY DETAILS, THE FDOT "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" ADOPTED IN 1991 BY THE STATE OF FLORIDA, AND ALL SUPPLEMENTS THERETO, AND THE FDOT "STANDARD PLANS", WHICHEVER IS MORE STRINGENT.

2. ALL FDOT DESIGN INDICES ARE HEREBY INCORPORATED AS PLAN REFERENCES HEREIN. CONTRACTOR IS RESPONSIBLE FOR OBTAINING COMPLETE COPIES OF ALL APPLICABLE INDEX DRAWINGS AND CONSTRUCTING ALL WORKS IN CONFORMANCE WITH THE FDOT STANDARD PLANS, LATEST EDITION.

3. THE LOCATIONS OF EXISTING UTILITIES SUCH AS WATER MAINS, SEWER MAINS, GAS LINES, ETC., AS SHOWN ON THE PLANS, WITH THE EXCEPTION OF THE LOCATIONS OF EXISTING UTILITIES AT ALL POINTS OF CONNECTION TO AND AT ALL AREAS OF CONFLICT WITH UTILITY PROVIDER MAINS, WHICH HAVE BEEN FIELD VERIFIED, HAVE BEEN DETERMINED FROM THE BEST AVAILABLE INFORMATION AND ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR. HOWEVER, THE ENGINEER AND OWNER DO NOT ASSUME RESPONSIBILITY FOR THE SIZES AND LOCATIONS SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF THE SIZE AND LOCATION OF ALL EXISTING UTILITIES SHOWN AND NOT SHOWN ON THESE PLANS.

4. CONTRACTOR, INCLUDING ANY SUB-CONTRACTORS, IS RESPONSIBLE TO ENSURE THAT ALL REQUIRED PERMITS ARE OBTAINED AND ARE IN HAND AT THE JOB SITE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. CONTRACTOR SHALL ABIDE BY ALL CONDITIONS CONTAINED THEREIN. PERMITS INCLUDED (BUT NOT NECESSARILY LIMITED TO) ARE:
   - ACOE NATIONWIDE OR INDIVIDUAL DREDGE AND FILL
   - FDEP WATER DISTRIBUTION
   - FDEP SANITARY SEWER COLLECTION AND TRANSMISSION
   - FDEP REUSE
   - FDEP DREDGE AND FILL
   - FDEP NPDES GENERIC PERMIT FOR STORM WATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES
   - FDOT DRIVEWAY CONNECTION
   - FDOT UTILITY
   - FDOT STORMWATER DISCHARGE CONNECTION
   - FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION PERMIT FOR IMPACTS TO PROTECTED SPECIES
   - LOCAL RIGHT OF WAY USE
   - LOCAL UNDERGROUND UTILITIES
   - WATER MANAGEMENT DISTRICT CONSUMPTIVE USE FOR CONSTRUCTION DEWATERING (CUP)
   - WATER MANAGEMENT DISTRICT ENVIRONMENTAL RESOURCE PERMIT (ERP)

5. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL SETBACKS AND EASEMENTS BEFORE BEGINNING CONSTRUCTION.

6. BENCHMARKS AND OTHER REFERENCE POINTS SHALL BE CAREFULLY MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. IF DISTURBED OR DESTROYED, THESE POINTS SHALL BE REPLACED BY A LICENSED FLORIDA PROFESSIONAL LAND SURVEYOR (P.L.S.) AT CONTRACTOR'S EXPENSE.

7. DIFFERING SITE CONDITIONS FROM THAT WHICH IS REPRESENTED HEREON, WHETHER ABOVE, ON, OR BELOW THE SURFACE OF THE GROUND, SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER AND OWNER IN WRITING. NO CLAIM FOR EXPENSES INCURRED BY THE CONTRACTOR DUE TO DIFFERING SITE CONDITIONS WILL BE ALLOWED IF CONTRACTOR FAILS TO PROVIDE THE REQUIRED WRITTEN NOTIFICATION OF SUCH CONDITIONS TO THE ENGINEER AND OWNER.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION AND REMOVAL OF ALL EXISTING STRUCTURES, ETC., UNLESS OTHERWISE NOTED. ALL SOIL STRIPPINGS AND ANY UNSUITABLE MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR UNLESS OTHERWISE DIRECTED BY THE OWNER.

9. THE CONTRACTOR SHALL PROTECT ALL EXISTING STRUCTURES AND UTILITIES NOTED TO REMAIN FROM DAMAGE OR DISPLACEMENT DURING CONSTRUCTION. IN THE EVENT OBSTRUCTIONS ARE ENCOUNTERED, THE CONTRACTOR SHALL PROMPTLY NOTIFY THE ENGINEER AND THE UTILITY COMPANY. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL COSTS INCURRED TO REPAIR DAMAGE OR CORRECT DISPLACEMENT.

10. CONTRACTOR SHALL BE EXTREMELY CAUTIOUS WHEN WORKING NEAR TREES WHICH ARE TO BE SAVED, WHETHER SHOWN IN THE PLANS OR DESIGNATED IN THE FIELD. CONTRACTOR SHALL BECOME FAMILIAR WITH AND CONFORM WITH ALL TREE PROTECTION/PRESERVATION PROVISIONS OF THE PRELIMINARY SUBDIVISION PLAN/DEVELOPMENT PLAN AND LOCAL GOVERNMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACEMENT AND MITIGATION COSTS FOR ANY TREES REMOVED THAT WERE DESIGNATED TO BE PRESERVED.

11. WHEN DETAILS ARE PROVIDED, CONTRACTOR SHALL CONSTRUCT JOB PER SPECIFIC DETAILS, AND NOT BY SCALING FROM THESE PLANS.

12. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ANY REQUIRED TRAFFIC CONTROL PLANS. ALL WORK SHALL BE EXECUTED UNDER THE ESTABLISHED PLAN AND FDOT, AND LOCAL AGENCY APPROVED PROCEDURES.

13. THE CONTRACTOR SHALL RESTORE OFF SITE CONSTRUCTION AREAS TO EQUAL OR BETTER CONDITION THAN EXISTED PRIOR TO COMMENCEMENT OF CONSTRUCTION.

14. AS-BUILT DRAWINGS SHALL BE KEPT BY THE CONTRACTOR AND SUBMITTED TO THE PROJECT ENGINEER UPON PROJECT COMPLETION.

15. CONTRACTOR SHALL COMPLY WITH ALL LOCAL AGENCY REQUIREMENTS FOR INSPECTION AND TESTING.

16. ALL NEW UTILITIES AND UPGRADED UTILITIES PROVIDED TO OR ON THE SITE MUST BE INSTALLED UNDERGROUND.

17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RESTORATION OF ANY TRAFFIC SIGNAL EQUIPMENT INCLUDING BUT NOT LIMITED TO FIBER LOOP SENSORS PULL BOXES, CONDUIT TRAFFIC SIGNALS, AND CABINETS. ANY ITEMS DAMAGED BY THE CONTRACTOR WILL BE RESTORED TO THEIR ORIGINAL CONDITIONS UNLESS OTHERWISE AGREED UPON BY THE COUNTY TRAFFIC ENGINEER.

18. ALL CONSTRUCTION MUST BE IN ACCORDANCE WITH UTILITY PROVIDER'S STANDARDS AND CONSTRUCTION SPECIFICATIONS, LATEST EDITION.

19. CONTRACTOR SHALL NOTIFY ALL APPROPRIATE UTILITY COMPANIES OF PROPOSED START OF WORK IN ACCORDANCE WITH THEIR STANDARD REQUIREMENTS; INCLUDING BUT NOT LIMITED TO, WATER, RECLAIMED WATER, SEWER, POWER, TELEPHONE, GAS AND CABLE TV COMPANIES.

20. PRIOR TO COMMENCEMENT, CONTRACTOR SHALL PROVIDE ENGINEER WITH CONSTRUCTION SCHEDULE FOR VARIOUS SITE WORK ELEMENTS SO THAT PERIODIC SITE VISITS MAY BE COORDINATED TO ENSURE TIMELY CERTIFICATION OF COMPLETION TO AGENCIES AND AVOID DELAYS IN ISSUANCE OF CERTIFICATES OF OCCUPANCY/COMPLETION.

21. ALL RECOMMENDATIONS AND REQUIREMENTS OF INSPECTION PERSONNEL OTHER THAN OWNER/OWNER'S REPRESENTATIVE SHALL BE REPORTED TO ENGINEER/OWNER/OWNER'S REPRESENTATIVE PRIOR TO IMPLEMENTATION. COMPENSATION WILL NOT BE ALLOWED FOR WORK THAT IS NOT AUTHORIZED BY ENGINEER/OWNER/OWNER'S REPRESENTATIVE.

22. CONTRACTOR SHALL CONFIRM COMPATIBILITY OF PIPE SLOPES AND INVERTS DURING SHOP DRAWING AND MATERIALS ORDERING PHASE OF PROJECT AND ADVISE ENGINEER OF ANY DISCREPANCIES.

23. NO EXISTING MATERIAL SHALL BE USED IN NEW CONSTRUCTION UNLESS APPROVED DURING THE SHOP DRAWING APPROVAL PROCESS BY ENGINEER/OWNER/OWNER'S REPRESENTATIVE IN WRITING.

24. CONTRACTOR SHALL STAKE ALL IMPROVEMENTS USING THE PLAT(S), ROAD CENTERLINE GEOMETRY, AND BUILDING COORDINATES PROVIDED IN THESE PLANS. CONTRACTOR SHALL CONFIRM WITH THE ENGINEER THAT THE PLAT IS CURRENT PRIOR TO CONSTRUCTION.

25. CONTRACTOR SHALL CONFIRM THE BUILDING DIMENSIONS SHOWN HEREIN WITH THOSE IN THE FINAL ARCHITECTURAL DRAWINGS PRIOR TO STAKEOUT. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO COMPLETELY STAKE AND CHECK ALL IMPROVEMENTS TO ENSURE ADEQUATE POSITIONING, BOTH HORIZONTAL AND VERTICAL, INCLUDING MINIMUM BUILDING SETBACKS PRIOR TO THE INSTALLATION OF ANY IMPROVEMENT.

PAVING AND DRAINAGE

1. THE CONTRACTOR SHALL CONSTRUCT PAVEMENT IN ACCORDANCE WITH TYPICAL PAVEMENT SECTIONS AND LOCAL AGENCY SPECIFICATIONS. THE FINISHED PAVEMENT GRADES SHALL CONFORM TO THOSE SPECIFIED ON THE GRADING PLAN.

2. FLORIDA LAW (F.S. 553.851) PROTECTION OF UNDERGROUND PIPELINES MANDATES THAT "NO EXCAVATOR SHALL COMMENCE OR PERFORM ANY EXCAVATION IN ANY PUBLIC OR PRIVATE STREET, ALLEY, RIGHT-OF-WAY DEDICATED TO THE PUBLIC USE, OR GAS UTILITY EASEMENT WITHOUT FIRST OBTAINING INFORMATION CONCERNING THE POSSIBLE LOCATION OF GAS PIPELINES IN THE AREA OF THE PROPOSED EXCAVATION." THIS INCLUDES ANY OPERATION UTILIZING HAND TOOLS OR POWER TOOLS WHICH MOVES OR REMOVES ANY STRUCTURE, EARTH, ROCK, OR OTHER MASS OF MATERIAL BY SUCH METHODS AS DIGGING, BACKFILLING, DEMOLITION, GRADING, DITCHING, DRILLING, BORING AND CABLE PLOWING. THE EXCAVATOR MUST NOTIFY THE GAS UTILITY A MINIMUM OF 48 HOURS AND A MAXIMUM OF 5 DAYS PRIOR TO EXCAVATING (EXCLUDING SATURDAYS, SUNDAYS, AND LEGAL HOLIDAYS).

3. EXCAVATION, PAVING, AND STORM SEWER WORK SHALL BE DONE IN ACCORDANCE WITH FDOT "STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION", LATEST EDITION, AND LOCAL AGENCY SPECIFICATIONS.

4. UNLESS OTHERWISE NOTED, GRADE TO MEET EXISTING ELEVATIONS AT PROPERTY LINES. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE OF THE SITE TO THE RETENTION PONDS AS SHOWN BY PROPOSED GRADES AND FLOW ARROWS.

5. DURING CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE ADEQUATE DRAINAGE AND PROPER SOIL EROSION CONTROL MEASURES FOR PROTECTION OF ALL DRAINAGE AND SEWER STRUCTURES AND AT ALL ADJACENT LANDS AND ROADS.

6. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY AND ALL GEOTECHNICAL REPORTS PREPARED FOR THE SITE. GEOTECHNICAL RECOMMENDATIONS ARE NOT THE RESPONSIBILITY OF ENGINEER. ENGINEER HAS RELIED ON THE GEOTECHNICAL REPORT(S) IN PREPARATION OF THE DRAWINGS. ANY CONFLICT BETWEEN INFORMATION WITHIN THE REPORT AND THESE DRAWINGS SHALL BE REPORTED TO ENGINEER/OWNER/OWNER'S REPRESENTATIVE. ENGINEER ASSUMES NO RESPONSIBILITY FOR THE CORRECTNESS, COMPLETENESS, OR ACCURACY OF GEOTECHNICAL INFORMATION.

7. THE SITE SHALL BE CLEARED OF ALL TREES EXCEPT THOSE WHICH ARE DESIGNATED TO BE SAVED OR RELOCATED BEFORE CONSTRUCTION. THE CONTRACTOR SHALL MEET AT THE SITE WITH THE OWNER. AT THIS TIME, ANY TREES TO BE SAVED SHALL BE POINTED OUT AND TAGGED. THESE TREES SHALL BE PROTECTED FROM DAMAGE.

8. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE SUPERVISING ENGINEER IF A PAVEMENT OR FOUNDATION STAKE IS DISTURBED.

9. THE CONTRACTOR SHALL INSTALL DROP CURBS AND HANDICAP RAMPS AT ALL INTERSECTIONS OF THE SIDEWALK WITH THE PROPOSED PAVEMENT, UNLESS OTHERWISE SPECIFIED.

10. FOR HORIZONTAL AND VERTICAL CLEARANCES BETWEEN STORM PIPES AND WATER MAINS/SERVICES, SEE WATER NOTES ON THIS SHEET AND FDEP SEPARATION TABLE ON UTILITY PLAN.

11. ALL PUBLIC STORM PIPE MATERIALS SHALL BE REINFORCED CONCRETE PIPE (RCP) ASTM C-76 CLASS III, UNLESS OTHERWISE SPECIFIED. LIFTING HOLES ARE PROHIBITED.

12. ALL PRIVATE STORM PIPE MATERIALS SHALL BE AS FOLLOWS:
    12.1. DIAMETERS LESS THAN OR EQUAL TO 12-INCH SHALL BE HIGH DENSITY POLYETHYLENE (HDPE) PIPE
    12.2. DIAMETERS GREATER THAN OR EQUAL TO 15-INCH SHALL BE POLYPROPYLENE (PP) PIPE.

13. MINIMUM COVER OVER ALL PIPE SHALL BE 36-INCHES FROM TOP OF PIPE TO FINISHED GRADE, UNLESS OTHERWISE NOTED.

14. ALL STORM SYSTEM MANHOLE AND INLET STRUCTURES SHALL BE PRECAST CONCRETE.

15. THE CONTRACTOR SHALL USE CONCRETE WITH A MINIMUM 28 DAY STRENGTH OF 3,000 P.S.I..

16. ALL SIDEWALK WIDTHS SHALL BE AS NOTED ON THE SITE PLAN AND SHALL HAVE 1-INCH DEEP CONTRACTION JOINTS EVERY 5-FEET AND AN EXPANSION JOINT EVERY 20-FEET (MINIMUM). MAXIMUM SIDEWALK CROSS SLOPES SHALL BE 2.00% AND MAXIMUM SIDEWALK RUNNING SLOPES SHALL BE 5.00% EXCEPT AT RAMP LOCATIONS. MAXIMUM RAMP SLOPES SHALL BE 8.33%.

17. PROVIDE FDOT TYPE III SILT FENCE ALONG THE PROPERTY LINES AND PHASE LINES AS WELL AS ANY CONSTRUCTION WITHIN THE OTHER PHASES THAT IS DEEMED NECESSARY.

18. ALL TEST REPORTS GENERATED BY A TESTING FIRM ARE TO HAVE COPIES SENT DIRECTLY TO THE LOCAL AGENCY AS SOON AS THEY ARE GENERATED. CLEARANCE FROM THE LOCAL AGENCY SHALL BE RECEIVED PRIOR TO PAVING.

19. THE BASE COURSE SHALL NOT BE CONSTRUCTED UNTIL AFTER SUBGRADE CONSTRUCTION HAS BEEN COMPLETED AND REQUIRED SUBGRADE TEST RESULTS HAVE BEEN SUBMITTED TO AND APPROVED BY THE LOCAL AGENCY'S ENGINEER.

20. THE FINISHED BASE COURSE SHALL BE PRIMED WITHOUT DELAY, PROTECTED FROM HEAVY TRAFFIC, AND CONTINUOUSLY MAINTAINED FREE OF DAMAGE UNTIL THE WEARING SURFACE IS APPLIED. ALL BAD AREAS SHALL BE CUT OUT AND REPLACED PRIOR TO APPLYING WEARING SURFACE.

21. ASSUMING ACCEPTABLE CURING, THE WEARING SURFACE SHALL BE APPLIED NO SOONER THAN SEVEN (7) DAYS AND NO LATER THAN THIRTY (30) DAYS AFTER BASE COMPLETION.

22. ALL CONCRETE PIPE JOINTS SHALL BE WRAPPED IN FILTER FABRIC.

23. ROADWAY MARKING, STRIPING, SIGNS, AND OTHER TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" (MUTCD), INCLUDING SUBSEQUENT REVISIONS AND ADDENDUMS, AS PUBLISHED BY THE USDOT FEDERAL HIGHWAY ADMINISTRATION AS WELL AS FDOT AND LOCAL AGENCY STANDARDS AND SPECIFICATIONS.

24. ALL OFFSITE ROADWAY MARKING/STRIPING MATERIAL SHALL BE THERMOPLASTIC UNLESS OTHERWISE SPECIFIED.

25. ALL ONSITE ROADWAY MARKING/STRIPING MATERIAL SHALL BE PAINT UNLESS OTHERWISE SPECIFIED.

26. REGULATORY SIGNS AND MARKINGS SHALL BE IN PLACE PRIOR TO FINAL INSPECTION OF PAVING AND DRAINAGE IMPROVEMENTS.

27. PAVEMENT RETURN RADII SHALL BE MEASURED TO THE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

28. POND SLOPES AND BERMS SHALL BE SODDED TO TWO (2) FEET BELOW THE NORMAL WATER LINE (N.W.L.). IN THE CASE OF DRY BOTTOM PONDS, THE BOTTOM WILL BE SEEDED AND MULCHED UNLESS OTHERWISE SPECIFIED.

29. ALL PRECAST DRAINAGE STRUCTURES TO HAVE STEEL FRAME. ALL STRUCTURES IN PAVED AREAS TO HAVE STEEL RECTILINEAR GRATES WITH H-20 LOADING.

30. CONTRACTOR SHALL NOT COMPACT, STABILIZE, OR CONSTRUCT BASE COURSE WITHIN LANDSCAPE ISLANDS, TRACTS OR MEDIANS. WHERE SUCH TREATMENT DOES OCCUR, IT SHALL BE REMOVED AND REPLACED WITH SUITABLE PLANTING SOILS ACCEPTABLE TO LANDSCAPE ARCHITECT.

31. YARD DRAINS SHALL BE NYLOPLAST INLINE DRAINS AND DRAIN BASINS, OR APPROVED EQUAL, WITH CAST IRON GRATES AND WATERTIGHT ADAPTER CONNECTIONS. DOMED GRATES SHALL BE PROVIDED IN NON-SODDED AREAS.

32. ALL FIRE HYDRANT LOCATIONS SHALL BE MARKED BY PLACING BLUE REFLECTIVE PAVEMENT MARKERS IN THE CENTER OF THE NEAREST TRAVEL LANE.

33. MINIMUM LONGITUDINAL SLOPE OF CURB SHALL BE 0.30% UNLESS SPECIFIED OTHERWISE.

PAVING AND DRAINAGE (CONTINUED)

34. FINISHED FLOOR ELEVATION IS TYPICALLY 8" INCHES ABOVE DESIGN FINISHED GRADE AT OUTSIDE PERIMETER OF BUILDINGS EXCEPT AT ENTRIES AND WHERE OTHERWISE SHOWN.

35. CONTRACTOR SHALL REMOVE ALL MUCK DEPOSITS IN CONSTRUCTION AREAS AND AREAS TO BE FILLED. SEE GEOTECHNICAL REPORT.

36. DRAINAGE MANHOLES AND INLETS (NOT INCLUDING CONTROL STRUCTURES) IN THE PLANS ARE IDENTIFIED BY TOP TYPE ONLY. CONTRACTOR SHALL PROVIDE STANDARD DITCH BOTTOM INLET TOPS AND TYPE 'J' OR 'P' STRUCTURE BOTTOMS, SIZED AS REQUIRED TO ACCOMMODATE PIPE SIZES AND ORIENTATIONS SHOWN. SHOP DRAWINGS SHALL BE SUBMITTED WHICH CLEARLY REPRESENT SUCH DATA.

37. CONTRACTOR SHALL STABILIZE AND PROTECT ALL END WALL, MITERED END SECTION, FLARED END SECTION, ETC. STRUCTURES THROUGHOUT THE PROJECT UNTIL THE BANK SLOPES OF THE RECEIVING WATER BODY ARE STABILIZED AND ACCEPTED BY OWNER.

SANITARY SEWER

1. ROOF DRAINS, FOUNDATION DRAINS OR OTHER STORM WATER CONNECTIONS TO THE SANITARY SEWER ARE PROHIBITED.

2. ALL GRAVITY SEWER MUST BE SDR26 OR BETTER.

3. ALL SANITARY SERVICE LATERALS SHALL BE 6-INCH DIAMETER PVC AND SHALL END WITH A CLEAN OUT.

4. ALL SANITARY SEWER PIPE SHALL BE COLORED GREEN.

5. ALL SANITARY SEWER MANHOLES SHALL HAVE A MINIMUM DIAMETER OF 48-INCHES AND A MINIMUM ACCESS DIAMETER OF 22-INCHES.

6. MINIMUM COVER OVER ALL PIPE SHALL BE 36-INCHES FROM TOP OF PIPE TO FINISHED GRADE, UNLESS OTHERWISE NOTED.

7. FOR HORIZONTAL AND VERTICAL CLEARANCES BETWEEN SANITARY SEWER MAINS/ LATERALS AND WATER MAINS/SERVICES, SEE WATER NOTES ON THIS SHEET AND FDEP SEPARATION TABLE ON UTILITY PLAN.

8. WHERE SOIL REPORT INDICATES THE POSSIBILITY OF UNSUITABLE MATERIAL IN THE VICINITY OF SANITARY LINES, THE CONTRACTOR SHALL DETERMINE THE NATURE AND EXTENT OF THIS UNSUITABLE MATERIAL, PREPARE TRENCH, AND INSTALL THE SEWER LINE IN ACCORDANCE WITH ASTM D-2321. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ENGINEER OF THIS UNSUITABLE MATERIAL.

9. THE CONTRACTOR SHALL BE REQUIRED TO PERFORM INFILTRATION OR EXFILTRATION TEST, WHICHEVER IS APPLICABLE. INFILTRATION SHALL NOT EXCEED 50 GALLONS PER DAY PER INCH OF DIAMETER PER MILE OF LENGTH, OR THE COMPUTED EQUIVALENT FOR SHORTER LENGTHS OF LINE. THE CONTRACTOR SHALL MEET ALL REQUIREMENTS, CODES, AND ORDINANCES OF THE WASTEWATER TRANSMISSION AUTHORITY INCLUDING ADVANCED NOTIFICATION PRIOR TO CONSTRUCTION AND TESTING.

10. MADDEN, MOORHEAD & STOKES, LLC SHALL BE NOTIFIED A MINIMUM OF FIVE (5) FULL WORKING DAYS PRIOR TO CONSTRUCTION AND TESTING OF THE SANITARY SEWER, PHONE (407)-629-8330.

11. THE CONTRACTOR SHALL SUPPLY COMPLETE "AS BUILT" INFORMATION RELATIVE TO INVERTS, RIM ELEVATIONS, LOCATION OF MANHOLES AND LENGTHS OF PIPE. LATERALS SHALL BE LOCATED FROM THE CENTERLINE OF THE NEAREST DOWNSTREAM MANHOLE. THE INFORMATION SHALL BE SUBMITTED ON LEGIBLY MARKED-UP PRINTS TO THE ENGINEER WITHIN TWO (2) WEEKS OF COMPLETION OF SEWER CONSTRUCTION.

12. CONTRACTOR SHALL RECEIVE SEWER CERTIFICATION PRIOR TO PLACEMENT OF BASE COURSE.

13. MINIMUM SLOPE ON ALL SANITARY SEWER GRAVITY MAINS SHALL BE IN ACCORDANCE WITH UTILITY PROVIDER'S STANDARDS AND CONSTRUCTION SPECIFICATIONS, LATEST EDITION.

14. ALL SANITARY SERVICE LOCATIONS SHALL BE MARKED BY CUTTING AN "S" INTO THE CURB.

15. ALL LATERALS SHOULD BE RAN UP TO A MINIMUM OF 36" AND HAVE A GLUE CAP.

16. AIR RELEASE VALVES SHALL BE REQUIRED AT ALL HIGH POINTS ALONG THE FORCE MAIN.

17. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT AN EVEN TRANSITION IS MAINTAINED WHERE ASPHALT PAVING ABUTS MANHOLE/VALVE COVERS IN PAVED AREAS. AT EACH OF THESE LOCATIONS THE CONTRACTOR SHALL POUR AN 8-INCH THICK CONCRETE APRON AROUND THE MANHOLE/VALVE COVER A MINIMUM OF 4'x4' AT MANHOLES, AND 2'x2' AT VALVE COVERS LEVEL WITH THE FINAL LIFT OF ASPHALT.

18. PIPE LENGTHS SHOWN REPRESENT SCALED DISTANCES BETWEEN MANHOLE CENTERLINE.

19. INVERTS OF SANITARY SERVICE LATERALS AT THEIR CONNECTION TO SANITARY MANHOLES SHALL BE NO MORE THAN ONE (1) FOOT ABOVE THE MANHOLE INVERT.

20. PRIOR TO PAVING, CONTRACTOR SHALL VERIFY THE AS-BUILT SANITARY SEWER PIPE SLOPES. MINIMUM SLOPES SHALL BE IN ACCORDANCE WITH THE GREATER OF FDEP OR THE UTILITY PROVIDER'S MINIMUM CRITERIA. ANY LINE NOT MEETING MINIMUM SLOPES SHALL BE RELAYED BY CONTRACTOR TO MEET THE MINIMUM SLOPE REQUIREMENT AT NO ADDITIONAL COST.

21. MANHOLE LIFT HOLES AND GRADE ADJUSTMENT RINGS SHALL BE SEALED WITH NON-SHRINKING MORTAR OR OTHER APPROPRIATE MATERIAL.

22. INLET AND OUTLET PIPES SHALL BE JOINED TO THE MANHOLE WITH A GASKETED FLEXIBLE WATER-TIGHT CONNECTION OR ANOTHER WATER-TIGHT CONNECTION ARRANGEMENT THAT ALLOWS DIFFERENTIAL SETTLEMENT OF THE PIPE AND MANHOLE WALL.

23. WATER-TIGHT MANHOLE COVERS SHALL BE USED WHEREVER THE MANHOLE TOPS MAY BE FLOODED BY STREET RUNOFF OF HIGH WATER.

WATER

1. ALL MATERIALS AND CONSTRUCTION REQUIREMENTS FOR THE FIRE SERVICE, WATER LINES, CHECK VALVES, BACKFLOW PREVENTERS, GATE VALVES, ETC., SHALL BE IN ACCORDANCE WITH LOCAL AGENCY STANDARD DETAILS AND CONSTRUCTION SPECIFICATIONS.

2. ALL CONSTRUCTION AND MATERIALS SHALL BE IN COMPLIANCE WITH AWWA STANDARDS AND IN ACCORDANCE WITH LOCAL AGENCY STANDARDS.

3. ALL PUBLIC WATER SYSTEM COMPONENTS, EXCLUDING FIRE HYDRANTS, THAT WILL BE INSTALLED UNDER THIS PROJECT AND THAT WILL COME INTO CONTACT WITH DRINKING WATER WILL CONFORM TO NSF INTERNATIONAL STANDARD 61 AND WILL BE MARKED WITH THE NSF SEAL OF APPROVAL.

4. CONTRACTOR SHALL VERIFY SIZE AND TYPE OF EXISTING MAIN PRIOR TO ORDERING TAPPING MATERIALS FOR TIE-INS.

5. SITE CONTRACTOR SHALL COORDINATE AND VERIFY ALL UTILITY SERVICES WITH FINAL ARCHITECTURAL DRAWINGS AND BUILDING CONTRACTOR.

6. SITE UTILITY WORK SHALL TERMINATE 5-FEET FROM BUILDINGS UNLESS OTHERWISE STATED.

7. MINIMUM COVER OVER ALL PIPE SHALL BE 36-INCHES FROM TOP OF PIPE TO FINISHED GRADE, UNLESS OTHERWISE NOTED.

8. THE WATER MAIN SHALL BE LOCATED ABOVE THE STORMWATER AND SANITARY MAINS AT CONFLICTS, WHERE POSSIBLE.

WATER (CONTINUED)

9. VERTICAL SEPARATION BETWEEN UNDERGROUND POTABLE WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, AND RECLAIMED WATER PIPELINES:

   9.1. 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 12 INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

   9.2. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 12 INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

10. 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:

   10.1. 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.

   10.2. 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.

   10.3. 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.

   10.4. 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.

11. AT THE UTILITY CROSSINGS DESCRIBED IN NOTES 8 AND 9 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. ALTERNATIVELY, AT SUCH CROSSING, 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.

12. WATER LINES 2-INCHES, OR LESS, IN DIAMETER SHALL BE POLYETHYLENE TUBING.

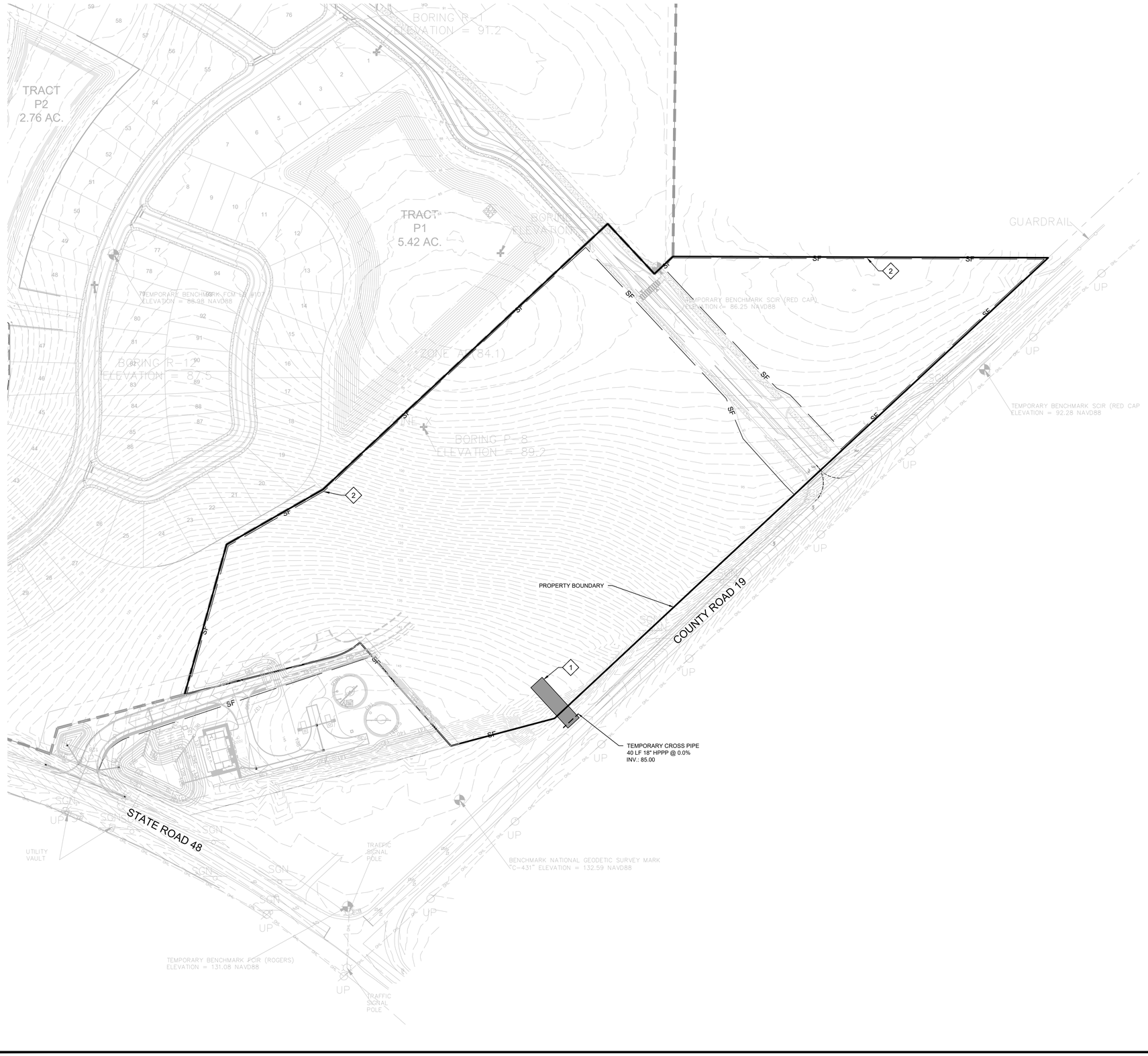
13. WATER LINES 4-INCH TO 12-INCH IN DIAMETER SHALL BE NSF LOGO PVC PIPE CONFORMING TO AWWA C-900 AND BE DR-18.

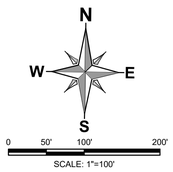
14. ALL FITTINGS SHALL BE DUCTILE IRON (D.I.) OR GRAY IRON MECHANICAL JOINTS WITH A MINIMUM PRESSURE RATING OF 250 P.S.I. CONFORMING TO ANSI A-21.10 / AWWA C-110, OR D.I. COMPACT FITTINGS FOR DIAMETERS 4-INCH TO 12-INCH CONFORMING TO ANSI A-21.53 / AWWA C-153.

15. FROM THE POINT OF SERVICE (P.O.S.) FORWARD AS DESIGNATED BY F.S. 633, FIRE SUPPLY PIPE SHALL BE DR-14 AND TESTED AT 200 PSI FOR TWO HOURS.

16. GATE VALVES SHALL CONFORM TO AWWA C-509-87, WITH WRENCH NUT EXTENSION STEMS AND OTHER APPURTENANCES AS REQUIRED AND SHALL BE IRON BODY, FULL BRONZE MOUNTED, DOUBLE DISK, PARALLEL SEAT, NON-RISING STEM VALVES WITH O-RING SEALS AND END CONNECTIONS AS CALLED FOR ON THE PLANS. ALL TEES, CAPS, PLUGS, BENDS, VALVES, ETC., SHALL BE PROVIDED WITH GRIP RING RESTRAINTS.

17. ALL NON-METALLIC WATER MAINS SHALL BE INSTALLED W





LEGEND

SF — STAKED EROSION CONTROL FENCE

PROPERTY BOUNDARY

#DEMOLITION NOTES

1. TEMPORARY CONSTRUCTION ENTRANCE (SEE DETAIL ON SHEET C008)
2. SINGLE STAKED SILT FENCE.

NOTES:

1. DROP INLET SEDIMENT BARRIERS ARE TO BE USED FOR SMALL, NEARLY LEVEL DRAINAGE AREAS. (LESS THAN 5%)
2. THE TOP OF STRUCTURE (PONDING HEIGHT) MUST BE WELL BELOW THE GROUND ELEVATION DOWNSLOPE TO PREVENT RUNOFF FROM BYPASSING THE INLET. EXCAVATION OF A BASIN ADJACENT TO THE DROP INLET OR A TEMPORARY DIKE ON THE DOWNSLOPE OF THE STRUCTURE MAY BE NECESSARY.
3. ALL SILT FENCE INSTALLED TO BE FDOT TYPE III.
4. WATER TRUCK SHALL BE ONSITE DURING CONSTRUCTION TO KEEP DUST LEVEL AT A MINIMUM. (OR USE OTHER METHODOLOGY FOR DUST ABATEMENT/CONTROL APPROVED BY COUNTY)

MADDEN
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CA# 0007723

SWPPP & DEMOLITION PLAN

FOR

LAKE HILLS SHOPPING CENTER

TOWN OF HOWEY IN THE HILLS FLORIDA

WINDCREST DEVELOPMENT GROUP, INC.
605 E. ROBINSON ST. SUITE 340
ORLANDO, FL 32801
407-219-3540

	DATE	REVISIONS
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BENJAMIN S. BECKHAM
LICENSE
NO. 79452
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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ENGINEER OF RECORD

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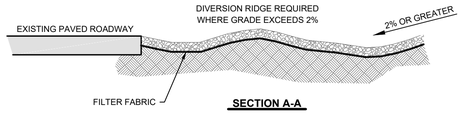
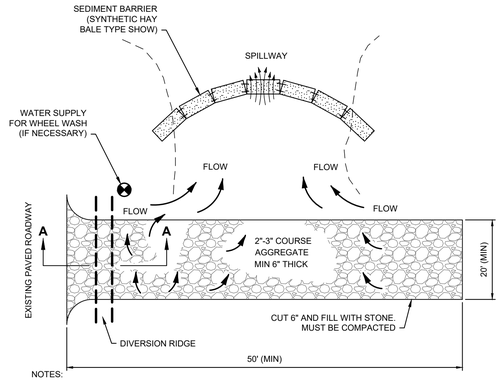
DRAWN BY: JAS
APPROVED BY: BSB

C007



SECTION A-A

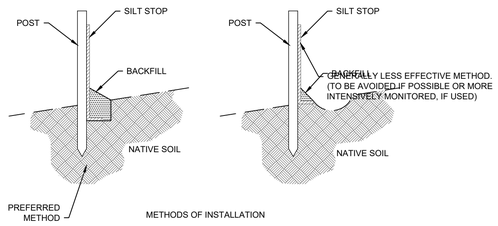


NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF WAY OR STORM WATER SYSTEMS. THEY 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 INTO THE PUBLIC RIGHT-OF-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.

TEMPORARY CONSTRUCTION ENTRANCE (CE)

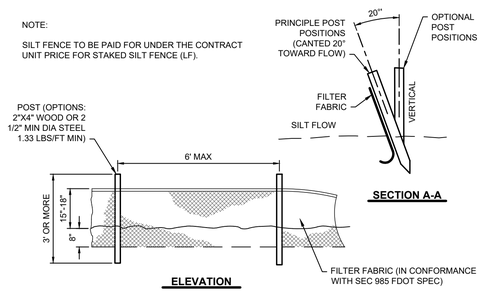
NTS



METHODS OF INSTALLATION

NOTE:

SILT FENCE TO BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR STAKED SILT FENCE (LF).



SECTION A-A

ELEVATION

NOTE:

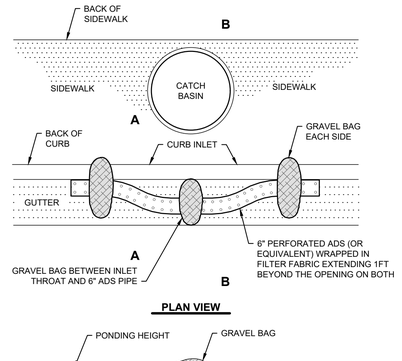
THE EROSION BARRIER, AS SHOWN, IS NOT TO BE CONSTRUED TO MEAN THAT IT IS ALL THAT MAY BE REQUIRED. THE CONTRACTOR IS TO TAKE WHATEVER MEASURES NECESSARY TO CONTROL EROSION THROUGHOUT THE PROJECT. EROSION CONTROL WILL BE INSTALLED PRIOR TO LAND CLEARING AND SHALL REMAIN IN PLACE UNTIL THE AREA IS STABILIZED. (SEE OTHER EROSION AND TURBIDITY NOTES ON THE GENERAL NOTES SHEET OF THIS PLAN SET.)

STAKED EROSION CONTROL (SILT FENCE) (SF)

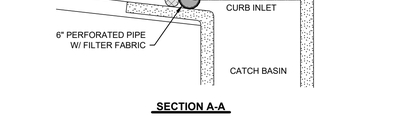
NTS

NOTES:

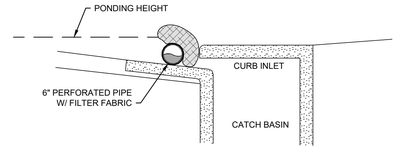
1. DROP INLET SEDIMENT BARRIERS ARE TO BE USED FOR SMALL, NEARLY LEVEL DRAINAGE AREAS. (LESS THAN 5%)
2. THE TOP OF STRUCTURE (PONDING HEIGHT) MUST BE WELL BELOW THE GROUND ELEVATION DOWNSLOPE TO PREVENT RUNOFF FROM BYPASSING THE INLET. EXCAVATION OF A BASIN ADJACENT TO THE DROP INLET OR A TEMPORARY DIKE ON THE DOWNSLOPE OF THE STRUCTURE MAY BE NECESSARY.
3. ALL EXISTING INLETS LOCATED ON EXISTING ROAD TO HAVE INLET PROTECTION DURING CONSTRUCTION.
4. ALL SILT FENCE INSTALLED (SINGLE OR DOUBLE) TO BE FDOT TYPE III.
5. WATER TRUCK SHALL BE ONSITE DURING CONSTRUCTION TO KEEP DUST LEVEL AT A MINIMUM. (OR USE OTHER METHODOLOGY FOT DUST ABATEMENT/CONTROL APPROVED BY COUNTY)
6. IF CONTRACTOR PERFORMS ANY WORK 100 FT OF THE EXISTING WETLAND DOUBLE ROW SILT FENCE TO BE INSTALLED.



PLAN VIEW



SECTION A-A

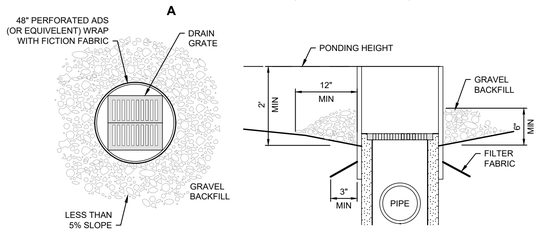


SECTION B-B

CURB INLET SEDIMENT BARRIER (CIP)

NTS

(INLET PROTECTION)



SECTION A-A

NOTES:

1. USE PIPE AND GRAVEL TYPE SEDIMENT BARRIER WHEN CURB INLET IS LOCATED IN GENTLY SLOPING STREET SEGMENT, WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPARATE FROM RUNOFF.
2. BARRIER SHALL ALLOW FOR OVERFLOW FROM SEVERE STORM EVENT.
3. INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT. SEDIMENT AND GRAVEL MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.

DROP INLET SEDIMENT BARRIER (IP)

NTS

(INLET PROTECTION)

MADDEN
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431 E. Horatio Avenue
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CA# 0007723

SWPPP & DEMOLITION PLAN

FOR

LAKE HILLS SHOPPING CENTER

FLORIDA

TOWN OF HOWEY IN THE HILLS

WINDCREST DEVELOPMENT GROUP, INC.
605 E. ROBINSON ST. SUITE 340
ORLANDO, FL 32801
407-219-3540

	DATE	REVISIONS
1	07/25/24	REVISED PER CITY OF LEESBURG COMMENTS
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BENJAMIN S. BECKHAM
LICENSE
NO. 79452
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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ENGINEER OF RECORD

JOB # 22041
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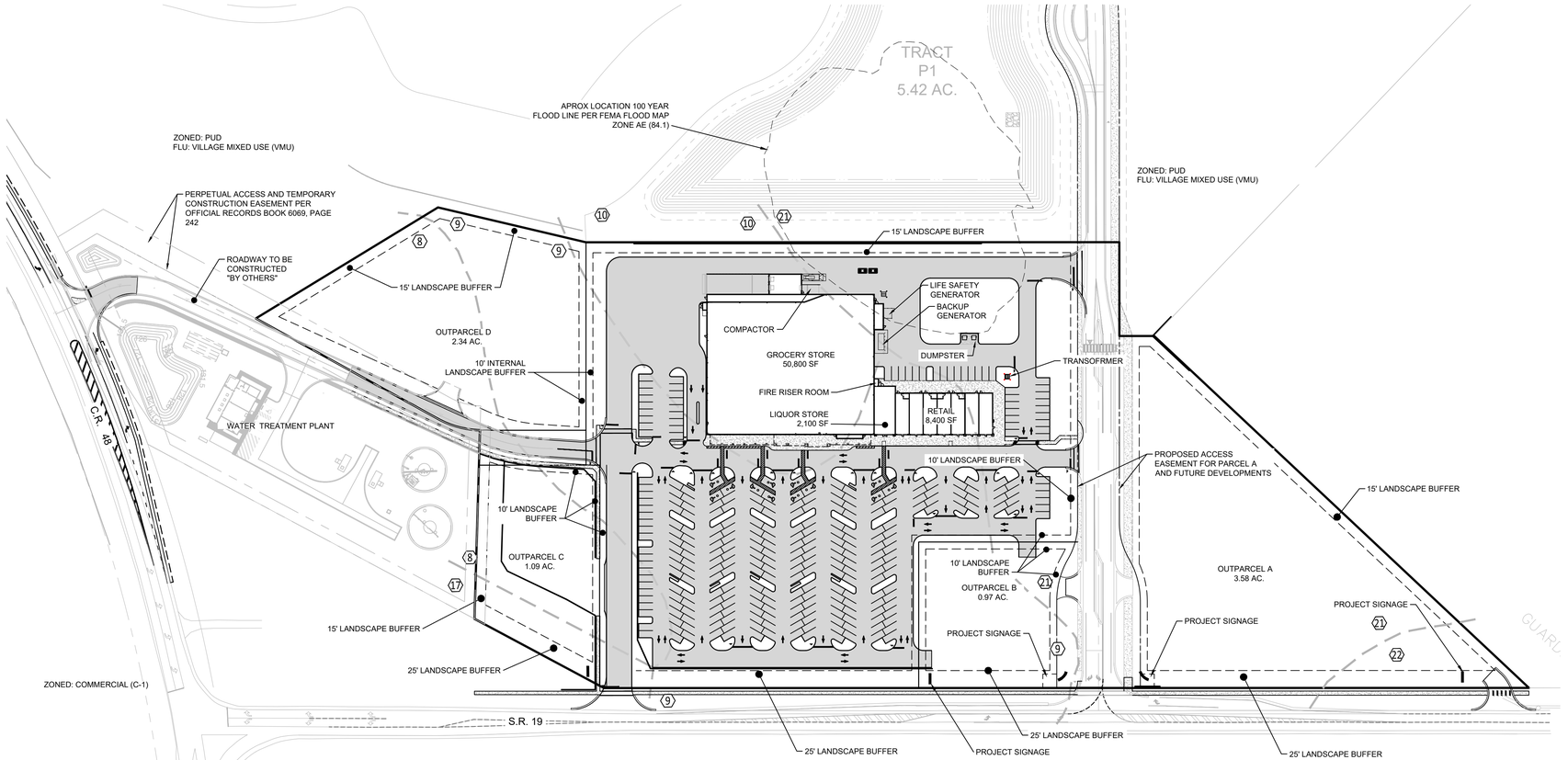
DESIGNED BY: KGS
DRAWN BY: JAS
APPROVED BY: BSB

C008



0 50' 100' 200'

SCALE: 1"=100'

SOILS LEGEND

SOIL NUMBER	SOIL NAME	HYDROLOGIC GROUP
8	CANDLER SANDS (0%-5% SLOPE)	A
9	CANDLER SANDS (5%-12% SLOPE)	A
10	CANDLER SANDS (12%-40% SLOPE)	A
21	LAKE SANDS (0%-5% SLOPE)	A
22	LAKE SANDS (5%-12% SLOPE)	A

SOURCE: USDA, NATURAL RESOURCE CONSERVATION SERVICE, SEMINOLE COUNTY, FLORIDA 2020

SITE DATA:

1.	**PARCEL ID:**	23-20-25-0002-000-01100
2.	**JURISDICTION:**	HOWEY-IN-THE-HILLS
3.	**ZONING:**	PUD
4.	**GROSS SITE AREA:**	18.43 ACRES ±
5.	**TOTAL BUILDING S.F.:**	61,300 SF
6.	**FLOOR AREA RATIO:**	
	MAXIMUM:	0.23 (PER OVERALL PD)
	PROPOSED:	0.08 F.A.R.
7.	MAX BUILDING HEIGHT:	35 FT (45 FT FOR PARAPETS, TOWERS, ETC.)
8.	PARKING:	
	REQUIRED:	306 SPACES
		5 SPACES PER 1,000SF OF BUILDING. AREA
		(61,300 SF / 1,000 SF) * 5 = 306 SPACES MIN.
	PROVIDED:	306 SPACES PROVIDED
9.	**OPEN SPACE:**	
	REQUIRED:	25%
	PROVIDED:	2AC
10.	DEDICATIONS & RESERVATIONS:	1.13 AC TO BE DEDICATED AS PUBLIC RIGHT-OF-WAY

LAND USE TABLE

LAND USE ID	OWNERSHIP	MAINTENANCE	AREA (SF)	AREA (AC)	AREA (%)	OPEN SPACE (AC)
GROCERY RETAIL	PRIVATE	PRIVATE	397,805.8001	9.13	49.56%	
OUTPARCEL A	PRIVATE	PRIVATE	155,771.8991	3.58	19.41%	0.90
OUTPARCEL B	PRIVATE	PRIVATE	42,387.7999	0.97	5.28%	0.24
OUTPARCEL C	PRIVATE	PRIVATE	47,569.7925	1.09	5.93%	0.27
OUTPARCEL D	PRIVATE	PRIVATE	102,057.3022	2.34	12.72%	0.59
SHARED ENTRANCE ROAD	PRIVATE	PRIVATE	7,675.3821	0.18	0.96%	
PUBLIC RIGHT-OF-WAY	PRIVATE	PRIVATE	49,343.3378	1.13	6.15%	
TOTAL			**802,611.3137**	**18.43**	**100.00%**	**2.00**

Trip Generation Summary

ITE Code	Land Use	Size	Daily Rate	Daily Trips	AM Peak Hour Rate	AM Total	AM Enter	AM Exit	PM Peak Hour Rate	PM Total	PM Enter	PM Exit
251	Senior Housing Single-Family	475 DU	4.31	2,047	0.27	127	42	85	0.31	150	91	59
252	Senior Housing Multifamily	125 DU	3.24	405	0.20	25	9	16	0.25	31	18	13
821	Shopping Plaza (40-150 KSF)	92.3 KSF	94.49	8,721	3.53	326	202	124	9.03	833	400	433
851	Convenience Store	5.0 KSF	762.28	3,811	62.54	313	156	157	49.11	246	125	121
934	Fast Food Restaurant with Drive-Thru	5.0 KSF	467.48	2,337	44.61	223	114	109	33.03	165	86	79
	Total Gross Trip Generation			17,322		1,014	523	491		1,425	720	705
	Internal Capture (Daily - 18.26%, AM -15.2%, PM - 21.4%)			*3,163*		*154*	*79*	*75*		*304*	*154*	*150*
	External Trips			14,159		860	444	416		1,121	566	555
	Retail Pass-by (40%)			2,852		111	69	42		262	126	136
	Convenience Pass-by (51%)			1,589		135	68	67		98	50	48
	Fast-Food Pass-by (49%)			936		93	47	46		64	33	31
	Total Pass-by			5377		339	184	155		424	209	215
	Total Net New External Trip Generation			**8,782**		**521**	**260**	**261**		**697**	**357**	**340**

ITE Trip Generation Manual, 11TH Edition
ITE equations were used as R^2 were greater than 0.75 and with more than 20 studies

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
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MASTER SITE PLAN
FOR
LAKE HILLS SHOPPING CENTER
TOWN OF HOWEY IN THE HILLS FLORIDA

WINDCREST DEVELOPMENT GROUP, INC.
605 E. ROBINSON ST. SUITE 340
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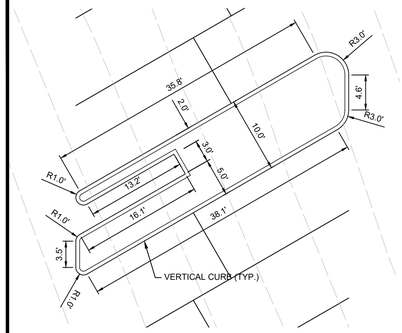
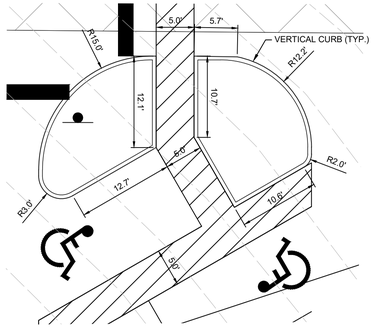
C009



ISLAND DETAIL "A"
1" = 10'.



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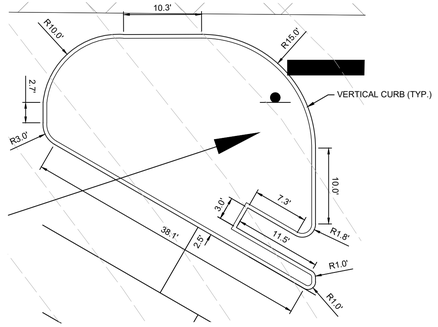


ISLAND DETAIL "C"
1" = 10'.

PUBLIX GENERATOR NOTES

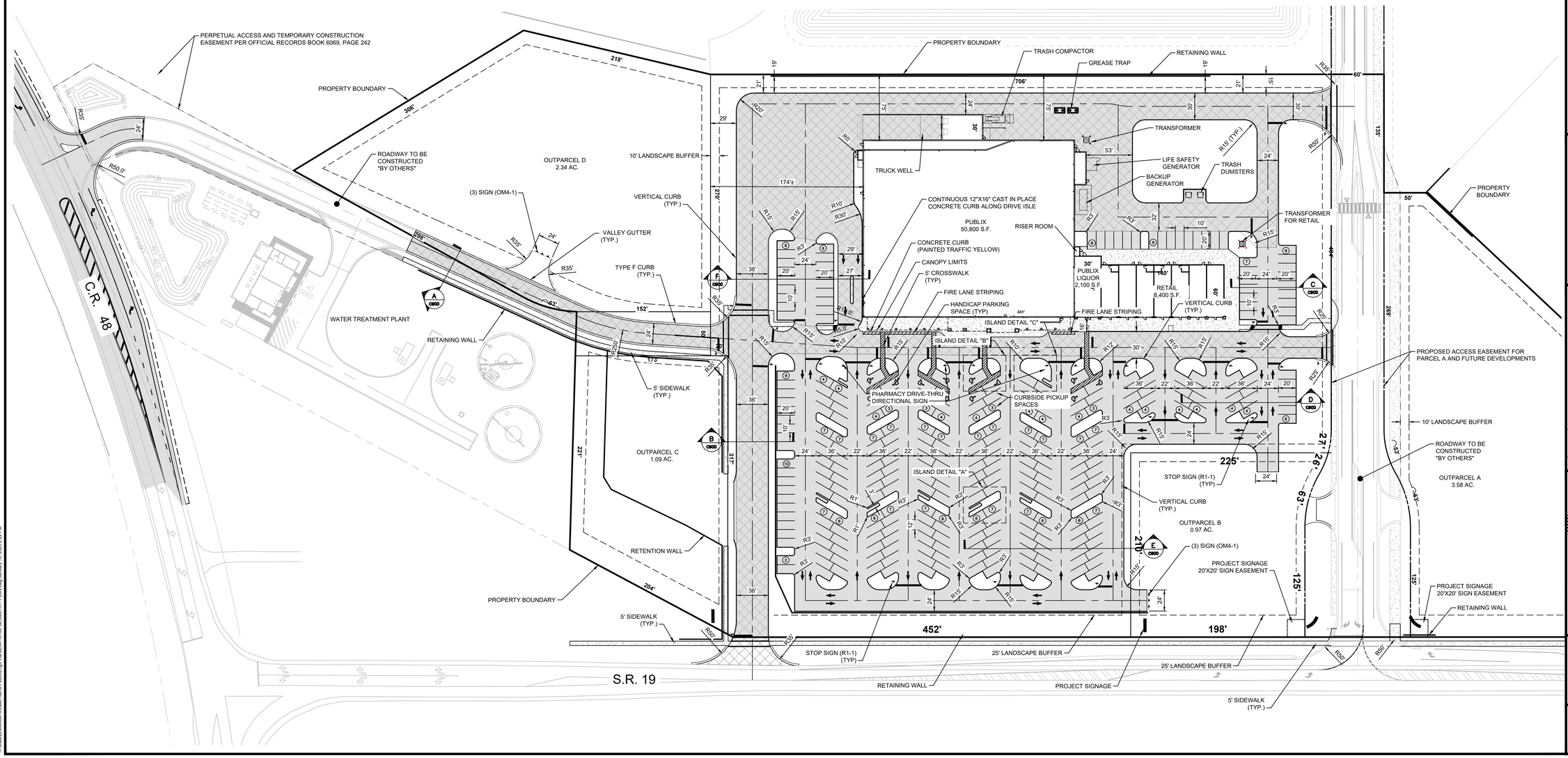
1. ALL PUBLIX STORES WILL HAVE A STANDBY GENERATOR.
2. THE DEVELOPER IS RESPONSIBLE FOR ALL ZONING AND PERMITTING RELATED TO THE STANDBY GENERATOR. PUBLIX UTILIZES A 500KW STANDBY GENERATOR, CATERPILLAR MODEL C15 WITH A 1000-GALLON SUB-BASE DIESEL TANK. THE GENERATOR AND TANK MEET UL REQUIREMENTS. THE DOUBLE WALL TANK IS FL DEP APPROVED, AND THE GENERATOR HAS A SOUND ATTENUATED ENCLOSURE. CUT SHEETS FOR THE GENERATOR ARE AVAILABLE FOR DOWNLOAD AT WWW.CAT.COM. SEE EXHIBITS FOR CUT SHEETS FOR THE CUSTOM DIESEL TANK.
3. THE DEVELOPER WILL PROVIDE IMPACT PROTECTION FOR THE STANDBY GENERATOR PER ARCHITECTS PLANS BY OTHERS.
4. STANDBY GENERATOR PADS MUST BE SURROUNDED BY ASPHALT OR PAVED SURFACE. PADS MUST NOT BE SURROUNDED BY GRAVEL OR LANDSCAPE.
5. THE CIVIL ENGINEER SHALL VERIFY THAT THE 500 KW STANDBY GENERATOR AND ITS ASSOCIATED DIESEL FUEL TANK ARE:
   a. NOT WITHIN 500 FEET OF ANY EXISTING COMMUNITY WATER SUPPLY WELL
   b. NOT WITHIN 500 FEET OF ANY EXISTING NON-TRANSIENT, NON-COMMUNITY WATER SUPPLY WELL NOT WITHIN 100 FEET OF ANY OTHER MUNICIPAL WATER SUPPLY WELL.
6. THE CIVIL ENGINEER WILL COMPLETE, SIGN AND SEAL, AND SUBMIT TO PUBLIX, THE APPROPRIATE "DECLARATION OF COMPLIANCE WITH STORAGE TANK SITING REQUIREMENTS", CONTAINED WITHIN THE EXHIBITS SECTION.
7. REFER TO PROTOTYPE EXHIBITS FOR LOCATIONS AND DIMENSIONS OF THE EQUIPMENT PAD. NO UTILITIES ARE TO BE ROUTED THROUGH THIS AREA.
8. THE CIVIL ENGINEER WILL PROVIDE VERIFICATION THAT THE GENERATOR (INCLUDING DIESEL TANK) LOCATION IS NOT IN ANY ENVIRONMENTALLY PROTECTED AREAS OR DEFINED ENVIRONMENTALLY PROTECTED WELL FIELDS.

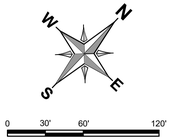
PUBLIX STRIPING NOTES

THE PREFERRED PRODUCT FOR TRAFFIC AND PAVEMENT MARKINGS; PARKING STALL LINES, SYMBOLS, CURB TOPS, STENCILS, WHEEL STOPS, IS COMPRISED OF TWO (2) COATS – FIRST COAT SHALL BE SHERWIN WILLIAMS PRO PARK WATERBORNE PAINT WITH CRUSHED GLASS ADDED FOR SLIP RESISTANCE. THE SECOND COAT TO BE APPLIED 30 DAYS AFTER THE FIRST COAT SHALL BE SOLVENT BASED, AEXCEL GORILLA PAINT WITH CRUSHED GLASS. GLASS USE SHALL BE 6 TO 8 POUNDS PER GALLON OF PAINT.

ALL ARROWS STOP BARS AND CROSSWALKS ARE TO BE THE SAME SPEC AS ABOVE. ALL BOLLARDS IN REAR SERVICE AREAS ARE TO BE PAINTED WITH SHERWIN WILLIAMS INDUSTRIAL ENAMEL, SAFETY YELLOW.

PAINT STRIPING IN ALL PARKING LOT AND PAVEMENT AREAS SHOULD BE CONSTRUCTED WITH A PAINT PRODUCT THAT PROVIDES A HIGH SLIP-RESISTANT FINISH AND PREVENTS INDIVIDUALS FROM SLIPPING WHEN STEPPING ON THE STRIPING IN BOTH WET AND DRY CONDITIONS.





PAVEMENT LEGEND

HEAVY DUTY PAVEMENT

SIGN LEGEND: (PER FDOT INDEX 17349)

OM4-1
24" x 24"

R1-1
30" x 30"
HIGH INTENSITY

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

GEOMETRY PLAN
FOR
LAKE HILLS SHOPPING CENTER
TOWN OF HOWEY IN THE HILLS FLORIDA

WINDCREST DEVELOPMENT GROUP, INC.
605 E. ROBINSON ST. SUITE 340
ORLANDO, FL 32801
407-219-3340

#	DATE	REVISIONS
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BENJAMIN S. BECKHAM LICENSE NO. 79452 STATE OF FLORIDA PROFESSIONAL ENGINEER

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ENGINEER OF RECORD

JOB #	22041
DATE:	08/06/24
DATUM:	NAVD 88
DESIGNED BY:	KGS
DRAWN BY:	JAS
APPROVED BY:	BSB

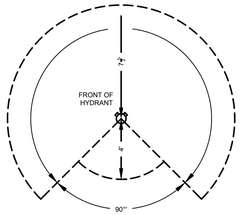
C101

SANITARYSTRUCTURE DATA	
NO.	STRUCTURE
SS1	RIM = 107.50' 48" SANITARY MANHOLE INV = 103.00' LAT1 INV = 103.00' LAT1 INV = 102.90' SP1
SS2	RIM = 106.81' 48" SANITARY MANHOLE INV = 101.79' SP1 INV = 101.79' LAT2 INV = 101.69' SP2
SS3	RIM = 106.45' 48" SANITARY MANHOLE INV = 97.50' SP2 INV = 97.40' SP3
SS4	RIM = 105.02' 48" SANITARY MANHOLE INV = 100.99' L39 INV = 100.89' SP4
SS5	RIM = 105.89' 48" SANITARY MANHOLE INV = 100.37' SP4 INV = 100.37' L23 INV = 100.27' SP5
SS6	RIM = 105.08' 60" DROP MANHOLE INV = 98.39' SP5 INV = 96.45' SP3 INV = 92.45' SP6

PIPE DATA				
NAME	SIZE	MATERIAL	PIPE LENGTH	SLOPE
LAT1	8"	PVC	57'	0.88%
LAT2	8"	PVC	62'	0.34%
SP1	8"	PVC	277'	0.40%
SP2	8"	PVC	173'	2.43%
SP3	8"	PVC	238'	0.40%
SP4	8"	PVC	128'	0.40%
SP5	8"	PVC	152'	1.24%
SP6	8"	PVC	248'	2.27%

FDEP SEPARATION REQUIREMENTS UNDER 62-555.314 EFFECTIVE 8-28-2003

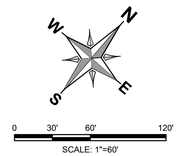
HAZARD	HORIZONTAL SEPARATION	VERTICAL SEPARATION		JOINT SPACING
		WATER ABOVE	WATER BELOW	
STORM SEWER	3FT MIN	12IN PREF, 6IN MIN	12IN MIN	3FT MIN
STORM FORCE MAIN	3FT MIN	12IN MIN	12IN MIN	3FT MIN
RECLAIMED WATER IF REGULATED UNDER 62-610	3FT MIN	12IN MIN	12IN MIN	3FT MIN
RECLAIMED WATER IF NOT REGULATED UNDER 62-610	10FT PREF, 6FT MIN	12IN MIN	12IN MIN	6FT MIN
VACUUM SANITARY SEWER	10FT PREF, 3FT MIN	12IN PREF, 6IN MIN	12IN MIN	3FT MIN
GRAVITY SANITARY SEWER	10FT PREF, 6FT MIN, 3FT MIN IF WATER MAIN IS 6IN ABOVE GRAVITY SANITARY SEWER.	12IN PREF, 6IN MIN	12IN MIN	6FT MIN
SANITARY SEWER FORCE MAIN	10FT PREF, 6FT MIN	12IN MIN	12IN MIN	6FT MIN
SEWAGE TREATMENT & DISPOSAL SYSTEM	10FT MIN	NONE	NONE	NONE



FIRE HYDRANT
CLEARANCE DETAIL

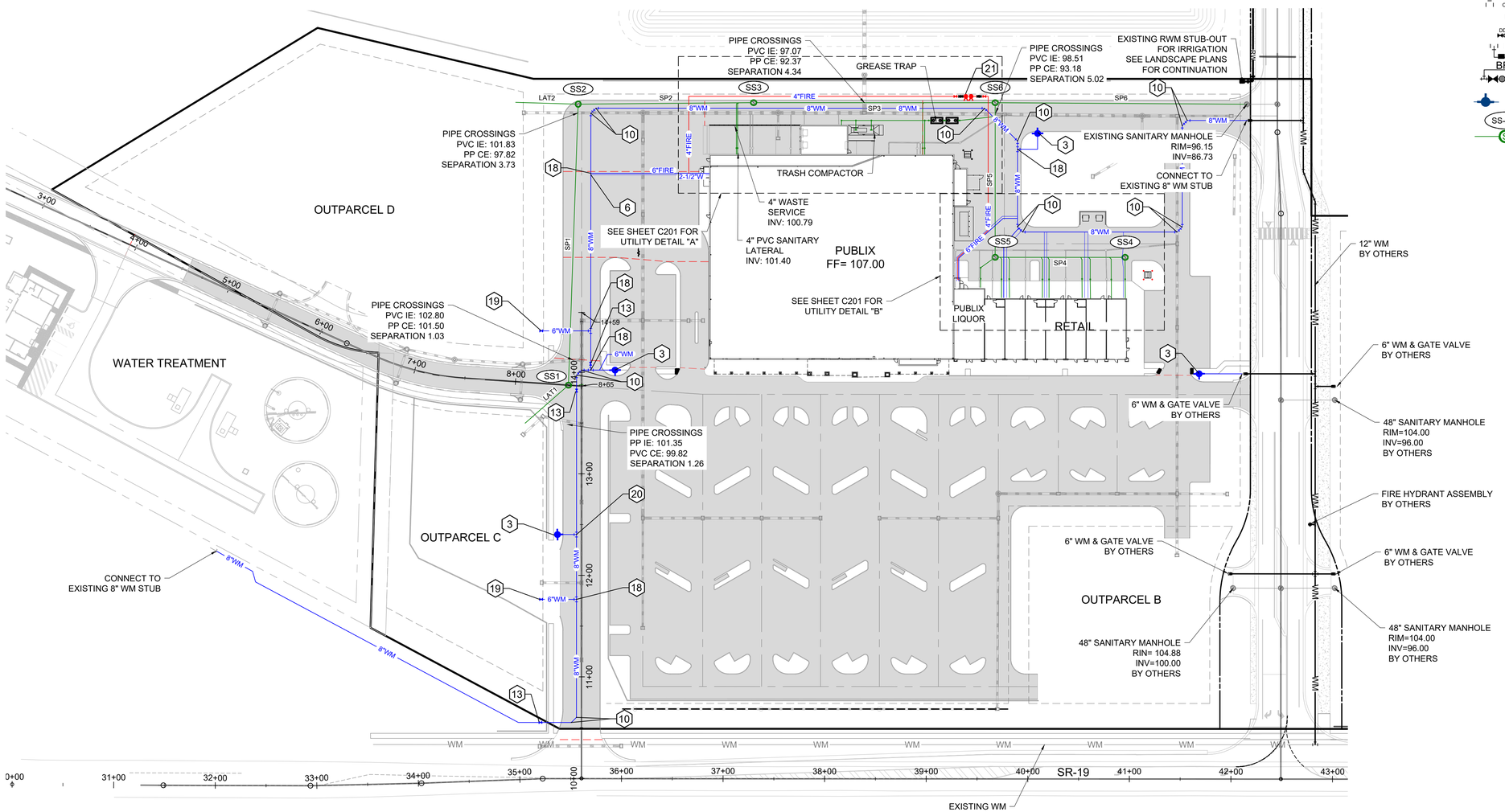
WATER NOTES

1. FIRE DEPARTMENT CONNECTION (NOTE: FIRE LINES DESIGNED BY OTHERS. SHOWN FOR INFORMATIONAL PURPOSES ONLY.)
2. POST INDICATOR VALVE
3. 6" FIRE HYDRANT ASSEMBLY
4. 8"X 8" X 8" TEE
5. 8" X 4" X 8" TEE
6. 8" X 2-1/2" X 8" TEE
7. 4" WATER METER WITH 4" BFP
8. 8" MASTER METER ASSEMBLY
9. 8" 90° BEND
10. 8" 45° BEND
11. 8" 22.5° BEND
12. 8" 11.25° BEND
13. 8" GATE VALVE
14. 3/4" HOSE BIBB
15. 2" WATER METER WITH 2" BFP
16. 4" DDCV
17. AUTOMATIC AIR RELEASE VALVE
18. 8" X 6" X 8" TEE
19. 6" GATE VALVE
20. 6" X 6" X 6" TEE
21. FIRE DEPARTMENT CONNECTION
22. 6" FIRE LINE



LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		UTILITY EASEMENT (U.E.)
		DRAINAGE EASEMENT (D.E.)
		EASEMENT (OTHER)
		TOP OF BANK
		TOE OF SLOPE
		DITCH CENTER
		CURB
		CONCRETE WALK
		ASPHALT PAVEMENT
30	30	CONTOUR (MAJOR)
29	29	CONTOUR (MINOR)
DS-100	DS000	STORM STRUCTURE NUMBER
		STORM DRAINAGE MANHOLE
		STORM DRAINAGE INLET
		YARD DRAIN
		OUTFALL STRUCTURE
	OUT-1	PIPE END (OUTFALL)
	8" WM	WATER MAIN (WM)
	6" WM	WATER SERVICE LINE (W)
		WATER METER
		GATE VALVE & BOX
		PLUG VALVE & BOX
		BUTTERFLY VALVE & BOX
		CHECK VALVE
		2" BLOW-OFF VALVE ASSEMBLY
		BENDS
		TEE
		REDUCER
	DDCV	DOUBLE DETECTOR CHECK VALVE
		JUMPER CONNECTION
	BFP	BACKFLOW PREVENTER
		FIRE HYDRANT
SS-100		SANITARY SEWER STRUCTURE #
	S	SANITARY SEWER



MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

UTILITY PLAN
FOR
LAKE HILLS SHOPPING CENTER
TOWN OF HOWEY IN THE HILLS FLORIDA

WINDCREST DEVELOPMENT GROUP, INC.
605 E. ROBINSON ST - SUITE 340
ORLANDO, FL 32801
407-219-3540

NO.	DATE	REVISIONS
1		
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BENJAMIN S. BECKHAM LICENSE NO. 79452 STATE OF FLORIDA PROFESSIONAL ENGINEER

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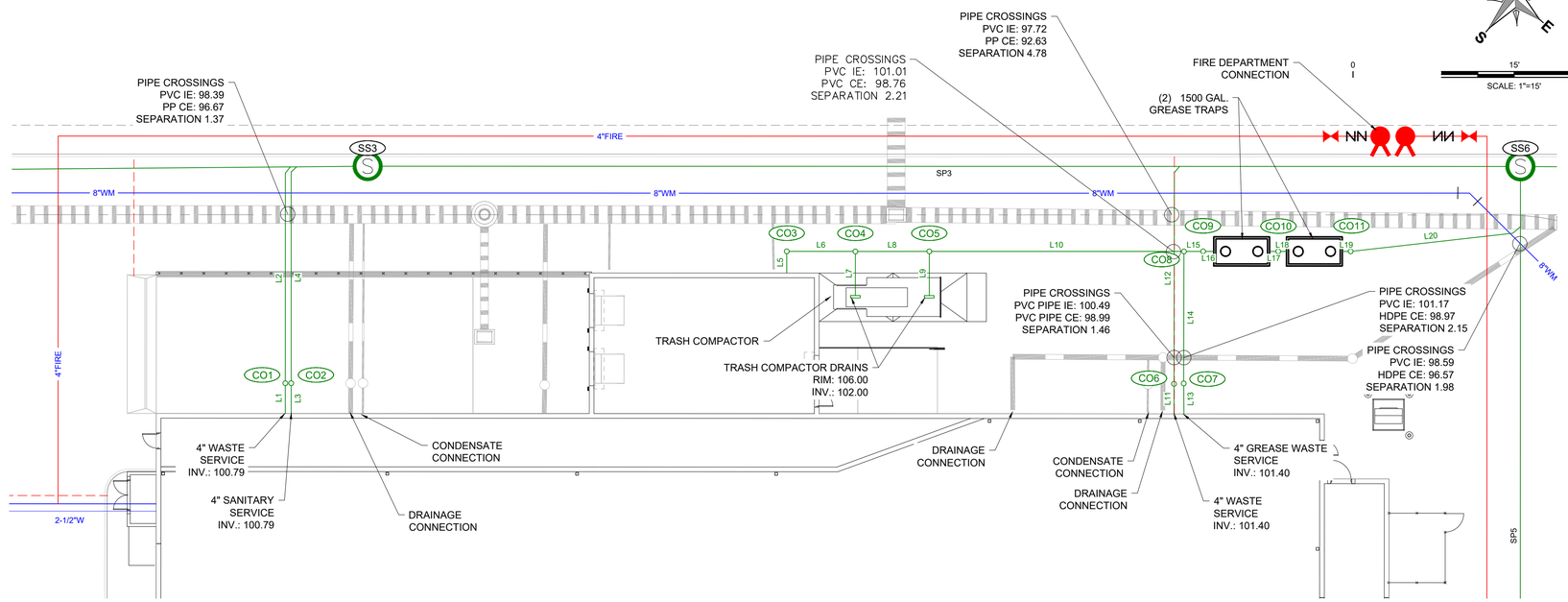
ENGINEER OF RECORD

JOB #	22041
DATE:	08/06/24
DATUM:	NAVD 88
DESIGNED BY:	KGS
DRAWN BY:	JAS
APPROVED BY:	BSB

C200

SANITARY STRUCTURE DATA	
NO.	STRUCTURE
CO1	INV = 100.42' L1 INV = 100.42' L2
CO2	INV = 100.43' L3 INV = 100.43' L4
CO3	INV = 101.36' L5 INV = 101.36' L6
CO4	INV = 101.30' L6 INV = 101.30' L7 INV = 101.30' L8
CO5	INV = 101.23' L8 INV = 101.23' L9 INV = 101.23' L10
CO6	INV = 101.00' L11 INV = 101.00' L12
CO7	INV = 101.20' L13 INV = 101.20' L14
CO8	INV = 101.00' L14 INV = 101.00' L10 INV = 101.00' L15
CO9	INV = 100.95' L15 INV = 101.95' L16
CO10	INV = 101.65' L17 INV = 101.65' L18
CO11	INV = 101.35' L19 INV = 101.35' L20

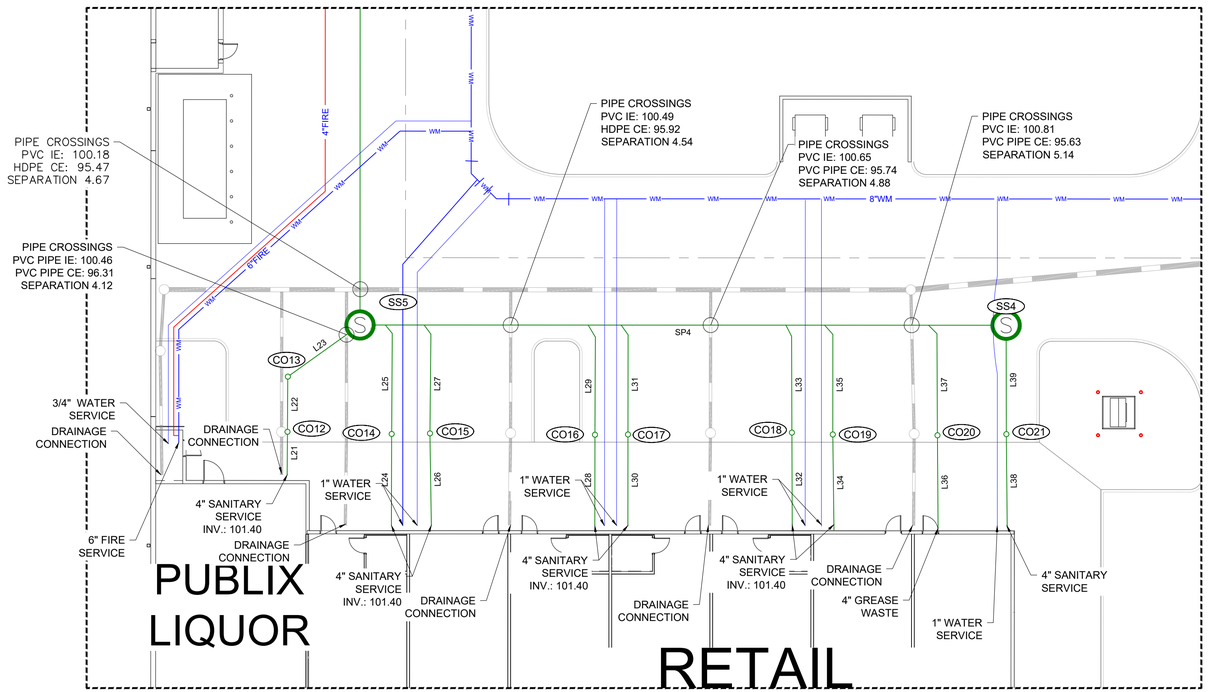
SANITARY STRUCTURE DATA	
NO.	STRUCTURE
CO12	INV = 101.26' L21 INV = 101.26' L22
CO13	INV = 100.86' L22 INV = 100.86' L23
CO14	INV = 101.01' L24 INV = 101.01' L25
CO15	INV = 101.01' L26 INV = 101.01' L27
CO16	INV = 101.07' L28 INV = 101.07' L29
CO17	INV = 101.07' L30 INV = 101.07' L31
CO18	INV = 101.13' L32 INV = 101.13' L33
CO19	INV = 101.23' L34 INV = 101.23' L35
CO20	INV = 101.23' L36 INV = 101.23' L37
CO21	INV = 101.23' L38 INV = 101.23' L39



UTILITY DETAIL "A"

PIPE DATA				
NAME	SIZE	MATERIAL	PIPE LENGTH	SLOPE
L1	4"	PVC	6'	5.87%
L2	4"	PVC	43'	5.87%
L3	4"	PVC	6'	5.85%
L4	4"	PVC	44'	5.85%
L5	4"	PVC	4'	0.82%
L6	4"	PVC	14'	0.44%
L7	4"	PVC	9'	7.70%
L8	4"	PVC	15'	0.44%
L9	4"	PVC	9'	8.46%
L10	4"	PVC	53'	0.44%
L11	4"	PVC	6'	6.42%
L12	4"	PVC	44'	9.41%
L13	4"	PVC	6'	3.19%
L14	4"	PVC	27'	0.73%
L15	4"	PVC	4'	1.26%
L16	4"	PVC	2'	2.28%
L17	4"	PVC	2'	2.80%
L18	4"	PVC	2'	2.92%
L19	4"	PVC	2'	2.89%
L20	4"	PVC	34'	7.81%

PIPE DATA				
NAME	SIZE	MATERIAL	PIPE LENGTH	SLOPE
L21	4"	PVC	9'	1.68%
L22	4"	PVC	11'	3.64%
L23	4"	PVC	18'	2.78%
L24	4"	PVC	18'	2.16%
L25	4"	PVC	20'	3.01%
L26	4"	PVC	18'	2.16%
L27	4"	PVC	20'	3.04%
L28	4"	PVC	18'	1.86%
L29	4"	PVC	19'	2.56%
L30	4"	PVC	18'	1.83%
L31	4"	PVC	20'	2.53%
L32	4"	PVC	18'	1.48%
L33	4"	PVC	19'	2.14%
L34	4"	PVC Pipe	19'	0.87%
L35	4"	PVC Pipe	20'	2.49%
L36	4"	PVC Pipe	18'	0.90%
L37	4"	PVC Pipe	20'	2.06%
L38	4"	PVC Pipe	18'	0.90%
L39	4"	PVC Pipe	22'	1.12%



UTILITY DETAIL "B"

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

UTILITY PLAN
FOR
LAKE HILLS SHOPPING CENTER
TOWN OF HOWEY IN THE HILLS FLORIDA

WINDCREST DEVELOPMENT GROUP, INC.
600 E. ROBINSON ST. SUITE 340
ORLANDO, FL 32801
407-219-5540

REVISIONS	DATE
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BENJAMIN S. BECKHAM
LICENSE
NO. 79452
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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ENGINEER OF RECORD

JOB # 22041
DATE: 08/06/24
DATUM: NAVD 88
DESIGNED BY: KGS
DRAWN BY: JAS
APPROVED BY: BSB

C201

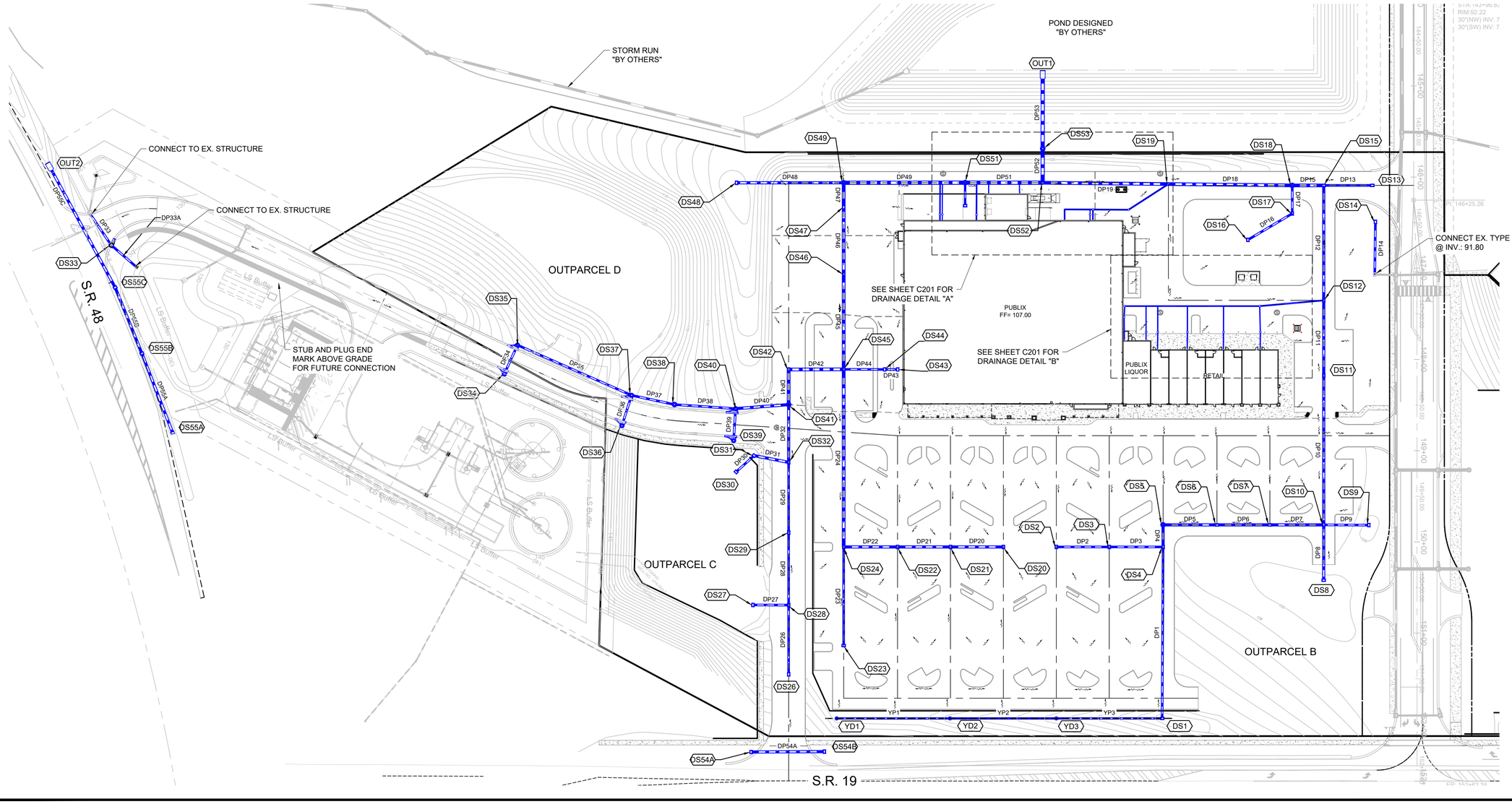
LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
		DRAINAGE EASEMENT (D.E.)
		EASEMENT (OTHER)
		CURB
		CURB AND GUTTER
		MIAMI CURB
		CONCRETE WALK
30	30	CONTOUR (MAJOR)
29	29	CONTOUR (MINOR)
		DIRECTION OF SURFACE FLOW
		NORMAL WATER LEVEL
		SEASON HIGH WATER LEVEL
		POND MAINTENANCE BERM
DS-100	DS000	STORM STRUCTURE NUMBER
		STORM DRAINAGE MANHOLE
	OR OR	STORM DRAINAGE INLET
		YARD DRAIN
	OR	OUTFALL STRUCTURE
	OUT-1	PIPE END (OUTFALL)
B-1		SOIL BORING
R-1		SOIL BORING (ROADWAY)
P-1		SOIL BORING (POND)

N E S W

0 30' 60' 120'

SCALE: 1"=60'



MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

DRAINAGE PLAN
FOR
LAKE HILLS SHOPPING CENTER
TOWN OF HOWEY IN THE HILLS FLORIDA

WINDCREST DEVELOPMENT GROUP, INC.
605 E. ROBINSON ST. SUITE 340
ORLANDO, FL 32801
407-219-3540

NO.	DATE	REVISIONS
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DRAWN BY:	JAS
APPROVED BY:	BSB

C300

STORM STRUCTURE DATA	
NO.	STRUCTURE
C01	RIM = 103.00' CLEAN OUT INV = 100.75 L1 INV = 97.00 L2
C02	RIM = 103.00' CLEAN OUT INV = 99.25 L3 INV = 96.00 L4
C03	RIM = 102.85' CLEAN OUT INV = 98.75 L5 INV = 96.00 L6
C05	RIM = 106.25' CLEAN OUT INV = 101.00 L11 INV = 101.00 L12
C06	RIM = 106.25' CLEAN OUT INV = 100.25 L10 INV = 100.25 L13 INV = 98.00 L14
C07	RIM = 106.46' CLEAN OUT INV = 97.75 L14 INV = 97.75 L15
C08	RIM = 99.31' CLEAN OUT INV = 96.87 L16 INV = 96.87 L17
C09	RIM = 106.25' CLEAN OUT INV = 94.83 CP1A INV = 94.83 L17 INV = 94.83 L18
C010	RIM = 114.39' CLEAN OUT INV = 100.11 L19 INV = 100.11 L20
C011	RIM = 101.35' CLEAN OUT INV = 98.92 L21 INV = 98.92 L22
C012	RIM = 101.32' CLEAN OUT INV = 98.89 L23 INV = 98.89 L24

STORM STRUCTURE DATA	
NO.	STRUCTURE
C013	RIM = 101.24' CLEAN OUT INV = 98.80 L25 INV = 98.80 L26
C014	RIM = 101.19' CLEAN OUT INV = 98.76 L27 INV = 98.76 L28
C015	RIM = 105.06' CLEAN OUT INV = 94.09 L18 INV = 94.09 L28 INV = 94.09 L29
DS1	RIM = 113.50' TYPE C INLET INV = 109.00 YP3 INV = 101.69 DP1
DS2	RIM = 104.85' TYPE C INLET INV = 100.25 DP2
DS3	RIM = 104.85' TYPE C INLET INV = 100.13 DP2 INV = 100.13 DP3
DS4	RIM = 104.85' TYPE C INLET INV = 98.08 DP1 INV = 100.02 DP3 INV = 98.08 DP4
DS5	RIM = 105.09' STORM MANHOLE INV = 98.01 DP4 INV = 98.01 DP5
DS6	RIM = 105.09' TYPE C INLET INV = 97.84 DP5 INV = 97.84 DP6
DS7	RIM = 105.09' TYPE C INLET INV = 97.66 DP6 INV = 97.66 DP7
DS8	RIM = 104.50' TYPE C INLET INV = 97.75 DP8

STORM STRUCTURE DATA	
NO.	STRUCTURE
DS9	RIM = 104.50' TYPE C INLET INV = 97.75 DP9
DS10	RIM = 105.09' TYPE C INLET INV = 97.49 DP7 INV = 97.49 DP9 INV = 97.49 DP8 INV = 97.49 DP10
DS11	RIM = 105.89' TYPE C INLET INV = 96.99 DP10 INV = 96.99 DP11
DS12	RIM = 104.48' TYPE C INLET INV = 96.77 DP11 INV = 93.75 L29 INV = 93.75 DP12
DS13	RIM = 96.95' TYPE C INLET INV = 92.00 DP13
DS14	RIM = 96.45' TYPE C INLET INV = 92.00 DP14
DS15	RIM = 99.50' TYPE C INLET INV = 93.36 DP12 INV = 91.50 DP13 INV = 91.50 DP15
DS16	RIM = 104.25' TYPE C INLET INV = 99.50 DP16
DS17	RIM = 100.75' TYPE C INLET INV = 96.25 DP17
DS18	RIM = 100.57' STORM MANHOLE INV = 91.25 DP15 INV = 96.00 DP17 INV = 91.25 DP18
DS19	RIM = 104.76' TYPE C INLET INV = 90.75 DP18 INV = 95.00 L15 INV = 90.75 DP19

STORM STRUCTURE DATA	
NO.	STRUCTURE
DS20	RIM = 104.85' TYPE C INLET INV = 99.25 DP20
DS21	RIM = 104.85' TYPE C INLET INV = 99.08 DP20 INV = 99.08 DP21
DS22	RIM = 104.85' TYPE C INLET INV = 98.90 DP21 INV = 98.90 DP22
DS23	RIM = 109.18' TYPE C INLET INV = 104.00 DP23
DS24	RIM = 104.85' TYPE C INLET INV = 98.73 DP22 INV = 98.73 DP23 INV = 98.73 DP24
DS26	RIM = 123.23' TYPE C INLET INV = 117.00 DP26
DS27	RIM = 118.00' TYPE C INLET INV = 110.50 DP27
DS28	RIM = 117.81' TYPE C INLET INV = 113.00 DP26 INV = 110.00 DP27 INV = 110.00 DP28
DS29	RIM = 112.13' TYPE C INLET INV = 107.25 DP28 INV = 107.25 DP29
DS30	RIM = 116.50' TYPE C INLET INV = 101.90 DP30
DS31	RIM = 106.50' TYPE C INLET INV = 101.50 DP30 INV = 101.50 DP31

STORM STRUCTURE DATA	
NO.	STRUCTURE
DS32	RIM = 107.53' TYPE C INLET INV = 103.00 DP29 INV = 101.25 DP31 INV = 101.25 DP32
DS33	RIM = 127.30' TYPE 5 INLET INV = 119.84 DP33A INV = 119.84 DP33
DS34	RIM = 129.75' TYPE 1 INLET INV = 123.00 DP34
DS35	RIM = 129.75' TYPE 1 INLET INV = 122.80 DP34 INV = 120.00 DP35
DS36	RIM = 118.49' TYPE 1 INLET INV = 113.00 DP36
DS37	RIM = 118.51' TYPE 1 INLET INV = 113.90 DP35 INV = 112.80 DP36 INV = 109.00 DP37
DS38	RIM = 114.50' STORM MANHOLE INV = 106.87 DP37 INV = 106.87 DP38
DS39	RIM = 109.12' TYPE 1 INLET INV = 104.00 DP39
DS40	RIM = 109.13' TYPE 1 INLET INV = 103.90 DP38 INV = 103.90 DP39 INV = 99.70 DP40
DS41	RIM = 107.75' STORM MANHOLE INV = 100.75 DP32 INV = 99.45 DP40 INV = 99.45 DP41
DS42	RIM = 107.01' TYPE C INLET INV = 99.33 DP41 INV = 99.33 DP42

STORM STRUCTURE DATA	
NO.	STRUCTURE
DS43	RIM = 106.06' TYPE C INLET INV = 101.25 DP43
DS44	RIM = 106.06' TYPE C INLET INV = 101.00 DP43 INV = 101.00 DP44
DS45	RIM = 105.92' TYPE C INLET INV = 99.15 DP42 INV = 100.75 DP44 INV = 98.14 DP24 INV = 96.84 DP45
DS46	RIM = 105.97' TYPE C INLET INV = 96.53 DP45 INV = 96.53 DP46
DS47	RIM = 106.11' TYPE C INLET INV = 96.31 DP46 INV = 96.31 DP47
DS48	RIM = 101.50' TYPE C INLET INV = 96.00 DP48
DS49	RIM = 106.36' STORM MANHOLE INV = 96.23 DP47 INV = 95.60 DP48 INV = 94.30 DP49
DS50	RIM = 102.75' TYPE C INLET INV = 98.20 DP50
DS51	RIM = 106.06' STORM MANHOLE INV = 93.40 DP49 INV = 98.00 DP50 INV = 93.40 DP51
DS52	RIM = 105.67' TYPE C INLET INV = 93.00 DP51 INV = 89.50 DP19 INV = 89.50 DP52
DS53	RIM = 96.17' STORM MANHOLE INV = 89.00 DP52 INV = 83.00 DP53

STORM STRUCTURE DATA	
NO.	STRUCTURE
DS54A	RIM = 127.00' TYPE C INLET INV = 123.00 DP54A
DS54B	RIM = 126.00' TYPE C INLET INV = 122.75 DP54A
DS55A	RIM = 130.00' TYPE C INLET INV = 125.00 DP55A
DS55B	RIM = 129.50' TYPE C INLET INV = 124.50 DP55A INV = 124.50 DP55B
DS55C	RIM = 128.75' TYPE C INLET INV = 122.35 DP55B INV = 122.35 DP55C
OUT1	RIM = 83.33' MITER END SECTION INV = 80.00 DP53
OUT2	RIM = 119.25' MITER END SECTION INV = 122.00 DP55C
YD1	RIM = 123.20' YARD DRAIN INV = 118.70 YP1
YD2	RIM = 121.40' YARD DRAIN INV = 116.90 YP1 INV = 116.90 YP2
YD3	RIM = 117.96' YARD DRAIN INV = 113.50 YP2 INV = 113.50 YP3

INSERTA TEE ® DETAIL (HP)

RECOMMENDED MINIMUM TRENCH WIDTHS	
PIPE DIAM.	MIN. TRENCH WIDTH
12" (300mm)	30" (762mm)
15" (375mm)	34" (864mm)
18" (450mm)	39" (991mm)
24" (600mm)	48" (1219mm)
30" (750mm)	56" (1422mm)
36" (900mm)	64" (1626mm)
42" (1050mm)	72" (1829mm)
48" (1200mm)	80" (2032mm)
60" (1500mm)	96" (2438mm)

NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION

2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.

3. THE INSERTA TEE CONNECTION CAN BE INSTALLED UP TO A VERTICAL ORIENTATION, BUT A 45° INSTALL ANGLE IS MOST COMMON. GREATER ANGLES ARE SUBJECT TO DESIGN ENGINEER APPROVAL AND MAY REQUIRE PREMIUM BACKFILL.

4. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.

5. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-1500mm).

6. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

7. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

NOTE: FOR INSTALLATION INSTRUCTIONS, REFER TO DETAIL STD-1100. FOR PROTRUSION INFORMATION, REFER TO DETAIL STD-1101. FOR HOLE SAW INFORMATION, REFER TO DETAIL STD-1102.

INSERTA TEE DETAIL (HP)

DRAWING NUMBER STD-101J

4640 TRUEMAN BLVD
HILLIARD, OH 43026

DRAWN BY:	HAK
DATE:	07/19/23
ONLY #'s	ENG
SCALE:	NTS
SHEET:	1

PIPE DATA				
NAME	SIZE	MATERIAL	PIPE LENGTH	SLOPE
DP1	18"	PP	188'	1.92%
DP2	18"	PP	58'	0.20%
DP3	18"	PP	59'	0.20%
DP4	24"	PP	24'	0.30%
DP5	24"	PP	59'	0.29%
DP6	24"	PP	58'	0.30%
DP7	24"	PP	59'	0.30%
DP8	24"	PP	61'	0.43%
DP9	18"	PP	49'	0.53%
DP10	24"	PP	164'	0.30%
DP11	24"	PP	82'	0.29%
DP12	24"	PP	126'	0.31%
DP13	18"	PP	53'	0.94%
DP14	18"	PP	58'	0.35%
DP15	30"	PP	34'	0.72%
DP16	18"	PP	57'	5.75%
DP17	18"	PP	31'	0.81%
DP18	30"	PP	136'	0.37%
DP19	30"	PP	138'	0.91%
DP20	24"	PP	58'	0.30%
DP21	24"	PP	58'	0.30%

PIPE DATA				
NAME	SIZE	MATERIAL	PIPE LENGTH	SLOPE
DP22	24"	PP	59'	0.30%
DP23	18"	PP	108'	4.87%
DP24	30"	PP	195'	0.30%
DP26	18"	PP	76'	5.27%
DP27	18"	PP	39'	1.28%
DP28	18"	PP	80'	3.46%
DP29	18"	PP	77'	5.52%
DP30	18"	PP	27'	1.50%
DP31	24"	PP	39'	0.65%
DP32	24"	PP	63'	0.79%
DP33	18"	PP	41'	3.27%
DP33A	18"	PP	35'	4.53%
DP34	18"	PP	35'	0.57%
DP35	18"	PP	137'	4.47%
DP36	18"	PP	35'	0.57%
DP37	18"	PP	48'	4.43%
DP38	18"	PP	67'	4.43%
DP39	18"	PP	35'	0.28%
DP40	24"	PP	58'	0.43%
DP41	30"	PP	38'	0.30%
DP42	30"	PP	60'	0.30%

PIPE DATA				
NAME	SIZE	MATERIAL	PIPE LENGTH	SLOPE
DP43	18"	PP	14'	1.75%
DP44	18"	PP	45'	0.56%
DP45	30"	PP	104'	0.30%
DP46	30"	PP	73'	0.30%
DP47	30"	PP	27'	0.30%
DP48	24"	PP	117'	0.34%
DP49	36"	PP	133'	0.67%
DP50	15"	PP	25'	0.79%
DP51	36"	PP	85'	0.47%
DP52	36"	PP	37'	1.34%
DP53	36"	PP	79'	3.81%
DP54A	24"	PP	80'	0.31%
DP55A	24"	PP	93'	0.54%
DP55B	24"	PP	78'	2.76%
DP55C	24"	PP	148'	0.24%
YP1	15"	PP	124'	1.45%
YP2	15"	PP	116'	2.92%
YP3	15"	PP	116'	3.88%

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

DRAINAGE PLAN
FOR
LAKE HILLS SHOPPING CENTER
FLORIDA
TOWN OF HOWEY IN THE HILLS

WINDCREST DEVELOPMENT GROUP, INC.
605 E. ROBINSON ST. SUITE 340
ORLANDO, FL 32801
407-219-3540

REVISIONS	DATE
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BENJAMIN S. BECKHAM
LICENSE
NO. 79452
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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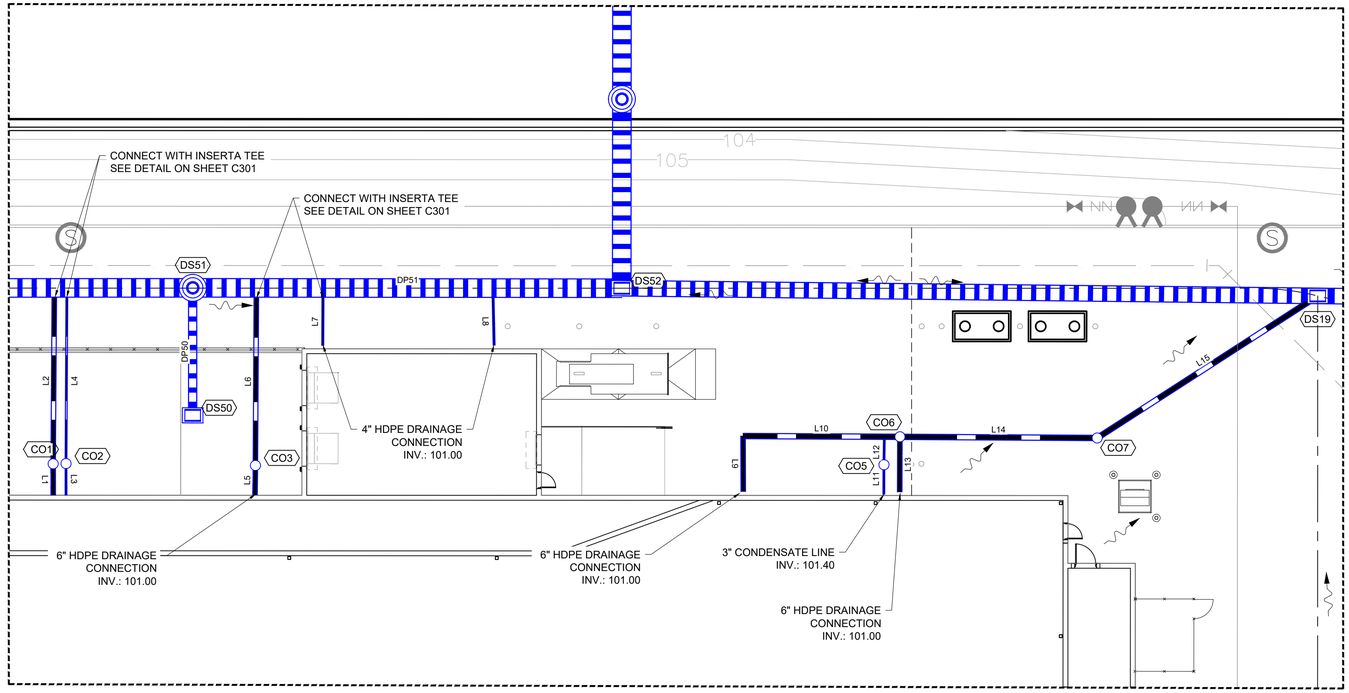
ENGINEER OF RECORD

JOB #	22041
DATE:	08/06/24
DATUM:	NAVD 88
DESIGNED BY:	KGS
DRAWN BY:	JAS
APPROVED BY:	BSB

C301

STORM STRUCTURE DATA	
NO.	STRUCTURE
CO1	INV = 100.75 L1 INV = 97.00 L2
CO2	INV = 99.25 L3 INV = 96.00 L4
CO3	INV = 98.75 L5 INV = 96.00 L6
CO5	INV = 101.00 L11 INV = 101.00 L12
CO6	INV = 100.25 L10 INV = 100.25 L13 INV = 98.00 L14
CO7	INV = 97.75 L14 INV = 97.75 L15
CO8	INV = 96.87 L16 INV = 96.87 L17
CO9	INV = 94.83 CP1A INV = 94.83 L17 INV = 94.83 L18

STORM STRUCTURE DATA	
NO.	STRUCTURE
CO10	INV = 100.11 L19 INV = 100.11 L20
CO11	INV = 98.92 L21 INV = 98.92 L22
CO12	INV = 98.89 L23 INV = 98.89 L24
CO13	INV = 98.80 L25 INV = 98.80 L26
CO14	INV = 98.76 L27 INV = 98.76 L28
CO15	INV = 94.09 L18 INV = 94.09 L28 INV = 94.09 L29



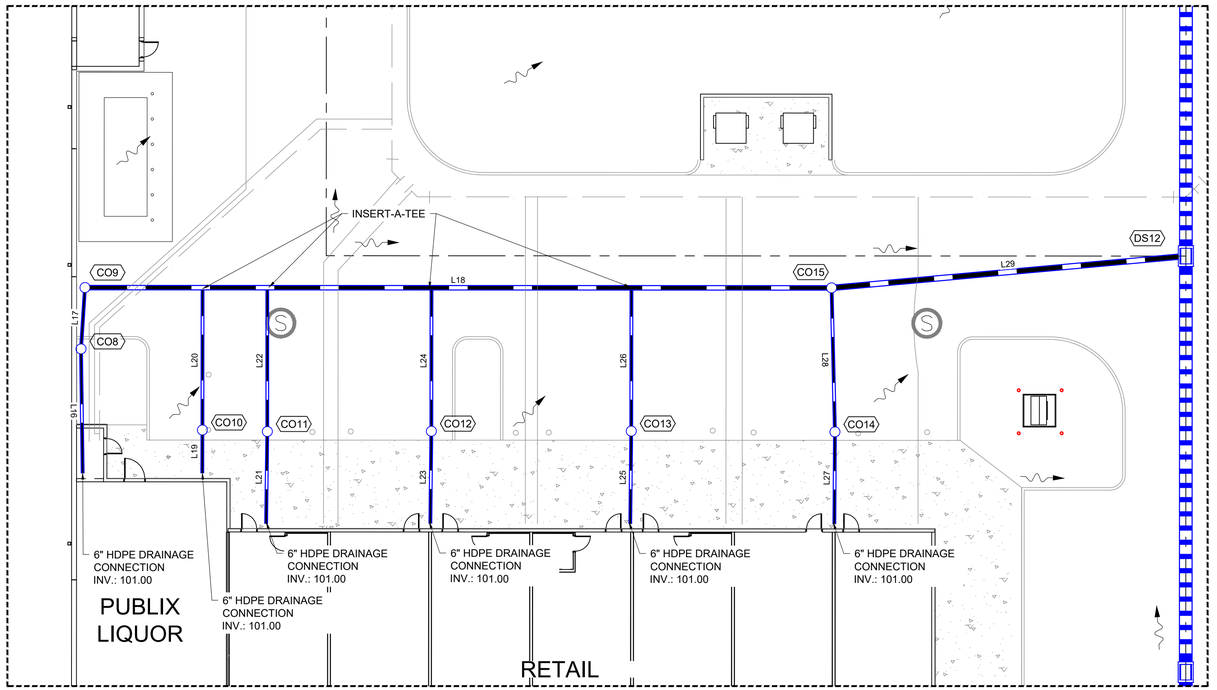
UTILITY DETAIL "A"

SCALE: 1"=15'

PIPE DATA				
NAME	SIZE	MATERIAL	PIPE LENGTH	SLOPE
DP50	15"	PP	25'	0.79%
L1	10"	HDPE	6'	4.00%
L2	10"	HDPE	33'	7.09%
L3	4"	HDPE	6'	4.01%
L4	4"	HDPE	33'	3.29%
L5	10"	HDPE	6'	4.32%
L6	10"	HDPE	33'	4.79%
L7	4"	HDPE	9'	68.09%
L8	4"	HDPE	9'	68.88%
L9	10"	HDPE	11'	2.28%

PIPE DATA				
NAME	SIZE	MATERIAL	PIPE LENGTH	SLOPE
L10	12"	HDPE	31'	1.61%
L11	4"	HDPE	6'	6.95%
L12	4"	HDPE	5'	6.95%
L13	10"	HDPE	11'	6.89%
L14	12"	HDPE	39'	0.64%
L15	12"	HDPE	52'	5.29%
L16	6"	HDPE	25'	16.81%
L17	6"	HDPE	12'	16.81%
L18	10"	HDPE	148'	0.50%
L19	6"	HDPE	8'	10.50%

PIPE DATA				
NAME	SIZE	MATERIAL	PIPE LENGTH	SLOPE
L20	6"	HDPE	28'	19.49%
L21	6"	HDPE	18'	11.43%
L22	6"	HDPE	28'	15.25%
L23	6"	HDPE	18'	11.60%
L24	6"	HDPE	28'	15.74%
L25	6"	HDPE	18'	12.00%
L26	6"	HDPE	28'	16.18%
L27	6"	HDPE	18'	12.33%
L28	6"	HDPE	29'	16.38%
L29	12"	HDPE	70'	0.49%



UTILITY DETAIL "B"

SCALE: 1"=15'

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

DRAINAGE PLAN
FOR
LAKE HILLS SHOPPING CENTER
TOWN OF HOWEY IN THE HILLS
FLORIDA

WINDCREST DEVELOPMENT GROUP, INC.
605 E. ROBINSON ST. SUITE 340
ORLANDO, FL 32801
407-219-3540

NO.	DATE	REVISIONS
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BENJAMIN S. BECKHAM
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PROFESSIONAL ENGINEER

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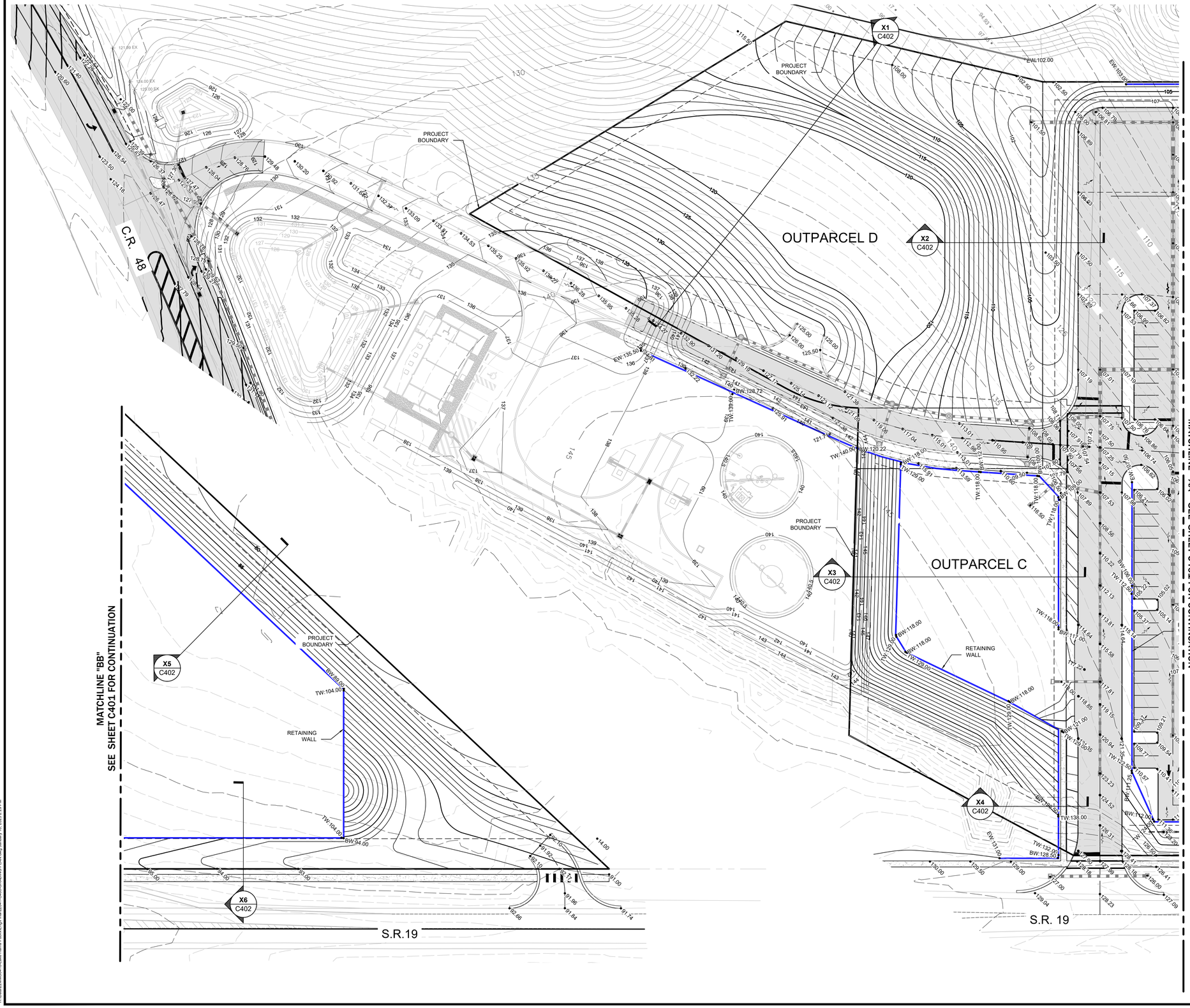
ENGINEER OF RECORD

JOB # 22041
DATE: 08/06/24
DATUM: NAVD 88
DESIGNED BY: KGS
DRAWN BY: JAS
APPROVED BY: BSB

C302



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W E
S

0 20' 40' 80'

SCALE: 1"=40'

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
		DRAINAGE EASEMENT (D.E.)
		EASEMENT (OTHER)
		CURB
		CURB AND GUTTER
		MIAMI CURB
		CONCRETE WALK
0.00 EX	0.00 OR / 0.00 TW / 0.00 BW	SPOT ELEVATION
	0.00 LP / 0.00 HP	ROAD ℄ ELEVATION
30	30	CONTOUR (MAJOR)
29	29	CONTOUR (MINOR)
		DIRECTION OF SURFACE FLOW
		NORMAL WATER LEVEL
		SEASON HIGH WATER LEVEL
		POND MAINTENANCE BERM
DS-100	DS-100	STORM STRUCTURE NUMBER
		STORM DRAINAGE MANHOLE
		STORM DRAINAGE INLET
		CONTROL STRUCTURE
	OR	OUTFALL STRUCTURE
	OUT-1	PIPE END (OUTFALL)
B-1		SOIL BORING
R-1		SOIL BORING (ROADWAY)
P-1		SOIL BORING (POND)
	D.S.	DOWNSPOUT

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GRADING PLAN
FOR
LAKE HILLS SHOPPING CENTER
TOWN OF HOVEY IN THE HILLS FLORIDA

WINDCREST DEVELOPMENT GROUP, INC.
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ORLANDO, FL 32801
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APPROVED BY:	BSB

C400

H:\Data\22\MMS\01\Lake Hams Point\Eng\Final\2041-C400-GRADING PLAN.dwg January 10, 2025 2:29 PM

RETAINING WALL

PROJECT BOUNDARY

RETAININGWALL

GROCERY STORE
50,800 SF
F.F.E = 107.00

FFE=107.00

LIQUOR STORE
2,100 SF

RETAIL
8,400 SF

OUTPARCEL B
0.97 AC.

OUTPARCEL A
3.58 AC.

RETAINING WALL

SHALLOW SWALE

S.R. 19

MATCHLINE "AA" - SEE SHEET C400 FOR CONTINUATION

MATCHLINE "BB" SEE SHEET C400 FOR CONTINUATION

X7 C402

X8 C402

X9 C402

0 20' 40' 80'

SCALE: 1"=40'

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
		DRAINAGE EASEMENT (D.E.)
		EASEMENT (OTHER)
		CURB
		CURB AND GUTTER
		MIAMI CURB
		CONCRETE WALK
+0.00 EX	+ 0.00 OR	SPOT ELEVATION
	+ OR + 0.00 TW + 0.00 BW	
	+ 0.00 LP + 0.00 HP	ROAD ℄ ELEVATION
30	30	CONTOUR (MAJOR)
29	29	CONTOUR (MINOR)
		DIRECTION OF SURFACE FLOW
		NORMAL WATER LEVEL
		SEASON HIGH WATER LEVEL
		POND MAINTENANCE BERM
DS-100	DS-100	STORM STRUCTURE NUMBER
		STORM DRAINAGE MANHOLE
		STORM DRAINAGE INLET
		CONTROL STRUCTURE
	OR	OUTFALL STRUCTURE
	OUT-1	PIPE END (OUTFALL)
B-1 R-1 P-1		SOIL BORING SOIL BORING (ROADWAY) SOIL BORING (POND)
	D.S.	DOWNSPOUT

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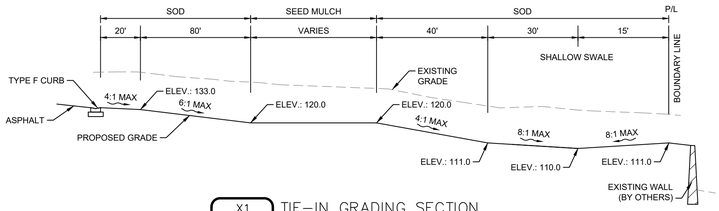
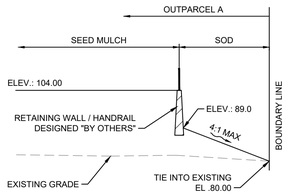
APPROVED BY:	BSB

C401



X1 – TIE–IN GRADING SECTION
N.T.S.



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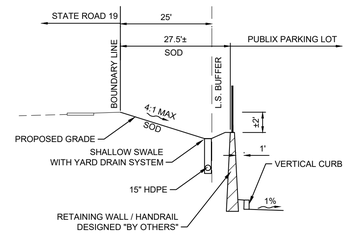
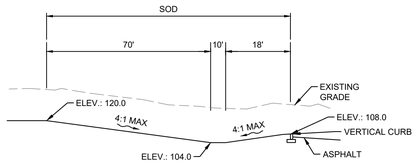
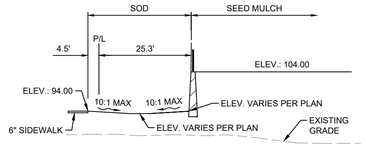
N.T.S.



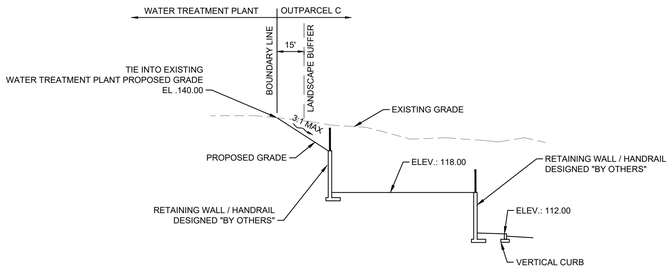
X9 – TIE–IN GRADING SECTION
N.T.S.



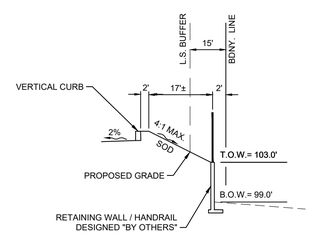
X2 – TIE–IN GRADING SECTION
N.T.S.



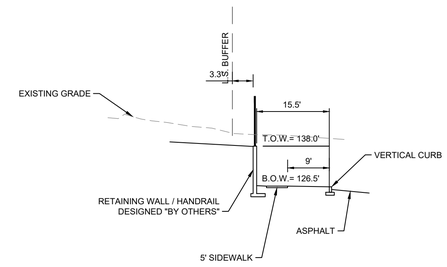
X6 – TIE–IN GRADING SECTION
N.T.S.



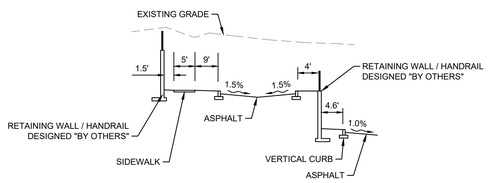
X3 – TIE–IN GRADING SECTION
N.T.S.



X7 – TIE–IN GRADING SECTION
N.T.S.



X4 – TIE–IN GRADING SECTION
N.T.S.



X8 – TIE–IN GRADING SECTION
N.T.S.

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

GRADING PLAN
FOR
LAKE HILLS SHOPPING CENTER
TOWN OF HOWEY IN THE HILLS FLORIDA

WINDCREST DEVELOPMENT GROUP, INC.
605 E. ROBINSON ST. SUITE 340
ORLANDO, FL 32801
407-219-3540

	DATE	REVISIONS
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BENJAMIN S. BECKHAM
LICENSE
NO. 79452
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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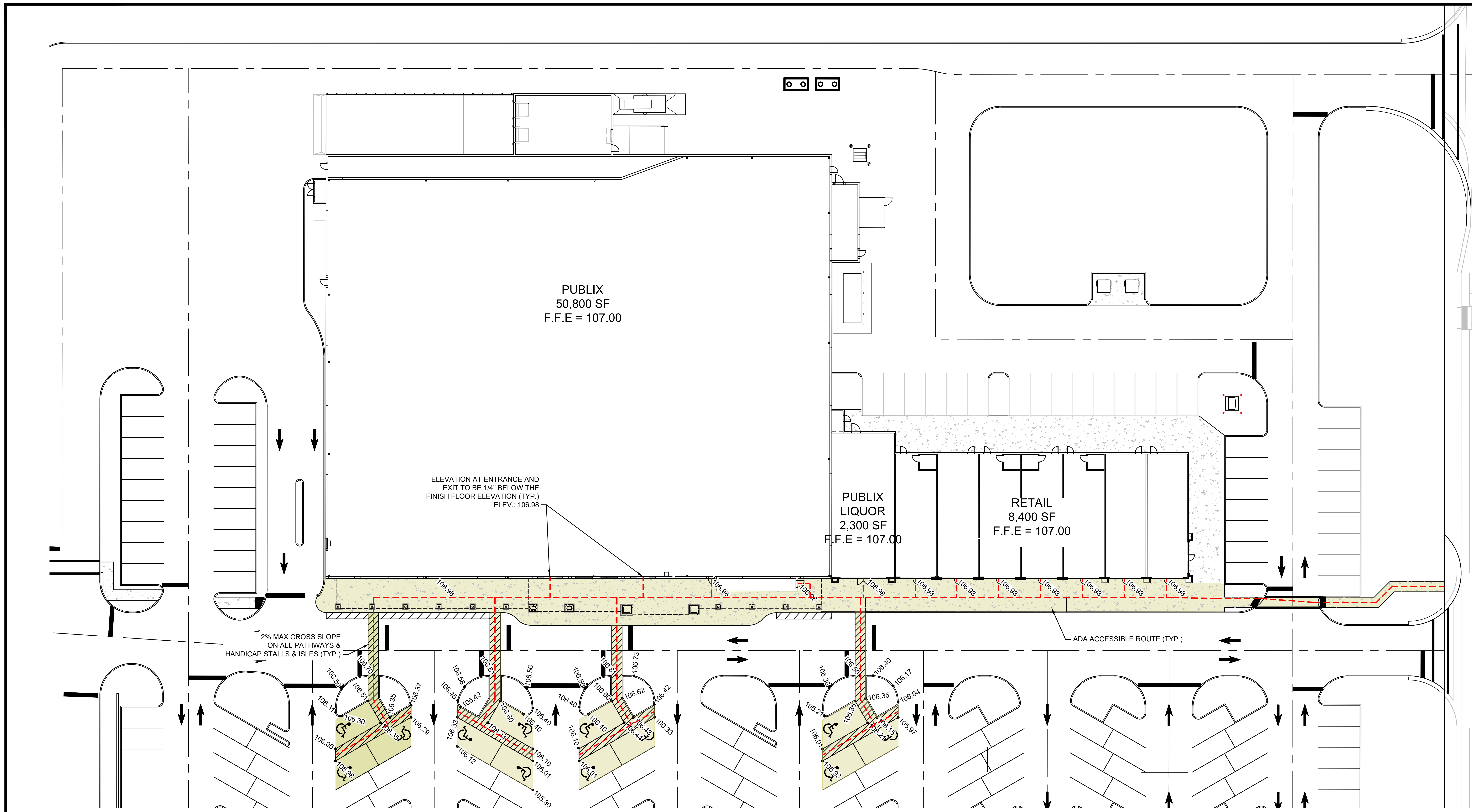
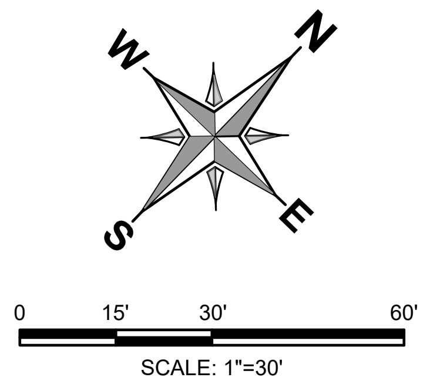
ENGINEER OF RECORD

JOB #	22041
DATE:	08/06/24
DATUM:	NAVD 88
DESIGNED BY:	KGS
DRAWN BY:	JAS
APPROVED BY:	BSB

C402





SCALE: 1"=30'

LEGEND

▨	ADA ACCESSIBLE PATH

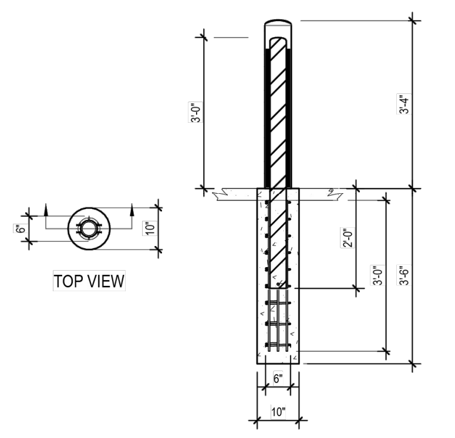
GENERAL NOTES:

1. PARKING:

REQUIRED:	306 SPACES
	5 SPACES PER 1,000SF OF BUILDING. AREA
	(61,300 SF / 1,000 SF) * 5 = 306 SPACES MIN.
PROVIDED:	12 HANDICAP SPACES
	294 STANDARD SPACES
	306 SPACES TOTAL

MCCUE CRASHCORE BOLLARD REQUIRED AT ENTRY/EXIT AND CUSTOMER SEATING AREAS

PLACE @ 5'-6" OC



CONTRACTORS NOTE:

BOLLARDS SUPPLIED AND INSTALLED BY MCCUE
PRIOR TO SIDEWALK BEING POURED.
NO SUBSTITUTIONS.
CONTACT MCCUE AND PUBILX TO RECEIVE
PUBLIX NATIONAL ACCOUNT PRICING FOR
MATERIALS AND INSTALLATION.

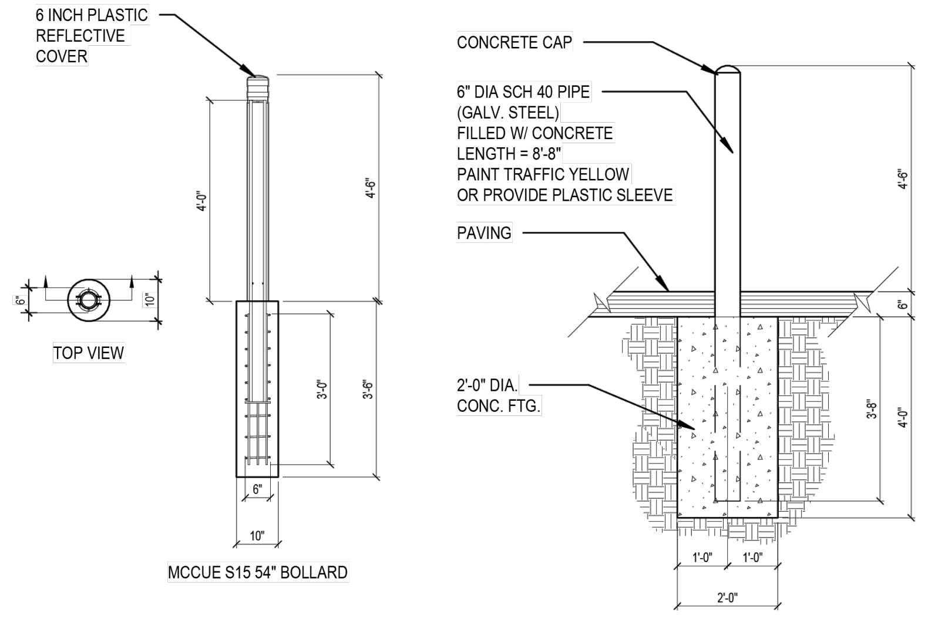
ORDERING INFORMATION AND TIMING:

ORDER: 4 WEEKS PRIOR TO SIDEWALK POUR
RECEIVE: 2 WEEKS PRIOR TO SIDEWALK POUR
INSTALLATION: 1 WEEK PRIOR TO SIDEWALK POUR

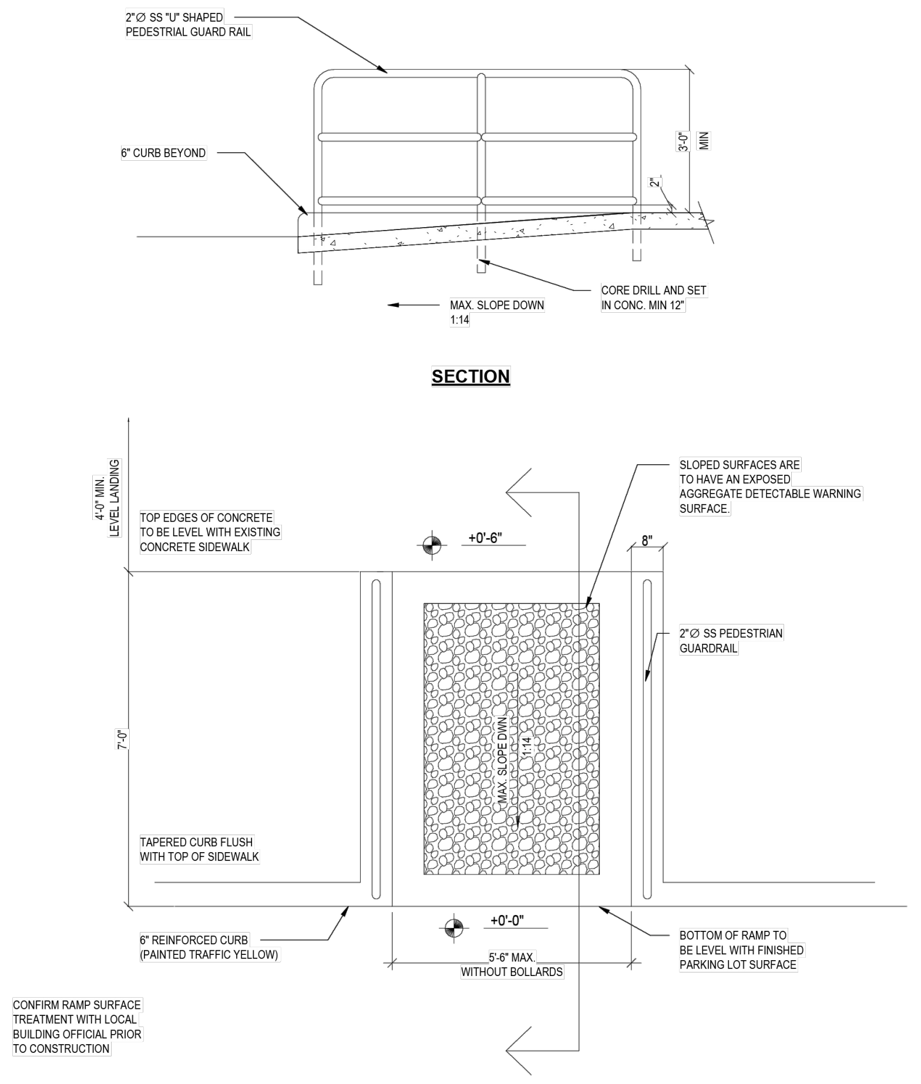
CONTACT INFO:	YANI DE LA CRUZ
EMAIL:	YDELACRUZ@MCCUE.COM
DIRECT:	978-219-5282
OFFICE ADDRESS:	MCCUE, 13 CENTENNIAL DRIVE PEABODY, MA 01960
WEBSITE:	MCCUE.COM

ACCEPTABLE DETAILS FOR BOLLARDS PROTECTING EQUIPMENT AND BUILDING COMPONENTS

PLACE AS NEEDED



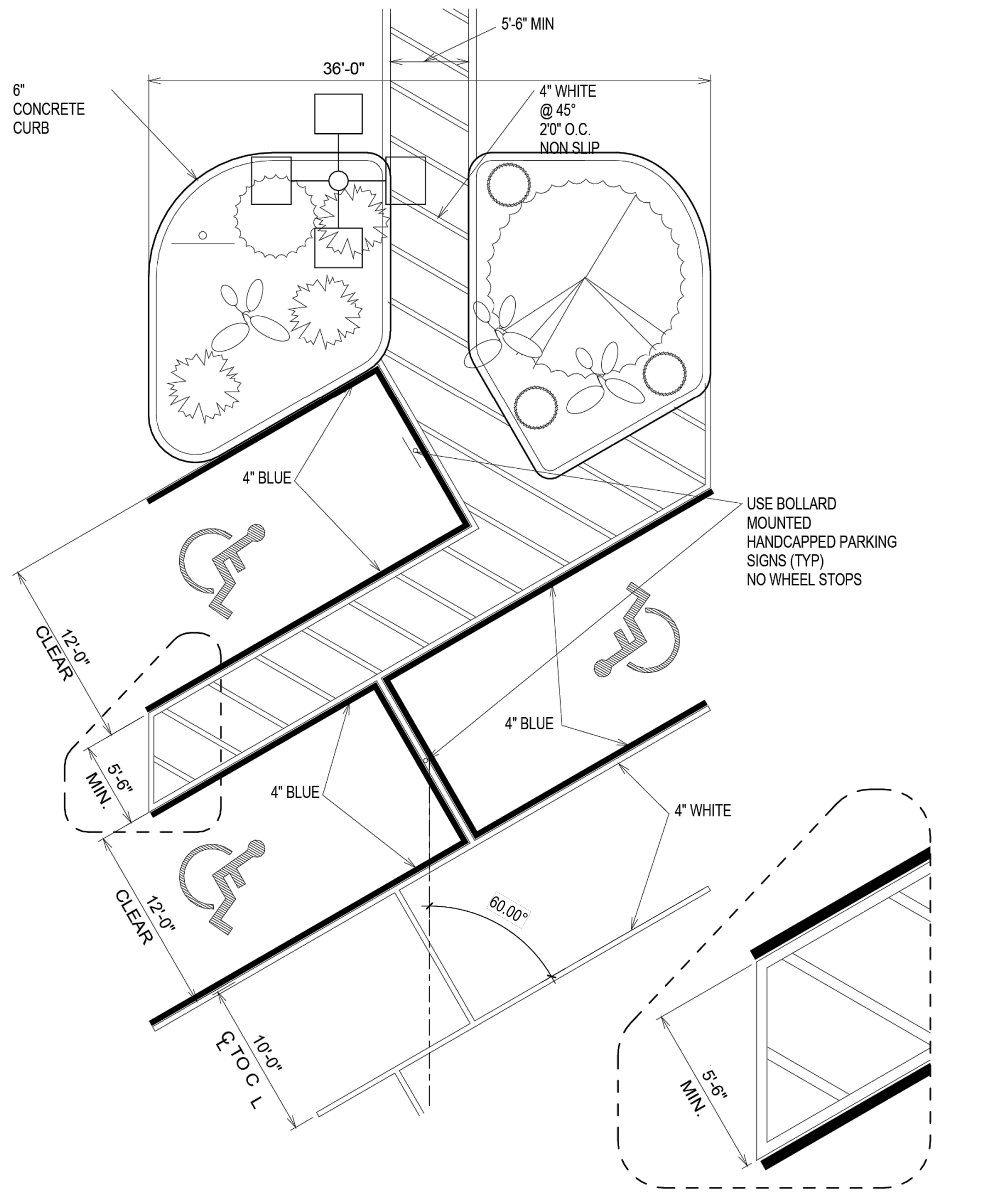
AUGUST 2024 EDITION SHEET 5-40 REVISED 01/01/20



RETURN CURB RAMP DETECTABLE WARNING PLAN

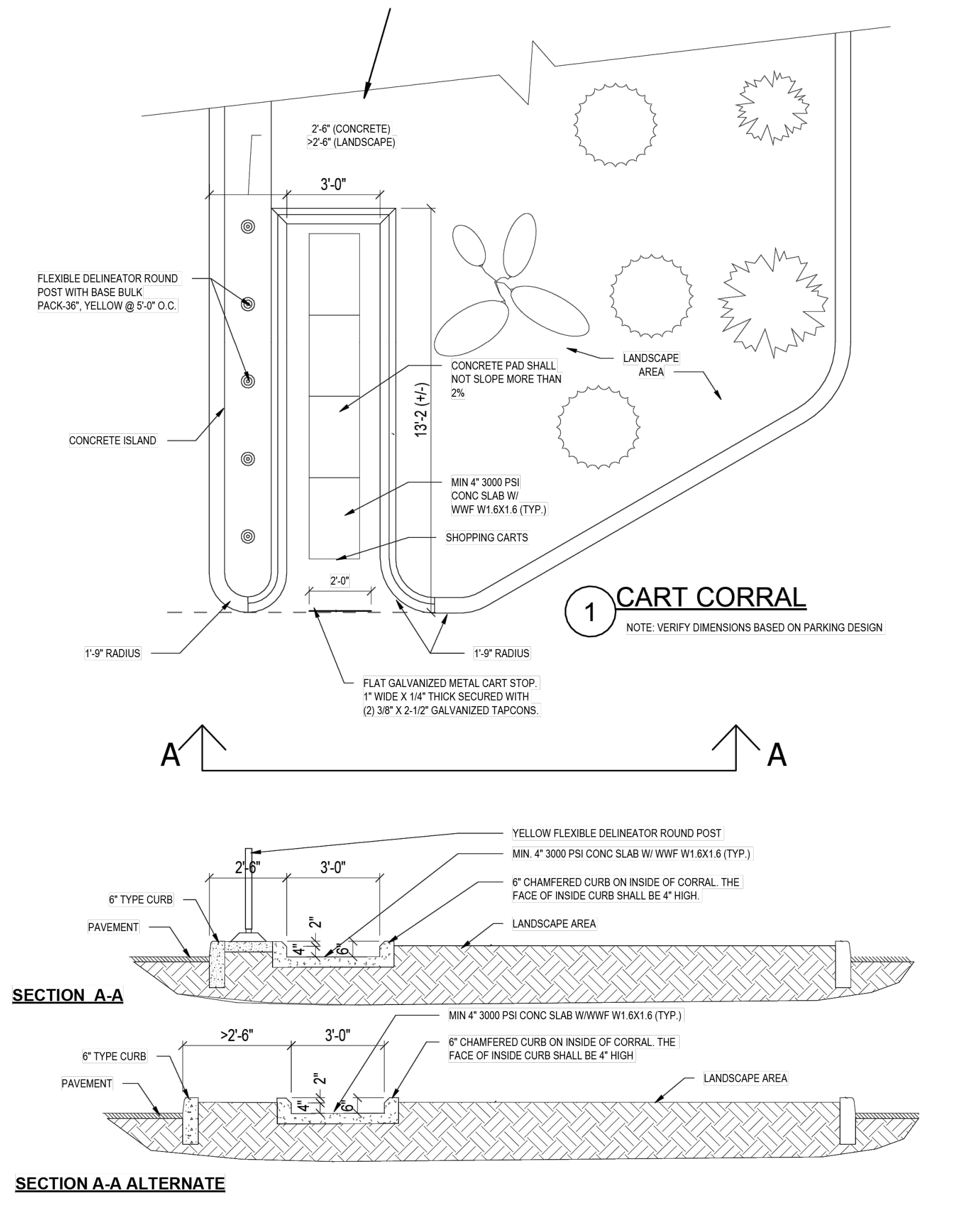
USE IN FRONT OF PUBLIX STORE

AUGUST 2024 EDITION SHEET 5-38 REVISED 10/01/22



SUGGESTED HANDICAP 60 DEGREE PARKING CLUSTER

CONCRETE ISLAND WITH FLEXIBLE DELINEATOR POSTS (LANDSCAPE ISLAND MAYBE USED AS AN ALTERNATIVE IF WIDTH EXCEEDS 2'-6". PLANTING TYPE AND PLACEMENT SHOULD DETER PEDESTRIAN FOOT TRAFFIC, I.E. SHRUB OR HEDGE)



① CART CORRAL

NOTE: VERIFY DIMENSIONS BASED ON PARKING DESIGN

AUGUST 2024 EDITION SHEET 5-50 REVISED 09/01/22

H:\Data\22MMS0410-Lake Harris Publix\Eng\Final\22041-C410-ADA ACCESIBILITY PLANS.dwg January 10, 2025 2:30 PM

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
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(407) 629-8330
CA# 0007723

ADA ACCESIBILITY PLAN

FOR

LAKE HILLS SHOPPING CENTER

TOWN OF HOWEY IN THE HILLS
FLORIDA

WINDCREST DEVELOPMENT GROUP, INC.
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ENGINEER OF RECORD

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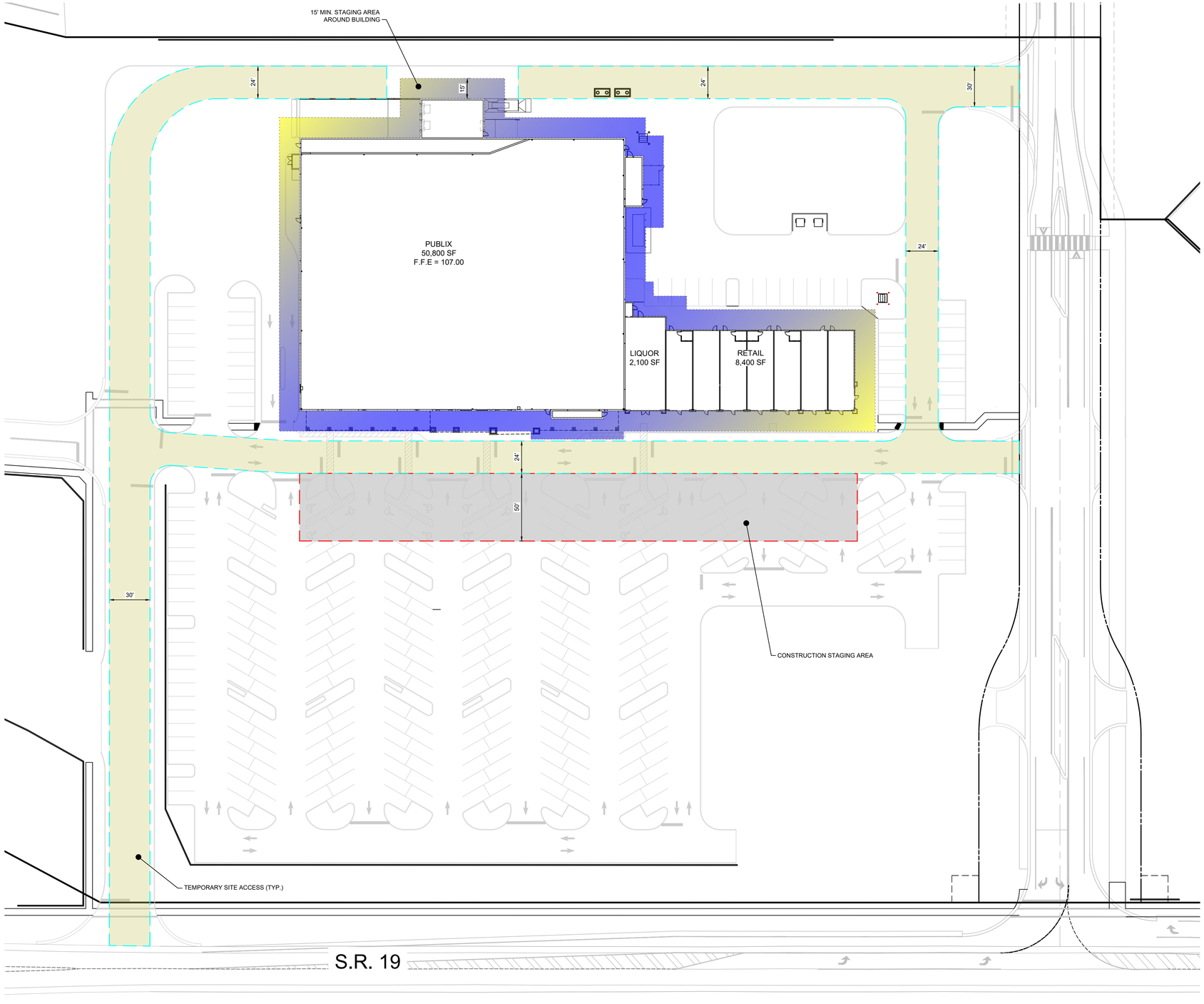
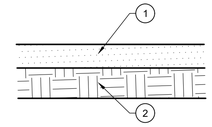
C410



LEGEND

- TEMPORARY SITE ACCESS
  SEE SHEET C007 FOR SWPPP CRITERIA AND CONSTRUCTION ACCESS
- CONSTRUCTION STAGING AREA
- 15' MIN STAGING AREA AROUND BUILDING



(1) 8" OF LIME ROCK 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.

OR

8" OF RECYCLED CONCRETE AGGREGATE (RCA) BASE.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 CRITERIA LISTED IN THE LATEST EDITION OF THE FDOT ROAD AND BRIDGE CONSTRUCTION SPECIFICATIONS.

(2) 12" OF 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.

NOTE:
CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADDITIONAL STABILIZATION IN AREAS THEY DEEM NECESSARY.

TEMPORARY SITE ACCESS AND CONSTRUCTION STAGING AREA PAVEMENT DETAIL

N.T.S.

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TEMPORARY SITE ACCESS AND STAGING PLAN

FOR

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TOWN OF HOWEY IN THE HILLS FLORIDA

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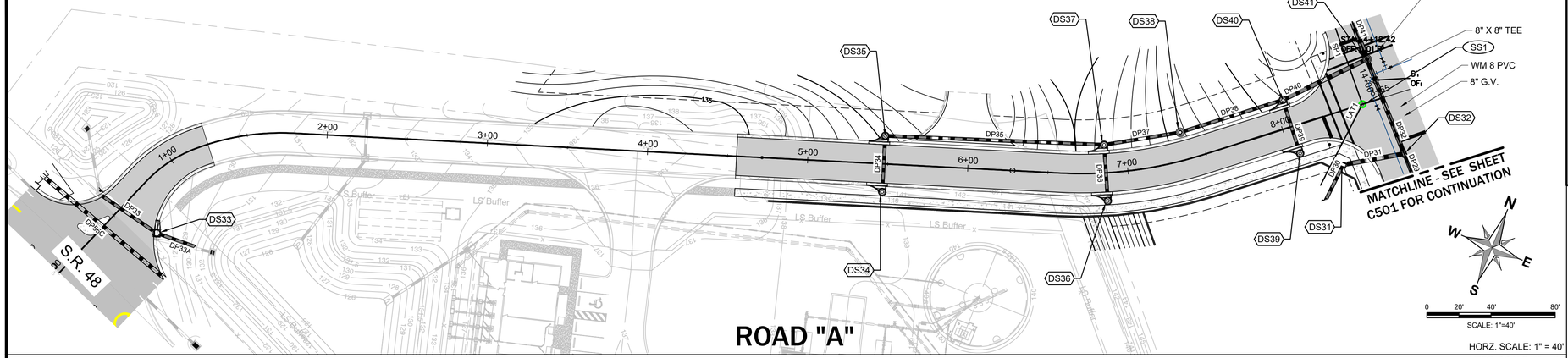
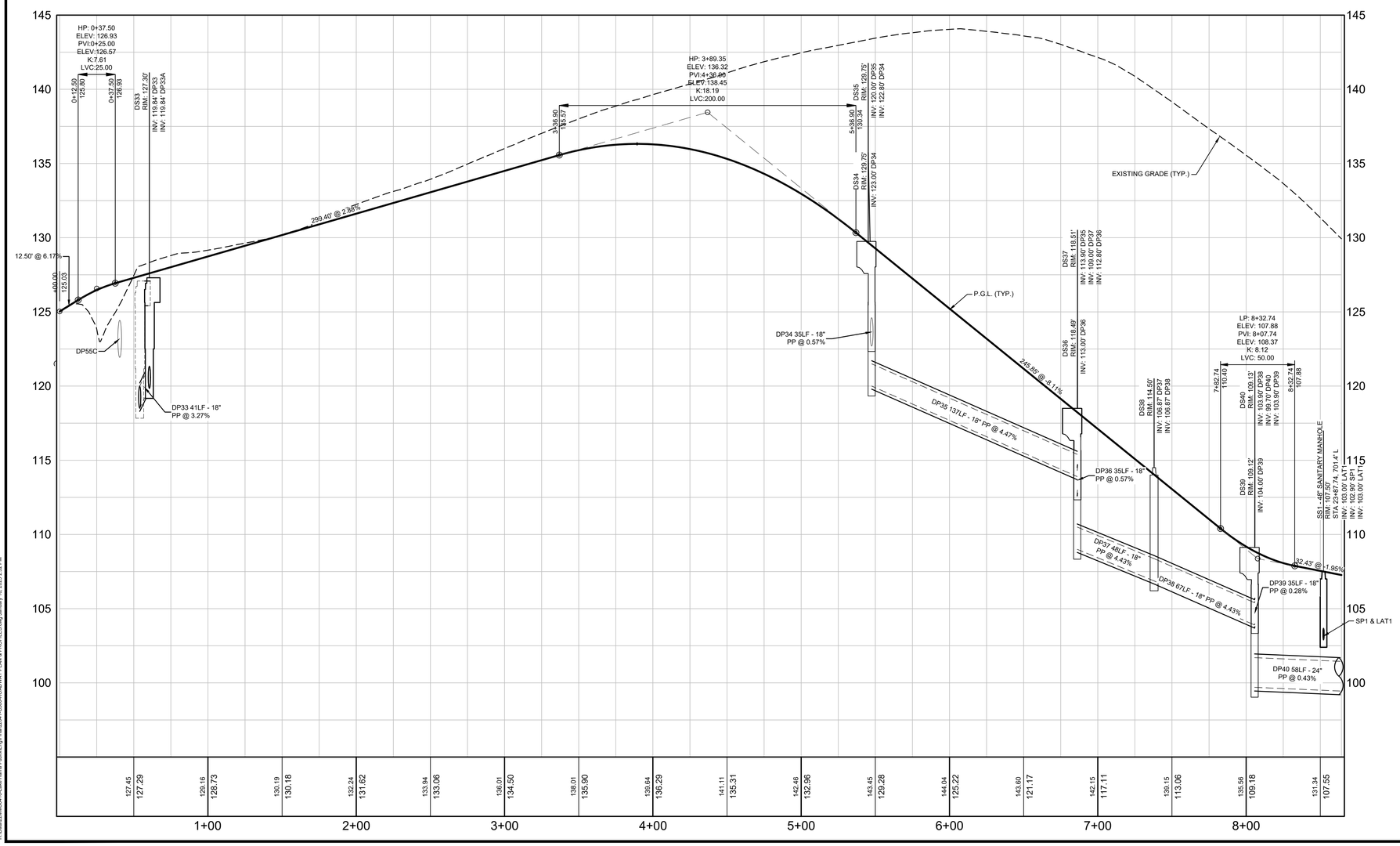




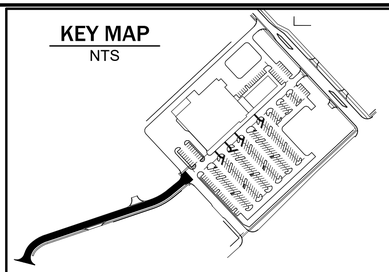
ESTIMATED WET SEASON WATER TABLE AND WATER TABLE LOCATED ON PROFILE BASED ON BOREHOLES. (REF: UNIVERSAL ENGINEERING SERVICES, PROJECT NO. 0130.2200427.000)

WATER MAIN AND RE-USE WATER LINES SHALL BE BURIED WITH A MINIMUM 36" GROUND COVER.

THE ENGINEER OF RECORD SHALL BE NOTIFIED IF ANY CROSSINGS DO NOT MEET THE REQUIRED SEPARATION CRITERIA PRIOR TO BACKFILLING. THE EOR WILL ASSIST THE PROJECT TEAM IN DETERMINING THE APPROPRIATE MODIFICATIONS NEEDED IN ORDER TO MEET THE SEPARATION REQUIREMENTS. NO BACKFILLING SHALL OCCUR UNTIL AFTER THE MODIFICATIONS ARE APPROVED BY THE OWNER AND AHJ (IF REQUIRED). CORRECTIONS COMPLETED, AND CORRECTIONS HAVE BEEN FIELD VERIFIED.

▽ ESTIMATED SEASONAL HIGH WATER LEVEL

KEY MAP
NTS



LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
		DRAINAGE EASEMENT (D.E.)
		EASEMENT (OTHER)
		CURB
		CURB AND GUTTER
		MIAMI CURB
		CONCRETE WALK
		POND MAINTENANCE BERM
DS-100	DS000	STORM STRUCTURE NUMBER
		STORM DRAINAGE MANHOLE
	OR	STORM DRAINAGE INLET
	YD	YARD DRAIN
	OR	OUTFALL STRUCTURE
	OUT-1	PIPE END (OUTFALL)
		FIRE HYDRANT
	WM	WATER MAIN (WM)
		WATER SERVICE
	RWM	RECLAIM WATER MAIN (RM)
	FM	FORCE MAIN (FM)
		SANITARY SEWER STRUCTURE #
	S	SANITARY SEWER
		SINGLE SANITARY SERVICE (6")
		DOUBLE SANITARY SERVICE (6")
B-1		SOIL BORING
R-1		SOIL BORING (ROADWAY)
P-1		SOIL BORING (POND)

MADDEN
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ROADWAY PLAN & PROFILES
FOR
LAKE HILLS SHOPPING CENTER
TOWN OF HOWEY IN THE HILLS FLORIDA

WINDCREST DEVELOPMENT GROUP, INC.
605 E. ROBINSON ST. SUITE 340
ORLANDO, FL 32801
407-219-3540

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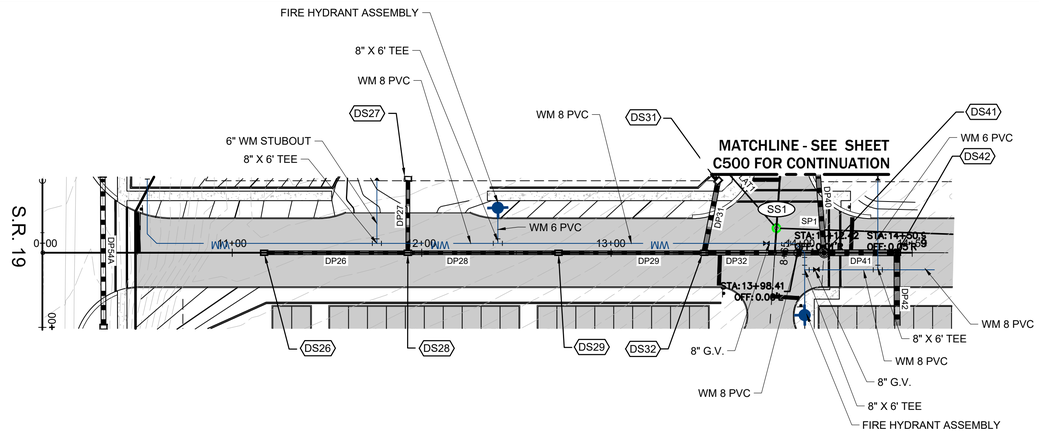
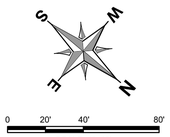
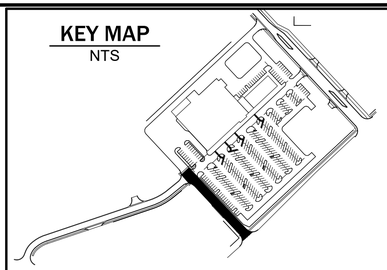
C500



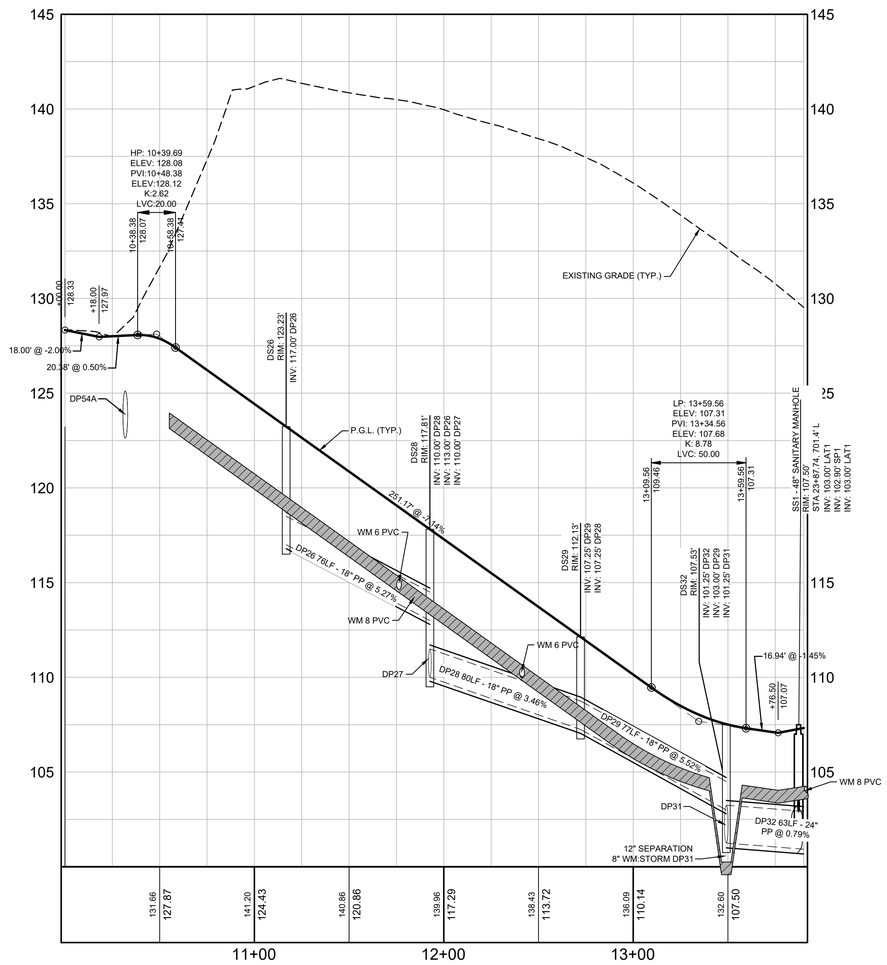


KEY MAP
NTS



ROAD "A"

HORZ. SCALE: 1" = 40'
VERT. SCALE: 1" = 4'



LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
		DRAINAGE EASEMENT (D.E.)
		EASEMENT (OTHER)
		CURB
		CURB AND GUTTER
		MIAMI CURB
		CONCRETE WALK
		POND MAINTENANCE BERM
DS-100	DS000	STORM STRUCTURE NUMBER
		STORM DRAINAGE MANHOLE
	OR	STORM DRAINAGE INLET
		YARD DRAIN
	OR	OUTFALL STRUCTURE
	OUT-1	PIPE END (OUTFALL)
		FIRE HYDRANT
	WM	WATER MAIN (WM)
		WATER SERVICE
	RWM	RECLAIM WATER MAIN (RM)
	FM	FORCE MAIN (FM)
		SANITARY SEWER STRUCTURE #
	S	SANITARY SEWER
		SINGLE SANITARY SERVICE (6")
		DOUBLE SANITARY SERVICE (6")
B-1		SOIL BORING
R-1		SOIL BORING (ROADWAY)
P-1		SOIL BORING (POND)

ESTIMATED WET SEASON WATER TABLE AND WATER TABLE LOCATED ON PROFILE BASED ON BOREHOLES. (REF: UNIVERSAL ENGINEERING SERVICES, PROJECT NO. 0130.2200427.000)

WATER MAIN AND RE-USE WATER LINES SHALL BE BURIED WITH A MINIMUM 36" GROUND COVER.

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▽ ESTIMATED SEASONAL HIGH WATER LEVEL

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C501

COUNTY ROAD 48, POSTED SPEED 45 MPH,DESIGN SPEED 45 MPH

DEMOLITION AND EROSION CONTROL PLAN

LEGEND

SF — STAKED EROSION CONTROL FDOT TYPE III SILT FENCE

LIMITS OF 1" MILL

 # DEMOLITION NOTES

1. SINGLE STAKED SILT FENCE. (SEE DETAIL ON SHEET C003.1)
2. EXISTING PAVEMENT 1" MILL
3. DEMO EXISTING STORM

N E S W

0 20' 40' 80'

SCALE: 1"=40'

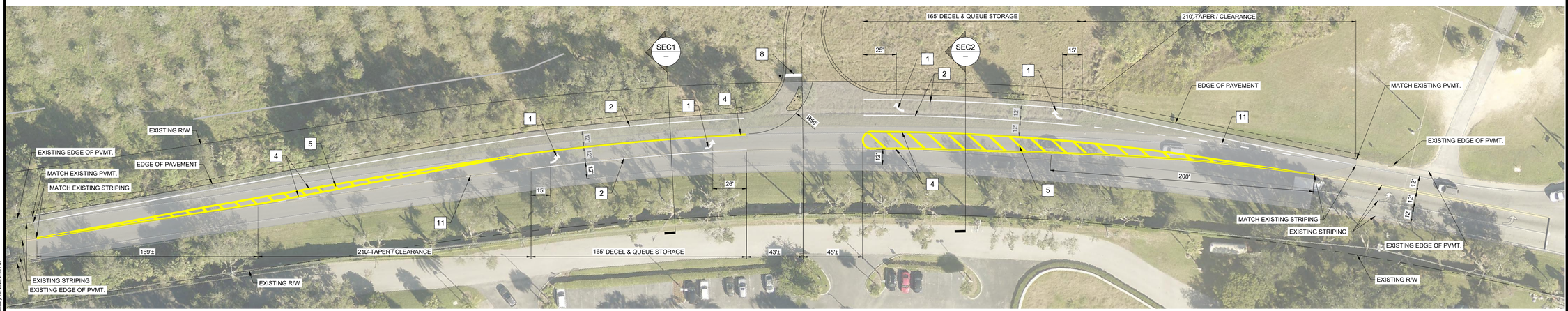
DIMENSION, STRIPING, AND SIGNAGE PLAN

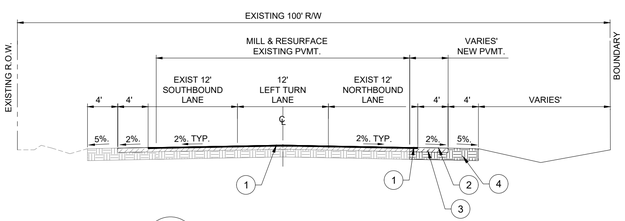
 # CONSTRUCTION NOTES

1. WHITE THERMOPLASTIC TURN ARROWS (TYP.) PER FDOT INDEX 711-001
2. 6" WHITE SOLID THERMOPLASTIC PER FDOT INDEX 711-001
3. 6" YELLOW SOLID THERMOPLASTIC PER FDOT INDEX 711-001
4. 6" DOUBLE YELLOW THERMOPLASTIC PER FDOT INDEX 711-001
5. 18" YELLOW GORE STRIPE W/ 10' SPACING PER FDOT INDEX 711-001
6. REFLECTIVE PVMT. MARKERS W/ 40' SPACING PER FDOT INDEX 711-001
7. SPECIAL EMPHASIS CROSSWALK STRIPING PER FDOT INDEX # 711-001
8. 24" WHITE THERMOPLASTIC STOP BAR
9. R1-1 STOP SIGN
10. ADA HANDICAP RAMP. FDOT TYPE CR-F
11. 6" WHITE SKIP (6' X 10')

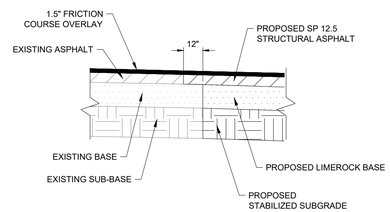
NOTES:

1. MILL EXISTING ROADWAY FULL WIDTH TO 1" MINIMUM DEPTH
2. FINISH GRADE OF SHOULDER TO BE BELOW EDGE OF PVMT. TO ALLOW FOR SOD PER FDOT STANDARD PLANS INDEX 570-010 (FORMERLY INDEX 105)
3. ALL DISTURBED AREAS SHALL BE SODDED
4. ALL UNPAVED AREAS WITHIN ROW SHALL BE SODDED
5. ALL LANE STRIPING TO BE 6" THERMOPLASTIC, UNLESS OTHERWISE NOTED
6. FOR SUPERPAVE UTILIZE TRAFFIC LEVEL C
7. ALL CONSTRUCTION MATERIALS AND ROADWAY DESIGN SHALL BE IN ACCORDANCE WITH THE LATEST LAKE COUNTY STANDARDS
8. ALL SIDEWALKS, DETECTABLE WARNING MATS AND CURB RAMPS SHALL BE BUILT AND INSPECTED TO MEET ADA REQUIREMENTS (MAX DESIGN CROSS-SLOPE = 1.50%; MAX DESIGN LOGITUDINAL SLOPE = 5.00%)
9. ANY DRIVEWAYS DISTURBED BY CONSTRUCTION SHALL BE REBUILT TO EXISTING CONDITIONS OR BETTER
10. ALL MAINTENANCE OF TRAFFIC SHALL BE IN ACCORDANCE WITH FDOT STANDARD PLAN INDEXES (PREFIX 102) 600-608, 625, 628, & 655 AS APPLICABLE

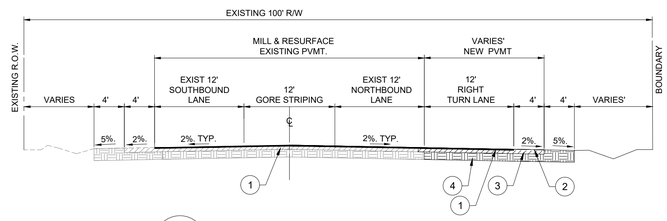




SEC1 — TYPICAL SECTION - 100' R.O.W.
C.R. 33 N.T.S.



PW — PAVEMENT WIDENING DETAIL
C.R. 33 N.T.S.



SEC2 — TYPICAL SECTION - 100' R.O.W.
C.R. 33 N.T.S.

ROADWAY PVMT. SPECIFICATIONS

1. 1.5" FRICTION COURSE FC 12.5
2. 1-1/2 INCHES OF FLORIDA DOT ASPHALTIC CONCRETE MIX OF TYPE SP-9.5 PLACED AND COMPACTED IN ACCORDANCE WITH FLORIDA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.
3. 6-INCHES OF CRUSHED CONCRETE OR LIMEROCK BASE FROM A FDOT APPROVED MATERIAL PROVIDER, MEETING THE MINIMUM LBR AND GRADATION REQUIREMENTS OF SECTION 911, AND COMPACTED TO A DENSITY OF NOT LESS THAN 98 PERCENT OF THE MATERIAL'S MODIFIED PROCTOR DENSITY VALUE AS DETERMINED BY AASHTO T-180 TEST METHOD.
4. 12-INCHES OF STABILIZED SUBGRADE, MINIMUM LBR EQUAL TO 40, AND COMPACTED TO A MINIMUM DENSITY EQUIVALENT TO 98 PERCENT OF THE SOIL'S MODIFIED PROCTOR DENSITY VALUE AS DETERMINED BY AASHTO T-180 TEST METHOD.

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

OFFSITE IMPROVEMENTS PLAN
FOR
LAKE HILLS SHOPPING CENTER
FLORIDA
TOWN OF HOWEY IN THE HILLS

WINDCREST DEVELOPMENT GROUP, INC.
605 E. ROBINSON ST. SUITE 340
ORLANDO, FL 32801
407-219-3540

#	DATE	REVISIONS
1		
2		
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BENJAMIN S. BECKHAM
LICENSE
NO. 79452
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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ENGINEER OF RECORD

JOB #	22041
DATE:	08/06/24
DATUM:	NAVD 88
DESIGNED BY:	KGS
DRAWN BY:	JAS
APPROVED BY:	BSB

C710

COUNTY ROAD 48, POSTED SPEED 45 MPH,DESIGN SPEED 45 MPH

KEY MAP
NTS

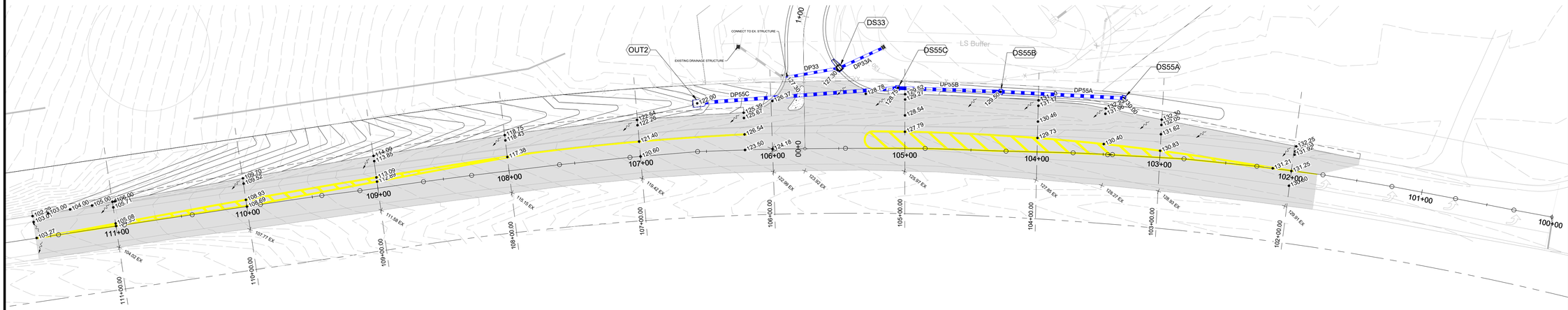
LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
		DRAINAGE EASEMENT (D.E.)
		EASEMENT (OTHER)
		CURB
		CURB AND GUTTER
		MIAMI CURB
		CONCRETE WALK
	22.80TC / 22.30EP / 26.80LP OR 26.80 OR 26.80	SPOT ELEVATION
		ROAD ℄ ELEVATION
30	30	CONTOUR (MAJOR)
29	29	CONTOUR (MINOR)
		DIRECTION OF SURFACE FLOW
		NORMAL WATER LEVEL
		SEASON HIGH WATER LEVEL
		POND MAINTENANCE BERM
ST-10	ST-10	STORM STRUCTURE NUMBER
	OR OR	STORM DRAINAGE MANHOLE
		STORM DRAINAGE INLET
		CONTROL STRUCTURE
	OR	OUTFALL STRUCTURE
	OUT-1	PIPE END (OUTFALL)

N
W E
S
0 20' 40' 80'
SCALE: 1"=40'

STORM STRUCTURE DATA	
NO.	STRUCTURE
DS33	RIM = 127.30' TYPE S INLET INV = 119.84 DP33A INV = 119.84 DP33
DS55A	RIM = 130.00' TYPE C INLET INV = 125.00 DP55A
DS55B	RIM = 129.50' TYPE C INLET INV = 124.50 DP55A INV = 124.50 DP55B
DS55C	RIM = 128.75' TYPE C INLET INV = 122.35 DP55B INV = 122.35 DP55C
OUT2	RIM = 119.25' MITER END SECTION INV = 122.00 DP55C

PIPE DATA				
NAME	SIZE	MATERIAL	PIPE LENGTH	SLOPE
DP33	18"	PP	41'	3.27%
DP33A	18"	PP	35'	4.53%
DP55A	24"	PP	93'	0.54%
DP55B	24"	PP	78'	2.76%
DP55C	24"	PP	148'	0.24%



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(407) 629-8330
CA# 0007723

OFFSITE DRAINAGE AND GRADING PLAN
FOR
LAKE HILLS SHOPPING CENTER
TOWN OF HOWEY IN THE HILLS FLORIDA

WINDCREST DEVELOPMENT GROUP, INC.
609 E. ROBINSON ST. SUITE 340
ORLANDO, FL 32801
407-219-3540

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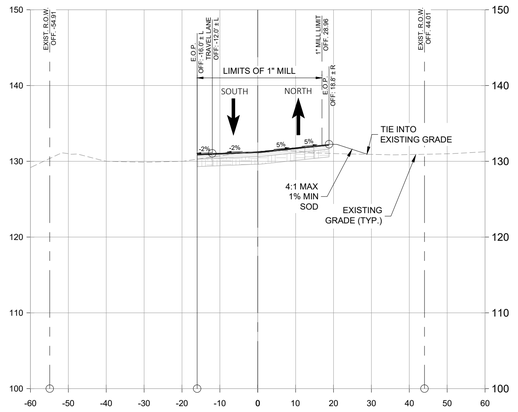
ENGINEER OF RECORD

JOB # 22041
DATE: 08/06/24
DATUM: NAVD 88
DESIGNED BY: KGS
DRAWN BY: JAS
APPROVED BY: BSB

C711

STA: 102+00.00
SCALE: H = 40, V = 20



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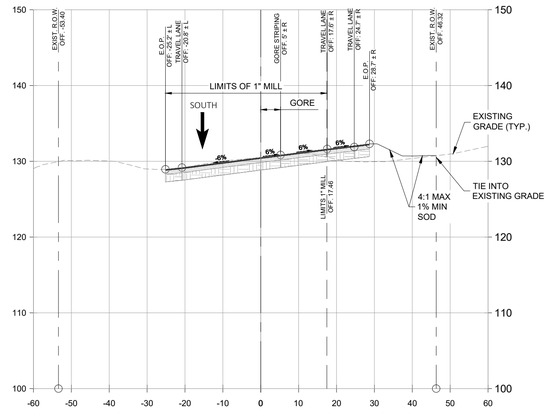

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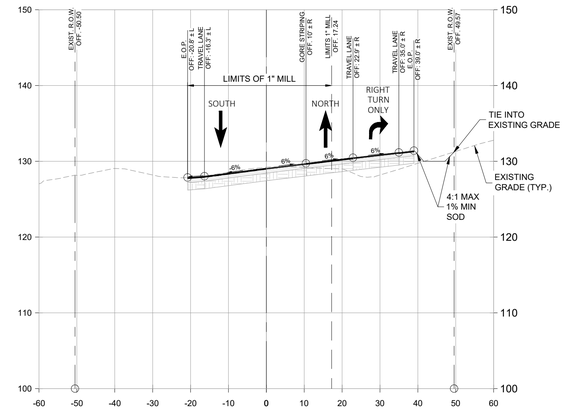

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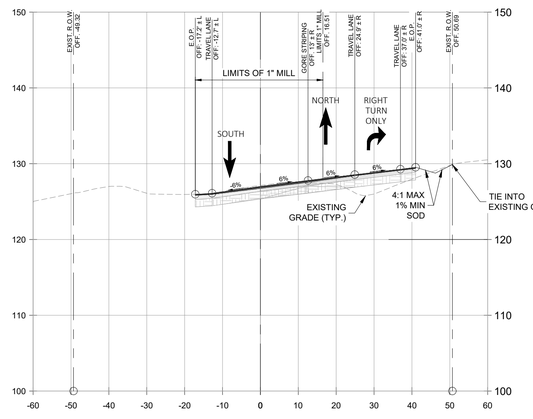

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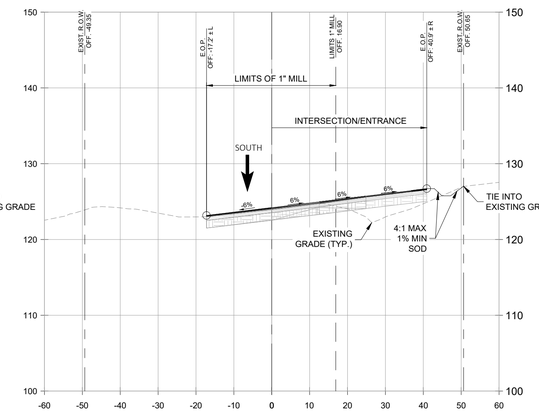

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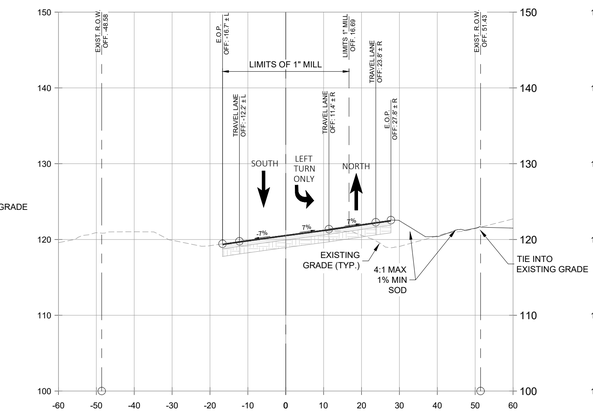

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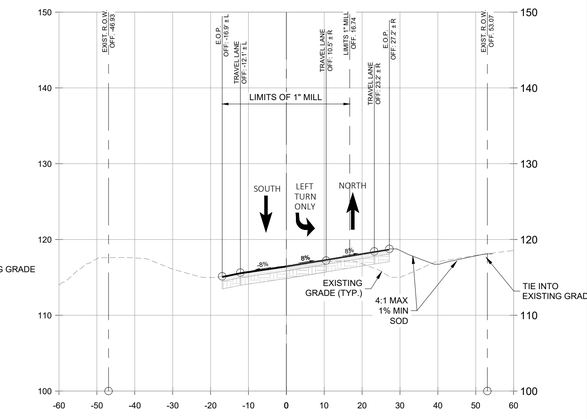

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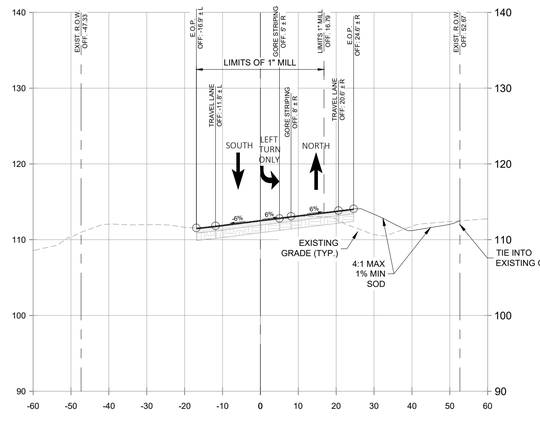

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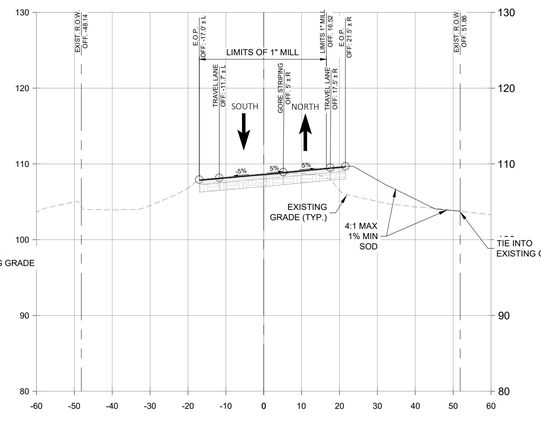

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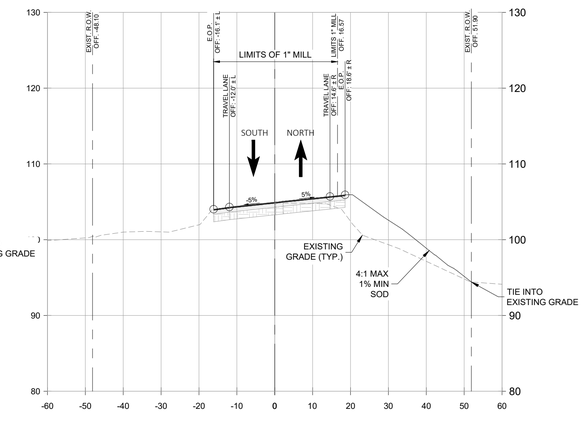

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(407) 629-8330
CA# 0007723

OFFSITE CROSS SECTIONS
FOR
LAKE HILLS SHOPPING CENTER
TOWN OF HOWEY IN THE HILLS FLORIDA

WINDCREST DEVELOPMENT GROUP, INC.
609 E. ROBINSON ST. SUITE 340
ORLANDO, FL 32801
407-219-3540

	DATE	REVISIONS
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BENJAMIN S. BECKHAM
LICENSE
NO. 79452
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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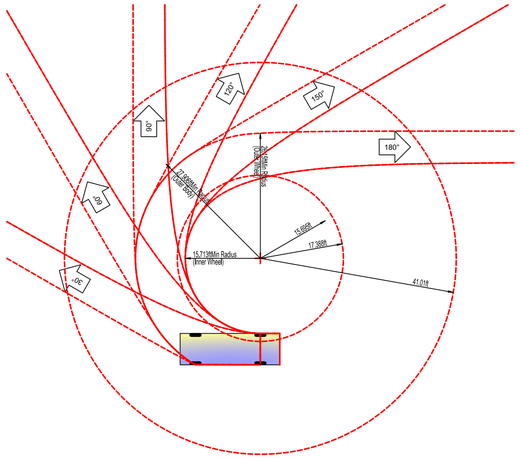
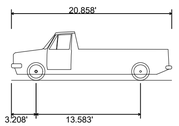
ENGINEER OF RECORD

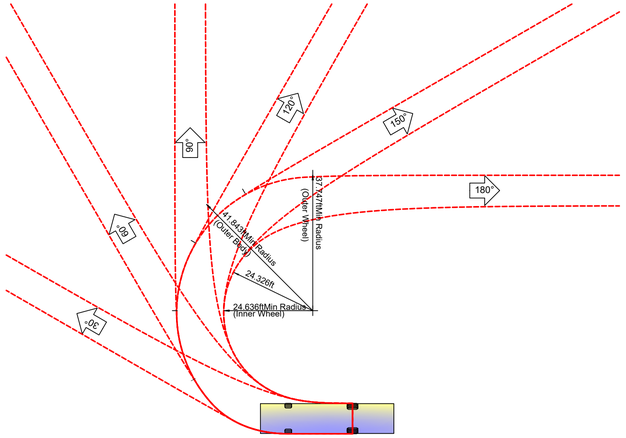
JOB #	22041
DATE:	08/06/24
DATUM:	NAVD 88
DESIGNED BY:	KGS
DRAWN BY:	JAS
APPROVED BY:	BSB

C712



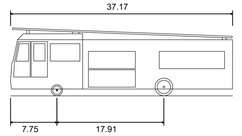


F-150 SUPERCAB 4X2 STYLESIDE 8' BOX
OVERALL LENGTH: 20.858'
TRACK WIDTH: 6.575'
LOCK-TO-LOCK TIME: 4.00 SEC
CURB TO CURB TURNING RADIUS: 26.150'



P75 AERIAL LADDER TRUCK TURNING TEMPLATE

N.T.S.

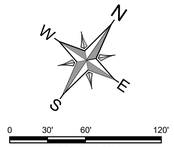


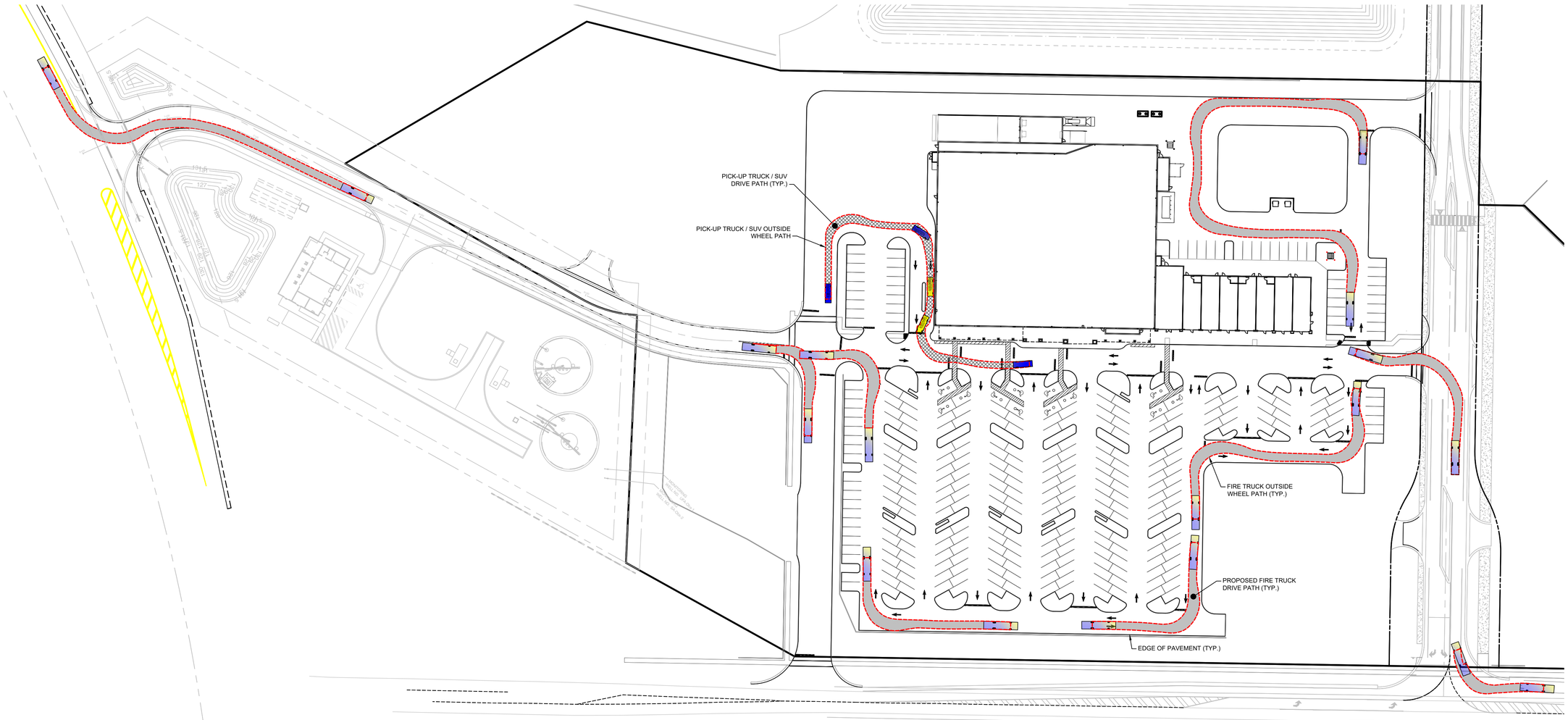
HP75 AERIAL LADDER TRUCK

OVERALL LENGTH: 37.17'
OVERALL WIDTH: 8.33'
TRACK WIDTH: 8.50'
LOCK-TO-LOCK TIME: 6.00S
MAX STEERING ANGLE (VIRTUAL): 31.80°

P75 AERIAL LADDER TRUCK VEHICLE PROFILE

N.T.S.





MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

VEHICULAR CIRCULATION PLAN

FOR

LAKE HILLS SHOPPING CENTER

TOWN OF HOWEY IN THE HILLS FLORIDA

WINDCREST DEVELOPMENT GROUP, INC.
605 E. ROBINSON ST. SUITE 340
ORLANDO, FL 32801
407-219-3540

	DATE	REVISIONS
1		
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BENJAMIN S. BECKHAM
LICENSE
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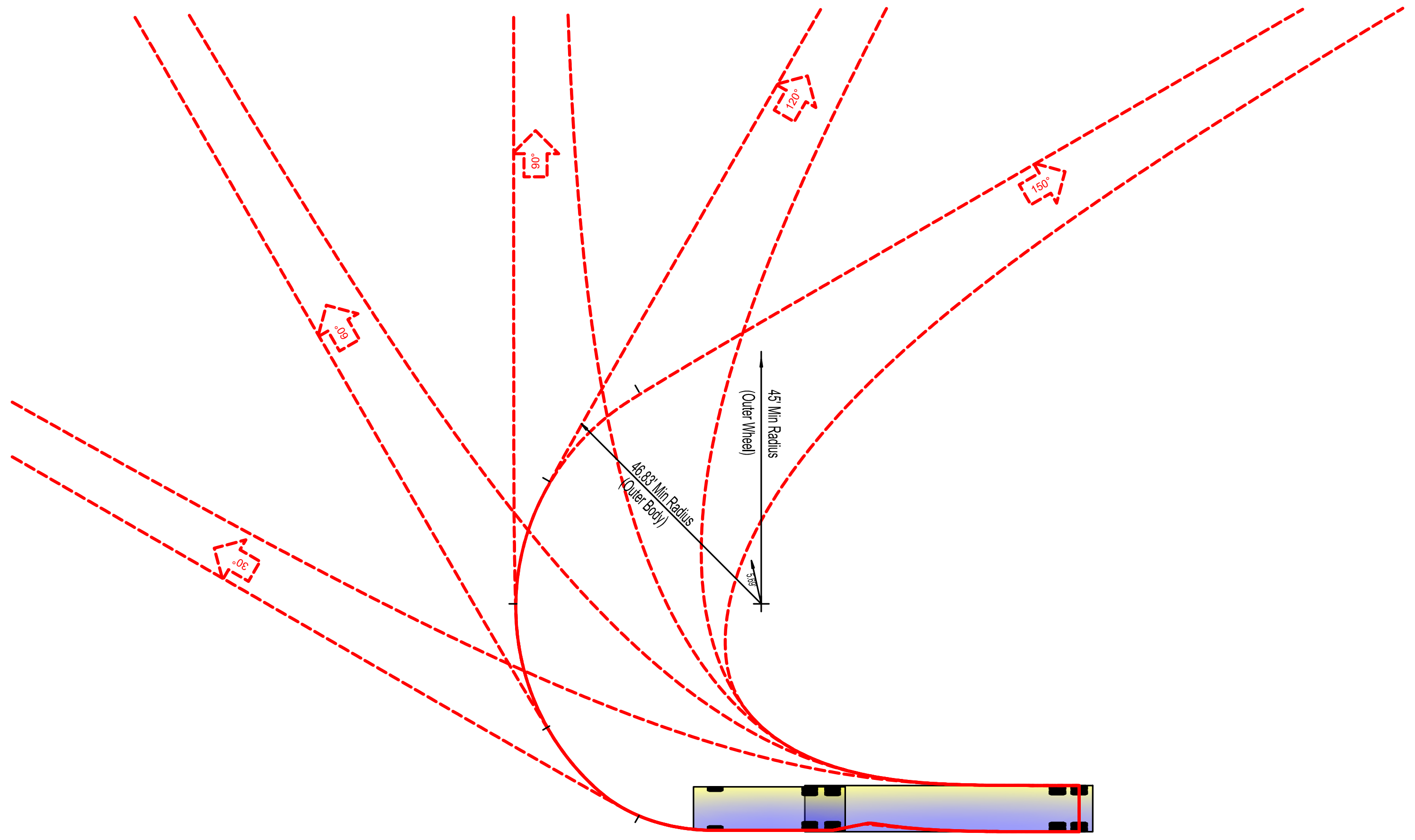
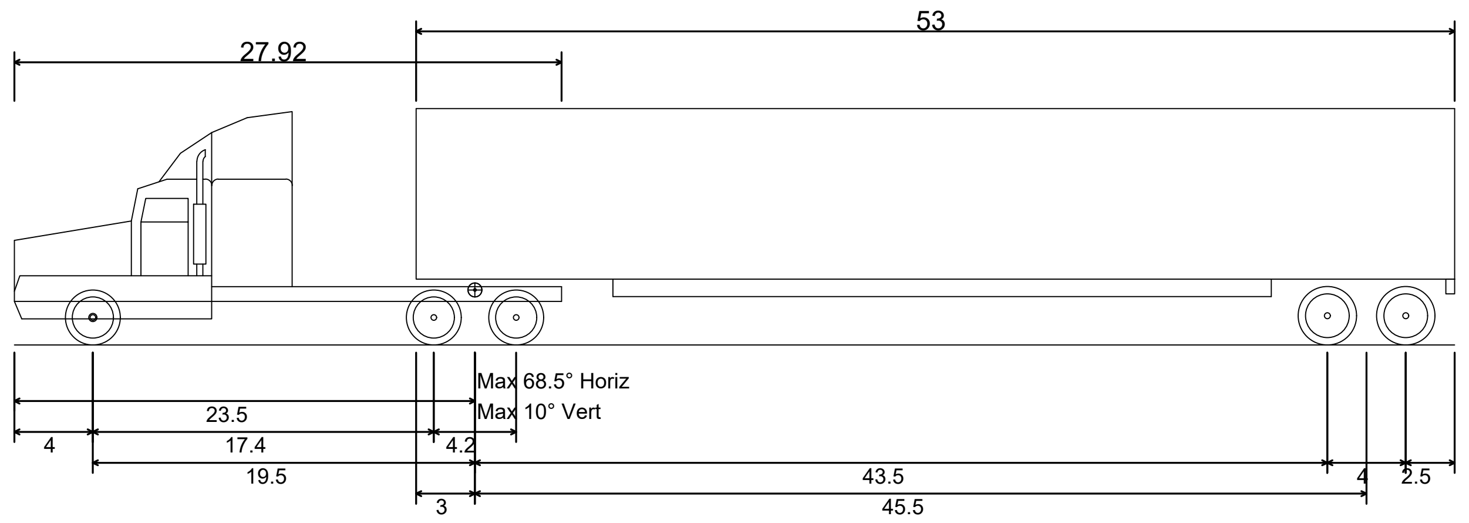
DESIGNED BY:	KGS
DRAWN BY:	JAS
APPROVED BY:	BSB

C800



WB-67 - INTERSTATE SEMI-TRAILER TURNING TEMPLATE

N.T.S.

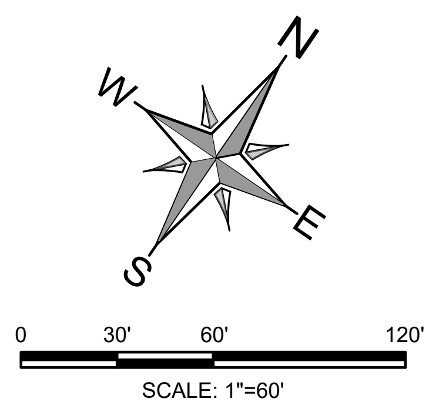


WB-67 - INTERSTATE SEMI-TRAILER

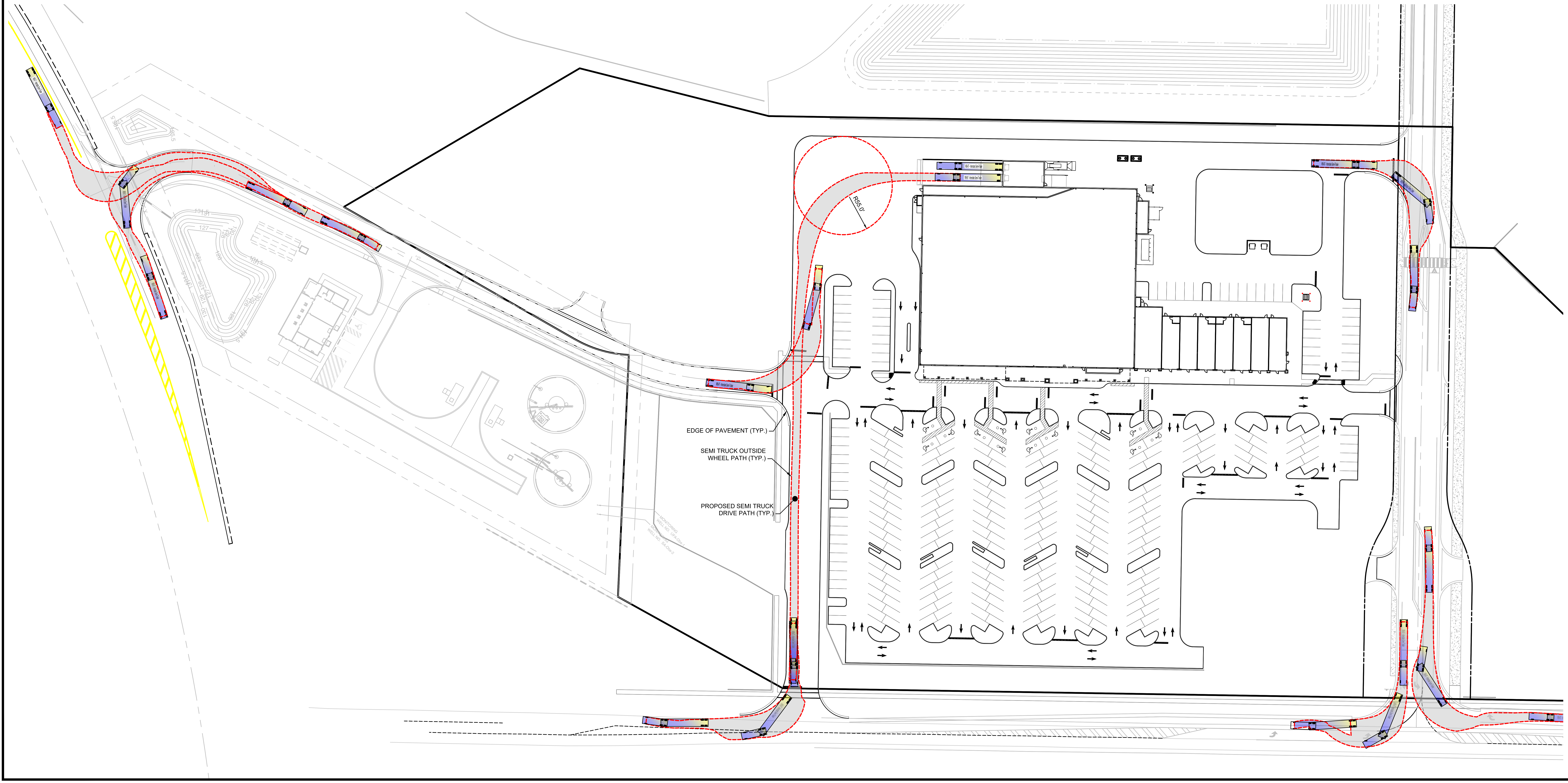
OVERALL LENGTH 73.50'
MAX TRACK WIDTH 8.50'
LOCK-TO-LOCK TIME: 6 sec
CURB TO CURB TURNING RADIUS: 45.00'

WB-67 - INTERSTATE SEMI-TRAILER VEHICLE PROFILE

N.T.S.



SCALE: 1"=60'



EDGE OF PAVEMENT (TYP.)

SEMI TRUCK OUTSIDE WHEEL PATH (TYP.)

PROPOSED SEMI TRUCK DRIVE PATH (TYP.)

MADDEN
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CIVIL ENGINEERS
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VEHICULAR CIRCULATION PLAN
FOR
LAKE HILLS SHOPPING CENTER
TOWN OF HOWEY IN THE HILLS FLORIDA

WINDCREST DEVELOPMENT GROUP, INC.
605 E. ROBINSON ST. SUITE 340
ORLANDO, FL 32801
407-219-3540

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BENJAMIN S. BECKHAM LICENSE NO. 79452 STATE OF FLORIDA PROFESSIONAL ENGINEER

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DESIGNED BY: KGS
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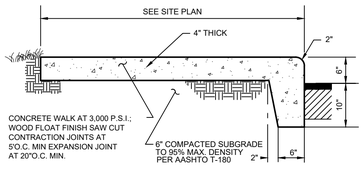
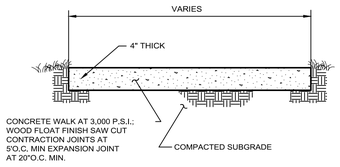
APPROVED BY: BSB

C801

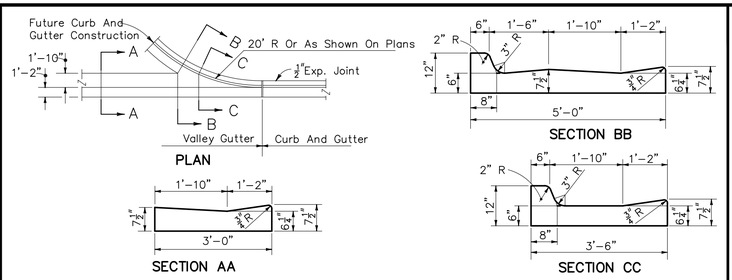
H:\Data\22MMS0410-Lake Harris Publix\Eng\Final\22041-C800-VEHICLE CIRCULATION PLAN.dwg January 10, 2025 2:36 PM



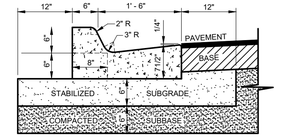
904 — CONC WALK & CURB
N.T.S.



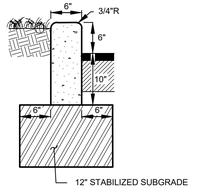
907 — CONCRETE WALK
N.T.S.



300V — VALLEY GUTTER DETAIL
N.T.S.



300F — STANDARD CURB AND GUTTER
N.T.S.



914 — VERTICAL CURB DETAIL

PAVEMENT SPECIFICATIONS

LIGHT DUTY

(1) 2" OF FDOT SUPERPAVE SP-9.5 FINE MIX FOR LIGHT-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.

(2) 6" OF LIME ROCK 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.

OR

6" OF RECYCLED CONCRETE AGGREGATE (RCA) BASE.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 CRITERIA LISTED IN THE LATEST EDITION OF THE FDOT ROAD AND BRIDGE CONSTRUCTION SPECIFICATIONS.

(3) 12" OF 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.

NOTE:
1. ROADS SHALL BE CONSTRUCTED PER TOWN OF HOWEY IN THE HILLS STANDARDS AND SPECIFICATIONS.

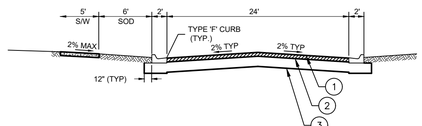
HEAVY DUTY

(4) 2.5" OF FDOT SUPERPAVE 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.

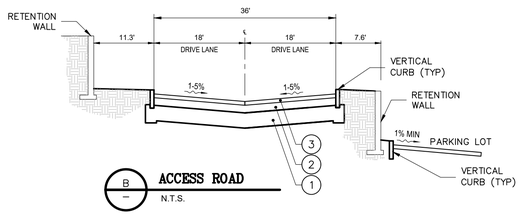
(5) 8" OF LIME ROCK BASE. THE BASE COURSE SHOULD BE COMPACTED TO A MINIMUM DENSITY OF 98 PERCENT OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY AND EXHIBIT A MINIMUM LBR OF 100. THE LIMEROCK MATERIAL SHOULD COMPLY WITH THE LATEST EDITION OF THE FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) ROAD AND BRIDGE CONSTRUCTION SPECIFICATIONS.

OR

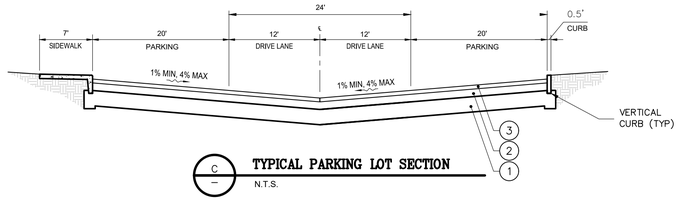
8" RECYCLED CONCRETE AGGREGATE (RCA) BASE.THE BASE COURSE MATERIAL SHOULD BE SOURCED FROM AN FDOT APPROVED SUPPLIER. THE BASE SHOULD BE COMPACTED TO A MINIMUM DENSITY OF 98 PERCENT OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY AND EXHIBIT A MINIMUM LBR OF 150. THE BASE MATERIAL SHOULD COMPLY WITH THE CRITERIA LISTED IN THE LATEST EDITION OF THE FDOT ROAD AND BRIDGE CONSTRUCTION SPECIFICATIONS.



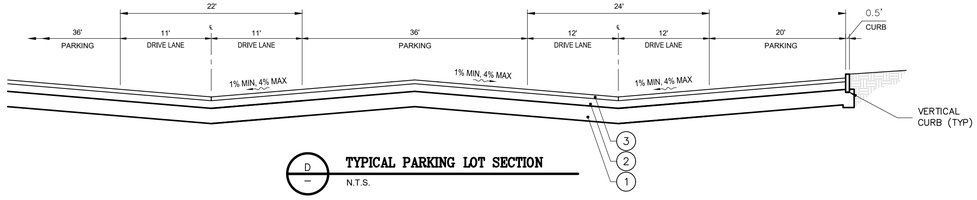
A — 50' RIGHT OF WAY SECTION (TYP.)
NOT TO SCALE



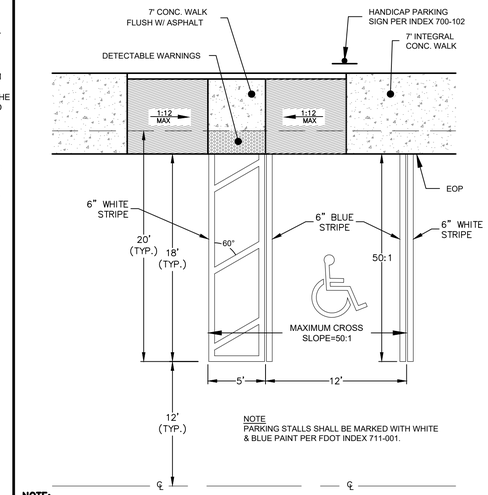
B — ACCESS ROAD
N.T.S.



C — TYPICAL PARKING LOT SECTION
N.T.S.



D — TYPICAL PARKING LOT SECTION
N.T.S.



NOTE
PARKING STALLS SHALL BE MARKED WITH WHITE & BLUE PAINT PER FDOT INDEX 711-001.

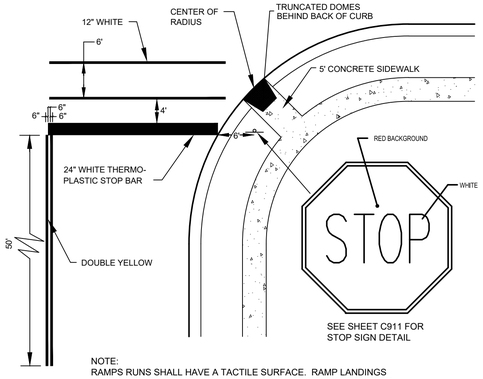
NOTE:

1. ACCESSIBILITY:
   A. IN ACCORDANCE WITH THE FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION, 4.1.3 SECTION (1). DATED OCT. 1997 AT LEAST ONE ACCESSIBLE ROUTE COMPLYING WITH 4.3 SHALL CONNECT ACCESSIBLE BUILDING OR FACILITY ENTRANCES WITH ALL ACCESSIBLE SPACES AND ELEMENTS WITHIN THE BUILDING OR FACILITY. DOORS ACCESSING THE BUILDING MUST BE DEPICTED ON SITE PLAN. RAMP DETAILS WITH SLOPE INFORMATION SHALL BE DEPICTED ON SITE PLAN.
   B. THE LOCATION OF HANDICAPPED PARKING STALLS, LOADING ZONES, SIDEWALKS AND RAMPS ON SITE SHALL MEET CHAPTER 316.1955 OF THE FLORIDA ACCESSIBILITY CODE: RAMPS SHALL NOT EXCEED 12:1 SLOPES PARKING SPACE AND AISLE SHALL NOT EXCEED 50:1 CROSS-SLOPE. (TLO 11-16-96) 12-11-96

NOTE: (HANDICAP SIGN ONLY)

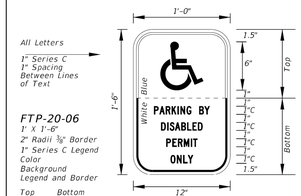
1. ALL LETTERS SHALL BE BLACK AND SHALL CONFORM TO FDOT "DESIGN STANDARDS", CURRENT EDITION.
2. TOP PORTION OF SIGN SHALL HAVE REFLECTORIZED (ENGINEERING GRADE) BLUE BACKGROUND WITH WHITE REFLECTORIZED LEGEND AND BORDER.
3. BOTTOM PORTION OF SIGN SHALL HAVE A REFLECTORIZED (ENGINEERING GRADE) WHITE BACKGROUND WITH BLACK BORDER.
4. ONE SIGN REQUIRED FOR EACH PARKING SPACE.
5. BOTTOM OF SIGN SHALL BE 7' ABOVE GROUND IN ACCORDANCE WITH FDOT "DESIGN STANDARDS", CURRENT EDITION.

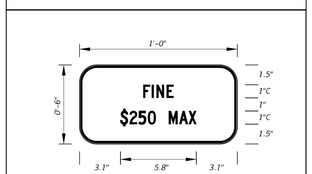
818 — HANDICAP RAMP AND PARKING STALL DETAIL
N.T.S.



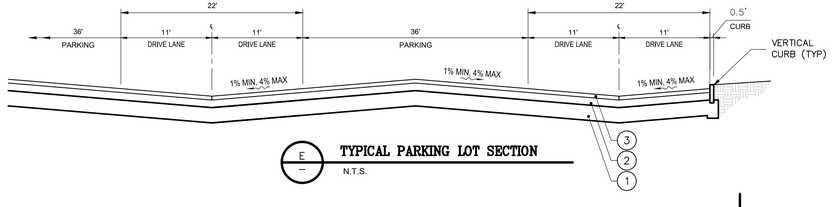
NOTE:
RAMPS RUNS SHALL HAVE A TACTILE SURFACE. RAMP LANDINGS ADJOINING VEHICULAR WAYS SHALL HAVE A TACTILE SURFACE 36" WIDE BORDERING THE VEHICULAR WAY. TACTILE SURFACES SHALL BE CONSTRUCTED AS SHOWN ON DETAIL TD ON SHEET DT-3.

917 — STOP SIGN, BAR AND CROSSWALK
N.T.S.

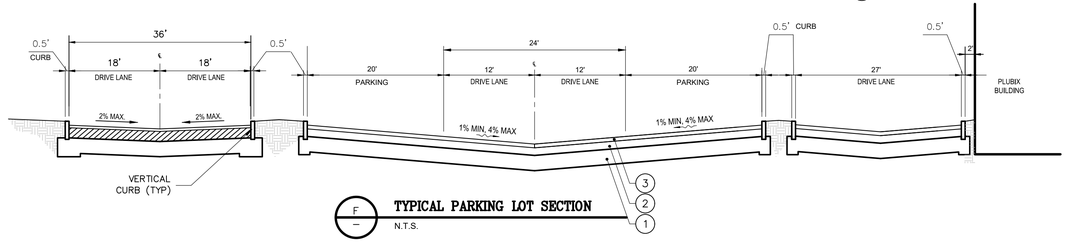




FDOT INDEX 700-102



E — TYPICAL PARKING LOT SECTION
N.T.S.



F — TYPICAL PARKING LOT SECTION
N.T.S.

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

CONSTRUCTION DETAILS
FOR
LAKE HILLS SHOPPING CENTER
FLORIDA
TOWN OF HOWEY IN THE HILLS

WINDCREST DEVELOPMENT GROUP, INC.
605 E. ROBINSON ST. SUITE 340
ORLANDO, FL 32801
407-219-3540

#	DATE	REVISIONS
1		
2		
3		
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11		

BENJAMIN S. BECKHAM LICENSE NO. 79452 STATE OF FLORIDA PROFESSIONAL ENGINEER

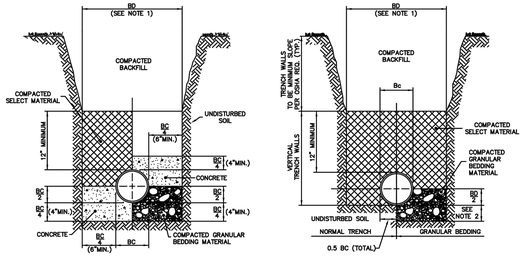
This item has been digitally signed and sealed by Benjamin S. Beckham, PE on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

ENGINEER OF RECORD

JOB #	22041
DATE:	08/06/24
DATUM:	NAVD 88
DESIGNED BY:	KGS
DRAWN BY:	JAS
APPROVED BY:	BSB

C900



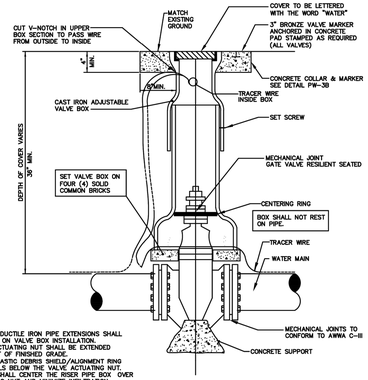
CLASS "A" BEDDING
SPECIAL CONDITIONS

CLASS "B" BEDDING
NORMAL CONDITIONS

NOTES: FOR BEDDING AND TRENCHING

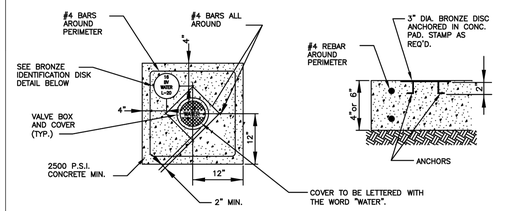
1. DIMENSION BC = PIPE O.D.
   DIMENSION BD = BC + 16"
   MAXIMUM BD = BC + 30"
   MINIMUM BD = MAXIMUM DIMENSION OF BELL + 8" (UNSHEETED TRENCH)
2. DEPTH FOR REMOVAL FOR UNSUITABLE MATERIAL SHALL BE AS REQUIRED TO REACH SUITABLE FOUNDATION. FOR ROCK OR OTHER NON-CUSHIONING MATERIAL, DEPTH SHALL BE 6" 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

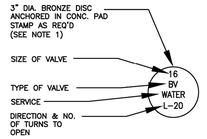


NOTES
1. PVC PIPE OR DUCTILE IRON PIPE EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.
2. THE VALVE ACTUATING NUT SHALL BE EXTENDED WITHIN 2 FEET OF FINISHED GRADE.
3. PROVIDE A PLASTIC DEBRIS SHIELD/ALIGNMENT RING WHICH INSTALLS BELOW THE VALVE ACTUATING NUT. THIS SHIELD SHALL CENTER THE RISER 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

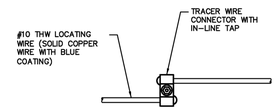


NOTE:
1. BRONZE IDENTIFICATION DISC SHALL BE REQUIRED FOR ALL VALVES.
2. 6" THICK CONCRETE PAD IN ROADWAY OR PAVED AREAS, 4" THICK CONCRETE PAD IN OTHER AREAS.



BRONZE IDENTIFICATION DISC DETAIL

VALVE COLLAR
NOT TO SCALE



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

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:

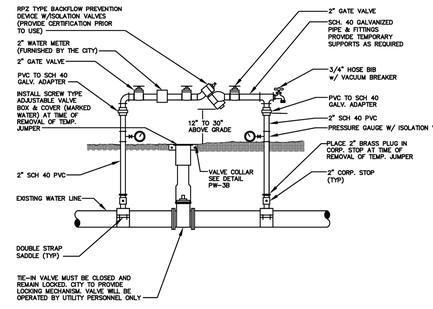
   A. THE TIE-IN VALVES SHALL BE OPERATED AND PRESSURE TESTED IN THE PRESENCE OF THE UTILITY COMPANY AND ENGINEER TO VERIFY WATER TIGHTNESS PRIOR TO THE TIE-IN. VALVES WHICH ARE NOT WATERTIGHT SHALL BE REPLACED OR A NEW VALVE INSTALLED IMMEDIATELY ADJACENT TO THE LEAKING VALVE.

   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.



TEMPORARY JUMPER CONNECTION
NOT TO SCALE

NOTE: LOCATION TO BE DETERMINED AT TIME OF PRECONSTRUCTION CONFERENCE W/ CITY.

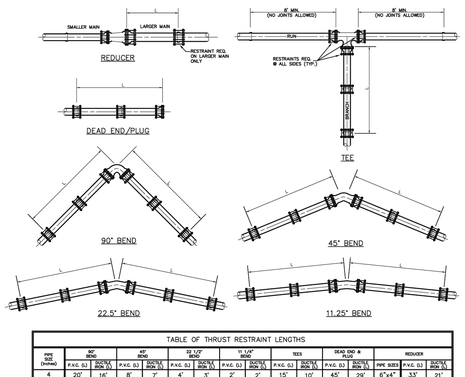
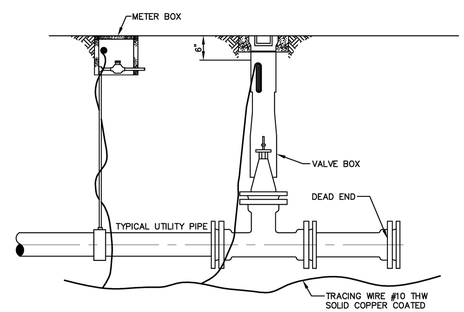


TABLE OF THRUST RESTRAINT LENGTHS

PIPE SIZE (Inches)	90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND		TEES		DEAD END & PLUG		REDUCER		
	P.V.C. (L)	DUCTILE IRON (L)	P.V.C. (L)	DUCTILE IRON (L)	P.V.C. (L)	DUCTILE IRON (L)	P.V.C. (L)	DUCTILE IRON (L)	P.V.C. (L)	DUCTILE IRON (L)	P.V.C. (L)	DUCTILE IRON (L)	PIPE SIZES	P.V.C. (L)	DUCTILE IRON (L)
4	20'	16'	8'	7'	4'	3'	2'	2'	15'	10'	45'	29'	6"x4"	33'	21'
6	28'	22'	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



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

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

CITY DETAILS
FOR
LAKE HILLS SHOPPING CENTER
FLORIDA
TOWN OF HOWEY IN THE HILLS

WINDCREST DEVELOPMENT GROUP, INC.
605 E. ROBINSON ST. SUITE 340
ORLANDO, FL 32801
407-219-3540

DATE	REVISIONS
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BENJAMIN S. BECKHAM
LICENSE NO. 79452
STATE OF FLORIDA
PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by Benjamin S. Beckham, PE on the date adjacent to the seal.

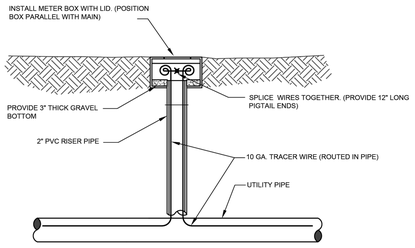
Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

ENGINEER OF RECORD

JOB #	22041
DATE:	08/06/24
DATUM:	NAVD 88
DESIGNED BY:	KGS
DRAWN BY:	JAS
APPROVED BY:	BSB

C910

Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL PW-2
Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL PW-3A
Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL PW-3B
Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL PW-5
Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL PW-6B
Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL PW-6A
Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL PW-7
Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL PW-8



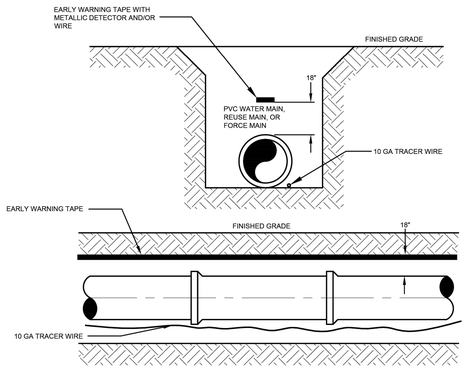
TRACER WIRE BOX UTILIZING METER BOX

NOTES:

1. TRACER WIRE STATION BOX TO BE INSTALLED WHERE THE WIRE CANNOT BE BROUGHT TO GRADE IN A VALVE BOX WITHIN THE MANDATORY 500 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



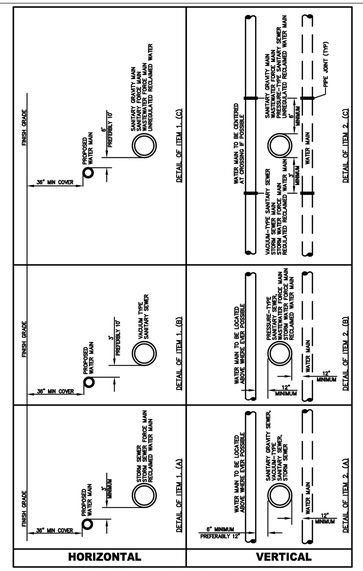
NOTES:

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

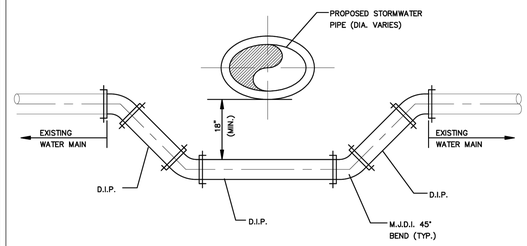
Howey-in-the-Hills
Standard Details
DATE: FEB 2022
DETAIL PW-10



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
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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 62CELL 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 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.

Howey-in-the-Hills
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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
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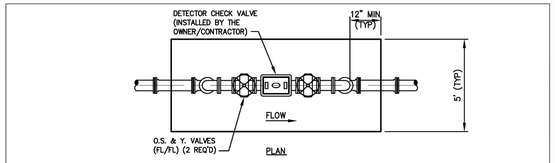
GENERAL WATER NOTES

(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.

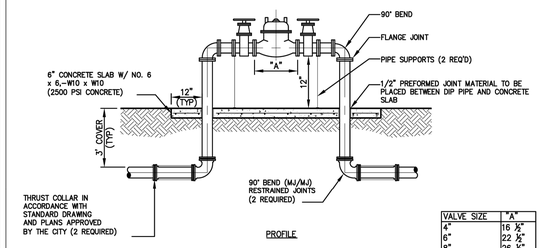
(B) WHERE AN UNDERGROUND WATER MAIN IS BEING LAID LESS THAN THREE FEET HORIZONTALLY FROM ANOTHER PIPELINE AND WHERE AN UNDERGROUND WATER MAIN IS CROSSING ANOTHER PIPELINE AND IS BEING LAID LESS THAN THE REQUIRED MINIMUM VERTICAL DISTANCE FROM THE OTHER PIPELINE:
1. USE OF PIPE, OR CASING PIPE, HAVING 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;
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



PLAN

NOTE:
INSERT BACKFLOW PREVENTION DEVICE WHEN REQUIRED BY CITY



PROFILE

VALVE SIZE	"A"
4"	16 ½"
6"	22 ½"
8"	26 ½"

NOTES:

1. ALL ABOVE GROUND PIPE JOINTS SHALL BE FLANGED.
2. DETECTOR CHECK VALVE SHALL BE INSTALLED BY THE CONTRACTOR.

DETECTOR CHECK VALVE ASSEMBLY

NOT TO SCALE

Howey-in-the-Hills
Standard Details
DATE: FEB 2022
DETAIL PW-12

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

CITY DETAILS

FOR

LAKE HILLS SHOPPING CENTER

TOWN OF HOWEY IN THE HILLS FLORIDA

WINDCREST DEVELOPMENT GROUP, INC.
605 E. ROBINSON ST. SUITE 340
ORLANDO, FL 32801
407-219-3540

DATE	REVISIONS
1	
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BENJAMIN S. BECKHAM
LICENSE NO. 79452
STATE OF FLORIDA
PROFESSIONAL ENGINEER

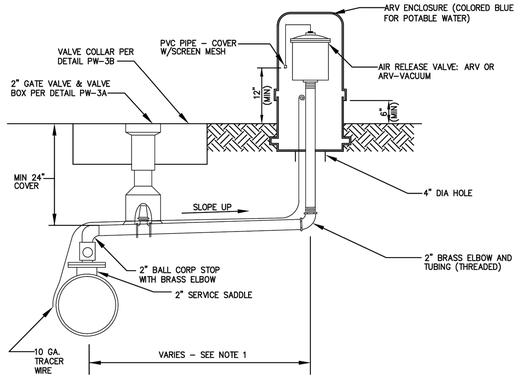
This item has been digitally signed and sealed by Benjamin S. Beckham, PE on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

ENGINEER OF RECORD

JOB #	22041
DATE:	08/06/24
DATUM:	NAVD 88
DESIGNED BY:	KGS
DRAWN BY:	JAS
APPROVED BY:	BSB

C911



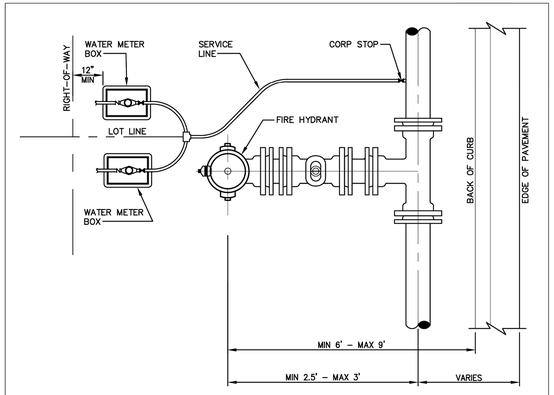
NOTES:

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



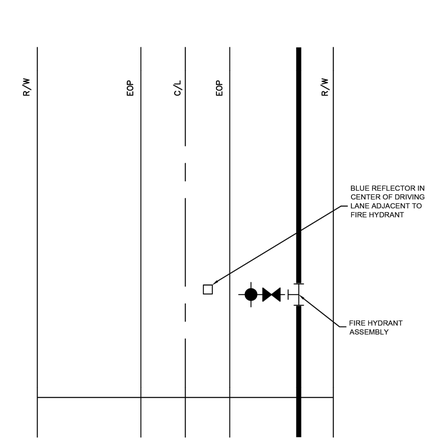
NOTES:

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

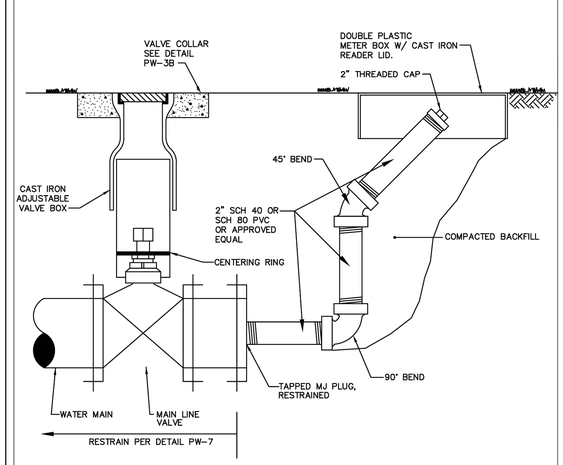
Howey-in-the-Hills Standard Details | DATE: FEB 2022 | DETAIL PW-14



FIRE HYDRANT REFLECTOR

NOT TO SCALE

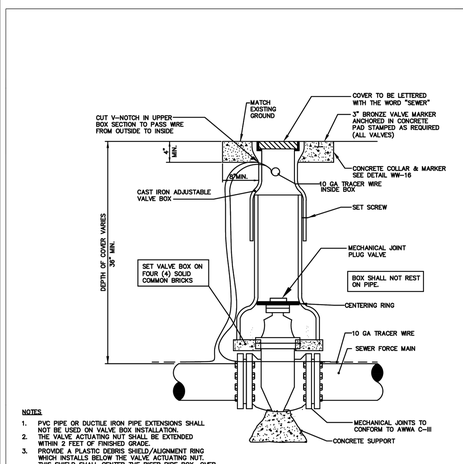
Howey-in-the-Hills Standard Details | DATE: FEB 2022 | DETAIL PW-15



BLOWOFF VALVE

NOT TO SCALE

Howey-in-the-Hills Standard Details | DATE: FEB 2022 | DETAIL PW-16



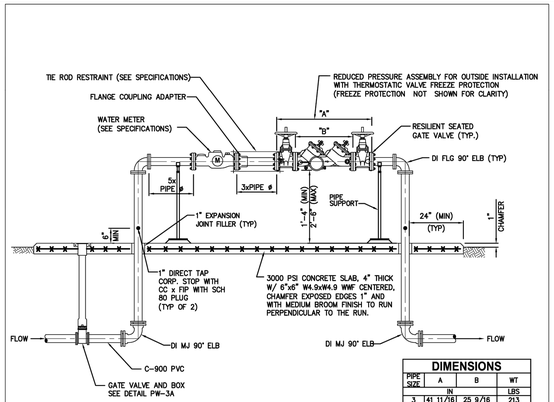
NOTES

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.
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.

PLUG VALVE AND BOX

NOT TO SCALE

Howey-in-the-Hills Standard Details | DATE: FEB 2022 | DETAIL WW-13



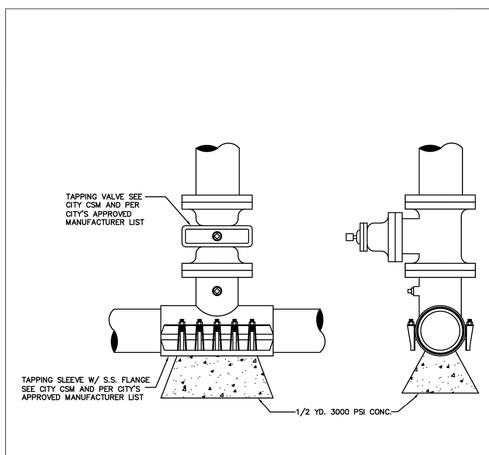
DIMENSIONS			
PIPE SIZE	A	B	WT
	IN		LBS
3	41 11/16	25 9/16	213
4	50 7/16	32 5/16	360
6	59 11/16	38 9/16	601
8	69 3/16	46 1/16	892
10	84 3/16	58 1/16	1593

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

Howey-in-the-Hills Standard Details | DATE: FEB 2022 | DETAIL PW-23



WET TAP SLEEVE AND TAPPING VALVE

NOT TO SCALE

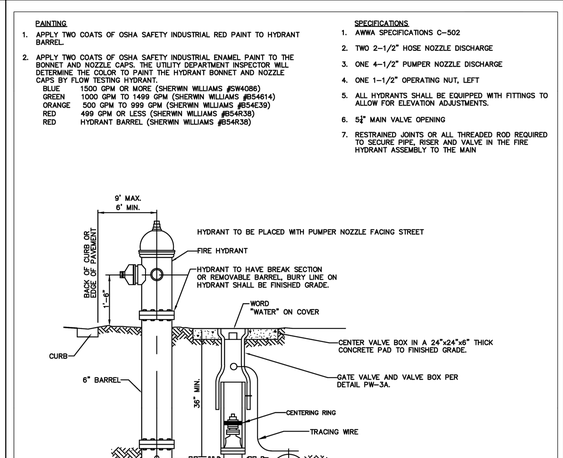
Howey-in-the-Hills Standard Details | DATE: FEB 2022 | DETAIL PW-17

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

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

CITY DETAILS

FOR

LAKE HILLS SHOPPING CENTER

TOWN OF HOWEY IN THE HILLS FLORIDA

WINDCREST DEVELOPMENT GROUP, INC.
605 E. ROBINSON ST. SUITE 340
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407-219-3540

DATE	REVISIONS
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BENJAMIN S. BECKHAM LICENSE NO. 79452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by Benjamin S. Beckham, PE 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.

ENGINEER OF RECORD

JOB #	22041
DATE:	08/06/24
DATUM:	NAVD 88
DESIGNED BY:	KGS
DRAWN BY:	JAS
APPROVED BY:	BSB

C912

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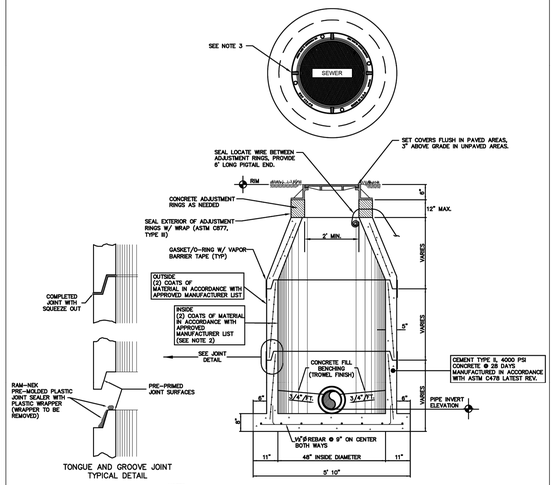


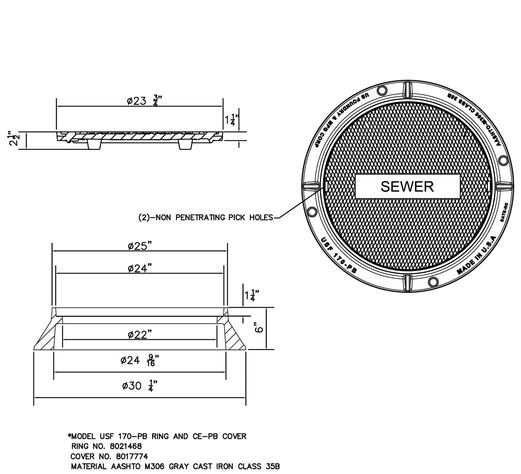
NOTES:

1. ALTERNATE-PRECAST MANHOLE TOPS MUST BE APPROVED IN ADVANCE.
2. LINER (100 MILS DFT) SHALL BE USED WHERE SHOWN ON DRAWINGS AND/OR REQUIRED BY THE CITY.
3. MANHOLE LID TO BE CENTERED OVER EFFLUENT PIPE.
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

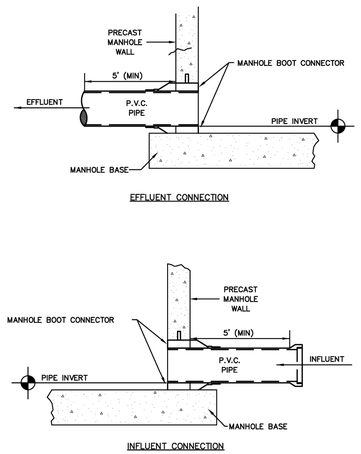


*MODEL USF 170-PB RING AND CE-PB COVER
RING NO. 8021468
COVER NO. 8017774
MATERIAL AASHTO M306 GRAY CAST IRON CLASS 35B

SANITARY MANHOLE COVER

NOT TO SCALE

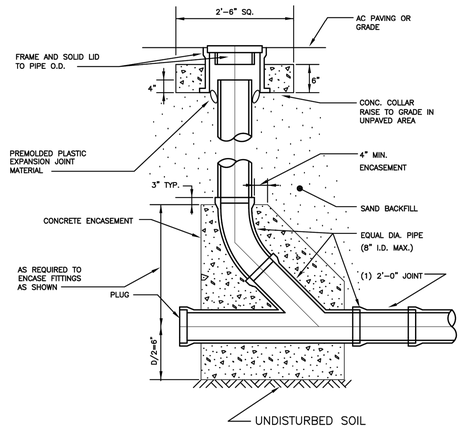
Howey-in-the-Hills Standard Details	DATE: FEB 2022
	DETAIL WW-2



PIPE CONNECTION TO PRECAST SANITARY MANHOLE

NOT TO SCALE

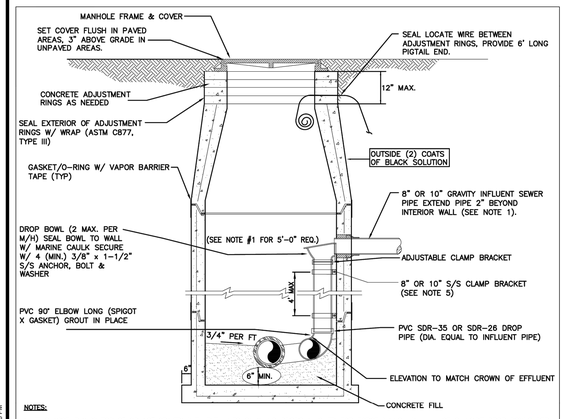
Howey-in-the-Hills Standard Details	DATE: FEB 2022
	DETAIL WW-3



GRAVITY CLEAN-OUT

NOT TO SCALE

Howey-in-the-Hills Standard Details	DATE: FEB 2022
	DETAIL WW-9



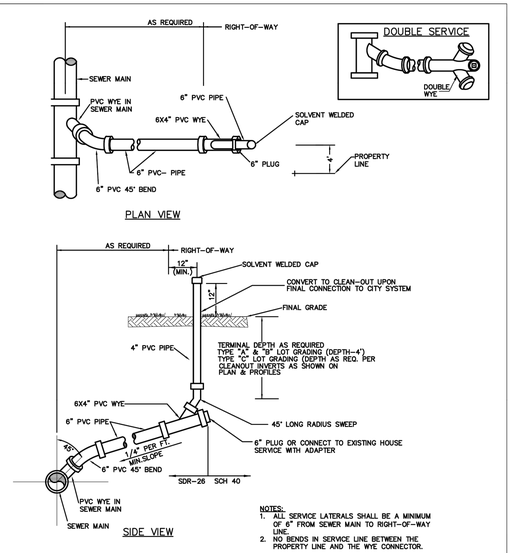
NOTES:

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-NEX 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



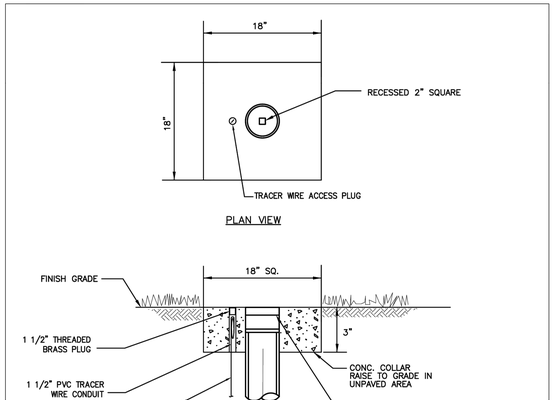
NOTES:

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

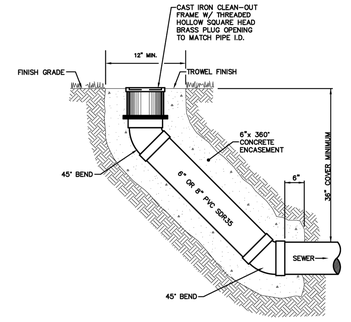
Howey-in-the-Hills Standard Details	DATE: FEB 2022
	DETAIL WW-6



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

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

CITY DETAILS

FOR

LAKE HILLS SHOPPING CENTER

FLORIDA

TOWN OF HOWEY IN THE HILLS

WINDCREST DEVELOPMENT GROUP, INC.
605 E. ROBINSON ST. SUITE 340
ORLANDO, FL 32801
407-219-3540

DATE	REVISIONS
	1
	2
	3
	4
	5
	6
	7
	8
	9
	10
	11

BENJAMIN S. BECKHAM
LICENSE NO. 79452
STATE OF FLORIDA
PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by Benjamin S. Beckham, PE on the date adjacent to the seal.

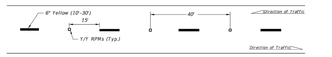
Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

ENGINEER OF RECORD

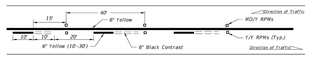
JOB #	22041
DATE:	08/06/24
DATUM:	NAVD 88
DESIGNED BY:	KGS
DRAWN BY:	JAS
APPROVED BY:	BSB

C913

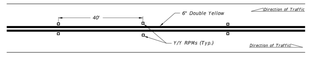
ALTERNATING SKIP LINE



SKIP LINE



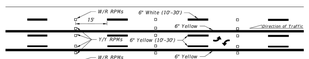
SOLID LINE WITH ALTERNATING SKIP



DOUBLE SOLID LINE

MULTILANE

SOLID LINE WITH SKIP



SKIP LINE WITH TWO-WAY LEFT TURN LANE

ALTERNATING SKIP LINE WITH TWO-WAY LEFT TURN LANE

NOTES:

1. Offset all RPMs 1" from solid longitudinal lines unless otherwise noted or shown.
2. Spacing may be reduced for sharp curves if required.
3. For placement of RPMs on ramps, see Index 711-003.
4. Make the traffic face of the RPM the same color as the pavement marking that it is supplementing.

LEGEND:

BLT = BACK OF CURB

EOP = EDGE OF PAVEMENT

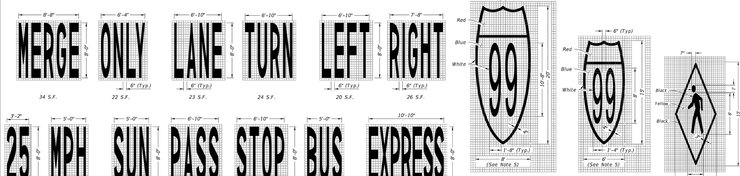
RPM = RAISED PAVEMENT MARKER

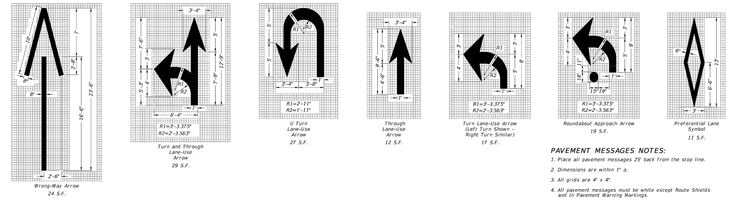
W/R = WHITE/RED RPM

Y/Y = YELLOW/YELLOW RPM

Y/R = YELLOW/RED RPM

MD/Y = MONO-DIRECTIONAL YELLOW RPM

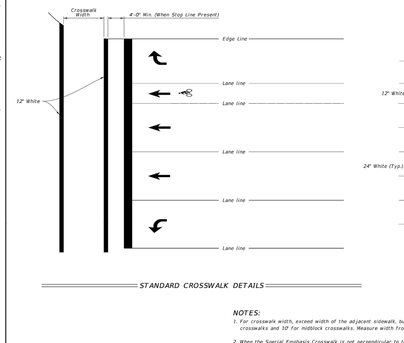




PAVEMENT MESSAGE AND ARROW DETAILS

PAVEMENT MESSAGES NOTES:

1. Place all pavement messages 25' back from the stop line.
2. Dimensions are within 1" ±.
3. All grids are 4' x 4'.
4. All pavement messages must be white except Route Shields and In Pavement Warning Markings.
5. Increase width of route shield for routes with three digits.

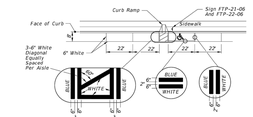


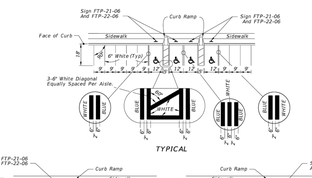
STANDARD CROSSWALK DETAILS

SPECIAL EMPHASIS CROSSWALK DETAILS

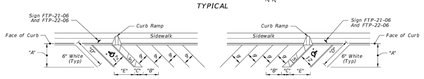
NOTES:

1. For crosswalk width, exceed width of the adjacent sidewalk, but do not make width less than 6' for intersection crosswalks and 10' for midblock crosswalks. Measure width from the inside of the transverse crosswalk markings.
2. When the Special Emphasis Crosswalk is not perpendicular to the lane lines, make the longitudinal markings parallel to the lane lines.
3. Refer to Index 522-002 when Curb Ramps are present.





TYPICAL



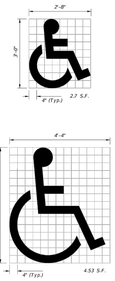
FORWARD-IN PARKING

REVERSE-IN PARKING

*FOR ACCESSIBLE MARKINGS - SEE ABOVE

DIMENSIONS					
A, B	"A"	"B"	"C"	"D"	"E"
45°	17'-0"	12'-0"	7'-0"	24'-0"	17'-0"

PAVEMENT MARKING FOR PARKING



(See Note 5)

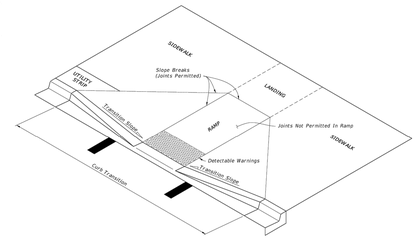
UNIVERSAL SYMBOL OF ACCESSIBILITY

NOTES:

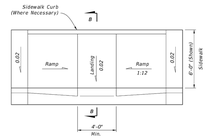
1. Dimensions are to the centerline of markings.
2. An Access Aisle is required for each accessible space when angle parking is used.
3. Criteria for pavement markings only, not public sidewalk curb ramp locations. For ramp locations refer to plans.
4. Mount FTP-22-06 sign below the FTP-21-06 sign.
5. Use of the pavement symbol in accessible parking spaces is optional. When pavement symbol is used, the symbol is either 3'-0" or 5'-0" high and white in color.

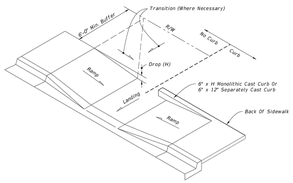
GENERAL NOTES:

1. Cross Slopes and Grades:
   - A. Sidewalk, ramp, and landing slopes (i.e. 0.02, 0.05, and 1:12) shown in this Index are maximums. With approval of the Engineer, provide the minimum feasible slope where the requirements cannot be met.
   - B. Landings must have cross-slopes less than or equal to 0.02 in any direction.
   - C. Maintain a single longitudinal slope along each side of the curb ramp. Ramp slopes are not required to exceed 15 feet in length.
   - D. Joints permitted at the location of Slope Breaks. Otherwise locate joints in accordance with Index 522-001. No joints are permitted within the ramp portion of the Curb Ramp.
2. Curb, Curb and Gutter and/or Sidewalk:
   - A. Refer to Index 522-001 for concrete thickness and sidewalk details.
   - B. Remove any existing curb, curb and gutter, or sidewalk to the nearest joint beyond the curb transition or to the extent that no remaining section is less than 5 feet long.
   - C. Width of Curb Ramp is 4'-0" minimum. Match sidewalk or Shared Use Path width as shown in the Plans.
3. Curb Ramp Alpha-Identification:
   - A. Sidewalk curb ramp alpha-identifications (e.g. CR-A) are provided for reference purposes in the Plans.
   - B. Alpha-identifications CR-I and CR-J are intentionally omitted.
4. Detectable Warnings:
   - A. Install detectable warnings in accordance with Specification 527.
   - B. Place detectable warnings across the full width of the ramp or landing, to a minimum depth of 2 feet measured perpendicular to the curb line and no greater than 5 feet from the back of the curb or edge of pavement.
   - C. If detectable warnings are shown in the Plans on slopes greater than 5%, align the truncated domes with the centerline of the ramp; otherwise, the truncated domes are not required to be aligned.

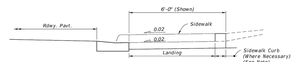


CURB RAMP NOMENCLATURE





CONSTRUCTION OF SIDEWALK CURB IN CUT SECTIONS



NOTE: For additional information on sidewalk curb construction, see SIDEWALK CURB OPTIONS details.

SECTION B-B

MONOLITHIC CAST CURB

SEPARATELY CAST CURB

SIDEWALK CURB OPTIONS

SIDEWALK CURB RAMPS CR-C AND SIDEWALK CURB

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

FDOT DETAILS FOR LAKE HILLS SHOPPING CENTER FLORIDA

TOWN OF HOVEY IN THE HILLS

WINDCREST DEVELOPMENT GROUP, INC.
605 E. ROBINSON ST. SUITE 340
ORLANDO, FL 32801
407-219-3540

1	2	3	4	5	6	7	8	9	10	11	DATE	REVISIONS

BENJAMIN S. BECKHAM LICENSE NO. 79452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by Benjamin S. Beckham, PE 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.

ENGINEER OF RECORD

JOB # 22041
DATE: 08/06/24
DATUM: NAVD 88
DESIGNED BY: KGS
DRAWN BY: JAS
APPROVED BY: BSB

C920

TREE MITIGATION, LANDSCAPE, AND IRRIGATION PLANS

LAKE HILLS SHOPPING CENTER

CITY OF HOWIE IN THE HILLS, FLORIDA

SHEET INDEX

Christoph
er D Rice

Digitally signed by
Christopher D Rice
Date: 2025.01.13
13:40:47 -05'00'

BORRELLI + PARTNERS
ARCHITECTURE PLANNING LANDSCAPE INTERIOR
ORLANDO 20 VASSAR STREET
FLORIDA 32804 (407) 418-1338

SIGNATURE AND DATED SEAL

CHRISTOPHER D. RICE LA#666-7122

CONSULTANTS

LAKE HILLS SHOPPING CENTER

DRAWING TITLE: LANDSCAPE PLANS COVER SHEET

PROJECT ADDRESS

OWNER NAME AND ADDRESS

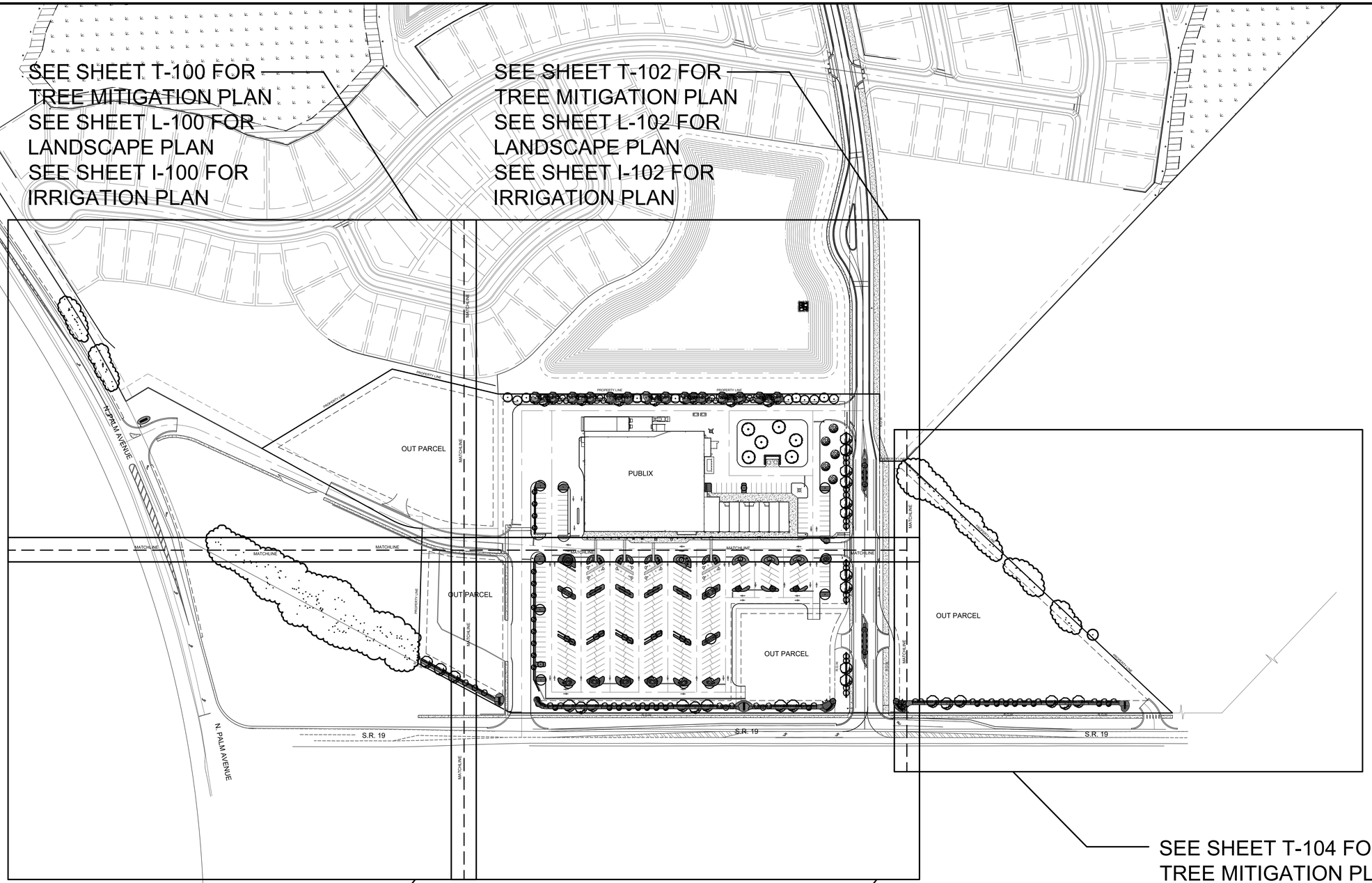
REV.	DESCRIPTION	DATE

PROJECT NO.	24-091
PHASE	90% CONSTRUCTION DOC.
SCALE	NTS
FILE NAME	
DRAWN BY	CDR
CHECKED BY	CDR
DATE	01-08-25

C-100

SEE SHEET T-100 FOR
TREE MITIGATION PLAN
SEE SHEET L-100 FOR
LANDSCAPE PLAN
SEE SHEET I-100 FOR
IRRIGATION PLAN

SEE SHEET T-102 FOR
TREE MITIGATION PLAN
SEE SHEET L-102 FOR
LANDSCAPE PLAN
SEE SHEET I-102 FOR
IRRIGATION PLAN



SEE SHEET T-104 FOR
TREE MITIGATION PLAN
SEE SHEET L-104 FOR
LANDSCAPE PLAN
SEE SHEET I-104 FOR
IRRIGATION PLAN

SEE SHEET T-101 FOR
TREE MITIGATION PLAN
SEE SHEET L-101 FOR
LANDSCAPE PLAN
SEE SHEET I-101 FOR
IRRIGATION PLAN

SEE SHEET T-103 FOR
TREE MITIGATION PLAN
SEE SHEET L-103 FOR
LANDSCAPE PLAN
SEE SHEET I-103 FOR
IRRIGATION PLAN

0' 50' 100' 200'
SCALE: 1"=100'-0"
NORTH

BORRELLI + PARTNERS
ARCHITECTURE PLANNING LANDSCAPE INTERIOR
ORLANDO 20 VASSAR STREET (407) 418-1338
SARASOTA 1605 MAIN STREET (941) 487-1338

SIGNATURE AND DATED SEAL

CHRISTOPHER D. RICE LA#666-7122

CONSULTANTS

LAKE HILLS SHOPPING CENTER

DRAWING TITLE: MASTER KEY PLAN

PROJECT ADDRESS

OWNER NAME AND ADDRESS

REV.	DESCRIPTION	DATE

PROJECT NO.	24-091
PHASE	90% CONSTRUCTION DOC.
SCALE	1"=100'-0"
FILE NAME	
DRAWN BY	CDR
CHECKED BY	CDR
DATE	01-08-25

K-100

EXISTING CANOPY

EXISTING CANOPY

MATCHLINE

PROPERTY LINE

PROPERTY LINE

N. PALM AVENUE

OUT PARCEL

MATCHLINE

MATCHLINE

MATCHLINE

MATCHLINE

EXISTING TREES

- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED
- ALL EXISTING TREES
- HERITAGE TREE
- SPECIMEN TREE

0' 15' 30' 60'
SCALE: 1"=30'-0"
NORTH

BORRELLI + PARTNERS
ARCHITECTURE PLANNING LANDSCAPE INTERIOR
20 VASSAR STREET
ORLANDO, FLORIDA 32804 407.418.1338

SIGNATURE AND DATED SEAL

CHRISTOPHER D. RICE LA#666-7122

CONSULTANTS

LAKE HILLS SHOPPING CENTER

DRAWING TITLE: TREE MITIGATION PLAN

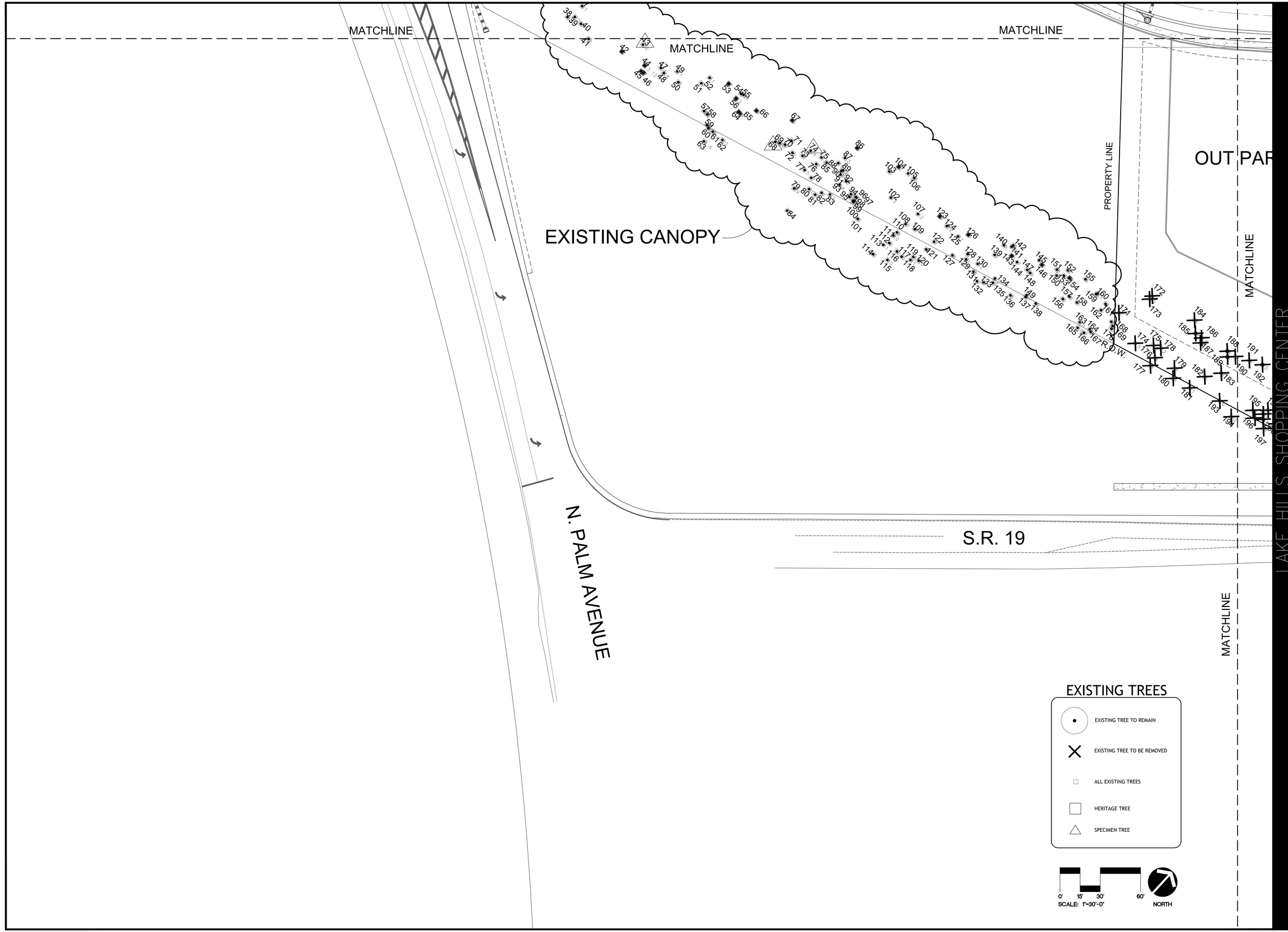
REV.	DESCRIPTION	DATE

PROJECT ADDRESS

OWNER NAME AND ADDRESS

PROJECT NO.	24-091
PHASE	90% CONSTRUCTION DOC.
SCALE	1"=30'-0"
FILE NAME	
DRAWN BY	CDR
CHECKED BY	CDR
DATE	01-08-25

T-100



BORRELLI + PARTNERS
ARCHITECTURE PLANNING LANDSCAPE INTERIOR
ORLANDO 20 VASSAR STREET, SUITE 118 - 1338
ORLANDO, FL 32804 (407) 648-1818

SIGNATURE AND DATED SEAL

CHRISTOPHER D. RICE LA#66-7122

CONSULTANTS

LAKE HILLS SHOPPING CENTER

DRAWING TITLE: TREE MITIGATION PLAN

PROJECT ADDRESS

OWNER NAME AND ADDRESS

REV.	DESCRIPTION	DATE

PROJECT NO.	24-091
PHASE	90% CONSTRUCTION DOC.
SCALE	1"=30'-0"
FILE NAME	
DRAWN BY	CDR
CHECKED BY	CDR
DATE	01-08-25

T-101

NO EXISTING TREES THIS SHEET

MATCHLINE

EXISTING TREES

- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED
- ALL EXISTING TREES
- HERITAGE TREE
- SPECIMEN TREE

PROPERTY LINE

PROPERTY LINE

PUBLIX

R.O.W.

R.O.W.

PROPERTY LINE

220 221 222 223 224 225 226

MATCHLINE

MATCHLINE

MATCHLINE

MATCHLINE

0' 15' 30' 60'
SCALE: 1"=30'-0"

NORTH

BORRELLI + PARTNERS
ARCHITECTURE PLANNING LANDSCAPE INTERIOR
ORLANDO 20 VASSAR STREET, SUITE A ORLANDO, FL 32804 407.418.1338

SIGNATURE AND DATED SEAL

CHRISTOPHER D. RICE LA#666-7122

CONSULTANTS

LAKE HILLS SHOPPING CENTER

DRAWING TITLE: TREE MITIGATION PLAN

PROJECT ADDRESS

OWNER NAME AND ADDRESS

REV.	DESCRIPTION	DATE

PROJECT NO.	24-091
PHASE	90% CONSTRUCTION DOC.
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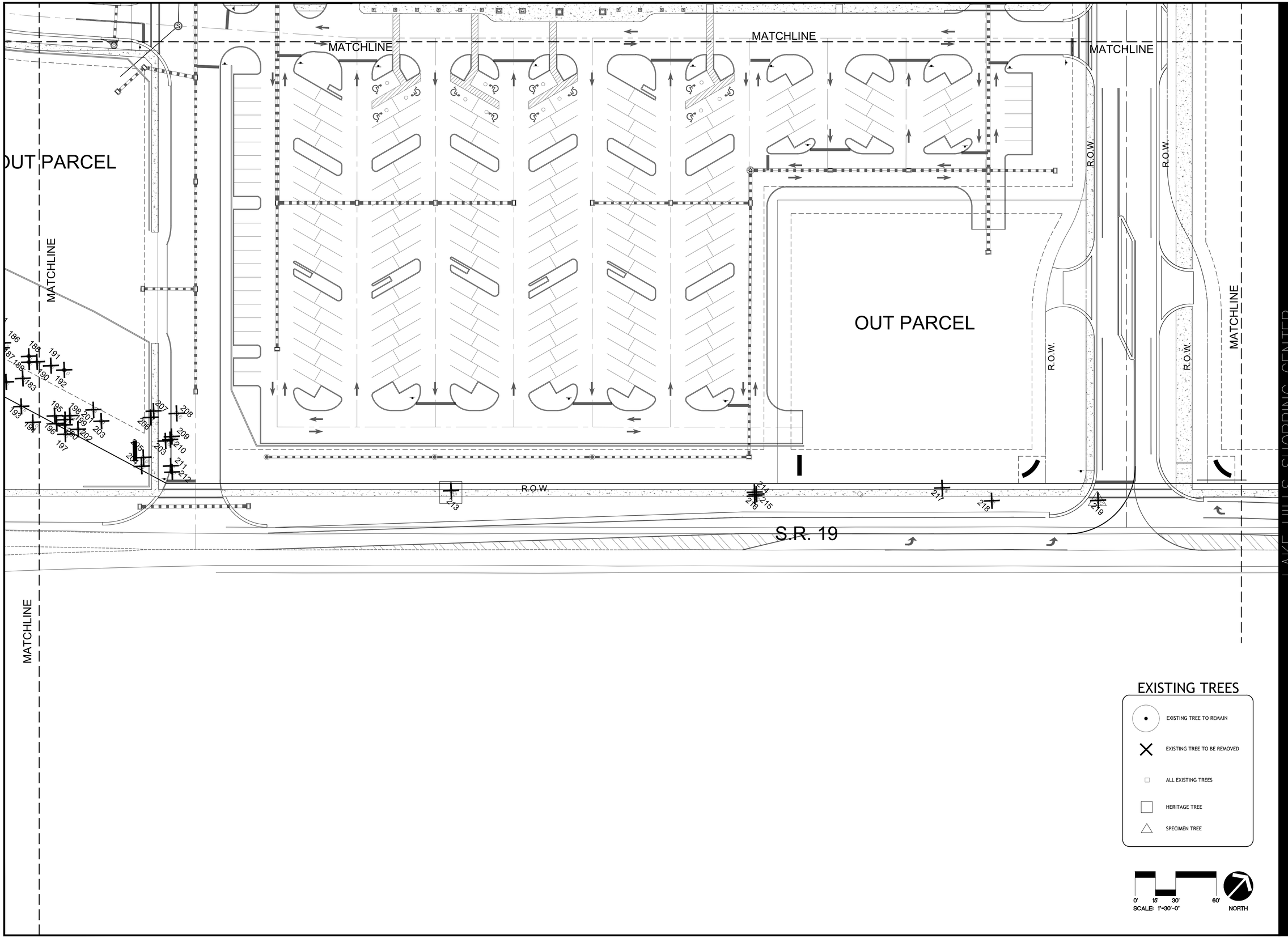
DRAWN BY	CDR
CHECKED BY	CDR
DATE	01-08-25

T-102



EXISTING TREES

- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED
- ALL EXISTING TREES
- HERITAGE TREE
- SPECIMEN TREE

0' 15' 30' 60'
SCALE: 1"=30'-0"

NORTH

BORRELLI + PARTNERS
ARCHITECTURE PLANNING LANDSCAPE INTERIOR
ORLANDO 20 VASSAR STREET, SUITE A, ORLANDO, FL 32804 407.418.1338

SIGNATURE AND DATED SEAL

CHRISTOPHER D. RICE LA#66-7122

CONSULTANTS

LAKE HILLS SHOPPING CENTER

DRAWING TITLE: TREE MITIGATION PLAN

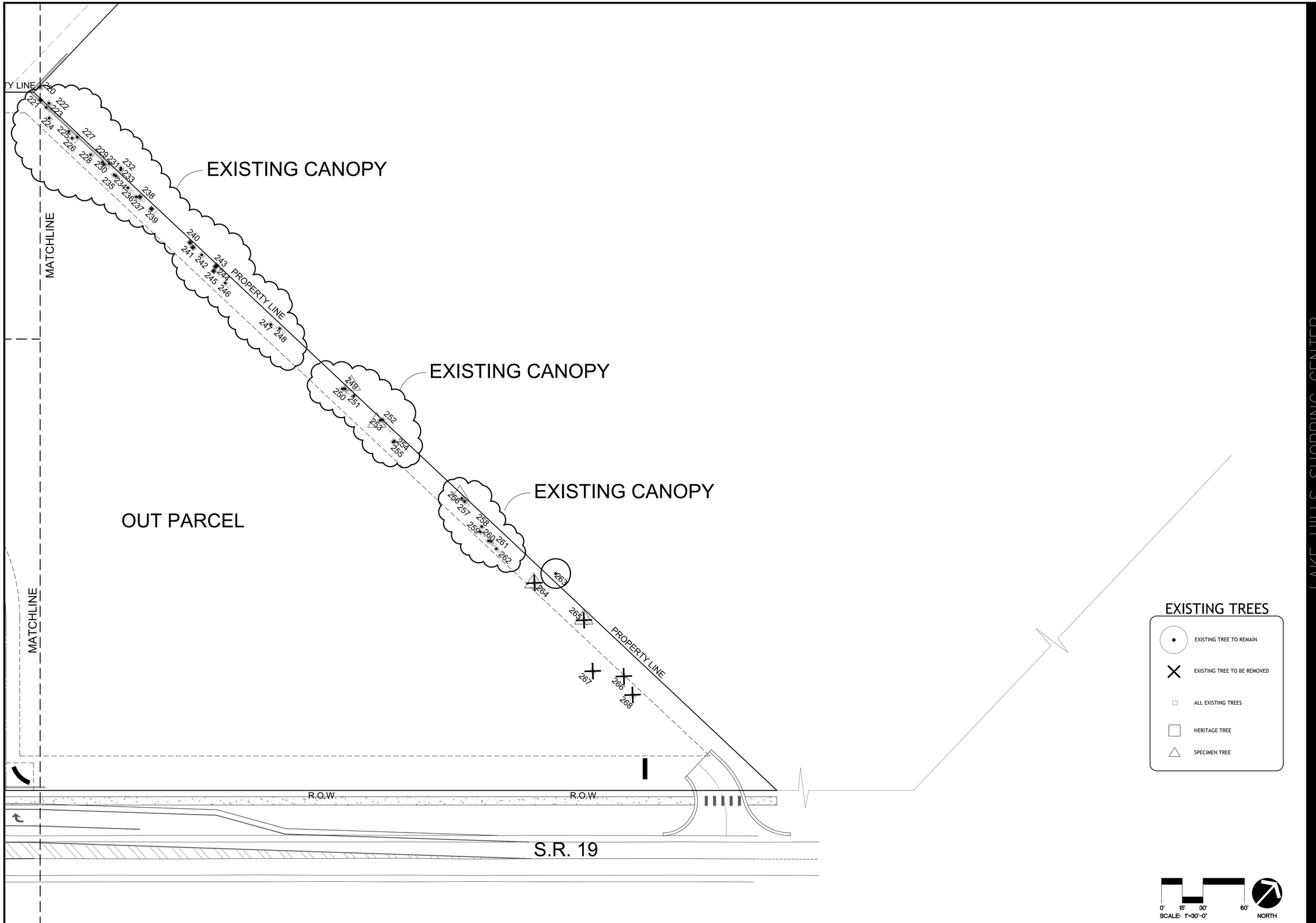
REV.	DESCRIPTION	DATE

PROJECT ADDRESS

OWNER NAME AND ADDRESS

PROJECT NO.	24-091
PHASE	90% CONSTRUCTION DOC.
SCALE	1"=30'-0"
FILE NAME	
DRAWN BY	CDR
CHECKED BY	CDR
DATE	01-08-25

T-103



BORRELLI + PARTNERS
ARCHITECTURE PLANNING LANDSCAPE INTERIOR
ORLANDO 720 VASSAR STREET 32804 (407) 418-1338

SIGNATURE AND DATED SEAL

CHRISTOPHER D. RICE LA#666-7722

CONSULTANTS

LAKE HILLS SHOPPING CENTER

DRAWING TITLE: TREE MITIGATION PLAN

REV.	DESCRIPTION	DATE

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SCALE	1"=30'-0"
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DATE	01-08-25

T-104

EXISTING TREES LIST

TREE#	TYPE	DBH	INCHES REMOVED	INCHES SAVED	MITIGATION INCHES	SPEC
1	OAK*	21	-	21	0	OUT OF PROPERTY
2	OAK	12	-	12	0	OUT OF PROPERTY
3	OAK	10	-	10	0	OUT OF PROPERTY
4	OAK	13	-	13	0	OUT OF PROPERTY
5	OAK	11	-	11	0	OUT OF PROPERTY
6	OAK	13	-	13	0	OUT OF PROPERTY
7	OAK	11	-	11	0	OUT OF PROPERTY
8	OAK	14	-	14	0	OUT OF PROPERTY
9	OAK	13	-	13	0	OUT OF PROPERTY
10	OAK	13	-	13	0	OUT OF PROPERTY
11	OAK	14	-	14	0	OUT OF PROPERTY
12	OAK	10	-	10	0	OUT OF PROPERTY
13	OAK	7	-	7	0	OUT OF PROPERTY
14	OAK	8	-	8	0	OUT OF PROPERTY
15	OAK	14	-	14	0	OUT OF PROPERTY
16	OAK	16	-	16	0	OUT OF PROPERTY
17	OAK	10	-	10	0	OUT OF PROPERTY
18	OAK	10	-	10	0	OUT OF PROPERTY
19	OAK	12	-	12	0	OUT OF PROPERTY
20	OAK	18	-	18	0	OUT OF PROPERTY
21	OAK	13	-	13	0	OUT OF PROPERTY
22	OAK	17	-	17	0	OUT OF PROPERTY
23	OAK	15	-	15	0	OUT OF PROPERTY
24	OAK	14	-	14	0	OUT OF PROPERTY
25	OAK	15	-	15	0	OUT OF PROPERTY
26	OAK*	24	-	24	0	OUT OF PROPERTY
27	OAK	9	-	9	0	OUT OF PROPERTY
28	OAK	11	-	11	0	OUT OF PROPERTY
29	OAK	13	13	-	13	ACCESS EASEMENT
30	OAK	10	10	-	10	ACCESS EASEMENT
31	OAK	11	11	-	11	ACCESS EASEMENT
32	OAK*	20	20	-	20	ACCESS EASEMENT
33	PALM	18	18	-	0	ACCESS EASEMENT
34	PALM	13	13	-	0	ACCESS EASEMENT
35	PALM	16	16	-	0	ACCESS EASEMENT
36	PALM	15	15	-	0	ACCESS EASEMENT
37	OAK	11	-	11	0	OUT OF PROPERTY
38	OAK	16	-	16	0	OUT OF PROPERTY
39	OAK	10	-	10	0	OUT OF PROPERTY
40	OAK	8	-	8	0	OUT OF PROPERTY
41	OAK	9	-	9	0	OUT OF PROPERTY
42	CAMPHOR	6	-	6	0	OUT OF PROPERTY
43	OAK*	32	-	32	0	OUT OF PROPERTY
44	CAMPHOR	25	-	25	0	OUT OF PROPERTY
45	CAMPHOR	6	-	6	0	OUT OF PROPERTY
46	CAMPHOR	7	-	7	0	OUT OF PROPERTY
47	OAK	14	-	14	0	OUT OF PROPERTY
48	OAK	18	-	18	0	OUT OF PROPERTY
49	OAK	11	-	11	0	OUT OF PROPERTY
50	OAK	9	-	9	0	OUT OF PROPERTY
51	OAK	9	-	9	0	OUT OF PROPERTY
52	OAK	11	-	11	0	OUT OF PROPERTY
53	CAMPHOR	7	-	7	0	OUT OF PROPERTY
54	OAK	11	-	11	0	OUT OF PROPERTY
55	OAK	18	-	18	0	OUT OF PROPERTY
56	CAMPHOR	12	-	12	0	OUT OF PROPERTY
57	CHERRY LAUREL	9	-	9	0	OUT OF PROPERTY
58	CHERRY LAUREL	6	-	6	0	OUT OF PROPERTY
59	CHERRY LAUREL	6	-	6	0	OUT OF PROPERTY
60	CHERRY LAUREL	6	-	6	0	OUT OF PROPERTY
61	CHERRY LAUREL	16	-	16	0	OUT OF PROPERTY
62	OAK	10	-	10	0	OUT OF PROPERTY
63	CHERRY LAUREL	15	-	15	0	OUT OF PROPERTY
64	CAMPHOR	8	-	8	0	OUT OF PROPERTY
65	CHERRY LAUREL	9	-	9	0	OUT OF PROPERTY
66	CAMPHOR	8	-	8	0	OUT OF PROPERTY
67	CAMPHOR	9	-	9	0	OUT OF PROPERTY
68	OAK*	27	-	27	0	OUT OF PROPERTY
69	OAK	10	-	10	0	OUT OF PROPERTY
70	CHERRY LAUREL	6	-	6	0	OUT OF PROPERTY
71	OAK	6	-	6	0	OUT OF PROPERTY
72	OAK	6	-	6	0	OUT OF PROPERTY
73	OAK	8	-	8	0	OUT OF PROPERTY
74	OAK*	24	-	24	0	OUT OF PROPERTY
75	OAK	13	-	13	0	OUT OF PROPERTY
76	OAK	7	-	7	0	OUT OF PROPERTY
77	OAK	15	-	15	0	OUT OF PROPERTY
78	OAK	7	-	7	0	OUT OF PROPERTY
79	OAK	19	-	19	0	OUT OF PROPERTY
80	CHERRY LAUREL	10	-	10	0	OUT OF PROPERTY
81	CHERRY LAUREL	7	-	7	0	OUT OF PROPERTY
82	PINE	9	-	9	0	OUT OF PROPERTY
83	OAK	12	-	12	0	OUT OF PROPERTY
84	CHERRY LAUREL	7	-	7	0	OUT OF PROPERTY
85	OAK	12	-	12	0	OUT OF PROPERTY
86	CAMPHOR	6	-	6	0	OUT OF PROPERTY
87	OAK	13	-	13	0	OUT OF PROPERTY
88	OAK	16	-	16	0	OUT OF PROPERTY
89	OAK	16	-	16	0	OUT OF PROPERTY
90	OAK	16	-	16	0	OUT OF PROPERTY
91	OAK	8	-	8	0	OUT OF PROPERTY
92	OAK	8	-	8	0	OUT OF PROPERTY
93	PINE	14	-	14	0	OUT OF PROPERTY
94	OAK	6	-	6	0	OUT OF PROPERTY
95	PINE	9	-	9	0	OUT OF PROPERTY
96	OAK	6	-	6	0	OUT OF PROPERTY
97	OAK	8	-	8	0	OUT OF PROPERTY
98	OAK	6	-	6	0	OUT OF PROPERTY
99	PINE	10	-	10	0	OUT OF PROPERTY
100	OAK	6	-	6	0	OUT OF PROPERTY

EXISTING TREES LIST

TREE#	TYPE	DBH	INCHES REMOVED	INCHES SAVED	MITIGATION INCHES	SPEC
101	CHERRY LAUREL	6	-	6	0	OUT OF PROPERTY
102	PINE	13	-	13	0	OUT OF PROPERTY
103	OAK	6	-	6	0	OUT OF PROPERTY
104	CAMPHOR	8	-	8	0	OUT OF PROPERTY
105	OAK	7	-	7	0	OUT OF PROPERTY
106	OAK	6	-	6	0	OUT OF PROPERTY
107	PiINE	12	-	12	0	OUT OF PROPERTY
108	OAK	7	-	7	0	OUT OF PROPERTY
109	OAK	7	-	7	0	OUT OF PROPERTY
110	OAK	8	-	8	0	OUT OF PROPERTY
111	PINE	10	-	10	0	OUT OF PROPERTY
112	CHERRY LAUREL	6	-	6	0	OUT OF PROPERTY
113	PINE	11	-	11	0	OUT OF PROPERTY
114	CHERRY LAUREL	6	-	6	0	OUT OF PROPERTY
115	CHERRY LAUREL	10	-	10	0	OUT OF PROPERTY
116	CHERRY LAUREL	6	-	6	0	OUT OF PROPERTY
117	PINE	9	-	9	0	OUT OF PROPERTY
118	PINE	11	-	11	0	OUT OF PROPERTY
119	OAK	6	-	6	0	OUT OF PROPERTY
120	OAK	10	-	10	0	OUT OF PROPERTY
121	CHERRY LAUREL	6	-	6	0	OUT OF PROPERTY
122	OAK	7	-	7	0	OUT OF PROPERTY
123	CAMPHOR	8	-	8	0	OUT OF PROPERTY
124	OAK	15	-	15	0	OUT OF PROPERTY
125	PINE	11	-	11	0	OUT OF PROPERTY
126	CAMPHOR	6	-	6	0	OUT OF PROPERTY
127	PINE	8	-	8	0	OUT OF PROPERTY
128	OAK	17	-	17	0	OUT OF PROPERTY
129	OAK	6	-	6	0	OUT OF PROPERTY
130	PINE	12	-	12	0	OUT OF PROPERTY
131	OAK	8	-	8	0	OUT OF PROPERTY
132	PINE	7	-	7	0	OUT OF PROPERTY
133	PINE	7	-	7	0	OUT OF PROPERTY
134	PINE	12	-	12	0	OUT OF PROPERTY
135	OAK	7	-	7	0	OUT OF PROPERTY
136	OAK	8	-	8	0	OUT OF PROPERTY
137	PINE	6	-	6	0	OUT OF PROPERTY
138	PINE	9	-	9	0	OUT OF PROPERTY
139	OAK	9	-	9	0	OUT OF PROPERTY
140	OAK	9	-	9	0	OUT OF PROPERTY
141	PINE	14	-	14	0	OUT OF PROPERTY
142	OAK	6	-	6	0	OUT OF PROPERTY
143	CAMPHOR	8	-	8	0	OUT OF PROPERTY
144	PINE	7	-	7	0	OUT OF PROPERTY
145	PINE	15	-	15	0	OUT OF PROPERTY
146	CAMPHOR	6	-	6	0	OUT OF PROPERTY
147	OAK	6	-	6	0	OUT OF PROPERTY
148	PINE	9	-	9	0	OUT OF PROPERTY
149	OAK	10	-	10	0	OUT OF PROPERTY
150	OAK	6	-	6	0	OUT OF PROPERTY
151	OAK	8	-	8	0	OUT OF PROPERTY
152	OAK	6	-	6	0	OUT OF PROPERTY
153	OAK	6	-	6	0	OUT OF PROPERTY
154	CAMPHOR	8	-	8	0	OUT OF PROPERTY
155	OAK	6	-	6	0	OUT OF PROPERTY
156	OAK	6	-	6	0	OUT OF PROPERTY
157	PINE	9	-	9	0	OUT OF PROPERTY
158	PINE	6	-	6	0	OUT OF PROPERTY
159	OAK	6	-	6	0	OUT OF PROPERTY
160	OAK	15	-	15	0	OUT OF PROPERTY
161	OAK	6	-	6	0	OUT OF PROPERTY
162	PINE	6	-	6	0	OUT OF PROPERTY
163	OAK	10	-	10	0	OUT OF PROPERTY
164	OAK	8	-	8	0	OUT OF PROPERTY
165	PINE	10	-	10	0	OUT OF PROPERTY
166	PINE	7	-	7	0	OUT OF PROPERTY
167	OAK	8	-	8	0	OUT OF PROPERTY
168	PINE	11	-	11	0	OUT OF PROPERTY
169	OAK	8	-	8	0	OUT OF PROPERTY
170	OAK	8	-	8	0	OUT OF PROPERTY
171	OAK	7	7	-	7	
172	PINE	12	12	-	0	
173	PINE	14	14	-	0	
174	OAK	13	13	-	13	
175	OAK	26	26	-	26	
176	PINE	8	8	-	0	
177	PINE	8	8	-	0	RIGHT OF WAY
178	OAK	13	13	-	13	
179	OAK	8	8	-	8	
180	PINE	8	8	-	0	RIGHT OF WAY
181	PINE	11	11	-	0	RIGHT OF WAY
182	OAK	6	6	-	6	
183	PINE	8	8	-	0	
184	OAK	8	8	-	8	
185	CAMPHOR	8	8	-	0	
186	CHERRY LAUREL	12	12	-	12	
187	CHERRY LAUREL	8	8	-	8	
188	CHERRY LAUREL	8	8	-	8	
189	CHERRY LAUREL	6	6	-	6	
190	OAK	8	8	-	8	
191	OAK	6	6	-	6	
192	CHERRY LAUREL	10	10	-	10	
193	OAK	16	16	-	16	RIGHT OF WAY
194	OAK	10	10	-	10	RIGHT OF WAY
195	OAK	7	7	-	7	
196	OAK	6	6	-	6	
197	PINE	8	8	-	0	RIGHT OF WAY
198	OAK	14	14	-	14	
199	OAK	10	10	-	10	
200	OAK	10	10	-	10	

EXISTING TREES LIST

TREE#	TYPE	DBH	INCHES REMOVED	INCHES SAVED	MITIGATION INCHES	SPEC
201	OAK	9	9	-	9	
202	OAK	10	10	-	10	
203	CHERRY LAUREL	16	16	-	16	
204	CHERRY LAUREL	7	7	-	7	
205	OAK	10	10	-	10	
206	OAK	14	14	-	14	
207	OAK	7	7	-	7	
208	OAK	16	16	-	16	
209	OAK	7	7	-	7	
210	OAK	13	13	-	13	
211	OAK	7	7	-	7	
212	OAK	7	7	-	7	
213	OAK**	42	42	-	42	RIGHT OF WAY
214	OAK	10	10	-	10	RIGHT OF WAY
215	OAK	6	6	-	6	RIGHT OF WAY
216	OAK	10	10	-	10	RIGHT OF WAY
217	PALM	14	14	-	0	RIGHT OF WAY
218	OAK	8	8	-	8	RIGHT OF WAY
219	OAK*	32	32	-	32	RIGHT OF WAY
220	OAK	8	-	8	0	OUT OF PROPERTY
221	CAMPHOR	7	-	7	0	
222	OAK	8	-	8	0	OUT OF PROPERTY
223	PALM	12	-	12	0	
224	OAK	7	-	7	0	
225	OAK	7	-	7	0	
226	OAK	12	-	12	0	
227	OAK	6	-	6	0	
228	OAK	7	-	7	0	
229	OAK	10	-	10	0	
230	OAK	12	-	12	0	
231	OAK	11	-	11	0	
232	OAK	6	-	6	0	OUT OF PROPERTY
233	OAK	7	-	7	0	OUT OF PROPERTY
234	OAK	9	-	9	0	
235	OAK	7	-	7	0	
236	OAK	16	-	16	0	
237	OAK	13	-	13	0	
238	CAMPHOR	10	-	10	0	
239	CAMPHOR	12	-	12	0	
240	CAMPHOR	12	-	12	0	
241	CAMPHOR	7	-	7	0	
242	OAK	7	-	7	0	
243	CAMPHOR	10	-	10	0	
244	CAMPHOR	11	-	11	0	
245	CAMPHOR	7	-	7	0	
246	OAK	12	-	12	0	
247	OAK	17	-	17	0	
248	OAK	10	-	10	0	
249	OAK*	20	-	20	0	
250	OAK	14	-	14	0	
251	OAK	17	-	17	0	
252	OAK	15	-	15	0	
253	OAK*	29	-	29	0	
254	OAK	17	-	17	0	
255	OAK	12	-	12	0	
256	OAK*	20	-	20	0	
257	OAK	15	-	15	0	
258	PALM	12	-	12	0	
259	OAK	14	-	14	0	
260	OAK	14	-	14	0	
261	OAK	12	-	12	0	
262	PINE	10	-	10	0	
263	PINE	11	-	11	0	OUT OF PROPERTY
264	OAK*	24	24	-	24	
265	OAK*	22	22	-	22	
266	CHERRY LAUREL	6	6	-	6	
267	OAK	8	8	-	8	
268	CHERRY LAUREL	8	8	-	8	

NOTES: *SPECIMEN TREE ACCORDING TO COUNTY CODE 7.11.00 TREES
**HERITAGE TREE ACCORDING TO COUNTY CODE 7.11.00 TREES

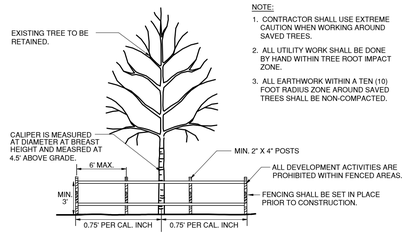
GRAND TOTAL

TOTAL # ON SITE	TOTAL DBH ON SITE	INCHES REMOVED	INCHES SAVED	MITIGATION INCHES
101	1198	726	472	565

PROPOSED TREES

REPLACEMENT PROVIDED	QUANTITY	FINAL QUANTITY
SHADE TREES		
RED MAPLE - 4" CAL.	5	20"
SOUTHERN RED CEDAR - 4" CAL.	11	44"
LIVE OAK - 4" CAL.	9	36"
HIGHRISE LIVE OAK - 4" CAL.	46	184"
AMERICAN ELM - 4" CAL.	18	72"
	89	356"
UNDERSTORY TREES		
JAPANESE BLUEBERRY - 3" CAL.	4	12"
CRAPE MYRTLE - 2" CAL.	18	36"
'MUSKOGEE' CRAPE MYRTLE - 3" CAL.	78	234"
LIGUSTRUM TREE - 2.5" CAL.	12	30"
	112	312"
TOTAL TREES PLANTED	201	668"

TREE PROTECTION DETAIL



NOTE:
1. CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING AROUND SAVED TREES.
2. ALL UTILITY WORK SHALL BE DONE BY HAND WITHIN TREE ROOT IMPACT ZONE.
3. ALL EARTHWORK WITHIN A TEN (10) FOOT RADIUS ZONE AROUND SAVED TREES SHALL BE NON-COMPACTED.

NOTES: FENCING SHALL BE AT LEAST 3' ABOVE GROUND AND MIN. OF 3' BELOW GRADE.
THE MAXIMUM REQUIRED UNDISTURBED AREA SHALL NOT EXCEED 24' FROM CENTER OF TREE.

TREE REPLACEMENT CALCULATIONS

TOTAL TREE INCHES ON SITE	1,198"
TOTAL TREE INCHES PRESERVED	472"
TOTAL TREE INCHES REMAINING	726"
NON PROTECTED TREE INCHES REMOVED	161"
TOTAL PROTECTED TREE INCHES REMOVED	565"
TOTAL INCHES PROPOSED TO BE PLANTED	668"
BALANCE OF MITIGATION	-103" (SURPLUS)

BORRELLI + PARTNERS
ARCHITECTURE PLANNING LANDSCAPE INTERIOR
1300 SOUTH ORANGE AVENUE, SUITE 418 - 1338
ORLANDO, FLORIDA 32806 (407) 648-1818

SIGNATURE AND DATED SEAL
CHRISTOPHER D. RICE LA#66-7122

CONSULTANTS

LAKE HILLS SHOPPING CENTER

DRAWING TITLE: TREE MITIGATION LIST

REV.	DESCRIPTION	DATE

PROJECT ADDRESS
OWNER NAME AND ADDRESS

PROJECT NO.	24-091
PHASE	905 CONSTRUCTION DOC.
SCALE	N.T.S
FILE NAME	
DRAWN BY	JV
CHECKED BY	CDR
DATE	01-08-25

T-500

EXISTING CANOPY

EXISTING CANOPY

MATCHLINE

PROPERTY LINE

PROPERTY LINE

ZP
37

N. PALM AVENUE

OUT PARCEL

MATCHLINE

MATCHLINE

MATCHLINE

0' 15' 30' 60'
SCALE: 1"=30'-0"

NORTH

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L-100

MATCHLINE

MATCHLINE

MATCHLINE

MATCHLINE

EXISTING CANOPY

PROPERTY LINE

OUT PAR

R.O.W.

QV 3

BAHIA GRASS

ST 77

MF 28

N. PALM AVENUE

S.R. 19

0' 15' 30' 60'
SCALE: 1"=30'-0"

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L-101

MATCHLINE

PROPERTY LINE

PROPERTY LINE

BAHIA GRASS

MULCHED BED

JVS 3 | QVH 3 | MF 19 | LIM 3 | QVH 3 | MF 20 | LIM 3 | QVH 3 | MF 19 | JVS 1 | QVH 3 | MF 18 | JVS 1 | QVH 3 | MF 19 | LIM 3 | QVH 3 | MF 23 | LIM 3 | QVH 3 | MF 25 | JVS 6

ZP 26 | ST 12 | ZP 18 | ZP 24 | ST 21 | ZP 19 | ST 32 | ZP 20 | ST 28 | ZP 35 | ST 19 | ZP 51 | ST 23 | ZP 7 | ST 27 | ZP 25 | ST 12 | ZP 26 | ST 20 | ZP 17 | ST 21

PUBLIX

QV 6

AR 5

MF1 20

VWS 13

LM 38

TA 77

LIM 1

LM 54 | UA 1 | SP 4 | VO 35

LM 48 | UA 1

UA 1 | LM 49

TA 53

LIM 1 | VWS 10 | LM 37

LM 72 | UA

TA 80 | CA 2 | CA 2 | ZP 8 | JP 28 | CA 2 | TA 58 | CA 3 | TA 108 | CA 2 | JP 88 | ZP 23 | JP 91 | ZP 23 | JP 91

QVH 2 | LIM 2 | QVH 2 | LM 10 | EG 16 | LIM 2 | QVH 2 | LIM 2 | VO 65

EG 17 | LM 10 | LJT 2 | DB 33 | SP 2

R.O.W.

0' 15' 30' 60'
SCALE: 1"=30'-0"

NORTH

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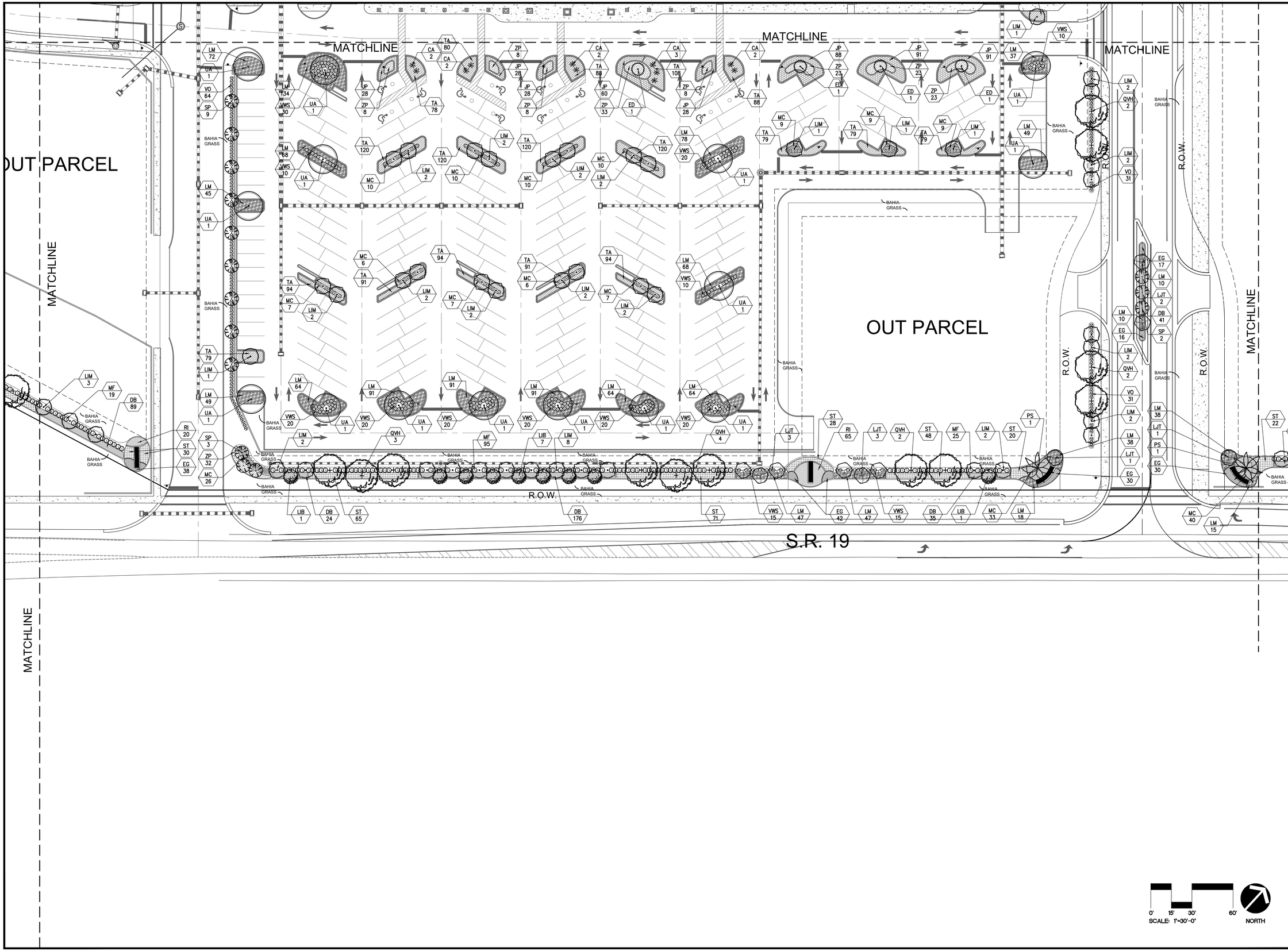
L-102



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FILE NAME	
DRAWN BY	CDR
CHECKED BY	CDR
DATE	01-08-25

L-103

TY LINE

MATCHLINE

EXISTING CANOPY

PROPERTY LINE

EXISTING CANOPY

EXISTING CANOPY

OUT PARCEL

MATCHLINE

PROPERTY LINE

ST 22	DB 30	LIM 2	QVH 3	ST 76	MF 118	DB 176	LIM 8	LIB 7	QVH 3	ST 77	LIM 3	DB 77	LIB 2	ST 27	EG 65						

BAHIA GRASS

BAHIA GRASS

R.O.W.

R.O.W.

S.R. 19

0' 15' 30' 60'
SCALE: 1"=30'-0"

NORTH

LAKE HILLS SHOPPING CENTER

CONSULTANTS

SIGNATURE AND DATED SEAL

CHRISTOPHER D. RICE LA#666-7722

BORRELLI + PARTNERS
ARCHITECTURE PLANNING LANDSCAPE INTERIOR
ORLANDO 20 VASSAR STREET
SUITE 1A ORLANDO, FL 32804 407.418.1338

REV.	DESCRIPTION	DATE

PROJECT ADDRESS

OWNER NAME AND ADDRESS

DRAWING TITLE

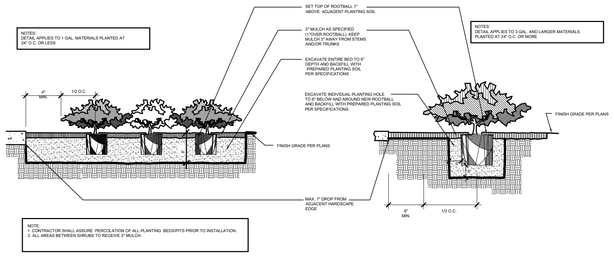
LANDSCAPE PLAN

PROJECT NO.	24-091
PHASE	90% CONSTRUCTION DOC.
SCALE	1"=30'-0"
FILE NAME	
DRAWN BY	CDR
CHECKED BY	CDR
DATE	01-08-25

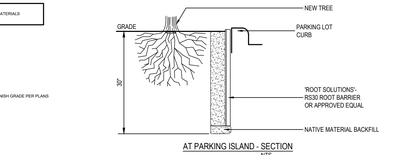
L-104

PLANT LIST

SYMBOL	QUANTITY	BOTANICAL NAME	COMMON NAME	DESCRIPTION	WATER USE / NATIVE
CANOPY TREES					
AR	5	ACER RUBRUM 'FLORIDA FLAME'	RED MAPLE	12'–14' HT. X 6' SPRD.; 4" CAL.; FULL	SPACE AS SHOWN GUY
ED	4	ELAEOCARPUS DECIPIENS	JAPANESE BLUEBERRY	10'–12" HT. X 4'–5' SPRD; 3" CAL., FULL	SPACE AS SHOWN GUY
JVS	11	JUNIPERUS VIRGINIANNA	SOUTHERN RED CEDAR	12'–14' HT.; 6' SPRD.; 4" CAL.,	FULL TO GROUND GUY
LIB	18	LAGERSTROEMIA INDICA 'BLACK DIAMOND'	BLACK DIAMOND CREPE MYRTLE	10'–12' HT., 4'–5' SPRD., 2" CAL.; MULTI–TRUNK	SPACE AS SHOWN GUY
LIM	78	LAGERSTROEMIA INDICA 'MUSKOGEE'	LAVENDER CREPE MYRTLE	10'–12' HT., 4'–5' SPRD., 3" CAL.; STANDARD TRUNK	SPACE AS SHOWN GUY
LJT	12	LIGUSTRUM JAPONICUM	LIGUSTRUM TREE	8' X 8',; 2.5" CAL.; MULTI–TRUNK, SPECIMEN FORM	SPACE AS SHOWN GUY
PS	2	PHOENIX SYLVESTRIS	WILD DATE PALM	12' CT. STRAIGHT TRUNK; SPECIMEN FORM	SPACE AS SHOWN GUY
QV	9	QUERCUS VIRGINIANA	LIVE OAK	12'–14' HT X 6'–8' SPR., 4" CAL.	SPACE AS SHOWN GUY
QVH	46	QUERCUS VIRGINIANA 'HIGHRISE'	LIVE OAK	13'–15' HT x 5'–6' SPR.; 4" CAL.	SPACE AS SHOWN GUY
SP	20	SABAL PALMETTO	CABBAGE PALM	ALL @ 14' C.T.; STRAIGHT TRUNKS	SPACE AS SHOWN GUY
UA	18	ULMAS AMERICANA 'ALLEE'	AMERICAN ELM	12'–14' HT X 6'–8' SPRD.; 4" CAL.; FULL	SPACE AS SHOWN GUY
SHRUBS					
CA	11	CRINUM ASIATICUM	CRINUM LILY	36" HT., 36" SPRD., FULL, 7 GAL.	AS SHOWN
MC	199	MUHLENBERGIA CAPILLARIS	PINK MUHLY GRASS	30" O.A.; FULL; 3 GAL.	30" O.C.
MF	428	MYRCIANTHES FRAGRANS	SIMPSON'S STOPPER	36" HT. x 36" SPRD.; FULL; 7 GAL.	36" O.C.
MF1	20	MYRCIANTHES FRAGRANS	SIMPSON'S STOPPER	48" HT. x 48" SPRD.; FULL; 10 GAL.	36" O.C.
ST	750	SCHEFLERA ARBORICOLA 'TRINETTE'	DWARF VARIEGATED SCHEFLERA	24" HT X 24" SPRD.; 3 GAL.; FULL	30" O.C.
VO	226	VIBURNUM ODORATISSIMUM	SWEET VIBURNUM	28" HT X 28' SPRD; FULL; 3 GAL.	30" O.C.
VWS	243	VIBURNUM OBOVATUM 'MRS. SHILLER'S DELIGHT'	DWARF WALTER'S VIBURNUM	24" HT., 24" SPRD., FULL, 3 GAL.	30" O.C.
GROUNDCOVER					
DB	681	DIETES BICOLOR	YELLOW AFRICAN IRIS	18" HT. x 15"SPRD., FULL, 3 GAL.	24" O.C.
EG	271	EVOLVULUS GLOMERATUS	BLUE DAZE	8" O.A., FULL, 1 GAL.	18" O.C.
JP	442	JUNIPERUS CHINENSIS 'PARSONII'	PARSON'S JUNIPER	12" HT. x 15" SPRD., FULL.; 3 GAL.	24" O.C.
LM	1,497	LIRIOPE MUSCARI 'EMERALD GODDESS'	BORDER GRASS	12" HT. x 15" SPRD.; FULL; 1 GAL.	24" O.C.
RI	85	RHAPHIOLEPIS INDICA 'ALBA'	DWARF INDIAN HAWTHORN	15" HT. x 15" SPRD., FULL, 3 GAL.	24" O.C.
TA	1,832	TRACHELOSPERMUM ASIATICUM 'MINIMA'	ASIATIC JASMINE	12" SPRD., MIN. 10 RUNNERS, 1 GAL.	18" O.C.
ZP	454	ZAMIA PUMILA	COONTIE	24" O.A., FULL, 3 GAL.	30" O.C.
SOD					
	SEE PLANS	PASPALUM NOTATUM 'ARGENTINE'	ARGENTINE BAHIA	SOLID, FREE OF PESTS AND DISEASES	FIELD VERIFY QTY.
MULCH					
	SEE	MINI PINE BARK NUGGETS	MINI PINE BARK NUGGETS	FREE OF DIRT AND DEBRIS	FIELD VERIFY QTY.



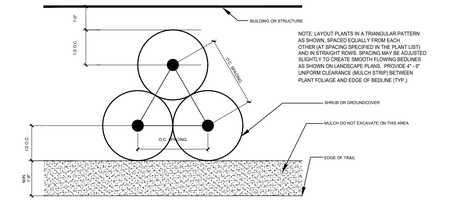
1 GROUNDCOVER AND SHRUB PLANTING DETAIL
NOT TO SCALE



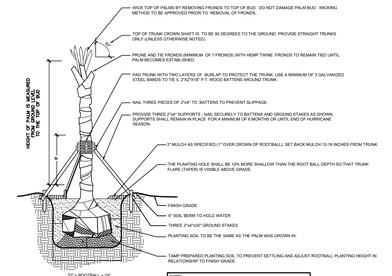
AT PARKING ISLAND - SECTION
NTS

NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWINGS.
3. THE RAISED ROOT GUIDING RIBS MUST BE FACING TOWARDS THE TREE ROOTS.
4. THE TOP OF THE BARRIER PANELS MUST BE SLIGHTLY ABOVE GRADE (NEVER BELOW GRADE).
5. POSITION BARRIER PANELS VERTICALLY WITH TOP AGAINST THE STRUCTURE TO BE PROTECTED.
6. SEE LANDSCAPE SITE PLAN TO DETERMINE TREES THAT REQUIRE BARRIER PANEL.

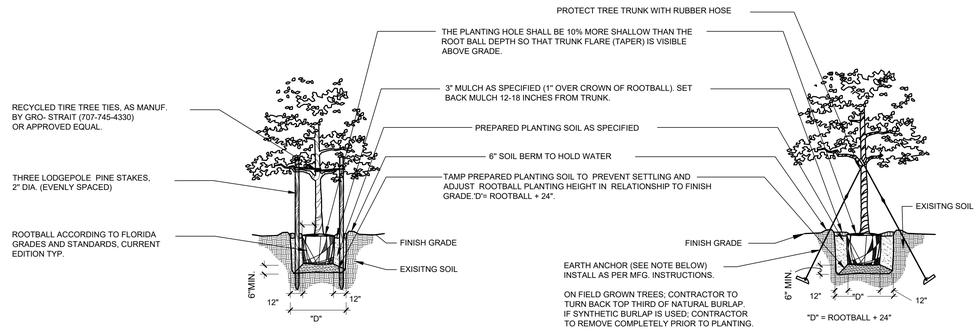
2 LINEAR ROOT BARRIER PLACEMENT
NOT TO SCALE



3 SHRUB SPACING DETAIL
NOT TO SCALE



4 PALM TREE PLANTING DETAIL
NOT TO SCALE



NOTES:
INCLUDES TREES WITH 3-1/2" CALIPER AND BELOW.

SUPPORTS AND STAKES MUST BE AT LEAST 2' FROM NEAREST EDGE OF PAVEMENT.

5 SMALL TREE PLANTING DETAIL
NOT TO SCALE

NOTES:
INCLUDES TREES WITH 4" CALIPER AND GREATER.
TREE SUPPORT SYSTEM TO BE 'DUCKBILL' MODEL No. 88-DTS-0, OR APPROVED EQUAL. SYSTEM INCLUDES THREE (3) EARTH ANCHORS, 15' OF GALV. STEEL CABLE WITH BRIGHT ORANGE COATING, THREE (3) TURNBUCKLES AND SIX (6) 3/16" CABLE CLAMPS.

6 LARGE TREE PLANTING DETAILS
NOT TO SCALE

LANDSCAPE PLANTING AND CONTRACTOR NOTES:

1. ALL PLANTS MUST BE HEALTHY, VIGOROUS MATERIAL FREE OF PESTS AND DISEASES.
2. CONTRACTOR TO INSTALL 60" DEEP ROOT BARRIER AT ALL PARKING LOT ISLANDS. SEE DETAIL SHEET L-500.
3. ALL PLANTS SHALL BE FLORIDA NO. 1 OR BETTER, AS GRADED IN FLORIDA GRADES AND STANDARDS FOR NURSERY PLANTS.
4. ALL PLANTS ARE SUBJECT TO APPROVAL BY THE LANDSCAPE ARCHITECT AND OWNER BEFORE, DURING, AND AFTER INSTALLATION.
5. ALL SINGLE-TRUNKED TREES SHALL BE STRAIGHT TRUNKED WITH ONE CENTRAL LEADER AND HAVE A FULL, DENSE CROWN.
6. ALL TREES SHALL BE STAKED AND GUYED AS SHOWN IN PLANTING DETAILS.
7. ALL MULCH PLANTING AREAS SHALL BE A MINIMUM OF 3" IN DEPTH.
8. ALL PLANTING AREAS SHALL HAVE A MINIMUM OF 3" TOPSOIL.
9. ALL TREES SHALL BE FREE OF OPEN WOUNDS AND WOUND SCARS IN THE CLEAR TRUNK AREA.
10. 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.
11. TREES SHALL NOT BE PLACED WITHIN 7' OF ANY FIRE PROTECTION EQUIPMENT AND NOT WITHIN 5' OF ANY UTILITIES.
12. TREES SHALL NOT BE PLACED WHERE THEY WILL OBSCURE ANY VIEWS TO TRAFFIC, PEDESTRIANS OR SIGNAGE. CONTRACTOR TO FIELD ADJUST TREE LOCATIONS TO AVOID CONFLICTS. IF PLANTING IS QUESTIONABLE; CONTRACTOR TO CONTACT LANDCAPE ARCHITECT OR OWNER'S REPRESENTATIVE TO DISCUSS RELOCATION.
13. CONTRACTOR SHALL TAKE CARE TO PROTECT ALL TREES AND LANDSCAPING MATERIAL WITHIN PROJECT LIMITS AS WELL AS EXISTING TREES IMMIDIATELY ADJACENT TO PROJECT LIMITS. IF THE EXISTING LANDSCAPE, TREES OR OTHER RELATED MATERIALS ARE IMPACTED DURING LANDSCAPE INSTALLATION THEN THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPLACEMENTS, AS WELL AS, ALL OTHER ASPECTS OF REMEDIATION INCLUDING BUT NOT LIMITED TO: TREES, SHRUBS, GROUNDCOVERS, SOD, AND ANY OTHER MATERIALS IMPACTED BY CONSTRUCTION.
14. SOIL CONDITIONS MAY VARY THROUGHOUT THE SITE AND CONTRACTOR TO SHALL PROVIDE PROPER EQUIPMENT FOR PROPER EXCAVATION.
15. CONTRACTOR SHALL INCLUDE THE COSTS OF EXCAVATION, DISPOSAL OF EXCESS MATERIALS, BACKFILL, SOIL AMENDMENTS, SPECIAL BED PREPERATION, MULCH, TREE STAKING AND GUYING, FERTILIZER, WATERING FOR PLANT ESTABLISHMENT, SITE CLEAN-UP AND MAINTAINENCE WITHIN BID NUMBER.
16. CONTRACTOR SHALL SOD ALL DAMAGED GRASS AREAS DISTURBED DURING CONSTRUCTION. SEE LANDSCAPE SPECIFICATIONS FOR SOD INSTALLATION.
16. 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.
17. 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.
18. THE LANDSCAPE CONTRACTOR SHALL STAKE THE LOCATIONS OF ALL PLANT MATERIAL AND PLANTING BED LINES FOR REVIEW BY THE LANDSCAPE ARCHITECT AND OWNER.
19. 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.
20. 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.
21. 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.
22. 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.
23. 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 THEIR WORK.

BORRELLI + PARTNERS
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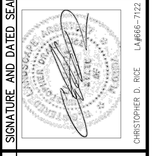
ORLANDO, 20 VASSAR STREET, 32804, 407.418.1338

SIGNATURE AND DATED SEAL



CHRISTOPHER D. RICE LA#66-7122

CONSULTANTS

LAKE HILLS SHOPPING CENTER

DRAWING TITLE: LANDSCAPE DETAILS AND PLANT LIST

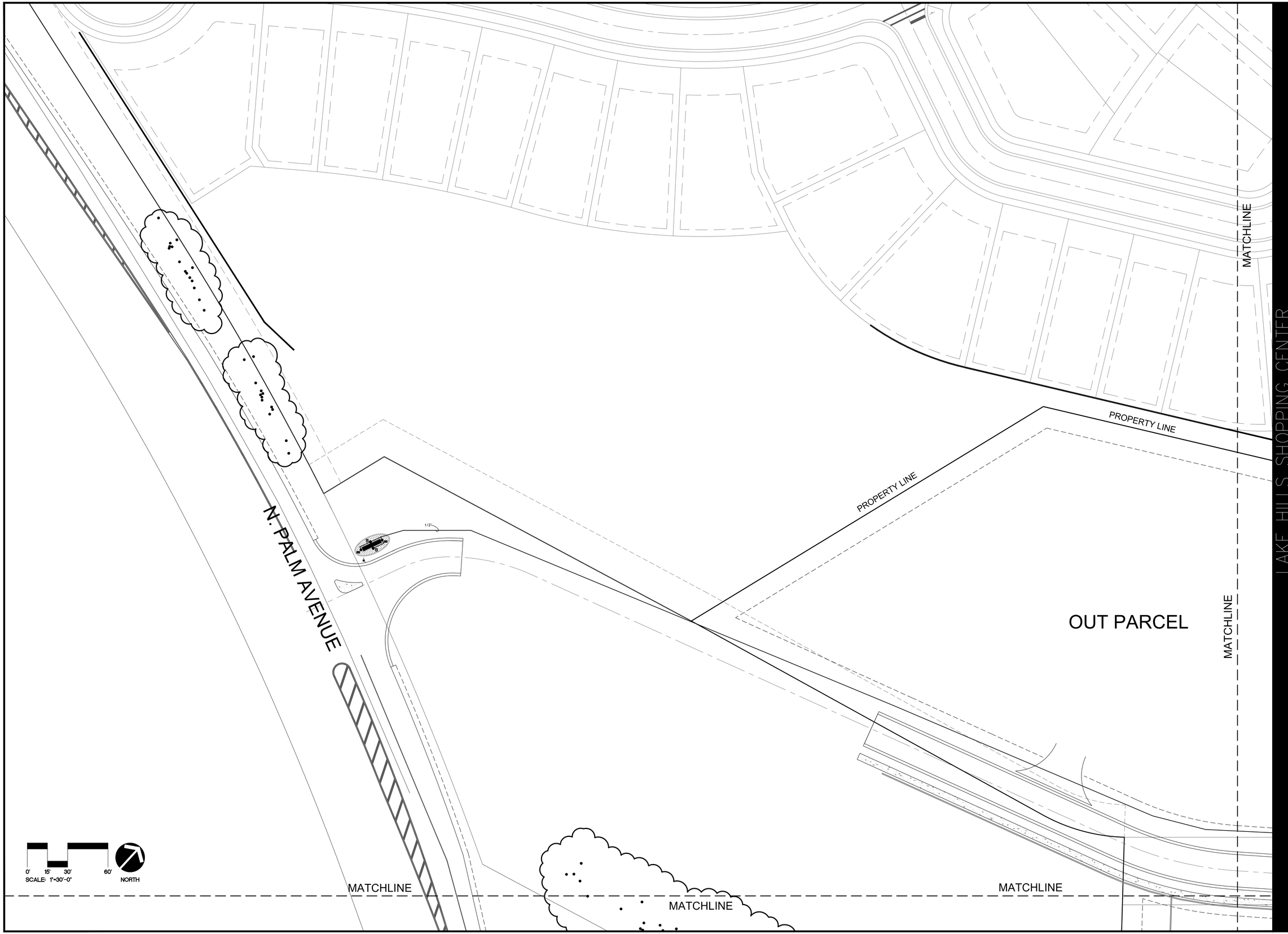
REV.	DESCRIPTION	DATE

PROJECT ADDRESS

OWNER NAME AND ADDRESS

PROJECT NO.	24–091
PHASE	90% CONSTRUCTION DOC.
SCALE	N.T.S
FILE NAME	
DRAWN BY	JY
CHECKED BY	CDR
DATE	01–08–25

L-500



LAKE HILLS SHOPPING CENTER

BORRELLI + PARTNERS
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20 VASSAR STREET
CAMBRIDGE, MASSACHUSETTS 02139-1338
T 617.868.1338

SIGNATURE AND DATED SEAL

COMMONWEALTH OF MASSACHUSETTS
CHRISTOPHER D. RICE
REGISTERED LANDSCAPE ARCHITECT

CHRISTOPHER D. RICE LA#66-7122

CONSULTANTS

DRAWING TITLE: IRRIGATION PLAN

REV.	DESCRIPTION	DATE

PROJECT ADDRESS

OWNER NAME AND ADDRESS

PROJECT NO.	24-091
PHASE	90% CONSTRUCTION DOC.
SCALE	1"=30'-0"
FILE NAME	
DRAWN BY	CDR
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DATE	01-08-25

I-100

MATCHLINE

MATCHLINE

MATCHLINE

EXISTING CANOPY

PROPERTY LINE

OUT PAR

MATCHLINE

R.O.W.

N. PALM AVENUE

S.R. 19

MATCHLINE

0' 15' 30' 60'
SCALE: 1"=30'-0"

NORTH

LAKE HILLS SHOPPING CENTER

BORRELLI + PARTNERS
ARCHITECTURE PLANNING LANDSCAPE INTERIOR
ORLANDO 20 VASSAR STREET SUITE 1 ORLANDO, FL 32804 407.418.1338

SIGNATURE AND DATED SEAL

CHRISTOPHER D. RICE LA#666-7122

CONSULTANTS

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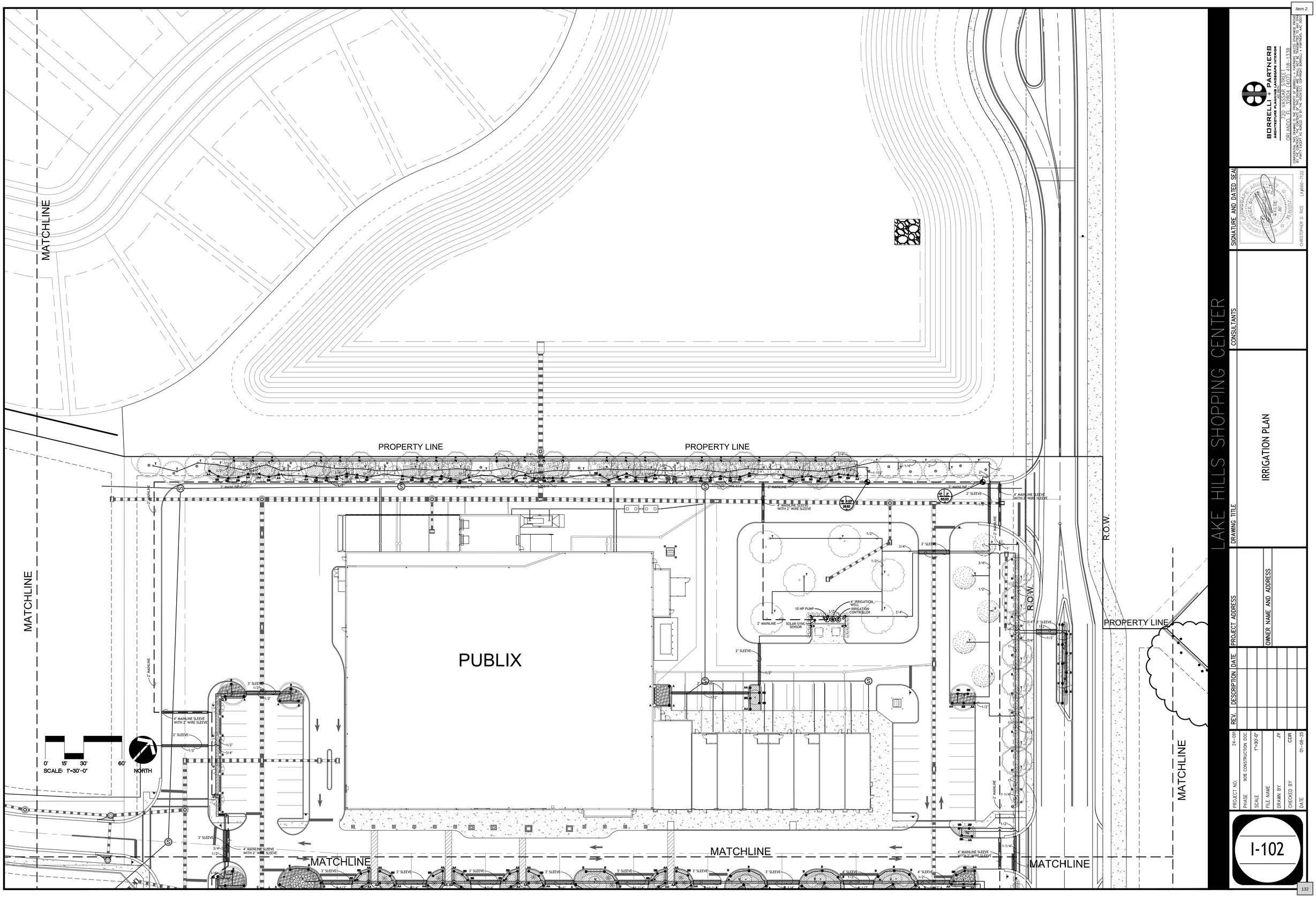

LAKE HILLS SHOPPING CENTER

CONSULTANTS

SIGNATURE AND DATED SEAL

CHRISTOPHER D. RICE LA#666-7122

BORRELLI + PARTNERS
ARCHITECTURE PLANNING LANDSCAPE INTERIOR
20 VASSAR STREET
ORLANDO, FL 32804 (407) 418-1338

REV.	DESCRIPTION	DATE

PROJECT ADDRESS

OWNER NAME AND ADDRESS

DRAWING TITLE

IRRIGATION PLAN

PROJECT NO.	24-091
PHASE	90% CONSTRUCTION DOC.
SCALE	1"=30'-0"
FILE NAME	
DRAWN BY	JY
CHECKED BY	CDR
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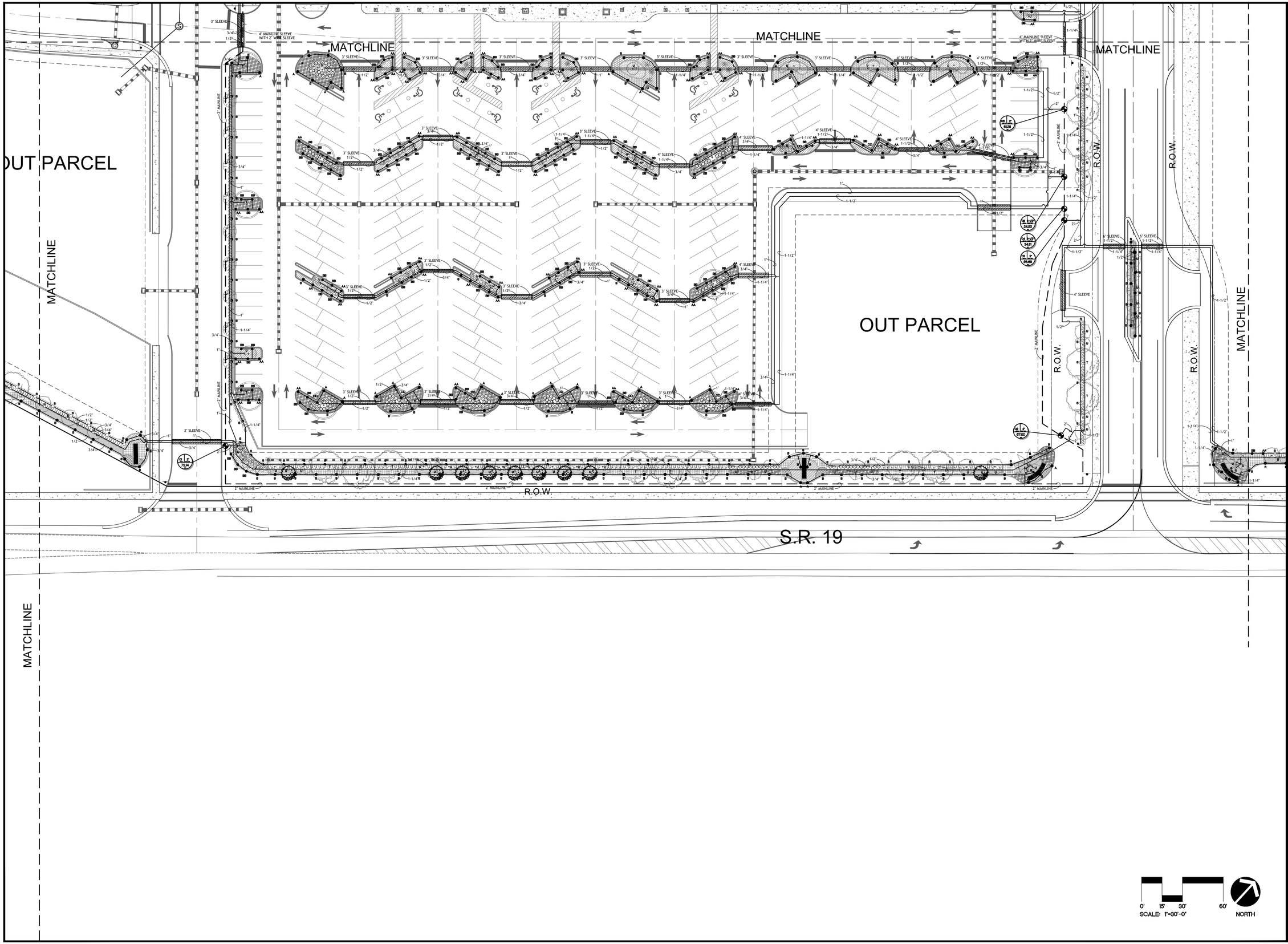

BORRELLI + PARTNERS
ARCHITECTURE PLANNING LANDSCAPE INTERIOR
ORLANDO 20 VASSAR STREET, SUITE 118-1338

SIGNATURE AND DATED SEAL

CHRISTOPHER D. RICE LA#666-7122

CONSULTANTS

LAKE HILLS SHOPPING CENTER

DRAWING TITLE: IRRIGATION PLAN

REV.	DESCRIPTION	DATE

PROJECT ADDRESS

OWNER NAME AND ADDRESS

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DRAWN BY	JY
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DATE	01-08-25

I-103

TY LINE

MATCHLINE

EXISTING CANOPY

PROPERTY LINE

EXISTING CANOPY

EXISTING CANOPY

OUT PARCEL

MATCHLINE

PROPERTY LINE

R.O.W.

R.O.W.

S.R. 19

0' 15' 30' 60'
SCALE: 1"=30'-0"

NORTH

LAKE HILLS SHOPPING CENTER

BORRELLI + PARTNERS
ARCHITECTURE PLANNING LANDSCAPE INTERIOR

ORLANDO 720 VASSAR STREET
ORLANDO, FLORIDA 32804 (407) 418-1338

SIGNATURE AND DATED SEAL

CHRISTOPHER D. RICE LA#666-7722

CONSULTANTS

REV.	DESCRIPTION	DATE

PROJECT ADDRESS

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IRRIGATION PLAN

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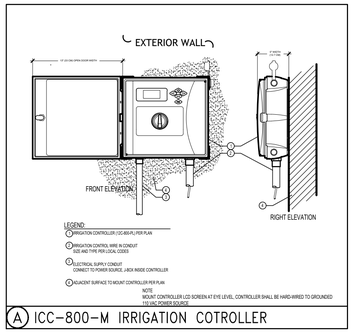
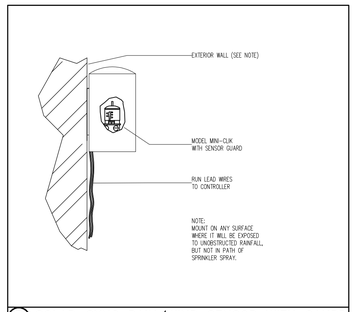
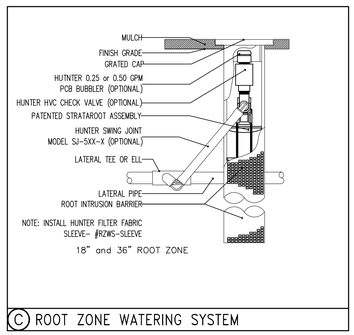
I-104



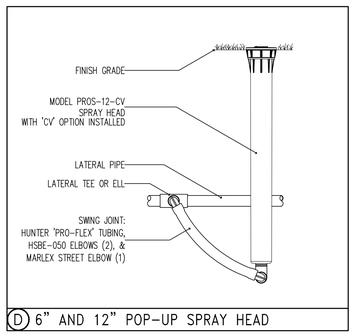
(A) ICC-800-M IRRIGATION COTROLLER



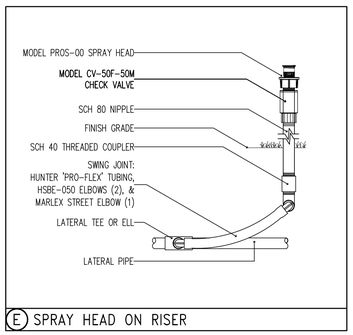
(B) SOLAR-SYNC RAIN/WIND SENSOR WITH GAURD



(C) ROOT ZONE WATERING SYSTEM



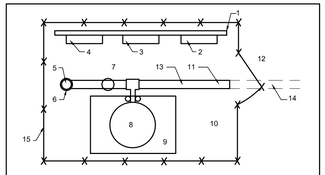
(D) 6" AND 12" POP-UP SPRAY HEAD



(E) SPRAY HEAD ON RISER

SPRAY NOZZLE CHART

TYPE	SYM	NOZZLE	NOZZLE PATTERN	GPM
MP1000 8-15' radius	A	MAROON	90° ADJUSTABLE ARC	.21
	B	MAROON	180° ADJUSTABLE ARC	.42
	C	LT. BLUE	210° ADJUSTABLE ARC	.49
	D	LT. BLUE	270° ADJUSTABLE ARC	.63
	E	OLIVE	360° ARC	.84
MP2000 13'-21' radius	F	BLACK	90° ADJUSTABLE ARC	.43
	G	BLACK	180° ADJUSTABLE ARC	.77
	H	GREEN	210° ADJUSTABLE ARC	.86
	I	GREEN	270° ADJUSTABLE ARC	1.10
	J	RED	360° ARC	1.48
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	TURQUOISE	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	0.50 GPM FLOOD BUBBLER	.50
	U	PCN50	1.00 GPM FLOOD BUBBLER	1.00
	V	SR-4Q	90° WITH 4' RADIUS	.22
	W	SR-4H	180° WITH 4' RADIUS	.44
MP800 6'-12' radius	AA	ORANGE	90° ADJUSTABLE ARC	.23
	BB	ORANGE	180° ADJUSTABLE ARC	.42
	CC	ORANGE	210° ADJUSTABLE ARC	.43
	DD	GREEN	360° ARC	.78



1) STEEL SUPPORT
2) CONTROLLER
3) DISCONNECT
4) STARTER (WHEN REQUIRED)
5) PRESSURE RELIEF VALVE
6) WELL
7) CHECK VALVE (IF REQUIRED)
8) 120 GAL. BLADDER TANK
9) 4" CONCRETE PAD
10) 6" GRAVEL
11) GALV. STEEL PIPE
12) GATE/LATCH
13) 45° ELBOW
14) MAINLINE
15) 6' HT. GREEN CHAIN LINK FENCE

(F) WELL DETAIL

WELL SPECIFICATIONS

PART 1 - WELL

1.1 THE CONTRACTOR SHALL DRIVE OR DRILL ONE 4" DEEP WELL FOR THE OPERATION OF THE IRRIGATION SYSTEM. THE WELL SHALL PRODUCE 100 GALLONS PER MINUTE WITH NOT MORE THAN A 5 FOOT PUMPING DRAWDOWN.

1.2 THE WELL SHALL BE INNSTALLED AS PER STATE AND LOCAL CODE REGULATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FEES AND PERMITS REQUIRED TO DRILL THE WELL OR WELLS.

PART 2 - PUMP

2.1 THE CONTRACTOR SHALL FURNISH AND INSTALL ONE 10.0 H.P. SUBMERSIBLE PUMP IN THE WELL. THE PUMP SHALL BE CAPABLE OF PRODUCING 100 GALLONS PER MINUTE AT xx T.D.H. (TOTAL DYNAMIC HEAD). THE T.D.H. IS AT GROUND LEVEL. THE PUMP OR PUMPS SHALL BE INSTALLED USING THE FOLLOWING EQUIPMENT AND MATERIALS: ALL EQUIPMENT MAY NOT BE LISTED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING ALL NECESSARY EQUIPMENT FOR THE OPERATION OF THE WELL PUMP AND ITS CONNECTION TO THE IRRIGATION SYSTEM.

A) 4 X 2 INCH SANITARY WELL SEAL
B) GALVANIZED DROP PIPE, SIZE AS REQUIRED
C) SUBMERSIBLE PUMP CABLE
D) ALL NECESSARY GALVANIZED FITTINGS THAT ARE REQUIRED FOR THE CONNECTION OF THE SYSTEM ALL ABOVE GROUND PIPE SHALL BE GALVANIZED STEEL.
E) ALL NECESSARY ELECTRICAL WIRE, SWITCHES AND CONDUIT
F) ISOLATION VALVE
G) SILENT CHECK VALVE
H) MAGNETIC STARTER FOR THREE PHASE SYSTEM, SIZE AS REQUIRED
I) ABOVE GROUND CHECK VALVE, WHERE REQUIRED BY CODE

PART 3 - NOTES

3.1 THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND CONNECTION OF ALL THE ABOVE EQUIPMENT AND THE CONNECTION TO THE IRRIGATION SYSTEM.

3.2 POWER FOR THE OPERATION OF THE WELL PUMP SHALL BE SUPPLIED TO A JUNCTION BOX AT THE WELL LOCATION BY OTHERS, UNLESS NOTED OTHERWISE ON THE PLAN. COORDINATE ALL POWER REQUIREMENTS WITH THE OWNER OR GENERAL CONTRACTOR.

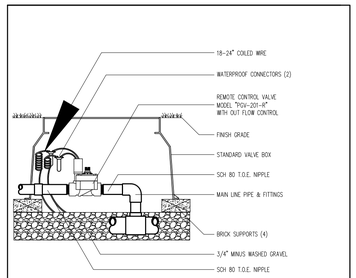
PART 4 - WELL TESTING

4.1 BEFORE SETTING THE PUMP THE WELL DRILLER SHALL PROVIDE A BORING REPORT AND WATER QUALITY ANALYSIS TO THE LANDSCAPE ARCHITECT FOR HIS OR HER APPROVAL.

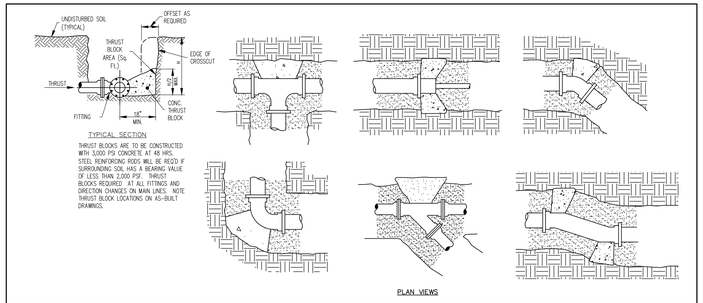
4.2 BEFORE SETTING THE PUMP THE WELL DRILLER SHALL NOTIFY THE LANDSCAPE ARCHITECT OF THE STATIC WATER LEVEL TO DETERMINE IF THE PUMP CAN PROVIDE THE PROPER G.P.M. AND P.S.I. FOR THE OPERATION OF THE IRRIGATION SYSTEM.

PART 5 - SITE CONDITIONS

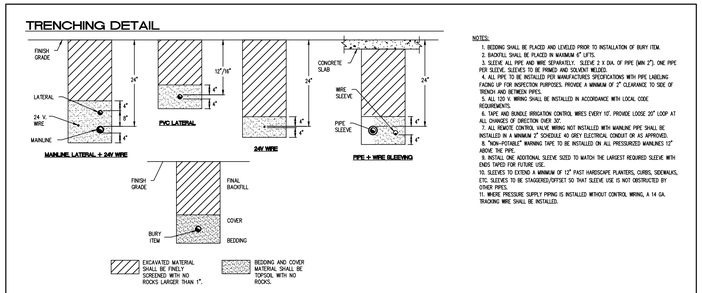
5.1 THE WELL DRILLER SHALL BE RESPONSIBLE TO VISIT THE SITE AND BECOME FAMILIAR WITH THE ON-SITE LOCATION OF THE WELL. IT SHALL BE HIS RESPONSIBILITY TO NOTIFY THE OWNER IF HE FEELS THE LOCATION SHOULD BE MOVED. THE OWNER SHALL NOT BE RESPONSIBLE TO PAY FOR ANY WELL OR PART OF A WELL THAT DOES NOT MEET THE FULL INTENT OF THESE SPECIFICATIONS.



(G) PGV 151 & 201 GLOBE VALVE



(H) THRUST BLOCK DETAILS



(I) 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.
7) ALL CONTROL WIRE SPLICES SHALL BE MADE IN VALVE BOXES USING SNAP-TITE CONNECTORS AND SEALANT.
8) 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.
9) ALL VALVES, GATE VALVES AND QUICK COUPLERS SHALL BE INSTALLED IN VALVE BOXES.
10) 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.
11) 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.
12) 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.
13) ALL WORK SHALL BE GUARANTEED FOR ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE AGAINST ALL DEFECTS IN EQUIPMENT AND WORKMANSHIP.
14) 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.
15) CONCRETE THRUST BLOCKS ARE TO BE UTULIZED AT ALL MAINLINE DIRECTION CHANGES.
16) 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.

SYMBOL	DESCRIPTION	QUANTITIES
▫	HUNTER INDUSTRIES RZWS WITH PCN .50 AND 1.00 GPM BUBBLER	225
●	12" POP-UP SPRAY – HUNTER IND. 'PROS-12-PRS40' BODY W/MP1000 NOZZLES	200
⬢	12" POP-UP SPRAY – HUNTER IND. 'PROS-12-PRS40' BODY W/MP800 NOZZLES	296
○	6" POP-UP SPRAY – HUNTER IND. 'PROS-06-PRS40' BODY W/MP1000 NOZZLES	86
◔	24" POP-UP SPRAY – HUNTER IND. 'PROS-00-PRS40' RISER W/MP1000 NOZZLES	75
◕	HUNTER 'ICV-FS-AS-40' SERIES ELECTRIC VALVE WITH ACCU-SET PRESSURE REGULATOR 2" + 1-1/2"	8
(C)	HUNTER "ICC-800" CONTROLLER, 8 STATION UNIT WITH 'ICM-800' EXPANSION MODULE INSTALL WITH A SOLAR-SYNC SENSOR AND BY-PASS BOX. GROUND WITH AN 8' COPPER CLAD ROD.	1
⊕	HUNTER SOLAR-SYNC SENSOR	1
(W)	4" IRRIGATION WELL	1
(P)	10 HP PUMP TO PROVIDE A MINIMUM 100 GPM AT 60 PSI	1
——	LATERAL LINE – SCH 40 PVC – SIZE PER PLAN	SEE PLAN
-----	2" MAINLINE – SCH 40 PVC SIZE PER PLAN	SEE PLAN
▬	SLEEVING – SCH. 40 PVC MIN. DEPTH OF 24"	SEE PLAN

(J) EQUIPMENT LIST FOR COMMON AREA

WATER SCHEDULE FOR COMMON AREA

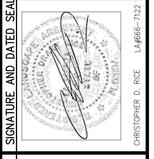
WATER SCHEDULE

ZONE #	WATER TYPE	WATERING TIME (MIN)*	GAL. PER MINUTE	GAL. PER WATERING	PRECIP. IN INCHES
1	SHRUBS	20	72.14	1442.8	0.43
2	BUBBLER	15	67	1005	0.43
3	SHRUBS	20	56.69	1133.8	0.43
4	SHRUBS	20	34.81	696.2	0.43
5	BUBBLER	15	24.5	367.5	0.43
6	SHRUBS	20	61.38	1227.6	0.43
7	BUBBLER	15	63	945	0.43
8	SHRUBS	20	28.82	576.4	0.43
TOTAL		145	408.34	7394.3	
WATERING SCHEDULE		14788.6 GAL / WEEK - SUMMER (MAR 15-OCT 14 (2 TIMES /WEEK))			
		7394.3 GAL / WEEK - WINTER (OCT 15-MAR 14 (1 TIME/WEEK))			
USAGE		576755.4 GAL / YEAR (78 WATERINGS PER YEAR)			
CALCULATIONS		403728.78 GAL / YEAR W/ 30% REDUCTION FOR SOLAR-SYN			

*ZONE RUN TIMES SHOWN ARE FOR AFTER PLANT ESTABLISHMENT PERIOD (90 DAYS).

BORRELLI + PARTNERS
ARCHITECTURE PLANNING LANDSCAPE INTERIOR
ORLANDO 20 VASSAR STREET (407) 648-1338

SIGNATURE AND DATED SEAL



CHRISTOPHER D. RICE LA#666-7122

CONSULTANTS

LAKE HILLS SHOPPING CENTER

DRAWING TITLE: IRRIGATION DETAILS AND WATER SCHEDULE

REV.	DESCRIPTION	DATE

PROJECT ADDRESS

OWNER NAME AND ADDRESS

PROJECT NO.	24-091
PHASE	90% CONSTRUCTION DOC.
SCALE	N.T.S
FILE NAME	
DRAWN BY	JV
CHECKED BY	CDR
DATE	01-08-25

I-500

Lake Hills Shopping Center

Stormwater Report

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS

Prepared by:

Madden, Moorhead, & Stokes, LLC
431 E. Horatio Avenue, Suite 260
Maitland, FL 32751

December 2024

BENJAMIN S. BECKHAM LICENSE No. 79452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Benjamin S. Beckham, P.E. using a digital signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Digitally signed by Benjamin S Beckham
Date: 2025.01.10 14:46:50 -05'00'

Benjamin S. Beckham, P.E. #79452
Certificate of Authorization No. CA-0007723

Documents included herein which have been prepared by professionals other than Madden, Moorhead, and Stokes, LLC. are not covered under the above registered engineer's signature and seal

Table of Contents

Exhibits

Appendices

Introduction

The proposed project, Lake Hills Shopping Center, is within the municipality of Howey in the Hills, Florida. The project is located near the intersection of C.R. 48 and S.R. 19. The development will consist of supporting infrastructure for a Publix Supermarket with retail shopping, access roads from C.R. 48 and S.R. 19 to the Publix. Also, four outparcels will be mass graded for future development.

Computations within this report shall consider full build out of the Publix and outparcels. The analysis provided in this report is in compliance with the stormwater management requirements of the St. John's River Water Management District (SJRWMD) and the City of Howey in the Hills.

Existing Conditions

The site is undeveloped and the drains north to a land locked depressional area designated Zone AE (Elev. 84.1). The site is a retired orange grove. Soils are well drained and seasonal high groundwater levels are approximately 5'-10' below surface elevations. Elevations range from 140 to 81.

Approximately 10.6 acres drains north to a depressional area just offsite, and the remaining 7.8 acres drains offsite to an adjacent property and a small area in the western portion of the site drains towards C.R. 48.

Proposed Conditions

The proposed project is part Lake Hills Main Blvd master drainage system located just north of the site. See Appendix B for the Master Drainage Report.

The proposed drainage infrastructure will serve the Publix parking lot, the access roads to Publix, and Outparcels B, C and D. Outparcel A drainage will be collected and routed through the drainage system of Lake Hill Main Blvd. The entire +/- 19 acre development will outfall to Pond 1 of the adjacent master drainage system.

Calculations within this report are for the secondary storm system only. Nutrient loading calculations have been accounted for in the master system.

Within basin Post-1 the master stormwater calculations has allotted for 15.72 acres of impervious from the Lake Hills Shopping Center and outparcels (see Appendix B). The proposed impervious from the Publix development is 14.00 acres (see Land Use Table 1).

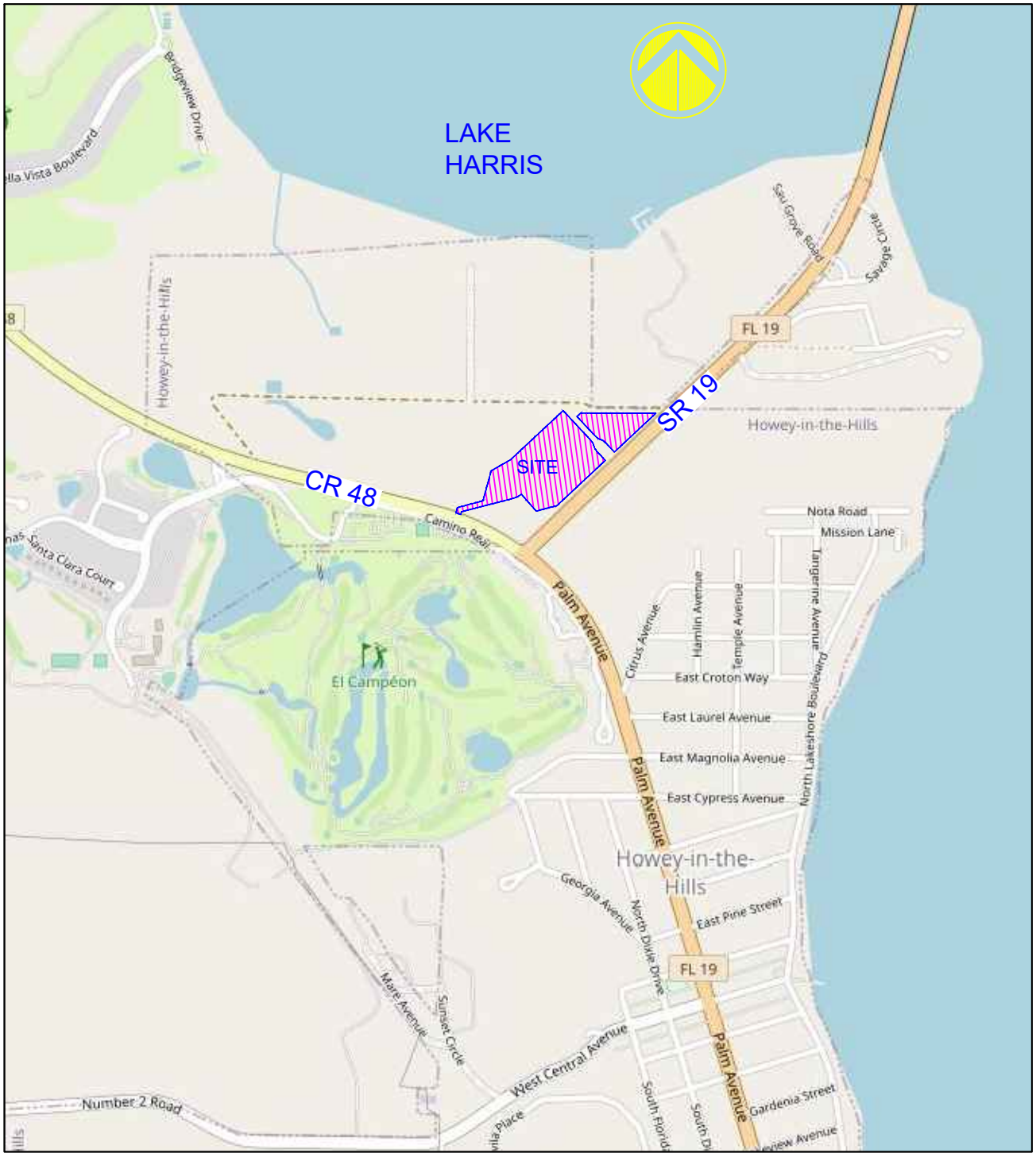
The StormCAD calculations consider the 10yr storm frequency as the primary IDF curve. The PD1 tailwater elevation 82.52 was obtained from the master stormwater report in Appendix B.

Lake Hills Publix Property

Area = 18.89
(includes access road from CR48)

Land Use Table 1	Area (Ac.)	Percent of Site
Pavement (parking, access roads, aprons)	5.80	30.70%
Sidewalks	0.41	2.17%
Buildings	1.41	7.46%
Outparcel A (80% Impervious)	2.86	15.14%
Outparcel B (80% Impervious)	0.78	4.13%
Outparcel C (80% Impervious)	0.87	4.61%
Outparcel D (80% Impervious)	1.87	9.90%
Open Space	4.89	25.89%
Total	14.00	

EXHIBITS



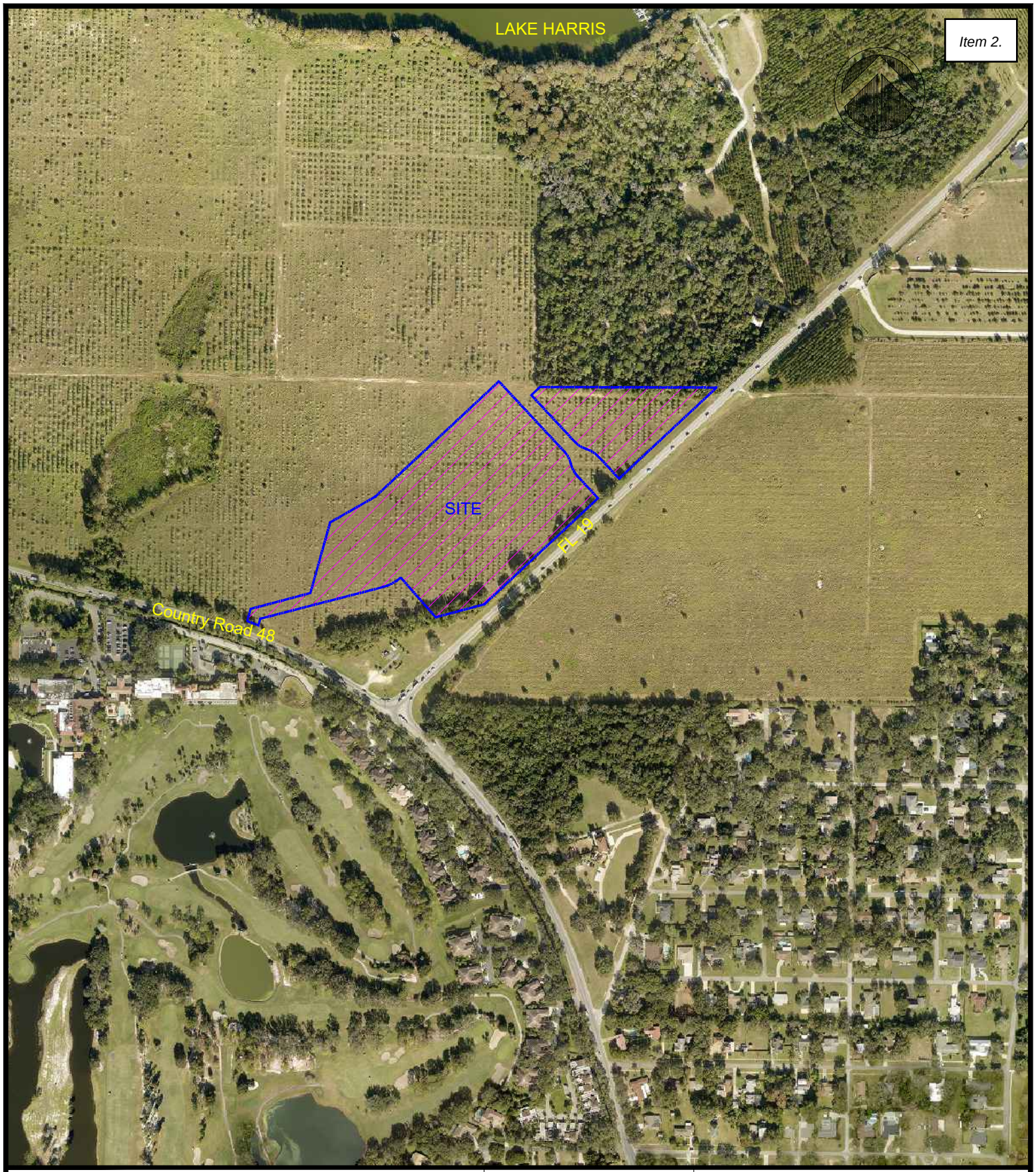
MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. HORATIO AVE., STE. 260, MAITLAND, FL 32751 * (407) 629-8330
CERTIFICATE OF AUTHORIZATION NO. CA-0007723

JOB NO.	22041
SEC. 23, TWP. 20S, RANGE 25E	
DRAWN BY:	NC
APPROVED BY:	BSB
DATE:	03/29/2024
SCALE:	1" = 2000'

Lake Hills Shopping Center

LOCATION MAP

OpenStreetMap.org



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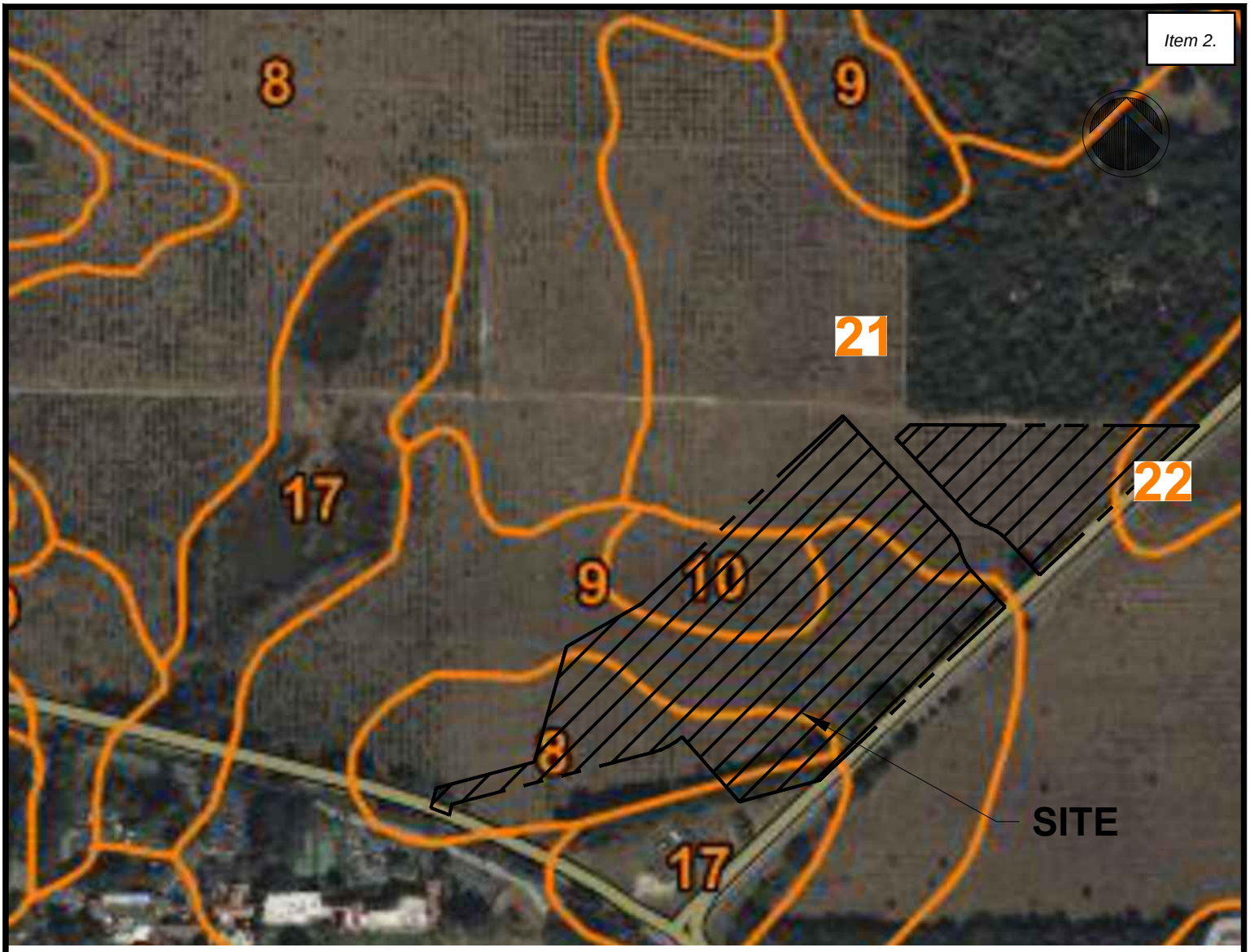
APPROVED BY:	BSB
DATE:	03/29/2024
SCALE:	1" = 800'

Lake Hills Shopping Center

Town of Howey-In-The-Hills, FL

AERIAL MAP

SOURCE: fdot.dot.state.fl.us



SOILS LEGEND		
SOIL NUMBER	SOIL NAME	HYDROLOGIC GROUP
8	CANDLER SANDS (0%–5% SLOPE)	A
9	CANDLER SANDS (5%–12% SLOPE)	A
10	CANDLER SANDS (12%–40% SLOPE)	A
17	ARENTS	B
21	LAKE SANDS (0%–5% SLOPE)	A
22	LAKE SANDS (5%–12% SLOPE)	A

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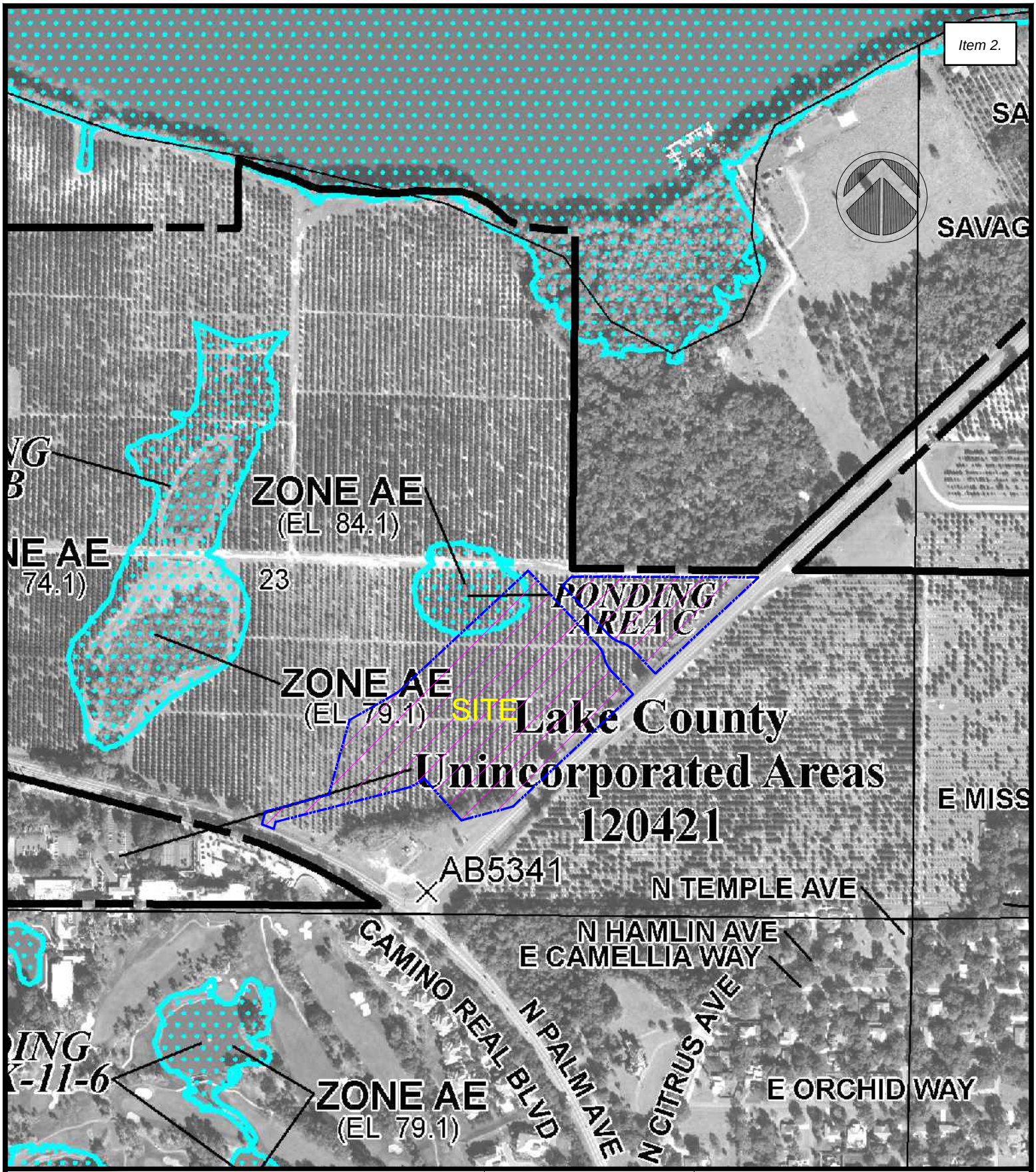
JOB NO.	22041
SEC. 23, TWP. 20S, RANGE 25E	
DRAWN BY:	KS
APPROVED BY:	BEN
DATE:	03/29/2023
Scale:	1" = 400'

LAKE HILLS SHOPPING CENTER

SOILS MAP

USDA Web Soil Survey



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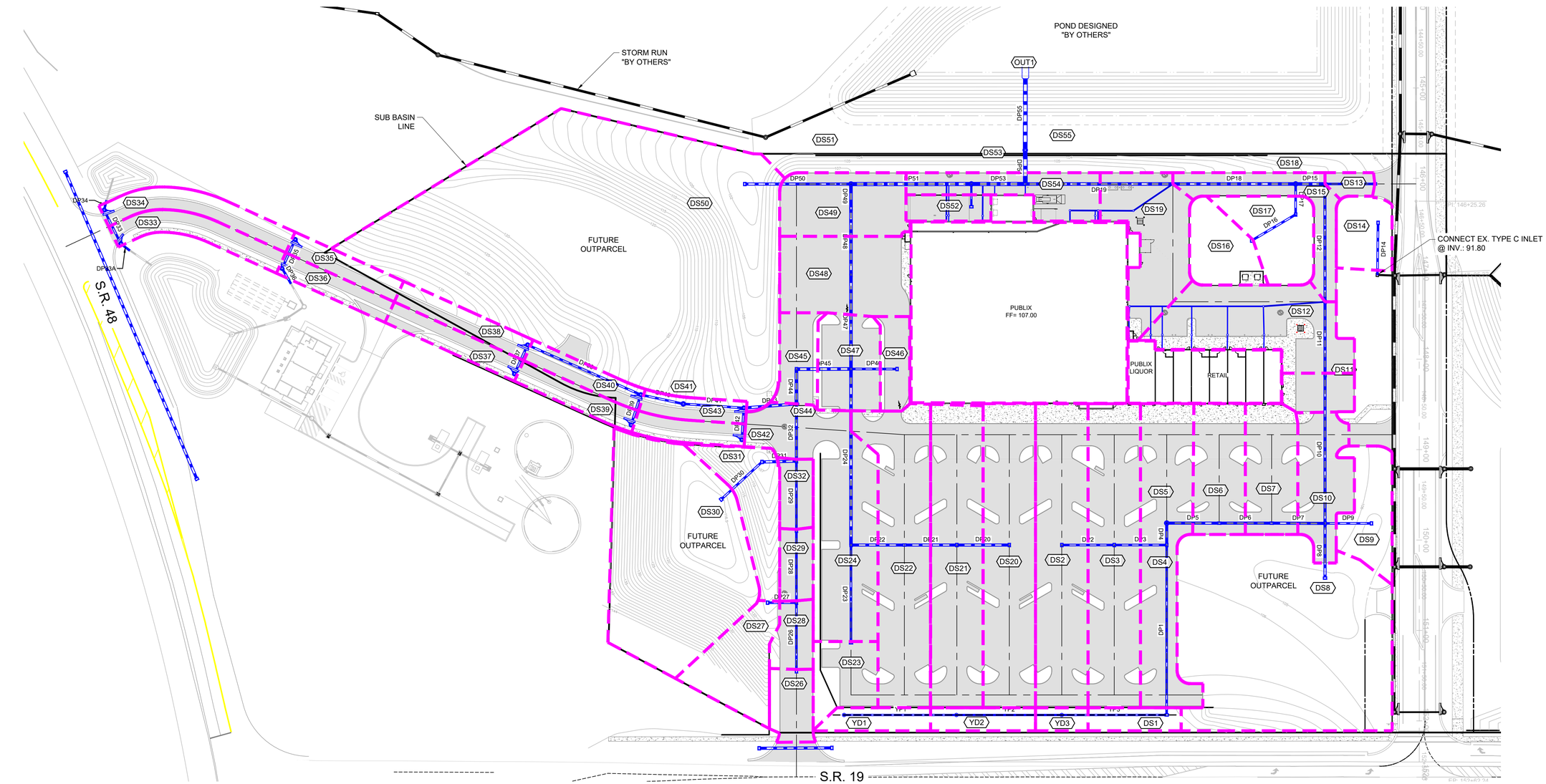
JOB NO.	22041
SEC. 23, TWP. 20S, RANGE 25E	
DRAWN BY:	NC
APPROVED BY:	BSB
DATE:	03/27/2024
SCALE:	1" = 500'

LAKE HILLS SHOPPING CENTER
FIRM
LAKE COUNTY, FLORIDA
MAP #12069C0485E
DATED: DEC. 18, 2012

DATUMS:
HORIZONTAL (LOCATION): NA
VERTICAL (ELEVATION): NAVD1

Appendix A
StormCAD



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431 E. Horatio Avenue
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Maitland, Florida 32751
(407) 629-8330
CA# 0007723

STORMCAD SUB-BASINS

FOR

LAKE HILLS SHOPPING CENTER

TOWN OF HOWEY IN THE HILLS FLORIDA

WINDCREST DEVELOPMENT GROUP, INC.
605 E. ROBINSON ST. SUITE 340
ORLANDO, FL 32801
407-219-3540

	DATE	REVISIONS
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		

ENGINEER OF RECORD

JOB # 22041
DATE: 08/06/24
DATUM: NAVD 88
DESIGNED BY: KGS
DRAWN BY: JAS
APPROVED BY: BSB

EXHIBIT

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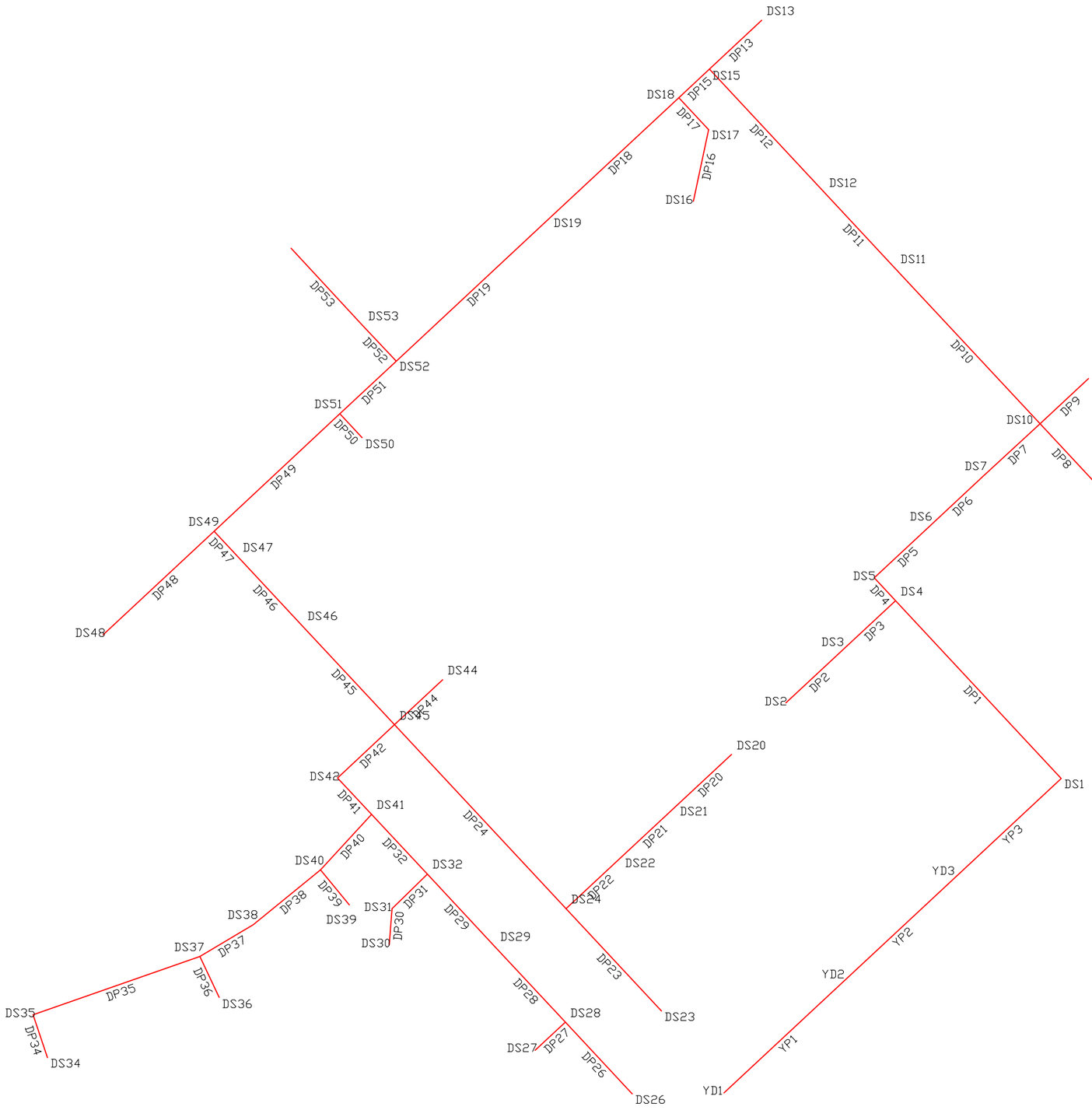
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Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	82.018	0.01	12.92	0.20	0.00	10.80	10.0	71.8	2.9	31.25	138.2	5.97	36	3.66	80.00	83.00	82.52	84.81	84.88	98.00	DP53
2	1	37.412	1.09	12.91	0.90	0.98	10.80	10.0	71.8	2.9	31.26	83.53	8.98	36	1.34	89.00	89.50	90.27	91.31	98.00	105.25	DP52
3	2	59.647	0.01	7.18	0.20	0.00	6.07	10.0	20.3	5.7	34.38	59.17	7.97	36	0.67	93.00	93.40	94.64	95.30	105.25	106.06	DP51
4	3	133.076	0.01	7.11	0.20	0.00	6.01	10.0	19.9	5.7	34.34	59.42	7.26	36	0.68	93.40	94.30	95.30	96.20	106.06	106.36	DP49
5	4	26.778	0.22	4.76	0.90	0.20	3.90	10.0	19.8	5.7	22.34	24.28	5.61	30	0.30	96.23	96.31	98.12	98.20	106.36	106.11	DP47
6	5	73.344	0.27	4.54	0.50	0.14	3.70	10.0	19.6	5.8	21.31	24.33	4.76	30	0.30	96.31	96.53	98.49	98.63	106.11	105.97	DP46
7	6	104.372	0.17	4.27	0.90	0.15	3.57	10.0	19.3	5.8	20.69	24.21	4.45	30	0.30	96.53	96.84	98.85	99.02	105.97	105.92	DP45
8	7	60.294	0.10	2.04	0.90	0.09	1.77	10.0	18.9	5.8	10.37	24.28	4.74	30	0.30	99.15	99.33	100.29	100.47	105.92	107.01	DP42
9	8	38.463	0.01	1.94	0.20	0.00	1.68	10.0	18.6	5.9	9.91	24.82	3.70	30	0.31	99.33	99.45	100.72	100.74	107.01	107.75	DP41
10	9	58.317	0.07	0.49	0.80	0.06	0.39	10.0	17.5	6.0	2.33	16.04	2.21	24	0.43	99.45	99.70	100.93	100.23	107.75	109.13	DP40
11	10	67.120	0.01	0.35	0.20	0.00	0.27	10.0	16.5	6.2	1.69	23.93	5.60	18	4.42	103.90	106.87	104.17	107.36	109.13	114.50	DP38
12	11	48.123	0.08	0.34	0.80	0.06	0.27	10.0	15.7	6.3	1.71	23.93	3.41	18	4.43	106.87	109.00	107.36	109.49	114.50	118.50	DP37
13	12	136.573	0.09	0.18	0.80	0.07	0.14	10.0	11.9	7.0	1.00	24.04	4.82	18	4.47	113.90	120.00	114.11	120.37	118.50	129.75	DP35
14	13	35.032	0.09	0.09	0.80	0.07	0.07	10.0	10.0	7.4	0.53	8.60	2.58	18	0.57	122.80	123.00	123.05	123.27	129.75	129.75	DP34
15	2	163.083	0.27	4.64	0.90	0.24	3.75	10.0	71.2	2.9	10.91	38.90	4.04	30	0.77	89.50	90.75	91.31	91.85	105.25	104.76	DP19
16	15	135.704	0.01	4.37	0.20	0.00	3.51	10.0	70.7	2.9	10.26	26.97	5.01	30	0.37	90.75	91.25	91.85	92.32	104.76	100.57	DP18
17	16	32.348	0.17	4.05	0.90	0.15	3.44	10.0	70.5	2.9	10.08	39.06	5.06	30	0.77	91.25	91.50	92.32	92.56	100.57	99.50	DP15
18	17	130.000	0.36	3.85	0.90	0.32	3.26	10.0	70.2	2.9	9.58	13.42	4.64	24	0.30	93.36	93.75	94.61	95.00	99.50	104.48	DP12
19	18	80.963	0.08	3.49	0.90	0.07	2.94	10.0	70.0	2.9	8.65	13.34	4.52	24	0.30	96.75	96.99	97.92	98.16	104.48	105.89	DP11
20	19	164.030	0.19	3.41	0.90	0.17	2.87	10.0	69.5	3.0	8.47	13.53	4.11	24	0.30	96.99	97.49	98.35	98.65	105.89	105.09	DP10
21	20	59.001	0.19	1.96	0.90	0.17	1.56	10.0	69.2	3.0	4.63	13.15	2.04	24	0.29	97.49	97.66	98.93	98.94	105.09	105.09	DP7
22	21	58.000	0.19	1.77	0.90	0.17	1.39	10.0	68.9	3.0	4.13	13.65	2.02	24	0.31	97.66	97.84	98.99	99.00	105.09	105.09	DP6

Project File: PublixStormCAD.stm | Number of lines: 52 | Run Date: 1/2/2025

NOTES:Intensity = 12.4956 + -1.6712(X) + -0.3490(X)^2 + 0.0502(X)^3 -- X = Ln(Tc)(min); Return period =Yrs. 10 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
23	22	58.000	0.01	1.58	0.20	0.00	1.22	10.0	68.5	3.0	3.64	13.27	2.01	24	0.29	97.84	98.01	99.05	99.06	105.09	105.09	DP5
24	23	24.204	0.39	1.57	0.90	0.35	1.22	10.0	68.4	3.0	3.64	13.18	2.13	24	0.29	98.01	98.08	99.11	99.12	105.09	104.85	DP4
25	24	187.929	0.07	0.28	0.20	0.01	0.06	10.0	54.2	3.5	0.19	15.77	1.01	18	1.92	98.08	101.69	99.18	101.85	104.85	113.50	DP1
26	25	115.968	0.07	0.21	0.20	0.01	0.04	10.0	46.2	3.8	0.16	13.78	2.80	15	3.88	109.00	113.50	109.09	113.65	113.50	118.65	YP3
27	26	116.476	0.07	0.14	0.20	0.01	0.03	10.0	34.5	4.4	0.12	11.95	1.58	15	2.92	113.50	116.90	113.65	117.04	118.65	121.40	YP2
28	27	124.163	0.07	0.07	0.20	0.01	0.01	10.0	10.0	7.4	0.10	8.42	1.55	15	1.45	116.90	118.70	117.04	118.82	121.40	123.20	YP1
29	9	63.295	0.07	1.44	0.90	0.06	1.30	10.0	15.6	6.3	8.18	21.78	5.76	24	0.79	100.75	101.25	101.60	102.27	107.75	107.53	DP32
30	29	76.940	0.07	0.42	0.90	0.06	0.38	10.0	14.7	6.4	2.44	26.74	6.59	18	5.52	103.00	107.25	103.31	107.84	107.53	112.13	DP29
31	30	79.542	0.07	0.35	0.90	0.06	0.32	10.0	13.7	6.6	2.09	21.15	3.42	18	3.46	107.25	110.00	107.84	110.54	112.13	117.81	DP28
32	31	75.874	0.09	0.09	0.90	0.08	0.08	10.0	10.0	7.4	0.60	26.12	4.32	18	5.27	113.00	117.00	113.16	117.29	117.81	123.23	DP26
33	12	35.001	0.08	0.08	0.80	0.06	0.06	10.0	10.0	7.4	0.47	8.60	2.50	18	0.57	112.80	113.00	113.04	113.25	118.50	118.49	DP36
34	31	31.962	0.19	0.19	0.90	0.17	0.17	10.0	10.0	7.4	1.27	14.23	2.65	18	1.56	110.00	110.50	110.54	110.92	117.81	118.00	DP27
35	10	35.117	0.07	0.07	0.80	0.06	0.06	10.0	10.0	7.4	0.41	6.07	1.96	18	0.28	103.90	104.00	104.17	104.27	109.13	109.12	DP39
36	29	38.085	0.18	0.95	0.90	0.16	0.86	10.0	10.2	7.4	6.30	19.85	4.30	24	0.66	101.25	101.50	102.27	102.39	107.53	106.50	DP31
37	36	28.000	0.77	0.77	0.90	0.69	0.69	10.0	10.0	7.4	5.13	13.60	4.77	18	1.43	101.50	101.90	102.39	102.77	106.50	116.50	DP30
38	7	50.874	0.08	0.08	0.50	0.04	0.04	10.0	10.0	7.4	0.30	7.97	2.13	18	0.49	100.75	101.00	100.95	101.20	105.92	105.68	DP44
39	24	58.000	0.45	0.90	0.90	0.41	0.81	10.0	10.6	7.3	5.89	4.95	3.33	18	0.19	100.02	100.13	101.52	101.63	104.85	104.85	DP3
40	39	58.000	0.45	0.45	0.90	0.41	0.41	10.0	10.0	7.4	3.00	5.17	1.70	18	0.21	100.13	100.25	101.73	101.75	104.85	104.85	DP2
41	7	194.701	0.49	1.98	0.90	0.44	1.60	10.0	13.7	6.6	10.63	24.46	4.79	30	0.30	98.14	98.73	99.31	99.87	105.92	104.85	DP24
42	41	59.000	0.47	1.36	0.90	0.42	1.04	10.0	12.5	6.9	7.16	13.15	3.12	24	0.29	98.73	98.90	100.17	100.21	104.85	104.85	DP22
43	42	58.000	0.44	0.89	0.90	0.40	0.62	10.0	11.8	7.0	4.34	13.65	1.97	24	0.31	98.90	99.08	100.31	100.33	104.85	104.85	DP21
44	43	58.000	0.45	0.45	0.50	0.23	0.23	10.0	10.0	7.4	1.67	13.27	0.85	24	0.29	99.08	99.25	100.37	100.37	104.85	104.85	DP20

Project File: PublixStormCAD.stm | Number of lines: 52 | Run Date: 1/2/2025

NOTES:Intensity = 12.4956 + -1.6712(X) + -0.3490(X)^2 + 0.0502(X)^3 -- X = Ln(Tc)(min); Return period =Yrs. 10 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
45	41	108.169	0.13	0.13	0.90	0.12	0.12	10.0	10.0	7.4	0.87	25.11	1.65	18	4.87	98.73	104.00	100.17	104.35	104.85	109.18	DP23
46	3	25.237	0.06	0.06	0.90	0.05	0.05	10.0	10.0	7.4	0.40	6.23	2.60	15	0.79	98.00	98.20	98.21	98.45	106.06	102.75	DP50
47	20	60.544	1.10	1.10	0.90	0.99	0.99	10.0	10.0	7.4	7.34	16.06	3.97	24	0.43	97.49	97.75	98.93	98.71	105.09	104.50	DP8
48	20	51.348	0.16	0.16	0.90	0.14	0.14	10.0	10.0	7.4	1.07	8.10	1.79	18	0.51	97.49	97.75	98.93	98.14	105.09	104.50	DP9
49	16	33.836	0.17	0.31	0.20	0.03	0.06	10.0	18.0	6.0	0.37	9.78	2.44	18	0.74	96.00	96.25	96.20	96.47	100.57	100.75	DP17
50	4	117.359	2.34	2.34	0.90	2.11	2.11	10.0	10.0	7.4	15.60	14.30	4.97	24	0.34	95.60	96.00	97.60	98.08	106.36	101.50	DP48
51	17	55.335	0.03	0.03	0.90	0.03	0.03	10.0	10.0	7.4	0.20	10.81	1.03	18	0.90	91.50	92.00	92.56	92.16	99.50	96.95	DP13
52	49	56.500	0.14	0.14	0.20	0.03	0.03	10.0	10.0	7.4	0.21	27.28	1.59	18	5.75	96.25	99.50	96.47	99.67	100.75	104.25	DP16

Project File: PublixStormCAD.stm | Number of lines: 52 | Run Date: 1/2/2025

NOTES:Intensity = 12.4956 + -1.6712(X) + -0.3490(X)^2 + 0.0502(X)^3 -- X = Ln(Tc)(min); Return period =Yrs. 10 ; c = cir e = ellip b = box

Appendix B
Lake Hills Main Blvd. & Mass Grading Stormwater Report

Stormwater Report

FOR

Lake Hills Main Blvd & Mass Grading

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS

Prepared by:

Madden, Moorhead, & Stokes, LLC.
431 E. Horatio Avenue, Suite 260
Maitland, FL 32751

November, 2024

David A. Stokes, P.E. #66527
Certificate of Authorization No. EB-0007723

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Exhibits

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Introduction

The proposed project, Lake Hills Mass Infrastructure, is in Howey-In-The-Hills, Florida. The project is located northwest of the CR48 and SR19 intersection. The development consists of a spine road to future development. The analysis provided in this report supports that the proposed project follows the stormwater management requirements of the SJRWMD and Howey-In-The-Hills, FL.

Existing Conditions

The undeveloped site is +/- 210 acres with grazing grassland of good condition. The site has a combination soils. There are 6 pre-development basins. Basin Pre-1 is the north side of the site adjacent to Lake Harris. Basin Pre-2 is the western corner that goes to an onsite wetland W-3. Basin Pre-3 is a portion of CR48 that goes to an onsite wetland W-4. Basin Pre-4 in along the southern property boundary and goes to onsite wetland W-4. Basin Pre-5 goes to the onsite wetlands W-5/6. Basin Pre-6 goes to an onsite depression. Please see Appendices B through F for the predevelopment stormwater analysis.

Proposed Conditions

The proposed development consists of ten drainage basins. Pond 1 is a 100yr/24hr retention pond that will service a portion of our onsite drainage and offsite area. Pond 2 and Pond 3 are interconnected wet ponds that outfall into Pond 10. Pond 4 and Pond 10 are interconnected wet ponds and outfall into Lake Harris. Pond 5 is a dry pond that has an outfall to Pond 10. Pond 7 is a wet pond that outfalls to Lake Harris. Pond 8 is a wet pond that outfalls to Lake Harris. Pond 9 is a wet pond that outfalls to Lake Harris. Pond 12 is a wet pond that outfalls to Lake Harris. All ponds are designed in accordance with the town of Howey-In-The-Hills and SJRWMD standards. Refer to Appendices G through K for the post development stormwater analysis. A summary of post stormwater analysis is presented in Appendix A.

Stormwater Management Criteria

Attenuation:

SJRWMD:

The post development maximum rate of discharge cannot exceed the predevelopment maximum rate for the 25yr/24hr storm event and Mean/24hr storm event.

Pollution Abatement Volume:

Dry Pond:

In accordance with SJRWMD design criteria, the pollution abatement volume criteria is 1.25 inches times impervious area in addition to 0.5 inches over the total area.

Wet Pond:

In accordance with SJRWMD design criteria, the pollution abatement volume criteria is 2.5” over the impervious areas or 1” over the entire area, whichever is greater.

Wet Pond Drawdown:

SJRWMD:

No more than half the treatment volume should be discharged in the first 24-30 hours after the storm event.

Permanent Pool Volume:

SJRWMD:

The permanent pool shall be sized to provide at least a 14-day average residence time

during the wet season (June - October). As an option to maintaining a littoral zone an additional 50% of the appropriate permanent pool volume is required.

Nutrient Analysis

The ultimate receiving water body for this project is Lake Harris. Lake Harris is impaired for nutrients. Please see Appendix M for Pre/Post Nutrient Analysis.

100-Year Floodplain

Flood plain information was obtained from the Flood Insurance Rate Map (FIRM); map #12069C0485E effective date December 18, 2012. The property lies within Flood Zone 'X' – and is not located within the 100 year flood hazard area with a portion of the property lying within Flood Zone 'A' & 'AE' and is in a special flood hazard area subject to inundation by the 1% annual chance flood.

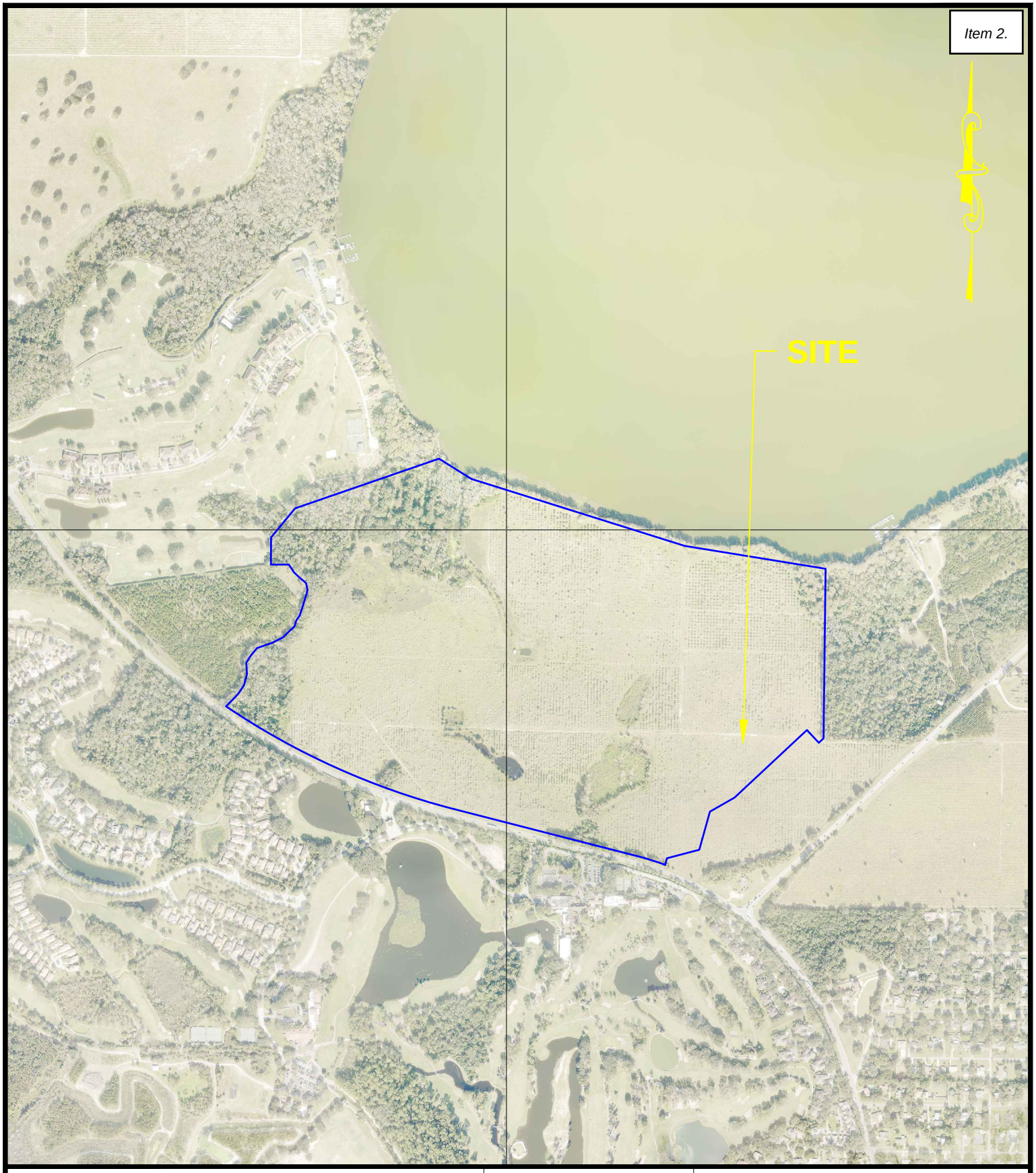
Tailwater Discussion

The tailwater is Lake Harris along the north property boundary. The tailwater elevation used for this analysis was 63.32, which is near the existing wetland line.

Secondary Drainage System

The secondary drainage system was modeled with the Storm Sewers program. The secondary drainage calculations are in Appendix N.

EXHIBITS



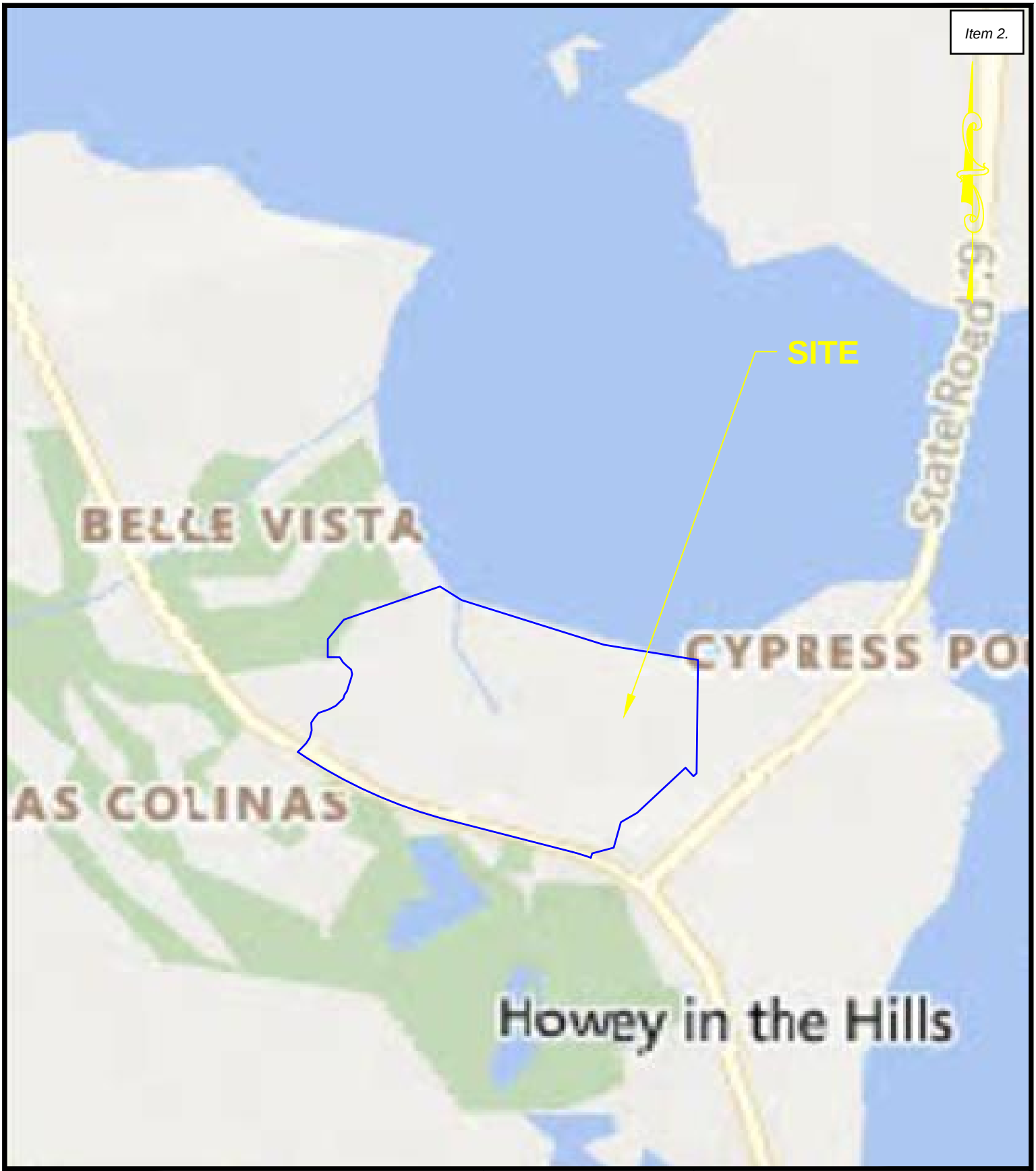
MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. HORATIO AVE., STE. 260, MAITLAND, FL 32751 * (407) 629-8330

JOB NO.	23019
SEC. 22, TWP. 20, RANGE 25	
DRAWN BY:	KAC
APPROVED BY:	DAS
DATE:	11/06/2024
Scale:	1" = 1000'

LAKE HILLS

AERIAL MAP

GOOGLE MAPS



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JOB NO.	23019
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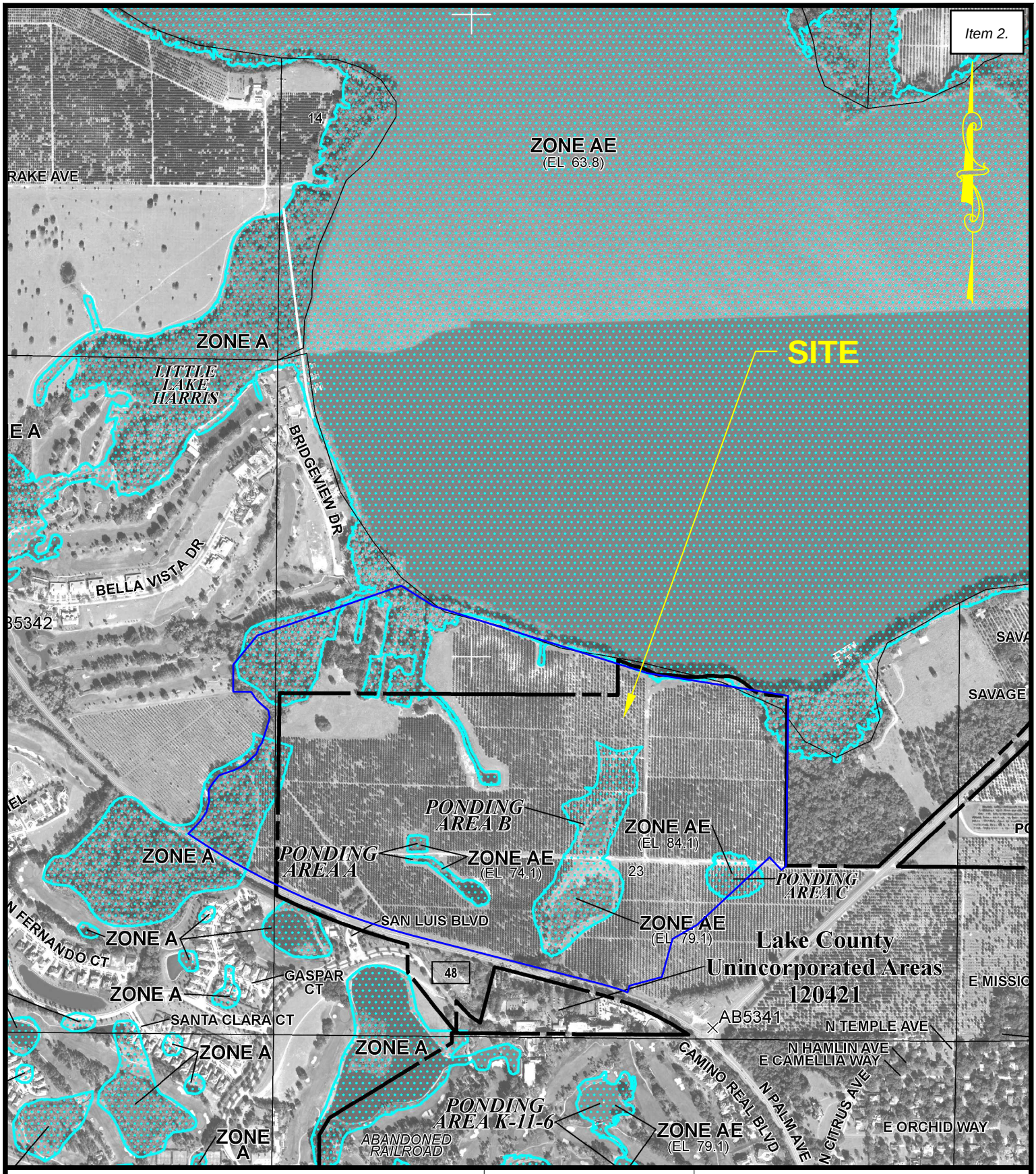
APPROVED BY:	DAS
DATE:	11/06/2024
Scale:	1" = 1500'

LAKE HILLS

LOCATION MAP

GOOGLE MAPS



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Scale:	1" = 1000'

LAKE HILLS

FLOOD INSURANCE RATE MAP
LAKE COUNTY, FLORIDA
MAP #12069C0485E
EFFECTIVE DATE DEC. 18, 2012

Appendix A
Summary Sheet

Pre vs. Post Development Discharge

Node	Storm Event	Pre-Development Discharge (cfs)	Post-Development Discharge (cfs)	Pre/Post Difference (cfs)
Lake Harris	25yr/24hr	333.54	235.04	+98.5
Lake Harris	Mean/24hr	93.63	9.72	+83.91

Post-Development Pond Stages

Pond	**Mean Annual Stage (ft)**	**10yr/24hr Stage(ft)**	**25yr/24hr Stage (ft)**	**100yr/24hr Stage(ft)**	**Top of Pond (ft)**
PD1	91.14	82.52	83.84	86.17	90.00
PD2	75.70	76.01	76.56	77.91	78.00
PD3	75.70	75.99	76.42	77.59	78.00
PD4	67.48	67.73	68.17	68.94	69.00
PD5	80.21	80.53	80.94	81.87	83.00
PD7	67.29	67.66	68.32	69.9	70.00
PD8	67.14	67.44	67.78	68.14	69.00
PD9	67.24	67.70	68.13	69.04	71.00
PD10	67.47	67.72	68.12	68.69	69.00
PD12	66.53	66.87	67.34	68.52	70.00

Appendix B
Predevelopment Basin Map

NODE: LAKE HARRIS

NODE: LAKE HARRIS

NODE: LAKE HARRIS

NODE: LAKE HARRIS

LINK: PIPE 3
36" RCP
N. INVERT = 62.21
S. INVERT = 63.16

BASIN: PRE-1
AREA: 124.27
CN: 61
TOC:19

NODE: W-3

BASIN: PRE-2
AREA: 18.27
CN: 70
TOC: 14

NODE: W-4

BASIN: PRE-4
AREA: 21.38
CN: 68
TOC: 10

NODE: SW-6/7

BASIN: PRE-3
AREA: 3.38
CN: 49
TOC: 44

NODE: W-5/6

NODE: W-5/6

BASIN: PRE-5
AREA: 45.86
CN: 66
TOC: 14

NODE: DEPRES-6

BASIN: PRE-6
AREA: 22.
CN: 68
TOC: 12

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Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

SITE PLAN
FOR
23019-LAKE HILLS - STREET A
LAKE COUNTY FLORIDA

READER & PARTNERS, LLC
5850 TB LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 850-4899

	DATE	REVISIONS
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		

KATLYN ASHLEY CROWELL
LICENSE
NO. PE95331
STATE OF FLORIDA
PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by Kaitlyn Ashley Crowell, PE 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.

ENGINEER OF RECORD

JOB # 23019
DATE: 6/28/24
DATUM: NAVD 88
DESIGNED BY: XXXX
DRAWN BY: XXXX
APPROVED BY: XXXX

C004

Appendix C
Predevelopment Hydrology Calculations

Lake Hills
Predevelopment Hydrology **Analyzed: 6/25/24**

Basin PRE-1	103.42	Ac.
Basin PRE-2	12.76	Ac.
Basin PRE-3	3.19	Ac.
Basin PRE-4	21.38	Ac.
Basin PRE-5	45.86	Ac.
Basin PRE-6	22.88	Ac.
Total Basin Area:	209.49	Ac.

CURVE NUMBER CALCULATION:

Basin PRE-1

Land Use/Vegetation	Hydric Group	CN	Total Area (Ac.)	CN * Area
Pasture, grassland, or range	A	49	60.09	2944.4
Woods	A/D	79	14.16	1118.6
Woods-grass combination	B	58	17.33	1005.1
Pasture, grassland, or range	B/D	80	11.84	947.2
TOTAL AREA			103.42	6015.4
			CN =	**58**

Basin PRE-2

Land Use/Vegetation	Hydric Group	CN	Total Area (Ac.)	CN * Area
Pasture, grassland, or range	A	49	5.46	267.54
Pasture, grassland, or range	A/D	80	7.13	570.4
Woods	A/D	79	0.17	13.43
TOTAL AREA			12.76	851.4
			CN =	**67**

Basin PRE-3

Land Use/Vegetation	Hydric Group	CN	Total Area (Ac.)	CN * Area
Pasture, grassland, or range	A	49	3.19	156.31
TOTAL AREA			3.19	156.3
			CN =	**49**

Basin PRE-4

Land Use/Vegetation	Hydric Group	CN	Total Area (Ac.)	CN * Area
Pasture, grassland, or range	A	68	14.05	955.4
Pasture, grassland, or range	B	61	5.2	317.2
TOTAL AREA			19.25	1272.6
			CN =	**66**

Basin PRE-5

Land Use/Vegetation	Hydric Group	CN	Total Area (Ac.)	CN * Area
Pasture, grassland, or range	A	68	34.53	2348.04
Pasture, grassland, or range	B	61	5.44	331.84
TOTAL AREA			39.97	2679.9
			CN =	**67**

Basin PRE-6 **Total**

Lake Hills
Predevelopment Hydrology **Analyzed: 6/25/24**

Land Use/Vegetation	Hydric Group	CN	Area (Ac.)	CN * Area
Pasture, grassland, or range	A	68	22.88	1555.84
TOTAL AREA			22.88	1555.8
			CN =	**68**

Segment	PRE-1	PRE-2	PRE-3	PRE-4	PRE-5	PRE-6
Total flow length, ft.	1276	1021	1255	651	1890	1270
Sheet Flow						
Manning's n	0.13	0.13	0.13	0.13	0.13	0.13
Flow length, ft.	100	100	100	100	100	100
2 yr/24 hour rainfall, in.	4.5	4.5	4.5	4.5	4.5	4.5
Start elevation, ft.	87	92	96	96.05	148	148
End elevation, ft.	86	90.4	95.96	93.15	134.5	145.7
Slope, ft/ft	0.01000	0.01600	0.00040	0.02900	0.13500	0.02300
T_t, hour	0.16	0.13	0.59	0.11	0.06	0.12
Shallow Concentrated Flow						
Flow length, ft.	1176	921	1155	551	1790	1170
Start elevation, ft.	86	90.4	95.96	93.15	134.5	145.7
End elevation, ft.	65	68	74	75	75	81
Slope, ft/ft	0.01786	0.02432	0.01901	0.03294	0.03324	0.05530
Average velocity, ft/s	2.2	2.45	2.2	2.9	2.9	3.8
T_t, hour	0.148	0.104	0.146	0.053	0.171	0.086
Time of concentration, hr.	0.31	0.24	0.73	0.16	0.23	0.20
Time of concentration, min.	18.6	14.3	44.0	9.5	13.7	12.1
Time of Concentration For Calculations (min.):	**19**	**14**	**44**	**10**	**14**	**12**

Lake Hills
Predevelopment Hydrology **Analyzed: 6/25/24**

Basin Lake Harris	18.80	Ac.
Basin W-3	5.50	Ac.
Basin W-4	0.19	Ac.
Basin S/W 6-7	2.13	Ac.
Basin W-5/6	5.89	Ac.
Total Basin Area:	32.51	Ac.

CURVE NUMBER CALCULATION:

Basin Lake Harris

Land Use/Vegetation	Hydric Group	CN	Total Area (Ac.)	CN * Area
Wetlands	N/A	98	18.80	1842.4
TOTAL AREA			18.80	1842.4
			CN =	**98**

Basin W-3

Land Use/Vegetation	Hydric Group	CN	Total Area (Ac.)	CN * Area
Wetlands	N/A	98	5.5	539
TOTAL AREA			5.50	539.0
			CN =	**98**

Basin W-4

Land Use/Vegetation	Hydric Group	CN	Total Area (Ac.)	CN * Area
Wetlands	N/A	98	0.19	18.62
TOTAL AREA			0.19	18.6
			CN =	**98**

Basin S/W 6-7

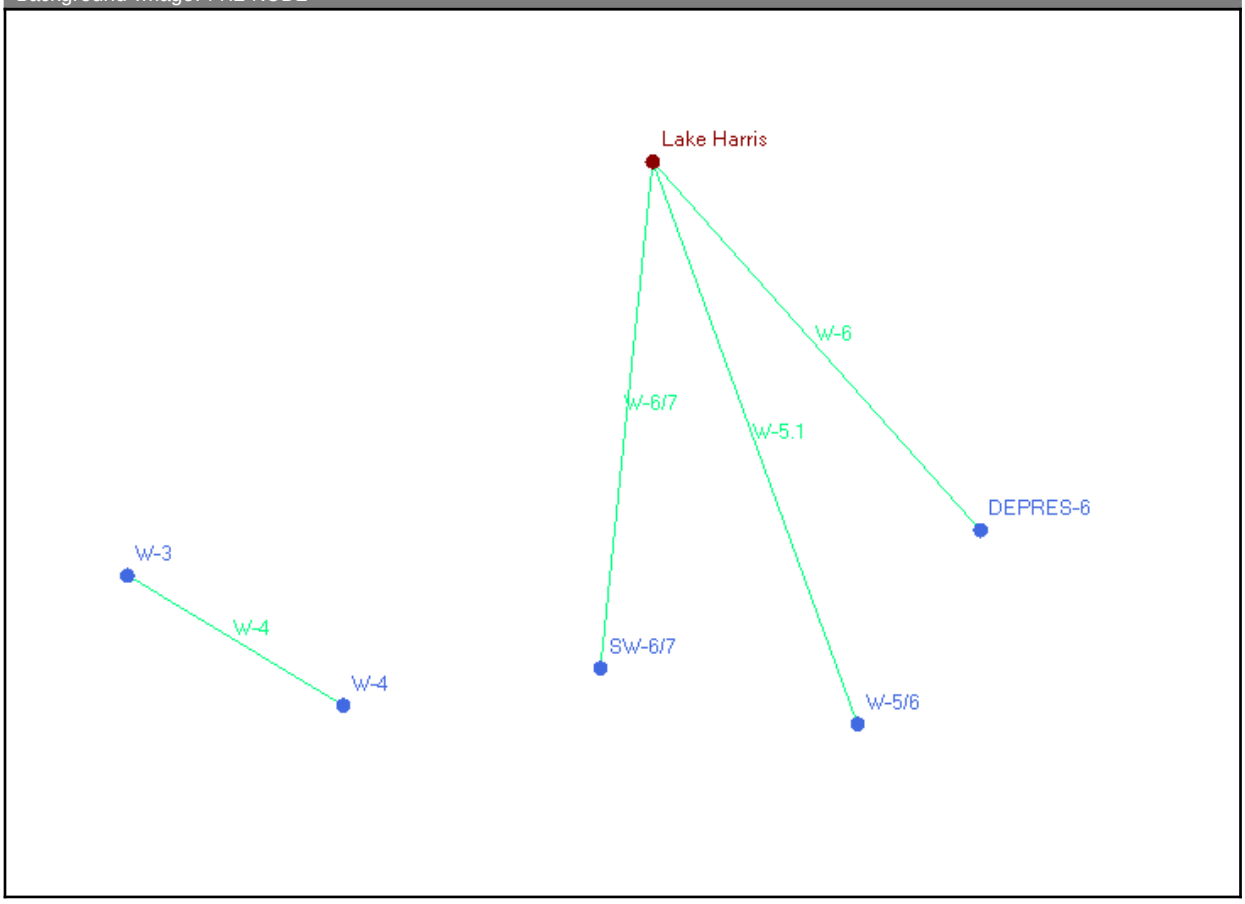
Land Use/Vegetation	Hydric Group	CN	Total Area (Ac.)	CN * Area
Wetlands	N/A	98	2.13	208.74
TOTAL AREA			2.13	208.7
			CN =	**98**

Basin W-5/6

Land Use/Vegetation	Hydric Group	CN	Total Area (Ac.)	CN * Area
Wetlands	N/A	98	5.89	577.22
TOTAL AREA			5.89	577.2
			CN =	**98**

Appendix D
Predevelopment ICPR Node Diagram

Background Image: PRE NODE



Appendix E
Predevelopment ICPR Input Data

Simple Basin: Pre-1

Scenario:	PREDEVELOPMENT
Node:	Lake Harris
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	19.0000 min
Max Allowable Q:	99999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	124.2700 ac
Curve Number:	61.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Pre-2

Scenario:	PREDEVELOPMENT
Node:	W-3
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:	18.2700 ac
Curve Number:	70.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Pre-3

Scenario:	PREDEVELOPMENT
Node:	W-4
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	44.0000 min
Max Allowable Q:	99999.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	3.3800 ac
Curve Number:	49.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Pre-4

Scenario:	PREDEVELOPMENT
Node:	SW-6/7
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	21.3800 ac
Curve Number:	68.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Pre-5

Scenario:	PREDEVELOPMENT
Node:	W-5/6
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:	45.8600 ac
Curve Number:	66.0
% Impervious:	0.00
% DCIA:	0.00

% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Pre-6

Scenario: PREDEVELOPMENT
Node: DEPRES-6
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: 22.8800 ac
Curve Number: 68.0
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Node: DEPRES-6

Scenario: PREDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 81.00 ft
Warning Stage: 85.00 ft

Stage [ft]	Area [ac]	Area [ft2]
81.00	0.4300	18731
82.00	1.0200	44431
83.00	1.6600	72310
84.00	2.6900	117176
85.00	3.7600	163786

Comment:

Node: Lake Harris

Scenario: PREDEVELOPMENT

Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 63.80 ft
Warning Stage: 64.80 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	63.80
0	0	0	12.0000	63.80
0	0	0	24.0000	63.80
0	0	0	36.0000	63.80

Comment:

Node: SW-6/7

Scenario: PREDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 75.00 ft
Warning Stage: 77.00 ft

Stage [ft]	Area [ac]	Area [ft2]
75.00	0.5300	23087
76.00	2.1800	94961
77.00	4.3800	190793

Comment:

Node: W-3

Scenario: PREDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 66.00 ft
Warning Stage: 71.00 ft

Stage [ft]	Area [ac]	Area [ft2]
66.00	0.0100	436
67.00	0.0300	1307
68.00	0.7600	33106
69.00	2.3200	101059
70.00	4.0300	175547
71.00	5.7700	251341

Comment:

Node: W-4

Scenario: PREDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 75.00 ft
Warning Stage: 90.00 ft

Stage [ft]	Area [ac]	Area [ft2]
75.00	0.0200	871
76.00	0.0700	3049
77.00	0.1000	4356
78.00	0.1300	5663
79.00	0.1600	6970
80.00	0.1900	8276
81.00	0.2500	10890
82.00	0.2600	11326
85.00	0.3400	14810
87.00	0.3900	16988
88.00	0.4200	18295
89.00	0.4500	19602
90.00	0.4900	21344

Comment:

Node: W-5/6

Scenario: PREDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 75.00 ft
Warning Stage: 79.00 ft

Stage [ft]	Area [ac]	Area [ft2]
75.00	5.1700	225205
76.00	6.7400	293594
77.00	7.8500	341946
78.00	10.3000	448668
79.00	14.2300	619859

Comment:

Weir Link: W-4

Scenario: PREDEVELOPMENT
From Node: W-4
To Node: W-3
Link Count: 1

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Trapezoidal
Invert:	90.00 ft
Control Elevation:	90.00 ft
Max Depth:	9999.00 ft
Extrapolation Method:	Normal Projection
Bottom Width:	55.23 ft
Left Slope:	5.000 (h:v)
Right Slope:	5.000 (h:v)

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: W-5

Scenario:	PREDEVELOPMENT
From Node:	W-5/6
To Node:	Lake Harris
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Irregular
Invert:	78.10 ft
Control Elevation:	78.10 ft
Cross Section:	W-5

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: W-5.1

Scenario:	PREDEVELOPMENT
From Node:	W-5/6
To Node:	Lake Harris
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Irregular
Invert:	78.00 ft
Control Elevation:	78.00 ft
Cross Section:	W-5.1

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: W-6

Scenario:	PREDEVELOPMENT
From Node:	DEPRES-6
To Node:	Lake Harris
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Irregular
Invert:	85.00 ft
Control Elevation:	85.00 ft
Cross Section:	W-6

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: W-6/7

Scenario:	PREDEVELOPMENT
From Node:	SW-6/7
To Node:	Lake Harris
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Irregular
Invert:	76.10 ft
Control Elevation:	76.10 ft
Cross Section:	W-6/7

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:

Simulation: 100YR-24HR

Scenario:	PREDEVELOPMENT
Run Date/Time:	6/28/2024 8:44:44 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	30.0000

Hydrology [sec]	Surface Hydraulics

		[sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		60.0000

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:
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:

Simulation: 10YR-24HR

Scenario: PREDEVELOPMENT
Run Date/Time: 6/28/2024 8:45:35 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	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		60.0000

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:
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:	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: 25YR-24HR

Scenario: PREDEVELOPMENT
Run Date/Time: 6/28/2024 8:46:22 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	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		60.0000

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		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:	7.54 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: 25YR-96HR

Scenario:	PREDEVELOPMENT
Run Date/Time:	6/28/2024 8:47:10 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	100.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		60.0000

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:
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: 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: PREDEVELOPMENT

Run Date/Time: 6/28/2024 8:49:42 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	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		60.0000

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:
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:	~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:

Appendix F
Predevelopment ICPR Node Min/Max Report

Node Max Conditions [PREDEVELOPMENT]

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]
DEPRES-6	100YR-24HR	85.00	85.20	0.0010	128.91	9.11	163786
Lake Harris	100YR-24HR	64.80	63.80	0.0000	595.17	0.00	0
SW-6/7	100YR-24HR	77.00	76.49	0.0006	132.31	115.04	141493
W-3	100YR-24HR	71.00	71.23	0.0010	110.43	0.00	251341
W-4	100YR-24HR	90.00	82.40	0.0010	4.69	0.00	11791
W-5/6	100YR-24HR	79.00	78.07	0.0008	250.68	6.12	461043
DEPRES-6	10YR-24HR	85.00	84.28	0.0010	53.46	0.00	130256
Lake Harris	10YR-24HR	64.80	63.80	0.0000	190.80	0.00	0
SW-6/7	10YR-24HR	77.00	76.25	0.0006	56.52	26.16	119140
W-3	10YR-24HR	71.00	70.08	0.0010	52.63	0.00	181889
W-4	10YR-24HR	90.00	78.96	0.0010	1.25	0.00	6920
W-5/6	10YR-24HR	79.00	76.77	0.0006	109.75	0.00	330687
DEPRES-6	25YR-24HR	85.00	84.97	0.0010	78.65	0.00	162207
Lake Harris	25YR-24HR	64.80	63.80	0.0000	333.54	0.00	0
SW-6/7	25YR-24HR	77.00	76.35	0.0006	81.78	56.35	128195
W-3	25YR-24HR	71.00	70.51	0.0010	72.08	0.00	214469
W-4	25YR-24HR	90.00	80.27	0.0010	2.26	0.00	8979
W-5/6	25YR-24HR	79.00	77.35	0.0006	156.76	0.00	379364
DEPRES-6	MEAN	85.00	83.25	0.0010	25.46	0.00	83605
Lake Harris	MEAN	64.80	63.80	0.0000	93.63	0.00	0
SW-6/7	MEAN	77.00	76.14	0.0007	28.34	2.44	108000
W-3	MEAN	71.00	69.47	0.0010	30.38	0.00	136435
W-4	MEAN	90.00	77.28	0.0010	0.67	0.00	4728
W-5/6	MEAN	79.00	76.04	0.0005	56.99	0.00	295582

Appendix G
Postdevelopment Basin Map

NODE: LAKE HARRIS

LAKE HARRIS

NODE: LAKE HARRIS

LAKE HARRIS

NODE: LAKE HARRIS

NODE: LAKE HARRIS

NODE: W-3

POND 11

POND 8

POND 7

POND 10

POND 4

POND 9

POND 12

POND 3

POND 2

POND 1

POND 5

BASIN: POST-8
AREA: 16.24
CN: 76
TOC: 15

BASIN: POST-9
AREA: 9.58
CN: 76
TOC: 15

BASIN: POST-10
AREA: 11.84
CN: 78
TOC: 15

BASIN: POST-7
AREA: 35.50
CN: 72
TOC: 15

BASIN: POST-3
AREA: 13.23
CN: 76
TOC: 15

BASIN: POST-12
AREA: 15.36
CN: 77
TOC: 15

BASIN: POST-4
AREA: 9.49
CN: 74
TOC: 15

BASIN: POST-5
AREA: 33.01
CN: 74
TOC: 15

BASIN: POST-2
AREA: 20.50
CN: 67
TOC: 15

BASIN: POST-1
AREA: 27.25
CN: 85
TOC: 15

SCHOOL PARCEL
22.00 AC.

COMMUNITY RECREATION/PARK
6.36 AC.

WETLAND

WETLAND

WETLAND

WETLAND

WETLAND

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

POSTDEVELOPMENT BASIN MAP

FOR

LAKE HILLS MASS INFRASTRUCTURE

FLORIDA

LAKE COUNTY

READERS & PARTNERS, LLC
5850 TB LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-4899

	DATE	REVISIONS
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		

KAITLYN ASHLEY CROWELL
LICENSE
NO. PE95331
STATE OF FLORIDA
PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by Kaitlyn Ashley Crowell, PE 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.

ENGINEER OF RECORD

JOB # 23019
DATE: 10/15/24
DATUM: NAVD 88
DESIGNED BY: KAC
DRAWN BY: JSK
APPROVED BY: KAC

POST-1

H:\Data\23MM\23195-Lake Hills PD\Drawings\In the Hills\Stormwater\POST Basin.dwg October 15, 2024 2:11 PM

Appendix H
Postdevelopment Hydrology Calculations

Project:	**Lake Hills**
Basin:	**Post-1**
Pond:	**Pond-1**
Basin Area:	**27.25 ac**

Land Use Table:

Area (ac)	*Land Use*	*CN*
7.93	Proposed Pavement/Sidewalk (Commercial)	98
2.81	Proposed Pavement/Sidewalk (Residential)	98
0.92	Impervious Lot (Residential)	98
6.38	Outparcels (80% Impervious)	98
1.41	Impervious Lot (Commercial)	98
5.85	Pervious/Landscape (HSG-A)	39
1.94	Pond Surface Area	100
Composite CN		85

SJRWMD Water Quality Presumptive Criteria:

1" over the basin area:		2.271 AF
1.25" over impervious area + 0.5" over basin area		3.162 AF
	Design WQ	3.162 AF
100Y/24H Volume		21.950 AF
Controlling Volume:		21.950 AF
Stage at Control Elevation:		86.56 FT
Proposed Weir Elevation:		N/A

Stage/Storage Table:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
90.00	3.81	3.724	34.030
89.00	3.64	3.553	30.306
88.00	3.47	3.384	26.753
87.00	3.30	3.217	23.369
86.00	3.13	3.054	20.152
85.00	2.97	2.893	17.098
84.00	2.81	2.736	14.205
83.00	2.66	2.583	11.469
82.00	2.51	2.435	8.886
81.00	2.36	2.290	6.451
80.00	2.22	2.149	4.161
79.00	2.08	2.012	2.012
78.00	1.94	0.000	0.000

Project:	**Lake Hills**
Basin:	**Post-2**
Pond:	**Pond-2**
Basin Area:	**20.50 ac**

Land Use Table:

Area (ac)	*Land Use*	*CN*
1.85	Proposed Pavement/Sidewalk	98
6.65	Impervious Lot	98
10.78	Pervious/Landscape (HSG-A)	39
1.23	Wet Pond Water Surface	100
Composite CN		67

SJRWMD Water Quality Presumptive Criteria:

1" over the basin area:		1.708 AF
2.5" over impervious		1.769 AF
	Design WQ	1.769 AF
Treatment Volume Elevation		75.35 FT
Proposed Weir Elevation:		See Pond 2 and Pond 3 Calcs

Stage/Storage Table:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
78.00	1.69	1.631	5.819
77.00	1.57	1.512	4.189
76.00	1.45	1.395	2.677
75.00	1.34	1.282	1.282
74.00	1.23	0.000	0.000

Permanent Pool Volume:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
74.00	1.23	1.171	5.036
73.00	1.12	1.063	3.865
72.00	1.01	0.985	2.802
71.00	0.96	1.817	1.817
69.00	0.86	0.000	0.000
		0.000	0.000
			0.000

Permanent Pool Volume Calculation

Compound C Value*	0.53
Wet Season Rainfall	32.00 IN
PPV Required	2.65 AF
PPV Provided	5.04 AF

Mean Depth Calculation

Mean Depth (between 2-8 feet, ok)	4.1 FT

Residence Time Calculation

Required Residence Time	14.0 DAYS
Provided Residence Time	28 DAYS

*C value is 0.95 times impervious plus 0.15 times pervious over the entire area.

Project:	**Lake Hills**
Basin:	**Post-3**
Pond:	**Pond-3**
Basin Area:	**13.23 ac**

Land Use Table:

Area (ac)	*Land Use*	*CN*
1.55	Proposed Pavement/Sidewalk	98
5.99	Impervious Lot	98
4.98	Pervious/Landscape (HSG-A)	39
0.71	Wet Pond Water Surface	100
Composite CN		76

SJRWMD Water Quality Presumptive Criteria:

1" over the basin area:		1.103 AF
2.5" over impervious		1.571 AF
	Design WQ	1.571 AF
Treatment Volume Elevation:		75.93 FT
Proposed Weir Elevation:		See Pond 2 and Pond 3 Calcs

Stage/Storage Table:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
78.00	1.15	1.089	3.692
77.00	1.03	0.975	2.603
76.00	0.92	0.866	1.628
75.00	0.81	0.762	0.762
74.00	0.71	0.000	0.000

Permanent Pool Volume:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
74.00	0.71	0.663	2.601
73.00	0.61	0.569	1.938
72.00	0.52	0.500	1.369
71.00	0.48	0.869	0.869
69.00	0.39	0.000	0.000

Permanent Pool Volume Calculation

Compound C Value*	0.65
Wet Season Rainfall	32.00 IN
PPV Required	2.10 AF
PPV Provided	2.60 AF

Mean Depth Calculation

Mean Depth (between 2-8 feet, ok)	3.7 FT

Residence Time Calculation

Required Residence Time	14.0 DAYS
Provided Residence Time	18 DAYS

*C value is 0.95 times impervious plus 0.15 times pervious over the entire area.

Project:	**Lake Hills**
Pond:	**Pond-2 and Pond-3**
Basin Area:	**33.73 ac**

SJRWMD Water Quality Presumptive Criteria:

1" over the basin area:		2.811 AF
2.5" over impervious		3.340 AF
	Design WQ	3.340 AF
Treatment Volume Elevation:		75.57 FT
Proposed Weir Elevation:		75.60 FT

Pond 2 Stage/Storage Table:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
78.00	1.69	1.631	5.819
77.00	1.57	1.512	4.189
76.00	1.45	1.395	2.677
75.00	1.34	1.282	1.282
74.00	1.23	0.000	0.000

Pond 3 Stage/Storage Table:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
78.00	1.15	1.089	3.692
77.00	1.03	0.975	2.603
76.00	0.92	0.866	1.628
75.00	0.81	0.762	0.762
74.00	0.71	0.000	0.000

Pond 2/3 Stage/Storage Table:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
78.00	2.84	2.720	9.511
77.00	2.60	2.486	6.791
76.00	2.37	2.261	4.305
75.00	2.15	2.044	2.044
74.00	1.94	0.000	0.000

Project:	**Lake Hills**
Basin:	**Post-4**
Pond:	**Pond-4**
Basin Area:	**9.49 ac**

Land Use Table:

Area (ac)	*Land Use*	*CN*
1.19	Proposed Pavement/Sidewalk	98
4.09	Impervious Lot	98
3.92	Pervious/Landscape (HSG-A)	39
0.29	Wet Pond Water Surface	100
Composite CN		74

SJRWMD Water Quality Presumptive Criteria:

1" over the basin area:		0.790 AF
2.5" over impervious		1.099 AF
	Design WQ	1.099 AF
Treatment Volume Elevation:		67.55 FT
Proposed Weir Elevation:		See Pond 4 and Pond 10 Calcs

Stage/Storage Table:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
69.00	0.56	0.520	1.668
68.00	0.48	0.448	1.148
67.00	0.41	0.381	0.700
66.00	0.35	0.319	0.319
65.00	0.29	0.000	0.000

Permanent Pool Volume:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
65.00	0.29	0.261	1.145
64.00	0.23	0.209	0.884
63.00	0.18	0.173	0.675
62.00	0.16	0.502	0.502
58.00	0.09	0.000	0.000

Permanent Pool Volume Calculation

Compound C Value*	0.62
Wet Season Rainfall	32.00 IN
PPV Required	1.43 AF
PPV Provided	See Pond 4 and Pond 10 Calcs

Mean Depth Calculation

Mean Depth (between 2-8 feet, ok)	See Pond 4 and Pond 10 Calcs

Residence Time Calculation

Required Residence Time	14.0 DAYS
Provided Residence Time	See Pond 4 and Pond 10 Calcs

*C value is 0.95 times impervious plus 0.15 times pervious over the entire area.

Project:	**Lake Hills**
Basin:	**Post-10**
Pond:	**Pond-10**
Basin Area:	**11.84 ac**

Land Use Table:

Area (ac)	*Land Use*	*CN*
4.45	Proposed Pavement/Sidewalk	98
2.70	Impervious Lot	98
4.03	Pervious/Landscape (HSG-A)	39
0.65	Wet Pond Water Surface	100
Composite CN		78

SJRWMD Water Quality Presumptive Criteria:

1" over the basin area:		0.986 AF
2.5" over impervious		1.490 AF
	Design WQ	1.490 AF
Treatment Volume Elevation:		67.55 FT
Proposed Weir Elevation:		See Pond 4 and Pond 10 Calcs

Stage/Storage Table:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
69.00	0.93	0.896	3.152
68.00	0.86	0.822	2.256
67.00	0.79	0.751	1.434
66.00	0.72	0.683	0.683
65.00	0.65	0.000	0.000

Permanent Pool Volume:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
65.00	0.65	0.619	3.476
64.00	0.59	0.558	2.857
63.00	0.53	0.514	2.299
62.00	0.50	1.785	1.785
58.00	0.39	0.000	0.000

Permanent Pool Volume Calculation

Compound C Value*	0.68
Wet Season Rainfall	32.00 IN
PPV Required	1.96 AF
PPV Provided	See Pond 4 and Pond 10 Calcs

Mean Depth Calculation

Mean Depth (between 2-8 feet, ok)	See Pond 4 and Pond 10 Calcs

Residence Time Calculation

Required Residence Time	14.0 DAYS
Provided Residence Time	See Pond 4 and Pond 10 Calcs

*C value is 0.95 times impervious plus 0.15 times pervious over the entire area.

Project:	**Lake Hills**		
Pond:	**Pond 4 & Pond-10**		
Basin Area:	**21.32 ac**		
SJRWMD Water Quality Presumptive Criteria:			
1" over the basin area:			1.777 AF
2.5" over impervious			2.589 AF
		Design WQ	2.589 AF
Treatment Volume Elevation:			67.36 FT
Proposed Weir Elevation:			67.40 FT
Pond 4 Stage/Storage Table:			
Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
69.00	0.56	0.520	1.668
68.00	0.48	0.448	1.148
67.00	0.41	0.381	0.700
66.00	0.35	0.319	0.319
65.0 NWL	0.29	0.261	1.145
64.00	0.23	0.209	0.884
63.00	0.18	0.173	0.675
62.00	0.16	0.502	0.502
58.00	0.09	0.000	0.000
Pond 10 Stage/Storage Table:			
Stage (FT)	Area (AC)	Δ Vol. (AF)	Σ Vol. (AF)
69.00	0.93	0.896	3.152
68.00	0.86	0.822	2.256
67.00	0.79	0.751	1.434
66.00	0.72	0.683	0.683
65.0 NWL	0.65	0.619	3.476
64.00	0.59	0.558	2.857
63.00	0.53	0.514	2.299
62.00	0.50	1.785	1.785
58.00	0.39	0.000	0.000
Pond 10 Stage/Storage Table:			
Stage (FT)	Area (AC)	Δ Vol. (AF)	Σ Vol. (AF)
69.00	1.49	1.42	4.82
68.00	1.34	1.27	3.40
67.00	1.20	1.13	2.13
66.00	1.06	1.00	1.00
65.0 NWL	0.94	0.88	4.62
64.00	0.82	0.77	3.74
63.00	0.71	0.69	2.97
62.00	0.66	2.29	2.29
58.00	0.48	0.000	0.00
Permanent Pool Volume Calculation			
Compound C Value*			0.65
Wet Season Rainfall			32.00 IN
PPV Required			3.39 AF
PPV Provided			4.62 AF
Mean Depth Calculation			
Mean Depth (between 2-8 feet, ok)			4.9 FT
Residence Time Calculation			
Required Residence Time			14.0 DAYS
Provided Residence Time			20 DAYS
*C value is 0.95 times impervious plus 0.15 times pervious over the entire area			

Project:	**Lake Hills**
Basin:	**Post-5**
Pond:	**Pond-5**
Basin Area:	**33.01 ac**

Land Use Table:

Area (ac)	*Land Use*	*CN*
3.41	Proposed Pavement/Sidewalk	98
12.54	Impervious Lot	98
13.26	Pervious/Landscape (HSG-A)	39
3.80	Pond Surface Area	100
Composite CN		75

SJRWMD Water Quality Presumptive Criteria:

1" over the basin area:		2.750 AF
1.25" over impervious area + 0.5" over basin area		3.037 AF
	Design WQ	3.037 AF
Stage at Control Elevation:		79.78 FT
Proposed Weir Elevation:		80.00 FT

Stage/Storage Table:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
83.00	4.58	4.477	16.730
82.00	4.38	4.279	12.253
81.00	4.18	4.084	7.974
80.00	3.99	3.891	3.891
79.00	3.80	0.000	0.000

Project:	**Lake Hills**
Basin:	**Post-7**
Pond:	**Pond-7**
Basin Area:	**35.50 ac**

Land Use Table:

Area (ac)	*Land Use*	*CN*
4.43	Proposed Pavement/Sidewalk	98
13.50	Impervious Lot	98
16.03	Pervious/Landscape (HSG-A)	39
1.55	Wet Pond Water Surface	100
Composite CN		71

SJRWMD Water Quality Presumptive Criteria:

1" over the basin area:		2.958 AF
2.5" over impervious		3.735 AF
	Design WQ	3.735 AF
Treatment Volume Elevation:		67.22 FT
Proposed Weir Elevation:		68.00 FT

Stage/Storage Table:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
70.00	2.26	2.187	9.470
69.00	2.11	2.036	7.283
68.00	1.96	1.888	5.247
67.00	1.81	1.746	3.359
66.00	1.68	1.612	1.612
65.00	1.55	0.000	0.000

Permanent Pool Volume:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
65.00	1.55	1.483	6.478
64.00	1.42	1.359	4.995
63.00	1.30	1.269	3.636
62.00	1.24	2.367	2.367
60.00	1.13	0.000	0.000

Permanent Pool Volume Calculation

Compound C Value*	0.59
Wet Season Rainfall	32.00 IN
PPV Required	5.10 AF
PPV Provided	6.48 AF

Mean Depth Calculation

Mean Depth (between 2-8 feet, ok)	4.2 FT

Residence Time Calculation

Required Residence Time	14.0 DAYS
Provided Residence Time	19 DAYS

*C value is 0.95 times impervious plus 0.15 times pervious over the entire area.

Project:	**Lake Hills**
Basin:	**Post-8**
Pond:	**Pond-8**
Basin Area:	**16.24 ac**

Land Use Table:

Area (ac)	*Land Use*	*CN*
1.86	Proposed Pavement/Sidewalk	98
7.78	Impervious Lot	98
6.09	Pervious/Landscape (HSG-A)	39
0.51	Wet Pond Water Surface	100
Composite CN		76

SJRWMD Water Quality Presumptive Criteria:

1" over the basin area:		1.354 AF
2.5" over impervious		2.008 AF
	Design WQ	2.008 AF
Treatment Volume Elevation:		67.10 FT
Proposed Weir Elevation:		67.10 FT

Stage/Storage Table:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
69.00	0.97	0.918	3.662
68.00	0.87	0.822	2.744
67.00	0.77	0.728	1.923
66.00	0.68	0.639	1.194
65.00	0.60	0.555	0.555
64.00	0.51	0.000	0.000

Permanent Pool Volume:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
64.00	0.51	0.476	2.664
63.00	0.44	0.402	2.188
62.00	0.37	0.349	1.786
61.00	0.33	1.437	1.437
55.00	0.15	0.000	0.000
		0.000	0.000
			0.000

Permanent Pool Volume Calculation

Compound C Value*	0.65
Wet Season Rainfall	32.00 IN
PPV Required	2.58 AF
PPV Provided	2.66 AF

Mean Depth Calculation

Mean Depth (between 2-8 feet, ok)	5.2 FT

Residence Time Calculation

Required Residence Time	14.0 DAYS
Provided Residence Time	15 DAYS

*C value is 0.95 times impervious plus 0.15 times pervious over the entire area.

Project:	**Lake Hills**
Basin:	**Post-9**
Pond:	**Pond-9**
Basin Area:	**9.58 ac**

Land Use Table:

Area (ac)	*Land Use*	*CN*
4.30	Future Community Recreation Park	98
0.30	Proposed Pavement/Sidewalk	98
0.78	Impervious Lot	98
3.64	Pervious/Landscape (HSG-A)	39
0.56	Wet Pond Water Surface	100
Composite CN		76

SJRWMD Water Quality Presumptive Criteria:

1" over the basin area:		0.799 AF
2.5" over impervious		0.897 AF
	Design WQ	0.897 AF
Treatment Volume Elevation:		66.96 FT
Proposed Weir Elevation:		67.00 FT

Stage/Storage Table:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
71.00	0.98	0.935	4.191
70.00	0.89	0.855	3.256
69.00	0.82	0.778	2.401
68.00	0.74	0.703	1.623
67.00	0.67	0.631	0.920
66.00	0.60	0.289	0.289
65.50	0.56	0.000	0.000

Permanent Pool Volume:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
65.50	0.56	0.529	2.334
64.50	0.50	0.465	1.805
63.50	0.43	0.213	1.341
63.00	0.42	1.127	1.127
60.00	0.33	0.000	0.000
		0.000	0.000
			0.000

Permanent Pool Volume Calculation

Compound C Value*	0.54
Wet Season Rainfall	32.00 IN
PPV Required	1.26 AF
PPV Provided	2.33 AF

Mean Depth Calculation

Mean Depth (between 2-8 feet, ok)	4.2 FT

Residence Time Calculation

Required Residence Time	14.0 DAYS
Provided Residence Time	28 DAYS

*C value is 0.95 times impervious plus 0.15 times pervious over the entire area.

Project:	**Lake Hills**
Basin:	**Post-12**
Pond:	**Pond-12**
Basin Area:	**15.36 ac**

Land Use Table:

Area (ac)	*Land Use*	*CN*
2.16	Proposed Pavement/Sidewalk	98
6.94	Impervious Lot	98
5.38	Pervious/Landscape (HSG-A)	39
0.88	Wet Pond Water Surface	100
Composite CN		77

SJRWMD Water Quality Presumptive Criteria:

1" over the basin area:		1.280 AF
2.5" over impervious		1.896 AF
	Design WQ	1.896 AF
Treatment Volume Elevation:		66.42 FT
Proposed Weir Elevation:		66.45 FT

Stage/Storage Table:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
70.00	1.57	1.496	6.619
69.00	1.43	1.358	5.123
68.00	1.29	1.226	3.765
67.00	1.16	1.102	2.539
66.00	1.04	0.986	1.437
65.00	0.93	0.451	0.451
64.50	0.88	0.000	0.000

Permanent Pool Volume:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
64.50	0.88	0.825	3.666
63.50	0.77	0.727	2.841
62.50	0.68	0.970	2.113
61.00	0.61	1.143	1.143
59.00	0.53	0.000	0.000
		0.000	0.000
			0.000

Permanent Pool Volume Calculation

Compound C Value*	0.67
Wet Season Rainfall	32.00 IN
PPV Required	2.51 AF
PPV Provided	3.67 AF

Mean Depth Calculation

Mean Depth (between 2-8 feet, ok)	4.2 FT

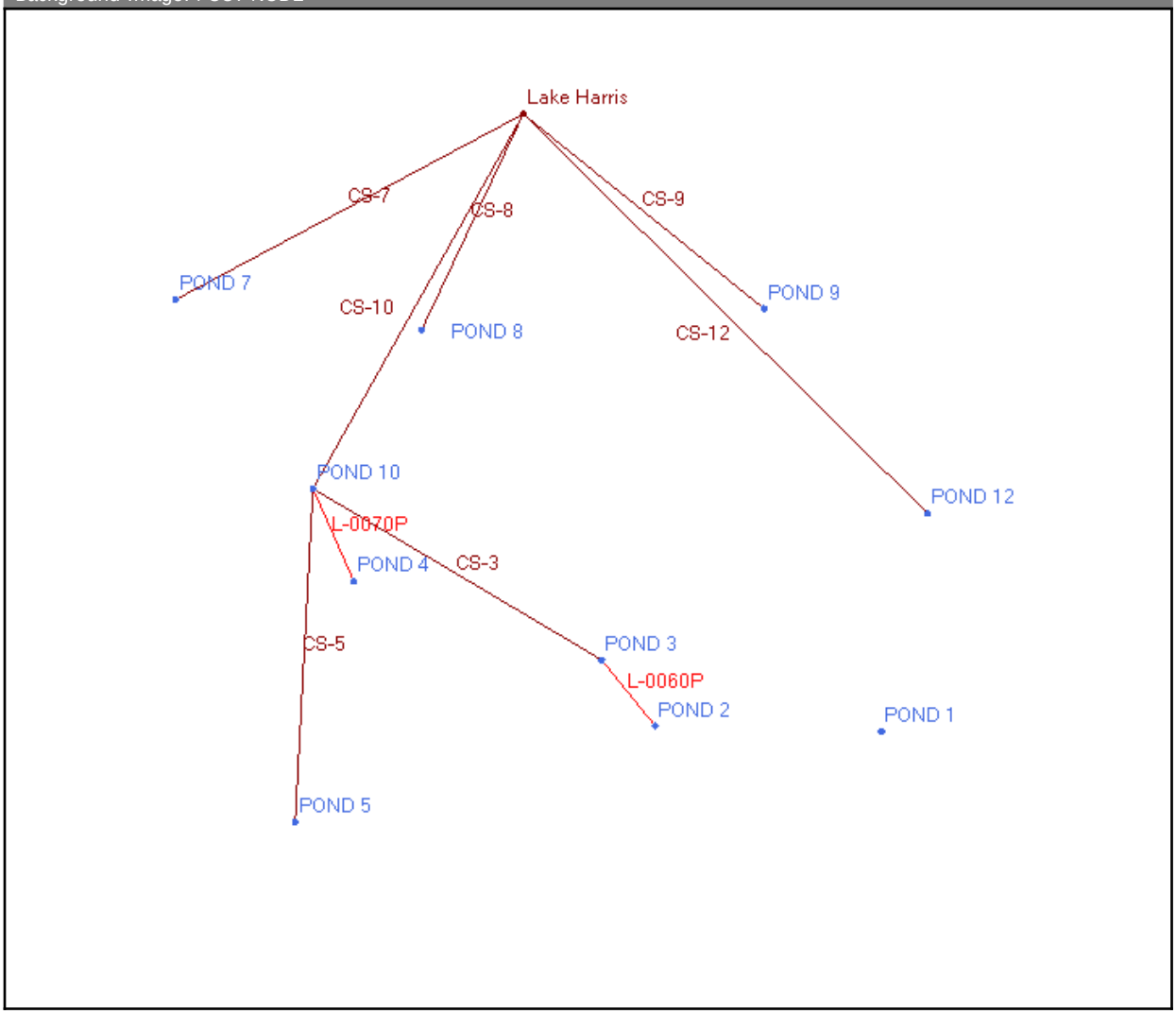
Residence Time Calculation

Required Residence Time	14.0 DAYS
Provided Residence Time	22 DAYS

*C value is 0.95 times impervious plus 0.15 times pervious over the entire area.

Appendix I
Postdevelopment ICPR Node Diagram

Background Image: POST NODE



Appendix J
Postdevelopment ICPR Input Data

Simple Basin: Post 1

Scenario:	POSTDEVELOPMENT
Node:	POND 1
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	27.2500 ac
Curve Number:	85.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Post 10

Scenario:	POSTDEVELOPMENT
Node:	POND 10
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	11.8700 ac
Curve Number:	78.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Post 12

Scenario:	POSTDEVELOPMENT
Node:	POND 12
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	15.3600 ac
Curve Number:	77.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Post 2

Scenario:	POSTDEVELOPMENT
Node:	POND 2
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	20.5000 ac
Curve Number:	67.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Post 3

Scenario:	POSTDEVELOPMENT
Node:	POND 3
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	13.2300 ac
Curve Number:	76.0
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Post 4

Scenario:	POSTDEVELOPMENT
Node:	POND 4
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	9.4900 ac
Curve Number:	74.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Post 5

Scenario:	POSTDEVELOPMENT
Node:	POND 5
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	33.0100 ac
Curve Number:	75.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Post 7

Scenario:	POSTDEVELOPMENT
Node:	POND 7
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	35.5000 ac
Curve Number:	71.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Post 8

Scenario:	POSTDEVELOPMENT
Node:	POND 8
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	16.2400 ac
Curve Number:	76.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Post 9

Scenario:	POSTDEVELOPMENT
Node:	POND 9
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	9.5800 ac
Curve Number:	76.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Public Park

Scenario:	POSTDEVELOPMENT
Node:	POND 1
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:	4.0000 ac
Curve Number:	49.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Node: Lake Harris

Scenario:	POSTDEVELOPMENT
Type:	Time/Stage
Base Flow:	0.00 cfs
Initial Stage:	63.32 ft
Warning Stage:	64.32 ft
Boundary Stage:	

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	63.32
0	0	0	12.0000	63.32
0	0	0	24.0000	63.32
0	0	0	36.0000	63.32

Comment:

Node: POND 1

Scenario: POSTDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 78.00 ft
Warning Stage: 90.00 ft

Stage [ft]	Area [ac]	Area [ft2]
90.00	3.8100	165964
89.00	3.6400	158558
88.00	3.4700	151153
87.00	3.3000	143748
86.00	3.1300	136343
85.00	2.9700	129373
84.00	2.8100	122404
83.00	2.6600	115870
82.00	2.5100	109336
81.00	2.3600	102802
80.00	2.2200	96703
79.00	2.0800	90605
78.00	1.9400	84506

Comment:

Node: POND 10

Scenario: POSTDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 65.00 ft
Warning Stage: 69.00 ft

Stage [ft]	Area [ac]	Area [ft2]
69.00	0.9300	40511
68.00	0.8600	37462
67.00	0.7900	34412
66.00	0.7200	31363
65.00	0.6500	28314

Comment:

Node: POND 12

Scenario: POSTDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 64.50 ft
Warning Stage: 70.00 ft

Stage [ft]	Area [ac]	Area [ft2]
70.00	1.5700	68389
69.00	1.4300	62291
68.00	1.2900	56192
67.00	1.1600	50530
66.00	1.0400	45302
65.00	0.9300	40511
64.50	0.8800	38333

Comment:

Node: POND 2

Scenario: POSTDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 74.00 ft
Warning Stage: 78.00 ft

Stage [ft]	Area [ac]	Area [ft2]
78.00	1.6900	73616
77.00	1.5700	68389
76.00	1.4500	63162
75.00	1.3400	58370
74.00	1.2300	53579

Comment:

Node: POND 3

Scenario: POSTDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 74.00 ft
Warning Stage: 78.00 ft

Stage [ft]	Area [ac]	Area [ft2]
78.00	1.1500	50094
77.00	1.0300	44867
76.00	0.9200	40075

Stage [ft]	Area [ac]	Area [ft2]
75.00	0.8100	35284
74.00	0.7100	30928

Comment:

Node: POND 4

Scenario: POSTDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 65.00 ft
Warning Stage: 69.00 ft

Stage [ft]	Area [ac]	Area [ft2]
69.00	0.5600	24394
68.00	0.4800	20909
67.00	0.4100	17860
66.00	0.3500	15246
65.00	0.2900	12632

Comment:

Node: POND 5

Scenario: POSTDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 79.00 ft
Warning Stage: 83.00 ft

Stage [ft]	Area [ac]	Area [ft2]
83.00	4.5800	199505
82.00	4.3800	190793
81.00	4.1800	182081
80.00	3.9900	173804
79.00	3.8000	165528

Comment:

Node: POND 7

Scenario: POSTDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs

Initial Stage: 65.00 ft
Warning Stage: 70.00 ft

Stage [ft]	Area [ac]	Area [ft2]
70.00	2.2600	98446
69.00	2.1100	91912
68.00	1.9600	85378
67.00	1.8100	78844
66.00	1.6800	73181
65.00	1.5500	67518

Comment:

Node: POND 8

Scenario: POSTDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 64.00 ft
Warning Stage: 69.00 ft

Stage [ft]	Area [ac]	Area [ft2]
69.00	0.9700	42253
68.00	0.8700	37897
67.00	0.7700	33541
66.00	0.6800	29621
65.00	0.6000	26136
64.00	0.5100	22216

Comment:

Node: POND 9

Scenario: POSTDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 65.50 ft
Warning Stage: 71.00 ft

Stage [ft]	Area [ac]	Area [ft2]
71.00	0.9800	42689
70.00	0.8900	38768
69.00	0.8200	35719
68.00	0.7400	32234
67.00	0.6700	29185
66.00	0.6000	26136
65.50	0.5600	24394

Comment:

Drop Structure Link: CS-10		Upstream Pipe		Downstream Pipe	
Scenario:	POSTDEVELOPMENT	Invert:	63.50 ft	Invert:	63.30 ft
		Manning's N:	0.0120	Manning's N:	0.0120
From Node:	POND 10	Geometry: Circular		Geometry: Circular	
To Node:	Lake Harris	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Link Count:	2	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Solution:	Combine	Op Table:		Op Table:	
Increments:	0	Ref Node:		Ref Node:	
Pipe Count:	2	Manning's N:	0.0000	Manning's N:	0.0000
Damping:	0.0000 ft	Top Clip			
Length:	62.00 ft	Default:	0.00 ft	Default:	0.00 ft
FHWA Code:	0	Op Table:		Op Table:	
Entr Loss Coef:	0.00	Ref Node:		Ref Node:	
Exit Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Loss Coef:	0.00				
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:	Broad Crested Vertical	Default:	0.00 ft
Geometry Type:	Circular	Op Table:	
Invert:	64.50 ft	Ref Node:	
Control Elevation:	65.00 ft	Discharge Coefficients	
Max Depth:	0.33 ft	Weir Default:	3.200
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment: 1-4" 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:	67.40 ft		

Control Elevation:	67.40 ft
Max Depth:	3.38 ft
Max Width:	8.69 ft
Fillet:	0.00 ft

Ref Node:	
Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment: Type H Inlet

Drop Structure Comment:

Drop Structure Link: CS-12		Upstream Pipe		Downstream Pipe	
Scenario:	POSTDEVELOPMENT	Invert:	64.05 ft	Invert:	63.91 ft
		Manning's N:	0.0120	Manning's N:	0.0120
From Node:	POND 12	Geometry: Circular		Geometry: Circular	
To Node:	Lake Harris	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Solution:	Combine	Op Table:		Op Table:	
Increments:	0	Ref Node:		Ref Node:	
Pipe Count:	1	Manning's N:	0.0000	Manning's N:	0.0000
Damping:	0.0000 ft	Top Clip			
Length:	59.00 ft	Default:	0.00 ft	Default:	0.00 ft
FHWA Code:	0	Op Table:		Op Table:	
Entr Loss Coef:	0.00	Ref Node:		Ref Node:	
Exit Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Loss Coef:	0.00				
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:	Broad Crested Vertical
Geometry Type:	Circular
Invert:	64.00 ft
Control Elevation:	64.50 ft
Max Depth:	0.31 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- 3.75" 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:	66.45 ft	Ref Node:	
Control Elevation:	66.45 ft	**Discharge Coefficients**	
Max Depth:	2.33 ft	Weir Default:	3.200
Max Width:	3.01 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Weir Comment: Type C Inlet

Drop Structure Comment:

Drop Structure Link: CS-3		Upstream Pipe		Downstream Pipe	
Scenario:	POSTDEVELOPMENT	Invert:	71.00 ft	Invert:	61.00 ft
		Manning's N:	0.0120	Manning's N:	0.0120
From Node:	POND 3	Geometry: Circular		Geometry: Circular	
To Node:	POND 10	Max Depth:	3.00 ft	Max Depth:	3.00 ft
Link Count:	1	**Bottom Clip**			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Solution:	Combine	Op Table:		Op Table:	
Increments:	0	Ref Node:		Ref Node:	
Pipe Count:	1	Manning's N:	0.0000	Manning's N:	0.0000
Damping:	0.0000 ft	**Top Clip**			
Length:	1463.00 ft	Default:	0.00 ft	Default:	0.00 ft
FHWA Code:	0	Op Table:		Op Table:	
Entr Loss Coef:	0.00	Ref Node:		Ref Node:	
Exit Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Loss Coef:	0.00				
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:	73.50 ft	Ref Node:	
Control Elevation:	74.00 ft		

Max Depth:	0.42 ft

Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment: 1- 5" orifice

Weir Component

Weir:	2
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Horizontal
Geometry Type:	Rectangular
Invert:	75.60 ft
Control Elevation:	75.60 ft
Max Depth:	3.33 ft
Max Width:	4.44 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: Type E Inlet

Drop Structure Comment:

Drop Structure Link: CS-5	
Scenario:	POSTDEVELOPMENT
From Node:	POND 5
To Node:	POND 10
Link Count:	1
Flow Direction:	Both
Solution:	Combine
Increments:	0
Pipe Count:	1
Damping:	0.0000 ft
Length:	1000.00 ft
FHWA Code:	0
Entr Loss Coef:	0.00
Exit Loss Coef:	0.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream Pipe	
Invert:	77.00 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

Downstream Pipe	
Invert:	61.00 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:	Horizontal
Geometry Type:	Rectangular
Invert:	81.50 ft
Control Elevation:	81.50 ft
Max Depth:	2.33 ft
Max Width:	3.01 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: Type C Inlet

Weir Component

Weir:	2
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Rectangular
Invert:	80.00 ft
Control Elevation:	80.00 ft
Max Depth:	1.50 ft
Max Width:	4.50 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: 18" x 54" Weir

Drop Structure Comment:

Drop Structure Link: CS-7		Upstream Pipe		Downstream Pipe	
Scenario:	POSTDEVELOPMENT	Invert:	65.80 ft	Invert:	65.00 ft
		Manning's N:	0.0120	Manning's N:	0.0120
From Node:	POND 7	Geometry: Circular		Geometry: Circular	
To Node:	Lake Harris	Max Depth:	2.50 ft	Max Depth:	2.50 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Solution:	Combine	Op Table:		Op Table:	
Increments:	0	Ref Node:		Ref Node:	
Pipe Count:	2	Manning's N:	0.0000	Manning's N:	0.0000
Damping:	0.0000 ft	Top Clip			
Length:	347.00 ft	Default:	0.00 ft	Default:	0.00 ft
FHWA Code:	0	Op Table:		Op Table:	

Entr Loss Coef:	0.00	Ref Node:		Ref Node:	
Exit Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Loss Coef:	0.00				
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:	Broad Crested Vertical
Geometry Type:	Circular
Invert:	64.50 ft
Control Elevation:	65.00 ft
Max Depth:	0.50 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- 6" Orifice

Weir Component

Weir:	2
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Horizontal
Geometry Type:	Rectangular
Invert:	68.90 ft
Control Elevation:	68.90 ft
Max Depth:	3.38 ft
Max Width:	8.69 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: Type H Inlet

Weir Component

Weir:	3
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Rectangular
Invert:	67.20 ft
Control Elevation:	67.20 ft
Max Depth:	1.50 ft
Max Width:	14.00 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

Fillet:	0.00 ft

Discharge Coefficients	
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Drop Structure Comment:

Drop Structure Link: CS-8		Upstream Pipe		Downstream Pipe	
Scenario:	POSTDEVELOPMENT	Invert:	64.15 ft	Invert:	64.00 ft
		Manning's N:	0.0120	Manning's N:	0.0120
From Node:	POND 8	Geometry: Circular		Geometry: Circular	
To Node:	Lake Harris	Max Depth:	2.50 ft	Max Depth:	2.50 ft
Link Count:	2	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Solution:	Combine	Op Table:		Op Table:	
Increments:	0	Ref Node:		Ref Node:	
Pipe Count:	2	Manning's N:	0.0000	Manning's N:	0.0000
Damping:	0.0000 ft	Top Clip			
Length:	57.00 ft	Default:	0.00 ft	Default:	0.00 ft
FHWA Code:	0	Op Table:		Op Table:	
Entr Loss Coef:	0.00	Ref Node:		Ref Node:	
Exit Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Loss Coef:	0.00				
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:	Broad Crested Vertical	Default:	0.00 ft
Geometry Type:	Circular	Op Table:	
Invert:	63.50 ft	Ref Node:	
Control Elevation:	64.00 ft	Discharge Coefficients	
Max Depth:	0.23 ft	Weir Default:	3.200
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment: 1- 2.75" Orifice

Weir Component		Bottom Clip	
Weir:	2	Default:	0.00 ft
Weir Count:	1		

Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Horizontal
Geometry Type:	Rectangular
Invert:	67.50 ft
Control Elevation:	67.50 ft
Max Depth:	3.38 ft
Max Width:	8.69 ft
Fillet:	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: Type H Inlet

Weir Component

Weir:	3
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Rectangular
Invert:	67.10 ft
Control Elevation:	67.10 ft
Max Depth:	0.40 ft
Max Width:	14.00 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: 4.8" x 14' Weir

Drop Structure Comment:

Drop Structure Link: CS-9		Upstream Pipe		Downstream Pipe	
Scenario:	POSTDEVELOPMENT	Invert:	65.40 ft	Invert:	65.25 ft
		Manning's N:	0.0120	Manning's N:	0.0120
From Node:	POND 9	Geometry: Circular		Geometry: Circular	
To Node:	Lake Harris	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Solution:	Combine	Op Table:		Op Table:	
Increments:	0	Ref Node:		Ref Node:	
Pipe Count:	1	Manning's N:	0.0000	Manning's N:	0.0000
Damping:	0.0000 ft	Top Clip			
Length:	57.00 ft	Default:	0.00 ft	Default:	0.00 ft
FHWA Code:	0	Op Table:		Op Table:	
Entr Loss Coef:	0.00	Ref Node:		Ref Node:	
Exit Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000

Bend Loss Coef: 0.00
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:	65.00 ft	Ref Node:	
Control Elevation:	65.50 ft	**Discharge Coefficients**	
Max Depth:	0.23 ft	Weir Default:	3.200
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment: 1- 2.75" 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:	67.55 ft	Ref Node:	
Control Elevation:	67.55 ft	**Discharge Coefficients**	
Max Depth:	2.33 ft	Weir Default:	3.200
Max Width:	3.01 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Weir Comment: Type C Inlet

Weir Component		Bottom Clip	
Weir:	3	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	**Top Clip**	
Weir Type:	Broad Crested Vertical	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	67.00 ft	Ref Node:	
Control Elevation:	67.00 ft	**Discharge Coefficients**	
Max Depth:	0.50 ft	Weir Default:	3.200
Max Width:	2.50 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600

Orifice Table:

Weir Comment: 6"x30" Weir

Drop Structure Comment:

Pipe Link: L-0060P		Upstream		Downstream	
Scenario:	POSTDEVELOPMENT	Invert:	71.00 ft	Invert:	71.00 ft
		Manning's N:	0.0120	Manning's N:	0.0120
From Node:	POND 2	Geometry: Circular		Geometry: Circular	
To Node:	POND 3	Max Depth:	3.00 ft	Max Depth:	3.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	200.00 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.00	Top Clip			
Exit Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Pipe Link: L-0070P		Upstream		Downstream	
Scenario:	POSTDEVELOPMENT	Invert:	60.00 ft	Invert:	60.00 ft
		Manning's N:	0.0120	Manning's N:	0.0120
From Node:	POND 4	Geometry: Circular		Geometry: Circular	
To Node:	POND 10	Max Depth:	4.00 ft	Max Depth:	4.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	194.00 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.00	Top Clip			
Exit Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Simulation: 100YR-24HR

Scenario: POSTDEVELOPMENT

Run Date/Time: 11/6/2024 11:20:45 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	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		60.0000

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:

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:	~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:

Simulation: 10YR-24HR

Scenario: POSTDEVELOPMENT
Run Date/Time: 11/6/2024 11:23:14 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	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		60.0000

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:

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:	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: 25YR-24HR

Scenario:	POSTDEVELOPMENT
Run Date/Time:	11/6/2024 11:24:47 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	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		60.0000

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		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:	7.54 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: MEAN

Scenario: POSTDEVELOPMENT
Run Date/Time: 11/6/2024 11:26:06 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	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		60.0000

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:
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

IA Recovery Time: 24.0000 hr
Smp/Man Basin Rain Opt: Global
Rainfall Name: ~SCSII-24
Rainfall Amount: 4.50 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: RECOVERY

Scenario: POSTDEVELOPMENT
Run Date/Time: 11/6/2024 11:03:50 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	120.0000

	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

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:

Folder:			
		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:	7.54 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:

Appendix K
Postdevelopment ICPR Node Min/Max Report

Node Max Conditions [POSTDEVELOPMENT]

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]
Lake Harris	100YR-24HR	64.32	63.32	0.0000	461.75	0.00	0
POND 1	100YR-24HR	90.00	86.17	0.0010	278.24	0.00	137600
POND 10	100YR-24HR	69.00	68.69	0.0008	221.43	203.92	39587
POND 12	100YR-24HR	70.00	68.52	-0.0010	134.24	38.40	59380
POND 2	100YR-24HR	78.00	77.90	-0.0010	151.53	32.74	73074
POND 3	100YR-24HR	78.00	77.58	-0.0009	128.25	55.65	47900
POND 4	100YR-24HR	69.00	68.94	-0.0010	79.40	55.73	24198
POND 5	100YR-24HR	83.00	81.87	-0.0010	280.40	26.19	189659
POND 7	100YR-24HR	70.00	69.90	-0.0010	282.80	74.98	97765
POND 8	100YR-24HR	69.00	68.14	0.0010	139.97	129.85	38524
POND 9	100YR-24HR	71.00	69.04	-0.0010	82.57	34.72	35856
Lake Harris	10YR-24HR	64.32	63.32	0.0000	73.99	0.00	0
POND 1	10YR-24HR	90.00	82.52	0.0010	141.66	0.00	112749
POND 10	10YR-24HR	69.00	67.73	-0.0008	58.83	30.16	36635
POND 12	10YR-24HR	70.00	66.87	0.0008	64.49	9.62	49830
POND 2	10YR-24HR	78.00	76.01	0.0008	72.09	7.24	63198
POND 3	10YR-24HR	78.00	75.99	-0.0007	54.07	12.87	40014
POND 4	10YR-24HR	69.00	67.73	-0.0010	36.64	8.69	20097
POND 5	10YR-24HR	83.00	80.53	-0.0006	131.19	5.49	178158
POND 7	10YR-24HR	70.00	67.66	0.0010	124.92	14.79	83153
POND 8	10YR-24HR	69.00	67.44	0.0010	66.37	18.13	35444
POND 9	10YR-24HR	71.00	67.70	-0.0009	39.15	6.23	31317
Lake Harris	25YR-24HR	64.32	63.32	0.0000	235.74	0.00	0
POND 1	25YR-24HR	90.00	83.84	0.0010	188.57	0.00	121356
POND 10	25YR-24HR	69.00	68.13	0.0008	104.43	96.80	37853
POND 12	25YR-24HR	70.00	67.34	-0.0008	88.44	28.22	52446
POND 2	25YR-24HR	78.00	76.55	-0.0008	101.95	20.19	66036
POND 3	25YR-24HR	78.00	76.41	-0.0008	74.61	37.41	42054
POND 4	25YR-24HR	69.00	68.17	-0.0009	51.22	25.61	21523
POND 5	25YR-24HR	83.00	80.94	-0.0008	182.19	13.04	181551
POND 7	25YR-24HR	70.00	68.32	-0.0010	178.31	42.00	87482
POND 8	25YR-24HR	69.00	67.78	0.0010	91.58	61.19	36949
POND 9	25YR-24HR	71.00	68.13	-0.0010	54.03	19.97	32671
Lake Harris	MEAN	64.32	63.32	0.0000	9.49	0.00	0
POND 1	MEAN	90.00	81.14	0.0010	95.05	0.00	103688
POND 10	MEAN	69.00	67.48	0.0009	37.73	4.49	35870
POND 12	MEAN	70.00	66.53	0.0007	40.88	1.28	48070
POND 2	MEAN	78.00	75.68	0.0007	43.08	1.11	61632
POND 3	MEAN	78.00	75.68	0.0007	33.91	8.29	38534
POND 4	MEAN	69.00	67.48	0.0009	22.49	4.46	19321
POND 5	MEAN	83.00	80.21	0.0005	81.39	1.40	175556
POND 7	MEAN	70.00	67.28	0.0009	74.14	1.93	80650
POND 8	MEAN	69.00	67.14	0.0010	41.63	1.37	34149
POND 9	MEAN	71.00	67.24	-0.0007	24.56	1.16	29908
Lake Harris	RECOVERY	64.32	63.32	0.0000	235.74	0.00	0
POND 1	RECOVERY	90.00	83.84	0.0010	188.57	0.00	121356

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]
POND 10	RECOVERY	69.00	68.13	0.0008	104.43	96.80	37853
POND 12	RECOVERY	70.00	67.34	-0.0008	88.44	28.22	52446
POND 2	RECOVERY	78.00	76.55	-0.0009	101.95	20.19	66036
POND 3	RECOVERY	78.00	76.41	0.0007	74.61	37.41	42054
POND 4	RECOVERY	69.00	68.17	0.0008	51.22	25.61	21523
POND 5	RECOVERY	83.00	80.94	0.0006	182.19	13.04	181551
POND 7	RECOVERY	70.00	68.32	-0.0010	178.31	41.99	87482
POND 8	RECOVERY	69.00	67.78	0.0010	91.58	61.19	36949
POND 9	RECOVERY	71.00	68.13	-0.0008	54.03	19.97	32671

Appendix L
Postdevelopment ICPR 25yr/24hr Node Time Series Report

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 3	0.0000	74.00
RECOVERY	POND 3	0.2511	74.00
RECOVERY	POND 3	0.5050	74.00
RECOVERY	POND 3	0.7527	74.00
RECOVERY	POND 3	1.0027	74.00
RECOVERY	POND 3	1.2527	74.00
RECOVERY	POND 3	1.5027	74.00
RECOVERY	POND 3	1.7527	74.00
RECOVERY	POND 3	2.0027	74.00
RECOVERY	POND 3	2.2527	74.00
RECOVERY	POND 3	2.5027	74.00
RECOVERY	POND 3	2.7527	74.00
RECOVERY	POND 3	3.0027	74.00
RECOVERY	POND 3	3.2527	74.00
RECOVERY	POND 3	3.5027	74.00
RECOVERY	POND 3	3.7527	74.00
RECOVERY	POND 3	4.0027	74.00
RECOVERY	POND 3	4.2527	74.00
RECOVERY	POND 3	4.5027	74.00
RECOVERY	POND 3	4.7527	74.00
RECOVERY	POND 3	5.0027	74.00
RECOVERY	POND 3	5.2527	74.00
RECOVERY	POND 3	5.5027	74.00
RECOVERY	POND 3	5.7527	74.00
RECOVERY	POND 3	6.0027	74.00
RECOVERY	POND 3	6.2527	74.00
RECOVERY	POND 3	6.5027	74.00
RECOVERY	POND 3	6.7527	74.00
RECOVERY	POND 3	7.0027	74.00
RECOVERY	POND 3	7.2527	74.00
RECOVERY	POND 3	7.5027	74.00
RECOVERY	POND 3	7.7527	74.01
RECOVERY	POND 3	8.0027	74.01
RECOVERY	POND 3	8.2527	74.01
RECOVERY	POND 3	8.5027	74.02
RECOVERY	POND 3	8.7527	74.02
RECOVERY	POND 3	9.0027	74.03
RECOVERY	POND 3	9.2530	74.04
RECOVERY	POND 3	9.5031	74.05
RECOVERY	POND 3	9.7520	74.06
RECOVERY	POND 3	10.0029	74.08
RECOVERY	POND 3	10.2516	74.09

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 3	10.5014	74.12
RECOVERY	POND 3	10.7521	74.15
RECOVERY	POND 3	11.0016	74.20
RECOVERY	POND 3	11.2513	74.26
RECOVERY	POND 3	11.5006	74.34
RECOVERY	POND 3	11.7503	74.55
RECOVERY	POND 3	12.0000	75.34
RECOVERY	POND 3	12.2500	76.36
RECOVERY	POND 3	12.5007	76.39
RECOVERY	POND 3	12.7509	76.31
RECOVERY	POND 3	13.0001	76.24
RECOVERY	POND 3	13.2509	76.17
RECOVERY	POND 3	13.5016	76.11
RECOVERY	POND 3	13.7509	76.06
RECOVERY	POND 3	14.0002	76.01
RECOVERY	POND 3	14.2533	75.97
RECOVERY	POND 3	14.5013	75.94
RECOVERY	POND 3	14.7535	75.91
RECOVERY	POND 3	15.0007	75.88
RECOVERY	POND 3	15.2537	75.87
RECOVERY	POND 3	15.5014	75.85
RECOVERY	POND 3	15.7550	75.84
RECOVERY	POND 3	16.0034	75.82
RECOVERY	POND 3	16.2509	75.82
RECOVERY	POND 3	16.5035	75.81
RECOVERY	POND 3	16.7526	75.80
RECOVERY	POND 3	17.0034	75.80
RECOVERY	POND 3	17.2540	75.79
RECOVERY	POND 3	17.5042	75.78
RECOVERY	POND 3	17.7529	75.78
RECOVERY	POND 3	18.0046	75.77
RECOVERY	POND 3	18.2504	75.77
RECOVERY	POND 3	18.5004	75.76
RECOVERY	POND 3	18.7504	75.75
RECOVERY	POND 3	19.0004	75.75
RECOVERY	POND 3	19.2504	75.75
RECOVERY	POND 3	19.5004	75.75
RECOVERY	POND 3	19.7504	75.74
RECOVERY	POND 3	20.0004	75.74
RECOVERY	POND 3	20.2504	75.73
RECOVERY	POND 3	20.5004	75.73
RECOVERY	POND 3	20.7504	75.72

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 3	21.0004	75.72
RECOVERY	POND 3	21.2504	75.72
RECOVERY	POND 3	21.5004	75.72
RECOVERY	POND 3	21.7504	75.71
RECOVERY	POND 3	22.0004	75.71
RECOVERY	POND 3	22.2504	75.71
RECOVERY	POND 3	22.5004	75.71
RECOVERY	POND 3	22.7504	75.71
RECOVERY	POND 3	23.0004	75.71
RECOVERY	POND 3	23.2504	75.71
RECOVERY	POND 3	23.5004	75.71
RECOVERY	POND 3	23.7504	75.71
RECOVERY	POND 3	24.0004	75.71
RECOVERY	POND 3	24.2504	75.70
RECOVERY	POND 3	24.5004	75.68
RECOVERY	POND 3	24.7504	75.66
RECOVERY	POND 3	25.0004	75.65
RECOVERY	POND 3	25.2504	75.64
RECOVERY	POND 3	25.5004	75.63
RECOVERY	POND 3	25.7504	75.62
RECOVERY	POND 3	26.0004	75.61
RECOVERY	POND 3	26.2504	75.60
RECOVERY	POND 3	26.5004	75.59
RECOVERY	POND 3	26.7504	75.59
RECOVERY	POND 3	27.0004	75.58
RECOVERY	POND 3	27.2504	75.57
RECOVERY	POND 3	27.5004	75.56
RECOVERY	POND 3	27.7504	75.56
RECOVERY	POND 3	28.0004	75.55
RECOVERY	POND 3	28.2504	75.54
RECOVERY	POND 3	28.5004	75.53
RECOVERY	POND 3	28.7504	75.53
RECOVERY	POND 3	29.0004	75.52
RECOVERY	POND 3	29.2504	75.51
RECOVERY	POND 3	29.5004	75.50
RECOVERY	POND 3	29.7504	75.50
RECOVERY	POND 3	30.0004	75.49
RECOVERY	POND 3	30.2504	75.48
RECOVERY	POND 3	30.5004	75.47
RECOVERY	POND 3	30.7504	75.47
RECOVERY	POND 3	31.0004	75.46
RECOVERY	POND 3	31.2504	75.45

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 3	31.5004	75.44
RECOVERY	POND 3	31.7504	75.44
RECOVERY	POND 3	32.0004	75.43
RECOVERY	POND 3	32.2504	75.42
RECOVERY	POND 3	32.5004	75.41
RECOVERY	POND 3	32.7504	75.41
RECOVERY	POND 3	33.0004	75.40
RECOVERY	POND 3	33.2504	75.39
RECOVERY	POND 3	33.5004	75.39
RECOVERY	POND 3	33.7504	75.38
RECOVERY	POND 3	34.0004	75.37
RECOVERY	POND 3	34.2504	75.36
RECOVERY	POND 3	34.5004	75.36
RECOVERY	POND 3	34.7504	75.35
RECOVERY	POND 3	35.0004	75.34
RECOVERY	POND 3	35.2504	75.34
RECOVERY	POND 3	35.5004	75.33
RECOVERY	POND 3	35.7504	75.32
RECOVERY	POND 3	36.0004	75.31
RECOVERY	POND 3	36.2504	75.31
RECOVERY	POND 3	36.5004	75.30
RECOVERY	POND 3	36.7504	75.29
RECOVERY	POND 3	37.0004	75.29
RECOVERY	POND 3	37.2504	75.28
RECOVERY	POND 3	37.5004	75.27
RECOVERY	POND 3	37.7504	75.26
RECOVERY	POND 3	38.0004	75.26
RECOVERY	POND 3	38.2504	75.25
RECOVERY	POND 3	38.5004	75.24
RECOVERY	POND 3	38.7504	75.24
RECOVERY	POND 3	39.0004	75.23
RECOVERY	POND 3	39.2504	75.22
RECOVERY	POND 3	39.5004	75.22
RECOVERY	POND 3	39.7504	75.21
RECOVERY	POND 3	40.0004	75.20
RECOVERY	POND 3	40.2504	75.20
RECOVERY	POND 3	40.5004	75.19
RECOVERY	POND 3	40.7504	75.18
RECOVERY	POND 3	41.0004	75.17
RECOVERY	POND 3	41.2504	75.17
RECOVERY	POND 3	41.5004	75.16
RECOVERY	POND 3	41.7504	75.15

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 3	42.0004	75.15
RECOVERY	POND 3	42.2504	75.14
RECOVERY	POND 3	42.5004	75.13
RECOVERY	POND 3	42.7504	75.13
RECOVERY	POND 3	43.0004	75.12
RECOVERY	POND 3	43.2504	75.11
RECOVERY	POND 3	43.5004	75.11
RECOVERY	POND 3	43.7504	75.10
RECOVERY	POND 3	44.0004	75.09
RECOVERY	POND 3	44.2504	75.09
RECOVERY	POND 3	44.5004	75.08
RECOVERY	POND 3	44.7504	75.07
RECOVERY	POND 3	45.0004	75.07
RECOVERY	POND 3	45.2504	75.06
RECOVERY	POND 3	45.5004	75.05
RECOVERY	POND 3	45.7504	75.05
RECOVERY	POND 3	46.0004	75.04
RECOVERY	POND 3	46.2504	75.03
RECOVERY	POND 3	46.5004	75.03
RECOVERY	POND 3	46.7504	75.02
RECOVERY	POND 3	47.0004	75.02
RECOVERY	POND 3	47.2504	75.01
RECOVERY	POND 3	47.5004	75.00
RECOVERY	POND 3	47.7504	75.00
RECOVERY	POND 3	48.0004	74.99
RECOVERY	POND 3	48.2504	74.98
RECOVERY	POND 3	48.5004	74.98
RECOVERY	POND 3	48.7504	74.97
RECOVERY	POND 3	49.0004	74.96
RECOVERY	POND 3	49.2504	74.96
RECOVERY	POND 3	49.5004	74.95
RECOVERY	POND 3	49.7504	74.95
RECOVERY	POND 3	50.0004	74.94
RECOVERY	POND 3	50.2504	74.93
RECOVERY	POND 3	50.5004	74.93
RECOVERY	POND 3	50.7504	74.92
RECOVERY	POND 3	51.0004	74.91
RECOVERY	POND 3	51.2504	74.91
RECOVERY	POND 3	51.5004	74.90
RECOVERY	POND 3	51.7504	74.90
RECOVERY	POND 3	52.0004	74.89
RECOVERY	POND 3	52.2504	74.88

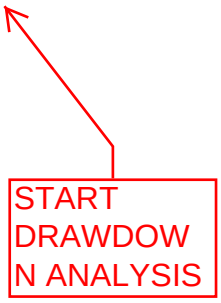
Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 3	52.5004	74.88
RECOVERY	POND 3	52.7504	74.87
RECOVERY	POND 3	53.0004	74.87
RECOVERY	POND 3	53.2504	74.86
RECOVERY	POND 3	53.5004	74.85
RECOVERY	POND 3	53.7504	74.85
RECOVERY	POND 3	54.0004	74.84
RECOVERY	POND 3	54.2504	74.84
RECOVERY	POND 3	54.5004	74.83
RECOVERY	POND 3	54.7504	74.82
RECOVERY	POND 3	55.0004	74.82
RECOVERY	POND 3	55.2504	74.81
RECOVERY	POND 3	55.5004	74.81
RECOVERY	POND 3	55.7504	74.80
RECOVERY	POND 3	56.0004	74.79
RECOVERY	POND 3	56.2504	74.79
RECOVERY	POND 3	56.5004	74.78
RECOVERY	POND 3	56.7504	74.78
RECOVERY	POND 3	57.0004	74.77
RECOVERY	POND 3	57.2504	74.77
RECOVERY	POND 3	57.5004	74.76
RECOVERY	POND 3	57.7504	74.75
RECOVERY	POND 3	58.0004	74.75
RECOVERY	POND 3	58.2504	74.74
RECOVERY	POND 3	58.5004	74.74
RECOVERY	POND 3	58.7504	74.73
RECOVERY	POND 3	59.0004	74.73
RECOVERY	POND 3	59.2504	74.72
RECOVERY	POND 3	59.5004	74.71
RECOVERY	POND 3	59.7504	74.71
RECOVERY	POND 3	60.0004	74.70
RECOVERY	POND 3	60.2504	74.70
RECOVERY	POND 3	60.5004	74.69
RECOVERY	POND 3	60.7504	74.69
RECOVERY	POND 3	61.0004	74.68
RECOVERY	POND 3	61.2504	74.68
RECOVERY	POND 3	61.5004	74.67
RECOVERY	POND 3	61.7504	74.67
RECOVERY	POND 3	62.0004	74.66
RECOVERY	POND 3	62.2504	74.65
RECOVERY	POND 3	62.5004	74.65
RECOVERY	POND 3	62.7504	74.64

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 3	63.0004	74.64
RECOVERY	POND 3	63.2504	74.63
RECOVERY	POND 3	63.5004	74.63
RECOVERY	POND 3	63.7504	74.62
RECOVERY	POND 3	64.0004	74.62
RECOVERY	POND 3	64.2504	74.61
RECOVERY	POND 3	64.5004	74.61
RECOVERY	POND 3	64.7504	74.60
RECOVERY	POND 3	65.0004	74.60
RECOVERY	POND 3	65.2504	74.59
RECOVERY	POND 3	65.5004	74.59
RECOVERY	POND 3	65.7504	74.58
RECOVERY	POND 3	66.0004	74.58
RECOVERY	POND 3	66.2504	74.57
RECOVERY	POND 3	66.5004	74.57
RECOVERY	POND 3	66.7504	74.56
RECOVERY	POND 3	67.0004	74.56
RECOVERY	POND 3	67.2504	74.55
RECOVERY	POND 3	67.5004	74.55
RECOVERY	POND 3	67.7504	74.54
RECOVERY	POND 3	68.0004	74.54
RECOVERY	POND 3	68.2504	74.53
RECOVERY	POND 3	68.5004	74.53
RECOVERY	POND 3	68.7504	74.52
RECOVERY	POND 3	69.0004	74.52
RECOVERY	POND 3	69.2504	74.51
RECOVERY	POND 3	69.5004	74.51
RECOVERY	POND 3	69.7504	74.50
RECOVERY	POND 3	70.0004	74.50
RECOVERY	POND 3	70.2504	74.49
RECOVERY	POND 3	70.5004	74.49
RECOVERY	POND 3	70.7504	74.48
RECOVERY	POND 3	71.0004	74.48
RECOVERY	POND 3	71.2504	74.47
RECOVERY	POND 3	71.5004	74.47
RECOVERY	POND 3	71.7504	74.46
RECOVERY	POND 3	72.0004	74.46
RECOVERY	POND 3	72.2504	74.46
RECOVERY	POND 3	72.5004	74.45
RECOVERY	POND 3	72.7504	74.45
RECOVERY	POND 3	73.0004	74.44
RECOVERY	POND 3	73.2504	74.44

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 7	0.0000	65.00
RECOVERY	POND 7	0.2511	65.00
RECOVERY	POND 7	0.5050	65.00
RECOVERY	POND 7	0.7527	65.00
RECOVERY	POND 7	1.0027	65.00
RECOVERY	POND 7	1.2527	65.00
RECOVERY	POND 7	1.5027	65.00
RECOVERY	POND 7	1.7527	65.00
RECOVERY	POND 7	2.0027	65.00
RECOVERY	POND 7	2.2527	65.00
RECOVERY	POND 7	2.5027	65.00
RECOVERY	POND 7	2.7527	65.00
RECOVERY	POND 7	3.0027	65.00
RECOVERY	POND 7	3.2527	65.00
RECOVERY	POND 7	3.5027	65.00
RECOVERY	POND 7	3.7527	65.00
RECOVERY	POND 7	4.0027	65.00
RECOVERY	POND 7	4.2527	65.00
RECOVERY	POND 7	4.5027	65.00
RECOVERY	POND 7	4.7527	65.00
RECOVERY	POND 7	5.0027	65.00
RECOVERY	POND 7	5.2527	65.00
RECOVERY	POND 7	5.5027	65.00
RECOVERY	POND 7	5.7527	65.00
RECOVERY	POND 7	6.0027	65.00
RECOVERY	POND 7	6.2527	65.00
RECOVERY	POND 7	6.5027	65.00
RECOVERY	POND 7	6.7527	65.00
RECOVERY	POND 7	7.0027	65.00
RECOVERY	POND 7	7.2527	65.00
RECOVERY	POND 7	7.5027	65.00
RECOVERY	POND 7	7.7527	65.00
RECOVERY	POND 7	8.0027	65.00
RECOVERY	POND 7	8.2527	65.00
RECOVERY	POND 7	8.5027	65.01
RECOVERY	POND 7	8.7527	65.02
RECOVERY	POND 7	9.0027	65.03
RECOVERY	POND 7	9.2530	65.04
RECOVERY	POND 7	9.5031	65.06
RECOVERY	POND 7	9.7520	65.08
RECOVERY	POND 7	10.0029	65.10
RECOVERY	POND 7	10.2516	65.13

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 7	10.5014	65.17
RECOVERY	POND 7	10.7521	65.21
RECOVERY	POND 7	11.0016	65.28
RECOVERY	POND 7	11.2513	65.37
RECOVERY	POND 7	11.5006	65.48
RECOVERY	POND 7	11.7503	65.77
RECOVERY	POND 7	12.0000	66.80
RECOVERY	POND 7	12.2500	68.21
RECOVERY	POND 7	12.5007	68.30
RECOVERY	POND 7	12.7509	68.15
RECOVERY	POND 7	13.0001	68.00
RECOVERY	POND 7	13.2509	67.87
RECOVERY	POND 7	13.5016	67.77
RECOVERY	POND 7	13.7509	67.69
RECOVERY	POND 7	14.0002	67.64
RECOVERY	POND 7	14.2533	67.59
RECOVERY	POND 7	14.5013	67.55
RECOVERY	POND 7	14.7535	67.52
RECOVERY	POND 7	15.0007	67.50
RECOVERY	POND 7	15.2537	67.48
RECOVERY	POND 7	15.5014	67.47
RECOVERY	POND 7	15.7550	67.45
RECOVERY	POND 7	16.0034	67.44
RECOVERY	POND 7	16.2509	67.43
RECOVERY	POND 7	16.5035	67.43
RECOVERY	POND 7	16.7526	67.42
RECOVERY	POND 7	17.0034	67.41
RECOVERY	POND 7	17.2540	67.41
RECOVERY	POND 7	17.5042	67.40
RECOVERY	POND 7	17.7529	67.40
RECOVERY	POND 7	18.0046	67.39
RECOVERY	POND 7	18.2504	67.38
RECOVERY	POND 7	18.5004	67.37
RECOVERY	POND 7	18.7504	67.37
RECOVERY	POND 7	19.0004	67.36
RECOVERY	POND 7	19.2504	67.36
RECOVERY	POND 7	19.5004	67.36
RECOVERY	POND 7	19.7504	67.36
RECOVERY	POND 7	20.0004	67.35
RECOVERY	POND 7	20.2504	67.35
RECOVERY	POND 7	20.5004	67.34
RECOVERY	POND 7	20.7504	67.33

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 7	21.0004	67.33
RECOVERY	POND 7	21.2504	67.33
RECOVERY	POND 7	21.5004	67.33
RECOVERY	POND 7	21.7504	67.32
RECOVERY	POND 7	22.0004	67.32
RECOVERY	POND 7	22.2504	67.32
RECOVERY	POND 7	22.5004	67.32
RECOVERY	POND 7	22.7504	67.32
RECOVERY	POND 7	23.0004	67.32
RECOVERY	POND 7	23.2504	67.32
RECOVERY	POND 7	23.5004	67.32
RECOVERY	POND 7	23.7504	67.32
RECOVERY	POND 7	24.0004	67.31
RECOVERY	POND 7	24.2504	67.30
RECOVERY	POND 7	24.5004	67.28
RECOVERY	POND 7	24.7504	67.26
RECOVERY	POND 7	25.0004	67.24
RECOVERY	POND 7	25.2504	67.23
RECOVERY	POND 7	25.5004	67.22
RECOVERY	POND 7	25.7504	67.20
RECOVERY	POND 7	26.0004	67.19
RECOVERY	POND 7	26.2504	67.18
RECOVERY	POND 7	26.5004	67.17
RECOVERY	POND 7	26.7504	67.16
RECOVERY	POND 7	27.0004	67.15
RECOVERY	POND 7	27.2504	67.14
RECOVERY	POND 7	27.5004	67.13
RECOVERY	POND 7	27.7504	67.12
RECOVERY	POND 7	28.0004	67.10
RECOVERY	POND 7	28.2504	67.09
RECOVERY	POND 7	28.5004	67.08
RECOVERY	POND 7	28.7504	67.07
RECOVERY	POND 7	29.0004	67.06
RECOVERY	POND 7	29.2504	67.05
RECOVERY	POND 7	29.5004	67.04
RECOVERY	POND 7	29.7504	67.03
RECOVERY	POND 7	30.0004	67.02
RECOVERY	POND 7	30.2504	67.01
RECOVERY	POND 7	30.5004	67.00
RECOVERY	POND 7	30.7504	66.99
RECOVERY	POND 7	31.0004	66.98
RECOVERY	POND 7	31.2504	66.97



Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 7	31.5004	66.96
RECOVERY	POND 7	31.7504	66.95
RECOVERY	POND 7	32.0004	66.94
RECOVERY	POND 7	32.2504	66.93
RECOVERY	POND 7	32.5004	66.92
RECOVERY	POND 7	32.7504	66.91
RECOVERY	POND 7	33.0004	66.90
RECOVERY	POND 7	33.2504	66.89
RECOVERY	POND 7	33.5004	66.88
RECOVERY	POND 7	33.7504	66.87
RECOVERY	POND 7	34.0004	66.86
RECOVERY	POND 7	34.2504	66.85
RECOVERY	POND 7	34.5004	66.84
RECOVERY	POND 7	34.7504	66.83
RECOVERY	POND 7	35.0004	66.82
RECOVERY	POND 7	35.2504	66.81
RECOVERY	POND 7	35.5004	66.80
RECOVERY	POND 7	35.7504	66.79
RECOVERY	POND 7	36.0004	66.78
RECOVERY	POND 7	36.2504	66.77
RECOVERY	POND 7	36.5004	66.76
RECOVERY	POND 7	36.7504	66.75
RECOVERY	POND 7	37.0004	66.75
RECOVERY	POND 7	37.2504	66.74
RECOVERY	POND 7	37.5004	66.73
RECOVERY	POND 7	37.7504	66.72
RECOVERY	POND 7	38.0004	66.71
RECOVERY	POND 7	38.2504	66.70
RECOVERY	POND 7	38.5004	66.69
RECOVERY	POND 7	38.7504	66.68
RECOVERY	POND 7	39.0004	66.67
RECOVERY	POND 7	39.2504	66.67
RECOVERY	POND 7	39.5004	66.66
RECOVERY	POND 7	39.7504	66.65
RECOVERY	POND 7	40.0004	66.64
RECOVERY	POND 7	40.2504	66.63
RECOVERY	POND 7	40.5004	66.62
RECOVERY	POND 7	40.7504	66.61
RECOVERY	POND 7	41.0004	66.61
RECOVERY	POND 7	41.2504	66.60
RECOVERY	POND 7	41.5004	66.59
RECOVERY	POND 7	41.7504	66.58

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 7	42.0004	66.57
RECOVERY	POND 7	42.2504	66.56
RECOVERY	POND 7	42.5004	66.56
RECOVERY	POND 7	42.7504	66.55
RECOVERY	POND 7	43.0004	66.54
RECOVERY	POND 7	43.2504	66.53
RECOVERY	POND 7	43.5004	66.53
RECOVERY	POND 7	43.7504	66.52
RECOVERY	POND 7	44.0004	66.51
RECOVERY	POND 7	44.2504	66.50
RECOVERY	POND 7	44.5004	66.49
RECOVERY	POND 7	44.7504	66.49
RECOVERY	POND 7	45.0004	66.48
RECOVERY	POND 7	45.2504	66.47
RECOVERY	POND 7	45.5004	66.46
RECOVERY	POND 7	45.7504	66.46
RECOVERY	POND 7	46.0004	66.45
RECOVERY	POND 7	46.2504	66.44
RECOVERY	POND 7	46.5004	66.44
RECOVERY	POND 7	46.7504	66.43
RECOVERY	POND 7	47.0004	66.42
RECOVERY	POND 7	47.2504	66.41
RECOVERY	POND 7	47.5004	66.41
RECOVERY	POND 7	47.7504	66.40
RECOVERY	POND 7	48.0004	66.39
RECOVERY	POND 7	48.2504	66.39
RECOVERY	POND 7	48.5004	66.38
RECOVERY	POND 7	48.7504	66.37
RECOVERY	POND 7	49.0004	66.37
RECOVERY	POND 7	49.2504	66.36
RECOVERY	POND 7	49.5004	66.35
RECOVERY	POND 7	49.7504	66.35
RECOVERY	POND 7	50.0004	66.34
RECOVERY	POND 7	50.2504	66.33
RECOVERY	POND 7	50.5004	66.33
RECOVERY	POND 7	50.7504	66.32
RECOVERY	POND 7	51.0004	66.31
RECOVERY	POND 7	51.2504	66.31
RECOVERY	POND 7	51.5004	66.30
RECOVERY	POND 7	51.7504	66.30
RECOVERY	POND 7	52.0004	66.29
RECOVERY	POND 7	52.2504	66.28

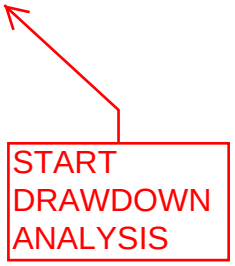
Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 7	52.5004	66.28
RECOVERY	POND 7	52.7504	66.27
RECOVERY	POND 7	53.0004	66.27
RECOVERY	POND 7	53.2504	66.26
RECOVERY	POND 7	53.5004	66.25
RECOVERY	POND 7	53.7504	66.25
RECOVERY	POND 7	54.0004	66.24
RECOVERY	POND 7	54.2504	66.24
RECOVERY	POND 7	54.5004	66.23
RECOVERY	POND 7	54.7504	66.23
RECOVERY	POND 7	55.0004	66.22
RECOVERY	POND 7	55.2504	66.22
RECOVERY	POND 7	55.5004	66.21
RECOVERY	POND 7	55.7504	66.20
RECOVERY	POND 7	56.0004	66.20
RECOVERY	POND 7	56.2504	66.19
RECOVERY	POND 7	56.5004	66.19
RECOVERY	POND 7	56.7504	66.18
RECOVERY	POND 7	57.0004	66.18
RECOVERY	POND 7	57.2504	66.17
RECOVERY	POND 7	57.5004	66.17
RECOVERY	POND 7	57.7504	66.16
RECOVERY	POND 7	58.0004	66.16
RECOVERY	POND 7	58.2504	66.16
RECOVERY	POND 7	58.5004	66.15
RECOVERY	POND 7	58.7504	66.15
RECOVERY	POND 7	59.0004	66.14
RECOVERY	POND 7	59.2504	66.14
RECOVERY	POND 7	59.5004	66.13
RECOVERY	POND 7	59.7504	66.13
RECOVERY	POND 7	60.0004	66.12
RECOVERY	POND 7	60.2504	66.12
RECOVERY	POND 7	60.5004	66.11
RECOVERY	POND 7	60.7504	66.11
RECOVERY	POND 7	61.0004	66.11
RECOVERY	POND 7	61.2504	66.10
RECOVERY	POND 7	61.5004	66.10
RECOVERY	POND 7	61.7504	66.09
RECOVERY	POND 7	62.0004	66.09
RECOVERY	POND 7	62.2504	66.09
RECOVERY	POND 7	62.5004	66.08
RECOVERY	POND 7	62.7504	66.08

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 7	63.0004	66.07
RECOVERY	POND 7	63.2504	66.07
RECOVERY	POND 7	63.5004	66.07
RECOVERY	POND 7	63.7504	66.06
RECOVERY	POND 7	64.0004	66.06
RECOVERY	POND 7	64.2504	66.06
RECOVERY	POND 7	64.5004	66.05
RECOVERY	POND 7	64.7504	66.05
RECOVERY	POND 7	65.0004	66.05
RECOVERY	POND 7	65.2504	66.04
RECOVERY	POND 7	65.5004	66.04
RECOVERY	POND 7	65.7504	66.04
RECOVERY	POND 7	66.0004	66.03
RECOVERY	POND 7	66.2504	66.03
RECOVERY	POND 7	66.5004	66.03
RECOVERY	POND 7	66.7504	66.02
RECOVERY	POND 7	67.0004	66.02
RECOVERY	POND 7	67.2504	66.02
RECOVERY	POND 7	67.5004	66.01
RECOVERY	POND 7	67.7504	66.01
RECOVERY	POND 7	68.0004	66.01
RECOVERY	POND 7	68.2504	66.01
RECOVERY	POND 7	68.5004	66.00
RECOVERY	POND 7	68.7504	66.00
RECOVERY	POND 7	69.0004	66.00
RECOVERY	POND 7	69.2504	65.99
RECOVERY	POND 7	69.5004	65.99
RECOVERY	POND 7	69.7504	65.99
RECOVERY	POND 7	70.0004	65.99
RECOVERY	POND 7	70.2504	65.98
RECOVERY	POND 7	70.5004	65.98
RECOVERY	POND 7	70.7504	65.98
RECOVERY	POND 7	71.0004	65.98
RECOVERY	POND 7	71.2504	65.97
RECOVERY	POND 7	71.5004	65.97
RECOVERY	POND 7	71.7504	65.97
RECOVERY	POND 7	72.0004	65.97
RECOVERY	POND 7	72.2504	65.97
RECOVERY	POND 7	72.5004	65.96
RECOVERY	POND 7	72.7504	65.96
RECOVERY	POND 7	73.0004	65.96
RECOVERY	POND 7	73.2504	65.96

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 8	0.0000	64.00
RECOVERY	POND 8	0.2511	64.00
RECOVERY	POND 8	0.5050	64.00
RECOVERY	POND 8	0.7527	64.00
RECOVERY	POND 8	1.0027	64.00
RECOVERY	POND 8	1.2527	64.00
RECOVERY	POND 8	1.5027	64.00
RECOVERY	POND 8	1.7527	64.00
RECOVERY	POND 8	2.0027	64.00
RECOVERY	POND 8	2.2527	64.00
RECOVERY	POND 8	2.5027	64.00
RECOVERY	POND 8	2.7527	64.00
RECOVERY	POND 8	3.0027	64.00
RECOVERY	POND 8	3.2527	64.00
RECOVERY	POND 8	3.5027	64.00
RECOVERY	POND 8	3.7527	64.00
RECOVERY	POND 8	4.0027	64.00
RECOVERY	POND 8	4.2527	64.00
RECOVERY	POND 8	4.5027	64.00
RECOVERY	POND 8	4.7527	64.00
RECOVERY	POND 8	5.0027	64.00
RECOVERY	POND 8	5.2527	64.00
RECOVERY	POND 8	5.5027	64.00
RECOVERY	POND 8	5.7527	64.00
RECOVERY	POND 8	6.0027	64.00
RECOVERY	POND 8	6.2527	64.00
RECOVERY	POND 8	6.5027	64.00
RECOVERY	POND 8	6.7527	64.00
RECOVERY	POND 8	7.0027	64.01
RECOVERY	POND 8	7.2527	64.01
RECOVERY	POND 8	7.5027	64.02
RECOVERY	POND 8	7.7527	64.03
RECOVERY	POND 8	8.0027	64.05
RECOVERY	POND 8	8.2527	64.06
RECOVERY	POND 8	8.5027	64.08
RECOVERY	POND 8	8.7527	64.11
RECOVERY	POND 8	9.0027	64.14
RECOVERY	POND 8	9.2530	64.17
RECOVERY	POND 8	9.5031	64.21
RECOVERY	POND 8	9.7520	64.25
RECOVERY	POND 8	10.0029	64.30
RECOVERY	POND 8	10.2516	64.36

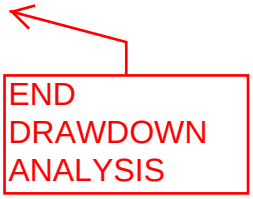
Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 8	10.5014	64.42
RECOVERY	POND 8	10.7521	64.50
RECOVERY	POND 8	11.0016	64.62
RECOVERY	POND 8	11.2513	64.76
RECOVERY	POND 8	11.5006	64.93
RECOVERY	POND 8	11.7503	65.36
RECOVERY	POND 8	12.0000	66.74
RECOVERY	POND 8	12.2500	67.74
RECOVERY	POND 8	12.5007	67.48
RECOVERY	POND 8	12.7509	67.37
RECOVERY	POND 8	13.0001	67.32
RECOVERY	POND 8	13.2509	67.28
RECOVERY	POND 8	13.5016	67.26
RECOVERY	POND 8	13.7509	67.24
RECOVERY	POND 8	14.0002	67.23
RECOVERY	POND 8	14.2533	67.22
RECOVERY	POND 8	14.5013	67.21
RECOVERY	POND 8	14.7535	67.20
RECOVERY	POND 8	15.0007	67.19
RECOVERY	POND 8	15.2537	67.19
RECOVERY	POND 8	15.5014	67.19
RECOVERY	POND 8	15.7550	67.18
RECOVERY	POND 8	16.0034	67.18
RECOVERY	POND 8	16.2509	67.18
RECOVERY	POND 8	16.5035	67.18
RECOVERY	POND 8	16.7526	67.18
RECOVERY	POND 8	17.0034	67.17
RECOVERY	POND 8	17.2540	67.17
RECOVERY	POND 8	17.5042	67.17
RECOVERY	POND 8	17.7529	67.17
RECOVERY	POND 8	18.0046	67.16
RECOVERY	POND 8	18.2504	67.16
RECOVERY	POND 8	18.5004	67.16
RECOVERY	POND 8	18.7504	67.15
RECOVERY	POND 8	19.0004	67.15
RECOVERY	POND 8	19.2504	67.15
RECOVERY	POND 8	19.5004	67.15
RECOVERY	POND 8	19.7504	67.15
RECOVERY	POND 8	20.0004	67.15
RECOVERY	POND 8	20.2504	67.15
RECOVERY	POND 8	20.5004	67.14
RECOVERY	POND 8	20.7504	67.14

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 8	21.0004	67.14
RECOVERY	POND 8	21.2504	67.14
RECOVERY	POND 8	21.5004	67.14
RECOVERY	POND 8	21.7504	67.14
RECOVERY	POND 8	22.0004	67.14
RECOVERY	POND 8	22.2504	67.14
RECOVERY	POND 8	22.5004	67.14
RECOVERY	POND 8	22.7504	67.14
RECOVERY	POND 8	23.0004	67.14
RECOVERY	POND 8	23.2504	67.14
RECOVERY	POND 8	23.5004	67.14
RECOVERY	POND 8	23.7504	67.14
RECOVERY	POND 8	24.0004	67.14
RECOVERY	POND 8	24.2504	67.12
RECOVERY	POND 8	24.5004	67.10
RECOVERY	POND 8	24.7504	67.09
RECOVERY	POND 8	25.0004	67.07
RECOVERY	POND 8	25.2504	67.05
RECOVERY	POND 8	25.5004	67.03
RECOVERY	POND 8	25.7504	67.02
RECOVERY	POND 8	26.0004	67.00
RECOVERY	POND 8	26.2504	66.98
RECOVERY	POND 8	26.5004	66.96
RECOVERY	POND 8	26.7504	66.95
RECOVERY	POND 8	27.0004	66.93
RECOVERY	POND 8	27.2504	66.91
RECOVERY	POND 8	27.5004	66.89
RECOVERY	POND 8	27.7504	66.88
RECOVERY	POND 8	28.0004	66.86
RECOVERY	POND 8	28.2504	66.84
RECOVERY	POND 8	28.5004	66.82
RECOVERY	POND 8	28.7504	66.81
RECOVERY	POND 8	29.0004	66.79
RECOVERY	POND 8	29.2504	66.77
RECOVERY	POND 8	29.5004	66.75
RECOVERY	POND 8	29.7504	66.74
RECOVERY	POND 8	30.0004	66.72
RECOVERY	POND 8	30.2504	66.70
RECOVERY	POND 8	30.5004	66.69
RECOVERY	POND 8	30.7504	66.67
RECOVERY	POND 8	31.0004	66.65
RECOVERY	POND 8	31.2504	66.63



Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 8	31.5004	66.62
RECOVERY	POND 8	31.7504	66.60
RECOVERY	POND 8	32.0004	66.58
RECOVERY	POND 8	32.2504	66.57
RECOVERY	POND 8	32.5004	66.55
RECOVERY	POND 8	32.7504	66.53
RECOVERY	POND 8	33.0004	66.52
RECOVERY	POND 8	33.2504	66.50
RECOVERY	POND 8	33.5004	66.48
RECOVERY	POND 8	33.7504	66.46
RECOVERY	POND 8	34.0004	66.45
RECOVERY	POND 8	34.2504	66.43
RECOVERY	POND 8	34.5004	66.41
RECOVERY	POND 8	34.7504	66.40
RECOVERY	POND 8	35.0004	66.38
RECOVERY	POND 8	35.2504	66.36
RECOVERY	POND 8	35.5004	66.35
RECOVERY	POND 8	35.7504	66.33
RECOVERY	POND 8	36.0004	66.31
RECOVERY	POND 8	36.2504	66.30
RECOVERY	POND 8	36.5004	66.28
RECOVERY	POND 8	36.7504	66.26
RECOVERY	POND 8	37.0004	66.25
RECOVERY	POND 8	37.2504	66.23
RECOVERY	POND 8	37.5004	66.22
RECOVERY	POND 8	37.7504	66.20
RECOVERY	POND 8	38.0004	66.18
RECOVERY	POND 8	38.2504	66.17
RECOVERY	POND 8	38.5004	66.15
RECOVERY	POND 8	38.7504	66.13
RECOVERY	POND 8	39.0004	66.12
RECOVERY	POND 8	39.2504	66.10
RECOVERY	POND 8	39.5004	66.09
RECOVERY	POND 8	39.7504	66.07
RECOVERY	POND 8	40.0004	66.05
RECOVERY	POND 8	40.2504	66.04
RECOVERY	POND 8	40.5004	66.02
RECOVERY	POND 8	40.7504	66.01
RECOVERY	POND 8	41.0004	65.99
RECOVERY	POND 8	41.2504	65.97
RECOVERY	POND 8	41.5004	65.96
RECOVERY	POND 8	41.7504	65.94

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 8	42.0004	65.93
RECOVERY	POND 8	42.2504	65.91
RECOVERY	POND 8	42.5004	65.90
RECOVERY	POND 8	42.7504	65.88
RECOVERY	POND 8	43.0004	65.86
RECOVERY	POND 8	43.2504	65.85
RECOVERY	POND 8	43.5004	65.83
RECOVERY	POND 8	43.7504	65.82
RECOVERY	POND 8	44.0004	65.80
RECOVERY	POND 8	44.2504	65.79
RECOVERY	POND 8	44.5004	65.77
RECOVERY	POND 8	44.7504	65.76
RECOVERY	POND 8	45.0004	65.74
RECOVERY	POND 8	45.2504	65.73
RECOVERY	POND 8	45.5004	65.71
RECOVERY	POND 8	45.7504	65.70
RECOVERY	POND 8	46.0004	65.68
RECOVERY	POND 8	46.2504	65.67
RECOVERY	POND 8	46.5004	65.65
RECOVERY	POND 8	46.7504	65.64
RECOVERY	POND 8	47.0004	65.62
RECOVERY	POND 8	47.2504	65.61
RECOVERY	POND 8	47.5004	65.59
RECOVERY	POND 8	47.7504	65.58
RECOVERY	POND 8	48.0004	65.56
RECOVERY	POND 8	48.2504	65.55
RECOVERY	POND 8	48.5004	65.54
RECOVERY	POND 8	48.7504	65.52
RECOVERY	POND 8	49.0004	65.51
RECOVERY	POND 8	49.2504	65.49
RECOVERY	POND 8	49.5004	65.48
RECOVERY	POND 8	49.7504	65.46
RECOVERY	POND 8	50.0004	65.45
RECOVERY	POND 8	50.2504	65.44
RECOVERY	POND 8	50.5004	65.42
RECOVERY	POND 8	50.7504	65.41
RECOVERY	POND 8	51.0004	65.40
RECOVERY	POND 8	51.2504	65.38
RECOVERY	POND 8	51.5004	65.37
RECOVERY	POND 8	51.7504	65.35
RECOVERY	POND 8	52.0004	65.34
RECOVERY	POND 8	52.2504	65.33



Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 8	52.5004	65.31
RECOVERY	POND 8	52.7504	65.30
RECOVERY	POND 8	53.0004	65.29
RECOVERY	POND 8	53.2504	65.27
RECOVERY	POND 8	53.5004	65.26
RECOVERY	POND 8	53.7504	65.25
RECOVERY	POND 8	54.0004	65.23
RECOVERY	POND 8	54.2504	65.22
RECOVERY	POND 8	54.5004	65.21
RECOVERY	POND 8	54.7504	65.19
RECOVERY	POND 8	55.0004	65.18
RECOVERY	POND 8	55.2504	65.17
RECOVERY	POND 8	55.5004	65.16
RECOVERY	POND 8	55.7504	65.14
RECOVERY	POND 8	56.0004	65.13
RECOVERY	POND 8	56.2504	65.12
RECOVERY	POND 8	56.5004	65.11
RECOVERY	POND 8	56.7504	65.09
RECOVERY	POND 8	57.0004	65.08
RECOVERY	POND 8	57.2504	65.07
RECOVERY	POND 8	57.5004	65.06
RECOVERY	POND 8	57.7504	65.05
RECOVERY	POND 8	58.0004	65.03
RECOVERY	POND 8	58.2504	65.02
RECOVERY	POND 8	58.5004	65.01
RECOVERY	POND 8	58.7504	65.00
RECOVERY	POND 8	59.0004	64.99
RECOVERY	POND 8	59.2504	64.97
RECOVERY	POND 8	59.5004	64.96
RECOVERY	POND 8	59.7504	64.95
RECOVERY	POND 8	60.0004	64.94
RECOVERY	POND 8	60.2504	64.93
RECOVERY	POND 8	60.5004	64.92
RECOVERY	POND 8	60.7504	64.91
RECOVERY	POND 8	61.0004	64.89
RECOVERY	POND 8	61.2504	64.88
RECOVERY	POND 8	61.5004	64.87
RECOVERY	POND 8	61.7504	64.86
RECOVERY	POND 8	62.0004	64.85
RECOVERY	POND 8	62.2504	64.84
RECOVERY	POND 8	62.5004	64.83
RECOVERY	POND 8	62.7504	64.82

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 9	0.0000	65.50
RECOVERY	POND 9	0.2511	65.50
RECOVERY	POND 9	0.5050	65.50
RECOVERY	POND 9	0.7527	65.50
RECOVERY	POND 9	1.0027	65.50
RECOVERY	POND 9	1.2527	65.50
RECOVERY	POND 9	1.5027	65.50
RECOVERY	POND 9	1.7527	65.50
RECOVERY	POND 9	2.0027	65.50
RECOVERY	POND 9	2.2527	65.50
RECOVERY	POND 9	2.5027	65.50
RECOVERY	POND 9	2.7527	65.50
RECOVERY	POND 9	3.0027	65.50
RECOVERY	POND 9	3.2527	65.50
RECOVERY	POND 9	3.5027	65.50
RECOVERY	POND 9	3.7527	65.50
RECOVERY	POND 9	4.0027	65.50
RECOVERY	POND 9	4.2527	65.50
RECOVERY	POND 9	4.5027	65.50
RECOVERY	POND 9	4.7527	65.50
RECOVERY	POND 9	5.0027	65.50
RECOVERY	POND 9	5.2527	65.50
RECOVERY	POND 9	5.5027	65.50
RECOVERY	POND 9	5.7527	65.50
RECOVERY	POND 9	6.0027	65.50
RECOVERY	POND 9	6.2527	65.50
RECOVERY	POND 9	6.5027	65.50
RECOVERY	POND 9	6.7527	65.50
RECOVERY	POND 9	7.0027	65.50
RECOVERY	POND 9	7.2527	65.51
RECOVERY	POND 9	7.5027	65.51
RECOVERY	POND 9	7.7527	65.52
RECOVERY	POND 9	8.0027	65.52
RECOVERY	POND 9	8.2527	65.53
RECOVERY	POND 9	8.5027	65.54
RECOVERY	POND 9	8.7527	65.55
RECOVERY	POND 9	9.0027	65.57
RECOVERY	POND 9	9.2530	65.58
RECOVERY	POND 9	9.5031	65.60
RECOVERY	POND 9	9.7520	65.62
RECOVERY	POND 9	10.0029	65.65
RECOVERY	POND 9	10.2516	65.68

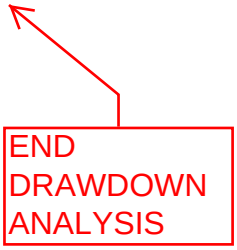
Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 9	10.5014	65.72
RECOVERY	POND 9	10.7521	65.76
RECOVERY	POND 9	11.0016	65.83
RECOVERY	POND 9	11.2513	65.91
RECOVERY	POND 9	11.5006	66.01
RECOVERY	POND 9	11.7503	66.27
RECOVERY	POND 9	12.0000	67.13
RECOVERY	POND 9	12.2500	68.11
RECOVERY	POND 9	12.5007	68.01
RECOVERY	POND 9	12.7509	67.85
RECOVERY	POND 9	13.0001	67.75
RECOVERY	POND 9	13.2509	67.69
RECOVERY	POND 9	13.5016	67.64
RECOVERY	POND 9	13.7509	67.60
RECOVERY	POND 9	14.0002	67.57
RECOVERY	POND 9	14.2533	67.54
RECOVERY	POND 9	14.5013	67.51
RECOVERY	POND 9	14.7535	67.48
RECOVERY	POND 9	15.0007	67.45
RECOVERY	POND 9	15.2537	67.43
RECOVERY	POND 9	15.5014	67.41
RECOVERY	POND 9	15.7550	67.39
RECOVERY	POND 9	16.0034	67.37
RECOVERY	POND 9	16.2509	67.36
RECOVERY	POND 9	16.5035	67.35
RECOVERY	POND 9	16.7526	67.34
RECOVERY	POND 9	17.0034	67.32
RECOVERY	POND 9	17.2540	67.31
RECOVERY	POND 9	17.5042	67.30
RECOVERY	POND 9	17.7529	67.30
RECOVERY	POND 9	18.0046	67.29
RECOVERY	POND 9	18.2504	67.28
RECOVERY	POND 9	18.5004	67.27
RECOVERY	POND 9	18.7504	67.26
RECOVERY	POND 9	19.0004	67.25
RECOVERY	POND 9	19.2504	67.25
RECOVERY	POND 9	19.5004	67.24
RECOVERY	POND 9	19.7504	67.24
RECOVERY	POND 9	20.0004	67.23
RECOVERY	POND 9	20.2504	67.22
RECOVERY	POND 9	20.5004	67.21
RECOVERY	POND 9	20.7504	67.21

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 9	21.0004	67.20
RECOVERY	POND 9	21.2504	67.20
RECOVERY	POND 9	21.5004	67.19
RECOVERY	POND 9	21.7504	67.19
RECOVERY	POND 9	22.0004	67.19
RECOVERY	POND 9	22.2504	67.18
RECOVERY	POND 9	22.5004	67.18
RECOVERY	POND 9	22.7504	67.18
RECOVERY	POND 9	23.0004	67.18
RECOVERY	POND 9	23.2504	67.18
RECOVERY	POND 9	23.5004	67.18
RECOVERY	POND 9	23.7504	67.17
RECOVERY	POND 9	24.0004	67.17
RECOVERY	POND 9	24.2504	67.16
RECOVERY	POND 9	24.5004	67.14
RECOVERY	POND 9	24.7504	67.12
RECOVERY	POND 9	25.0004	67.10
RECOVERY	POND 9	25.2504	67.09
RECOVERY	POND 9	25.5004	67.08
RECOVERY	POND 9	25.7504	67.07
RECOVERY	POND 9	26.0004	67.05
RECOVERY	POND 9	26.2504	67.04
RECOVERY	POND 9	26.5004	67.04
RECOVERY	POND 9	26.7504	67.03
RECOVERY	POND 9	27.0004	67.02
RECOVERY	POND 9	27.2504	67.01
RECOVERY	POND 9	27.5004	67.00
RECOVERY	POND 9	27.7504	67.00
RECOVERY	POND 9	28.0004	66.99
RECOVERY	POND 9	28.2504	66.98
RECOVERY	POND 9	28.5004	66.97
RECOVERY	POND 9	28.7504	66.97
RECOVERY	POND 9	29.0004	66.96
RECOVERY	POND 9	29.2504	66.95
RECOVERY	POND 9	29.5004	66.95
RECOVERY	POND 9	29.7504	66.94
RECOVERY	POND 9	30.0004	66.93
RECOVERY	POND 9	30.2504	66.92
RECOVERY	POND 9	30.5004	66.92
RECOVERY	POND 9	30.7504	66.91
RECOVERY	POND 9	31.0004	66.90
RECOVERY	POND 9	31.2504	66.90

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 9	31.5004	66.89
RECOVERY	POND 9	31.7504	66.88
RECOVERY	POND 9	32.0004	66.87
RECOVERY	POND 9	32.2504	66.87
RECOVERY	POND 9	32.5004	66.86
RECOVERY	POND 9	32.7504	66.85
RECOVERY	POND 9	33.0004	66.85
RECOVERY	POND 9	33.2504	66.84
RECOVERY	POND 9	33.5004	66.83
RECOVERY	POND 9	33.7504	66.82
RECOVERY	POND 9	34.0004	66.82
RECOVERY	POND 9	34.2504	66.81
RECOVERY	POND 9	34.5004	66.80
RECOVERY	POND 9	34.7504	66.80
RECOVERY	POND 9	35.0004	66.79
RECOVERY	POND 9	35.2504	66.78
RECOVERY	POND 9	35.5004	66.78
RECOVERY	POND 9	35.7504	66.77
RECOVERY	POND 9	36.0004	66.76
RECOVERY	POND 9	36.2504	66.76
RECOVERY	POND 9	36.5004	66.75
RECOVERY	POND 9	36.7504	66.74
RECOVERY	POND 9	37.0004	66.74
RECOVERY	POND 9	37.2504	66.73
RECOVERY	POND 9	37.5004	66.72
RECOVERY	POND 9	37.7504	66.72
RECOVERY	POND 9	38.0004	66.71
RECOVERY	POND 9	38.2504	66.70
RECOVERY	POND 9	38.5004	66.70
RECOVERY	POND 9	38.7504	66.69
RECOVERY	POND 9	39.0004	66.68
RECOVERY	POND 9	39.2504	66.68
RECOVERY	POND 9	39.5004	66.67
RECOVERY	POND 9	39.7504	66.66
RECOVERY	POND 9	40.0004	66.66
RECOVERY	POND 9	40.2504	66.65
RECOVERY	POND 9	40.5004	66.64
RECOVERY	POND 9	40.7504	66.64
RECOVERY	POND 9	41.0004	66.63
RECOVERY	POND 9	41.2504	66.62
RECOVERY	POND 9	41.5004	66.62
RECOVERY	POND 9	41.7504	66.61

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 9	42.0004	66.60
RECOVERY	POND 9	42.2504	66.60
RECOVERY	POND 9	42.5004	66.59
RECOVERY	POND 9	42.7504	66.58
RECOVERY	POND 9	43.0004	66.58
RECOVERY	POND 9	43.2504	66.57
RECOVERY	POND 9	43.5004	66.56
RECOVERY	POND 9	43.7504	66.56
RECOVERY	POND 9	44.0004	66.55
RECOVERY	POND 9	44.2504	66.55
RECOVERY	POND 9	44.5004	66.54
RECOVERY	POND 9	44.7504	66.53
RECOVERY	POND 9	45.0004	66.53
RECOVERY	POND 9	45.2504	66.52
RECOVERY	POND 9	45.5004	66.51
RECOVERY	POND 9	45.7504	66.51
RECOVERY	POND 9	46.0004	66.50
RECOVERY	POND 9	46.2504	66.50
RECOVERY	POND 9	46.5004	66.49
RECOVERY	POND 9	46.7504	66.48
RECOVERY	POND 9	47.0004	66.48
RECOVERY	POND 9	47.2504	66.47
RECOVERY	POND 9	47.5004	66.46
RECOVERY	POND 9	47.7504	66.46
RECOVERY	POND 9	48.0004	66.45
RECOVERY	POND 9	48.2504	66.45
RECOVERY	POND 9	48.5004	66.44
RECOVERY	POND 9	48.7504	66.43
RECOVERY	POND 9	49.0004	66.43
RECOVERY	POND 9	49.2504	66.42
RECOVERY	POND 9	49.5004	66.42
RECOVERY	POND 9	49.7504	66.41
RECOVERY	POND 9	50.0004	66.40
RECOVERY	POND 9	50.2504	66.40
RECOVERY	POND 9	50.5004	66.39
RECOVERY	POND 9	50.7504	66.39
RECOVERY	POND 9	51.0004	66.38
RECOVERY	POND 9	51.2504	66.37
RECOVERY	POND 9	51.5004	66.37
RECOVERY	POND 9	51.7504	66.36
RECOVERY	POND 9	52.0004	66.36
RECOVERY	POND 9	52.2504	66.35

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 9	52.5004	66.34
RECOVERY	POND 9	52.7504	66.34
RECOVERY	POND 9	53.0004	66.33
RECOVERY	POND 9	53.2504	66.33
RECOVERY	POND 9	53.5004	66.32
RECOVERY	POND 9	53.7504	66.32
RECOVERY	POND 9	54.0004	66.31
RECOVERY	POND 9	54.2504	66.30
RECOVERY	POND 9	54.5004	66.30
RECOVERY	POND 9	54.7504	66.29
RECOVERY	POND 9	55.0004	66.29
RECOVERY	POND 9	55.2504	66.28
RECOVERY	POND 9	55.5004	66.28
RECOVERY	POND 9	55.7504	66.27
RECOVERY	POND 9	56.0004	66.27
RECOVERY	POND 9	56.2504	66.26
RECOVERY	POND 9	56.5004	66.25
RECOVERY	POND 9	56.7504	66.25
RECOVERY	POND 9	57.0004	66.24
RECOVERY	POND 9	57.2504	66.24
RECOVERY	POND 9	57.5004	66.23
RECOVERY	POND 9	57.7504	66.23
RECOVERY	POND 9	58.0004	66.22
RECOVERY	POND 9	58.2504	66.22
RECOVERY	POND 9	58.5004	66.21
RECOVERY	POND 9	58.7504	66.21
RECOVERY	POND 9	59.0004	66.20
RECOVERY	POND 9	59.2504	66.19
RECOVERY	POND 9	59.5004	66.19
RECOVERY	POND 9	59.7504	66.18
RECOVERY	POND 9	60.0004	66.18
RECOVERY	POND 9	60.2504	66.17
RECOVERY	POND 9	60.5004	66.17
RECOVERY	POND 9	60.7504	66.16
RECOVERY	POND 9	61.0004	66.16
RECOVERY	POND 9	61.2504	66.15
RECOVERY	POND 9	61.5004	66.15
RECOVERY	POND 9	61.7504	66.14
RECOVERY	POND 9	62.0004	66.14
RECOVERY	POND 9	62.2504	66.13
RECOVERY	POND 9	62.5004	66.13
RECOVERY	POND 9	62.7504	66.12



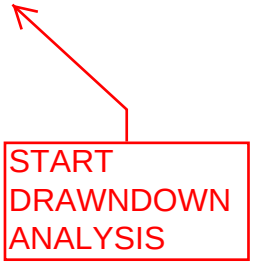
Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 9	63.0004	66.12
RECOVERY	POND 9	63.2504	66.11
RECOVERY	POND 9	63.5004	66.11
RECOVERY	POND 9	63.7504	66.10
RECOVERY	POND 9	64.0004	66.10
RECOVERY	POND 9	64.2504	66.09
RECOVERY	POND 9	64.5004	66.09
RECOVERY	POND 9	64.7504	66.08
RECOVERY	POND 9	65.0004	66.08
RECOVERY	POND 9	65.2504	66.07
RECOVERY	POND 9	65.5004	66.07
RECOVERY	POND 9	65.7504	66.06
RECOVERY	POND 9	66.0004	66.06
RECOVERY	POND 9	66.2504	66.05
RECOVERY	POND 9	66.5004	66.05
RECOVERY	POND 9	66.7504	66.04
RECOVERY	POND 9	67.0004	66.04
RECOVERY	POND 9	67.2504	66.03
RECOVERY	POND 9	67.5004	66.03
RECOVERY	POND 9	67.7504	66.02
RECOVERY	POND 9	68.0004	66.02
RECOVERY	POND 9	68.2504	66.01
RECOVERY	POND 9	68.5004	66.01
RECOVERY	POND 9	68.7504	66.01
RECOVERY	POND 9	69.0004	66.00
RECOVERY	POND 9	69.2504	66.00
RECOVERY	POND 9	69.5004	65.99
RECOVERY	POND 9	69.7504	65.99
RECOVERY	POND 9	70.0004	65.98
RECOVERY	POND 9	70.2504	65.98
RECOVERY	POND 9	70.5004	65.97
RECOVERY	POND 9	70.7504	65.97
RECOVERY	POND 9	71.0004	65.96
RECOVERY	POND 9	71.2504	65.96
RECOVERY	POND 9	71.5004	65.96
RECOVERY	POND 9	71.7504	65.95
RECOVERY	POND 9	72.0004	65.95
RECOVERY	POND 9	72.2504	65.94
RECOVERY	POND 9	72.5004	65.94
RECOVERY	POND 9	72.7504	65.93
RECOVERY	POND 9	73.0004	65.93
RECOVERY	POND 9	73.2504	65.93

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 10	0.0000	65.00
RECOVERY	POND 10	0.2511	65.00
RECOVERY	POND 10	0.5050	65.00
RECOVERY	POND 10	0.7527	65.00
RECOVERY	POND 10	1.0027	65.00
RECOVERY	POND 10	1.2527	65.00
RECOVERY	POND 10	1.5027	65.00
RECOVERY	POND 10	1.7527	65.00
RECOVERY	POND 10	2.0027	65.00
RECOVERY	POND 10	2.2527	65.00
RECOVERY	POND 10	2.5027	65.00
RECOVERY	POND 10	2.7527	65.00
RECOVERY	POND 10	3.0027	65.00
RECOVERY	POND 10	3.2527	65.00
RECOVERY	POND 10	3.5027	65.00
RECOVERY	POND 10	3.7527	65.00
RECOVERY	POND 10	4.0027	65.00
RECOVERY	POND 10	4.2527	65.00
RECOVERY	POND 10	4.5027	65.00
RECOVERY	POND 10	4.7527	65.00
RECOVERY	POND 10	5.0027	65.00
RECOVERY	POND 10	5.2527	65.00
RECOVERY	POND 10	5.5027	65.00
RECOVERY	POND 10	5.7527	65.00
RECOVERY	POND 10	6.0027	65.00
RECOVERY	POND 10	6.2527	65.00
RECOVERY	POND 10	6.5027	65.00
RECOVERY	POND 10	6.7527	65.00
RECOVERY	POND 10	7.0027	65.01
RECOVERY	POND 10	7.2527	65.01
RECOVERY	POND 10	7.5027	65.02
RECOVERY	POND 10	7.7527	65.02
RECOVERY	POND 10	8.0027	65.03
RECOVERY	POND 10	8.2527	65.04
RECOVERY	POND 10	8.5027	65.05
RECOVERY	POND 10	8.7527	65.07
RECOVERY	POND 10	9.0027	65.09
RECOVERY	POND 10	9.2530	65.11
RECOVERY	POND 10	9.5031	65.13
RECOVERY	POND 10	9.7520	65.16
RECOVERY	POND 10	10.0029	65.20
RECOVERY	POND 10	10.2516	65.23

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 10	10.5014	65.28
RECOVERY	POND 10	10.7521	65.34
RECOVERY	POND 10	11.0016	65.43
RECOVERY	POND 10	11.2513	65.53
RECOVERY	POND 10	11.5006	65.67
RECOVERY	POND 10	11.7503	66.00
RECOVERY	POND 10	12.0000	67.09
RECOVERY	POND 10	12.2500	68.12
RECOVERY	POND 10	12.5007	68.01
RECOVERY	POND 10	12.7509	67.93
RECOVERY	POND 10	13.0001	67.88
RECOVERY	POND 10	13.2509	67.84
RECOVERY	POND 10	13.5016	67.81
RECOVERY	POND 10	13.7509	67.78
RECOVERY	POND 10	14.0002	67.75
RECOVERY	POND 10	14.2533	67.73
RECOVERY	POND 10	14.5013	67.71
RECOVERY	POND 10	14.7535	67.69
RECOVERY	POND 10	15.0007	67.68
RECOVERY	POND 10	15.2537	67.67
RECOVERY	POND 10	15.5014	67.66
RECOVERY	POND 10	15.7550	67.65
RECOVERY	POND 10	16.0034	67.64
RECOVERY	POND 10	16.2509	67.63
RECOVERY	POND 10	16.5035	67.63
RECOVERY	POND 10	16.7526	67.62
RECOVERY	POND 10	17.0034	67.61
RECOVERY	POND 10	17.2540	67.61
RECOVERY	POND 10	17.5042	67.60
RECOVERY	POND 10	17.7529	67.60
RECOVERY	POND 10	18.0046	67.59
RECOVERY	POND 10	18.2504	67.58
RECOVERY	POND 10	18.5004	67.58
RECOVERY	POND 10	18.7504	67.57
RECOVERY	POND 10	19.0004	67.57
RECOVERY	POND 10	19.2504	67.57
RECOVERY	POND 10	19.5004	67.56
RECOVERY	POND 10	19.7504	67.56
RECOVERY	POND 10	20.0004	67.56
RECOVERY	POND 10	20.2504	67.55
RECOVERY	POND 10	20.5004	67.55
RECOVERY	POND 10	20.7504	67.54

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 10	21.0004	67.54
RECOVERY	POND 10	21.2504	67.54
RECOVERY	POND 10	21.5004	67.54
RECOVERY	POND 10	21.7504	67.53
RECOVERY	POND 10	22.0004	67.53
RECOVERY	POND 10	22.2504	67.53
RECOVERY	POND 10	22.5004	67.53
RECOVERY	POND 10	22.7504	67.53
RECOVERY	POND 10	23.0004	67.53
RECOVERY	POND 10	23.2504	67.53
RECOVERY	POND 10	23.5004	67.52
RECOVERY	POND 10	23.7504	67.52
RECOVERY	POND 10	24.0004	67.52
RECOVERY	POND 10	24.2504	67.51
RECOVERY	POND 10	24.5004	67.50
RECOVERY	POND 10	24.7504	67.48
RECOVERY	POND 10	25.0004	67.48
RECOVERY	POND 10	25.2504	67.47
RECOVERY	POND 10	25.5004	67.46
RECOVERY	POND 10	25.7504	67.46
RECOVERY	POND 10	26.0004	67.45
RECOVERY	POND 10	26.2504	67.45
RECOVERY	POND 10	26.5004	67.45
RECOVERY	POND 10	26.7504	67.44
RECOVERY	POND 10	27.0004	67.44
RECOVERY	POND 10	27.2504	67.44
RECOVERY	POND 10	27.5004	67.43
RECOVERY	POND 10	27.7504	67.43
RECOVERY	POND 10	28.0004	67.43
RECOVERY	POND 10	28.2504	67.43
RECOVERY	POND 10	28.5004	67.42
RECOVERY	POND 10	28.7504	67.42
RECOVERY	POND 10	29.0004	67.42
RECOVERY	POND 10	29.2504	67.42
RECOVERY	POND 10	29.5004	67.42
RECOVERY	POND 10	29.7504	67.42
RECOVERY	POND 10	30.0004	67.41
RECOVERY	POND 10	30.2504	67.41
RECOVERY	POND 10	30.5004	67.41
RECOVERY	POND 10	30.7504	67.41
RECOVERY	POND 10	31.0004	67.41
RECOVERY	POND 10	31.2504	67.41

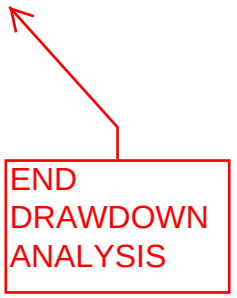
Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 10	31.5004	67.41
RECOVERY	POND 10	31.7504	67.40
RECOVERY	POND 10	32.0004	67.40
RECOVERY	POND 10	32.2504	67.40
RECOVERY	POND 10	32.5004	67.40
RECOVERY	POND 10	32.7504	67.40
RECOVERY	POND 10	33.0004	67.39
RECOVERY	POND 10	33.2504	67.39
RECOVERY	POND 10	33.5004	67.39
RECOVERY	POND 10	33.7504	67.38
RECOVERY	POND 10	34.0004	67.38
RECOVERY	POND 10	34.2504	67.37
RECOVERY	POND 10	34.5004	67.37
RECOVERY	POND 10	34.7504	67.36
RECOVERY	POND 10	35.0004	67.36
RECOVERY	POND 10	35.2504	67.35
RECOVERY	POND 10	35.5004	67.35
RECOVERY	POND 10	35.7504	67.34
RECOVERY	POND 10	36.0004	67.33
RECOVERY	POND 10	36.2504	67.33
RECOVERY	POND 10	36.5004	67.32
RECOVERY	POND 10	36.7504	67.31
RECOVERY	POND 10	37.0004	67.31
RECOVERY	POND 10	37.2504	67.30
RECOVERY	POND 10	37.5004	67.29
RECOVERY	POND 10	37.7504	67.28
RECOVERY	POND 10	38.0004	67.28
RECOVERY	POND 10	38.2504	67.27
RECOVERY	POND 10	38.5004	67.26
RECOVERY	POND 10	38.7504	67.25
RECOVERY	POND 10	39.0004	67.25
RECOVERY	POND 10	39.2504	67.24
RECOVERY	POND 10	39.5004	67.23
RECOVERY	POND 10	39.7504	67.22
RECOVERY	POND 10	40.0004	67.21
RECOVERY	POND 10	40.2504	67.20
RECOVERY	POND 10	40.5004	67.19
RECOVERY	POND 10	40.7504	67.19
RECOVERY	POND 10	41.0004	67.18
RECOVERY	POND 10	41.2504	67.17
RECOVERY	POND 10	41.5004	67.16
RECOVERY	POND 10	41.7504	67.15



Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 10	42.0004	67.14
RECOVERY	POND 10	42.2504	67.13
RECOVERY	POND 10	42.5004	67.12
RECOVERY	POND 10	42.7504	67.11
RECOVERY	POND 10	43.0004	67.10
RECOVERY	POND 10	43.2504	67.09
RECOVERY	POND 10	43.5004	67.08
RECOVERY	POND 10	43.7504	67.07
RECOVERY	POND 10	44.0004	67.07
RECOVERY	POND 10	44.2504	67.06
RECOVERY	POND 10	44.5004	67.05
RECOVERY	POND 10	44.7504	67.04
RECOVERY	POND 10	45.0004	67.03
RECOVERY	POND 10	45.2504	67.02
RECOVERY	POND 10	45.5004	67.01
RECOVERY	POND 10	45.7504	67.00
RECOVERY	POND 10	46.0004	66.99
RECOVERY	POND 10	46.2504	66.98
RECOVERY	POND 10	46.5004	66.97
RECOVERY	POND 10	46.7504	66.96
RECOVERY	POND 10	47.0004	66.95
RECOVERY	POND 10	47.2504	66.94
RECOVERY	POND 10	47.5004	66.93
RECOVERY	POND 10	47.7504	66.92
RECOVERY	POND 10	48.0004	66.91
RECOVERY	POND 10	48.2504	66.90
RECOVERY	POND 10	48.5004	66.89
RECOVERY	POND 10	48.7504	66.88
RECOVERY	POND 10	49.0004	66.87
RECOVERY	POND 10	49.2504	66.86
RECOVERY	POND 10	49.5004	66.85
RECOVERY	POND 10	49.7504	66.84
RECOVERY	POND 10	50.0004	66.83
RECOVERY	POND 10	50.2504	66.82
RECOVERY	POND 10	50.5004	66.81
RECOVERY	POND 10	50.7504	66.80
RECOVERY	POND 10	51.0004	66.79
RECOVERY	POND 10	51.2504	66.78
RECOVERY	POND 10	51.5004	66.77
RECOVERY	POND 10	51.7504	66.76
RECOVERY	POND 10	52.0004	66.75
RECOVERY	POND 10	52.2504	66.74

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 10	52.5004	66.73
RECOVERY	POND 10	52.7504	66.72
RECOVERY	POND 10	53.0004	66.71
RECOVERY	POND 10	53.2504	66.70
RECOVERY	POND 10	53.5004	66.69
RECOVERY	POND 10	53.7504	66.68
RECOVERY	POND 10	54.0004	66.67
RECOVERY	POND 10	54.2504	66.66
RECOVERY	POND 10	54.5004	66.65
RECOVERY	POND 10	54.7504	66.64
RECOVERY	POND 10	55.0004	66.63
RECOVERY	POND 10	55.2504	66.62
RECOVERY	POND 10	55.5004	66.61
RECOVERY	POND 10	55.7504	66.60
RECOVERY	POND 10	56.0004	66.59
RECOVERY	POND 10	56.2504	66.58
RECOVERY	POND 10	56.5004	66.57
RECOVERY	POND 10	56.7504	66.56
RECOVERY	POND 10	57.0004	66.55
RECOVERY	POND 10	57.2504	66.54
RECOVERY	POND 10	57.5004	66.53
RECOVERY	POND 10	57.7504	66.52
RECOVERY	POND 10	58.0004	66.51
RECOVERY	POND 10	58.2504	66.50
RECOVERY	POND 10	58.5004	66.49
RECOVERY	POND 10	58.7504	66.48
RECOVERY	POND 10	59.0004	66.47
RECOVERY	POND 10	59.2504	66.46
RECOVERY	POND 10	59.5004	66.45
RECOVERY	POND 10	59.7504	66.44
RECOVERY	POND 10	60.0004	66.43
RECOVERY	POND 10	60.2504	66.42
RECOVERY	POND 10	60.5004	66.41
RECOVERY	POND 10	60.7504	66.40
RECOVERY	POND 10	61.0004	66.39
RECOVERY	POND 10	61.2504	66.38
RECOVERY	POND 10	61.5004	66.37
RECOVERY	POND 10	61.7504	66.36
RECOVERY	POND 10	62.0004	66.35
RECOVERY	POND 10	62.2504	66.34
RECOVERY	POND 10	62.5004	66.34
RECOVERY	POND 10	62.7504	66.33

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 10	63.0004	66.32
RECOVERY	POND 10	63.2504	66.31
RECOVERY	POND 10	63.5004	66.30
RECOVERY	POND 10	63.7504	66.29
RECOVERY	POND 10	64.0004	66.28
RECOVERY	POND 10	64.2504	66.27
RECOVERY	POND 10	64.5004	66.26
RECOVERY	POND 10	64.7504	66.25
RECOVERY	POND 10	65.0004	66.24
RECOVERY	POND 10	65.2504	66.23
RECOVERY	POND 10	65.5004	66.23
RECOVERY	POND 10	65.7504	66.22
RECOVERY	POND 10	66.0004	66.21
RECOVERY	POND 10	66.2504	66.20
RECOVERY	POND 10	66.5004	66.19
RECOVERY	POND 10	66.7504	66.18
RECOVERY	POND 10	67.0004	66.17
RECOVERY	POND 10	67.2504	66.16
RECOVERY	POND 10	67.5004	66.15
RECOVERY	POND 10	67.7504	66.15
RECOVERY	POND 10	68.0004	66.14
RECOVERY	POND 10	68.2504	66.13
RECOVERY	POND 10	68.5004	66.12
RECOVERY	POND 10	68.7504	66.11
RECOVERY	POND 10	69.0004	66.10
RECOVERY	POND 10	69.2504	66.09
RECOVERY	POND 10	69.5004	66.08
RECOVERY	POND 10	69.7504	66.08
RECOVERY	POND 10	70.0004	66.07
RECOVERY	POND 10	70.2504	66.06
RECOVERY	POND 10	70.5004	66.05
RECOVERY	POND 10	70.7504	66.04
RECOVERY	POND 10	71.0004	66.03
RECOVERY	POND 10	71.2504	66.03
RECOVERY	POND 10	71.5004	66.02
RECOVERY	POND 10	71.7504	66.01
RECOVERY	POND 10	72.0004	66.00
RECOVERY	POND 10	72.2504	65.99
RECOVERY	POND 10	72.5004	65.98
RECOVERY	POND 10	72.7504	65.98
RECOVERY	POND 10	73.0004	65.97
RECOVERY	POND 10	73.2504	65.96



Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 10	73.5004	65.95
RECOVERY	POND 10	73.7504	65.94
RECOVERY	POND 10	74.0004	65.94
RECOVERY	POND 10	74.2504	65.93
RECOVERY	POND 10	74.5004	65.92
RECOVERY	POND 10	74.7504	65.91
RECOVERY	POND 10	75.0004	65.91
RECOVERY	POND 10	75.2504	65.90
RECOVERY	POND 10	75.5004	65.89
RECOVERY	POND 10	75.7504	65.88
RECOVERY	POND 10	76.0004	65.87
RECOVERY	POND 10	76.2504	65.87
RECOVERY	POND 10	76.5004	65.86
RECOVERY	POND 10	76.7504	65.85
RECOVERY	POND 10	77.0004	65.84
RECOVERY	POND 10	77.2504	65.84
RECOVERY	POND 10	77.5004	65.83
RECOVERY	POND 10	77.7504	65.82
RECOVERY	POND 10	78.0004	65.82
RECOVERY	POND 10	78.2504	65.81
RECOVERY	POND 10	78.5004	65.80
RECOVERY	POND 10	78.7504	65.79
RECOVERY	POND 10	79.0004	65.79
RECOVERY	POND 10	79.2504	65.78
RECOVERY	POND 10	79.5004	65.77
RECOVERY	POND 10	79.7504	65.77
RECOVERY	POND 10	80.0004	65.76
RECOVERY	POND 10	80.2504	65.75
RECOVERY	POND 10	80.5004	65.74
RECOVERY	POND 10	80.7504	65.74
RECOVERY	POND 10	81.0004	65.73
RECOVERY	POND 10	81.2504	65.72
RECOVERY	POND 10	81.5004	65.72
RECOVERY	POND 10	81.7504	65.71
RECOVERY	POND 10	82.0004	65.70
RECOVERY	POND 10	82.2504	65.70
RECOVERY	POND 10	82.5004	65.69
RECOVERY	POND 10	82.7504	65.68
RECOVERY	POND 10	83.0004	65.68
RECOVERY	POND 10	83.2504	65.67
RECOVERY	POND 10	83.5004	65.66
RECOVERY	POND 10	83.7504	65.66

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 12	0.0000	64.50
RECOVERY	POND 12	0.2511	64.50
RECOVERY	POND 12	0.5050	64.50
RECOVERY	POND 12	0.7527	64.50
RECOVERY	POND 12	1.0027	64.50
RECOVERY	POND 12	1.2527	64.50
RECOVERY	POND 12	1.5027	64.50
RECOVERY	POND 12	1.7527	64.50
RECOVERY	POND 12	2.0027	64.50
RECOVERY	POND 12	2.2527	64.50
RECOVERY	POND 12	2.5027	64.50
RECOVERY	POND 12	2.7527	64.50
RECOVERY	POND 12	3.0027	64.50
RECOVERY	POND 12	3.2527	64.50
RECOVERY	POND 12	3.5027	64.50
RECOVERY	POND 12	3.7527	64.50
RECOVERY	POND 12	4.0027	64.50
RECOVERY	POND 12	4.2527	64.50
RECOVERY	POND 12	4.5027	64.50
RECOVERY	POND 12	4.7527	64.50
RECOVERY	POND 12	5.0027	64.50
RECOVERY	POND 12	5.2527	64.50
RECOVERY	POND 12	5.5027	64.50
RECOVERY	POND 12	5.7527	64.50
RECOVERY	POND 12	6.0027	64.50
RECOVERY	POND 12	6.2527	64.50
RECOVERY	POND 12	6.5027	64.50
RECOVERY	POND 12	6.7527	64.50
RECOVERY	POND 12	7.0027	64.51
RECOVERY	POND 12	7.2527	64.51
RECOVERY	POND 12	7.5027	64.52
RECOVERY	POND 12	7.7527	64.52
RECOVERY	POND 12	8.0027	64.53
RECOVERY	POND 12	8.2527	64.54
RECOVERY	POND 12	8.5027	64.55
RECOVERY	POND 12	8.7527	64.56
RECOVERY	POND 12	9.0027	64.58
RECOVERY	POND 12	9.2530	64.60
RECOVERY	POND 12	9.5031	64.62
RECOVERY	POND 12	9.7520	64.64
RECOVERY	POND 12	10.0029	64.67
RECOVERY	POND 12	10.2516	64.71

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 12	10.5014	64.74
RECOVERY	POND 12	10.7521	64.79
RECOVERY	POND 12	11.0016	64.86
RECOVERY	POND 12	11.2513	64.95
RECOVERY	POND 12	11.5006	65.06
RECOVERY	POND 12	11.7503	65.33
RECOVERY	POND 12	12.0000	66.24
RECOVERY	POND 12	12.2500	67.31
RECOVERY	POND 12	12.5007	67.25
RECOVERY	POND 12	12.7509	67.09
RECOVERY	POND 12	13.0001	66.97
RECOVERY	POND 12	13.2509	66.89
RECOVERY	POND 12	13.5016	66.83
RECOVERY	POND 12	13.7509	66.78
RECOVERY	POND 12	14.0002	66.75
RECOVERY	POND 12	14.2533	66.72
RECOVERY	POND 12	14.5013	66.69
RECOVERY	POND 12	14.7535	66.67
RECOVERY	POND 12	15.0007	66.66
RECOVERY	POND 12	15.2537	66.65
RECOVERY	POND 12	15.5014	66.64
RECOVERY	POND 12	15.7550	66.62
RECOVERY	POND 12	16.0034	66.62
RECOVERY	POND 12	16.2509	66.61
RECOVERY	POND 12	16.5035	66.61
RECOVERY	POND 12	16.7526	66.60
RECOVERY	POND 12	17.0034	66.60
RECOVERY	POND 12	17.2540	66.59
RECOVERY	POND 12	17.5042	66.59
RECOVERY	POND 12	17.7529	66.59
RECOVERY	POND 12	18.0046	66.58
RECOVERY	POND 12	18.2504	66.58
RECOVERY	POND 12	18.5004	66.57
RECOVERY	POND 12	18.7504	66.57
RECOVERY	POND 12	19.0004	66.56
RECOVERY	POND 12	19.2504	66.56
RECOVERY	POND 12	19.5004	66.56
RECOVERY	POND 12	19.7504	66.56
RECOVERY	POND 12	20.0004	66.56
RECOVERY	POND 12	20.2504	66.55
RECOVERY	POND 12	20.5004	66.54
RECOVERY	POND 12	20.7504	66.54

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 12	21.0004	66.54
RECOVERY	POND 12	21.2504	66.54
RECOVERY	POND 12	21.5004	66.53
RECOVERY	POND 12	21.7504	66.53
RECOVERY	POND 12	22.0004	66.53
RECOVERY	POND 12	22.2504	66.53
RECOVERY	POND 12	22.5004	66.53
RECOVERY	POND 12	22.7504	66.53
RECOVERY	POND 12	23.0004	66.53
RECOVERY	POND 12	23.2504	66.53
RECOVERY	POND 12	23.5004	66.53
RECOVERY	POND 12	23.7504	66.53
RECOVERY	POND 12	24.0004	66.53
RECOVERY	POND 12	24.2504	66.52
RECOVERY	POND 12	24.5004	66.50
RECOVERY	POND 12	24.7504	66.48
RECOVERY	POND 12	25.0004	66.47
RECOVERY	POND 12	25.2504	66.46
RECOVERY	POND 12	25.5004	66.45
RECOVERY	POND 12	25.7504	66.44
RECOVERY	POND 12	26.0004	66.43
RECOVERY	POND 12	26.2504	66.42
RECOVERY	POND 12	26.5004	66.41
RECOVERY	POND 12	26.7504	66.40
RECOVERY	POND 12	27.0004	66.39
RECOVERY	POND 12	27.2504	66.38
RECOVERY	POND 12	27.5004	66.38
RECOVERY	POND 12	27.7504	66.37
RECOVERY	POND 12	28.0004	66.36
RECOVERY	POND 12	28.2504	66.35
RECOVERY	POND 12	28.5004	66.34
RECOVERY	POND 12	28.7504	66.33
RECOVERY	POND 12	29.0004	66.32
RECOVERY	POND 12	29.2504	66.31
RECOVERY	POND 12	29.5004	66.30
RECOVERY	POND 12	29.7504	66.29
RECOVERY	POND 12	30.0004	66.28
RECOVERY	POND 12	30.2504	66.27
RECOVERY	POND 12	30.5004	66.26
RECOVERY	POND 12	30.7504	66.25
RECOVERY	POND 12	31.0004	66.24
RECOVERY	POND 12	31.2504	66.23

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 12	31.5004	66.23
RECOVERY	POND 12	31.7504	66.22
RECOVERY	POND 12	32.0004	66.21
RECOVERY	POND 12	32.2504	66.20
RECOVERY	POND 12	32.5004	66.19
RECOVERY	POND 12	32.7504	66.18
RECOVERY	POND 12	33.0004	66.17
RECOVERY	POND 12	33.2504	66.16
RECOVERY	POND 12	33.5004	66.15
RECOVERY	POND 12	33.7504	66.14
RECOVERY	POND 12	34.0004	66.13
RECOVERY	POND 12	34.2504	66.12
RECOVERY	POND 12	34.5004	66.12
RECOVERY	POND 12	34.7504	66.11
RECOVERY	POND 12	35.0004	66.10
RECOVERY	POND 12	35.2504	66.09
RECOVERY	POND 12	35.5004	66.08
RECOVERY	POND 12	35.7504	66.07
RECOVERY	POND 12	36.0004	66.06
RECOVERY	POND 12	36.2504	66.05
RECOVERY	POND 12	36.5004	66.04
RECOVERY	POND 12	36.7504	66.03
RECOVERY	POND 12	37.0004	66.03
RECOVERY	POND 12	37.2504	66.02
RECOVERY	POND 12	37.5004	66.01
RECOVERY	POND 12	37.7504	66.00
RECOVERY	POND 12	38.0004	65.99
RECOVERY	POND 12	38.2504	65.98
RECOVERY	POND 12	38.5004	65.97
RECOVERY	POND 12	38.7504	65.96
RECOVERY	POND 12	39.0004	65.96
RECOVERY	POND 12	39.2504	65.95
RECOVERY	POND 12	39.5004	65.94
RECOVERY	POND 12	39.7504	65.93
RECOVERY	POND 12	40.0004	65.92
RECOVERY	POND 12	40.2504	65.91
RECOVERY	POND 12	40.5004	65.90
RECOVERY	POND 12	40.7504	65.89
RECOVERY	POND 12	41.0004	65.89
RECOVERY	POND 12	41.2504	65.88
RECOVERY	POND 12	41.5004	65.87
RECOVERY	POND 12	41.7504	65.86

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 12	42.0004	65.85
RECOVERY	POND 12	42.2504	65.84
RECOVERY	POND 12	42.5004	65.83
RECOVERY	POND 12	42.7504	65.83
RECOVERY	POND 12	43.0004	65.82
RECOVERY	POND 12	43.2504	65.81
RECOVERY	POND 12	43.5004	65.80
RECOVERY	POND 12	43.7504	65.79
RECOVERY	POND 12	44.0004	65.78
RECOVERY	POND 12	44.2504	65.78
RECOVERY	POND 12	44.5004	65.77
RECOVERY	POND 12	44.7504	65.76
RECOVERY	POND 12	45.0004	65.75
RECOVERY	POND 12	45.2504	65.74
RECOVERY	POND 12	45.5004	65.73
RECOVERY	POND 12	45.7504	65.73
RECOVERY	POND 12	46.0004	65.72
RECOVERY	POND 12	46.2504	65.71
RECOVERY	POND 12	46.5004	65.70
RECOVERY	POND 12	46.7504	65.69
RECOVERY	POND 12	47.0004	65.69
RECOVERY	POND 12	47.2504	65.68
RECOVERY	POND 12	47.5004	65.67
RECOVERY	POND 12	47.7504	65.66
RECOVERY	POND 12	48.0004	65.65
RECOVERY	POND 12	48.2504	65.64
RECOVERY	POND 12	48.5004	65.64
RECOVERY	POND 12	48.7504	65.63
RECOVERY	POND 12	49.0004	65.62
RECOVERY	POND 12	49.2504	65.61
RECOVERY	POND 12	49.5004	65.61
RECOVERY	POND 12	49.7504	65.60
RECOVERY	POND 12	50.0004	65.59
RECOVERY	POND 12	50.2504	65.58
RECOVERY	POND 12	50.5004	65.57
RECOVERY	POND 12	50.7504	65.57
RECOVERY	POND 12	51.0004	65.56
RECOVERY	POND 12	51.2504	65.55
RECOVERY	POND 12	51.5004	65.54
RECOVERY	POND 12	51.7504	65.53
RECOVERY	POND 12	52.0004	65.53
RECOVERY	POND 12	52.2504	65.52

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 12	52.5004	65.51
RECOVERY	POND 12	52.7504	65.50
RECOVERY	POND 12	53.0004	65.50
RECOVERY	POND 12	53.2504	65.49
RECOVERY	POND 12	53.5004	65.48
RECOVERY	POND 12	53.7504	65.47
RECOVERY	POND 12	54.0004	65.47
RECOVERY	POND 12	54.2504	65.46
RECOVERY	POND 12	54.5004	65.45
RECOVERY	POND 12	54.7504	65.44
RECOVERY	POND 12	55.0004	65.44
RECOVERY	POND 12	55.2504	65.43
RECOVERY	POND 12	55.5004	65.42
RECOVERY	POND 12	55.7504	65.41
RECOVERY	POND 12	56.0004	65.41
RECOVERY	POND 12	56.2504	65.40
RECOVERY	POND 12	56.5004	65.39
RECOVERY	POND 12	56.7504	65.38
RECOVERY	POND 12	57.0004	65.38
RECOVERY	POND 12	57.2504	65.37
RECOVERY	POND 12	57.5004	65.36
RECOVERY	POND 12	57.7504	65.36
RECOVERY	POND 12	58.0004	65.35
RECOVERY	POND 12	58.2504	65.34
RECOVERY	POND 12	58.5004	65.33
RECOVERY	POND 12	58.7504	65.33
RECOVERY	POND 12	59.0004	65.32
RECOVERY	POND 12	59.2504	65.31
RECOVERY	POND 12	59.5004	65.31
RECOVERY	POND 12	59.7504	65.30
RECOVERY	POND 12	60.0004	65.29
RECOVERY	POND 12	60.2504	65.29
RECOVERY	POND 12	60.5004	65.28
RECOVERY	POND 12	60.7504	65.27
RECOVERY	POND 12	61.0004	65.26
RECOVERY	POND 12	61.2504	65.26
RECOVERY	POND 12	61.5004	65.25
RECOVERY	POND 12	61.7504	65.24
RECOVERY	POND 12	62.0004	65.24
RECOVERY	POND 12	62.2504	65.23
RECOVERY	POND 12	62.5004	65.22
RECOVERY	POND 12	62.7504	65.22

Appendix M
Pre/Post Nutrient Analysis

NUTRIENT REMOVAL COMPARISSON		
	NITROGEN	PHOSPHORUS
	KG/YR	KG/YR
PRE	146.4	19.827
POST	0	0
NET REDUCTION	-146.4	-19.827

Complete Report (not including cost) Ver 4.3.5

Project: Lake Hills
Date: 11/6/2024 9:27:43 AM

Site and Catchment Information

Analysis: Net Improvement

Catchment Name	Pre-1	Pre-2	Pre-3	Pre-4	Pre-5	Pre-6	Impacted Wetlands
Rainfall Zone	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2
Annual Mean Rainfall	52.00	52.00	52.00	52.00	52.00	52.00	52.00

Pre-Condition Landuse Information

Landuse	Agricultural - General: TN=2.800 TP=0.487	Agricultural - General: TN=2.800 TP=0.487	Agricultural - General: TN=2.800 TP=0.487	Agricultural - General: TN=2.800 TP=0.487	Agricultural - General: TN=2.800 TP=0.487	Agricultural - General: TN=2.800 TP=0.487	Undeveloped - Wet Flatwoods: TN=1.213 TP=0.021
Area (acres)	103.42	12.76	3.19	19.25	39.97	22.88	6.08
Rational Coefficient (0-1)	0.03	0.05	0.01	0.05	0.05	0.05	0.91
Non DCIA Curve Number	58.00	67.00	49.00	66.00	67.00	68.00	100.00
DCIA Percent (0-100)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen EMC (mg/l)	2.800	2.800	2.800	2.800	2.800	2.800	1.213

Phosphorus EMC (mg/l)	0.487	0.487	0.487	0.487	0.487	0.487	0.021
Runoff Volume (ac-ft/yr)	12.011	2.654	0.194	3.754	8.314	5.056	24.063
Groundwater N (kg/yr)	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
Nitrogen Loading (kg/yr)	41.465	9.163	0.668	12.959	28.702	17.457	35.990
Phosphorus Loading (kg/yr)	7.212	1.594	0.116	2.254	4.992	3.036	0.623

Summary Treatment Report Version: 4.3.5

Project: Lake Hills

Analysis Type: Net Improvement

Date:11/6/2024

BMP Types:

Catchment 1 - (Pre-1) None
Catchment 2 - (Pre-2) None
Catchment 3 - (Pre-3) None
Catchment 4 - (Pre-4) None
Catchment 5 - (Pre-5) None
Catchment 6 - (Pre-6) None
Catchment 7 - (Impacted Wetlands) None

Routing Summary

Catchment 1 Routed to Outlet
Catchment 2 Routed to Outlet
Catchment 3 Routed to Catchment 2
Catchment 4 Routed to Catchment 1
Catchment 5 Routed to Catchment 1
Catchment 6 Routed to Catchment 1
Catchment 7 Routed to Outlet

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	146.4 kg/yr	
Total N post load	kg/yr	
Target N load reduction	%	
Target N discharge load	146.4 kg/yr	
Percent N load reduction	%	
Provided N discharge load	kg/yr	lb/yr
Provided N load removed	kg/yr	lb/yr

Phosphorus

Surface Water Discharge

Total P pre load	19.827 kg/yr	
Total P post load	kg/yr	
Target P load reduction	%	
Target P discharge load	19.827 kg/yr	
Percent P load reduction	%	

Provided P discharge load	kg/yr	lb/yr
Provided P load removed	kg/yr	lb/yr

Complete Report (not including cost) Ver 4.3.5

Project: Lake Hills-Post
Date: 11/6/2024 10:14:12 AM

Site and Catchment Information

Analysis: Net Improvement

Catchment Name	Post 1	Post 2	Post 3	Post 4	Post 5	Post 6	Post 7	Post 8	Post 9	Post 10	Post 12
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
Annual Mean Rainfall	52.00	52.00	52.00	52.00	52.00	52.00	52.00	52.00	52.00	52.00	52.00

Post-Condition Landuse Information

Landuse	Low-Intensity Commercial: TN=1.13 TP=0.188	Low-Density Residential: TN=1.645 TP=0.27	Low-Density Residential: TN=1.645 TP=0.27	Low-Density Residential: TN=1.645 TP=0.27	Low-Density Residential: TN=1.645 TP=0.27	Low-Density Residential: TN=1.645 TP=0.27	Low-Density Residential: TN=1.645 TP=0.27	Low-Density Residential: TN=1.645 TP=0.27	Low-Density Residential: TN=1.645 TP=0.27	Low-Density Residential: TN=1.645 TP=0.27	Low-Density Residential: TN=1.645 TP=0.27
Area (acres)	27.25	20.50	13.23	7.92	33.01	0.00	35.50	16.24	9.58	11.84	15.36
Rational Coefficient (0-1)	0.58	0.19	0.26	0.25	0.22	0.00	0.23	0.26	0.15	0.40	0.27

Non DCIA Curve Number	54.00	60.00	68.00	65.00	67.00	29.90	63.00	68.00	69.00	70.00	69.00
DCIA Percent (0-100)	71.00	20.00	27.00	27.00	23.00	0.00	25.00	28.00	13.00	45.00	29.00
Wet Pond Area (ac)	1.94	1.23	0.00	0.29	3.80	0.00	1.55	0.51	0.56	0.65	0.88
Nitrogen EMC (mg/l)	1.130	1.645	1.645	1.645	1.645	1.645	1.645	1.645	1.645	1.645	1.645
Phosphorus EMC (mg/l)	0.188	0.270	0.270	0.270	0.270	0.270	0.270	0.270	0.270	0.270	0.270
Runoff Volume (ac-ft/yr)	63.678	15.532	14.665	8.239	28.242	0.000	33.896	17.954	5.961	19.202	17.142
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
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
Nitrogen Loading (kg/yr)	88.722	31.503	29.745	16.712	57.282	0.000	68.750	36.416	12.092	38.947	34.770
Phosphorus Loading (kg/yr)	14.761	5.171	4.882	2.743	9.402	0.000	11.284	5.977	1.985	6.393	5.707

Summary Treatment Report Version: 4.3.5

Project: Lake Hills-Post

Analysis Type: Net Improvement

BMP Types:

Catchment 1 - (Post 1) Retention

Catchment 2 - (Post 2) Wet Detention

Catchment 3 - (Post 3) Wet Detention

Catchment 4 - (Post 4) Wet Detention

Catchment 5 - (Post 5) Retention

Catchment 6 - (Post 6) Wet Detention

Catchment 7 - (Post 7) Wet Detention

Catchment 8 - (Post 8) Wet Detention

Catchment 9 - (Post 9) Wet Detention

Catchment 10 - (Post 10) Wet Detention

Catchment 11 - (Post 12) Wet Detention

Based on % removal values to the nearest percent

Date:11/6/2024

Routing Summary

Catchment 1 Routed to Outlet
Catchment 2 Routed to Catchment 3
Catchment 3 Routed to Catchment 10
Catchment 4 Routed to Catchment 10
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 Outlet
Catchment 11 Routed to Outlet

Total nitrogen target removal met? **No**

Total phosphorus target removal met? **No**

Summary Report

Nitrogen

Surface Water Discharge

Total N pre load	kg/yr	
Total N post load	414.94 kg/yr	
Target N load reduction	100 %	
Target N discharge load	kg/yr	
Percent N load reduction	99+ %	
Provided N discharge load	kg/yr	lb/yr
Provided N load removed	414.94 kg/yr	914.94 lb/yr

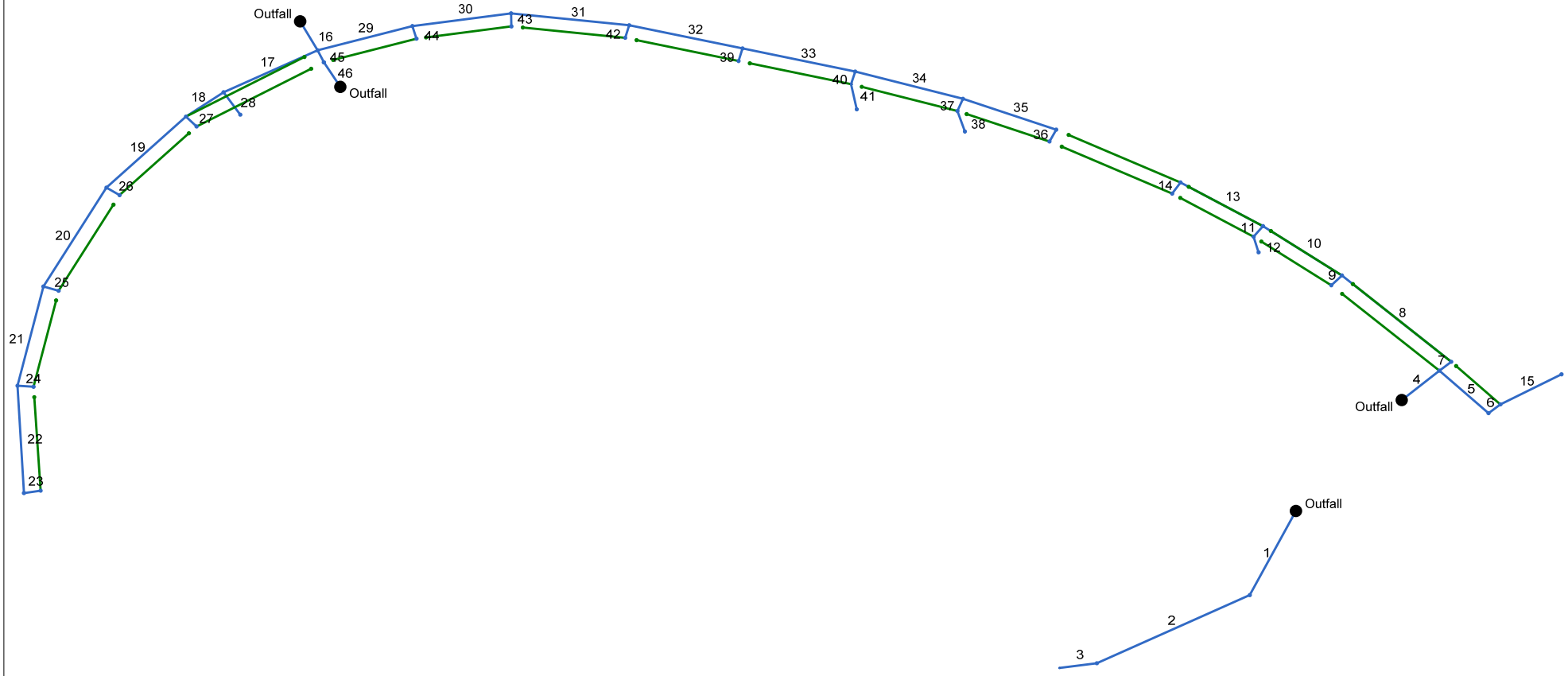
Phosphorus

Surface Water Discharge

Total P pre load	kg/yr	
Total P post load	68.304 kg/yr	
Target P load reduction	100 %	
Target P discharge load	kg/yr	
Percent P load reduction	99+ %	
Provided P discharge load	kg/yr	lb/yr
Provided P load removed	68.304 kg/yr	150.61 lb/yr

Appendix N
Secondary Drainage System Calculations (StormSewer)

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Project File: STREET A STORM SEWER.stm	Number of lines: 46	Date: 11/6/2024

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	243.587	0.01	2.59	0.60	0.01	0.78	15.0	19.8	5.7	4.48	54.22	2.82	24	5.75	70.50	84.50	80.81	85.24	73.25	102.00	P-48
2	1	373.504	0.01	2.58	0.60	0.01	0.78	15.0	15.9	6.3	4.87	18.13	4.61	24	0.64	89.00	91.40	89.71	92.18	102.00	99.66	P-47
3	2	81.062	2.57	2.57	0.30	0.77	0.77	15.0	15.0	6.4	4.94	13.76	4.03	24	0.37	91.40	91.70	92.23	92.53	99.66	97.00	P-46
4	End	112.058	0.09	12.26	0.80	0.07	7.80	15.0	21.1	5.6	43.46	59.15	5.44	42	0.29	78.00	78.33	80.81	80.95	73.63	92.03	P-36
5	4	153.916	4.51	8.63	0.80	3.61	5.30	15.0	16.0	6.3	33.18	48.70	6.76	30	1.41	78.33	80.50	82.06	82.98	92.03	95.88	Pipe - (55)
6	5	34.510	0.12	4.12	0.80	0.10	1.70	15.0	15.8	6.3	10.65	12.18	3.39	24	0.29	80.50	80.60	84.05	84.13	95.88	95.88	Pipe - (54)
7	4	34.514	0.12	3.54	0.80	0.10	2.42	15.0	20.9	5.6	13.55	22.69	2.76	30	0.26	78.23	78.32	82.06	82.09	92.03	92.22	P-34
8	7	326.877	0.33	3.42	0.80	0.26	2.33	15.0	19.0	5.8	13.55	22.12	2.76	30	0.25	78.32	79.13	82.27	82.57	92.22	88.17	P-35
9	8	34.620	0.28	0.28	0.80	0.22	0.22	15.0	15.0	6.4	1.44	4.90	1.17	15	0.49	79.13	79.30	82.76	82.78	88.17	87.80	P-30
10	8	213.472	0.21	2.81	0.80	0.17	1.84	15.0	18.0	6.0	10.95	12.32	3.48	24	0.25	79.13	79.67	82.76	83.19	88.17	86.65	P-31
11	10	34.495	0.18	2.22	0.80	0.14	1.37	15.0	15.3	6.4	8.69	15.04	2.77	24	0.38	79.67	79.80	83.51	83.55	86.65	86.65	P-29
12	11	42.695	2.04	2.04	0.60	1.22	1.22	15.0	15.0	6.4	7.83	15.48	2.49	24	0.47	81.00	81.20	83.69	83.74	86.65	86.79	Pipe - (53)
13	10	210.910	0.21	0.38	0.80	0.17	0.30	15.0	15.8	6.3	1.91	3.51	1.56	15	0.25	79.67	80.20	83.51	83.66	86.65	85.56	P-37
14	13	34.482	0.17	0.17	0.80	0.14	0.14	15.0	15.0	6.4	0.87	3.37	0.71	15	0.23	80.20	80.28	83.72	83.73	85.56	85.56	P-28
15	6	153.000	4.00	4.00	0.40	1.60	1.60	15.0	15.0	6.4	10.25	11.56	3.26	24	0.26	80.60	81.00	84.22	84.53	95.88	86.00	
16	End	85.400	0.54	24.62	0.80	0.43	16.13	15.0	22.2	5.5	94.98	92.23	7.56	48	0.35	61.00	61.30	66.65	66.97	185.15	70.71	P-33
17	16	229.732	0.01	10.92	0.80	0.01	7.07	15.0	21.6	5.5	46.01	47.67	6.51	36	0.44	64.00	65.00	68.95	69.88	70.71	73.81	P-12 (1)
18	17	103.048	0.25	2.59	0.80	0.20	2.07	15.0	21.3	5.5	18.50	29.86	6.49	24	1.48	68.21	69.74	70.54	71.29	73.81	75.24	P-12
19	18	253.541	0.30	2.13	0.80	0.24	1.70	15.0	20.5	5.6	16.61	27.09	6.55	24	1.22	69.74	72.84	71.29	74.31	75.24	78.34	P-09
20	19	294.469	0.27	1.59	0.80	0.22	1.27	15.0	18.5	5.9	7.50	21.28	3.99	24	0.75	72.84	75.06	74.31	76.03	78.34	82.16	P-08
21	20	268.384	0.29	1.10	0.80	0.23	0.88	15.0	17.5	6.0	5.31	9.02	6.52	15	1.66	77.66	82.12	78.35	83.05	82.16	86.62	P-04
22	21	284.463	0.30	0.58	0.80	0.24	0.46	15.0	15.5	6.3	2.93	8.06	3.61	15	1.33	82.12	85.90	83.05	86.59	86.62	90.56	P-03
23	22	36.272	0.28	0.28	0.80	0.22	0.22	15.0	15.0	6.4	1.44	4.93	2.72	15	0.50	85.90	86.08	86.59	86.55	90.56	90.58	P-05

Project File: STREET A STORM SEWER.stm | Number of lines: 46 | Run Date: 11/6/2024

NOTES:Intensity = 12.4956 + -1.6712(X) + -0.3490(X)^2 + 0.0502(X)^3 -- X = Ln(Tc)(min); Return period =Yrs. 10 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
24	21	34.498	0.23	0.23	0.80	0.18	0.18	15.0	15.0	6.4	1.18	4.29	1.30	15	0.38	82.12	82.25	83.05	83.06	86.62	86.62	P-06
25	20	34.497	0.22	0.22	0.80	0.18	0.18	15.0	15.0	6.4	1.13	4.46	3.02	15	0.41	77.66	77.80	78.09	78.23	82.16	82.16	P-07
26	19	34.504	0.24	0.24	0.80	0.19	0.19	15.0	15.0	6.4	1.23	4.76	2.21	15	0.46	73.34	73.50	74.31	73.94	78.34	78.34	P-10
27	18	34.639	0.21	0.21	0.80	0.17	0.17	15.0	15.0	6.4	1.08	4.75	2.04	15	0.46	70.24	70.40	71.29	70.81	75.24	75.24	P-11
28	17	69.354	8.32	8.32	0.60	4.99	4.99	15.0	15.0	6.4	31.97	31.15	6.51	30	0.58	65.00	65.40	70.54	70.96	73.81	73.51	Pipe - (56)
29	16	212.535	0.21	12.72	0.80	0.17	8.28	15.0	20.7	5.6	46.54	70.93	4.84	42	0.42	63.50	64.40	68.95	69.34	70.71	71.45	P-14
30	29	213.684	0.26	12.26	0.80	0.21	7.91	15.0	20.1	5.7	45.01	59.52	6.37	36	0.68	64.80	66.25	69.88	70.71	71.45	72.85	P-17
31	30	254.569	0.25	11.79	0.80	0.20	7.54	15.0	19.4	5.8	43.52	63.24	6.16	36	0.77	66.75	68.70	71.66	72.58	72.85	74.77	P-16
32	31	250.003	0.25	11.33	0.80	0.20	7.17	15.0	18.7	5.9	42.04	57.80	5.95	36	0.64	68.70	70.30	73.47	74.31	74.77	76.68	P-15
33	32	248.636	0.24	10.87	0.80	0.19	6.80	15.0	18.0	6.0	40.52	62.32	5.73	36	0.74	70.30	72.15	75.14	75.92	76.68	78.28	P-24
34	33	241.497	0.22	5.69	0.80	0.18	3.60	15.0	17.1	6.1	21.92	36.72	4.47	30	0.68	72.30	73.95	76.69	77.27	78.28	79.55	P-23
35	34	215.445	0.30	0.55	0.80	0.24	0.44	15.0	15.6	6.3	2.78	6.82	2.50	15	0.95	75.05	77.10	77.74	78.06	79.55	81.73	P-22
36	35	34.491	0.25	0.25	0.80	0.20	0.20	15.0	15.0	6.4	1.28	4.13	1.14	15	0.35	77.10	77.22	78.24	78.25	81.73	81.72	P-27
37	34	34.506	0.18	4.92	0.80	0.14	2.99	15.0	15.2	6.4	19.06	29.29	3.88	30	0.43	73.85	74.00	77.74	77.80	79.55	79.55	P-26
38	37	56.456	4.74	4.74	0.60	2.84	2.84	15.0	15.0	6.4	18.22	24.64	5.80	24	1.19	74.00	74.67	78.03	78.40	79.55	80.17	Pipe - (52)
39	32	34.500	0.21	0.21	0.80	0.17	0.17	15.0	15.0	6.4	1.08	4.29	0.88	15	0.38	71.55	71.68	75.14	75.15	76.68	76.68	P-21
40	33	34.492	0.20	4.94	0.80	0.16	3.00	15.0	15.2	6.4	19.15	29.30	3.90	30	0.43	70.45	70.60	76.69	76.75	78.28	78.28	P-25
41	40	67.843	4.74	4.74	0.60	2.84	2.84	15.0	15.0	6.4	18.22	18.81	5.80	24	0.59	70.60	71.00	76.92	77.30	78.28	75.60	P-32
42	31	34.500	0.21	0.21	0.80	0.17	0.17	15.0	15.0	6.4	1.08	4.91	0.88	15	0.49	70.10	70.27	73.47	73.47	74.77	74.77	P-20
43	30	34.487	0.21	0.21	0.80	0.17	0.17	15.0	15.0	6.4	1.08	4.61	0.88	15	0.43	67.85	68.00	71.66	71.67	72.85	72.85	P-19
44	29	34.500	0.25	0.25	0.80	0.20	0.20	15.0	15.0	6.4	1.28	4.61	1.04	15	0.43	67.00	67.15	69.88	69.89	71.45	71.45	P-18
45	16	34.499	0.44	0.44	0.80	0.35	0.35	15.0	15.0	6.4	2.26	102.6	0.18	48	0.43	61.30	61.45	68.95	68.95	70.71	70.71	P-13

Project File: STREET A STORM SEWER.stm | Number of lines: 46 | Run Date: 11/6/2024

NOTES:Intensity = 12.4956 + -1.6712(X) + -0.3490(X)^2 + 0.0502(X)^3 -- X = Ln(Tc)(min); Return period =Yrs. 10 ; c = cir e = ellip b = box

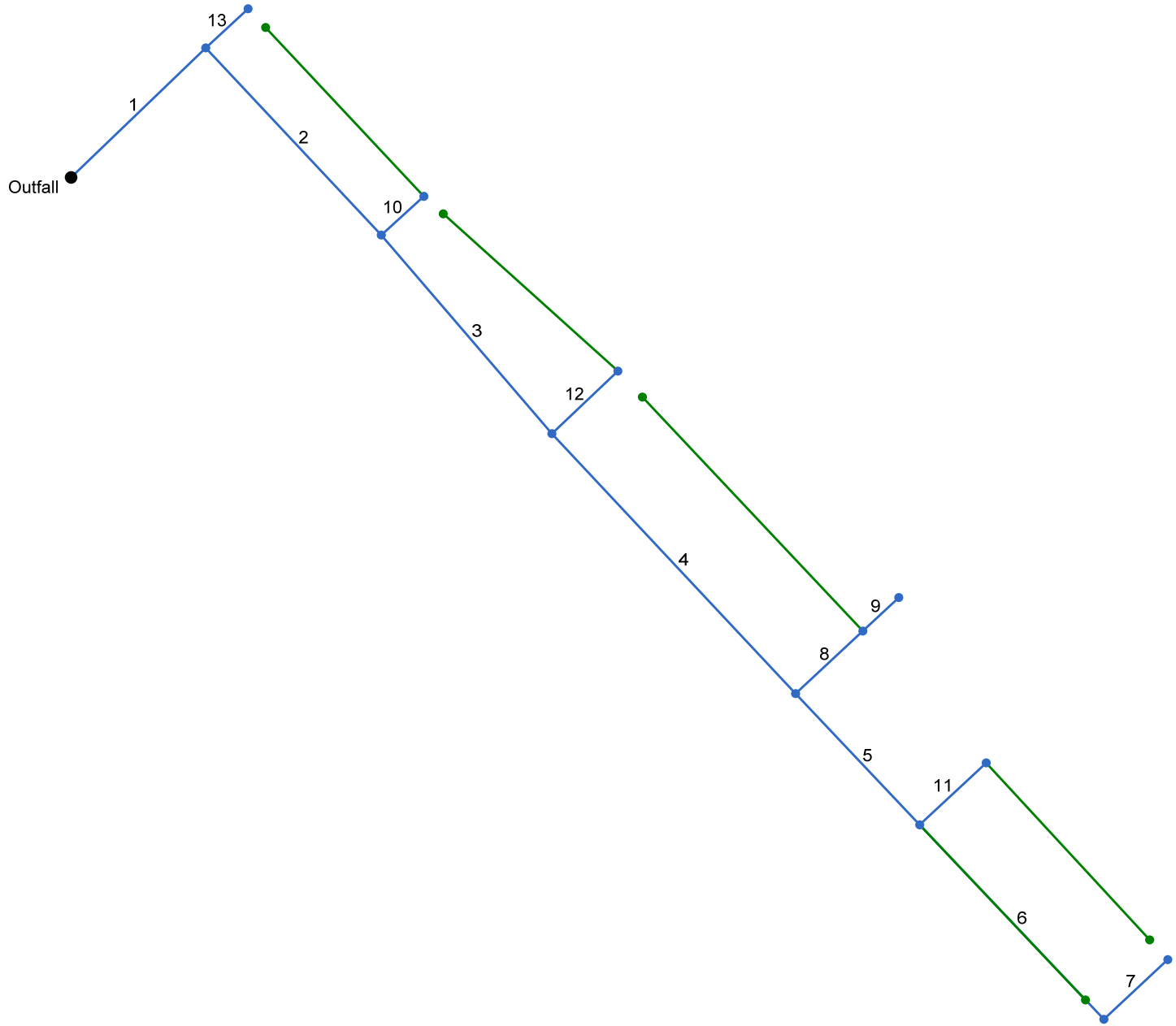
Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
46	End	73.813	0.44	0.44	0.80	0.35	0.35	15.0	15.0	6.4	2.25	91.58	0.18	48	0.41	61.00	61.30	66.65	66.65	244.82	70.71	Pipe - (51)

Project File: STREET A STORM SEWER.stm | Number of lines: 46 | Run Date: 11/6/2024

NOTES:Intensity = 12.4956 + -1.6712(X) + -0.3490(X)^2 + 0.0502(X)^3 -- X = Ln(Tc)(min); Return period =Yrs. 10 ; c = cir e = ellip b = box

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Project File: STREET A STORM SEWER-SR19.stm	Number of lines: 13	Date: 11/6/2024

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	112.058	0.09	0.00	0.80	0.07	0.00	15.0	0.0	0.0	0.00	0.00	3.24	36	1.99	72.00	74.23	76.46	76.49	73.63	92.03	P-36
2	1	153.916	0.10	0.00	0.80	0.08	0.00	15.0	0.0	0.0	0.00	0.00	10.03	30	3.92	78.23	84.27	79.07	85.78	92.03	95.03	P-54
3	2	157.001	0.15	0.00	0.80	0.12	0.00	15.0	0.0	0.0	0.00	0.00	6.24	30	2.84	84.27	88.73	85.78	90.21	95.03	99.91	DP63
4	3	213.731	0.04	0.00	0.80	0.03	0.00	15.0	0.0	0.0	0.00	0.00	5.42	30	0.35	88.73	89.48	90.34	91.09	99.91	104.74	DP59
5	4	108.377	0.04	0.00	0.80	0.03	0.00	15.0	0.0	0.0	0.00	0.00	3.74	18	0.62	97.68	98.35	98.19	98.89	104.74	104.72	DP56
6	5	160.641	0.13	0.00	0.80	0.10	0.00	15.0	0.0	0.0	0.00	0.00	2.92	18	0.30	98.35	98.83	98.95	99.43	104.72	104.19	Pipe - (58)
7	6	52.503	0.25	0.00	0.80	0.20	0.00	15.0	0.0	0.0	0.00	0.00	1.76	15	0.32	98.83	99.00	99.62	99.66	104.19	104.19	DP52
8	4	55.087	0.04	0.00	0.80	0.03	0.00	15.0	0.0	0.0	0.00	0.00	4.10	30	0.36	89.55	89.75	91.77	91.85	104.74	104.72	DP58
9	8	29.506	3.58	0.00	0.80	2.86	0.00	15.0	0.0	0.0	0.00	0.00	3.99	30	0.34	89.75	89.85	91.99	92.03	104.72	107.54	DP57
10	2	34.510	0.12	0.00	0.80	0.10	0.00	15.0	0.0	0.0	0.00	0.00	2.69	15	0.58	88.80	89.00	89.10	89.31	95.03	94.71	P-53
11	5	54.507	0.04	0.00	0.80	0.03	0.00	15.0	0.0	0.0	0.00	0.00	1.98	15	0.59	99.58	99.90	99.75	100.07	104.72	104.72	DP55
12	3	54.503	0.15	0.00	0.80	0.12	0.00	15.0	0.0	0.0	0.00	0.00	2.91	18	0.73	93.93	94.33	94.23	94.66	99.91	99.63	DP60
13	1	34.514	0.12	0.00	0.80	0.10	0.00	15.0	0.0	0.0	0.00	0.00	2.00	30	0.26	78.23	78.32	78.51	78.60	92.03	92.22	P-34

Project File: STREET A STORM SEWER-SR19.stm

Number of lines: 13

Run Date: 11/6/2024

NOTES:Intensity = 12.4956 + -1.6712(X) + -0.3490(X)^2 + 0.0502(X)^3 -- X = Ln(Tc)(min); Return period =Yrs. 10 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	112.058	0.09	4.85	0.80	0.07	3.88	15.0	42.7	4.0	15.35	32.74	2.29	36	0.21	78.00	78.23	80.81	80.85	73.63	92.03	P-36
2	1	153.916	0.10	4.64	0.80	0.08	3.71	15.0	42.1	4.0	14.80	48.36	4.39	30	1.39	78.33	80.47	80.98	81.77	92.03	95.03	P-54
3	2	157.001	0.15	4.42	0.80	0.12	3.53	15.0	41.5	4.0	14.21	69.12	8.38	30	2.84	84.27	88.73	85.04	90.00	95.03	99.91	DP63
4	3	213.731	0.04	4.12	0.80	0.03	3.29	15.0	40.6	4.1	13.39	24.29	5.07	30	0.35	88.73	89.48	90.06	90.80	99.91	104.74	DP59
5	4	108.377	0.04	0.46	0.80	0.03	0.37	15.0	36.8	4.3	1.58	29.75	3.12	30	0.53	92.78	93.35	93.17	93.76	104.74	104.72	DP56
6	5	160.641	0.13	0.38	0.80	0.10	0.30	15.0	15.8	6.3	1.91	5.74	2.92	18	0.30	98.35	98.83	98.95	99.43	104.72	104.19	Pipe - (58)
7	6	52.503	0.25	0.25	0.80	0.20	0.20	15.0	15.0	6.4	1.28	3.67	1.76	15	0.32	98.83	99.00	99.62	99.66	104.19	104.19	DP52
8	4	55.087	0.04	3.62	0.80	0.03	2.89	15.0	15.1	6.4	18.48	24.71	4.87	30	0.36	89.55	89.75	91.40	91.51	104.74	104.72	DP58
9	8	29.506	3.58	3.58	0.80	2.86	2.86	15.0	15.0	6.4	18.34	58.48	8.38	30	2.03	93.45	94.05	94.41	95.50	104.72	107.54	DP57
10	2	34.510	0.12	0.12	0.80	0.10	0.10	15.0	15.0	6.4	0.62	16.34	1.36	24	0.52	80.47	80.65	81.77	80.92	95.03	94.71	P-53
11	5	54.507	0.04	0.04	0.80	0.03	0.03	15.0	15.0	6.4	0.21	24.83	0.67	30	0.37	93.35	93.55	93.76	93.77	104.72	104.72	DP55
12	3	54.503	0.15	0.15	0.80	0.12	0.12	15.0	15.0	6.4	0.77	9.00	2.91	18	0.73	93.93	94.33	94.23	94.66	99.91	99.63	DP60
13	1	34.514	0.12	0.12	0.80	0.10	0.10	15.0	15.0	6.4	0.62	22.69	0.13	30	0.26	78.23	78.32	80.98	80.98	92.03	92.22	P-34

Project File: STREET A STORM SEWER-SR19.stm | Number of lines: 13 | Run Date: 11/6/2024

NOTES:Intensity = 12.4956 + -1.6712(X) + -0.3490(X)^2 + 0.0502(X)^3 -- X = Ln(Tc)(min); Return period =Yrs. 10 ; c = cir e = ellip b = box

December 1, 2023

Publix Super Markets Inc.
c/o WindCrest Development Group, Inc.
605 East Robinson Street, Suite 340
Orlando, Florida 32801

Attention: Mr. Tom Murray
tmurray@windcrestinc.com

Reference: **Phase I Environmental Site Assessment**
Publix Retail Development
North of County Road 48 and State Road 19
Howey-In-The-Hills, Lake County, Florida 34737
UES Project No. 0140.2300323.0000
UES Report No. 2056537

Dear Mr. Murray:

Universal Engineering Sciences (UES) has completed a Phase I Environmental Site Assessment (ESA) in compliance with the American Society for Testing and Materials (ASTM) Standard E1527-21 for the above-referenced site (the "subject property"). The purpose of this assessment was to identify recognized environmental conditions (RECs) in association with the subject property as defined in ASTM E1527-21. Based on the conclusions of the Phase I ESA, UES did not identify a REC, controlled REC, or significant data gap to be associated with the subject property and does not recommend further assessment of the subject property at this time. Further details regarding the Phase I ESA conducted by UES are presented in the attached report.

CONTINUING OBLIGATIONS

The User of this report is required to ensure that continuing obligations are followed after purchase or acquisition of the subject property. Any land use restrictions in effect at the subject property must be maintained. The User should ensure that all parties at the subject property are following best management practices and taking “reasonable steps” with respect to preventing and limiting exposure to any hazardous substance releases on the subject property. In the event of a future release on the subject property, the property owner or responsible party should report it to the appropriate regulatory agency. Full cooperation must be provided to any parties authorized to conduct assessments or responses to the subject property.

Please note that an environmental liens or activity and use limitations search was not performed for the subject property. In accordance with ASTM E1527-21, it is the responsibility of the User of this report to confirm that there are no environmental liens or activity and use limitations filed for the subject property. In the event that any are identified, please contact UES immediately for further evaluation.

We appreciate this opportunity to provide environmental services to you and we look forward to future endeavors. Please contact the undersigned if you have any questions regarding this report.

Respectfully submitted,
UNIVERSAL ENGINEERING SCIENCES

Chris McCormick, L.E.P.
Environmental Project Manager
cmccormick@teamues.com

PHASE I ENVIRONMENTAL SITE ASSESSMENT

Publix Retail Development
North of County Road 48 and State Road 19
Howey-In-The-Hills, Lake County, Florida 34737
UES Project No. 0140.2300323.0000
UES Report No. 2056537

Report Issuance Date: December 1, 2023
Report Viability Date: May 18, 2024

Prepared for:

Publix Super Markets Inc.
c/o WindCrest Development Group, Inc.
605 East Robinson Street, Suite 340
Orlando, Florida 32801

Prepared by:

Universal Engineering Sciences
3532 Maggie Boulevard
Orlando, Florida 32811
(407) 423-0504
www.teamues.com

PHASE I ENVIRONMENTAL SITE ASSESSMENT

Publix Retail Development
North of County Road 48 and State Road 19
Howey-In-The-Hills, Lake County, Florida 34737
UES Project No. 0140.2300323.0000
UES Report No. 2056537

Report Issuance Date: December 1, 2023
Report Viability Date: May 18, 2024

This Phase I Environmental Site Assessment (ESA) was conducted in accordance with the guidelines of the ASTM E1527-21 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, and therefore, the federal Environmental Protection Agency's All Appropriate Inquiry Rule. The accuracy, correctness and completeness of the Phase I ESA are provided with the knowledge of ASTM E1527-21. In addition, the accuracy, correctness and completeness of this Phase I ESA are provided with knowledge of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as set forth in 42 United States Code Section 9601 et seq., as amended. Qualifications of the personnel participating in this assessment are provided in **Appendix J**.

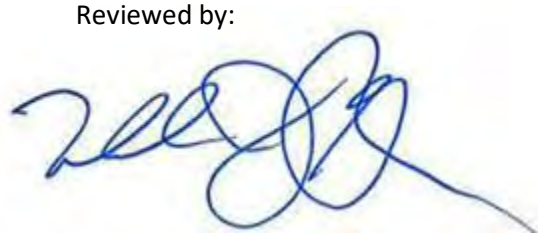
Declaration of Environmental Professional and Signature

We declare that, to the best of our professional knowledge and belief, We meet the definition of Environmental Professional as defined in §312.10 of 40 CFR 312. We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all-appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Report Prepared by:

Chris McCormick, L.E.P.
Environmental Project Manager
cmccormick@teamues.com

Reviewed by:



Michael J. Geden, P.G.
Senior Geologist
mgeden@teamues.com

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LIST OF FIGURES AND APPENDICES

EXECUTIVE SUMMARY

Universal Engineering Sciences (UES) has completed a Phase I Environmental Site Assessment (ESA) in compliance with the ASTM International Standard E1527-21 for the property located north of the County Road 48 intersection with State Road 19 in Howey-In-The-Hills, Lake County, Florida 34737 (the "subject property"). The purpose of this assessment was to identify recognized environmental conditions (RECs) in association with the subject property as defined in ASTM E1527-21. The subject property is described in the table below and illustrated on the Site Location Map presented as **Figure 1** and the Site Plan/2023 Aerial Photograph presented as **Figure 2**.

Subject Property Overview

Parcel ID	Acreage	Number of Building(s) and Square Footage	Current Use
23-20-25-0004-000-00200	19.9	None	Vacant land

NOTE: Please carefully review this report in its entirety for a full description of our evaluation procedures and findings.

Based on UES' field observations, historical research, public records review and interviews conducted in accordance with ASTM format E1527-21, the findings of this Phase I ESA are as follows:

1) UES reviewed readily available records and conducted a site visit to determine the historical and current use of the subject property. It was undeveloped land containing trees and general vegetation in the early 1940s and then developed as agricultural land (citrus grove) from the 1950s to the 2010s and was vacant land in the 2020s. The subject property has been agricultural land from the 1950s through the present day.

2) The subject property historically operated as agricultural (citrus grove). Improper or long term application of agricultural chemicals has been shown, at times, to remain in the soil above the recommended exposure levels established by the FDEP. The Phase I Environmental Site Assessment And Limited Soil Evaluation (dated August 13, 2021) indicates soil samples were collected, field analyzed for arsenic, and select samples were laboratory analyzed for agricultural chemicals to address the historical operation as a citrus grove. Soil borings S01, S19, 19A, S20, S36, and S37 appear on the subject property. Soil boring S21 appears on the west adjoining property near the subject property line. A soil sample was collected from each boring and field analyzed for arsenic and lead utilizing an X-ray fluorescence (XRF) meter. The XRF meter detected an arsenic concentration above 2.1 milligrams per kilogram (mg/kg) at S21. The remaining results were below 2.1 mg/kg. Soil sample S21 was then laboratory analyzed for arsenic and lead. Soil sample S19A was analyzed for Organochlorine Pesticides. The laboratory did not detect any arsenic and pesticide concentrations exceeding Florida Department of Environmental Protection (FDEP) Soil Cleanup Taret Levels (SCTLs). Based on the concentrations being below their SCTLs, the potential for the soil in these areas to be impacted by agricultural chemicals is low. See Section 4.8 for details of the soil evaluation to address this concern.

3) A recognized environmental condition (REC) is defined as (1) the presence of hazardous substances or petroleum products in, on, or at the subject property due to a release to the environment; (2) the likely presence of hazardous substances or petroleum products in, on, or at

the subject property due to a release or likely release to the environment; or (3) the presence of hazardous substances or petroleum products in, on, or at the subject property under conditions that pose a material threat of a future release to the environment.

- No RECs were identified in connection with the subject property.

4) A controlled REC (CREC) is defined as a REC affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities with hazardous substances or petroleum products allowed to remain in place subject to implementation of required controls.

- No controlled RECs were identified in connection with the subject property.

5) A historical REC (HREC) is a previous release of hazardous substances or petroleum products affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities and meeting unrestricted use criteria established by the applicable regulatory authority or authorities without subjecting the subject property to any controls.

- No historical RECs were identified in connection with the subject property.

6) UES obtained an ASTM regulatory database report through Environmental Risk Information Services (ERIS) and reviewed pertinent regulatory records from the United States Environmental Protection Agency (EPA) and Florida Department of Environmental Protection (FDEP), as needed.

- The subject property is not listed on the federal or state databases.

- Facilities located within the ASTM search distances were identified on the federal and state databases. Based on the findings of the regulatory records review, these listings do not appear as a REC in connection with the subject property.

7) UES was not contracted to obtain an Environmental Lien Search (ELS) Report for the subject property. It is the User's obligation to confirm whether any environmental liens or activity and use limitations are recorded for the subject property.

8) Significant Data Gaps considered likely to affect the conclusions of this Phase I ESA were not identified during the preparation of this Phase I ESA.

9) The User of this report is required to ensure that continuing obligations are followed after purchase or acquisition of the subject property. Any land use restrictions in effect at the subject property must be maintained. The User should ensure that all parties at the subject property are following best management practices and taking "reasonable steps" with respect to preventing and limiting exposure to any hazardous substance releases on the subject property. In the event of a future release on the subject property, the property owner or responsible party should report it to the appropriate regulatory agency. Full cooperation must be provided to any parties authorized to conduct assessments or responses to the subject property.

1.0 INTRODUCTION

1.1 PURPOSE

Universal Engineering Sciences (UES) prepared this Phase I Environmental Site Assessment (ESA) in accordance with the guidelines of the ASTM E1527-21 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process. The primary purpose of this assessment is to conduct an evaluation of the subject property and surrounding properties to identify recognized environmental conditions (RECs), controlled recognized environmental conditions (CRECs), historical recognized environmental conditions (HRECs), and de minimis conditions with the past or present uses of the subject property and surrounding properties. ASTM E1527-21 defines these conditions as follows:

- REC: (1) the presence of hazardous substances or petroleum products in, on, or at the subject property due to a release to the environment; (2) the likely presence of hazardous substances or petroleum products in, on, or at the subject property due to a release or likely release to the environment; or (3) the presence of hazardous substances or petroleum products in, on, or at the subject property under conditions that pose a material threat of a future release to the environment. The term REC is not intended to include de minimis conditions which are conditions related to a release that generally do not present a threat to human health or the environment and which generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

- CREC: A recognized environmental condition affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities with hazardous substances or petroleum products allowed to remain in place subject to implementation of required controls (for example, activity and use limitations or other property use limitations).

- HREC: A previous release of hazardous substances or petroleum products affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities and meeting unrestricted use criteria established by the applicable regulatory authority or authorities without subjecting the subject property to any controls (for example, activity and use limitations or other property use limitations). A historical recognized environmental condition is not a recognized environmental condition.

1.2 SCOPE OF SERVICES

The contracted scope of services consists of the preparation of a Phase I ESA of the subject property in accordance with the guidelines set forth in ASTM E1527-21. The accuracy, correctness and completeness of this Phase I ESA is provided with knowledge of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as set forth in 42 United States Code Section 9601 et seq., as amended.

1.3 LIMITATIONS AND EXCEPTIONS

The findings of this report represent our professional judgment; UES offers or extends no warranty, express or implied. These findings are relevant to the dates of our property evaluation and the information cited herein. This report should not be relied upon to represent property conditions on other dates or at locations other than those specifically cited within the report. Performance of this practice is intended to reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions in connection with the subject property.

1.4 CRITICAL DATES – CONTINUED VIABILITY OF ESA

Due to changing environmental regulatory conditions and potential on-site or adjacent activities occurring after this Phase I ESA, the client may not presume the continuing applicability to the subject property of the conclusions in this assessment for more than 180 days prior to the date of acquisition of the property or for transactions not involving an acquisition such as a lease or refinance, the date of the intended transaction. If within this period the assessment will be used by a user different from the user for whom the assessment was originally prepared, the subsequent user must also satisfy the User's Responsibilities. An environmental site assessment meeting or exceeding this practice and for which the information was collected or updated within one year prior to the date of acquisition of the property or (for transactions not involving an acquisition) the date of the intended transaction may be used provided that the following components of the inquiries were conducted or updated within 180 days of the date of purchase or the date of the intended transaction:

Date of Components

Phase I ESA Component	Date
Date of Declaration by the Environmental Professional for the Assessment	December 1, 2023
Earliest Date of Interviews with Owners, Operators, and Occupants	November 20, 2023
Date of Search for Recorded Environmental Liens	Not Provided
Date of Regulatory Records Review	November 22, 2023
Date of Site Reconnaissance	Tuesday, November 28, 2023
Report Viability Date (180 days after the earliest date above)	May 18, 2024

1.5 SPECIAL TERMS AND CONDITIONS

This report, and the information contained herein, shall be the sole property of UES until payment of any unpaid balance is made in full. Publix Super Markets Inc., hereinafter referred to as the "User" of this Phase I ESA report, agrees that until payment is made in full, the User shall not have a proprietary interest in this report, or the information contained herein. UES shall have the absolute right to request the return of all copies of this report submitted to other parties, public or private, on behalf of the User in the event of nonpayment of outstanding fees by the contractual conditions that govern this assessment.

1.6 USER RELIANCE

This report is intended for the sole use of the User, Publix Super Markets Inc. and WindCrest Development Group, Inc.. Its contents may not be relied upon by other parties without the explicit written consent of UES. This is not a statement of suitability of the subject property for any use or purpose. In accepting this report, all parties herein mentioned agree to the General Conditions of the Agreement between UES and Publix Super Markets Inc..

2.0 USER-PROVIDED INFORMATION

2.1 USER QUESTIONNAIRE

The User is required to complete an AAI compliant User Questionnaire to qualify for one of the Landowner Liability Protections (LLPs) offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the "Brownfields Amendments"). Failure to complete this questionnaire could result in a

determination that "all appropriate inquiry" is not complete. UES was provided with a User Questionnaire completed by Mr. Tom Murray with WindCrest Development Group, Inc. (dated November 20, 2023). A summary of the User responses is provided in the table below.

Summary of User Questionnaire Responses

Question	Response		Comments
	Yes	No	
As the User, are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?	☐	☒	
As the User, are you aware of any Activity and Use Limitations, such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?	☐	☒	
As the User, do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?	☐	☒	
Does the purchase price being paid for this property reasonably reflect the fair market value of the property?	☒	☐	
If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?	☐	☒	
As the User of this ESA are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases?	☐	☒	
Do you know the past uses of the property?	☐	☒	
Do you know of specific chemicals that are present or once were present at the property?	☐	☒	
Do you know of spills or other chemical releases that have taken place at the property?	☐	☒	
Do you know of any environmental cleanups that have taken place at the property?	☐	☒	
As the user of this ESA, based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination at the property?	☐	☒	

2.2 Reason for Performing Phase I ESA

UES was contracted to perform this Phase I ESA for the prospective owner to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser defense to CERCLA liability. The User indicated the reason UES was contracted to perform this Phase I ESA was to purchase the subject property.

2.3 Environmental Liens or Activity Land Use Limitations

Information pertaining to potential environmental liens or activity and use limitations on the subject property that are filed or recorded under federal, tribal, state or local laws was not supplied to UES by the User. Please note that an environmental liens or activity and use limitations search was not performed for the subject property. In accordance with ASTM E1527-21, it is the responsibility of the User of this report to confirm that there are no environmental liens or activity and use limitations filed for the subject property.

3.0 SITE DESCRIPTION

3.1 Location and Legal Description

The subject property is approximately 19.9 acres of vacant land on one tax parcel (ID#: 23-20-25-0004-000-00200) located north of the County Road 48 intersection with State Road 19 in Howey-In-The-Hills, Lake County, Florida 34737. The subject property is located within Section 23, Township 20 South and Range 25 East, as referenced in the USGS topographic quadrangle map titled "Howey In The Hills, FL" provided as **Figure 1**. Refer to the Site Plan/2023 Aerial Photograph, **Figure 2**. The proposed site plan and the property appraiser record in **Appendix A** for additional details.

3.2 Property and Vicinity Characteristics

The subject property is vacant agricultural land (former citrus grove) containing trees and general vegetation. Access to the subject property is provided by County Road 48 and State Road 19. The subject property vicinity is characterized primarily by agricultural property (vacant), commercial property (golf course, hotel, lodge, resort, and vacant), residential property (homes and vacant), and utility property (public well). Refer to the Site Plan/2023 Aerial Photograph (**Figure 2**) for additional details pertaining to the subject and surrounding properties.

3.3 Current Use of the Subject Property

The subject property is unoccupied vacant land.

3.4 Structures, Roads, and/or Other Improvements within the Subject Property

There are no structures, roads and/or other improvements at the subject property.

3.5 Current Uses of Adjoining Parcels

During UES' site reconnaissance, properties adjoining the subject property were observed from the subject property boundaries, without being entered, or from curbside, for possible sources of impacts or environmental impairment which could migrate to the subject property via surface water runoff, groundwater transport, or other pathways.

Description of Adjoining Parcels

Direction From The Subject Property	Description of Current Use
North	Vacant land
East	County Road 48, public well, lodge, and vacant land
South	State Road 19, home, resort, hotel, golf course, and vacant land
West	Vacant land

4.0 HISTORICAL RECORDS REVIEW

A historical assessment of the subject property, adjoining properties and surrounding area was performed through a review of available standard historical resources including aerial photographs, topographic maps, Sanborn fire insurance maps, and city directory records. Additional standard historical sources were reviewed if deemed useful in identifying RECs and readily available. These sources are cited in the table below.

Historical Records Reviewed

Standard		Reviewed		Source
		Yes	No	
4.1	Aerial Photographs *(Required)*	☒	☐	Environmental Risk Information Services (ERIS) Google Earth Florida Department of Transportation (FDOT) University of Florida (UF)
4.2	USGS Topographic Maps *(Required)*	☒	☐	ERIS, TopoView
4.3	Fire Insurance Maps *(Required)*	☐	☒	The ERIS report indicates no coverage is available.
4.4	City Directories *(Required)*	☒	☐	ERIS
4.5	Property Tax Files	☒	☐	Lake County Property Appraiser records
4.6	Recorded Land Title Records	☐	☒	
4.7	Building Department Records	☐	☒	
4.8	Other Historical Sources	☒	☐	FDEP Ethylene Dibromide (EDB) Application Zone Delineation Map. Phase I Environmental Site Assessment And Limited Soil Evaluation

4.1 AERIAL PHOTOGRAPHS

UES reviewed a series of aerial photographs in order to evaluate the previous land uses of the subject property and surrounding area. Copies of the aerial photographs are provided in **Appendix B**. Descriptions of UES observations are outlined in the table below.

Summary of Aerial Photographs Observations

Photograph		Remarks
Year	Quality	
1941	Fair	Subject Property The subject property appears to be undeveloped land containing trees and general vegetation. Adjoining Properties & Surrounding Area County Road 48 and a golf course appears on the south property. The remaining properties appear to be undeveloped land.
1947	Fair	Subject Property No significant changes Adjoining Properties & Surrounding Area No significant changes
1952	Fair	Subject Property Agricultural land (citrus grove) appears on the subject property. Adjoining Properties & Surrounding Area A citrus grove appears on the adjoining properties. State Road 19 appears on the east property.
1958 1966	Fair	Subject Property No significant changes Adjoining Properties & Surrounding Area No significant changes
1972	Good	Subject Property No significant changes Adjoining Properties & Surrounding Area The resort and hotel appear on a south property.
1974 1979 1983	Good	Subject Property No significant changes Adjoining Properties & Surrounding Area No significant changes
1995	Good	Subject Property No significant changes Adjoining Properties & Surrounding Area The marina appears on the east property. The public well appears on the south property.
1999	Good	Subject Property No significant changes Adjoining Properties & Surrounding Area Homes appear on the south property.

Summary of Aerial Photographs Observations

Photograph		Remarks
Year	Quality	
2004	Good	Subject Property No significant changes Adjoining Properties & Surrounding Area Additional homes appear on the south property.
2008 2013	Good	Subject Property No significant changes Adjoining Properties & Surrounding Area No significant changes
2017	Good	Subject Property The subject property no longer appears to operate as a citrus grove. Adjoining Properties & Surrounding Area The north, east, and west properties no longer appear to operate as a citrus grove.
2019 2023	Good	Subject Property No significant changes Adjoining Properties & Surrounding Area No significant changes

4.2 TOPOGRAPHIC MAPS

UES reviewed a series of historical topographic maps in order to evaluate the previous land uses of the subject property and surrounding area. Copies of the historical topographic maps are provided in **Appendix C**. Descriptions of UES observations are outlined in the table below.

Summary of Historical Topographic Map Observations

Year	Remarks
1969	Subject Property Agricultural land (citrus grove) appears on the subject property. Adjoining Properties & Surrounding Area A citrus grove appears on the adjoining properties. County Road 48 appears on the south property and State Road 19 appears on the east property.
2015	Subject Property Citrus grove is not represented on the map. Adjoining Properties & Surrounding Area Citrus grove is not represented on the map.
2021	Subject Property No significant changes Adjoining Properties & Surrounding Area No significant changes

4.3 Sanborn Fire Insurance Maps

Sanborn Fire Insurance Maps providing coverage of the subject property and vicinity were unavailable. A copy of the no coverage letter is provided in **Appendix D**.

4.4 City Directories

The subject property does not appear in the city directory report. UES notes that the adjoining property entries from the city directory review are not considered to be pertinent to the review since they do not appear as a business that would generate hazardous waste or store petroleum. The city directory findings are provided in **Appendix E**.

4.5 Property Tax Records

The Lake County Property Appraiser identifies the current owner of the subject property as Lake Harris (Orlando) ASLI VII Owner #1 LLC. The land use code for the subject property is Acreage - Non Agricultural (9900). Refer to **Appendix A** for a copy of the property appraiser report.

4.6 Recorded Land Title Records

The User did not contract UES to acquire a chain-of-title report for the subject property, which typically contains information regarding historical site ownership.

4.7 Building Department Records

UES did not review building department records in preparation of this Phase I ESA.

4.8 Other Historical Sources

The FDEP Ethylene Dibromide (EDB) Application Zone Delineation Map indicates EDB-impacted groundwater has not been identified beneath where the subject property is located. EDB was formerly used in citrus grove applications as a fumigant against nematodes and is a known carcinogen.

The User provided the Phase I Environmental Site Assessment And Limited Soil Evaluation (dated August 13, 2021) written by UES (Project No. 0140.2100203.0000; Report No. 1892506) for K. Hovnanian Homes LLC. The report indicates soil samples were collected, field analyzed for arsenic, and select samples were laboratory analyzed for agricultural chemicals to address the historical operation as a citrus grove. Fifty-two (52) soil borings (S01 thru S52) were placed within the citrus grove area. Soil borings S01, S19, 19A, S20, S36, and S37 appear on the subject property. Soil boring S21 appears on the west adjoining property near the subject property line. A soil sample was collected from each boring approximately 6-inches to 12-inches below the land surface (bls). Each soil sample was field analyzed for arsenic and lead using an X-ray fluorescence (XRF) meter. The XRF meter detected an arsenic concentration above 2.1 milligrams per kilogram (mg/kg) at S21. The remaining results were below 2.1 mg/kg. Soil sample S21 was then laboratory analyzed for arsenic and lead utilizing Environmental Protection Agency (EPA) Method 6010. Soil sample S19A was collected approximately 6-inches to 12-inches below the land surface (bls) and laboratory analyzed for Organochlorine Pesticides utilizing EPA Method 8081. The laboratory did not detect any arsenic and pesticide concentrations exceeding FDEP Soil Cleanup Taret Levels (SCTLs). Based on the concentrations being below their SCTLs, the potential for the soil in these areas to be impacted by agricultural chemicals is low.

4.9 Historical Summary of the Subject Property and Surrounding Areas

The subject property was undeveloped land containing trees and general vegetation in the early 1940s. It was then developed as agricultural land (citrus grove) from the 1950s to the 2010s and was vacant land in the 2020s. The subject property has been agricultural land from the 1950s through the present day.

The subject property historically operated as agricultural (citrus grove). Improper or long term application of agricultural chemicals has been shown, at times, to remain in the soil above the recommended exposure levels established by the FDEP. Field and laboratory soil analysis did not detect any arsenic and pesticide concentrations exceeding FDEP Soil Cleanup Taret Levels (SCTLs). See Section 4.8 for details of the soil evaluation to address this concern.

The surrounding area was commercial property (golf course) and undeveloped land in the early 1940s. Agricultural land (citrus grove) appeared from the 1950s to the 2010s and additional commercial land appeared in the 1970s (resort and hotel), 1990s (marina), and 2020s (lodge). Utility land (public well) and residential property (homes) appeared in the late-1990s. The area has been agricultural, commercial, government, and residential land from the mid 2000's through the present day.

5.0 REGULATORY RECORDS REVIEW

5.1 Regulatory Database Report and Records Review

As a part of this assessment, we reviewed information sources to obtain existing information pertaining to a release of hazardous substances or petroleum products on or near the subject property. UES obtained an ASTM regulatory database report from Environmental Risk Information Services (ERIS), which is provided in **Appendix G**. UES also reviewed other available standard environmental record sources at the Florida Department of Environmental Protection (FDEP), as needed. The table below lists the approximate minimum search distances used during this assessment in review of the regulatory database, as set forth in ASTM E1527-21.

Minimum Search Distances - ASTM E1527-21

Source	Search Distance
Federal NPL Site List (National Priorities List)	1.0 mile
Federal Delisted NPL Site List	0.5 mile
Federal CERCLIS List (Comprehensive Environmental Response Compensation and Liability Act of 1980) / Superfund Enterprise Management System (SEMS)	0.5 mile
Federal CERCLIS NFRAP Site List /SEMS Archive List	0.5 mile
Federal RCRA CORRACTS Facilities List (Resource Conservation and Recovery Act)	1.0 mile
Federal RCRA non-CORRACTS TSD Facilities List	0.5 mile
Federal RCRA Generators List	Subject Property & Adjoining Parcels
Federal Institutional Control/Engineering Control Registries	Subject Property Only
Federal ERNS List (Emergency Response Notification System)	Subject Property Only

Minimum Search Distances - ASTM E1527-21

Source	Search Distance
States and Tribal Lists of Hazardous Waste Sites identified for investigation or remediation: • State- and Tribal-equivalent NPL • State- and Tribal-equivalent SEMS	 1.0 mile 0.5 mile
State and Tribal Landfill and/or Solid Waste Disposal Site Lists	0.5 mile
State and Tribal Leaking Storage Tanks Lists	0.5 mile
State and Tribal Registered Storage Tank Lists	Subject Property & Adjoining Parcels
State and Tribal Institutional Control/Engineering Control Registries	Subject Property Only
State and Tribal Voluntary Cleanup Sites	0.5 mile
State and Tribal Brownfield Sites	0.5 mile

UES' review of the referenced databases considered the potential or likelihood of contamination from adjoining and nearby sites. To evaluate which of the adjoining and nearby sites identified in the regulatory database report present potential environmental risks to the subject property, UES considered the following criteria:

- The type of database on which the site is identified.
- The direction and distance of the identified site from the subject property.
- The known or inferred groundwater flow direction in the subject property area.
- The status of any respective regulatory agency-required investigation(s) of the identified site.
- Surface and subsurface obstructions and diversions (e.g., buildings, roads, sewer systems, utility service lines, rivers, lakes, and ditches) that may be located between the identified site and the subject property.

According to information provided by ERIS and a review of public records maintained by the EPA and/or FDEP:

- The subject property is not listed on any Federal, State or local databases.

- Facilities in the surrounding area are listed on the following databases:
  - Aboveground Storage Tank (AST),
  - Underground Storage Tank (UST),
  - Leaking UST (LUST), and
  - Oil and Hazardous Materials Incidents (SPILLS)

Only those sites that are judged to present a potential environmental risk to the subject property and/or warrant additional evaluation are discussed in the table below.

Facilities Identified Within Minimum Search Distances

Facility	Facility ID(s)	Distance/Direction	Database(s)
CR 48 at Hwy 19 Howie-In-The-Hills	7524	South Adjacent Property	SPILLS
In January 2000, a vehicular accident at this location released diesel (30-gal) and sewage (4,000-gal) to soil. No additional information was available to be reviewed. A discharge was not reported and the State considers the issue closed. Based on the lack of a reported discharge, this facility is not a REC in connection with the subject property.			
Mission Inn Golf & Tennis Resort 10400 CR 48 Howey In The Hills	35-8840331	South Adjacent Property	AST UST LUST
This facility is a non-retail fuel user containing four USTs and three ASTs that were removed from the facility. It currently maintains two ASTs. A discharge was reported in May 1992. A No cleanup Required (NREQ) status was issued to the discharge in May 2001. Based on the resolution of the discharge, this facility is not a REC in connection with the subject property.			

In addition to reviewing the regulatory database report, UES performed reconnaissance of the subject property vicinity to identify any sites not mapped by ERIS due to inadequate or inaccurate address information and to look for unregistered facilities. Additional petroleum storage facilities or facilities suspected to use or generate hazardous materials were not observed in the near vicinity of the subject property during field reconnaissance performed by UES.

5.2 VAPOR ENCROACHMENT SCREENING

The purpose of a Vapor Encroachment Screening (VES) is to identify to the extent feasible pursuant to the procedures presented in the Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transaction (ASTM E2600-22). The VES is intended to be used independently or in conjunction with, but not as a replacement of, existing Practice E1527-21 Phase I ESA.

Vapor migration refers to the movement of *hazardous substances* or *petroleum products* vapor in the subsurface. A vapor encroachment condition (VEC) is defined as the presence or likely presence of chemicals of concern (COC) vapors in the subsurface of the subject property caused by the release of vapors from contaminated soil and/or groundwater either on or near the subject property.

UES conducted a Tier 1 Vapor Encroachment Screening (VES) for the subject property in accordance with ASTM E2600-22. The Tier 1 screening process utilizes the information collected as part of this Phase I ESA. The Area of Concern (AOC) for the purpose of this VES is 1/3 mile (1,760 feet) for COC and 1/10 mile (528 feet) for petroleum hydrocarbon COC. The approximate minimum search distances for Federal, Tribal and State-listed facilities surrounding the subject property are presented in the table below.

Approximate Minimum Search Distance Surrounding the Subject Property (ASTM E2600-22)

Source	COC	Petroleum Hydrocarbon COC
Federal NPL Site List	1/3 mile	1/10 mile
Federal SEMS List	1/3 mile	1/10 mile
Federal RCRA CORRACTS Facilities List	1/3 mile	1/10 mile
Federal RCRA Non-CORRACTS TSD Facilities List	1/3 mile	1/10 mile
Federal RCRA Generators List	Subject Property Only	Subject Property Only
Federal Institutional Control/Engineering Control Registries	Subject Property Only	Subject Property Only
Federal ERNS List	Subject Property Only	Subject Property Only
State and Tribal Equivalent NPL	1/3 mile	1/10 mile
State and Tribal Equivalent SEMS	1/3 mile	1/10 mile
State and Tribal Landfill and/or Solid Waste Disposal Site Lists	1/3 mile	1/10 mile
State and Tribal Leaking UST/AST Lists	1/3 mile	1/10 mile
State and Tribal UST/AST Lists	Subject Property Only	Subject Property Only
State and Tribal Institutional Control/Engineering Control Registries	Subject Property Only	Subject Property Only
State and Tribal Voluntary Cleanup Sites	1/3 mile	1/10 mile
State and Tribal Brownfield Sites	1/3 mile	1/10 mile

Based on our regulatory records review detailed in Section 5.1, facilities with known or suspected contamination are not located within the AOC; therefore, no vapor encroachment conditions were identified in connection with the subject property.

6.0 PHYSICAL SETTING SOURCES

The USGS topographic quadrangle map, soil survey report, and regulatory files available regarding properties of environmental concern in the subject property vicinity were reviewed as sources for obtaining information regarding the physical setting of the subject property and surrounding vicinity.

6.1 TOPOGRAPHY

The USGS topographic quadrangle map titled "Howey In The Hills, FL" was referenced as a source for obtaining information regarding the physical setting of the subject property and surrounding vicinity. The subject property is located at an elevation that ranges between approximately 85 feet to 150 feet above sea level. The existing topography slopes north down gradient toward Lake Harris. A copy of the USGS Quadrangle Map is provided as the Site Location Plan as **Figure 1**.

6.2 SOILS / GEOLOGY

The general geology is characterized by 30 to 50 feet of undifferentiated fine to medium grained sands and clayey sands of Holocene age overlying the Miocene age Hawthorn Group. The Hawthorn is approximately 100 feet thick and is comprised of interbedded layers of clay, clayey sand, sandy clay, and phosphatic carbonates. The underlying Tertiary age carbonates gently dip east under an increasing

thickness of younger sediments. According to the United States Department of Agriculture (USDA), Soil Conservation Service, Soil Survey of Lake County, Florida, the surficial soils of the subject property are classified in the table below. A soil map is provided in **Appendix F**.

Surficial Soil Types

Surficial Soil Type	Drainage Type
Candler sand (0 to 5 percent slopes)	Excessively Drained
Candler sand (5 to 12 percent slopes)	Excessively Drained
Candler sand (12 to 40 percent slopes)	Excessively Drained
Lake Sand (0 to 5 percent slopes)	Excessively Drained
Lake Sand (5 to 12 percent slopes)	Excessively Drained

6.3 HYDROGEOLOGY

The general hydrogeology includes an unconfined surficial aquifer separated from the Floridan aquifer by the Hawthorn Group. The surficial aquifer is recharged by rainfall and can yield small to moderate amounts of water to small diameter wells. The Floridan aquifer may reach 2,000 feet in thickness and is the primary source of the public water supply.

The direction of the surficial aquifer flow usually follows the topography of the land and flows toward surface bodies of water. Actual local groundwater flow direction can be influenced by factors such as surface topography, surface water bodies, underground structures, seasonal fluctuations in rainfall, soil and bedrock geology, and nearby production wells. Site-specific groundwater flow can only be determined by the installation of piezometers.

7.0 INFORMATION FROM SITE RECONNAISSANCE

On Tuesday, November 28, 2023, a site reconnaissance of the subject property was completed by Mr. Chris McCormick of UES. UES was unescorted during the site reconnaissance. The purpose was to evaluate the current conditions of the subject property and to obtain information indicating the likelihood of identifying RECs in connection with the subject property. At the time of UES' site visit, the the weather was clear and sunny.

7.1 METHODOLOGY

The reconnaissance included walking the accessible portions of the subject property and the site perimeter. This visual observation of the subject property focused primarily on its surface features. Adjoining properties were observed from curbside. Property use and significant features are indicated on the Site Plan/2023 Aerial Photograph presented as **Figure 2**. Representative site photographs of the subject property and adjoining parcels are included in **Appendix H**.

7.2 GENERAL SITE SETTING

The general site setting is characterized primarily by agricultural property (vacant), commercial property (golf course, hotel, lodge, resort, and vacant), residential property (homes and vacant), and utility property (public well). The subject property is vacant agricultural land (former citrus grove) containing trees and general vegetation. Access to the subject property is provided by County Road 48 and State Road 19.

7.3 SITE OBSERVATIONS

Site features observed, encountered, or suspected during UES' site visit are summarized in the table below. Affirmative responses are discussed in more detail in the following the table.

Site Reconnaissance Summary

Item	Observed or Encountered			Comments
	Yes	No	Suspect	
Limiting Conditions	☒	☐	☐	Portions of the subject property's ground surface were not viewed due to the presence of tall vegetation and densely wooded areas. Based on the present and historic usage of the subject property, the inability to properly observe these surface features does not appear to constitute a data failure.
Floor Drains	☐	☒	☐	
Building	☐	☒	☐	
Heat/Cooling Source	☐	☒	☐	
Drinking Water Source	☐	☒	☐	
Domestic Wastewater Discharge Source	☐	☒	☐	
Current Tenant Operations	☐	☒	☐	
Past Tenant Operations	☐	☒	☐	
Polychlorinated Biphenyls (PCBs)	☐	☒	☐	
Hazardous Substances and Petroleum Products	☐	☒	☐	
Storage Tanks	☐	☒	☐	
Odors	☐	☒	☐	
Pools of Liquid	☐	☒	☐	
Drums and Containers	☐	☒	☐	
Unidentified Substance Containers	☐	☒	☐	

Site Reconnaissance Summary

Item	Observed or Encountered			Comments
	Yes	No	Suspect	
Stains or Corrosion on Floors, Walls or Ceilings (not including water)	☐	☒	☐	
Sumps	☐	☒	☐	
Impoundments, Pits, Ponds or Lagoons for Waste Disposal or Treatment	☐	☒	☐	
Stained Soil or Pavement	☐	☒	☐	
Stressed Vegetation (not from insufficient water)	☐	☒	☐	
Wells	☐	☒	☐	
Adjacent and Nearby Properties	☐	☒	☐	
Solid Waste, Construction Debris and/or Imported Soil Stockpile	☐	☒	☐	
Other Notable Site Features	☐	☒	☐	

8.0 INTERVIEWS

As part of this Phase I Environmental Site Assessment, interviews were conducted to obtain information indicating recognized environmental conditions in connection with the subject property. The following persons or agencies were contacted for interviews in an effort to obtain information regarding the subject property.

Interview Summary

Represents	Comments
Current Property Owner	Mr. Ryan Lefkowitz with Avanti Management Corporation was interviewed by UES using an Owner Questionnaire (dated November 20, 2023). The owner representative indicated they have owned the subject property for 10 years. He did not identify an indicator that would point to a REC existing on the subject property. A copy of the completed questionnaire is presented in **Appendix I**.
Past Property Owner(s)	Contact information for past owners of the subject property were not supplied to nor found by UES.
Key Site Manager	Mr. Jay Diceglie was identified as the key site manager by the owner representative. He was not available to be interviewed prior to issuing this report.
Occupant	The subject property was unoccupied therefore no occupants were interviewed during the completion of this Phase I ESA.
State Government Agency	UES did not personally contact the Florida Department of Environmental Protection (FDEP). Based on review of FDEP's online OCULUS website and the Waste Cleanup Application, Contamination Locator Map (Map Direct), additional regulatory records pertaining to the subject property were not located. A copy of the map is presented in **Appendix G**.
State Government Agency	A request for records pertaining to the subject property was made to the Florida Department of Health in Lake County. At the time of this report, we have not received a response. A copy of the request is presented in **Appendix I**.
Local Government	Kelley Boeder, Office Associate III with the Lake County Fire Department responded to a request for records pertaining to the subject property. The representative indicated in their email response (dated November 20, 2023), there are no records for the subject property. A copy of the response is presented in **Appendix I**.
Local Government	A request for records pertaining to the subject property was made to the Town of Howie-In-The-Hills. At the time of this report, we have not received a response. A copy of the request is presented in **Appendix I**.
User	Mr. Tom Murray with WindCrest Development Group, Inc. was interviewed by UES using a User Questionnaire (dated November 20, 2023). Refer to Section 2.1 for User Questionnaire responses. A copy of the completed User Questionnaire is presented in **Appendix I**.

9.0 FINDINGS AND OPINIONS

The subject property historically operated as agricultural (citrus grove). Improper or long term application of agricultural chemicals has been shown, at times, to remain in the soil above the recommended exposure levels established by the FDEP. The Phase I Environmental Site Assessment And Limited Soil Evaluation (dated August 13, 2021) indicates soil samples were collected, field analyzed for arsenic, and select samples were laboratory analyzed for agricultural chemicals to address the historical operation as a citrus grove. Soil borings S01, S19, 19A, S20, S36, and S37 appear on the subject property. Soil boring S21 appears on the west adjoining property near the subject property line. A soil sample was collected

from each boring and field analyzed for arsenic and lead utilizing an X-ray fluorescence (XRF) meter. The XRF meter detected an arsenic concentration above 2.1 milligrams per kilogram (mg/kg) at S21. The remaining results were below 2.1 mg/kg. Soil sample S21 was then laboratory analyzed for arsenic and lead. Soil sample S19A was analyzed for Organochlorine Pesticides. The laboratory did not detect any arsenic and pesticide concentrations exceeding Florida Department of Environmental Protection (FDEP) Soil Cleanup Taret Levels (SCTLs). Based on the concentrations being below their SCTLs, the potential for the soil in these areas to be impacted by agricultural chemicals is low. See Section 4.8 for details of the soil evaluation to address this concern.

9.1 Recognized Environmental Conditions

This Phase I ESA has not revealed evidence of recognized environmental conditions (RECs).

9.2 Controlled Recognized Environmental Conditions

No controlled recognized environmental conditions (CRECs) were found for the subject property.

9.3 Historical Recognized Environmental Conditions

No historical recognized environmental conditions (HRECs) were found for the subject property.

9.4 Data Gaps

The following data gaps were encountered during the course of this Phase I ESA:

- Historical information found for the subject property may have exceeded five-year intervals. However, UES believes that this data gap is not considered significant as the specific use of the property and adjoining properties appears unchanged during the period of time that exceeded five years.

- Past owners were not available within reasonable time and/or cost constraints for interview for this report. However, based on information obtained from Environmental Risk Information Services and Lake County records, this data gap is not considered significant since it is likely information obtained would be duplicative of information obtained from other sources.

No significant data gaps that would have impacted our ability to identify RECs were encountered as part of this Phase I ESA.

10.0 CONCLUSIONS

UES has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-21 of the property located north of the County Road 48 intersection with State Road 19 in Howey-In-The-Hills, Lake County, Florida 34737 the subject property. Any exceptions to, or deletions from, this practice are described in Sections 1.2, 1.3 and 1.5 of this report. This assessment has revealed no recognized environmental conditions, controlled recognized environmental conditions, or significant data gaps in connection with the subject property.

The User of this report is required to ensure that continuing obligations are followed after purchase or acquisition of the subject property. Any land use restrictions in effect at the subject property must be maintained. The User should ensure that all parties at the subject property are following best management practices and taking “reasonable steps” with respect to preventing and limiting exposure to

any hazardous substance releases on the subject property. In the event of a future release on the subject property, the property owner or responsible party should report it to the appropriate regulatory agency.

11.0 DEVIATIONS

UES prepared this Phase I ESA in compliance with ASTM E1527-21.

12.0 ADDITIONAL SERVICES

Under the terms of the agreement between UES and Publix Super Markets Inc., no other services beyond the Phase I ESA were performed as part of this assessment.

13.0 REFERENCES

13.1 STANDARDS

ATSM International, Standard Practice for: Environmental Site Assessments: Phase I Environmental Site Assessment Process, Designation E 1527-21.

ATSM International, Standard Practice for: Vapor Encroachment Screening on Property Involved In Real Estate Transactions, Designation E2600-22.

13.2 PROPERTY RECORDS

Lake County Property Appraisers, Property Records, Legal Description(s), Zoning and Land Use Information. Available online at: http://lakecopropappr.com

13.3 REGULATORY AND HISTORICAL RESOURCES

Environmental Risk Information Services; Regulatory Database Report, Historical Aerials, USGS Topographic Map, and City Directories Order No. 23112000568 dated November 22, 2023.

United States Environmental Protection Agency, Facility Registry System (FRS). Available on-line at: https://enviro.epa.gov/facts/myproperty/

OCULUS Electronic Document Management System, FDEP Regulatory Files Review for Storage Tanks, Hazardous Waste, Solid Waste and Waste Cleanup Program Areas. Available on-line at: https://depedms.dep.state.fl.us/Oculus/servlet/login

Florida Department of Environmental Protection, Map Direct Application (Groundwater Delineation Map). Available on-line at: https://ca.dep.state.fl.us/mapdirect/?focus=grndwtr_dl

Florida Department of Environmental Protection, Map Direct Application (Contamination Locator Map). Available on-line at:
https://ca.dep.state.fl.us/mapdirect/?webmap=bdfa237157c7426a8f552e40a741685e

University of Florida Digital Collections website, Aerial Photograph Collection.
Available online at: http://ufdc.ufl.edu/aerials.
Photographs: 1941, 1947, 1958, and 1974.

Florida Department of Transportation website, Aerial Photograph Collection.
Available online at: http://www.dot.state.fl.us/surveyingandmapping/aerialmain.shtm.
Photographs: 1972, 1983, and 1995.

Google Earth
Photographs: 1999, 2004, 2008, 2013, 2017, and 2023.

13.4 PHYSICAL SETTING SOURCES

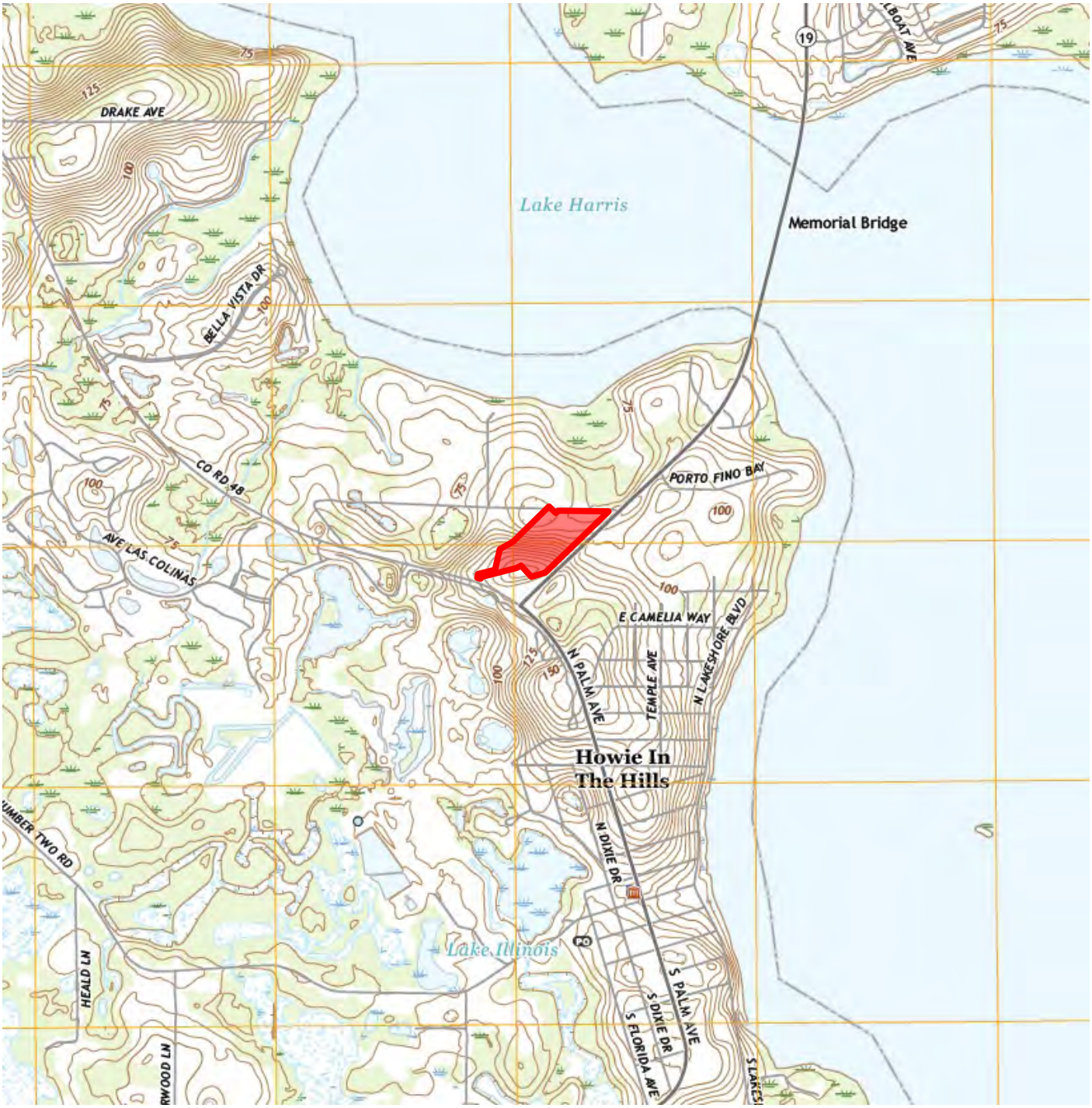
United States Geological Survey, Digital US Topographic Maps, 7.5-Minute Quadrangle Map "Howey In The Hills, FL," dated 2021. Available online at: http://www.usgs.gov/

United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (WSS). Available online at: http://websoilsurvey.nrcs.usda.gov/app/

USDA NRCS Soil Survey off Lake County Area, Florida, dated April 1975.

FIGURES

Grounded in Excellence



Legend

Subject Property

Image Source: 2021 USGS Quadrangle Maps “Howey In The Hills, FL"

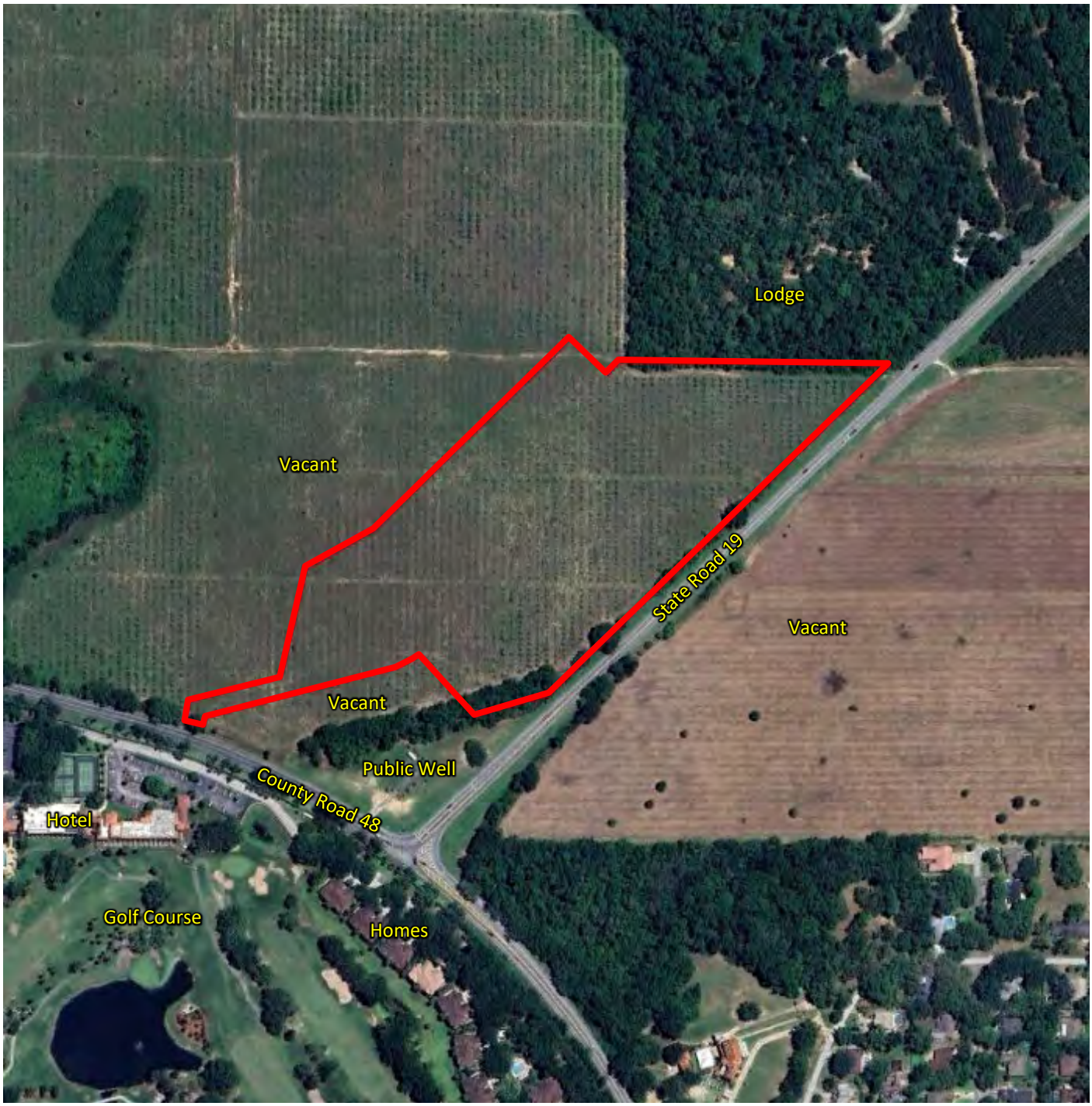
Publix Retail Development
North of County Road 48 and State Road 19
Howey-In-The-Hills, Lake County, Florida 34737

SITE LOCATION PLAN

Figure No: 1

Scale: 1” = 2,000’

Date: December 1, 2023 | Project No: 0140.2300323.0000 | Report No: 2056537



Legend

Subject Property

Note: 2023 Image provided by Google Earth

Publix Retail Development
North of County Road 48 and State Road 19
Howey-In-The-Hills, Lake County, Florida 34737

SITE PLAN

Figure No: 1

Scale: 1" = 430'

Date: December 1, 2023

Project No: 0140.2300323.0000

Report No: 2056537

APPENDIX A

Grounded in Excellence

LAND USE TABLE:

SITE AREA	OWNERSHIP	MAINTENANCE	AREA (AC)	AREA (%)
GROCERY RETAIL	PRIVATE	PRIVATE	9.13	47.59%
OUTPARCEL A	PRIVATE	PRIVATE	3.58	18.63%
OUTPARCEL B	PRIVATE	PRIVATE	0.97	5.07%
OUTPARCEL C	PRIVATE	PRIVATE	1.09	5.69%
OUTPARCEL D	PRIVATE	PRIVATE	2.33	12.13%
SHARED ENTRANCE ROAD	PRIVATE	PRIVATE	0.96	4.99%
PUBLIC RIGHT-OF-WAY	PUBLIC	PUBLIC	1.13	5.90%
TOTAL			19.19	100.00%

SITE DATA:

PARCEL ID: 23-20-25-0002-000-01100
JURISDICTION: HOWEY-IN-THE-HILLS
ZONING: PUD
GROSS SITE AREA: 19.19 ACRES ±

TOTAL BUILDING S.F.: 61,300 SF

FLOOR AREA RATIO:
- MAXIMUM: 0.23 (PER OVERALL PD)
- PROPOSED: TO BE DETERMINED WITH FINAL SITE PLAN

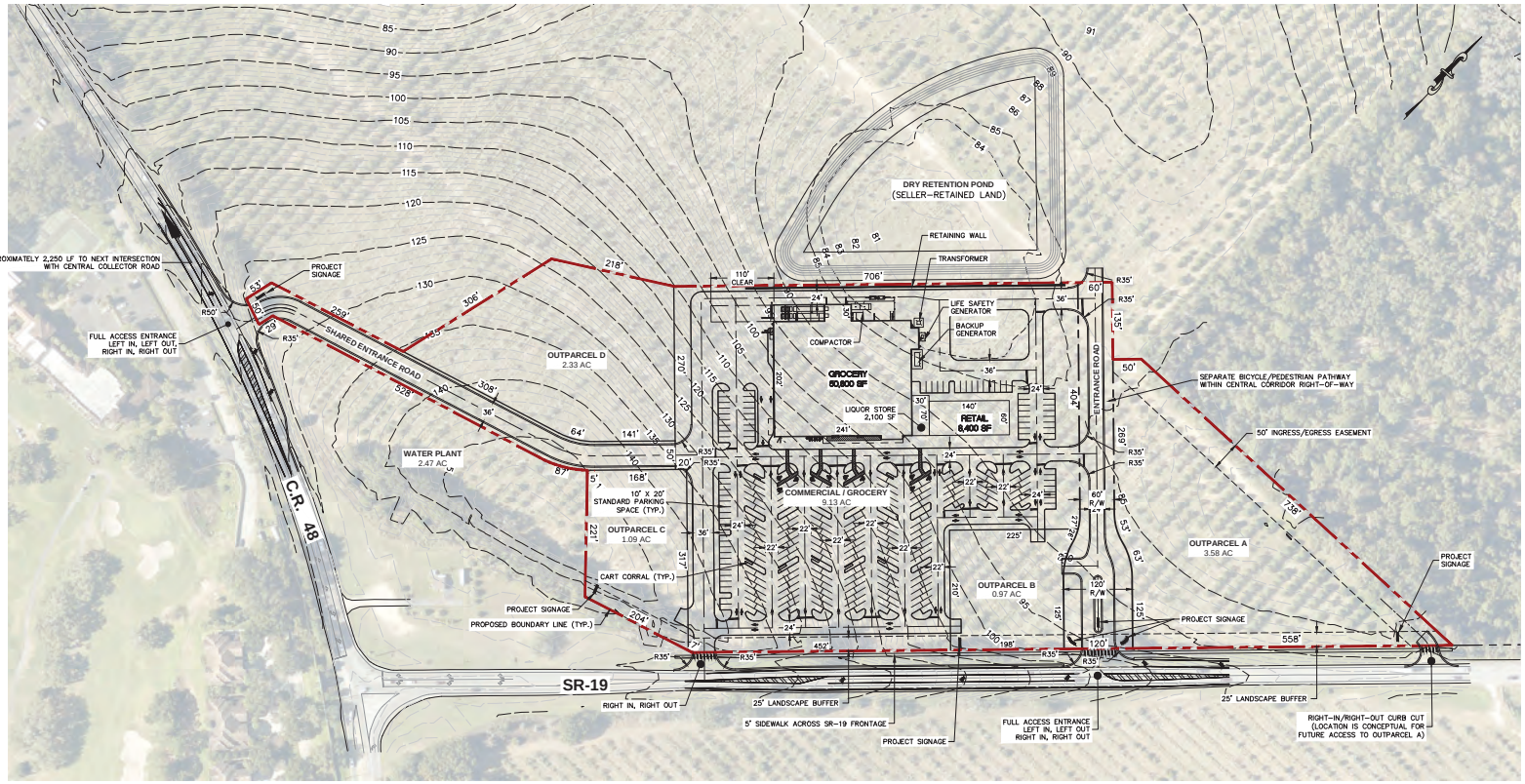
MAX BUILDING HEIGHT: 35 FT (45 FT FOR PARAPETS, TOWERS, ETC.)

PARKING:
- REQUIRED: 306 SPACES
  5 SPACES PER 1,000SF OF BUILDING. AREA
  (61,300 SF / 1,000 SF) * 5 = 306 SPACES MIN.
- PROVIDED: 326 SPACES PROVIDED

OPEN SPACE:
- REQUIRED: 40 ACRES ON OVERALL PD
- PROVIDED: 0 (ZERO) ACRES. THIS PROJECT IS NOT CONTRIBUTING TO THE OVERALL OPEN SPACE COMMITMENT AS DEFINED UNDER SECTION 5.D OF THE PUD.

DEDICATIONS & RESERVATIONS: 1.13 AC TO BE DEDICATED AS PUBLIC RIGHT-OF-WAY

GRAPHIC SCALE
100 0 50 100 200
(IN FEET)
1 inch = 100 ft.



MADDEN
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330

PRELIMINARY SITE PLAN
FOR
LAKE HILLS SHOPPING CENTER
TOWN OF HOWEY IN THE HILLS FLORIDA

WINDCREST DEVELOPMENT GROUP, INC.
605 E. ROBINSON ST. SUITE 340
ORLANDO, FL 32801
407-219-3540

ENGINEER'S CERTIFICATE OF AUTHORIZATION NO. EC 0007723
BENJAMIN R. BEECHAM LICENSE No. 79452 STATE OF FLORIDA PROFESSIONAL ENGINEER 2023

DATE	REVISIONS
11/7/23	REVISED PER HOWEY DRC COMMENTS

JOB # 22041
DATE: 09/29/23
SCALE: 1" = 100'
DESIGNED BY: JAL
DRAWN BY: JAL
APPROVED BY: BSB

C100

H:\Data\22041\Eng\PSP\22041_C100_PSP.dwg November 16, 2023 11:06 AM

PROPERTY RECORD CARD

General Information

Name:	LAKE HARRIS (ORLANDO) ASLI VII OWNER #1 LLC	**Alternate Key:**	1780438
Mailing Address:	923 N PENNSYLVANIA AVE WINTER PARK, FL 32789 *Update Mailing Address*	**Parcel Number:**	23-20-25-0004-000-00200
		Millage Group and City:	000H Howey in the Hills
		2023 Total Certified Millage Rate:	20.4342
		Trash/Recycling/Water/Info:	*My Public Services Map*
Property Location:	COUNTY ROAD 48 HOWEY IN THE HILLS FL, 34737	**Property Name:**	-- *Submit Property Name*
		School Information:	*School Locator & Bus Stop Map* *School Boundary Maps*
Property Description:	GOV LOTS 2, 4, 5, GOV LOTS 6, 7, N OF HWY 48, GOV LOT 8 N OF HWY 48 & W'LY OF HWY 19, GOV LOT 9 W'LY OF HWY 19 IN SECTION 23 TOWNSHIP 20 SOUTH RANGE 25 EAST--LESS BEG AT SE COR OF NW 1/4 OF SE 1/4, RUN N 00DEG 04MIN 21SEC E 1314.20 FT TO S'LY WATERS EDGE OF LAKE HARRIS & PT A, RETURN TO POB, RUN S 89DEG 35MIN 28SEC W 1100 FT, N 00DEG 27MIN 54SEC E 1484.76 FT TO S'LY WATERS EDGE OF LAKE HARRIS, THENCE E'LY ALONG SAID S'LY WATERS OF LAKE HARRIS TO PT A & LESS FROM THE SOUTHWEST CORNER OF THE SOUTHEAST 1/4 OF THE SOUTHEAST 1/4 OF SAID SECTION 23, AND ALSO THE SOUTHEAST CORNER OF GOVERNMENT LOT 8 RUN THENCE NORTHERLY ALONG THE EAST LINE OF SAID LOT 8 A DISTANCE OF 567.40 FEET TO THE CENTERLINE OF STATE ROAD 459, RUN THENCE SOUTH 46-47-00 WEST ALONG SAID CENTERLINE 259.13 FEET, NORTH 43-13-00 WEST 50 FEET FOR THE POINT OF BEGINNING, RUN SOUTH 74-54-00 WEST 742.75 FEET TO A POINT ON THE NORTH RIGHT OF WAY LINE OF STATE ROAD 48, RUN THENCE EASTERLY ALONG SAID NORTH RIGHT OF WAY LINE 363.60 FEET TO THE POINT OF INTERSECTION OF SAID NORTH RIGHT OF WAY LINE WITH THE WESTERLY RIGHT OF WAY LINE OF STATE ROAD 459, RUN THENCE NORTH 46-47-00 EAST 558.50 FEET ALONG SAID WESTERLY RIGHT OF WAY LINE TO THE POINT OF BEGINNING OF ADDITIONAL ROAD RIGHT OF WAY & LESS FROM THE SOUTHWEST CORNER OF THE SOUTHWEST 1/4 OF SECTION 23 TOWNSHIP 20 SOUTH RANGE 25 EAST RUN NORTH 00-53-14 EAST 1171.08 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY LINE OF COUNTY ROAD 48, SAID POINT LYING ON A CURVE CONCAVE NORTHEASTERLY HAVING A RADIUS OF 5679.58 FEET AND A CHORD BEARING AND DISTANCE OF SOUTH 69-35-43 EAST 1186.12 FEET, THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT AND SAID NORTHERLY RIGHT OF WAY LINE 1188.29 FEET, SOUTH 75-35-20 EAST ALONG SAID NORTHERLY RIGHT OF WAY LINE 1460.31 FEET TO A OINT OF CURVATURE OF A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 2341.83 FEET AND A CHORD BEARING AND DISTANCE OF SOUTH 72-35-58 EAST 223.25 FEET, THENCE ALONG THE ARC OF SAID CURVE TO THE RIGHT AND ALONG SAID NORTHERLY RIGHT OF WAY LINE 223.33 FEET TO THE POINT OF BEGINNING, THENCE LEAVING		

	SAID NORTHERLY RIGHT OF WAY LINE NORTH 15-36-38 EAST 52.62 FEET, NORTH 75-08-12 EAST 258.80 FEET, NORTH 75-51-45 EAST 298.35 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE NORTHWESTERLY HAVING A RADIUS OF 133.42 FEET AND A CHORD BEARING AND DISTANCE OF NORTH 62-15-27 EAST 62.77 FEET, THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT, A DISTANCE OF 63.36 FEET, THENCE SOUTH 41-20-52 EAST 270.88 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY LINE OF STATE ROAD 19, THENCE SOUTH 75-06-54 WEST ALONG SAID NORTHERLY RIGHT OF WAY LINE 531.94 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY LINE OF COUNTY ROAD 48 AND A POINT ON A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 2341.83 FEET AND A CHORD BEARING AND DISTANCE OF NORTH 66-12-04 WEST 299.49 FEET, THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT AND ALONG SAID NORTHERLY RIGHT OF WAY LINE 299.69 FEET TO THE POINT OF BEGINNING--ORB 4394 PG 1276

NOTE: This property description is a condensed/abbreviated version of the original description as recorded on deeds or other legal instruments in the public records of the Lake County Clerk of Court. It may not include the Public Land Survey System's Section, Township, Range information or the county in which the property is located. It is intended to represent the land boundary only and does not include easements or other interests of record. This description should not be used for purposes of conveying property title. The Property Appraiser assumes no responsibility for the consequences of inappropriate uses or interpretations of the property description.

Land Data

Line	Land Use	Frontage	Depth	Notes	No. Units	Type	Class Value	Land Value
1	WETLAND (9600)	0	0		10.530	Acre	$474.00	$474.00
2	ACREAGE - NON AGRICULTURAL (9900)	0	0		144.180	Acre	$2,162,700.00	$2,162,700.00

Click here for Zoning Info Map FEMA Flood

Miscellaneous Improvements

There is no improvement information to display.

Sales History

NOTE: This section is not intended to be a complete chain of title. Additional official book/page numbers may be listed in the property description above and/or recorded and indexed with the Clerk of Court. Follow this link to search all documents by owner's name..

Book/Page	Sale Date	Instrument	Qualified/Unqualified	Vacant/Improved	Sale Price
4394 / 1276	10/2013	Warranty Deed	Unqualified	Vacant	$5,775,500.00
3847 / 276	11/2009	Quit Claim Deed	Unqualified	Vacant	$100.00
1594 / 1451	03/1998	Quit Claim Deed	Unqualified	Vacant	$1.00
1594 / 1447	03/1998	Personal Rep Deed	Unqualified	Vacant	$1.00
1230 / 311	05/1993	Trustees Deed	Unqualified	Vacant	$1.00

Click here to search for mortgages, liens, and other legal documents.

Values and Estimated Ad Valorem Taxes

Values shown below are 2024 WORKING VALUES that are subject to change until certified.

Tax Authority	Market Value	Assessed Value	Taxable Value	Millage	Estimated Taxes
LAKE COUNTY BCC GENERAL FUND	$2,163,174	$2,163,174	$2,163,174	5.0364	$10,894.61
SCHOOL BOARD STATE	$2,163,174	$2,163,174	$2,163,174	3.2080	$6,939.46
SCHOOL BOARD LOCAL	$2,163,174	$2,163,174	$2,163,174	2.9980	$6,485.20

LAKE COUNTY WATER AUTHORITY	$2,163,174	$2,163,174	$2,163,174	0.2940	$635.97
NORTH LAKE HOSPITAL DIST	$2,163,174	$2,163,174	$2,163,174	0.1500	$324.48
ST JOHNS RIVER FL WATER MGMT DIST	$2,163,174	$2,163,174	$2,163,174	0.1793	$387.86
TOWN OF HOWEY IN THE HILLS	$2,163,174	$2,163,174	$2,163,174	7.5000	$16,223.81
LAKE COUNTY MSTU AMBULANCE	$2,163,174	$2,163,174	$2,163,174	0.4629	$1,001.33
LAKE COUNTY VOTED DEBT SERVICE	$2,163,174	$2,163,174	$2,163,174	0.0918	$198.58
LAKE COUNTY MSTU FIRE	$2,163,174	$2,163,174	$2,163,174	0.5138	$1,111.44
				Total: 20.4342	**Total:** $44,202.74

Exemptions Information

This property is benefitting from the following exemptions with a checkmark ✓

Homestead Exemption (first exemption up to $25,000)	Learn More	View the Law
Additional Homestead Exemption (up to an additional $25,000)	Learn More	View the Law
Limited Income Senior Exemption (applied to county millage - up to $50,000)	Learn More	View the Law
Limited Income Senior Exemption (applied to city millage - up to $25,000)	Learn More	View the Law
Limited Income Senior 25 Year Residency (county millage only-exemption amount varies)	Learn More	View the Law
Widow / Widower Exemption (up to $5,000)	Learn More	View the Law
Blind Exemption (up to $500)	Learn More	View the Law
Disability Exemption (up to $5,000)	Learn More	View the Law
Total and Permanent Disability Exemption (amount varies)	Learn More	View the Law
Veteran's Disability Exemption ($5,000)	Learn More	View the Law
Veteran's Total and Permanent Disability Exemption (amount varies)	Learn More	View the Law
Veteran's Combat Related Disability Exemption (amount varies)	Learn More	View the Law
Deployed Servicemember Exemption (amount varies)	Learn More	View the Law
First Responder Total and Permanent Disability Exemption (amount varies)	Learn More	View the Law
Surviving Spouse of First Responder Exemption (amount varies)	Learn More	View the Law
Conservation Exemption (amount varies)	Learn More	View the Law
Tangible Personal Property Exemption (up to $25,000)	Learn More	View the Law
Religious, Charitable, Institutional, and Organizational Exemptions (amount varies)	Learn More	View the Law
Economic Development Exemption	Learn More	View the Law
Government Exemption (amount varies)	Learn More	View the Law

Site Notice

November 20, 2023

1:7,500

0 0.05 0.1 0.2 mi

0 0.1 0.2 0.4 km

pointLayer

Override 1

polygonLayer

Override 1

County Boundary

Surrounding Counties

Street Names

Local Streets 10K

Tax Parcels Alternate Key

Tax Parcels

Lake BCC

APPENDIX B

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ERIS

HISTORICAL AERIALS

Project Property: North of County Road 48 and
State Road 19
North of County Road 48 and State Road 19
Howey-in-the-Hills FL

Project No: 0140.2300323.0000

Requested By: Universal Engineering Sciences

Order No: 23112000568

Date Completed: November 22,2023

Environmental Risk Information Services
A division of Glacier Media Inc.
1.866.517.5204 | info@erisinfo.com | erisinfo.com

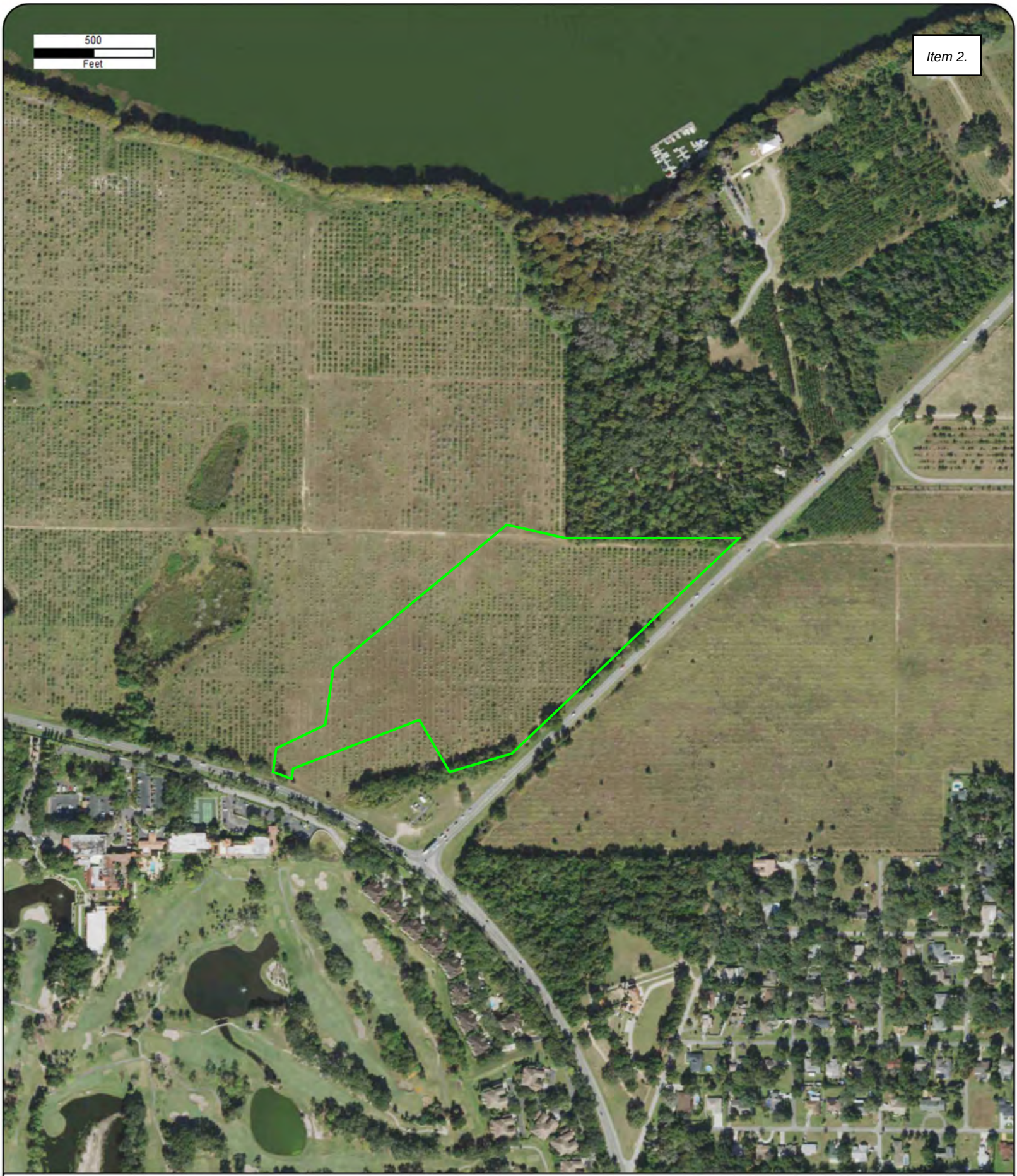
Date	Source	Scale	Comments
2022	MAXAR TECHNOLOGIES	1" = 500'	
2021	United States Department of Agriculture	1" = 500'	
2019	United States Department of Agriculture	1" = 500'	
2017	United States Department of Agriculture	1" = 500'	
2015	United States Department of Agriculture	1" = 500'	
2013	United States Department of Agriculture	1" = 500'	
2010	United States Department of Agriculture	1" = 500'	
2007	United States Department of Agriculture	1" = 500'	
2006	United States Department of Agriculture	1" = 500'	
2005	United States Department of Agriculture	1" = 500'	
1999	United States Geological Survey	1" = 500'	
1994	United States Geological Survey	1" = 500'	
1983	Florida Department of Transportation	1" = 500'	
1979	Florida Department of Transportation	1" = 500'	
1972	Florida Department of Transportation	1" = 500'	
1966	United States Geological Survey	1" = 500'	
1958	Agricultural Stabilization & Conserv. Service	1" = 500'	
1952	United States Geological Survey	1" = 500'	
1947	Agricultural Stabilization & Conserv. Service	1" = 500'	
1941	Agricultural Stabilization & Conserv. Service	1" = 500'	

Year: 2022
Source: MAXAR
Scale: 1" = 500'
Comment:

Address: North of County Road 48 and State Road 19, Howey-in-the-Hills, FL
Approx Center: -81.77686616,28.72729546

Order No: 23112000568

ERIS



Year: 2021
Source: USDA
Scale: 1" = 500'
Comment:

Address: North of County Road 48 and State Road 19, Howey-in-the-Hills, FL
Approx Center: -81.77686616,28.72729546

Order No: 23112000568

ERIS

Year: 2019
Source: USDA
Scale: 1" = 500'
Comment:

Address: North of County Road 48 and State Road 19, Howey-in-the-Hills, FL
Approx Center: -81.77686616,28.72729546

Order No: 23112000568

ERIS

Year: 2017
Source: USDA
Scale: 1" = 500'
Comment:

Address: North of County Road 48 and State Road 19,
Howey-in-the-Hills, FL
Approx Center: -81.77686616,28.72729546

Order No: 23112000568

ERIS

Year: 2015
Source: USDA
Scale: 1" = 500'
Comment:

Address: North of County Road 48 and State Road 19,
Howey-in-the-Hills, FL
Approx Center: -81.77686616,28.72729546

Order No: 23112000568

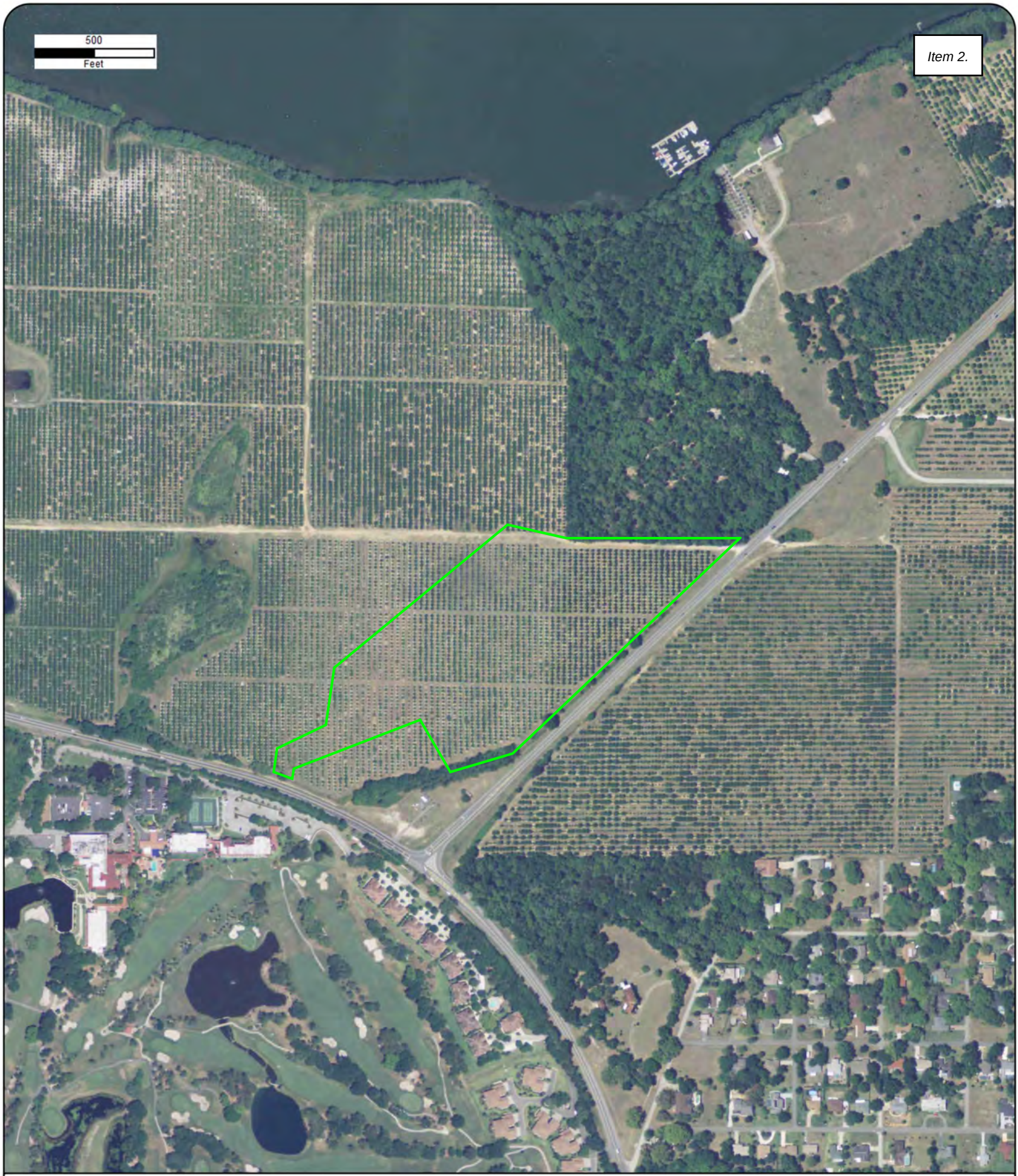
ERIS

Year: 2013
Source: USDA
Scale: 1" = 500'
Comment:

Address: North of County Road 48 and State Road 19, Howey-in-the-Hills, FL
Approx Center: -81.77686616,28.72729546

Order No: 23112000568

ERIS

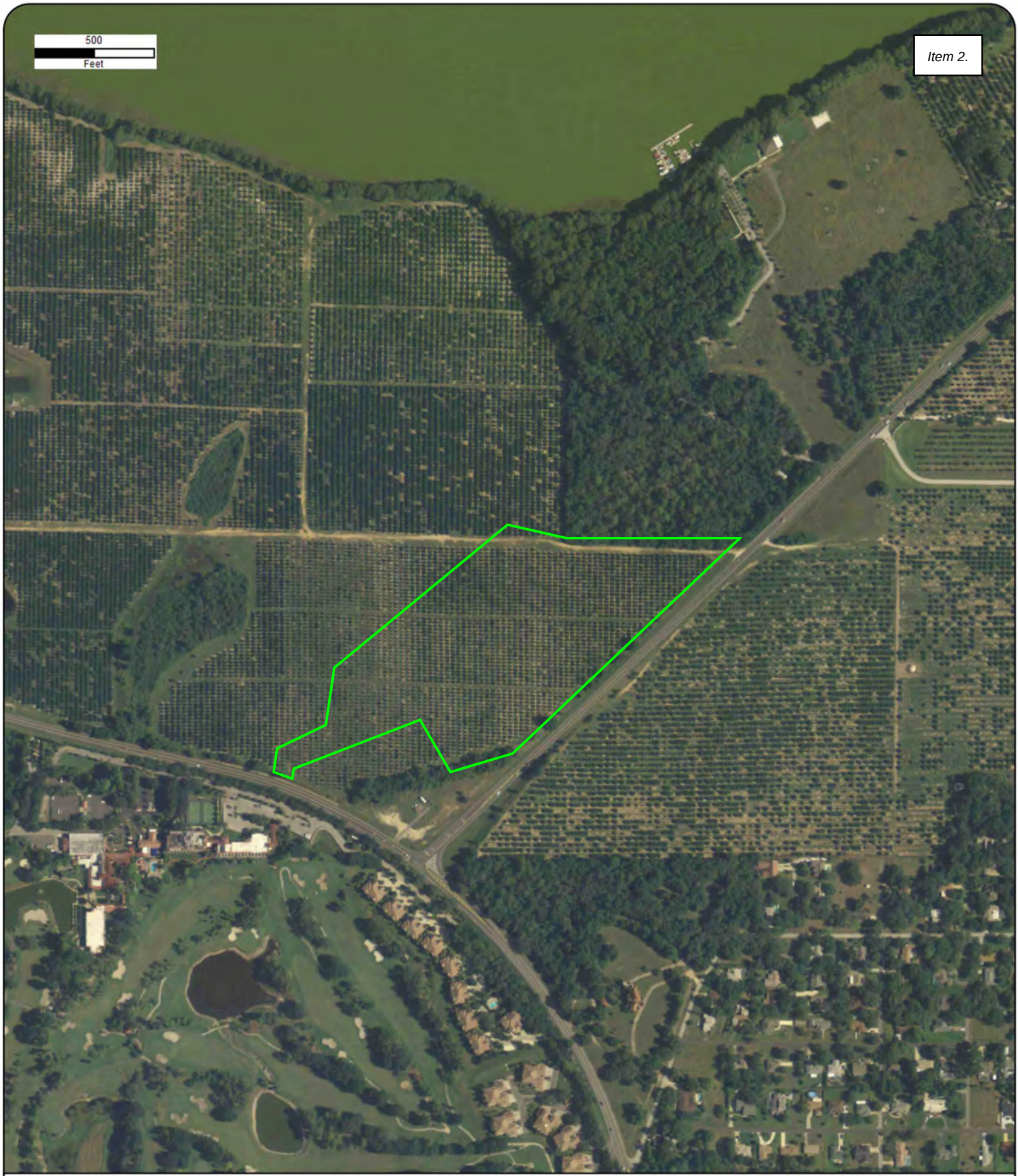


Year: 2010
Source: USDA
Scale: 1" = 500'
Comment:

Address: North of County Road 48 and State Road 19,
Howey-in-the-Hills, FL
Approx Center: -81.77686616,28.72729546

Order No: 23112000568

ERIS



Year: 2007
Source: USDA
Scale: 1" = 500'
Comment:

Address: North of County Road 48 and State Road 19, Howey-in-the-Hills, FL
Approx Center: -81.77686616,28.72729546

Order No: 23112000568

ERIS

Year: 2006
Source: USDA
Scale: 1" = 500'
Comment:

Address: North of County Road 48 and State Road 19,
Howey-in-the-Hills, FL
Approx Center: -81.77686616,28.72729546

Order No: 23112000568

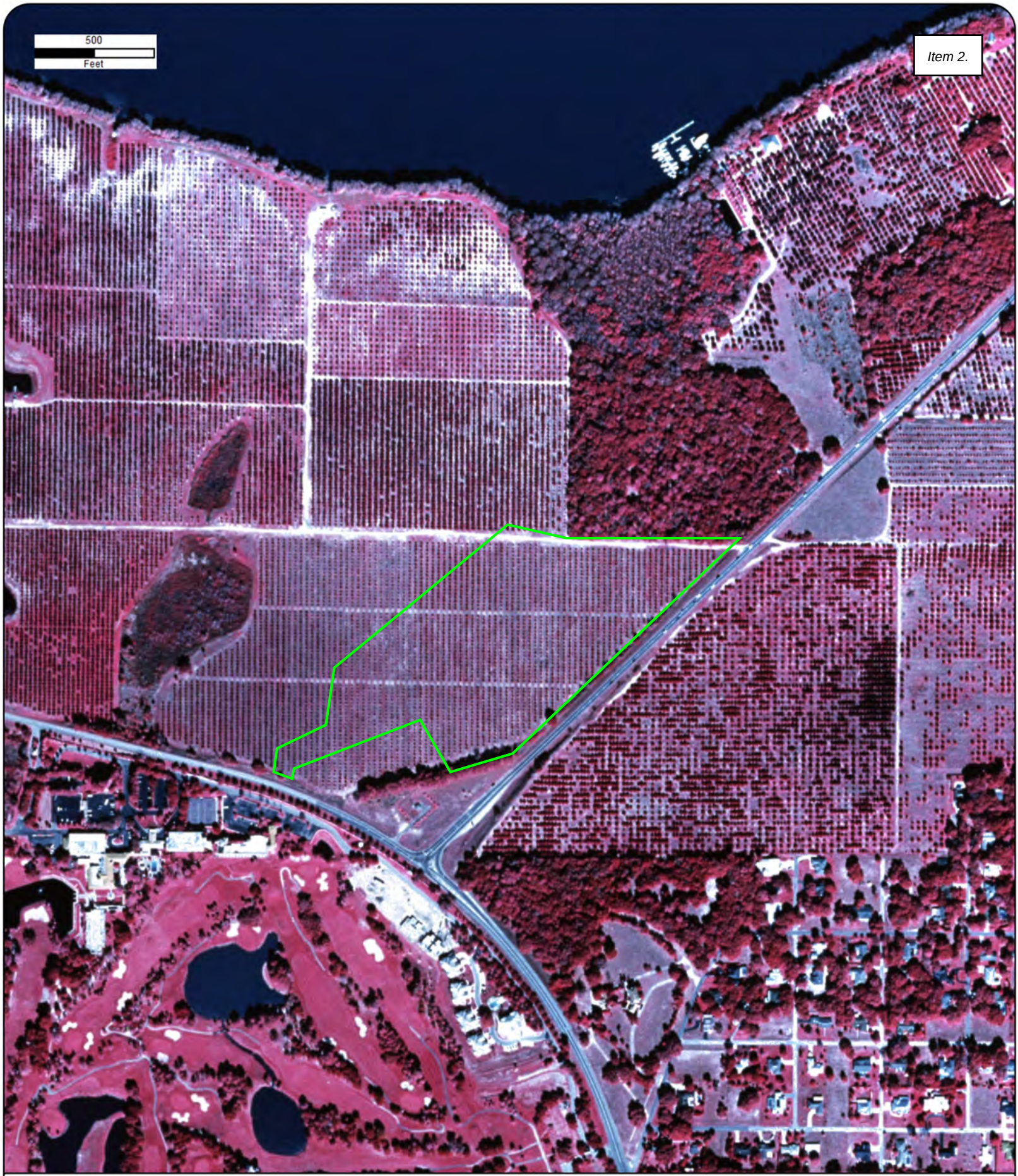
ERIS

Year: 2005
Source: USDA
Scale: 1" = 500'
Comment:

Address: North of County Road 48 and State Road 19, Howey-in-the-Hills, FL
Approx Center: -81.77686616,28.72729546

Order No: 23112000568

ERIS



Year: 1999
Source: USGS
Scale: 1" = 500'
Comment:

Address: North of County Road 48 and State Road 19, Howey-in-the-Hills, FL
Approx Center: -81.77686616,28.72729546

Order No: 23112000568

ERIS

Year: 1994
Source: USGS
Scale: 1" = 500'
Comment:

Address: North of County Road 48 and State Road 19,
Howey-in-the-Hills, FL
Approx Center: -81.77686616,28.72729546

Order No: 23112000568

ERIS

Year: 1983
Source: FDOT
Scale: 1" = 500'
Comment:

Address: North of County Road 48 and State Road 19, Howey-in-the-Hills, FL
Approx Center: -81.77686616,28.72729546

Order No: 23112000568

ERIS

Year: 1979
Source: FDOT
Scale: 1" = 500'
Comment:

Address: North of County Road 48 and State Road 19, Howey-in-the-Hills, FL
Approx Center: -81.77686616,28.72729546

Order No: 23112000568

ERIS

Year: 1972
Source: FDOT
Scale: 1" = 500'
Comment:

Address: North of County Road 48 and State Road 19, Howey-in-the-Hills, FL
Approx Center: -81.77686616,28.72729546

Order No: 23112000568

ERIS

Year: 1966
Source: USGS
Scale: 1" = 500'
Comment:

Address: North of County Road 48 and State Road 19, Howey-in-the-Hills, FL
Approx Center: -81.77686616,28.72729546

Order No: 23112000568

ERIS

Year: 1958
Source: ASCS
Scale: 1" = 500'
Comment:

Address: North of County Road 48 and State Road 19, Howey-in-the-Hills, FL
Approx Center: -81.77686616,28.72729546

Order No: 23112000568

Year: 1952
Source: USGS
Scale: 1" = 500'
Comment:

Address: North of County Road 48 and State Road 19, Howey-in-the-Hills, FL
Approx Center: -81.77686616,28.72729546

Order No: 23112000568

ERIS

Year: 1947
Source: ASCS
Scale: 1" = 500'
Comment:

Address: North of County Road 48 and State Road 19, Howey-in-the-Hills, FL
Approx Center: -81.77686616,28.72729546

Order No: 23112000568

Year: 1941
Source: ASCS
Scale: 1" = 500'
Comment:

Address: North of County Road 48 and State Road 19, Howey-in-the-Hills, FL
Approx Center: -81.77686616,28.72729546

Order No: 23112000568

APPENDIX C

UES™

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TOPOGRAPHIC MAPS

Project Property:	North of County Road 48 and State Road■19 North of County Road 48 and State Road 19 Howey-in-the-Hills FL None
Project No:	0140.2300323.0000
Requested By:	Universal Engineering Sciences
Order No:	23112000568
Date Completed:	November 22, 2023

Environmental Risk Information Services
A division of Glacier Media Inc.
1.866.517.5204 | info@erisinfo.com | erisinfo.com

We have searched USGS collections of current topographic maps and historical topographic maps for the project property. Below is a list of maps found for the project property and adjacent area. Maps are from 7.5 and 15 minute topographic map series, if available.

Year	Map Series
2021	7.5
2015	7.5
1969	7.5

Topographic Map Symbology for the maps may be available in the following documents:

Pre-1947

Page 223 of 1918 Topographic Instructions

Page 130 of 1928 Topographic Instructions

1947-2009

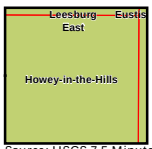
Topographic Map Symbols

2009-present

US Topo Map Symbols

2021

Order No. 23112000568

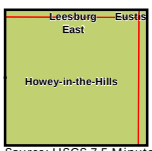


Available Quadrangle(s): Howey In The Hills, FL
Leesburg East, FL

Source: USGS 7.5 Minute Topographic Map

2015

Order No. 23112000568



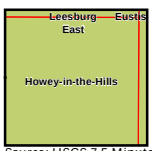
Available Quadrangle(s): Howey In The Hills, FL
Leesburg East, FL

Source: USGS 7.5 Minute Topographic Map

1969 (1-1969)

Aerial Photo Year: 1966

Order No. 23112000568



Available Quadrangle(s): Howey In The Hills, FL (1-1969)

Source: USGS 7.5 Minute Topographic Map

APPENDIX D

Grounded in Excellence

ERIS

FIRE INSURANCE MAPS

Project Property:	North of County Road 48 and State Road 19 North of County Road 48 and State Road 19 Howey-in-the-Hills FL
Project No:	0140.2300323.0000
Requested By:	Universal Engineering Sciences
Order No:	23112000568
Date Completed:	November 21, 2023

Please note that no information was found for your site or adjacent properties.

Environmental Risk Information Services
A division of Glacier Media Inc.
1.866.517.5204 | info@erisinfo.com | erisinfo.com

APPENDIX E

UES™

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CITY DIRECTORY

Project Property:	*North of County Road 48 and State Road 19* *North of County Road 48 and State Road 19* *Howey-in-the-Hills,FL*
Project No:	*0140.2300323.0000*
Requested By:	*Universal Engineering Sciences*
Order No:	*23112000568*
Date Completed:	*November 28, 2023*

November 28, 2023
RE: CITY DIRECTORY RESEARCH
North of County Road 48 and State Road 19
Howey-in-the-Hills,FL

Thank you for contacting ERIS for an City Directory Search for the site described above. Our staff has conducted a reverse listing City Directory search to determine prior occupants of the subject site and adjacent properties. We have provided the nearest addresses(s) when adjacent addresses are not listed. If we have searched a range of addresses, all addresses in that range found in the Directory are included.

Note: Reverse Listing Directories generally are focused on more highly developed areas. Newly developed areas may be covered in the more recent years, but the older directories will tend to cover only the "central" parts of the city. To complete the search, we have either utilized the ACPL, Library of Congress, State Archives, and/or a regional library or history center as well as multiple digitized directories. These do not claim to be a complete collection of all reverse listing city directories produced.

ERIS has made every effort to provide accurate and complete information but shall not be held liable for missing, incomplete or inaccurate information. To complete this search we used the general range(s) below to search for relevant findings. If you believe there are additional addresses or streets that require searching please contact us at 866-517-5204.

Search Criteria:
10000-11000 of County Rd 48
26300-End of State Rd 19
Search Notes:

Search Results Summary

Date	Source	Comment
2022	DIGITAL BUSINESS DIRECTORY	
2020	DIGITAL BUSINESS DIRECTORY	
2016	DIGITAL BUSINESS DIRECTORY	
2012	DIGITAL BUSINESS DIRECTORY	
2008	DIGITAL BUSINESS DIRECTORY	
2003	DIGITAL BUSINESS DIRECTORY	
2000	DIGITAL BUSINESS DIRECTORY	
1996	POLKS	

2022 COUNTY RD 48

SOURCE: DIGITAL BUSINESS DIRECTORY

10400 **BRITTANY UNGARO**...*RESIDENTIAL*
10400 **DOROTHY LIEBL**...*RESIDENTIAL*
10400 **EL CAMPEON GOLF COURSE**...*GOLF COURSES*
10400 **EL CONQUISTADOR RESTAURANT**...*RESTAURANTS*
10400 **GARY GILCHRIST GOLF ACADEMY**...*GOLF INSTRUCTION*
10400 **GROSS WELCH P C**...*LEGAL SERVICES*
10400 **LA HACIENDA**...*RESTAURANTS*
10400 **LA HACIENDA RESTAURANT**...*FOODSCARRY OUT*
10400 **LA HACIENDA RESTAURANT**...*RESTAURANTS*
10400 **LAS COLINAS GOLF COURSE**...*GOLF COURSES*
10400 **MISSION INN GOLF PRO SHOP**...*GOLF EQUIPMENT & SUPPLIES-RETAIL*
10400 **MISSION INN RESORT CLUB**...*GOLF COURSES*
10400 **MISSION INN RESORT CLUB**...*GOLF PRACTICE RANGES*
10400 **MISSION REAL ESTATE**...*REAL ESTATE*
10400 **NICKER'S RESTAURANT**...*RESTAURANTS*
10400 **NICKER'S RESTAURANT**...*FOODSCARRY OUT*
10400 **PACKING HOUSE BY PRODUCTS CO**...*PACKING & CRATING SERVICE*
10400 **SPA MARBELLA**...*PATIO & DECK BUILDERS*
10400 **SPA MARBELLA**...*SPAS-BEAUTY & DAY*

2022 STATE RD 19

SOURCE: DIGITAL BUSINESS DIRECTORY

26336 **POTOMAC LAND CORP**...*REAL ESTATE*
26336 **RICHARD JOYCE**...*RESIDENTIAL*
26533 **DAVID ROGERS**...*RESIDENTIAL*

2020 COUNTY RD 48

SOURCE: DIGITAL BUSINESS DIRECTORY

10400 **DOROTHY LIEBL**...*RESIDENTIAL*
10400 **EL CONQUISTADOR RESTAURANT**...*RESTAURANTS*
10400 **GARY GILCHRIST GOLF ACADEMY**...*GOLF INSTRUCTION*
10400 **GROSS WELCH P C**...*LEGAL SERVICES*
10400 **LA HACIENDA RESTAURANT**...*RESTAURANTS*
10400 **LA HACIENDA RESTAURANT**...*FOODSCARRY OUT*
10400 **MISSION INN GOLF PRO SHOP**...*GOLF EQUIPMENT & SUPPLIES-RETAIL*
10400 **MISSION INN RESORT CLUB**...*GOLF PRACTICE RANGES*
10400 **MISSION INN RESORT CLUB**...*GOLF COURSES*
10400 **MISSION REAL ESTATE**...*REAL ESTATE*
10400 **NICKER'S RESTAURANT**...*RESTAURANTS*
10400 **NICKER'S RESTAURANT**...*FOODSCARRY OUT*
10400 **PACKING HOUSE BY-PRODUCTS CO**...*PACKING & CRATING SERVICE*
10400 **SPA MARBELLA**...*PATIO & DECK BUILDERS*
10400 **SPA MARBELLA**...*SPAS-BEAUTY & DAY*

2020 STATE RD 19

SOURCE: DIGITAL BUSINESS DIRECTORY

26326 **RAY RONCO**...*RESIDENTIAL*
26336 **DEBORAH JOYCE**...*RESIDENTIAL*
26533 **DAVID ROGERS**...*RESIDENTIAL*
26533 **DAVID ROGERS WOODWORKING**...*CABINET MAKERS*

2016 COUNTY RD 48

SOURCE: DIGITAL BUSINESS DIRECTORY

10400 **DOROTHY LIEBL**...*RESIDENTIAL*
10400 **EL CONQUISTADOR RESTAURANT**...*RESTAURANTS*
10400 **LA HACIENDA RESTAURANT**...*RESTAURANTS*
10400 **LAS COLINAS HOA**...*NONCLASSIFIED ESTABLISHMENTS*
10400 **MISSION INN GOLF PRO SHOP**...*GOLF EQUIPMENT & SUPPLIES-RETAIL*
10400 **MISSION REAL ESTATE**...*REAL ESTATE*
10400 **NICKER'S RESTAURANT**...*RESTAURANTS*
10400 **SPA MARBELLA**...*SPAS-BEAUTY & DAY*

2016 STATE RD 19

SOURCE: DIGITAL BUSINESS DIRECTORY

26326 **RAY RONCO**...*RESIDENTIAL*
26336 **DEBORAH JOYCE**...*RESIDENTIAL*
26336 **KYLE JOYCE**...*RESIDENTIAL*
26336 **RICHARD JOYCE**...*NONCLASSIFIED ESTABLISHMENTS*
26336 **RICHARD JOYCE**...*RESIDENTIAL*
26336 **RYAN JOYCE**...*RESIDENTIAL*
26533 **DAVID ROGERS WOODWORKING**...*CABINET MAKERS*

2012 COUNTY RD 48

SOURCE: DIGITAL BUSINESS DIRECTORY

10400 **EL CONQUISTADOR RESTAURANT**...*EATING PLACES*
10400 **EL CONQUISTADOR RESTAURANT**...*FULL-SERVICE RESTAURANTS*
10400 **LA HACIENDA RESTAURANT**...*MEXICAN MENU*
10400 **LA HACIENDA RESTAURANT**...*FULL-SERVICE RESTAURANTS*
10400 **LAS COLINAS HOA**...*NONCLASSIFIED ESTABLISHMENTS*
10400 **LAS COLINAS HOA**...*NCLASSIFIABLE ESTAB*
10400 **LAS COLINAS HOA**
10400 **MISSION GOLF & TENNIS RESORT**...*HOTEL*
10400 **MISSION INN GOLF & TENNIS RSRT**...*COUNTRY CLUB MEMBERS*
10400 **MISSION INN GOLF PRO SHOP**...*GOLF EQUIPMENT & SUPPLIES-RETAIL*
10400 **MISSION INN GOLF TENNIS RESORT**...*RESORT GOLF COURSE AND RESTAURANT*
10400 **MISSION INN RESORT & CLUB**...*GOLF COURSES & COUNTRY CLUBS*
10400 **MISSION INN RESORT & CLUB**...*RESORTS*
10400 **MISSION INN RESORT & CLUB**...*COUNTRY CLUB MEMBERS*
10400 **MISSION REAL ESTATE**...*REAL ESTATE*
10400 **MISSION REAL ESTATE**...*OFFICES OF REAL ESTATE AGENTS & BROKERS*
10400 **MISSION REAL ESTATE**...*REAL ESTATE AGT,MGR*
10400 **NICKER'S RESTAURANT**...*RESTAURANTS*
10400 **NICKERS RESTAURANT**...*FULL-SERVICE RESTAURANTS*
10400 **NICKS RESTAURANT**...*AMERICAN MENU*
10400 **SPA MARBELLA**...*SPAS-BEAUTY & DAY*
10400 **SUPERIOR ASPHALT OF CENTRAL**...*ASPHALT & ASPHALT PRODUCTS*
10400 **SUPERIOR ASPHALT OF CENTRAL**...*HIGHWAY & ST CONSTR*

2012 STATE RD 19

SOURCE: DIGITAL BUSINESS DIRECTORY

26326 **CONNIE RONCO**...*RESIDENTIAL*
26326 **J KENNEDY**...*RESIDENTIAL*
26515 **ARNOLD BUTT**...*RESIDENTIAL*
26533 **DAVID ROGERS CABINETRY**...*CABINET MAKERS*
26533 **DAVID ROGERS WOODWORKING**...*CABNT/FINISH CARPNTRY*
26533 **DAVID ROGERS WOODWORKING**...*CABINET MAKERS*
26533 **DAVID ROGERS WOODWORKING**...*FINISH CARPENTRY CONTRS*

2008 COUNTY RD 48

SOURCE: DIGITAL BUSINESS DIRECTORY

10400 **EL CONQUISTADOR RESTAURANT**...*EATING PLACES*
10400 **G KEMNA**...*RESIDENTIAL*
10400 **J NASH**...*RESIDENTIAL*
10400 **JUDITH STANTON**...*RESIDENTIAL*
10400 **LA HACIENDA RESTAURANT**...*MEXICAN MENU*
10400 **LAS COLINAS HOA**...*NCLASSIFIABLE ESTAB*
10400 **MISSION GOLF & TENNIS RESORT**...*HOTEL*
10400 **MISSION INN GOLF & TENNIS RSRT**...*COUNTRY CLUB MEMBERS*
10400 **MISSION INN GOLF TENNIS RESORT**...*RESORT GOLF COURSE AND RESTAURANT*
10400 **MISSION INN RESORT & CLUB**...*COUNTRY CLUB MEMBERS*
10400 **MISSION REAL ESTATE**...*REAL ESTATE AGT,MGR*
10400 **NICKS RESTAURANT**...*AMERICAN MENU*
10400 **R MORRIS**...*RESIDENTIAL*
10400 **SUPERIOR ASPHALT OF CENTRAL**...*ASPHALT & ASPHALT PRODUCTS*
10400 **SUPERIOR ASPHALT OF CENTRAL**...*HIGHWAY & ST CONSTR*

2008 STATE RD 19

SOURCE: DIGITAL BUSINESS DIRECTORY

26326 **J M KENNEDY**...*RESIDENTIAL*
26336 **WILLIAM P OWINGS**...*RESIDENTIAL*
26515 **ARNOLD & VIRGINIA BUTT**...*RESIDENTIAL*
26515 **WILLIAM FIGNER**...*RESIDENTIAL*
26533 **DAVID ROGERS CABINETRY**...*CABINET MAKERS*
26533 **DAVID ROGERS WOODWORKING**...*CABNT/FINISH CARPNTRY*
26621 **STEPHEN J PRITZ**...*RESIDENTIAL*

2003 COUNTY RD 48

SOURCE: DIGITAL BUSINESS DIRECTORY

10400 **MISSION INN GOLF & TENNIS RSRT...** *STEAK AND BARBECUE RESTAURANTS*
10400 **MISSION REAL ESTATE**

2003 STATE RD 19

SOURCE: DIGITAL BUSINESS DIRECTORY

NO LISTING FOUND

2000 COUNTY RD 48

SOURCE: DIGITAL BUSINESS DIRECTORY

10400 **MISSION INN GOLF & TENNIS RSRT...** *STEAK AND BARBECUE RESTAURANTS*
10400 **MISSON INN GOLF & TENNIS**

2000 STATE RD 19

SOURCE: DIGITAL BUSINESS DIRECTORY

NO LISTING FOUND

1996 COUNTY RD 48

SOURCE: POLKS

COUNTY ROAD 48 *(H)* 34737

10400 MISSION INN
GOLF & TENNIS
RSRT .....-3000 C001 324-3101
Dann Leslie.....-3000 C001 324-2671
Dann Wade .....-3000 C001 324-2671

BUSINESSES 1 HOUSEHOLDS 2

1996 STATE RD 19

SOURCE: POLKS

23637 Turay Daniel S . -4218 C001 324-2762
Turay Laura .....-4218 C001 324-2974
26326 Kennedy J M .....-3031 C001 324-3349
26515 Butt Arnold.....-3042 C001 324-2650
Butt Virginia .....-3042 C001 324-2650
26621 Prilz Stephen J . -3030 C001 324-3519

BUSINESSES 1 HOUSEHOLDS 18

APPENDIX F

Grounded in Excellence

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Phase I Environmental Site Assessment and Limited Soil Evaluation

Lake Harris Property
Northwest of State Road 19 & County Road 48
Howey-In-The-Hills, Lake County, Florida 34737

UES Project No. 0140.2100203.0000
UES Report No. 1892506
Date: August 13, 2021

Prepared for:

K. Hovnanian Homes LLC
2301 Lucien Way, Suite 260
Maitland, Florida 32751

Prepared by:

Universal Engineering Sciences
3532 Maggie Boulevard
Orlando, Florida 32811
(407) 423-0504

9.0 FINDINGS AND OPINIONS

Based on UES' field observations, historical research, public records review and interviews conducted in accordance with ASTM format E1527-13, the findings and opinions of this Phase I ESA are the following:

1. The subject property is not listed on any federal or state databases. No RECs, CRECs, HRECs, de minimis conditions, or VECs were identified in connection with the property.

2. Soil laboratory analysis detected arsenic concentrations exceeding its residential direct exposure SCTL within the citrus grove area at and around S40. The approximately 4,450 square foot area of arsenic impacted soil delineated in the area of S40 appears as a BER in connection with the subject property. See Section 12 for additional information.

3. Soil laboratory analysis detected concentrations of arsenic, lead, and pesticides within the citrus grove, by the former structure, at the pump houses, and at the mix areas. Based on the concentrations being below their SCTLs, the potential for the soil in these areas to be impacted by agricultural chemicals is low.

4. Facilities located within the ASTM search distances were identified on the federal and state databases. Based on the findings of the regulatory records review, the potential for these facilities to have adversely impacted the subject property is considered low.

5. The User of this report is required to ensure that continuing obligations are followed after purchase or acquisition of the subject property. Any land use restrictions in effect at the subject property must be maintained. The User should ensure that all parties at the subject property are following best management practices and taking "reasonable steps" with respect to preventing and limiting exposure to any hazardous substance releases on the subject property. In the event of a future release on the subject property, the property owner or responsible party should report it to the appropriate regulatory agency. Full cooperation must be provided to any parties authorized to conduct assessments or responses to the site.

6. Please note that an environmental liens or activity and use limitations search was not performed for the subject property. In accordance with ASTM E1527-13, it is the responsibility of the User of this report to confirm that there are no environmental liens or activity and use limitations filed for the subject property. In the event that any are identified, please contact UES immediately for further evaluation.

10.0 CONCLUSIONS

We have performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E1527-13 of the property located northwest of the State Road 19 intersection with County Road 48 in Howey-In-The-Hills, Lake County, Florida 34737. Any exceptions to or deletions from this practice are described in Sections 1.2, 1.3, and 1.4 of this report. This assessment concludes that no evidence of RECs have been identified in connection with the subject property. However, the following BER was identified on the subject property:

- **BER:** Soil laboratory analysis detected arsenic concentrations exceeding its residential direct exposure SCTL within the citrus grove area around S40. An approximately 4,450 square foot area

of arsenic impacted soil was delineated in the area of S40. See Section 12 for additional information.

11.0 DEVIATIONS

UES prepared this Phase I ESA in compliance with ASTM E1527-13. Data gaps encountered in the preparation of this Phase I ESA are included in Section 1.4.

12.0 ADDITIONAL SERVICES

A limited soil evaluation (LSE) was conducted on the subject property to address its historical operation as agricultural (citrus grove). These operations include the use of agricultural chemicals (arsenic and pesticides). Improper or long term application of these chemicals has been shown, at times, to remain in the soil above regulatory limits. The former structure, pump houses, and mix areas are locations where the improper storage and handling of these chemicals have the potential to result in a release and adversely impact the subject property. All field work associated with this assessment was completed in accordance with the Florida Department of Environmental Protection (FDEP) Standard Operating Procedures. All laboratory soil samples were transported to SGS North America, Inc. (SGS) in Orlando, FL. See **Appendix A** for sample location plans.

12.1 CITRUS GROVE ASSESSMENT

On May 24, 2021, fifty-two (52) soil borings (S01 thru S52) were placed within the citrus grove area to address the arsenic concern. A soil sample was collected from each boring approximately 6-inches to 12-inches below the land surface (bls). Each soil sample was field analyzed using an X-ray fluorescence (XRF) meter. Twelve of the soil samples (S05, S09, S11, S21, S22, S23, S34, S35, S39, S40, S44, and S45) were sent to SGS to be analyzed for arsenic and lead utilizing Environmental Protection Agency (EPA) Method 6010. See **Appendix E** for XRF data and laboratory results.

On May 25, 2021, six soil sample borings (S11A, S14A, S17A, S19A, S44A, and S46A) were placed within the citrus grove area to address the pesticide concern. A soil sample was collected from each boring approximately 6-inches to 12-inches bls. All samples were analyzed by SGS for Organochlorine Pesticides utilizing EPA Method 8081. See **Appendix E** for laboratory results.

12.2 PUMP HOUSES AND MIX AREAS ASSESSMENT

Seven (S53 thru S59) soil sample borings were placed on the subject property to address the arsenic and pesticide concerns. S54 was also used to address the stained concrete concern. Soil borings were placed in the following locations:

- Two soil sample borings (S53 & S54) were placed by the west pump house.
- Two soil sample borings (S55 & S56) were placed by the east pump house.
- One soil sample boring (S57) was placed by the west mix area.
- One soil sample boring (S58) was placed by the east mix area.
- One soil sample boring (S59) was placed in the area of the former structure.

A soil sample was collected from each boring approximately 6-inches to 12-inches bls. Each soil sample was field analyzed using an XRF meter. All samples were analyzed by SGS for arsenic utilizing EPA Method 6010, lead utilizing EPA Method 6010, and Organochlorine Pesticides utilizing EPA Method 8081. S54 was

also analyzed for Total Petroleum Hydrocarbons utilizing the Florida Petroleum Residual Organic Method (FL-PRO). See **Appendix E** for XRF data and laboratory results.

12.3 S40 Area Assessment

On June 21, 2021, additional soil samples were collected at and around S40 to address the arsenic concentration exceeding State limits in the May 24, 2021 sampling event. Four additional soil borings (S40N, S40E, S40S, & S40W) were placed adjacent to S40. A soil sample was collected at 6-inches to 12-inches bls at each new boring and an additional soil sample was collected at 2-foot bls from S40. Each soil sample was field analyzed using an XRF meter. All samples were analyzed by SGS for arsenic utilizing EPA Method 6010. See **Appendix E** for XRF data and laboratory results.

In July 2021 and August 2021, forty-eight (48) soil sample borings (S60 thru S107) were placed in the S40 area to address the arsenic impacted soil. A soil sample was collected at 6-inches bls and 2-foot bls at each new boring. A soil sample was collected at 4-foot bls at seven borings (S40, S62, S67, S77, S79, S91, and S100) and a sample was collected at 6-foot bls at S100. All soil samples were field analyzed using an XRF meter. Thirty three (33) samples were analyzed by SGS for arsenic utilizing EPA Method 6010. See **Appendix E** for XRF data and laboratory results.

12.4 LSE Analytical Results

Sixty-three soil samples (63) were collected from the subject property and analyzed by a laboratory based on the criteria set in Sections 12.1 thru 12.3. Concentrations were compared to the FDEP Soil Cleanup Target Levels (SCTLs) established in the Florida Administrative Code (FAC) 62-777 Table II. Please refer to **Table 7** and **Table 8** for positive detection results of the samples. A copy of the Laboratory Analytical Report and Chain-Of-Custody Forms are included as **Appendix E**.

12.4.1 Citrus Grove Assessment Results

The laboratory detected one arsenic concentration exceeding its residential direct exposure SCTL. Thirteen (13) arsenic concentrations, twelve (12) lead concentrations, one dieldrin concentration, three p,p'-Dichlorodiphenyldichloroethylene (4,4'-DDE) concentrations, one p,p'-Dichlorodiphenyltrichloroethane, (4,4'-DDT) concentration, and four endrin concentrations were detected below their SCTLs. The remaining arsenic and pesticide analyte concentrations reported were below the laboratory Method Detection Limit (MDL).

12.4.2 Pump Houses and Mix Areas Assessment Results

The laboratory detected five arsenic concentrations, seven lead concentrations, one 4,4'-DDE concentrations, and one Total Petroleum Hydrocarbon (TPH) concentration below their SCTLs. The remaining arsenic and pesticide analyte concentrations reported were below the laboratory Method Detection Limit (MDL).

12.4.3 S40 Area Assessment Results

The laboratory detected fourteen (14) arsenic concentrations exceeding its residential direct exposure SCTL and sixteen (16) arsenic concentrations below its SCTLs. The remaining arsenic concentrations reported were below the laboratory Method Detection Limit (MDL).

12.5 LSE CONCLUSION

The purpose of this assessment was to determine if the site had been impacted by agricultural chemicals. We conclude the following:

1. The subject property historically operated as agricultural (citrus grove). Improper or long term application of agricultural chemicals has been shown, at times, to remain in the soil above the recommended exposure levels established by the FDEP. Soil laboratory analysis detected concentrations of arsenic exceeding its residential direct exposure FDEP Soil Cleanup Target Level (SCTL) and detected concentrations of arsenic, lead, dieldrin, p,p'-Dichlorodiphenyldichloroethylene (4,4'-DDE), p,p'- Dichlorodiphenyltrichloroethane, (4,4'-DDT), and endrin below their SCTLs. An approximately 4,450 square foot area of arsenic impacted soil was delineated in the area of S40.

2. The former structure, pump houses, and mix areas within the citrus grove are locations where improper storage and handling of agricultural chemicals have the potential to result in a release and adversely impact the subject property. Soil laboratory analysis detected concentrations of arsenic, lead, and 4,4'-DDE below their SCTLs. Based on the concentrations being below their SCTLs, the potential for the soil in these areas to be impacted by agricultural chemicals is low.

3. Stained concrete was observed by the diesel pump in the west pump house. The stain appeared to run off the concrete. Soil laboratory analysis detected a Total Petroleum Hydrocarbon (TPH) concentration below its SCTLs. Based on the concentration being below the SCTLs, the potential for the soil in this area to be impacted by the stain is low.

13.0 REFERENCES

References reviewed during the Phase I ESA are documented in **Appendix K**.

14.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

Please refer to the certification page for signatures of the environmental professionals who prepared and reviewed this Phase I ESA.

15.0 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

This assessment was completed by Chris McCormick, Environmental Project Manager, and reviewed by Michael J. Geden, P.G., both employees of Universal Engineering Sciences. We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in §312.10 of 40 CFR 312. We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312. Qualifications of personnel participating in this assessment are provided in **Appendix L**.

APPENDIX A

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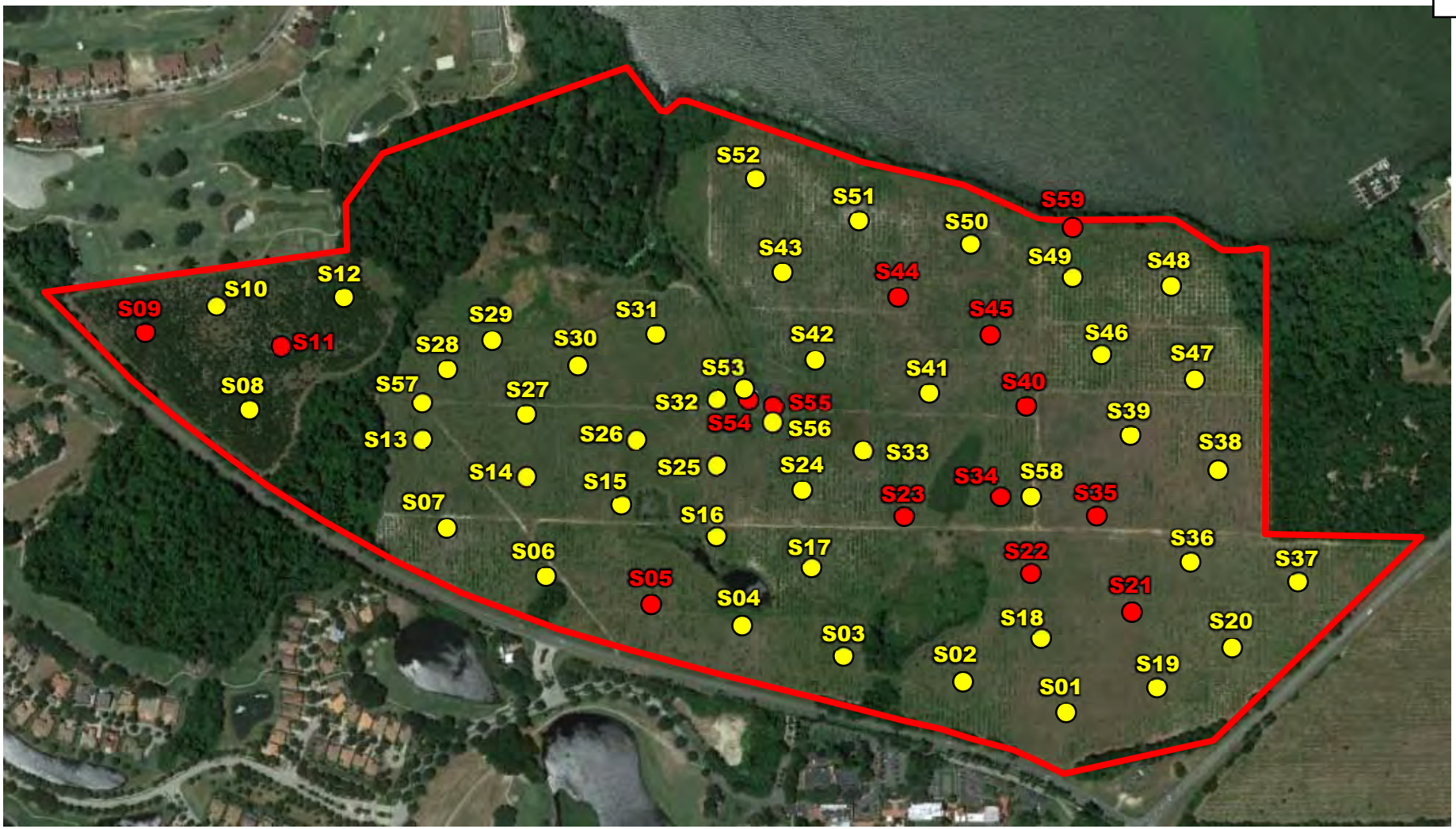


Legend

Subject Property

Soil Sample (Arsenic) Below 2 ppm

Soil Sample (Arsenic) At or Above 2 ppm

Note: 2021 Image provided by Google Earth

N

Scale: Not To Scale

Phase I ESA LSE - Lake Harris Property
NWC of State Road 19 & County Road 48
Howey-In-The-Hills,
Lake County, Florida 34737

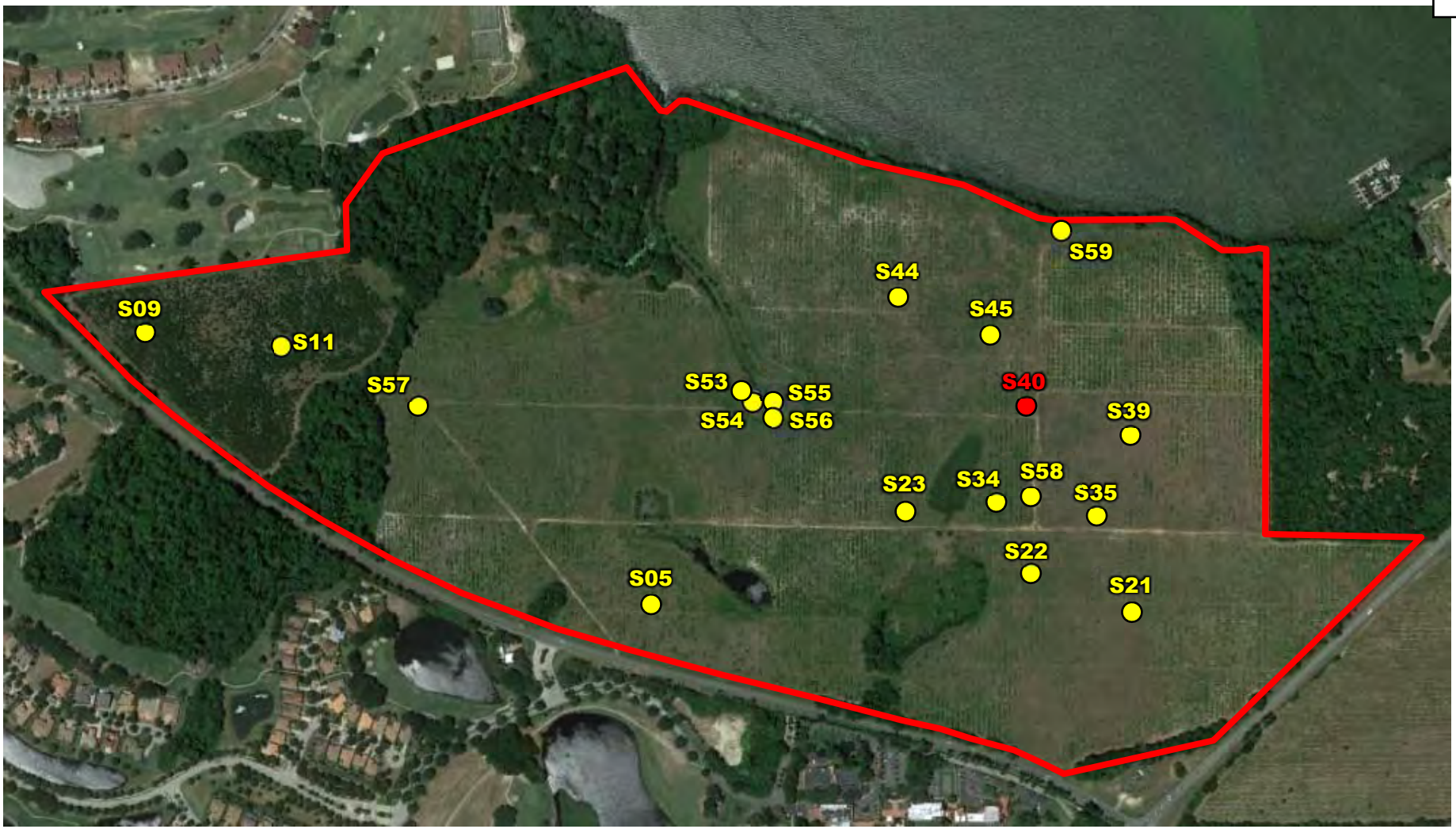
XRF ANALYSIS
SAMPLE LOCATION PLAN

UNIVERSAL ENGINEERING SCIENCES

Project No: 0140.2100203.0000

Report No. 1892506

Page No: **3**



Legend

Subject Property

Soil Sample (Arsenic) Passing

Soil Sample (Arsenic) Failing

Note: 2021 Image provided by Google Earth

N

Scale: Not To Scale

Phase I ESA LSE - Lake Harris Property
NWC of State Road 19 & County Road 48
Howey-In-The-Hills,
Lake County, Florida 34737

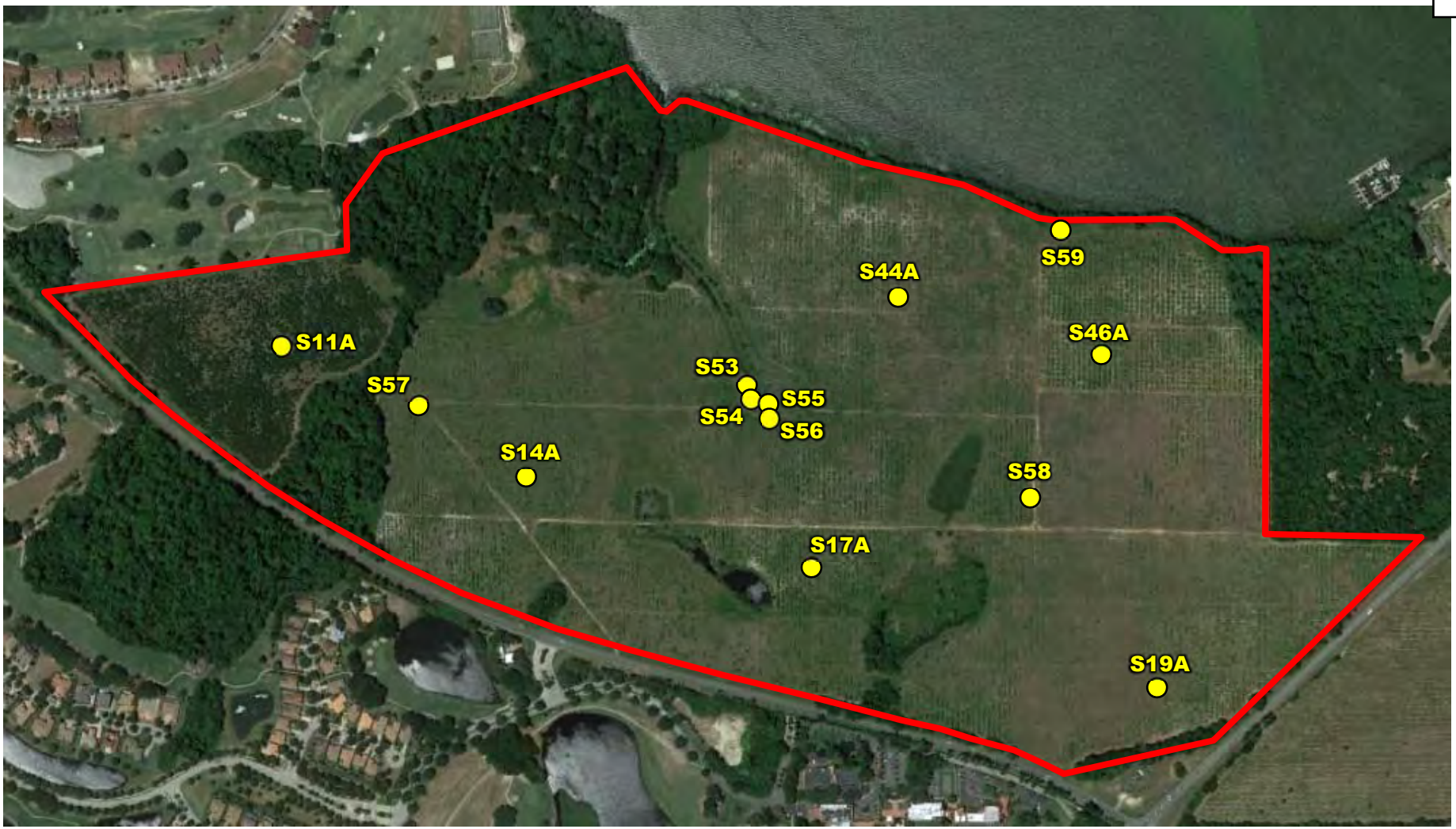
ARSENIC ANALYSIS
SAMPLE LOCATION PLAN

UNIVERSAL ENGINEERING SCIENCES

Project No: 0140.2100203.0000

Report No. 1892506

Page No: **4**



Legend

Subject Property

Soil Sample (Pesticide) Passing

Note: 2021 Image provided by Google Earth

N

Scale: Not To Scale

Phase I ESA LSE - Lake Harris Property
NWC of State Road 19 & County Road 48
Howey-In-The-Hills,
Lake County, Florida 34737

PESTICIDE ANALYSIS
SAMPLE LOCATION PLAN

UNIVERSAL ENGINEERING SCIENCES

Project No: 0140.2100203.0000

Report No. 1892506

Page No: **5**

TABLE 7: ARSENIC SOIL DATA

Lake Harris Property
NWC of State Road 19 & County Road 48
Howey-In-The-Hills, Lake County, Florida 34737

Sample ID	Date	Depth (ft)	XRF Screening (ppm)	Lab Verification (mg/kg)
S01	5/24/2021	0.0 - 0.5	ND <2	NC
S02	5/24/2021	0.0 - 0.5	ND <2	NC
S03	5/24/2021	0.0 - 0.5	1 ± 0.4	NC
S04	5/24/2021	0.0 - 0.5	1 ± 0.4	NC
S05	5/24/2021	0.0 - 0.5	2 ± 0.3	0.31
S06	5/24/2021	0.0 - 0.5	1 ± 0.4	NC
S07	5/24/2021	0.0 - 0.5	1 ± 0.3	NC
S08	5/24/2021	0.0 - 0.5	1 ± 0.3	NC
S09	5/24/2021	0.0 - 0.5	2 ± 0.3	0.15
S10	5/24/2021	0.0 - 0.5	ND <2	NC
S11	5/24/2021	0.0 - 0.5	2 ± 0.3	1.0
S12	5/24/2021	0.0 - 0.5	ND <2	NC
S13	5/24/2021	0.0 - 0.5	1 ± 0.4	NC
S14	5/24/2021	0.0 - 0.5	1 ± 0.3	NC
S15	5/24/2021	0.0 - 0.5	ND <2	NC
S16	5/24/2021	0.0 - 0.5	1 ± 0.3	NC
S17	5/24/2021	0.0 - 0.5	1 ± 0.3	NC
S18	5/24/2021	0.0 - 0.5	1 ± 0.4	NC
S19	5/24/2021	0.0 - 0.5	1 ± 0.4	NC
S20	5/24/2021	0.0 - 0.5	1 ± 0.4	NC
Soil Cleanup Target Level (SCTL)		**Residential**		**2.1**
		Commercial		**12**
		Leachability		***

Sample ID	Date	Depth (ft)	XRF Screening (ppm)	Lab Verification (mg/kg)
S21	5/24/2021	0.0 - 0.5	2 ± 0.4	0.23
S22	5/24/2021	0.0 - 0.5	2 ± 0.4	0.54
S23	5/24/2021	0.0 - 0.5	2 ± 0.4	0.98
S24	5/24/2021	0.0 - 0.5	ND <2	NC
S25	5/24/2021	0.0 - 0.5	1 ± 0.3	NC
S26	5/24/2021	0.0 - 0.5	1 ± 0.3	NC
S27	5/24/2021	0.0 - 0.5	1 ± 0.3	NC
S28	5/24/2021	0.0 - 0.5	1 ± 0.3	NC
S29	5/24/2021	0.0 - 0.5	ND <2	NC
S30	5/24/2021	0.0 - 0.5	ND <2	NC
S31	5/24/2021	0.0 - 0.5	1 ± 0.3	NC
S32	5/24/2021	0.0 - 0.5	1 ± 0.3	NC
S33	5/24/2021	0.0 - 0.5	1 ± 0.3	NC
S34	5/24/2021	0.0 - 0.5	4 ± 0.4	2.0
S35	5/24/2021	0.0 - 0.5	2 ± 0.4	0.24
S36	5/24/2021	0.0 - 0.5	1 ± 0.4	NC
S37	5/24/2021	0.0 - 0.5	1 ± 0.4	NC
S38	5/24/2021	0.0 - 0.5	ND <2	NC
S39	5/24/2021	0.0 - 0.5	2 ± 0.4	0.44
Soil Cleanup Target Level (SCTL)		**Residential**		**2.1**
		Commercial		**12**
		Leachability		***

Sample ID	Date	Depth (ft)	XRF Screening (ppm)	Lab Verification (mg/kg)
S40	5/24/2021	0.0 - 0.5	6 ± 0.5	**2.7**
	6/21/2021	0.5 - 2.0	3 ± 0.4	**2.4**
	7/2/2021	2 - 4	ND <2	0.10 U
S40N	6/21/2021	0.0 - 0.5	1 ± 0.4	1.2
S40E	6/21/2021	0.0 - 0.5	4 ± 0.4	**2.3**
S40S	6/21/2021	0.0 - 0.5	11 ± 00.2	**3.4**
S40W	6/21/2021	0.0 - 0.5	2 ± 0.4	0.8
S41	5/24/2021	0.0 - 0.5	1 ± 0.3	NC
S42	5/24/2021	0.0 - 0.5	1 ± 0.3	NC
S43	5/24/2021	0.0 - 0.5	ND <2	NC
S44	5/24/2021	0.0 - 0.5	2 ± 0.4	0.17
S45	5/24/2021	0.0 - 0.5	2 ± 0.4	0.26
S46	5/24/2021	0.0 - 0.5	1 ± 0.3	NC
S47	5/24/2021	0.0 - 0.5	1 ± 0.4	NC
S48	5/24/2021	0.0 - 0.5	ND <2	NC
S49	5/24/2021	0.0 - 0.5	ND <2	NC
S50	5/24/2021	0.0 - 0.5	1 ± 0.4	NC
S51	5/24/2021	0.0 - 0.5	ND <2	NC
S52	5/24/2021	0.0 - 0.5	1 ± 0.3	NC
S53	5/25/2021	0.0 - 0.5	ND <2	0.089 U
Soil Cleanup Target Level (SCTL)		**Residential**		**2.1**
		Commercial		**12**
		Leachability		***

Notes:

XRF - X-ray Fluorescense
ppm - Parts per million
mg/kg - milligrams per kilogram

U - Not detected at method detection limit (MDL)
I - Concentration between MDL and the PQL; therefore, it is an estimate.
NC - Laboratory Sample not collected at this interval

TABLE 7: ARSENIC SOIL DATA

Lake Harris Property
NWC of State Road 19 & County Road 48
Howey-In-The-Hills, Lake County, Florida 34737

Sample ID	Date	Depth (ft)	XRF Screening (ppm)	Lab Verification (mg/kg)
S54	5/25/2021	0.0 - 0.5	2 ± 0.4	0.36
S55	5/25/2021	0.0 - 0.5	2 ± 0.4	0.71
S56	5/25/2021	0.0 - 0.5	ND <2	0.093 U
S57	5/25/2021	0.0 - 0.5	1 ± 0.3	0.22
S58	5/25/2021	0.0 - 0.5	1 ± 0.3	0.12
S59	5/27/2021	0.0 - 0.5	2 ± 0.4	1.2
S60	7/2/2021	0.0 - 0.5	3 ± 0.5	NC
		0.5 - 2.0	ND <2	NC
S61	7/2/2021	0.0 - 0.5	4 ± 0.6	NC
		0.5 - 2.0	ND <3	NC
S62	7/2/2021	0.0 - 0.5	7 ± 0.6	NC
		0.5 - 2.0	3 ± 0.4	NC
		2 - 4	ND <2	0.094 U
S63	7/2/2021	0.0 - 0.5	4 ± 0.6	NC
		0.5 - 2.0	ND <2	NC
S64	7/2/2021	0.0 - 0.5	6 ± 0.5	**3.6**
		0.5 - 2.0	ND <2	NC
S65	7/2/2021	0.0 - 0.5	3 ± 0.4	1.8
		0.5 - 2.0	2 ± 0.4	NC
Soil Cleanup Target Level (SCTL)		**Residential**		**2.1**
		Commercial		**12**
		Leachability		***

Sample ID	Date	Depth (ft)	XRF Screening (ppm)	Lab Verification (mg/kg)
S66	7/2/2021	0.0 - 0.5	4 ± 0.5	NC
		0.5 - 2.0	1 ± 0.4	0.21
S67	7/2/2021	0.0 - 0.5	ND <4	NC
		0.5 - 2.0	5 ± 0.4	**3.9**
	8/3/2021	2 - 4	ND ± <2	0.097 U
S68	7/2/2021	0.0 - 0.5	ND ± <2	NC
		0.5 - 2.0	ND ± <2	NC
S69	7/2/2021	0.0 - 0.5	3 ± 0.5	NC
		0.5 - 2.0	2 ± 0.3	NC
S70	7/2/2021	0.0 - 0.5	2 ± 0.4	NC
		0.5 - 2.0	2 ± 0.4	NC
S71	7/2/2021	0.0 - 0.5	6 ± 0.4	NC
		0.5 - 2.0	ND ± <2	NC
S72	7/2/2021	0.0 - 0.5	5 ± 0.6	NC
		0.5 - 2.0	ND ± <5	NC
S73	7/2/2021	0.0 - 0.5	3 ± 0.5	**2.7**
		0.5 - 2.0	ND <2	NC
S74	7/2/2021	0.0 - 0.5	4 ± 0.4	**2.7**
		0.5 - 2.0	2 ± 0.4	NC
Soil Cleanup Target Level (SCTL)		**Residential**		**2.1**
		Commercial		**12**
		Leachability		***

Sample ID	Date	Depth (ft)	XRF Screening (ppm)	Lab Verification (mg/kg)
S75	7/2/2021	0.0 - 0.5	2 ± 0.3	NC
		0.5 - 2.0	1 ± 0.3	NC
S76	7/2/2021	0.0 - 0.5	4 ± 0.4	1.6
		0.5 - 2.0	2 ± 0.3	NC
S77	7/2/2021	0.0 - 0.5	1 ± 0.3	NC
		0.5 - 2.0	5 ± 0.6	**3.3**
	8/3/2021	2 - 4	ND ± <2	0.092 U
S78	7/2/2021	0.0 - 0.5	2 ± 0.3	NC
		0.5 - 2.0	1 ± 0.3	NC
S79	7/2/2021	0.0 - 0.5	3 ± 0.4	NC
		0.5 - 2.0	7 ± 0.5	NC
	8/3/2021	2 - 4	ND ± <2	0.094 U
S80	7/2/2021	0.0 - 0.5	1 ± 0.3	NC
		0.5 - 2.0	2 ± 0.4	0.25 I
S81	7/2/2021	0.0 - 0.5	3 ± 0.4	0.53
		0.5 - 2.0	ND ± <2	NC
S82	7/2/2021	0.0 - 0.5	4 ± 0.5	NC
		0.5 - 2.0	2 ± 0.4	0.90
S83	7/2/2021	0.0 - 0.5	2 ± 0.4	NC
		0.5 - 2.0	1 ± 0.4	1.0
Soil Cleanup Target Level (SCTL)		**Residential**		**2.1**
		Commercial		**12**
		Leachability		***

Notes:

XRF - X-ray Fluorescense
ppm - Parts per million
mg/kg - milligrams per kilogram

U - Not detected at method detection limit (MDL)
I - Concentration between MDL and the PQL; therefore, it is an estimate.
NC - Laboratory Sample not collected at this interval

TABLE 7: ARSENIC SOIL DATA

Lake Harris Property
NWC of State Road 19 & County Road 48
Howey-In-The-Hills, Lake County, Florida 34737

Sample ID	Date	Depth (ft)	XRF Screening (ppm)	Lab Verification (mg/kg)
S84	7/2/2021	0.0 - 0.5	2 ± 0.5	NC
		0.5 - 2.0	ND ± <2	NC
S85	7/2/2021	0.0 - 0.5	3 ± 0.4	NC
		0.5 - 2.0	2 ± 0.4	NC
S86	7/2/2021	0.0 - 0.5	5 ± 0.5	NC
		0.5 - 2.0	6 ± 0.4	NC
S87	7/2/2021	0.0 - 0.5	2 ± 0.4	2.0
		0.5 - 2.0	3 ± 0.5	1.1
S88	7/9/2021	0.0 - 0.5	3 ± 0.4	1.2
		0.5 - 2.0	ND ± <2	NC
S89	7/9/2021	0.0 - 0.5	3 ± 0.4	**3.0**
		0.5 - 2.0	ND ± <3	NC
S90	7/9/2021	0.0 - 0.5	1 ± 0.4	0.57
		0.5 - 2.0	1 ± 0.3	NC
S91	7/9/2021	0.0 - 0.5	1 ± 0.5	NC
		0.5 - 2.0	5 ± 0.5	**3.9**
		2 - 4	ND ± <2	0.10 U
S92	7/9/2021	0.0 - 0.5	2 ± 0.4	NC
		0.5 - 2.0	2 ± 0.4	NC
Soil Cleanup Target Level (SCTL)		**Residential**		**2.1**
		Commercial		**12**
		Leachability		***

Sample ID	Date	Depth (ft)	XRF Screening (ppm)	Lab Verification (mg/kg)
S93	7/9/2021	0.0 - 0.5	3 ± .7	NC
		0.5 - 2.0	2 ± 0.4	NC
S94	7/9/2021	0.0 - 0.5	3 ± 0.4	**2.8**
		0.5 - 2.0	3 ± 0.5	1.1
S95	7/9/2021	0.0 - 0.5	3 ± 0.4	**2.3**
		0.5 - 2.0	2 ± 0.4	1.2
S96	7/9/2021	0.0 - 0.5	5 ± 0.6	NC
		0.5 - 2.0	ND ± <2	NC
S97	7/9/2021	0.0 - 0.5	5 ± 0.6	NC
		0.5 - 2.0	1 ± 0.3	0.35
S98	7/9/2021	0.0 - 0.5	4 ± 0.4	NC
		0.5 - 2.0	ND ± <2	NC
S99	7/9/2021	0.0 - 0.5	2 ± 0.4	NC
		0.5 - 2.0	2 ± 0.4	NC
S100	7/9/2021	0.0 - 0.5	6 ± 0.5	NC
		0.5 - 2.0	6 ± 0.5	NC
		2 - 4	4 ± 0.5	**3.5**
	8/3/2021	4 - 6	ND ± <2	0.10 U
S101	7/9/2021	0.0 - 0.5	2 ± 0.4	NC
		0.5 - 2.0	ND ± <2	NC
Soil Cleanup Target Level (SCTL)		**Residential**		**2.1**
		Commercial		**12**
		Leachability		***

Sample ID	Date	Depth (ft)	XRF Screening (ppm)	Lab Verification (mg/kg)
S102	7/9/2021	0.0 - 0.5	3 ± 0.4	1.4
		0.5 - 2.0	1 ± 0.4	NC
S103	7/9/2021	0.0 - 0.5	1 ± 0.4	NC
		0.5 - 2.0	2 ± 0.5	NC
S104	8/3/2021	0.0 - 0.5	3 ± 0.4	**2.3**
		0.5 - 2.0	1 ± 0.3	NC
S105	8/3/2021	0.0 - 0.5	5 ± 0.4	NC
		0.5 - 2.0	1 ± 0.3	NC
S106	8/3/2021	0.0 - 0.5	2 ± 0.4	NC
		0.5 - 2.0	ND ± <2	NC
S107	8/3/2021	0.0 - 0.5	3 ± 0.4	1.3
		0.5 - 2.0	ND ± <2	NC
Soil Cleanup Target Level (SCTL)		**Residential**		**2.1**
		Commercial		**12**
		Leachability		***

Notes:

XRF - X-ray Fluorescense
ppm - Parts per million
mg/kg - milligrams per kilogram

U - Not detected at method detection limit (MDL)
I - Concentration between MDL and the PQL; therefore, it is an estimate.
NC - Laboratory Sample not collected at this interval

TABLE 8: LEAD, PESTICIDES, AND TPH SOIL DATA

Lake Harris Property
NWC of State Road 19 & County Road 48
Howey-In-The-Hills, Lake County, Florida 34737

Sample			XRF		Analytes					
Sample ID	Date Collected	Sample Interval (fbls)	Arsenic Reading (ppm)	Arsenic Variance (ppm)	Lead	Dieldrin	4'-DDE	4,4'-DDT	Endrin	TPH
S05	5/24/2021	0.5 - 1.0	2	0.3	1.9	NA	NA	NA	NA	NA
S09	5/24/2021	0.5 - 1.0	2	0.3	1.8	NA	NA	NA	NA	**NA**
S11	5/24/2021	0.5 - 1.0	2	0.3	7.1	NA	NA	NA	NA	**NA**
S11A	5/25/2021	0.5 - 1.0	NA	NA	NA	0.00052 U	0.00068 U	0.0030 I	0.00094 U	**NA**
S14A	5/25/2021	0.5 - 1.0	NA	NA	NA	0.00053 U	0.0010 I	0.00058 U	0.0033 I	**NA**
S17A	5/25/2021	0.5 - 1.0	NA	NA	NA	0.00062 U	0.0016 I	0.00068 U	0.13	**NA**
S19A	5/25/2021	0.5 - 1.0	NA	NA	NA	0.00050 U	0.00065 U	0.00055 U	0.00091 U	**NA**
S21	5/24/2021	0.5 - 1.0	2	0.3	1.0	NA	NA	NA	NA	**NA**
S22	5/24/2021	0.5 - 1.0	2	0.4	2.6	NA	NA	NA	NA	**NA**
S23	5/24/2021	0.5 - 1.0	2	0.4	1.7	NA	NA	NA	NA	**NA**
S34	5/24/2021	0.5 - 1.0	4	0.4	3.3	NA	NA	NA	NA	**NA**
S35	5/24/2021	0.5 - 1.0	2	0.4	3.5	NA	NA	NA	NA	**NA**
S39	5/24/2021	0.5 - 1.0	2	0.4	1.3	NA	NA	NA	NA	**NA**
S40	5/24/2021	0.5 - 1.0	6	0.5	2.7	NA	NA	NA	NA	**NA**
S40-2	6/21/2021	1.5 - 2.0	3	0.4	NA	NA	NA	NA	NA	**NA**
S40N	6/21/2021	0.5 - 1.0	1	0.4	NA	NA	NA	NA	NA	**NA**
S40E	6/21/2021	0.5 - 1.0	4	0.4	NA	NA	NA	NA	NA	**NA**
S40S	6/21/2021	0.5 - 1.0	11	0.2	NA	NA	NA	NA	NA	**NA**
S40W	6/21/2021	0.5 - 1.0	2	0.4	NA	NA	NA	NA	NA	**NA**
S44	5/24/2021	0.5 - 1.0	2	0.4	1.9	NA	NA	NA	NA	**NA**
S44A	5/25/2021	0.5 - 1.0	NA	NA	NA	0.00056 U	0.0735	0.0084	0.0849	**NA**
S45	5/24/2021	0.5 - 1.0	2	0.4	1.6	NA	NA	NA	NA	**NA**
S46A	5/25/2021	0.5 - 1.0	NA	NA	NA	0.0015 I	0.0034 I	0.00059 U	0.0583	**NA**
S53	5/25/2021	0.5 - 1.0	ND	<2	1.3	0.00051 U	0.00066 U	0.00056 U	0.00092 U	**NA**
S54	5/25/2021	0.5 - 1.0	2	0.4	2.4	0.00052 U	0.00068 U	0.00057 U	0.00095 U	54.0
S55	5/25/2021	0.5 - 1.0	2	0.4	5.6	0.00058 U	0.00075 U	0.00063 U	0.0010 U	**NA**
S56	5/25/2021	0.5 - 1.0	ND	<2	2.7	0.00048 U	0.00062 U	0.00052 U	0.00086 U	**NA**
S57	5/25/2021	0.5 - 1.0	1	0.3	0.12 I	0.00059 U	0.00077 U	0.00065 U	0.0011 U	**NA**
S58	5/25/2021	0.5 - 1.0	1	0.3	1.7	0.00057 U	0.00075 U	0.00063 U	0.0010 U	**NA**
S59	5/27/2021	0.5 - 1.0	2	0.4	1.4	0.00048 U	0.0011 I	0.00053 U	0.00087 U	**NA**
Soil Cleanup Target Level		**Residential**			**12**	**0.06**	**2.9**	**2.9**	**25**	**460**
		Commercial			**1,400**	**0.3**	**15**	**15**	**510**	**2700**
		Leachability			*******	**0.002**	**18**	**11**	**1**	**340**

Note 1: All analytical results presented in mg/kg

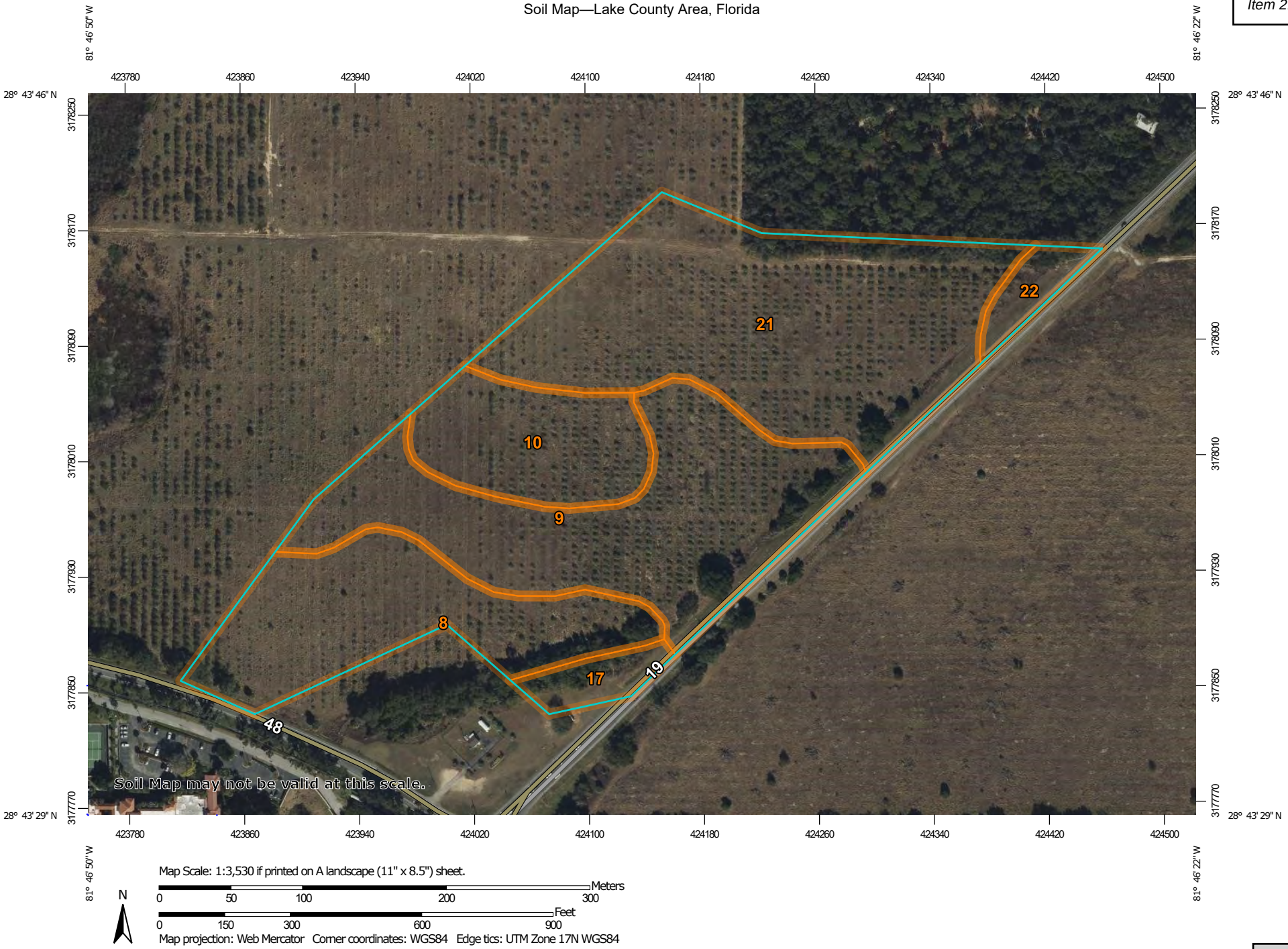
Note 2: Result presented in **BOLD** exceeds state limits

NA = Not Analyzed

U = Indicates that the compound was analyzed for but not detected.

I = The reported value is between the laboratory method detection limit (MDL) and the practical quantitation limit (PQL)

Soil Map—Lake County Area, Florida



Map Scale: 1:3,530 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Lake County Area, Florida
Survey Area Data: Version 23, Sep 6, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 6, 2022—Mar 21, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
8	Candler sand, 0 to 5 percent slopes	5.1	18.8%
9	Candler sand, 5 to 12 percent slopes	7.6	28.0%
10	Candler sand, 12 to 40 percent slopes	3.1	11.3%
17	Arents	0.7	2.7%
21	Lake sand, 0 to 5 percent slopes	10.0	36.8%
22	Lake sand, 5 to 12 percent slopes	0.7	2.4%
Totals for Area of Interest		**27.1**	**100.0%**

APPENDIX G

Grounded in Excellence

Tabloid ANSI B Landscape

November 28, 2023

- Brownfield Sites
- Brownfield Areas
- Registered Tanks from STCM

Petroleum Contamination Monitoring (PCTS) Discharges from STCM

- ELIGIBLE DISCHARGES COMPLETED
- INELIGIBLE DISCHARGES COMPETED
- Compliance & Enforcement Tracking-Hazardous Waste Facilities

Solid Waste Facilities

- Facility
- Waste Processing Area
- Solid Waste Disaster Debris Management Sites

1:18,056

0 0.17 0.35 0.7 mi

0 0.28 0.55 1.1 km

State of Florida, Maxar, FDEP, DWM, Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community, FDEP,DWM, Esri, HERE, iPC, FDEP/DWM/BWC, WRM

Map created by Map Direct, powered by ESRI.

ERIS

DATABASE REPORT

Project Property:	*North of County Road 48 and State Road 19* *North of County Road 48 and State Road 19* *Howey-in-the-Hills FL*
Project No:	*0140.2300323.0000*
Report Type:	*Database Report*
Order No:	*23112000568*
Requested by:	*Universal Engineering Sciences*
Date Completed:	*November 22, 2023*

Environmental Risk Information Services
A division of Glacier Media Inc.
1.866.517.5204 | info@erisinfo.com | erisinfo.com

Table of Contents

Executive Summary

Property Information:

Project Property:	*North of County Road 48 and State Road 19* *North of County Road 48 and State Road 19 Howey-in-the-Hills FL*
Project No:	*0140.2300323.0000*

Coordinates:

Latitude:	*28.72729546*
Longitude:	*-81.77686616*
UTM Northing:	*3,178,020.12*
UTM Easting:	*424,134.28*
UTM Zone:	*UTM Zone 17R*

Elevation: *99 FT*

Order Information:

Order No:	*23112000568*
Date Requested:	*November 20, 2023*
Requested by:	*Universal Engineering Sciences*
Report Type:	*Database Report*

Historicals/Products:

Aerial Photographs	*Historical Aerials (with Project Boundaries)*
City Directory Search	*CD - 2 Street Search*
ERIS Xplorer	*ERIS Xplorer*
Excel Add-On	*Excel Add-On*
Fire Insurance Maps	*US Fire Insurance Maps*
Physical Setting Report (PSR)	*Physical Setting Report (PSR)*
Topographic Map	*Topographic Maps*
Vapor Screening Tool	*Vapor Screening Tool*

Executive Summary: Report Summary

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
Standard Environmental Records								
Federal								
NPL	Y	1	0	0	0	0	0	0
PROPOSED NPL	Y	1	0	0	0	0	0	0
DELETED NPL	Y	0.5	0	0	0	0	-	0
SEMS	Y	0.5	0	0	0	0	-	0
ODI	Y	0.5	0	0	0	0	-	0
SEMS ARCHIVE	Y	0.5	0	0	0	0	-	0
CERCLIS	Y	0.5	0	0	0	0	-	0
IODI	Y	0.5	0	0	0	0	-	0
CERCLIS NFRAP	Y	0.5	0	0	0	0	-	0
CERCLIS LIENS	Y	PO	0	-	-	-	-	0
RCRA CORRACTS	Y	1	0	0	0	0	0	0
RCRA TSD	Y	0.5	0	0	0	0	-	0
RCRA LQG	Y	0.25	0	0	0	-	-	0
RCRA SQG	Y	0.25	0	0	0	-	-	0
RCRA VSQG	Y	0.25	0	0	0	-	-	0
RCRA NON GEN	Y	0.25	0	0	0	-	-	0
RCRA CONTROLS	Y	0.5	0	0	0	0	-	0
FED ENG	Y	0.5	0	0	0	0	-	0
FED INST	Y	0.5	0	0	0	0	-	0
LUCIS	Y	0.5	0	0	0	0	-	0
NPL IC	Y	0.5	0	0	0	0	-	0
ERNS 1982 TO 1986	Y	PO	0	-	-	-	-	0
ERNS 1987 TO 1989	Y	PO	0	-	-	-	-	0
ERNS	Y	PO	0	-	-	-	-	0
FED BROWNFIELDS	Y	0.5	0	0	0	0	-	0
FEMA UST	Y	0.25	0	0	0	-	-	0
FRP	Y	0.25	0	0	0	-	-	0

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
DELISTED FRP	Y	0.25	0	0	0	-	-	0
HIST GAS STATIONS	Y	0.25	0	0	0	-	-	0
REFN	Y	0.25	0	0	0	-	-	0
BULK TERMINAL	Y	0.25	0	0	0	-	-	0
SEMS LIEN	Y	PO	0	-	-	-	-	0
SUPERFUND ROD	Y	1	0	0	0	0	0	0
DOE FUSRAP	Y	1	0	0	0	0	0	0
State								
SHWS	Y	1	0	0	0	0	0	0
DELISTED SHWS	Y	1	0	0	0	0	0	0
ERIC	Y	1	0	0	0	0	0	0
CLEANUP DEP	Y	1	0	0	0	0	0	0
WCRPS	Y	1	0	0	0	0	0	0
DELISTED WCP	Y	1	0	0	0	0	0	0
SWF/LF	Y	0.5	0	0	0	0	-	0
LST	Y	0.5	0	0	0	0	-	0
DELISTED LST	Y	0.5	0	0	0	0	-	0
UST	Y	0.25	0	0	0	-	-	0
AST	Y	0.25	0	0	0	-	-	0
TANK	Y	0.25	0	0	0	-	-	0
DEL UST AST TANK	Y	0.25	0	0	0	-	-	0
DEL STORAGE TANK	Y	0.25	0	0	0	-	-	0
FF TANKS	Y	0.25	0	0	0	-	-	0
STCS	Y	0.5	0	0	0	0	-	0
INST	Y	0.5	0	0	0	0	-	0
ENG	Y	0.5	0	0	0	0	-	0
VCP	Y	0.5	0	0	0	0	-	0
BROWNFIELDS	Y	0.5	0	0	0	0	-	0
BROWNFIELD AREA	Y	0.5	0	0	0	0	-	0
HAZ WASTE FAC	Y	0.5	0	0	0	0	-	0
Tribal								
INDIAN LUST	Y	0.5	0	0	0	0	-	0
INDIAN UST	Y	0.25	0	0	0	-	-	0
DELISTED INDIAN LST	Y	0.5	0	0	0	0	-	0

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
DELISTED INDIAN UST	Y	0.25	0	0	0	-	-	0
County	***No County databases were selected to be included in the search.***							
Additional Environmental Records								
Federal								
FINDS/FRS	Y	PO	0	-	-	-	-	0
TRIS	Y	PO	0	-	-	-	-	0
PFAS NPL	Y	0.5	0	0	0	0	-	0
PFAS FED SITES	Y	0.5	0	0	0	0	-	0
PFAS SSEHRI	Y	0.5	0	0	0	0	-	0
ERNS PFAS	Y	0.5	0	0	0	0	-	0
PFAS NPDES	Y	0.5	0	0	0	0	-	0
PFAS TRI	Y	0.5	0	0	0	0	-	0
PFAS WATER	Y	0.5	0	0	0	0	-	0
PFAS TSCA	Y	0.5	0	0	0	0	-	0
PFAS E-MANIFEST	Y	0.5	0	0	0	0	-	0
PFAS IND	Y	0.5	0	0	0	0	-	0
HMIRS	Y	0.125	0	0	-	-	-	0
NCDL	Y	0.125	0	0	-	-	-	0
TSCA	Y	0.125	0	0	-	-	-	0
HIST TSCA	Y	0.125	0	0	-	-	-	0
FTTS ADMIN	Y	PO	0	-	-	-	-	0
FTTS INSP	Y	PO	0	-	-	-	-	0
PRP	Y	PO	0	-	-	-	-	0
SCRD DRYCLEANER	Y	0.5	0	0	0	0	-	0
ICIS	Y	PO	0	-	-	-	-	0
FED DRYCLEANERS	Y	0.25	0	0	0	-	-	0
DELISTED FED DRY	Y	0.25	0	0	0	-	-	0
FUDS	Y	1	0	0	0	0	0	0
FUDS MRS	Y	1	0	0	0	0	0	0
FORMER NIKE	Y	1	0	0	0	0	0	0
PIPELINE INCIDENT	Y	PO	0	-	-	-	-	0
MLTS	Y	PO	0	-	-	-	-	0
HIST MLTS	Y	PO	0	-	-	-	-	0
MINES	Y	0.25	0	0	0	-	-	0
SMCRA	Y	1	0	0	0	0	0	0

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
MRDS	Y	1	0	0	0	0	0	0
LM SITES	Y	1	0	0	0	0	0	0
ALT FUELS	Y	0.25	0	0	0	-	-	0
CONSENT DECREES	Y	0.25	0	0	0	-	-	0
AFS	Y	PO	0	-	-	-	-	0
SSTS	Y	0.25	0	0	0	-	-	0
PCBT	Y	0.5	0	0	0	0	-	0
PCB	Y	0.5	0	0	0	0	-	0
State								
PRIORITYCLEAN	Y	0.5	0	0	0	0	-	0
DRYCLEANERS	Y	0.25	0	0	0	-	-	0
DELISTED DRYCLEANERS	Y	0.25	0	0	0	-	-	0
HISTORICAL DRYC	Y	0.25	0	0	0	-	-	0
SPILLS	Y	0.125	0	**1**	-	-	-	**1**
DWM CONTAM	Y	0.5	0	0	0	0	-	0
DEL CONTAM SITE	Y	0.5	0	0	0	0	-	0
PFAS AFFF	Y	0.5	0	0	0	0	-	0
PFAS	Y	0.5	0	0	0	0	-	0
GW CONTAM	Y	0.125	0	0	-	-	-	0
UIC	Y	PO	0	-	-	-	-	0
WELL SURVEILLANCE	Y	0.25	0	0	0	-	-	0
CDV SOUTHEAST	Y	0.5	0	0	0	0	-	0
TIER 2	Y	0.125	0	**2**	-	-	-	**2**
DELISTED COUNTY	Y	0.25	0	0	0	-	-	0
Tribal	***No Tribal additional environmental record sources available for this State.***							
County	***No County additional environmental databases were selected to be included in the search.***							
Total:			0	**3**	0	0	0	**3**

**** PO – Property Only***
**** 'Property and adjoining properties' database search radii are set at 0.25 miles.***

Executive Summary: Site Report Summary - Project Property

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number

No records found in the selected databases for the project property.

Executive Summary: Site Report Summary - Surrounding Properties

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
1	TIER 2	Town of Howey in the Hills/Well3	Hwy 48 and St. Road 19 Howey in the Hills FL 34737	SSW	0.07 / 393.90	33	16
1	TIER 2	Town of Howey in the Hills / Well 3	Hwy 48 and St. Road 19 Howey in the Hills FL 34737	SSW	0.07 / 393.90	33	17
2	SPILLS		CR 48 at HWY 19 HOWIE-IN-THE-HILLS FL ***Incident No | Incident Date:*** 7524 | 01/06/2000	SSW	0.08 / 396.51	33	18

Executive Summary: Summary by Data Source

Non Standard

State

SPILLS - Oil and Hazardous Materials Incidents

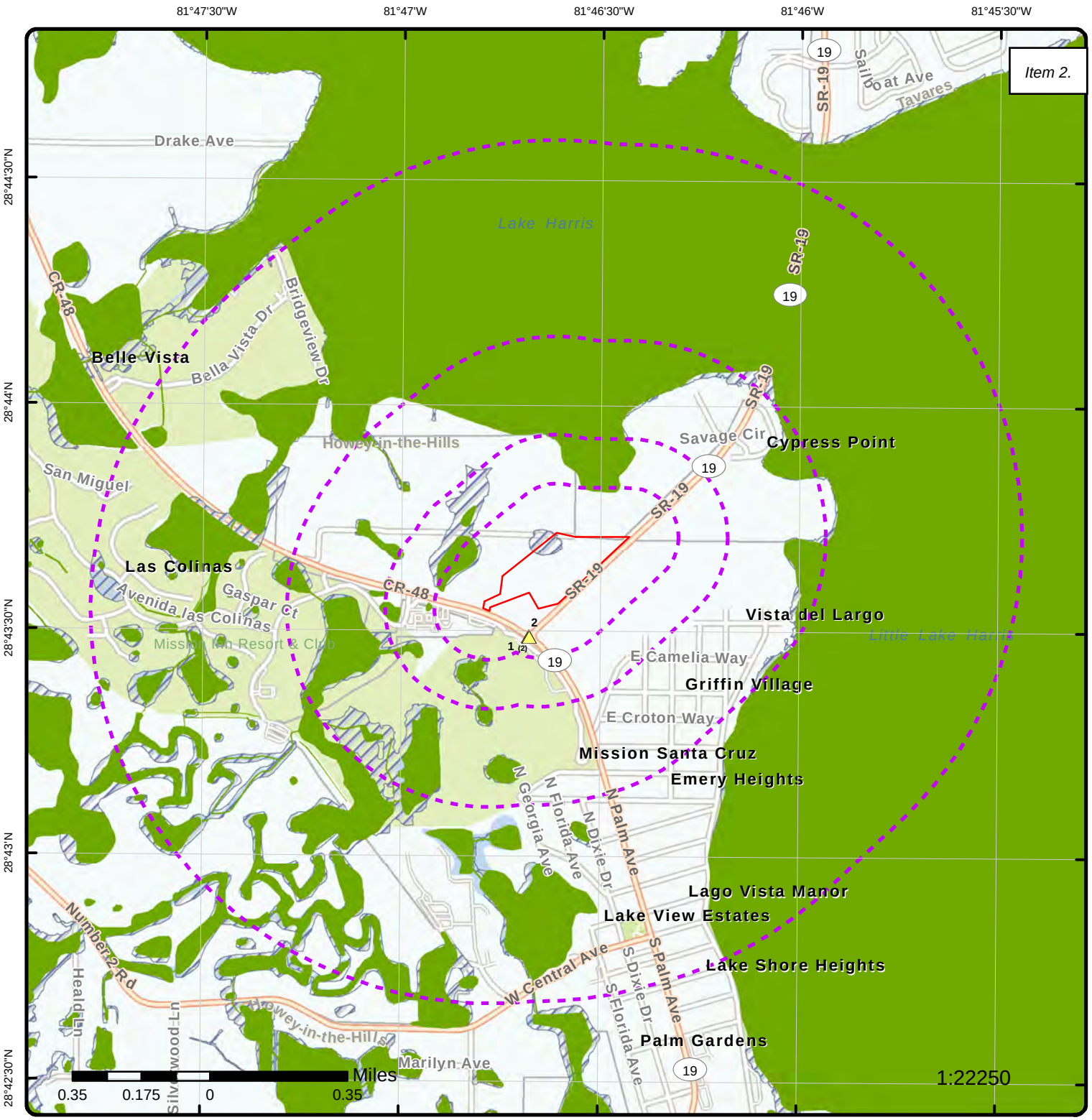
A search of the SPILLS database, dated Nov 1, 2023 has found that there are 1 SPILLS site(s) within approximately 0.12miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
	CR 48 at HWY 19 HOWIE-IN-THE-HILLS FL	SSW	0.08 / 396.51	2
	Incident No* | *Incident Date: *7524* | *01/06/2000*			

TIER 2 - Tier 2 Report

A search of the TIER 2 database, dated Mar 6, 2023 has found that there are 2 TIER 2 site(s) within approximately 0.12miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
Town of Howey in the Hills/Well3	Hwy 48 and St. Road 19 Howey in the Hills FL 34737	SSW	0.07 / 393.90	1
Town of Howey in the Hills / Well 3	Hwy 48 and St. Road 19 Howey in the Hills FL 34737	SSW	0.07 / 393.90	1

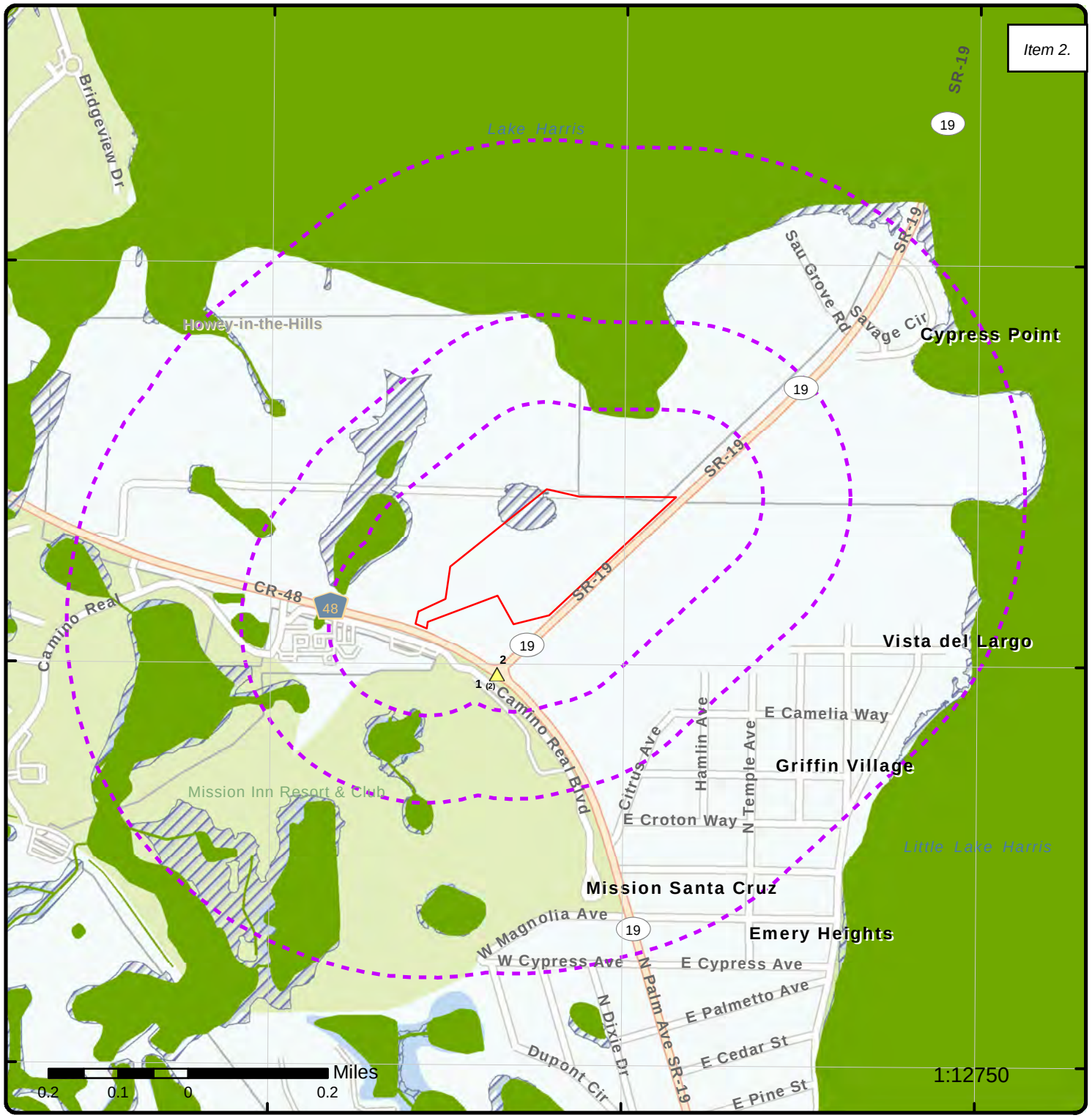


Map: 1.0 Mile Radius

Order Number: 23112000568

Address: North of County Road 48 and State Road 19, Howey-in-the-Hills, FL

- Project Property
- Buffer Outline
- Sites with Higher Elevation
- Sites with Same Elevation
- Sites with Lower Elevation
- Sites with Unknown Elevation
- Areas with Higher Elevation
- Areas with Same Elevation
- Areas with Lower Elevation
- Areas with Unknown Elevation
- Freeways; Highways
- Traffic Circle; Ramp
- Major & Minor Arterial
- Traffic Circle; Ramp
- Local Road
- Rail
- State
- Country
- National Wetland
- Indian Reserve Land
- Plume
- 100 Year Flood Zone
- 500 Year Flood Zone
- FWS Special Designation Areas
- National Priorities List (Active, Delisted, Proposed, Institutional Control)



Map: 0.5 Mile Radius

Order Number: 23112000568

Address: North of County Road 48 and State Road 19, Howey-in-the-Hills, FL

- Project Property
- Buffer Outline
- Sites with Higher Elevation
- Sites with Same Elevation
- Sites with Lower Elevation
- Sites with Unknown Elevation
- Areas with Higher Elevation
- Areas with Same Elevation
- Areas with Lower Elevation
- Areas with Unknown Elevation
- Freeways; Highways
- Traffic Circle; Ramp
- Major & Minor Arterial
- Traffic Circle; Ramp
- Local Road
- Rail
- State
- Country
- National Wetland
- Indian Reserve Land
- Plume
- 100 Year Flood Zone
- 500 Year Flood Zone
- FWS Special Designation Areas
- National Priorities List (Active, Delisted, Proposed, Institutional Control)

Map: 0.25 Mile Radius

Order Number: 23112000568

Address: North of County Road 48 and State Road 19, Howey-in-the-Hills, FL

- Project Property
- Buffer Outline
- Sites with Higher Elevation
- Sites with Same Elevation
- Sites with Lower Elevation
- Sites with Unknown Elevation
- Areas with Higher Elevation
- Areas with Same Elevation
- Areas with Lower Elevation
- Areas with Unknown Elevation
- Freeways; Highways
- Traffic Circle; Ramp
- Major & Minor Arterial
- Traffic Circle; Ramp
- Local Road
- Rail
- State
- Country
- National Wetland
- Indian Reserve Land
- Plume
- 100 Year Flood Zone
- 500 Year Flood Zone
- FWS Special Designation Areas
- National Priorities List (Active, Delisted, Proposed, Institutional Control)

Aerial **Year: 2022**

Order Number: 23112000568

Address: North of County Road 48 and State Road 19, Howey-in-the-Hills, FL

Source: ESRI World Imagery

Topographic Map

Year: 2021

Order Number: 23112000568

Address: North of County Road 48 and State Road 19, FL

Quadrangle(s): Howey-in-the-Hills FL, Astatula FL, Leesburg East FL

Source: USGS Topographic Map

Detail Report

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
1	1 of2	SSW	0.07 / 393.90	131.49 / 33	Town of Howey in the Hills/Well3 Hwy 48 and St. Road 19 Howey in the Hills FL 34737	TIER 2

2018 Data

Facility ID:	6062116	***Explosive:***	False
Filing Year:	2017(Tier2)	***Filing Type:***	302 312
CAS No:	7782505	***Max Daily Qty:***	999
Solid:	False	***Avg Daily Qty:***	499
Liquid:	True	***EHS:***	True
Gas:	True	***Below Thresholds:***	
Pure:	True	***Trade Secret:***	
Mixture:	False		

First Submit Date:	2018-02-15(Tier2)
NAICS Code:	221310
Dun Bradstreet Code:	08666919
Chemical Name:	Chlorine
Hazard Not Otherwise Classifi:	False
Contact Name:	John Town of Howey
Contact Type:	Owner / Operator
Contact Email:	Jernest@howey.org
Contact Work Phone:	352-324-2290
Contact 24 Hour Phone:	3524344253
Contact Mobile Phone:	(352) 348-9925

2019 Data

Facility ID:	6389499	***Explosive:***	False
Filing Year:	2018(Tier2)	***Filing Type:***	302 312
CAS No:	7782505	***Max Daily Qty:***	999
Solid:	False	***Avg Daily Qty:***	499
Liquid:	True	***EHS:***	True
Gas:	True	***Below Thresholds:***	
Pure:	True	***Trade Secret:***	
Mixture:	False		

First Submit Date:	2019-02-12(Tier2)
NAICS Code:	221310
Dun Bradstreet Code:	08666919
Chemical Name:	Chlorine
Hazard Not Otherwise Classifi:	False
Contact Name:	John Town of Howey
Contact Type:	Owner / Operator
Contact Email:	Jernest@howey.org
Contact Work Phone:	352-324-2290
Contact 24 Hour Phone:	3524344253
Contact Mobile Phone:	(352) 348-9925

2020 Data (Not Filed)

Facility ID:	6389499	***Explosive:***	False
Filing Year:	2018(Tier2)	***Filing Type:***	302 312

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site

CAS No:	7782505			***Max Daily Qty:***	999
Solid:	False			***Avg Daily Qty:***	499
Liquid:	True			***EHS:***	True
Gas:	True			***Below Thresholds:***	
Pure:	True			***Trade Secret:***	
Mixture:	False				
First Submit Date:		2019-02-12(Tier2)			
NAICS Code:		221310			
Dun Bradstreet Code:		08666919			
Chemical Name:		Chlorine			
Hazard Not Otherwise Classifi:		False			
Contact Name:		John Town of Howey			
Contact Type:		Owner / Operator			
Contact Email:		Jernest@howey.org			
Contact Work Phone:		352-324-2290			
Contact 24 Hour Phone:		3524344253			
Contact Mobile Phone:		(352) 348-9925			

1	***2 of2***	***SSW***	***0.07 / 393.90***	***131.49 / 33***	***Town of Howey in the Hills / Well 3 Hwy 48 and St. Road 19 Howey in the Hills FL 34737***	***TIER 2***

2022 Data

Facility ID:	7077957			***Explosive:***	False
Filing Year:	2021(Tier2)			***Filing Type:***	
CAS No:	7782505			***Max Daily Qty:***	999
Solid:	False			***Avg Daily Qty:***	499
Liquid:	True			***EHS:***	True
Gas:	True			***Below Thresholds:***	
Pure:	True			***Trade Secret:***	
Mixture:	False				
First Submit Date:		2022-01-03(Tier2)			
NAICS Code:		221310			
Dun Bradstreet Code:		8666919			
Chemical Name:		Chlorine			
Hazard Not Otherwise Classifi:		False			
Contact Name:		Martha McFarlane			
Contact Type:		Owner / Operator			
Contact Email:		Office@howey.org			
Contact Work Phone:		352-324-2290			
Contact 24 Hour Phone:					
Contact Mobile Phone:					

2023 Data

Facility ID:	7271413			***Explosive:***	False
Filing Year:	2022(Tier2)			***Filing Type:***	
CAS No:	7782505			***Max Daily Qty:***	999
Solid:	False			***Avg Daily Qty:***	499
Liquid:	True			***EHS:***	True
Gas:	True			***Below Thresholds:***	
Pure:	True			***Trade Secret:***	
Mixture:	False				
First Submit Date:		2023-02-06(Tier2)			
NAICS Code:		221310			
Dun Bradstreet Code:		08666919			
Chemical Name:		Chlorine			
Hazard Not Otherwise Classifi:		False			
Contact Name:		Martha McFarlane			
Contact Type:		Owner / Operator			
Contact Email:		Office@howey.org			
Contact Work Phone:		352-324-2290			
Contact 24 Hour Phone:					
Contact Mobile Phone:					

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	
2	1 of1	SSW	0.08 / 396.51	131.49 / 33	CR 48 at HWY 19 HOWIE-IN-THE-HILLS FL	SPILLS

Incident No: 7524
Incident Type: Inland
Incident Date: 01/06/2000
County: Lake

Spill Details

Incident Status:
Pollutant Name: Diesel fuel
Pollutant Category:
Description: Spill
Incident Party Name:
Incident Party Type:
Pollutant Actual Volume: 30
Pollutant Unit Measure: gallon
Criminal Indicator:
Hurricane Indicatr:
On Scene Response:

Spill Details

Incident Status:
Pollutant Name: Diesel fuel
Pollutant Category:
Description:
Incident Party Name:
Incident Party Type:
Pollutant Actual Volume: 30
Pollutant Unit Measure: gallon
Criminal Indicator:
Hurricane Indicatr:
On Scene Response:

Spill Details

Incident Status:
Pollutant Name: Sewage
Pollutant Category:
Description: Spill
Incident Party Name:
Incident Party Type:
Pollutant Actual Volume: 4000
Pollutant Unit Measure: gallon
Criminal Indicator:
Hurricane Indicatr:
On Scene Response:

Spill Details

Incident Status:
Pollutant Name: Sewage
Pollutant Category:
Description:
Incident Party Name:
Incident Party Type:
Pollutant Actual Volume: 4000
Pollutant Unit Measure: gallon
Criminal Indicator:
Hurricane Indicatr:
On Scene Response:

Unplottable Summary

Total: 5 Unplottable sites

DB	Company Name/Site Name	Address	City	Zip	ERIS ID
SPILLS		SR 19	HOWEY IN THE HILLS FL		813597884
		Incident No* | *Incident Date: 39498 | 05/19/2008			
SPILLS		CR 48 West of HWY 19	HOWEY-IN-THE-HILLS FL		813611846
		Incident No* | *Incident Date: 7535 | 01/06/2000			
SPILLS		SR-19 Bridge	HOWEY IN THE HILLS FL		872537550
		Incident No* | *Incident Date: 61853 | 11/6/2018 6:22:00 AM			
SPILLS		1/2 mile South of Yalaha Bakery off CR 48	YALAHA FL		813622447
		Incident No* | *Incident Date: 25758 | 03/14/2005			
UST	DIDION EUGENE / PASTURE	ONE QUARTER MI E OF YALAHA BAKERY ON 48	HOWEY IN THE HILLS FL	34732	894382487
		Facility ID* | *Facility Status: 9807288 | CLOSED ***Tank Status* | *Status Date:*** B - REMOVED FROM SITE | 12-MAY-2005, B - REMOVED FROM SITE | 12-MAY-2005			

Unplottable Report

Site:
SR 19 HOWEY IN THE HILLS FL SPILLS

Incident No: 39498
Incident Type: Inland
Incident Date: 05/19/2008
County: Lake

Spill Details

Incident Status:
Pollutant Name: Hydraulic oil
Pollutant Category:
Description: Leak/overflow
Incident Party Name:
Incident Party Type:
Pollutant Actual Volume: 10
Pollutant Unit Measure: gallon
Criminal Indicator:
Hurricane Indicatr:
On Scene Response:

Site:
CR 48 West of HWY 19 HOWEY-IN-THE-HILLS FL SPILLS

Incident No: 7535
Incident Type: Inland
Incident Date: 01/06/2000
County: Lake

Spill Details

Incident Status:
Pollutant Name: Diesel fuel
Pollutant Category:
Description: Spill
Incident Party Name:
Incident Party Type:
Pollutant Actual Volume: 30
Pollutant Unit Measure: gallon
Criminal Indicator:
Hurricane Indicatr:
On Scene Response:

Spill Details

Incident Status:
Pollutant Name: Diesel fuel
Pollutant Category:
Description:
Incident Party Name:
Incident Party Type:
Pollutant Actual Volume: 30
Pollutant Unit Measure: gallon
Criminal Indicator:
Hurricane Indicatr:
On Scene Response:

Spill Details

Incident Status:
Pollutant Name: Sewage
Pollutant Category:
Description:
Incident Party Name:
Incident Party Type:
Criminal Indicator:
Hurricane Indicatr:
On Scene Response:

Pollutant Actual Volume: 4000
Pollutant Unit Measure: gallon

Spill Details

Incident Status:
Pollutant Name: Sewage
Pollutant Category:
Description: Spill
Incident Party Name:
Incident Party Type:
Pollutant Actual Volume: 4000
Pollutant Unit Measure: gallon
Criminal Indicator:
Hurricane Indicatr:
On Scene Response:

Site:
SR-19 Bridge HOWEY IN THE HILLS FL

SPILLS

Incident No: 61853
Incident Type: Inland
Incident Date: 11/6/2018 6:22:00 AM
County: Lake

Spill Details

Incident Status: Pending-DM
Pollutant Name: Wastewater, n.o.s.
Pollutant Category: Wastewater
Description: Accident
Incident Party Name: DEP District Office
Incident Party Type: Agency
Pollutant Actual Volume: 6000
Pollutant Unit Measure: pounds
Criminal Indicator: No
Hurricane Indicatr: No
On Scene Response: No

Spill Details

Incident Status: Pending-DM
Pollutant Name: Wastewater, n.o.s.
Pollutant Category: Wastewater
Description: Accident
Incident Party Name: Police/Sheriff
Incident Party Type: Agency
Pollutant Actual Volume: 6000
Pollutant Unit Measure: pounds
Criminal Indicator: No
Hurricane Indicatr: No
On Scene Response: No

Spill Details

Incident Status: Pending-DM
Pollutant Name: Wastewater, n.o.s.
Pollutant Category: Wastewater
Description: Accident
Incident Party Name: Shelley's Residuals Management Facility
Incident Party Type: Responsible Party
Pollutant Actual Volume: 6000
Pollutant Unit Measure: pounds
Criminal Indicator: No
Hurricane Indicatr: No
On Scene Response: No

Spill Details

Incident Status: Pending-DM
Pollutant Name: Wastewater, n.o.s.
Pollutant Category: Wastewater
Description: Accident
Incident Party Name: Local Fire Department
Incident Party Type: Agency
Pollutant Actual Volume: 6000
Pollutant Unit Measure: pounds
Criminal Indicator: No
Hurricane Indicatr: No
On Scene Response: No

Site:
1/2 mile South of Yalaha Bakery off CR 48 YALAHA FL

SPILLS

Incident No: 25758
Incident Type: Inland
Incident Date: 03/14/2005
County: Lake

Spill Details

Incident Status:
Pollutant Name: Empty Drums/Containers
Pollutant Category:
Description: Dumping
Incident Party Name:
Incident Party Type:
Pollutant Actual Volume: 0
Pollutant Unit Measure: gallon
Criminal Indicator:
Hurricane Indicatr:
On Scene Response:

Spill Details

Incident Status:
Pollutant Name: Empty Drums/Containers
Pollutant Category:
Description: Abandoned Containers
Incident Party Name:
Incident Party Type:
Pollutant Actual Volume: 0
Pollutant Unit Measure: gallon
Criminal Indicator:
Hurricane Indicatr:
On Scene Response:

Site: ***DIDION EUGENE / PASTURE***
ONE QUARTER MI E OF YALAHA BAKERY ON 48 HOWEY IN THE HILLS FL 34732

UST

Facility ID: 9807288
Facility Status: CLOSED
Facility Type: Z
Type Desc: Other Regulated Facility
Facility Phone: 4792855694
Dep Co: P
Owner ID: 58048
Owner Phone: 4792855694
Owner: DIDION EUGENE J
Owner Address1: PO BOX 352
Owner Address2:
Owner City: HOWEY IN THE HILLS
Owner State: FL
Owner Zip 5: 34732
Contact: EUGENE J DIDION
Source: Tank Facility - All Locations and Tank Information; Tank Facility - All Locations and Owner Information
Oculus Docs Inventory URL: https://erisservice7.ecologeris.com/ErisExt/flo/ocure.ashx?ID=9807288&CAT=11
Information Portal Fac URL: http://prodenv.dep.state.fl.us/DepNexus/public/facilitysearch?pagination=true&facility.id=9807288
Information Portal Doc URL: http://prodenv.dep.state.fl.us/DepNexus/public/electronic-documents/9807288/facility!search
County: LAKE
Lat/Long Method:
Lat DD:
Lat MM:
Lat SS:
Long DD:
Long MM:
Long SS:

Tank Information

Tank ID: 1
Tank Status: B - REMOVED FROM SITE
Status Date: 12-MAY-2005
Installation Date:
Tank Desc:
Capacity:
Substance: A - Leaded Gas
Placement: UNDERGROUND
Tank Vessel Indic: TANK

Tank Information

Tank ID: 2
Tank Status: B - REMOVED FROM SITE
Status Date: 12-MAY-2005
Capacity:
Substance: D - Vehicular Diesel
Placement: UNDERGROUND

Installation Date: ***Tank Vessel Indic:*** TANK
Tank Desc:

Appendix: Database Descriptions

Environmental Risk Information Services (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. ERIS updates databases as set out in ASTM Standard E1527-13 and E1527-21, Section 8.1.8 Sources of Standard Source Information:

"Government information from nongovernmental sources may be considered current if the source updates the information at least every 90 days, or, for information that is updated less frequently than quarterly by the government agency, within 90 days of the date the government agency makes the information available to the public."

Standard Environmental Record Sources

Federal

National Priority List: NPL

Sites on the United States Environmental Protection Agency (EPA)'s National Priorities List of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the Superfund program. The NPL, which EPA is required to update at least once a year, is based primarily on the score a site receives from EPA's Hazard Ranking System. A site must be on the NPL to receive money from the Superfund Trust Fund for remedial action. Sites are represented by boundaries where available in the EPA Superfund Site Boundaries maintained by the Shared Enterprise Geodata and Services (SEGS). Site boundaries represent the footprint of a whole site, the sum of all of the Operable Units and the current understanding of the full extent of contamination; for Federal Facility sites, the total site polygon may be the Facility boundary. Where there is no polygon boundary data available for a given site, the site is represented as a point.

Government Publication Date: May 25, 2023

National Priority List - Proposed: PROPOSED NPL

Sites proposed by the United States Environmental Protection Agency (EPA), the state agency, or concerned citizens for addition to the National Priorities List (NPL) due to contamination by hazardous waste and identified by the EPA as a candidate for cleanup because it poses a risk to human health and/or the environment. Sites are represented by boundaries where available in the EPA Superfund Site Boundaries maintained by the Shared Enterprise Geodata and Services (SEGS). Site boundaries represent the footprint of a whole site, the sum of all of the Operable Units and the current understanding of the full extent of contamination; for Federal Facility sites, the total site polygon may be the Facility boundary. Where there is no polygon boundary data available for a given site, the site is represented as a point.

Government Publication Date: May 25, 2023

Deleted NPL: DELETED NPL

Sites deleted from the United States Environmental Protection Agency (EPA)'s National Priorities List. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate. Sites are represented by boundaries where available in the EPA Superfund Site Boundaries maintained by the Shared Enterprise Geodata and Services (SEGS). Site boundaries represent the footprint of a whole site, the sum of all of the Operable Units and the current understanding of the full extent of contamination; for Federal Facility sites, the total site polygon may be the Facility boundary. Where there is no polygon boundary data available for a given site, the site is represented as a point.

Government Publication Date: May 25, 2023

SEMS List 8R Active Site Inventory: SEMS

The U.S. Environmental Protection Agency's (EPA) Superfund Program has deployed the Superfund Enterprise Management System (SEMS), which integrates multiple legacy systems into a comprehensive tracking and reporting tool. This inventory contains active sites evaluated by the Superfund program that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The Active Site Inventory Report displays site and location information at active SEMS sites. An active site is one at which site assessment, removal, remedial, enforcement, cost recovery, or oversight activities are being planned or conducted. This data includes SEMS sites from the List 8R Active file as well as applicable sites from the SEMS GIS/REST file layer obtained from EPA's Facility Registry Service.

Government Publication Date: Sep 19, 2023

Inventory of Open Dumps, June 1985:

The Resource Conservation and Recovery Act (RCRA) provides for publication of an inventory of open dumps. The Act defines "open dumps" as facilities which do not comply with EPA's "Criteria for Classification of Solid Waste Disposal Facilities and Practices" (40 CFR 257).

Government Publication Date: Jun 1985

SEMS List 8R Archive Sites: SEMS ARCHIVE

The U.S. Environmental Protection Agency's (EPA) Superfund Enterprise Management System (SEMS) Archived Site Inventory displays site and location information at sites archived from SEMS. An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time. This data includes sites from the List 8R Archived site file.

Government Publication Date: Sep 19, 2023

Comprehensive Environmental Response, Compensation and Liability Information System - CERCLIS: CERCLIS

Superfund is a program administered by the United States Environmental Protection Agency (EPA) to locate, investigate, and clean up the worst hazardous waste sites throughout the United States. CERCLIS is a database of potential and confirmed hazardous waste sites at which the EPA Superfund program has some involvement. It contains sites that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The EPA administers the Superfund program in cooperation with individual states and tribal governments; this database is made available by the EPA.

Government Publication Date: Oct 25, 2013

EPA Report on the Status of Open Dumps on Indian Lands: IODI

Public Law 103-399, The Indian Lands Open Dump Cleanup Act of 1994, enacted October 22, 1994, identified congressional concerns that solid waste open dump sites located on American Indian or Alaska Native (AI/AN) lands threaten the health and safety of residents of those lands and contiguous areas. The purpose of the Act is to identify the location of open dumps on Indian lands, assess the relative health and environment hazards posed by those sites, and provide financial and technical assistance to Indian tribal governments to close such dumps in compliance with Federal standards and regulations or standards promulgated by Indian Tribal governments or Alaska Native entities.

Government Publication Date: Dec 31, 1998

CERCLIS - No Further Remedial Action Planned: CERCLIS NFRAP

An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time. The Archive designation means that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL). This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Government Publication Date: Oct 25, 2013

CERCLIS Liens: CERCLIS LIENS

A Federal Superfund lien exists at any property where EPA has incurred Superfund costs to address contamination ("Superfund site") and has provided notice of liability to the property owner. A Federal CERCLA ("Superfund") lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. This database is made available by the United States Environmental Protection Agency (EPA). This database was provided by the United States Environmental Protection Agency (EPA). Refer to SEMS LIEN as the current data source for Superfund Liens.

Government Publication Date: Jan 30, 2014

RCRA CORRACTS-Corrective Action: RCRA CORRACTS

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. At these sites, the Corrective Action Program ensures that cleanups occur. EPA and state regulators work with facilities and communities to design remedies based on the contamination, geology, and anticipated use unique to each site.

Government Publication Date: Jul 10, 2023

RCRA non-CORRACTS TSD Facilities: RCRA TSD

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. This database includes Non-Corrective Action sites listed as treatment, storage and/or disposal facilities of hazardous waste as defined by RCRA.

Government Publication Date: Jul 10, 2023

RCRA Generator List: RCR

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Large Quantity Generators (LQGs) generate 1,000 kilograms per month or more of hazardous waste or more than one kilogram per month of acutely hazardous waste.

Government Publication Date: Jul 10, 2023

RCRA Small Quantity Generators List: RCRA SQG

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Small Quantity Generators (SQGs) generate more than 100 kilograms, but less than 1,000 kilograms, of hazardous waste per month.

Government Publication Date: Jul 10, 2023

RCRA Very Small Quantity Generators List: RCRA VSQG

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Very Small Quantity Generators (VSQG) generate 100 kilograms or less per month of hazardous waste, or one kilogram or less per month of acutely hazardous waste. Additionally, VSQG may not accumulate more than 1,000 kilograms of hazardous waste at any time.

Government Publication Date: Jul 10, 2023

RCRA Non-Generators: RCRA NON GEN

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Non-Generators do not presently generate hazardous waste.

Government Publication Date: Jul 10, 2023

RCRA Sites with Controls: RCRA CONTROLS

List of Resource Conservation and Recovery Act (RCRA) facilities with institutional controls in place. RCRA gives the U.S. Environmental Protection Agency (EPA) the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances.

Government Publication Date: Jul 10, 2023

Federal Engineering Controls-ECs: FED ENG

This list of Engineering controls (ECs) is provided by the United States Environmental Protection Agency (EPA). ECs encompass a variety of engineered and constructed physical barriers (e.g., soil capping, sub-surface venting systems, mitigation barriers, fences) to contain and/or prevent exposure to contamination on a property. The EC listing includes remedy component data from Superfund decision documents issued in fiscal years 1982-2021 for applicable sites on the final or deleted on the National Priorities List (NPL); and sites with a Superfund Alternative Approach (SAA) Agreement in place. The only sites included that are not on the NPL; proposed for NPL; or removed from proposed NPL, are those with an SAA Agreement in place.

Government Publication Date: Oct 26, 2023

Federal Institutional Controls- ICs: FED INST

This list of Institutional controls (ICs) is provided by the United States Environmental Protection Agency (EPA). ICs are non-engineered instruments, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy. Although it is EPA's expectation that treatment or engineering controls will be used to address principal threat wastes and that groundwater will be returned to its beneficial use whenever practicable, ICs play an important role in site remedies because they reduce exposure to contamination by limiting land or resource use and guide human behavior at a site. The IC listing includes remedy component data from Superfund decision documents issued in fiscal years 1982-2021 for applicable sites on the final or deleted on the National Priorities List (NPL); and sites with a Superfund Alternative Approach (SAA) Agreement in place. The only sites included that are not on the NPL; proposed for NPL; or removed from proposed NPL, are those with an SAA Agreement in place.

Government Publication Date: Oct 26, 2023

Land Use Control Information System:

The LUCIS database is maintained by the U.S. Department of the Navy and contains information for former Base Realignment and Closure (BRAC) properties across the United States.

Government Publication Date: Sep 1, 2006

Institutional Control Boundaries at NPL sites: NPL IC

Boundaries of Institutional Control areas at sites on the United States Environmental Protection Agency (EPA)'s National Priorities List, or Proposed or Deleted, made available by the EPA's Shared Enterprise Geodata and Services (SEGS). United States Environmental Protection Agency (EPA)'s National Priorities List of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the Superfund program. Institutional controls are non-engineered instruments such as administrative and legal controls that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy.

Government Publication Date: May 25, 2023

Emergency Response Notification System: ERNS 1982 TO 1986

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

Government Publication Date: 1982-1986

Emergency Response Notification System: ERNS 1987 TO 1989

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

Government Publication Date: 1987-1989

Emergency Response Notification System: ERNS

Database of oil and hazardous substances spill reports made available by the United States Coast Guard National Response Center (NRC). The NRC fields initial reports for pollution and railroad incidents and forwards that information to appropriate federal/state agencies for response. These data contain initial incident data that has not been validated or investigated by a federal/state response agency.

Government Publication Date: Aug 12, 2023

The Assessment, Cleanup and Redevelopment Exchange System (ACRES) Brownfield Database: FED BROWNFIELDS

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties protects the environment, reduces blight, and takes development pressures off greenspaces and working lands. This data is provided by the United States Environmental Protection Agency (EPA) and includes Brownfield sites from the Cleanups in My Community (CIMC) web application.

Government Publication Date: Mar 13, 2023

FEMA Underground Storage Tank Listing: FEMA UST

The Federal Emergency Management Agency (FEMA) of the Department of Homeland Security maintains a list of FEMA owned underground storage tanks.

Government Publication Date: Dec 31, 2017

Facility Response Plan: FRP

This listing contains facilities that have submitted Facility Response Plans (FRPs) to the U.S. Environmental Protection Agency (EPA). Facilities that could reasonably be expected to cause "substantial harm" to the environment by discharging oil into or on navigable waters are required to prepare and submit FRPs. Harm is determined based on total oil storage capacity, secondary containment and age of tanks, oil transfer activities, history of discharges, proximity to a public drinking water intake or sensitive environments. This listing includes FRP facilities from an applicable EPA FOIA file and Homeland Infrastructure Foundation-Level Data (HIFLD) data file.

Government Publication Date: May 2, 2023

Delisted Facility Response Plans: DELISTED FRP

Facilities that once appeared in - and have since been removed from - the list of facilities that have submitted Facility Response Plans (FRP) to EPA. Facilities that could reasonably be expected to cause "substantial harm" to the environment by discharging oil into or on navigable waters are required to prepare and submit Facility Response Plans (FRPs). Harm is determined based on total oil storage capacity, secondary containment and age of tanks, oil transfer activities, history of discharges, proximity to a public drinking water intake or sensitive environments.

Government Publication Date: May 2, 2023

Historical Gas Stations: HIST GAS STA

This historic directory of service stations is provided by the Cities Service Company. The directory includes Cities Service filling stations that were located throughout the United States in 1930.

Government Publication Date: Jul 1, 1930

Petroleum Refineries: REFN

List of petroleum refineries from the U.S. Energy Information Administration (EIA) Refinery Capacity Report. Includes operating and idle petroleum refineries (including new refineries under construction) and refineries shut down during the previous year located in the 50 States, the District of Columbia, Puerto Rico, the Virgin Islands, Guam, and other U.S. possessions. Survey locations adjusted using public data.

Government Publication Date: Sep 20, 2023

Petroleum Product and Crude Oil Rail Terminals: BULK TERMINAL

A list of petroleum product and crude oil rail terminals from the U.S. Energy Information Administration (EIA), as well as petroleum terminals sourced from the Federal Communications Commission Data hosted by the Homeland Infrastructure Foundation-Level Database. Data includes operable bulk petroleum product terminals with a total bulk shell storage capacity of 50,000 barrels or more, and/or the ability to receive volumes from tanker, barge, or pipeline; also rail terminals handling the loading and unloading of crude oil with activity between 2017 and 2018. EIA petroleum product terminal data comes from the EIA-815 Bulk Terminal and Blender Report, which includes working, shell in operation, and shell idle for several major product groupings.

Government Publication Date: Sep 22, 2023

LIEN on Property: SEMS LIEN

The U.S. Environmental Protection Agency's (EPA) Superfund Enterprise Management System (SEMS) provides Lien details on applicable properties, such as the Superfund lien on property activity, the lien property information, and the parties associated with the lien.

Government Publication Date: Sep 19, 2023

Superfund Decision Documents: SUPERFUND ROD

This database contains a list of decision documents for Superfund sites. Decision documents serve to provide the reasoning for the choice of (or) changes to a Superfund Site cleanup plan. The decision documents include completed Records of Decision (ROD), ROD Amendments, Explanations of Significant Differences (ESD) for active and archived sites stored in the Superfund Enterprise Management System (SEMS), along with other associated memos and files. This information is maintained and made available by the U.S. Environmental Protection Agency.

Government Publication Date: Sep 19, 2023

Formerly Utilized Sites Remedial Action Program: DOE FUSRAP

The U.S. Department of Energy (DOE) established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from the Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations. The DOE Office of Legacy Management (LM) established long-term surveillance and maintenance (LTS&M) requirements for remediated FUSRAP sites. DOE evaluates the final site conditions of a remediated site on the basis of risk for different future uses. DOE then confirms that LTS&M requirements will maintain protectiveness.

Government Publication Date: Mar 4, 2017

State

Superfund Waste Cleanup & State-Funded Action Sites: SHWS

List of hazardous waste cleanup sites participating in various federal and state funded cleanup programs. Florida's State-Funded Action Sites and Superfund Waste Cleanup Sites lists are maintained and made available by the Florida Department of Environmental Protection (FDEP). This database is state equivalent CERCLIS.

Government Publication Date: Sep 18, 2023

Delisted State-Funded Action Sites: DELISTED SHWS

This database contains a list of closed hazardous waste sites of various federal and state funded cleanup programs that were removed from the Florida Department of Environmental Protection (FDEP).

Government Publication Date: Sep 18, 2023

ERIC Waste Cleanup: ERIC

Environmental Restoration Integrated Cleanup (ERIC) is a single database for tracking contaminated site cleanup activities in the Florida Department of Environmental Protection (DEP)'s Division of Waste Management (DWM). Includes records from 11 different DEP data systems, allowing tracking of a contaminated site throughout the course of cleanup regardless of which program area took the lead.

Government Publication Date: Aug 10, 2023

Florida Department of Environmental Protection Cleanup Sites: CLEANUP DEP

The Cleanup Sites layer feeds the FDEP's Contamination Locator Map (CLM). It provides locations and document links for sites currently in the cleanup process and sites awaiting cleanup funding. Cleanup programs include: Brownfields, Petroleum, EPA Superfund (CERCLA), Drycleaning, Responsible Party Cleanup, State Funded Cleanup, State Owned Lands Cleanup and Hazardous Waste Cleanup.

Government Publication Date: Aug 11, 2023

Waste Cleanup Responsible Party Sites: WCRPS

List of Open, Closed, and Inactive Waste Cleanup Responsible Party sites made available by the Florida Department of Environmental Protection.

Government Publication Date: Apr 11, 2021

Delisted Waste Cleanup Sites: DELISTED WCP

List of sites which once appeared on - and have since been removed from - the list of Waste Cleanup Sites made available by the Florida Department of Environmental Protection.

Government Publication Date: Aug 11, 2023

Solid Waste Facilities and Landfills: SWF/LF

The Solid Waste Facility Inventory Report made available by the Florida Department of Environmental Protection (FDEP) includes all types of authorized and unauthorized facilities: municipal solid waste, landfills, dumps, construction and demolition disposal, recycling facilities, and more.

Government Publication Date: May 25, 2023

Leaking Tanks: LST

The Storage Tank Regulation Section is part of the Petroleum Restoration Program in the Florida Department of Environmental Protection (FDEP)s Division of Waste Management. In 1983, Florida was one of the first states in the union to pass legislation and adopt rules for underground and aboveground storage tank systems. Since then, over 28,000 facilities have reported discharges of petroleum products from storage tank systems. Florida relies on groundwater for about 92 percent of its drinking water needs, and has some of the most stringent rules in the country.

Government Publication Date: Sep 29, 2023

Delisted Leaking Tanks: DELISTED LST

Whereas Leaking Tanks (LST) includes only facilities which currently have contamination as recorded by the Florida Department of Environmental Protection, this list contains facilities which were once included in LST data but no longer appear on the list made available by FDEP. Facilities may be removed from the current LST list because the discharge has been cleaned up, or the discharge is not required for 62-770.

Government Publication Date: Sep 29, 2023

Underground Storage Tanks: UST

List of Underground Storage Tank facilities made available by the Florida Department of Environmental Protection (FL DEP). Includes facilities tracked for active storage tanks, storage tank history, or petroleum cleanup activity. In an effort to minimize the occurrence and environmental risks of releases and discharges, FDEP administers standards pertaining to the construction, installation, operation, maintenance, repair, closure, and disposal of underground storage tank systems that store regulated substances.

Government Publication Date: Aug 11, 2023

Aboveground Storage Tanks: AST

List of Aboveground Storage Tank facilities made available by the Florida Department of Environmental Protection (FL DEP). Includes facilities tracked for active storage tanks, storage tank history, or petroleum cleanup activity.The Florida Department of Environmental Protection (FDEP) provides standards for aboveground storage tanks (ASTs) that have individual storage tank capacities greater than 550 gallons. The state also regulates the registration, construction, installation, operation, maintenance, repair, closure, and disposal of storage tank systems that store regulated substances.

Government Publication Date: Aug 11, 2023

Storage Tank Facilities: TANK

List of storage tank facilities made available by the Florida Department of Environmental Protection (FL DEP) for which tank information is not available. In the case of closed facilities - where all tanks have been removed or closed, and there is also no petroleum discharge or on-going cleanup activity - the owner data may not be current, but rather would represent the most recent information made available to FL DEP.

Government Publication Date: Aug 11, 2023

Delisted AST UST Storage Tanks: DEL UST AST TANK

This database contains a list of closed UST and AST storage tank sites that were removed from the Florida Department of Environmental Protection (FDEP) storage tank database.

Government Publication Date: Jul 2, 2015

Delisted Storage Tanks: DEL STORAGE TANK

List of sites that once appeared on - and have since been removed from - the list of UST and AST storage tank facilities made available by the Florida Department of Environmental Protection.

Government Publication Date: Aug 29, 2023

Federal Facilities Listing: FF TANKS

The Florida Department of Environmental Protection (FDEP) Storage Tank Program registers facilities and storage tanks where aboveground or underground storage tanks store pollutants, hazardous substances, and/or mineral acid substances regulated by Chapter 62-761, Florida Administrative Code, or when aboveground storage tanks or compression vessels store a hazardous substance which requires registration according to Chapter 376, Florida Statutes.

Government Publication Date: Aug 29, 2023

Storage Tank/Contaminated Facility Search: STCS

List of facilities and tanks in the Florida Department of Environmental Protection (FDEP) Bureau of Petroleum Storage Systems Storage Tank/Contaminated Facility Search. Note that tank details do not appear for facilities for which all tanks have been removed.

Government Publication Date: Aug 31, 2023

Institutional Controls Registry: INST

The Institutional Controls registry is maintained by the Florida Department of Environmental Protection (FDEP). The registry aims to help preserve adequate protection of contaminated soil regions and help to minimize any chances of exposure.

Government Publication Date: Aug 11, 2023

Engineering Controls: ENG

A listing of all engineering controls that are in place to eliminate or reduce the potential for contaminant migration and exposure to contaminants. These controls may include caps, barriers, guards or fences. The list is maintained by the Florida Department of Environmental Protection (FDEP).

Government Publication Date: Aug 11, 2023

Voluntary Cleanup Sites: VCP

A listing of active and closed voluntary cleanup sites registered by the Florida Department of Environmental Protection (FDEP).

Government Publication Date: Jul 1, 2022

Brownfield Sites: BROWNFIELDS

Brownfields are defined by the Florida Department of Environmental Protection (FDEP) as abandoned, idled, or underused industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contamination. This is a list of sites within designated Brownfield Areas within Florida where Brownfield Site Rehabilitation Agreement (BSRA)s have been executed between FDEP and a responsible party.

Government Publication Date: Sep 8, 2021

Brownfield Areas: BROWNFIELD AREA

Brownfields are defined by the Florida Department of Environmental Protection (FDEP) as abandoned, idled, or underused industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contamination. This is a list of Brownfield Areas, defined by the FDEP as contiguous areas of one or more brownfield sites, some of which may not be contaminated, that have been designated as such by a local government resolution. Such areas may include all or portions of community redevelopment areas, enterprise zones, empowerment zones, other such designated economically deprived communities and areas, and Environmental Protection Agency (EPA) designated brownfield pilot projects. Because a variety of sources and methods were used to derive information for this data, locations are approximate.

Government Publication Date: Aug 3, 2023

Hazardous Waste Facility List: HAZ WASTE FAC

List of Hazardous Waste Financial Assurance Facilities made available by the Division of Waste Management of the Florida Department of Environmental Protection (FDEP). The FDEP's Hazardous waste financial responsibility requirements exist to ensure that certain hazardous waste facilities and transporters have the financial resources available to provide for closure, postclosure and corrective action requirements and/or pay for bodily injury or property damage that might result from accidents, spills or other unexpected events, known as liabilities. These closure, postclosure, corrective action and liability requirements are called financial assurance.

Government Publication Date: Oct 23, 2023

Tribal

Leaking Underground Storage Tanks on Tribal/Indian Lands: INDIAN LUST

This list of leaking underground storage tanks (LUSTs) on Tribal/Indian Lands in Region 4, which includes Florida, is made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Apr 20, 2023

Underground Storage Tanks on Tribal/Indian Lands: INDIAN UST

This list of underground storage tanks (USTs) on Tribal/Indian Lands in Region 4, which includes Florida, is made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Apr 20, 2023

Delisted Tribal Leaking Storage Tanks: DELISTED INDIAN LST

Leaking Underground Storage Tank (LUST) facilities which once appeared on - and have since been removed from - the Regional Tribal/Indian LUST lists made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Apr 26, 2023

Delisted Tribal Underground Storage Tanks: DELISTED INDIAN UST

Underground Storage Tank (UST) facilities which once appeared on - and have since been removed from - the Regional Tribal/Indian UST lists made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Apr 26, 2023

County

No County databases were selected to be included in the search.

Additional Environmental Record Sources

Federal

Facility Registry Service/Facility Index: FINDS/FRS

The Facility Registry Service (FRS) is a centrally managed database that identifies facilities, sites, or places subject to environmental regulations or of environmental interest. FRS creates high-quality, accurate, and authoritative facility identification records through rigorous verification and management procedures that incorporate information from program national systems, state master facility records, and data collected from EPA's Central Data Exchange registrations and data management personnel. This list is made available by the U.S. Environmental Protection Agency (EPA).

Government Publication Date: Sep 8, 2023

Toxics Release Inventory (TRI) Program: TRIS

The U.S. Environmental Protection Agency's Toxics Release Inventory (TRI) is a database containing data on disposal or other releases of toxic chemicals from U.S. facilities and information about how facilities manage those chemicals through recycling, energy recovery, and treatment. There are currently 770 individually listed chemicals and 33 chemical categories covered by the TRI Program. Facilities that manufacture, process or otherwise use these chemicals in amounts above established levels must submit annual reporting forms for each chemical. Note that the TRI chemical list does not include all toxic chemicals used in the U.S. One of TRI's primary purposes is to inform communities about toxic chemical releases to the environment.

Government Publication Date: Oct 19, 2022

PFOA/PFOS Contaminated Sites: PFAS NPL

This list of Superfund Sites with Per- and Polyfluoroalkyl Substances (PFAS) detections is made available by the U.S. Environmental Protection Agency (EPA) in their PFAS Analytic Tools data, previously the list was obtained by EPA FOIA requests. EPA's Office of Land and Emergency Management and EPA Regional Offices maintain what is known about site investigations, contamination, and remedial actions under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) where PFAS is present in the environment. Limitations: Detections of PFAS at National Priorities List (NPL) sites do not mean that people are at risk from PFAS, are exposed to PFAS, or that the site is the source of the PFAS. The information in the Superfund NPL and Superfund Alternative Agreement (SAA) PFAS detection site list is years old and may not be accurate today. Site information such as site name, site ID, and location has been confirmed for accuracy; however, PFAS-related information such as media sampled, drinking water being above the health advisory, or mitigation efforts has not been verified. For Federal Facilities data, the other Federal agencies (OFA) are the lead agency for their data and provided them to EPA.

Government Publication Date: Sep 14, 2023

Federal Agency Locations with Known or Suspected PFAS Detections: PFAS FED SITES

List of Federal agency locations with known or suspected detections of Per- and Polyfluoroalkyl Substances (PFAS), made available by the U.S. Environmental Protection Agency (EPA) in their PFAS Analytic Tools data. EPA outlines that these data are gathered from several federal entities, such as the Federal Superfund program, Department of Defense (DOD), National Aeronautics and Space Administration, Department of Transportation, and Department of Energy. The dates this data was extracted for the PFAS Analytic Tools range from March 2022 to September 2023. Sites on this list do not necessarily reflect the source/s of PFAS contamination and detections do not indicate level of risk or human exposure at the site. Agricultural notifications in this data are limited to DOD sites only. At this time, the EPA is aware that this list is not comprehensive of all Federal agencies.

Government Publication Date: Sep 5, 2023

SSEHRI PFAS Contamination Sites: PFAS SSEHRI

This PFAS Contamination Site Tracker database is compiled by the Social Science Environmental Health Research Institute (SSEHRI) at Northeastern University. According to the SSEHRI, the database records qualitative and quantitative data from each known site of PFAS contamination, including timeline of discovery, sources, levels, health impacts, community response, and government response. The goal of this database is to compile information and support public understanding of the rapidly unfolding issue of PFAS contamination. All data presented was extracted from government websites, news articles, or publicly available documents, and this is cited in the tracker. Locations for the Known PFAS Contamination Sites are sourced from the PFAS Sites and Community Resources Map, credited to the Northeastern University's PFAS Project Lab, Silent Spring Institute, and the PFAS-REACH team. Disclaimer: The source conveys the data undergoes regular updates as new information becomes available, some sites may be missing and/or contain information that is incorrect or outdated, as well as their information represents all contamination sites SSEHRI is aware of, not all possible contamination sites. This data is not intended to be used for legal purposes. Access the following source link for the most current information: https://pfasproject.com/pfas-sites-and-community-resources/

Government Publication Date: Oct 9, 2022

National Response Center PFAS Spills: ERNS PFAS

This Per- and Poly-Fluoroalkyl Substances (PFAS) Spills dataset is made available via the U.S. Environmental Protection Agency's (EPA) PFAS Analytic Tools. The National Response Center (NRC), operated by the U.S. Coast Guard, is the designated federal point of contact for reporting all oil, chemical, and other discharges into the environment, for the United States and its territories. This dataset contains NRC spill information from 1990 to the present that is restricted to records associated with PFAS and PFAS-containing materials. Incidents are filtered to include only records with a "Material Involved" or "Incident Description" related to Aqueous Film Forming Foam (AFFF). The keywords used to filter the data included "AFFF," "Fire Fighting Foam," "Aqueous Film Forming Foam," "Fire Suppressant Foam, "PFAS," "PERFL," "PFOA," "PFOS," and "Genx." Limitations: The data from the NRC website contains initial incident data that has not been validated or investigated by a federal/state response agency. Keyword searches may misidentify some incident reports that do not contain PFAS. This dataset should also not be considered to be exhaustive of all PFAS spills/release incidents.

Government Publication Date: Sep 23, 2023

PFAS NPDES Discharge Monitoring: PFAS NPDES

This list of National Pollutant Discharge Elimination System (NPDES) permitted facilities with required monitoring for Per- and Polyfluoroalkyl (PFAS) Substances is made available via the U.S. Environmental Protection Agency (EPA)'s PFAS Analytic Tools. Any point-source wastewater discharger to waters of the United States must have a NPDES permit, which defines a set of parameters for pollutants and monitoring to ensure that the discharge does not degrade water quality or impair human health. This list includes NPDES permitted facilities associated with permits that monitor for Per- and Polyfluoroalkyl Substances (PFAS), limited to the years 2007 - present. EPA further advises the following regarding these data: currently, fewer than half of states have required PFAS monitoring for at least one of their permittees, and fewer states have established PFAS effluent limits for permittees. For states that may have required monitoring, some reporting and data transfer issues may exist on a state-by-state basis.

Government Publication Date: Sep 4, 2023

Perfluorinated Alkyl Substances (PFAS) from Toxic Release Inventory: PFAS TRI

List of Toxics Release Inventory (TRI) facilities at which the reported chemical is a per- or polyfluoroalkyl (PFAS) substance included in the U.S. Environmental Protection Agency's (EPA) consolidated PFAS Master List of PFAS Substances. Encompasses Toxics Release Inventory records included in the EPA PFAS Analytic Tools. The EPA's TRI database currently tracks information on disposal or releases of 770 individually listed toxic chemicals and 33 chemical categories from thousands of U.S. facilities and details about how facilities manage those chemicals through recycling, energy recovery, and treatment.

Government Publication Date: Oct 19, 2022

Perfluorinated Alkyl Substances (PFAS) Water Quality: PFAS WATER

The Water Quality Portal (WQP) is a cooperative service sponsored by the United States Geological Survey (USGS), the Environmental Protection Agency (EPA), and the National Water Quality Monitoring Council (NWQMC). This listing includes records from the Water Quality Portal where the characteristic (environmental measurement) is in the Environmental Protection Agency (EPA)'s consolidated Master List of PFAS Substances.

Government Publication Date: Jul 20, 2020

PFAS TSCA Manufacture and Import Facilities: PFAS

The U.S. Environmental Protection Agency (EPA) issued the Chemical Data Reporting (CDR) Rule under the Toxic Substances Control Act (TSCA) and requires chemical manufacturers and facilities that manufacture or import chemical substances to report data to EPA. This list is specific only to TSCA Manufacture and Import Facilities with reported per- and poly-fluoroalkyl (PFAS) substances. Data file is sourced from EPA's PFAS Analytic Tools TSCA dataset which includes CDR/Inventory Update Reporting data from 1998 up to 2020. Disclaimer: This data file includes production and importation data for chemicals identified in EPA's CompTox Chemicals Dashboard list of PFAS without explicit structures and list of PFAS structures in DSSTox. Note that some regulations have specific chemical structure requirements that define PFAS differently than the lists in EPA's CompTox Chemicals Dashboard. Reporting information on manufactured or imported chemical substance amounts should not be compared between facilities, as some companies claim Chemical Data Reporting Rule data fields for PFAS information as Confidential Business Information.

Government Publication Date: Jan 5, 2023

PFAS Waste Transfers from RCRA e-Manifest : PFAS E-MANIFEST

This Per- and Poly-Fluoroalkyl Substances (PFAS) Waste Transfers dataset is made available via the U.S. Environmental Protection Agency's (EPA) PFAS Analytic Tools. Every shipment of hazardous waste in the U.S. must be accompanied by a shipment manifest, which is a critical component of the cradle-to-grave tracking of wastes mandated by the Resource Conservation and Recovery Act (RCRA). According to the EPA, currently no Federal Waste Code exists for any PFAS compounds. To work around the lack of PFAS waste codes in the RCRA database, EPA developed the PFAS Transfers dataset by mining e-Manifest records containing at least one of these common PFAS keywords: • PFAS • PFOA • PFOS • PERFL • AFFF • GENX • GEN-X (plus the Vermont state-specific waste codes). Limitations: Amount or concentration of PFAS being transferred cannot be determined from the manifest information. Keyword searches may misidentify some manifest records that do not contain PFAS. This dataset should also not be considered to be exhaustive of all PFAS waste transfers.

Government Publication Date: Oct 11, 2023

PFAS Industry Sectors: PFAS IND

This Per- and Poly-Fluoroalkyl Substances (PFAS) Industry Sectors dataset is made available via the U.S. Environmental Protection Agency's (EPA) PFAS Analytic Tools. The EPA developed the dataset from various sources that show which industries may be handling PFAS including: EPA's Enforcement and Compliance History Online (ECHO) records restricted to potential PFAS-handling industry sectors; ECHO records for Fire Training Sites identified where fire-fighting foam may have been used in training exercises; and 14 CFR Part 139 Airports compiled from historic and current records from the FAA Airport Data and Information Portal. Since July 2006, all certificated Part 139 Airports are required to have fire-fighting foam onsite that meet certain military specifications, which to date have been fluorinated (Aqueous Film Forming Foam). Limitations: Inclusion in this dataset does not indicate that PFAS are being manufactured, processed, used, or released by the facility. Listed facilities potentially handle PFAS based on their industrial profile, but are unconfirmed by the EPA. Keyword searches in ECHO for Fire Training sites may misidentify some facilities and should not be considered to be an exhaustive list of fire training facilities in the U.S.

Government Publication Date: Apr 16, 2023

Hazardous Materials Information Reporting System: HMIRS

US DOT - Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) Incidents Reports Database taken from Hazmat Intelligence Portal, U.S. Department of Transportation.

Government Publication Date: Sep 1, 2020

National Clandestine Drug Labs: NCDL

The U.S. Department of Justice ("the Department"), Drug Enforcement Administration (DEA), provides this data as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy.

Government Publication Date: Jul 26, 2023

Toxic Substances Control Act: TSCA

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.

The CDR enables EPA to collect and publish information on the manufacturing, processing, and use of commercial chemical substances and mixtures (referred to hereafter as chemical substances) on the TSCA Chemical Substance Inventory (TSCA Inventory). This includes current information on chemical substance production volumes, manufacturing sites, and how the chemical substances are used. This information helps the Agency determine whether people or the environment are potentially exposed to reported chemical substances. EPA publishes submitted CDR data that is not Confidential Business Information (CBI).

Government Publication Date: Apr 11, 2019

Hist TSCA: HIST TSCA

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (I
and changing its name to the Chemical Data Reporting (CDR) rule.
The 2006 IUR data summary report includes information about chemicals manufactured or imported in quantities of 25,000 pounds or more at a single site during calendar year 2005. In addition to the basic manufacturing information collected in previous reporting cycles, the 2006 cycle is the first time EPA collected information to characterize exposure during manufacturing, processing and use of organic chemicals. The 2006 cycle also is the first time manufacturers of inorganic chemicals were required to report basic manufacturing information.
Government Publication Date: Dec 31, 2006

FTTS Administrative Case Listing: FTTS ADMIN
An administrative case listing from the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.
Government Publication Date: Jan 19, 2007

FTTS Inspection Case Listing: FTTS INSP
An inspection case listing from the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.
Government Publication Date: Jan 19, 2007

Potentially Responsible Parties List: PRP
Early in the site cleanup process, the U.S. Environmental Protection Agency (EPA) conducts a search to find the Potentially Responsible Parties (PRPs). The EPA looks for evidence to determine liability by matching wastes found at the site with parties that may have contributed wastes to the site. This listing contains PRPs, Noticed Parties, at sites in the EPA's Superfund Enterprise Management System (SEMS).
Government Publication Date: Oct 26, 2023

State Coalition for Remediation of Drycleaners Listing: SCRD DRYCLEANER
The State Coalition for Remediation of Drycleaners (SCRD) was established in 1998, with support from the U.S. Environmental Protection Agency (EPA) Office of Superfund Remediation and Technology Innovation. Coalition members are states with mandated programs and funding for drycleaner site remediation. Current members are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin. Since 2017, the SCRD no longer maintains this data, refer to applicable state source data where available.
Government Publication Date: Nov 08, 2017

Integrated Compliance Information System (ICIS): ICIS
The Integrated Compliance Information System (ICIS) database contains integrated enforcement and compliance information across most of U.S. Environmental Protection Agency's (EPA) programs. The vision for ICIS is to replace EPA's independent databases that contain enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions and a subset of the Permit Compliance System (PCS), which supports the National Pollutant Discharge Elimination System (NPDES). This information is maintained by the EPA Headquarters and at the Regional offices. A future release of ICIS will completely replace PCS and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities that support compliance and enforcement programs, including incident tracking, compliance assistance, and compliance monitoring.
Government Publication Date: Jan 21, 2023

Drycleaner Facilities: FED DRYCLEANERS
A list of drycleaner facilities from Enforcement and Compliance History Online (ECHO) data as made available by the U.S. Environmental Protection Agency (EPA), sourced from the ECHO Exporter file. The EPA tracks facilities that possess NAIC and SIC codes that classify businesses as drycleaner establishments.
Government Publication Date: Jul 23, 2023

Delisted Drycleaner Facilities: DELISTED FED DRY
List of sites removed from the list of Drycleaner Facilities (sites in the EPA's Integrated Compliance Information System (ICIS) with NAIC or SIC codes identifying the business as a drycleaner establishment).
Government Publication Date: Jul 23, 2023

Formerly Used Defense Sites: FUDS
Formerly Used Defense Sites (FUDS) are properties that were formerly owned by, leased to, or otherwise possessed by and under the jurisdiction of the Secretary of Defense prior to October 1986, where the Department of Defense (DOD) is responsible for an environmental restoration. The FUDS Annual Report to Congress (ARC) is published by the U.S. Army Corps of Engineers (USACE). This data is compiled from the USACE's Geospatial FUDS data layers and Homeland Infrastructure Foundation-Level Data (HIFLD) FUDS dataset.

Government Publication Date: Jul 12, 2022

FUDS Munitions Response Sites: FUDS MRS

Boundaries of Munitions Response Sites (MRS), published with the Formerly Used Defense Sites (FUDS) Annual Report to Congress (ARC) by the U.S. Army Corps of Engineers (USACE). An MRS is a discrete location within a Munitions response area (MRA) that is known to require a munitions response. An MRA means any area on a defense site that is known or suspected to contain unexploded ordnance (UXO), discarded military munitions (DMM), or munitions constituents (MC). This data is compiled from the USACE's Geospatial MRS data layers and Homeland Infrastructure Foundation-Level Data (HIFLD) MRS dataset.

Government Publication Date: Jul 12, 2022

Former Military Nike Missile Sites: FORMER NIKE

This information was taken from report DRXTH-AS-IA-83A016 (Historical Overview of the Nike Missile System, 12/1984) which was performed by Environmental Science and Engineering, Inc. for the U.S. Army Toxic and Hazardous Materials Agency Assessment Division. The Nike system was deployed between 1954 and the mid-1970's. Among the substances used or stored on Nike sites were liquid missile fuel (JP-4); starter fluids (UDKH, aniline, and furfuryl alcohol); oxidizer (IRFNA); hydrocarbons (motor oil, hydraulic fluid, diesel fuel, gasoline, heating oil); solvents (carbon tetrachloride, trichloroethylene, trichloroethane, stoddard solvent); and battery electrolyte. The quantities of material a disposed of and procedures for disposal are not documented in published reports. Virtually all information concerning the potential for contamination at Nike sites is confined to personnel who were assigned to Nike sites. During deactivation most hardware was shipped to depot-level supply points. There were reportedly instances where excess materials were disposed of on or near the site itself at closure. There was reportedly no routine site decontamination.

Government Publication Date: Dec 2, 1984

PHMSA Pipeline Safety Flagged Incidents: PIPELINE INCIDENT

A list of flagged pipeline incidents made available by the U.S. Department of Transportation (US DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA). PHMSA regulations require incident and accident reports for five different pipeline system types.

Government Publication Date: Dec 30, 2022

Material Licensing Tracking System (MLTS): MLTS

A list of sites that store radioactive material subject to the Nuclear Regulatory Commission (NRC) licensing requirements. This list is maintained by the NRC. As of September 2016, the NRC no longer releases location information for sites. Site locations were last received in July 2016.

Government Publication Date: May 11, 2021

Historic Material Licensing Tracking System (MLTS) sites: HIST MLTS

A historic list of sites that have inactive licenses and/or removed from the Material Licensing Tracking System (MLTS). In some cases, a site is removed from the MLTS when the state becomes an "Agreement State". An Agreement State is a State that has signed an agreement with the Nuclear Regulatory Commission (NRC) authorizing the State to regulate certain uses of radioactive materials within the State.

Government Publication Date: Jan 31, 2010

Mines Master Index File: MINES

The Master Index File (MIF) is provided by the United States Department of Labor, Mine Safety and Health Administration (MSHA). This file, which was originally created in the 1970's, contained many Mine-IDs that were invalid. MSHA removes invalid IDs from the MIF upon discovery. MSHA applicable data includes the following: all Coal and Metal/Non-Metal mines under MSHA's jurisdiction since 1/1/1970; mine addresses for all mines in the database except for Abandoned mines prior to 1998 from MSHA's legacy system (addresses may or may not correspond with the physical location of the mine itself); violations that have been assessed penalties as a result of MSHA inspections beginning on 1/1/2000; and violations issued as a result of MSHA inspections conducted beginning on 1/1/2000.

Government Publication Date: May 1, 2023

Surface Mining Control and Reclamation Act Sites: SMCRA

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by the Office of Surface Mining Reclamation and Enforcement (OSMRE) to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). This inventory contains information on the type and extent of Abandoned Mine Land (AML) impacts, as well as information on the cost associated with the reclamation of those problems. The data is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed. Disclaimer: Per the OSMRE, States and tribes who enter their data into eAMLIS (AML Inventory System) may truncate their latitude and longitude so the precise location of usually dangerous AMLs is not revealed in an effort to protect the public from searching for these AMLs, most of which are on private property. If more precise location information is needed, please contact the applicable state/tribe of interest.

Government Publication Date: Jun 13, 2023

Mineral Resource Data System: MRDS

The Mineral Resource Data System (MRDS) is a collection of reports describing metallic and nonmetallic mineral resources throughout the world. Included are deposit name, location, commodity, deposit description, geologic characteristics, production, reserves, resources, and references. This database contains the records previously provided in the Mineral Resource Data System (MRDS) of USGS and the Mineral Availability System/Mineral Industry Locator System (MAS/MILS) originated in the U.S. Bureau of Mines, which is now part of USGS. The USGS has ceased systematic updates of the MRDS database with their focus more recently on deposits of critical minerals while providing a well-documented baseline of historical mine locations from USGS topographic maps.

Government Publication Date: Mar 15, 2016

DOE Legacy Management Sites: LM SITES

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) currently manages radioactive and chemical waste, environmental contamination, and hazardous material at over 100 sites across the U.S. The LM manages sites with diverse regulatory drivers (statutes or programs that direct cleanup and management requirements at DOE sites) or as part of internal DOE or congressionally-recognized programs, such as but not limited to: Formerly Utilized Sites Remedial Action Program (FUSRAP), Uranium Mill Tailings Radiation Control Act (UMTRCA Title I, Tile II), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Resource Conservation and Recovery Act (RCRA), Decontamination and Decommissioning (D&D), Nuclear Waste Policy Act (NWPA). This site listing includes data exported from the DOE Office of LM's Geospatial Environmental Mapping System (GEMS). GEMS Data disclaimer: The DOE Office of LM makes no representation or warranty, expressed or implied, regarding the use, accuracy, availability, or completeness of the data presented herein.

Government Publication Date: May 25, 2023

Alternative Fueling Stations: ALT FUELS

This list of alternative fueling stations is sourced from the Alternative Fuels Data Center (AFDC). The U.S. Department of Energy's Office of Energy Efficiency & Renewable Energy launched the AFDC in 1991 as a repository for alternative fuel vehicle performance data, which provides a wealth of information and data on alternative and renewable fuels, advanced vehicles, fuel-saving strategies, and emerging transportation technologies. The data includes Biodiesel (B20 and above), Compressed Natural Gas (CNG), Electric, Ethanol (E85), Hydrogen, Liquefied Natural Gas (LNG), Propane (LPG), and Renewable Diesel (R20 and above) fuel type locations.

Government Publication Date: Aug 30, 2023

Superfunds Consent Decrees: CONSENT DECREES

This list of Superfund consent decrees is provided by the Department of Justice, Environment & Natural Resources Division (ENRD) through a Freedom of Information Act (FOIA) applicable file. This listing includes Consent Decrees for CERCLA or Superfund Sites filed and/or as proposed within the ENRD's Case Management System (CMS) since 2010. CMS may not reflect the latest developments in a case nor can the agency guarantee the accuracy of the data. ENRD Disclaimer: Congress excluded three discrete categories of law enforcement and national security records from the requirements of the FOIA; response is limited to those records that are subject to the requirements of the FOIA; however, this should not be taken as an indication that excluded records do, or do not, exist.

Government Publication Date: Apr 19, 2023

Air Facility System: AFS

This EPA retired Air Facility System (AFS) dataset contains emissions, compliance, and enforcement data on stationary sources of air pollution. Regulated sources cover a wide spectrum; from large industrial facilities to relatively small operations such as dry cleaners. AFS does not contain data on facilities that are solely asbestos demolition and/or renovation contractors, or landfills. ECHO Clean Air Act data from AFS are frozen and reflect data as of October 17, 2014; the EPA retired this system for Clean Air Act stationary sources and transitioned to ICIS-Air.

Government Publication Date: Oct 17, 2014

Registered Pesticide Establishments: SSTS

This national list of active EPA-registered foreign and domestic pesticide and/or device-producing establishments is based on data from the Section Seven Tracking System (SSTS). The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Section 7 requires that each producing establishment must place its EPA establishment number on the label or immediate container of each pesticide, active ingredient or device produced. An EPA establishment number on a pesticide product label identifies the EPA registered location where the product was produced. The list of establishments is made available by the U.S. Environmental Protection Agency (EPA).

Government Publication Date: Mar 1, 2023

Polychlorinated Biphenyl (PCB) Transformers: PCBT

Locations of Transformers Containing Polychlorinated Biphenyls (PCBs) registered with the United States Environmental Protection Agency. PCB transformer owners must register their transformer(s) with EPA. Although not required, PCB transformer owners who have removed and properly disposed of a registered PCB transformer may notify EPA to have their PCB transformer de-registered. Data made available by EPA.

Government Publication Date: Oct 15, 2019

Polychlorinated Biphenyl (PCB) Notifiers: PCB

Facilities included in the national list of facilities that have notified the United States Environmental Protection Agency (EPA) of Polychlorinated (PCB) activities. Any company or person storing, transporting or disposing of PCBs or conducting PCB research and development must notify the EPA and receive an identification number.

Government Publication Date: Mar 20, 2023

State

Priority Ranking List: PRIORITYCLEAN

The Florida Legislature has established a state-funded program to cleanup properties that are contaminated as a result of the operations of a drycleaning facility or wholesale supply facility (Chapter 376, Florida Statutes). The program is administered by the Florida Department of Environmental Protection (FDEP). The statute was sponsored by the drycleaning industry to address environmental, economic, and liability issues resulting from drycleaning solvent contamination. The program provides limited liability protection to the owner, operator and real property owner of drycleaning or wholesale supply facilities for cleanup of drycleaning solvent contamination if the parties meet the eligibility conditions stated in the law.

Government Publication Date: Aug 11, 2023

Dry Cleaning Facilities: DRYCLEANERS

A listing of dry cleaning facilities registered with the Florida Department of Environmental Protection (FDEP). The information contains facility identification number, site location information, related party (owner) information, and facility type and status. Data is taken from the Storage Tank & Contamination Monitoring database, the registration repository of dry cleaner facility data.

Government Publication Date: Oct 18, 2023

Delisted Dry Cleaning Facilities: DELISTED DRYCLEANERS

List of sites removed from the drycleaners database made available by the Florida Department of Environmental Conservation (DEC).

Government Publication Date: Oct 18, 2023

Historical Dry Cleaners: HISTORICAL DRYC

The Florida Department of Environmental Protection (FDEP) provided this historical database of regulated and non-regulated dry cleaning facilities. These facilities were at one time tracked and registered by the FDEP OCULUS Electronic Document Management System as "drums" in the underground storage tank database.

Government Publication Date: Aug 2, 2013

Oil and Hazardous Materials Incidents: SPILLS

Statewide listing of oil and hazardous materials spills and incidents recorded by the Florida Department of Environmental Protection (FDEP).

Government Publication Date: Nov 1, 2023

Contaminated Sites: DWM CONTAM

Florida Department of Environmental Protection (FDEP) Division of Waste Management (DWM) listing of active or known sites that include sites requiring cleanup but are not actively being worked on due to the agency's lack of funding (primarily petroleum and drycleaning).

Government Publication Date: Jul 14, 2023

Delisted Contaminated Sites: DEL CONTAM SITE

List of sites which were once included on the Florida Department of Environmental Protection (FDEP) Division of Waste Management (DWM)'s Contaminated Sites list. As sites on the Contaminated Sites (CS) list are cleaned up or closed under risk based corrective action, they are removed from the CS list.

Government Publication Date: Sep 30, 2015

Aqueous Film Forming Foam (AFFF): PFAS AFFF

A list of fire fighter training facilities that use or possibly used Aqueous Film Forming Foam (AFFF). This list is made available by the Florida Department of Environmental Protection (DEP).

Government Publication Date: Aug 22, 2023

PFAS Investigation at Federal Facilities: PFAS

List of sites - including Federal Facilities - in Florida at which either a) there has been confirmed or suspected usage of Aqueous Film Forming Foam (AFFF), or b) the Division of Waste Management has identified as a potential source or environmental impact related to per- and polyfluoroalkyl substances (PFAS). The Florida Department of Environmental Protection (DEP) is committed to the protection of the groundwater resources of the state and the public health and safety of residents. The DEP will continue its efforts to investigate and understand PFAS in the environment and the ecological and human health risks associated with PFAS contamination. Listings made available by the Florida Department of Environmental Protection (DEP).

Government Publication Date: Aug 23, 2023

Ground Water Contamination Areas: GW CONTAM

List of areas of known groundwater contamination made available by the Florida Department of Environmental Protection (DEP). 38 counties have been delineated primarily for the agricultural pesticide ethylene dibromide (EDB), and to a much lesser extent, volatile organic and petroleum contaminants. Permitted water wells in these areas must meet specific well construction criteria and water testing prior to well use. This dataset only indicates the presence or absence of specific groundwater contaminants and does not represent all known sources of groundwater contamination in the state of Florida.

Government Publication Date: Jul 12, 2023

Underground Injection Control Wells: UIC

Class I Underground Injection Control (UIC) wells that are currently or were previously active, as well as proposed sites, regulated by the Florida Department of Environmental Protection (FDEP). Class I UIC wells are used to inject nonhazardous waste, hazardous waste (new hazardous waste wells were banned in 1983), or municipal waste below the lowermost underground source of drinking water.

Government Publication Date: Nov 8, 2023

Well Surveillance Program Facilities: WELL SURVEILLANCE

List of facilities made available by the Florida Health Well Surveillance group. The Well Surveillance group manages several programs to identify and monitor areas in Florida where contaminated drinking water is suspected and may pose a threat to public health. The section coordinates with the County Health Departments (CHDs) to locate potable wells and conduct water sampling for contaminants of concern. The Well Surveillance Section is composed of the State Underground Petroleum Environmental Response Act (SUPER Act), Drinking Water Toxics Program (Toxics), Drycleaner Solvent Cleanup Program (DSCP). Includes locations of known cattle dipping vats.

Government Publication Date: Sep 25, 2023

Cattle Dip Vats: CDV SOUTHEAST

A list of Cattle Dip Vats in Southeast Florida made available by the Florida Department of Environmental Protection.

Government Publication Date: Jan 19, 2017

Tier 2 Report: TIER 2

A list of Tier 2 facilities in the state of Florida. The list tracks the inventory of chemicals within a particular facility. This list is provided by the Florida Division of Emergency Management.

Government Publication Date: Mar 6, 2023

Delisted County Records: DELISTED COUNTY

Records removed from county databases. Records may be removed from the county lists made available by the respective county departments because they are inactive, or because they have been deemed to be below reportable thresholds.

Government Publication Date: Nov 14, 2023

Tribal

No Tribal additional environmental record sources available for this State.

County

No County additional environmental databases were selected to be included in the search.

Definitions

Database Descriptions: This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

Detail Report: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

Distance: The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries. All values are an approximation.

Direction: The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

Elevation: The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

Executive Summary: This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

Map Key: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

Unplottables: These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and are included as reference.

APPENDIX H

Grounded in Excellence

Photo 1: Northwest section of the subject property facing southeast

Photo 2: Northeast section of the subject property facing southwest

SITE PHOTOGRAPHS

Photo 3: Southeast section of the subject property facing northwest

Photo 4: Southwest section of the subject property facing northeast

Vacant land on the north adjoining properties

Vacant land on the east adjacent property

SITE PHOTOGRAPHS

Public well on the south adjoining property

Vacant land on the south adjoining property

SITE PHOTOGRAPHS

Hotel and homes on the south adjacent properties

Vacant land on the west adjoining property

SITE PHOTOGRAPHS

APPENDIX I

Grounded in Excellence

USER INTERVIEW RECORD

PROJECT:	Lake Harris Publix Development
COMPLETED BY NAME & TITLE:	Thomas J Murray, P.E. VP.
PHONE / EMAIL:	407/219-3540 tmurray@windcrestinc.com
DATE:	11-20-2023

The *User* (client) must provide the following information to the *Environmental Professional To qualify for one of the Landowner Liability Protections (LLPs) offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the "Brownfields Amendments")*. Failure to provide this information could result in a determination that "*all appropriate inquiry*" is not complete.

1. Did a search of *recorded land title records* (or judicial records where appropriate) identify environmental liens (ELs) filed or recorded against the *property* under federal, tribal, state, or local law (40 CFR 312.26)?
☐ **YES** ☐ **NO** If **YES**, explain: Not to my knowledge

2. Did a search of *recorded land title records* (or judicial records where appropriate) identify any activity and use limitations (AULs), such as engineering controls, land use restrictions, or *institutional controls* that are in place at the *property* and/or have been filed or recorded against the *property* under federal, tribal, state, or local law (40 CFR 312.26)?
☐ **YES** ☐ **NO** If **YES**, explain: Not to my knowledge

3. Do you have any specialized knowledge or experience related to the *property* or nearby properties? For example, are you involved in the same line of business as the current or former *occupants* of the *property* or an adjoining *property* so that you would have specialized knowledge of the chemicals and processes used by this type of business (40 CFR 312.28)?
☐ **YES** ☐ **NO** If **YES**, explain: No

4A. Does the purchase price being paid for this *property* reasonably reflect the fair market value of the *property*? ☒ **YES** ☐ **NO**
4B. If **NO**, have you considered whether the lower purchase price is because contamination is known or believed to be present at the *property* (40 CFR 312.29)? ☐ **YES** ☐ **NO** If **YES**, explain:

5. Are you aware of commonly known or *reasonably ascertainable* information about the *property* that would help the *Environmental Professional* to identify conditions indicative of releases or threatened releases (40 CFR 312.30)?
☐ **YES** ☒ **NO** If **YES**, explain:

a.) Do you know any of the past uses of the *property*?

☐ **YES** ☒ **NO** If **YES**, explain: _____

b.) Do you know of specific chemicals that are present or once were present at the *property*?

☒ **YES** ☐ **NO** If **YES**, explain: Only from review of past phase I performed by UES

c.) Do you know of spills or other chemical releases that have taken place at the *property*?

☐ **YES** ☒ **NO** If **YES**, explain: Not to my knowledge

d.) Do you know of any environmental cleanups that have taken place at the *property*?

☐ **YES** ☒ **NO** If **YES**, explain: Not to my knowledge

6. Based on your knowledge and experience related to the *property*, are there any *obvious* indicators that point to the presence or likely presence of releases at the *property* (40 CFR 312.31)?

☐ **YES** ☒ **NO** If **YES**, explain: Not to my knowledge

ALSO NEEDED:

(a) The reason why the Phase I ESA is being performed;
Required by Purchaser

(b) The type of *property* and type of *property* transaction, for example, sale, purchase, refinance, foreclosure, exchange, etc.;
Purchase

(c) The complete and correct address for the subject property (a map or other documentation showing the subject property location and boundaries is helpful);
NWC SR19 & CR48 in Howey-In-The-Hills, FL

(d) Identification of all parties who will rely on the Phase I Report;
Publix Super Markets, Inc. & WindCRest Development Group, Inc.

(e) Identification of the site contact and how the contact can be reached;
Tom Murray via email tmurray@windcrestinc.com

(f) Any special terms and conditions which must be agreed upon by the Environmental Professional.
Publix Requirements

(g) Any other knowledge or experience with the subject property that may be pertinent to the environmental professional (for example, copies of any available prior environmental site assessment reports, documents, correspondence, etc., concerning the subject property and its environmental condition). Not to my Knowledge

OWNER INTERVIEW RECORD

PROJECT:	LakeHill PD - Commercial Property
COMPLETED BY NAME / TITLE:	Ryan Lefkowitz/VP, Avanti Management Corporation, as Agent of Owner
PHONE / EMAIL:	407-628-8488; rlefkowitz@avantiprop.com
DATE:	11/20/2023

1. How long have you owned the subject property? approx. 10 years

2. What is the use of the subject property? agriculture

3. Indicate the utility providers to the subject property as applicable:
Drinking Water: Howey-in-the-Hills
Sanitary Sewer: Howey-in-the-Hills via Central Lake CDD
Electric: n/a
Natural Gas: n/a
Other [Irrigation/Drinking Water Well(s), Septic System(s)]: n/a

4. Do you have any knowledge of prior usage of the subject property? Adjoining properties?
☐ **YES** ☒ **NO** If **YES**, explain:

5. Are you aware of any environmental concerns regarding the subject property or adjoining properties?
☐ **YES** ☒ **NO** If **YES**, explain:

6. Are you aware of any underground storage tanks, aboveground storage tanks or other storage or use of petroleum products or hazardous materials at the subject property?
☒ **YES** ☐ **NO** If **YES**, explain: There is a water pump on the property utilized for irrigation located adjacent to the irrigation canal that was dredged from Lake Harris. Above-ground fuel storage was present.

7. Are you aware of any Safety Data Sheets for any chemicals stored or used at the subject property?
☐ **YES** ☒ **NO** If **YES**, explain:

8. Are you aware of any environmental site assessment reports, environmental compliance audit reports that exist for the subject property?
☒ **YES** ☐ **NO** If **YES**, can you provide a copy? Attached

9. Are you aware of any Community Right-to-Know Plans, health and safety plans, spill prevention, countermeasure, and control plans for the subject property?

☐ **YES** ☒ **NO** If **YES**, explain: _____

10. Are you aware of any environmental permits for the subject property (e.g. solid waste disposal permits, hazardous waste disposal permits, wastewater permits, NPDES permits, underground injection permits)?

☐ **YES** ☒ **NO** If **YES**, explain: _____

11. Do you know of spills or chemical releases that have taken place at the subject property?

☐ **YES** ☒ **NO** If **YES**, explain: _____

12. Do you know of any environmental cleanups that have taken place at the subject property?

☐ **YES** ☒ **NO** If **YES**, explain: _____

13. Are you aware of any government notices or past, pending or threatened litigation or administrative proceeding regarding any possible violations of environmental laws or liabilities relating to hazardous substances or petroleum products at the subject property?

☐ **YES** ☒ **NO** If **YES**, explain: _____

14. Can you provide contact information for any of the past owners or occupants of the subject property?

☐ **YES** ☒ **NO** If **YES**, provide name and phone number or email address:

_____

15. Provide the name and email or phone number of the key site manager:
Jay Diceglie, (407) 383-7462

16. Provide any other helpful information about the property: _____

Chris McCormick, L.E.P.

From: Florida Department of Health <fdh@mycusthelp.net>
Sent: Monday, November 20, 2023 12:34 PM
To: Chris McCormick, L.E.P.
Subject: Public Records Request :: P108725-112023

Dear Christopher McCormick:

This email is to confirm receipt of your public records request. If this request requires extensive use of resources, this office will contact you again once an estimate of the costs associated with producing the records you seek is prepared. The tracking number associated with your request is in the subject line of this email. If you have any questions, please let me know. Your request was received in this office on 11/20/2023 and given the reference number **P108725-112023** for tracking purposes.

Records Requested: I am conducting a Phase I Environmental Site Assessment located north of the County Road 48 intersection with State Road 19 in Howey-In-The-Hills, Lake County, Florida 34737. It appears on one tax parcel (ID# 23-20-25-0004-000-00200) (Alt Key 1780438). Do you have any records related to environmental issues at this site (i.e. wells, septic systems, petroleum product/hazardous substance use, storage or disposal, spills, releases or cleanups)? I appreciate you taking time to review my site. Let me know if you need more information.

You can monitor the progress of your request at the link below and you'll receive an email when your request has been completed.

Florida Department of Health

To track your request and respond, visit the **Public Records Center**, then click on "View My Public Records Requests."

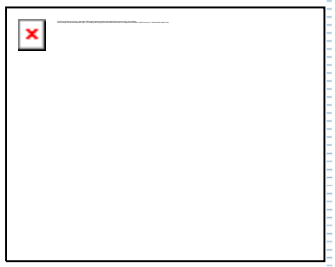
Chris McCormick, L.E.P.

From: Boeder, Kelly <kelly.boeder@lakecountyfl.gov>
Sent: Tuesday, November 21, 2023 10:21 AM
To: Chris McCormick, L.E.P.; Fire Rescue Info
Subject: RE: RFI – North of County Road 48 & State Road 19 Howey-In-The-Hills

Categories: Orange category

Thank you for contacting Lake County Fire Rescue

A search of our reporting program shows there are no records of any calls that resulted in any LCFR Hazardous Materials Team intervention or notification of the Environmental Protection Agency going back to June of 2017.
If there is anything further we can do to assist you, please don't hesitate to contact us at the FireRescueInfo@lakecountyfl.gov email address, or the phone number listed below.



KELLY BOEDER, *Notary Public*
Office Associate III

OFFICE OF FIRE RESCUE
Administration

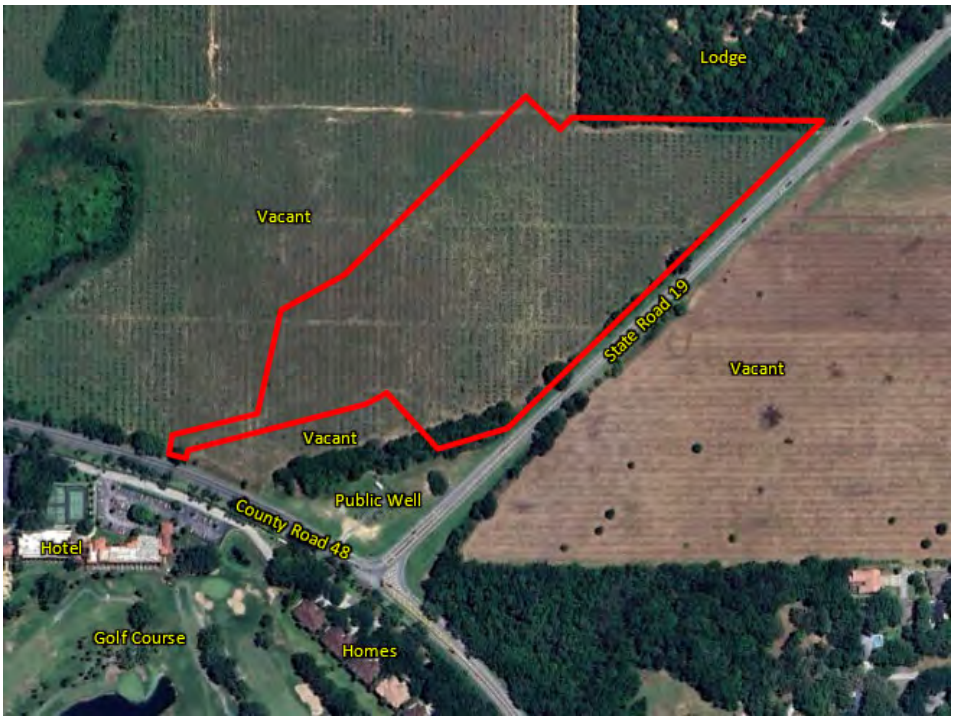
CUSTOMER SATISFACTION SURVEY LINK

A 315 W. Main St., Suite 411, Tavares, FL 32778
P 352-343-9458 | **F** 352-343-9516
E Kelly.boeder@lakecountyfl.gov | **W** www.lakecountyfl.gov

From: Chris McCormick, L.E.P. <CMcCormick@teamues.com>
Sent: Monday, November 20, 2023 12:30 PM
To: Fire Rescue Info <FireRescueInfo@lakecountyfl.gov>
Subject: RFI – North of County Road 48 & State Road 19 Howey-In-The-Hills

Hello,

I am conducting a Phase I Environmental Site Assessment located north of the County Road 48 intersection State Road 19 in Howey-In-The-Hills, Lake County, Florida 34737. It appears on one tax parcel (ID# 23-20-25-0004-000-00200) (Alt Key 1780438). In red below



Do you have any records related to petroleum product/hazardous substance use, storage or disposal, spills, releases or cleanups?

I appreciate you taking time to review my site. Let me know if you need more information.

Regards,

Chris McCormick, L.E.P.
Environmental Project Manager
Orlando Environmental, Health & Safety Services
Orlando Branch

3532 Maggie Boulevard
Orlando, Florida 32811
Office: 407-423-0504
Direct: 407-472-7975

Note: Universal Engineering Sciences has been rebranded as UES. Please visit our website www.teamues.com for additional information.

Chris McCormick, L.E.P.

From: Public Records <publicrecords@howey.org>
Sent: Monday, November 20, 2023 3:30 PM
To: Chris McCormick, L.E.P.
Subject: RE: RFI – North of County Road 48 & State Road 19 Howey-In-The-Hills

Categories: Orange category

Dear: Chris McCormick, – This e-mail acknowledges receipt of your public records request dated November 20, 2023. In accordance with Chapter 119 of the Florida Statutes and its exemptions, the Town will comply fully with the public records law and provide you with an opportunity to inspect the requested public records in a reasonable time period, all in accordance with Florida law. Your request is currently being reviewed by the respective record custodian(s).
You will be notified of the current format of the records and whether costs may be applicable for copying or extensive use of information technology resources or extensive clerical or supervisory assistance by personnel of the Town, or both, in order to accommodate your request. You will be contacted within a reasonable period of time and provided with the necessary information.

In the meantime, if you have any questions, please email me at publicrecords@howey.org

Best Regards,

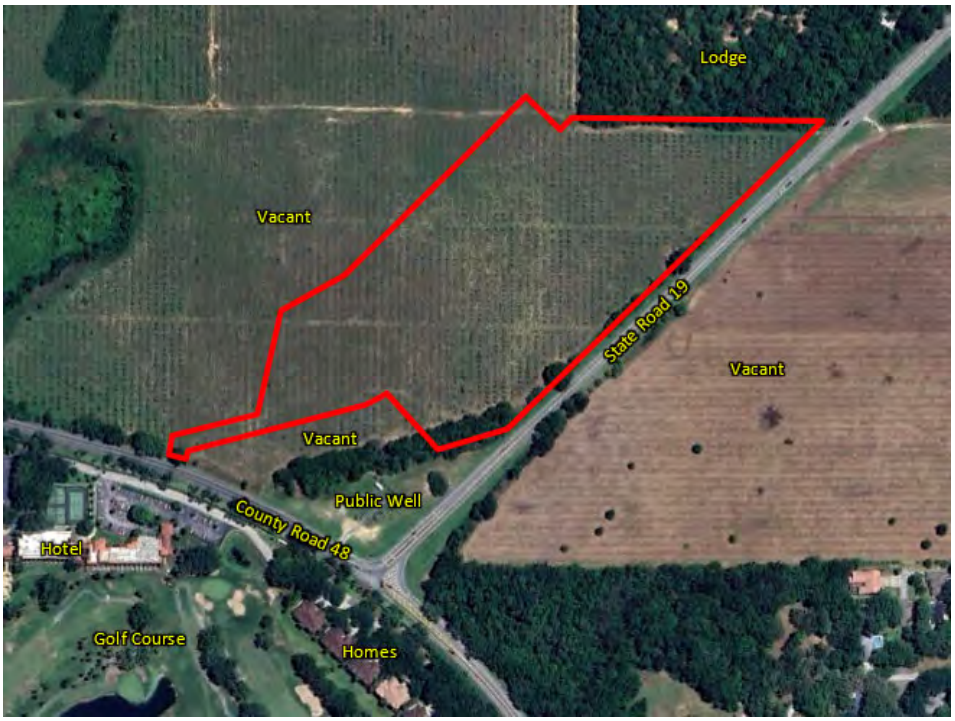
John Brock
Town Clerk for the Town of Howey-in-the-Hills P.O. Box 128
101 N. Palm Avenue
Howey-in-the-Hills, FL 34737
Town Hall: 352-324-2290

John Brock
Town Clerk for the Town of Howey-in-the-Hills
P.O. Box 128

101 N. Palm Avenue
Howey-in-the-Hills, FL 34737
Town Hall: 352-324-2290
Cell: 352-272-1925
jbrock@howey.org

From: Chris McCormick, L.E.P. <CMcCormick@teamues.com>
Sent: Monday, November 20, 2023 12:31 PM
To: Public Records <publicrecords@howey.org>
Subject: RFI – North of County Road 48 & State Road 19 Howey-In-The-Hills

Hello,
I am conducting a Phase I Environmental Site Assessment located north of the County Road 48 intersection with State Road 19 in Howey-In-The-Hills, Lake County, Florida 34737. It appears on one tax parcel (ID# 23-20-25-0004-000-00200) (Alt Key 1780438). In red below



Do you have any records related to petroleum product/hazardous substance use, storage or disposal, spills, releases or cleanups?

I appreciate you taking time to review my site. Let me know if you need more information.

Regards,

Chris McCormick, L.E.P.
Environmental Project Manager
Orlando Environmental, Health & Safety Services
Orlando Branch

3532 Maggie Boulevard
Orlando, Florida 32811
Office: 407-423-0504
Direct: 407-472-7975

Note: Universal Engineering Sciences has been rebranded as UES. Please visit our website www.teamues.com for additional information.

APPENDIX J

UES™

Grounded in Excellence

Christopher McCormick

Environmental Project Manager

Christopher McCormick has 21 years of professional experience in the environmental consulting industry. He has managed and performed numerous asbestos inspections and supervised various contaminated soil and mold abatements in Florida. Christopher also has extensive experience sampling soil, groundwater from wells, mold, and asbestos containing materials (ACM). He has also installed numerous temporary wells and installed erosion control fencing. He has also performed Infrared scans using a thermo-camera during inspections of commercial/residential properties for moisture and indoor air quality (IAQ) surveys. Christopher has also performed construction materials testing: slump tests, air content test, concrete cylinders, density testing with a nuclear gauge. His most recent relevant project experience includes: completion of Transaction Screen Process (TSP) reports and Phase I Environmental Site Assessments (ESA).

Education

BS in Biology, University of Central Florida

Years of Experience

Total 21/ UES 10

Certifications

- 40-Hour Hazardous Waste Operations and Emergency Response Training (HAZWOPER)
- 8-Hour OSHA Health and Safety Refresher Training, Full Face Respirator Test
- Florida Stormwater Erosion Inspector
- Asbestos Survey & Mechanical Training (AHERA Building Inspector)
- NIOSH 582 Equivalent – Level I

PROJECT EXPERIENCE

Former S&H Fabrication Annual Spring 2013 Semi-Annual Surface Water and Groundwater Monitoring Report, Orange County Solid Waste Management Facility, 5901 Young Pine Road

Orlando, Orange County, Florida

The subject property, an Orange County Solid Waste Management Facility (OCSWMF), is managed by the OCUSWD. It is comprised of two scale houses, eight retention ponds, a compost yard, a used tire processing area, one active and three closed Class I Landfill cells, one active and one closed Class III Landfill cells, and various other operating facilities. The semi-annual surface water and groundwater monitoring is conducted in accordance with OCSWMF's Monitoring Plan Implementation Schedule (MPIS) attached to the Landfill Operations Permit Number SF48-0128169-032. Christopher collected the samples for this semi-annual surface water and groundwater sampling event from four of the eight designated surface water monitoring locations (SW-P5, SW-P6, SW-P11, and SW-P12) at the subject property for quality assurance/ quality control purposes. He also inspected the monitor wells to ensure that they are functioning properly.

Asbestos Survey, Six Vacant Duplex Structures, City of Ocoee Public Works

Orange County, Florida

Christopher performed pre-demolition asbestos surveys and sampling of the interiors, exteriors and roofs of the six vacant residential structures constructed in 1950 to identify suspect ACM for the City of Ocoee Public Works Department. All of the structures were constructed with concrete block walls and wood roof systems. Christopher obtained samples of building materials which were observed during a walk-through inspection of the subject facilities that are typically suspected of containing asbestos as a constituent. The bulk samples were submitted to an NVLAP approved laboratory for analysis using EPA approved methods for industry accepted standards. According to Federal Regulation 49 CFR, Part 763 (AHERA), under the direction of an asbestos consultant licensed in the State of Florida, Mr. Robert Sport and Chris, conducted these activities and compiled and submitted a detailed report to the City of Ocoee.

Operation and Maintenance (O&M) of Remedial System

Sanford, Seminole County, Florida

Christopher assisted the project manager for annual this remedial O&M project. His duties/responsibilities included sample collection and analysis for annual report, cleaning and general maintenance of the treatment system, and repairs to the treatment system which was damaged by lightning. Universal designed and implemented the Remedial Action Plan and is responsible for all reporting to the Florida Department of Environmental Protection (FDEP) Central District, as well as summarizing the remedial activities conducted periodically.

Phase I ESA, Lake Charm Drive Subdivision

Oviedo, Seminole County, Florida

The subject property being considered for re-development as a new residential subdivision consisted of approximately 38 acres. Christopher conducted an evaluation of the past and current uses of subject property and surrounding properties to identify recognized environmental conditions which would warrant further evaluation with respect to the range of contaminants within the scope of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 U.S.C. 9601) and petroleum products.

Limited Groundwater Screening, WaWa Facility 5820 Edgewater Drive

Orlando, Orange County, Florida

Christopher collected the samples for this limited groundwater screening project.

Michael J. Geden, PG

Senior Project Geologist

Mike Geden has 41 years of professional experience in conducting and managing multiple groundwater investigations, site assessments, risk assessments, feasibility studies and site remedial actions. Project components have included literature and record searches, design and implementation of field assessment programs including installation and sampling of soil borings and groundwater monitor wells, geophysical investigations, single and multiple well aquifer testing, groundwater modeling and report preparation. Sites involved include those on the National Priorities List (NPL), RCRA, industrial, residential and open land. Clients have included the federal government, state, county and municipal governments and private industrial concerns.

Education

BS, Earth Science, Northeastern Illinois University

Years of Experience

41

Licenses

- Professional Geologist, FL #PG408
- Professional Geologist, AR
- Professional Geologist, NC

Certifications

- Employee Development Course in Hazardous Materials and Site Investigations
- Trained in Hazardous Waste Cleanup and Disposal Techniques
- Short Course, Ground Water Modeling, NWWA
- Short Course, RCRA Rules and Regulations, Government Institutes

Affiliations

- FPMA (Florida Petroleum Marketers Association)

PROJECT EXPERIENCE

Site Assessment /Remediation– Two Adjacent Brownfield Sites, Proposed Hotel/Commercial Site, 400 and 434 North Orange Avenue at Amelia Street

Orlando, Florida

Michael was the project geologist for the site assessment for this project which involved approximately six acres in downtown Orlando, Florida. Universal began work on this property as a Phase I Environmental Site Assessment (ESA) which identified the potential for contamination. A subsequent Phase II ESA confirmed the presence of soil contamination. Universal completed a site assessment to delineate the extent of Benzo(a)pyrene (BAP) in the soil. The assessment also showed that the soil contamination had not transitioned into the groundwater. Since the downtown area was designated as a brownfield area the property was designated a brownfield site to provide tax credits for the further assessment and remediation of the property. The property was split in half by two separate owners/developers with each parcel being eligible for the tax credits. The final assessment delineated the extent of impact on each parcel and Universal excavated the impacted soil for off-site disposal. The final assessment, remedial action and subsequent SRCO were completed within the same calendar year allowing the property owners to recoup 75% of the environmental cost.

Site Assessment/Remediation Proposed Mills Park

Orlando, Florida

Michael was the project geologist and manager. A Phase I ESA identified potential impacts to the property related to the presence of two railroad tracks that traversed a former lumber yard and other commercial/industrial parcels. The property was proposed for redevelopment as a multi-tenant retail and residential development. In April 2007, the City of Orlando designated the property as a Brownfield Site (BF480702000). The site assessment identified benzo (a) pyrene and its equivalents and arsenic in the soil beneath the former railroad tracks at concentrations that exceed the State of Florida cleanup criteria for residential use properties. Universal developed a remedial strategy for the excavation and off-site disposal of the estimated 8,800 cubic yards of contaminated soils. Upon removal of the soils the site was granted an SRCO by the FDEP.

Managed Assessment and Remedial Actions, Former Defense Fuels Supply Point

Lynn Haven, Florida

This facility formerly provided bulk fuels to Tyndell Air Force Base, but was decommissioned. Site activities included removal of bulk fuel storage tanks and the railroad network, delineation of

petroleum contamination within the soils and groundwater and the installation of groundwater and soil remediation systems. Active remediation at the site included dual-phase groundwater recovery, standard recovery wells, and air sparging. Soils at the site underwent enhanced bio-remediation. Recovered groundwater was treated in an on-site stripper and is then returned via infiltration galleries and spray fields.

Managed Assessment and Remedial Actions, Defense Fuels Supply Point, MacDill Air Force Base

Tampa, Florida

This operational facility provides bulk fuels to the Air Force Base. Site activities included delineation of petroleum contamination within the soils and groundwater and the installation of groundwater remediation systems. Refurbishing of the bulk storage tanks by the Air Force allowed for the installation of an air sparging system under the tanks which were placed back in operation. Contaminated soils in the basins and at the pumping facility were addressed as the refurbishing of the facility continued. Product recovery was completed at two locations and the installation of additional groundwater remedial systems was completed.

Program Manager, Petroleum Restoration Program

Central District, Florida

Provides overall management of all sites in the Central District assigned to Universal under the State of Florida Petroleum Restoration Program (PRP). Tasks include review of initial PRP offer, assignment of task to a project manager in one of six Universal offices in the Central District, allocation of company resources and review of all project deliverables.

Project Manager/Project Geologist, Retail Property

Seminole County, Florida

Former UST site had been redeveloped as a retail outlet. Petroleum contamination spread from the former tank location under an adjacent busy highway. Implemented approved remedial action consisting of in-situ chemical oxidation of high concentration source area. This action was followed by repopulation of the microbial community through the injection of Petrox. Finally, an oxygen release compound was injected into the surficial aquifer to aid in the biodegradation of the remaining contamination. Natural groundwater flow is expected to carry the microbes and nutrients to the impacted areas under the roadway.

Project Manager/Project Geologist, Commercial Warehouse

St. Cloud, Florida

Completed expedited site remediation in support of a warehouse facility sale. Assessed soil and groundwater impacts associated with an abandoned UST at the site. Negotiated with the FDEP for a soil and groundwater removal action in the vicinity of the tank. Following removal and clean soil determination, demonstrated two consecutive quarters of clean groundwater sampling which lead the State to issue a determination of No Further Action for the property. Property could then be sold for full worth with no environmental restrictions.

Project Manager/Project Geologist – Multiple Sites

Seminole County, Orange County, Osceola County, Volusia County and Polk County, Florida

Projects involved assessment, remedial design and implementation and long term monitoring under the FDEP Petroleum Cleanup Program which was the predecessor to the current PRP. Many sites had been redeveloped as retail facilities requiring that all work be completed with minimal disruption to retail operations.

Managed Assessment and Tank Closures, Entertainment Complex

Polk County, Florida

Worked with facility Environmental Compliance personnel to bring USTs into compliance at multiple properties. Services included aiding in the registration of tanks, contamination assessments at 5 tank farm locations, excavation and closure of tanks at 3 locations and abandonment of groundwater monitoring wells and one potable well which were no longer in service. Client received notifications of clean closure and a No Further Action determination on all sites addressed.

Managed Site Assessment and Closures, Multiple Retail Properties

Orange and Volusia Counties, Florida

Worked with a local development company to complete limited site assessments at multiple former petroleum sites. These sites, which had been redeveloped as retail properties were in the State Petroleum Cleanup program, but due to low scores, were not eligible for state funding. Negotiated scope of work with regulatory agencies to determine contaminant status of soil and groundwater at each site. Performed remedial actions as necessary to obtain a determination of No Further Action at each site.

Managed Assessment and Initial Remedial Action, Oil Treating Facility

Santa Rosa County, Florida

Conducted contamination assessment at an oil treating facility following the discovery that a small quantity of oil was leaking out of a hillside through naturally occurring groundwater seeps into a local stream system. A series of monitor wells, soil borings and soil gas surveys were completed to trace the oil back to the source. Aquatic toxicity surveys were completed and a risk assessment performed before initial remediation designs were completed. Remediation designs included an interception trench and shallow and deep recovery wells.

Project Geologist, Spill Response

Chiefland, Florida

Coordinated emergency response services at the site of a 5,000 gallon gasoline spill, which resulted from a highway accident involving an overturned tanker truck. Gasoline ran into a storm sewer system which ultimately discharged to a sinkhole. Project involved recovery of the free-floating product and contaminated soil from the sinkhole. Groundwater samples were collected and analyzed daily from the nearby municipal well field. Monitoring wells were installed between the sinkhole and the well field to provide an early warning of any contaminant movement. A standby carbon-adsorption treatment system was installed at the municipal well field. A soil gas survey revealed that a substantial amount of gasoline leaked out of the storm sewer system and was held in the soil beneath the storm sewer pipe. Vacuum extraction system to remediate the contaminated soil was designed, constructed, and put into operation within 60 days.

Project Manager/Project Geologist - St. Cloud Power Plant Petroleum Cleanup (OUC/FDEP)

St. Cloud, Florida

Managed the assessment of the St. Cloud Power Generation Facility during and after petroleum contamination remediation. This project was funded under the FDEP Petroleum Cleanup Program in a cost sharing agreement between the City of St. Cloud, Orlando Utilities Commission and the FDEP. The assessment determined the impact of accidental operational releases of petroleum products from the facility into the surrounding soil and groundwater. Once the extent of impact was identified, a plan for cleanup was developed and implemented.

Site Reconnaissance, US Navy Properties

Oahu, Hawaii

Completed initial site reconnaissance of all US Navy underground storage tank sites at military installations on the island of Oahu in Hawaii. Included site visits, initial mapping, records review and monitoring well inventory. Task was a part of a wide ranging multi-year contract with PACDIV to provide initial site characterizations of all fuel storage facilities within the district.

Toxicity Testing

Persian Gulf, Saudi Arabia

Part of research team testing the toxicity of an oil dispersant on sensitive corals in the Persian Gulf. Included establishing test tracts including control tracts and exposing corrals within the tracts to crude oil and various mixtures of crude oil and dispersant. Follow team monitored the health of the corrals on a quarterly basis for impacts.

Project Manager/Project Geologist – Former Central Florida Drum

Winter Springs, Florida

Managed preparation of a Phase I Site Assessment for a large parcel of land being purchased by a national home builder. A portion of the property had formerly been used as a drum recycling operation and is a listed brownfield site with known groundwater contamination. Michael completed an extensive Site Assessment to delineate impacted soils within the brownfield area and to screen for contaminants in the former citrus groves. The assessment identified two impacted areas. The Primary Area of Concern (PAC) consists of approximately 4.5 acres where soil is impacted with organochlorine pesticides, metals, BaP, BaP Eqs and PCB-1260. This area is also underlain by a chlorinated solvent plume in the groundwater. In addition to the Primary Area of Concern, soil containing primarily BaP, BaP Eqs and arsenic contamination was identified at a smaller adjacent parcel. Prepared a Limited Scope Remedial Action Plan (LSRAP) to address hot spots in the groundwater that exceeded the natural attenuation default concentrations for TCE. Addressing the hot spots allowed for natural attenuation monitoring of the remaining plume and eventual closure with groundwater use restrictions. Universal treated the hot spots with two applications of a chemical oxidant (PersulfOx). One application was applied through existing air sparge points from a prior remedial effort and the second application was completed using Universal's GeoProbe. Complete semi-annual sampling of monitoring wells within the impacted areas under the Brownfield agreement and as post active remediation

monitoring. Developed a LSRAP that proposed relocation of impacted soils from Area 1B to the PAC. The relocated soils were capped with clean fill and the area will remain a green space within the proposed development. Prepared the Voluntary Cleanup Tax Credit application which was reviewed and certified by a CPA and submitted on behalf of the client to the FDEP Brownfield Program

Project Manager/Project Geologist - Industrial Site Assessment

Sanford, Seminole County, Florida

Managed the supplemental site assessment of a former manufacturing facility which used tetrachloroethene (PCE) historically as a vapor degreaser. PCE leached through the concrete structure of the degreaser into the soils and groundwater under the building. The assessment used the membrane interface probe (MIP) for direct measurement of contaminant impact and to determine the lithology beneath the site. This investigation revealed a zone of DNAPL residing on top of one of the clay layers beneath the former degreasing unit. Universal collected groundwater samples from three hydrologic units utilizing a GeoProbe to delineate the extent of impact. Universal maintained a system for recovering impacted groundwater from the shallow aquifer which was treated on-site and discharged under permit to the POTW.

Project Manager/Project Geologist, Vacant Central Florida Industrial Property

Florida

Vacant property encompassing 5.21 acres was used as a manufacturing facility from approximately 1954 through 1961 and the remaining building (Bldg G) was then used for storage. TCE was detected in residential wells in 1992 and City water was supplied to the adjacent residential neighborhood. In 2007 the FDEP directed that a Site Assessment be completed. Prepared a Work Plan for a groundwater investigation of the surficial aquifer completed an off-site well survey to identify existing wells that were being used for residential or irrigation purposes. One residential well was found to have site related chemicals of concern (CoC) in excess of the GCTL and Universal worked with the FDEP Water Supply Restoration Program to have the residence attached to the City water supply. The detection of CoCs in off-site GeoProbe samples prompted Universal to file Initial Notice of Contamination Beyond Property Boundaries. Utilized a cone penetrometer and identified 3 water bearing units, and two confining layers in the unconsolidated sediments above the limestone bedrock. Utilized a membrane interface probe to identify source areas associated with former septic systems and at the former industrial process area. In subsequent investigations utilized a GeoProbe for the collection of discrete groundwater samples which were then analyzed at an on-site mobile laboratory for rapid delineation of the extent of impact. Utilized an in-house wetlands specialist who delineated the extent of the on-site wetlands and then obtained a permit from the US Army Corps of Engineers to access the wetlands for the collection of groundwater samples. Submitted a Site Assessment Report and a Supplemental Site Assessment Report to the FDEP.

Project Manager/Project Geologist - Sherwood Medical Industries NPL Site Operations & Management Activities

Deland, Florida

Responsible for total operation of all selected remedies at the Sherwood Medical NPL site in accordance with two approved Records of Decision (ROD). As Project Manager, Mike represents the interests of the client directly to the EPA in operational matters. Additionally, Mike is responsible for instrumentation of operating remediation system, installation of telemetry system to allow remote monitoring of system operation, weekly, monthly and quarterly O&M and preventative maintenance operations, preparation and implementation of a new O&M manual, semi-annual sampling of all monitoring points and regulatory reporting. All data is compiled into semi-annual reports which are submitted to the Florida Department of Environmental Protection and the United States Environmental Protection Agency, Region IV.

Project Manager/Project Geologist - Supplemental Field Investigation, Sherwood Medical Industries NPL Site

Deland, Florida

EPA requested the collection of additional data to better define extent of contamination at two identified source areas and on the adjacent private properties. Tasks included collection of groundwater data utilizing the GeoProbe Membrane Interface Probe and Electron Capture Detector, completion of multi-aquifer pumping test, installation of shallow, intermediate and deep aquifer monitoring wells and the collection of discrete depth groundwater samples utilizing dispersion sampling equipment. Second phase of effort required installation of FLUTE sampling technology to determine location of DNAPL within the interbedded sands, silts and clays of the confining layer.

Project Manager/Project Geologist – Source Area Remedial Action, Sherwood Medical Industries NPL Site

Deland, Florida

Source area had been defined in the Supplemental Site Assessment. A groundwater sample collected from within the basin showed a PCE concentration of 88,000 ug/l, and the highly impacted area covered 2,500 square feet. The PCE concentration suggested the potential for a limited area of phase separated compounds beneath the basin which had the potential to continue to spread through groundwater migration. Prepared a Remedial Action Plan for enhancement of the natural attenuation process utilizing Hydrogen Release Compound [extended release formula] (HRC-X™) for addressing high concentration contaminants found below the source area. Four monitoring clusters (one upgradient, one source area and two downgradient) were installed to monitor groundwater quality within the injection area as well as upgradient and downgradient. The HRC-X was injected into the subsurface at each grid location utilizing a GeoProbe Model 6620DT direct push rig and a GeoProbe GS2000 injection machine. Collected samples from the wells on a semi-annual basis in association with the routine O&M sampling at the site. Submitted to the FDEP and the EPA an Implementation Report on December 4, 2008 which showed PCE concentrations were reduced between 78% and 100% (non-detect) in the six source area and downgradient wells.

Project Manager/Project Geologist Sherwood Medical Industries NPL Site

Deland, Florida

Completed Soil Vapor Survey at NPL cleanup site at the request of the USEPA. Contaminant concentrations detected in the groundwater below the operating facility posed the potential for possible vapor intrusion into the manufacturing facility. While vapor concentrations were very high beneath the buildings and paved portions of the property, risk assessment modeling showed that exposure to the potential vapors was with acceptable levels. Samples were collected again 5 years later to compare changes in the concentrations and to re-evaluate exposure scenarios.

Project Manager/Project Geologist Sherwood Medical Industries NPL Site

Deland, Florida

Completed surface water, sediment and fish sampling at a lake adjacent to the NPL cleanup site. The adjacent lake is an operable unit of the site and fishing and swimming ban had been imposed on the lake based on the original Remedial Investigation report. New investigation demonstrated that contaminants were not bioaccumulating within the fish caught in the lake. Study also showed that contaminants within the sediments were not partitioning to the surface water and that the sediments were being buried by natural siltation further eliminating the exposure potential. Results of the investigation resulted in the fishing ban being lifted from the lake.

Project Manager/Project Geologist - Marine Corps Base Camp Lejuene

Jacksonville, North Carolina

Managed initial remedial investigation activities which were completed at Marine Corps Base Camp Lejeune NPL site including geophysical and hydrogeological investigations, soil, groundwater monitoring wells, potable supply wells, surface water and sediment sampling at 20 study sites on the installation. Sites included suspected chemical burial sites, abandoned landfills, underground storage tanks, and past and present industrial areas.

Project Manager/Project Geologist – Alabama Army Ammunition Plant

Childersburg, Alabama

Over a twenty year period Managed remedial investigation activities at the Alabama Army Ammunition Plant which were initiated following the completion of an initial records search in 1979. The site was placed on the NPL in 1987 and a portion of the property (Area A) was sold to private owners in 1990. Investigations have included sampling of soil, sediments, surface water and groundwater and several phases of remedial actions have been completed. A close working relationship with the regulatory agencies (EPA and Alabama Department of Environmental Management) allowed for the quick delineation of operable units based on analytical results and remediation under interim RODs. Area A of the property was completely remediated.

Project Manager - Information Management for NPL Assessment, Alabama Army Ammunition Plant

Childersburg, Alabama

Provided CERCLA oversight, community relations, closure report preparation, maintained administrative records, prepared site management plan, and DoD property transfer services for this project. Tasks involved the review of the community relations plan and maintaining the community outreach program. Also assisted in the preparation of the site-wide Record of Decision. Coordinated partnering meetings with each of the project stakeholders which included EPA, ADEM, AEC, USACE, IOC, AMC, CHPPM, the local community, and the prime contractors.

Lake Hills Shopping Center

Utility Report

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS

Prepared by:

Madden, Moorhead & Stokes, LLC
431 East Horatio Avenue, Suite 260
Maitland, FL 32751
(407) 629-8330

December 2024

BENJAMIN S. BECKHAM LICENSE No. 79452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Benjamin S. Beckham, P.E. using a digital signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Digitally signed by Benjamin S Beckham
Date: 2025.01.10 14:47:25 -05'00'

Benjamin S. Beckham, P.E. #79452
Certificate of Authorization No. CA-0007723

Documents included herein which have been prepared by professionals other than Madden, Moorhead, and Stokes, LLC. are not covered under the above registered engineer's signature and seal

Appendices

A Potable Water & Wastewater Demand Summary
B Water Main Schematic
C Maximum Daily Flow plus Fire Flow Hydraulic Analysis
D Peak Hour Flow Demand Hydraulic Analysis
E HGL Tie-In Calculations
F Lake Hills Main Blvd. Water Main Report

Potable Water Summary

The proposed project, Lake Hills Shopping Center, is within the municipality of Howey in the Hills, Florida. The project is located near the intersection of C.R. 48 and S.R. 19. The development will consist of supporting infrastructure for a Publix Supermarket with retail shopping and access roads from C.R. 48 and S.R. 19 to the Publix.

The proposed project improvements include an 8" water main system that will connect to the existing 8" watermain on S.R. 19 and will loop through the site to the connect to the existing 8" watermain on Lake Hills Main Blvd. The proposed 8" watermain will service the Publix Supermarket, retail shops and Outparcels C & D. Outparcels A & B will be connected to the 8" watermain along Lake Hills Main Blvd.

The proposed water distribution system is modeled using WaterCAD by Haestad Methods. Two scenarios are modeled for the project: peak hourly flow and maximum daily flow combined with fire flow. The model analyses presented in Appendices C and D demonstrate minimum system pressures greater than 20 psi and maximum velocities less than 10.0 ft/s.

The proposed wastewater system is designed in accordance with Florida Department of Environmental Protection (FDEP) and City of Howie-in-the-Hills standards and regulations.

All elevations presented within this report are referenced to the North American Vertical Datum of 1988 (NAVD88) unless otherwise noted.

Wastewater Summary

Sanitary sewer for the Publix site and outparcels will be collected in an 8" PVC sanitary system. Similar to the water connections, Outparcels C & D will be collected with the onsite system while Outparcels A & B will be collected in the sanitary system along Lake Hills Main Blvd. All sanitary sewer systems will connect to an offsite lift station located on the ajacent proper to the north just off of Lake Hills Main Blvd.

APPENDIX A

Potable Water & Wastewater Demand Summary

Water Demands

UNIT TYPE	DEMAND PER ERC	Sum of ERC's[3]	FLOW SUMMARY					
			AVG. DAY		MAX. DAY[1]		PEAK HOUR[2]	
	(GPD)		(GPD)	(GPM)	(GPD)	(GPM)	(GPD)	(GPM)
Publix Supermarket	350	12	4,200	2.92	8,400	5.83	16,800	11.67
Retail Shops	350	6	2,100	1.46	4,200	2.92	8,400	5.83
Outparcel A (not included in permit)	350	6	2,100	1.46	4,200	2.92	8,400	5.83
Outparcel B (not included in permit)	350	6	2,100	1.46	4,200	2.92	8,400	5.83
Outparcel C	350	6	2,100	1.46	4,200	2.92	8,400	5.83
Outparcel D	350	6	2,100	1.46	4,200	2.92	8,400	5.83
			14,700	10.21	29,400	20.42	58,800	40.83

Fire Flow = 2,625.00 GPM

Max. Day + Fire Flow = 2,645.42 GPM

Sewer Demands

UNIT TYPE	DEMAND PER ERC	Sum of ERC's[3]	FLOW SUMMARY					
			AVG. DAY		MAX. DAY[1]		PEAK HOUR[2]	
	(GPD)		(GPD)	(GPM)	(GPD)	(GPM)	(GPD)	(GPM)
Publix Supermarket	300	8	2,400	1.67	4,800	3.33	9,600	6.67
Retail Shops	300	4	1,200	0.83	2,400	1.67	4,800	3.33
Outparcel A (not included in permit)	300	4	1,200	0.83	2,400	1.67	4,800	3.33
Outparcel B (not included in permit)	300	4	1,200	0.83	2,400	1.67	4,800	3.33
Outparcel C	300	4	1,200	0.83	2,400	1.67	4,800	3.33
Outparcel D	300	4	1,200	0.83	2,400	1.67	4,800	3.33
			8,400	5.83	16,800	11.67	33,600	23.33

Notes:

[1]Max day factor = 2.0

[2]Peak Hour factor = 4.0

[3]Per Orange County Utilities

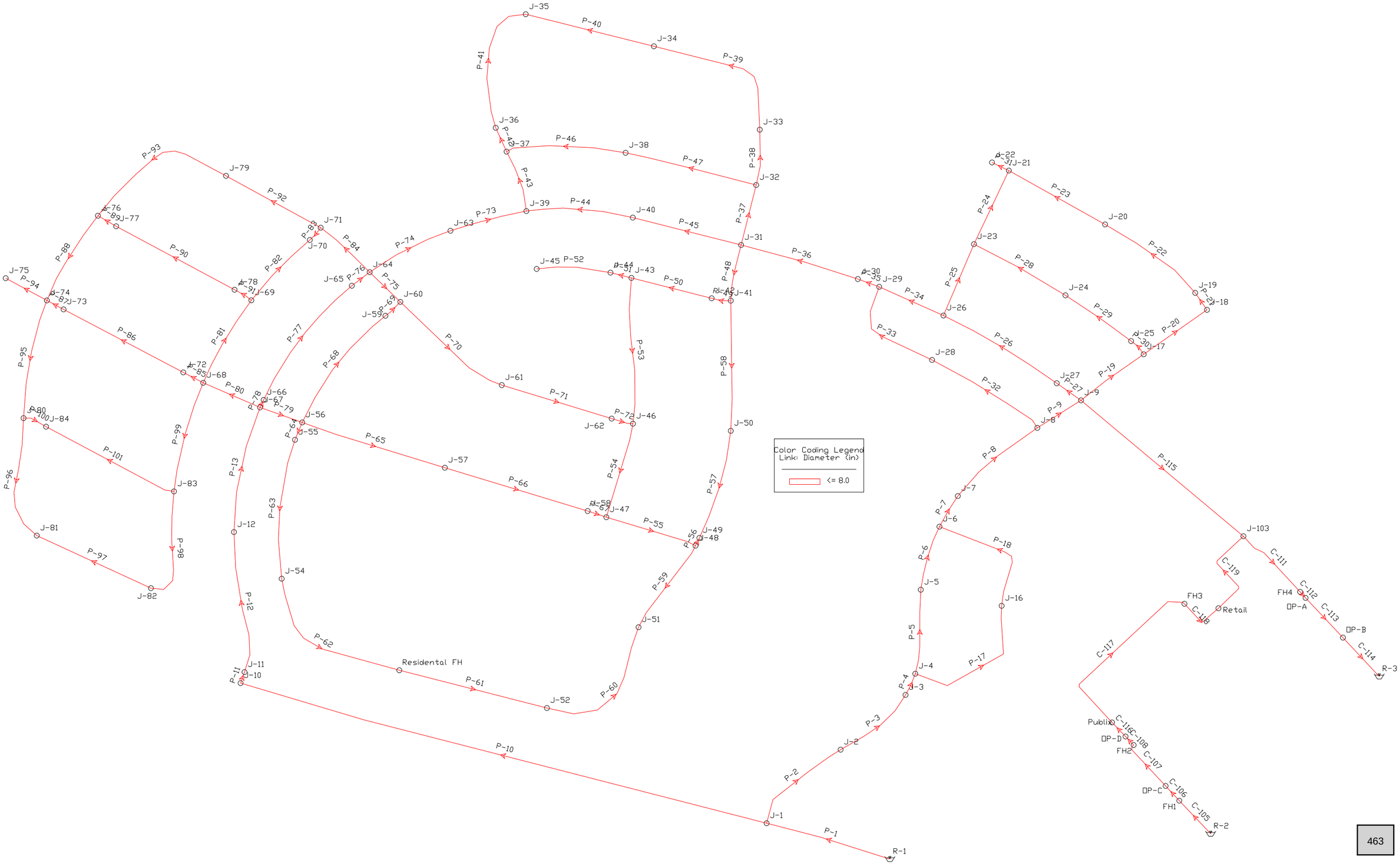
0

Required Fire Flow Demand

BUILDING TYPE	FBC CONST. TYPE	NFPA CONST. TYPE	TOTAL AREA	NFF PER NPFA 1 TABLE 18.4.5.2.1	BUILDING SPRINKLERED	ALLOWABLE NFF REDUCTION PER NFPA 1 18.4.5.3.2	ADJUSTED NFF FOR SPRINKLER CREDIT	MINIMUM ALLOWABLE NFF PER NFPA 1 18.4.5.3.2	REQUIRED FIRE FLOW
Publix/Retail	II-A	II(111)	61,300	3,500	Yes	75%	2,625	1,000	2,625

APPENDIX B

Water Main Schematic


J-35
P-40
J-34
P-39
P-41
J-36
P-42
J-37
P-46
J-38
P-47
J-33
P-38
J-32
P-43
J-39
P-44
J-40
P-45
P-37
J-31
P-36
J-30
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J-7
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J-6
P-6
J-5
P-5
J-4
P-4
J-3
P-3
J-2
P-2
J-1
P-1
R-1
P-10
J-11
P-11
J-10
P-12
J-12
P-13
J-54
P-62
Residental FH
P-61
J-52
P-60
J-51
P-59
J-49
P-56
J-48
P-55
J-47
P-58
P-57
J-50
P-54
J-46
P-72
J-62
P-71
J-61
P-70
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J-59
P-68
J-56
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P-75
J-45
P-52
J-44
J-43
P-50
P-48
J-41
P-49
P-53
J-42
J-22
J-21
P-24
P-23
J-20
P-22
J-23
P-28
J-24
P-29
P-25
J-19
P-21
J-18
J-25
P-20
J-17
P-19
P-26
J-103
P-115
C-111
C-119
FH3
C-118
Retail
FH4
C-112
C-113
P-A
P-B
C-114
R-3
C-117
Publix
P-D
C-116
C-108
FH2
C-107
P-C
C-106
FH1
C-105
R-2
J-18
P-17
J-16
P-18
J-15
P-16
J-14
P-15
J-13
P-14
J-75
P-94
J-74
P-87
J-73
P-88
J-76
P-89
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P-90
J-78
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J-70
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J-79
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P-93
P-95
P-86
J-72
P-85
J-68
P-81
P-80
J-66
P-78
P-67
P-79
P-77
J-67
J-80
P-100
J-84
P-101
J-83
P-99
P-98
J-81
P-97
J-82
P-96
Color Coding Legend
Link: Diameter (in)
<= 8.0

APPENDIX C

Maximum Daily Flow plus Fire Flow Hydraulic Analysis

Scenario: NFF
Steady State Analysis
Junction Report

Label	Base Flow (gpm)	Elevation (ft)	Type	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Description
J-48	0.00	79.68	Demand	0.00	193.34	49.18	
J-47	0.00	82.68	Demand	0.00	193.87	48.11	
J-46	0.00	77.74	Demand	0.00	194.26	50.41	
J-63	0.00	69.30	Demand	0.00	195.03	54.40	
J-60	0.00	74.66	Demand	0.00	194.44	51.82	
J-56	0.00	82.12	Demand	0.00	193.97	48.39	
J-40	0.00	73.71	Demand	0.00	195.39	52.65	
J-37	0.00	71.13	Demand	0.00	195.33	53.74	
J-32	0.00	74.10	Demand	0.00	195.43	52.49	
J-45	0.00	72.97	Demand	0.00	194.49	52.58	
J-43	0.00	74.32	Demand	0.00	194.50	51.99	
J-41	0.00	76.94	Demand	0.00	194.71	50.95	
J-10	0.00	92.19	Demand	0.00	202.68	47.80	
J-80	0.00	75.28	Demand	0.00	194.77	51.70	
J-76	0.00	71.68	Demand	0.00	194.76	53.25	
J-103	0.00	93.00	Demand	0.00	201.12	46.78	
FH2	0.00	103.50	Demand	0.00	226.05	53.02	
FH1	0.00	111.00	Demand	0.00	235.19	53.73	
J-68	0.00	78.12	Demand	0.00	194.77	50.47	
J-67	0.00	80.27	Demand	0.00	194.82	49.56	
J-64	0.00	71.89	Demand	0.00	194.75	53.16	
J-74	0.00	72.19	Demand	0.00	194.76	53.03	
J-71	0.00	92.08	Demand	0.00	194.76	44.42	
J-69	0.00	74.40	Demand	0.00	194.76	52.08	
J-9	0.00	87.33	Demand	0.00	201.12	49.23	
J-8	0.00	86.57	Demand	0.00	201.69	49.81	
J-6	0.00	89.32	Demand	0.00	206.52	50.71	
J-21	0.00	72.72	Demand	0.00	200.76	55.40	
J-18	0.00	74.79	Demand	0.00	200.87	54.55	
J-17	0.00	81.27	Demand	0.00	200.91	51.76	
J-4	0.00	94.23	Demand	0.00	208.32	49.36	
J-29	0.00	79.15	Demand	0.00	199.94	52.26	
OP-B	2.92	103.00	Demand	2.92	208.54	45.66	
Retail	2.92	104.00	Demand	2.92	201.33	42.11	
OP-C	2.92	118.00	Demand	2.92	233.07	49.79	
OP-D	2.92	120.00	Demand	2.92	224.82	45.35	
OP-A	2.92	101.00	Demand	2.92	201.98	43.69	
J-75	4.55	72.38	Demand	4.55	194.76	52.95	
J-79	4.55	68.21	Demand	4.55	194.76	54.75	
J-78	4.55	72.88	Demand	4.55	194.76	52.73	
J-82	4.55	81.89	Demand	4.55	194.77	48.84	
J-81	4.55	77.11	Demand	4.55	194.77	50.90	
J-5	4.55	91.92	Demand	4.55	207.32	49.93	
J-77	4.55	70.97	Demand	4.55	194.76	53.56	
J-72	4.55	76.94	Demand	4.55	194.77	50.98	
J-39	4.55	71.82	Demand	4.55	195.28	53.42	
J-70	4.55	70.85	Demand	4.55	194.76	53.61	
J-28	4.55	82.90	Demand	4.55	200.76	50.99	
J-7	4.55	88.68	Demand	4.55	205.04	50.34	
J-73	4.55	74.84	Demand	4.55	194.77	51.89	
J-1	4.55	100.31	Demand	4.55	216.15	50.12	
J-34	4.55	68.89	Demand	4.55	195.38	54.72	
J-2	4.55	97.68	Demand	4.55	212.48	49.67	
J-30	4.55	78.86	Demand	4.55	198.93	51.95	

Scenario: NFF
Steady State Analysis
Junction Report

Label	Base Flow (gpm)	Elevation (ft)	Type	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Description
J-31	4.55	76.16	Demand	4.55	195.50	51.63	
J-33	4.55	71.03	Demand	4.55	195.41	53.81	
J-35	4.55	70.78	Demand	4.55	195.35	53.90	
J-36	4.55	69.86	Demand	4.55	195.34	54.29	
J-84	4.55	75.21	Demand	4.55	194.77	51.73	
J-83	4.55	81.50	Demand	4.55	194.77	49.01	
J-3	4.55	95.14	Demand	4.55	209.49	49.47	
J-12	4.55	84.60	Demand	4.55	198.21	49.15	
J-11	4.55	90.36	Demand	4.55	201.98	48.29	
J-22	4.55	72.18	Demand	4.55	200.76	55.63	
J-52	4.55	85.38	Demand	4.55	188.70	44.70	
J-51	4.55	82.89	Demand	4.55	191.39	46.94	
J-50	4.55	75.91	Demand	4.55	194.02	51.10	
J-20	4.55	74.77	Demand	4.55	200.80	54.53	
J-55	4.55	83.73	Demand	4.55	193.19	47.36	
J-54	4.55	84.37	Demand	4.55	189.81	45.62	
J-27	4.55	85.73	Demand	4.55	200.99	49.87	
J-44	4.55	74.40	Demand	4.55	194.49	51.96	
J-24	4.55	78.41	Demand	4.55	200.81	52.96	
J-42	4.55	75.83	Demand	4.55	194.65	51.41	
J-23	4.55	76.45	Demand	4.55	200.73	53.77	
J-26	4.55	82.67	Demand	4.55	200.59	51.02	
J-38	4.55	71.13	Demand	4.55	195.37	53.75	
J-25	4.55	78.61	Demand	4.55	200.88	52.90	
J-62	4.55	76.47	Demand	4.55	194.27	50.97	
J-16	4.55	91.00	Demand	4.55	207.35	50.34	
J-66	4.55	79.80	Demand	4.55	194.81	49.76	
J-65	4.55	73.00	Demand	4.55	194.76	52.68	
J-57	4.55	84.23	Demand	4.55	193.92	47.46	
J-58	4.55	84.67	Demand	4.55	193.88	47.25	
J-59	4.55	74.50	Demand	4.55	194.35	51.85	
J-19	4.55	74.65	Demand	4.55	200.85	54.60	
J-61	4.55	75.10	Demand	4.55	194.35	51.59	
J-49	4.55	78.48	Demand	4.55	193.44	49.74	
Publix	5.83	104.00	Demand	5.83	222.78	51.39	
Residental FH	1,000.00	87.14	Demand	1,000.00	185.97	42.76	
FH3	1,125.00	101.00	Demand	1,125.00	201.43	43.45	
FH4	1,500.00	101.00	Demand	1,500.00	200.99	43.26	

Scenario: NFF
Steady State Analysis
Pipe Report

Label	Diameter (in)	Length (ft)	Material	Start Node	Stop Node	Hazen-Williams C	Upstream Calculated Pressure (psi)	Downstream Calculated Pressure (psi)	Minor Loss Coefficient	Pressure Pipe Headloss (ft)	Velocity (ft/s)
C-114	8.0	167.00	PVC	OP-B	R-3	120.0	45.66	0.00	0.39	6.86	8.78
C-113	8.0	172.00	PVC	OP-A	OP-B	120.0	43.69	45.66	0.00	6.56	8.77
C-112	8.0	26.00	PVC	FH4	OP-A	120.0	43.26	43.69	0.00	0.99	8.75
C-106	8.0	63.00	PVC	FH1	OP-C	120.0	53.73	49.79	0.00	2.12	8.19
C-105	8.0	143.00	PVC	R-2	FH1	120.0	0.00	53.73	0.39	5.21	8.19
C-108	8.0	37.00	PVC	FH2	OP-D	120.0	53.02	45.35	0.00	1.24	8.17
C-107	8.0	173.00	PVC	OP-C	FH2	120.0	49.79	53.02	1.19	7.02	8.17
C-116	8.0	61.00	PVC	OP-D	Publix	120.0	45.35	51.39	0.00	2.03	8.15
C-117	8.0	597.00	PVC	Publix	FH3	120.0	51.39	43.45	1.60	21.35	8.11
P-1	8.0	405.00	PVC	R-1	J-1	120.0	0.00	50.12	2.00	14.25	7.78
P-2	8.0	342.00	PVC	J-1	J-2	120.0	50.12	49.67	2.00	3.67	4.08
P-3	8.0	272.00	PVC	J-2	J-3	120.0	49.67	49.47	2.00	2.99	4.05
P-4	8.0	74.00	PVC	J-3	J-4	120.0	49.47	49.36	2.00	1.17	4.02
P-7	8.0	113.00	PVC	J-6	J-7	120.0	50.71	50.34	2.00	1.48	3.96
P-8	8.0	332.00	PVC	J-7	J-8	120.0	50.34	49.81	2.00	3.35	3.93
P-35	8.0	72.00	PVC	J-29	J-30	120.0	52.26	51.95	2.00	1.01	3.76
P-36	8.0	383.00	PVC	J-30	J-31	120.0	51.95	51.63	2.00	3.43	3.73
P-10	8.0	1,716.00	PVC	J-1	J-10	120.0	50.12	47.80	2.00	13.47	3.67
P-11	8.0	37.00	PVC	J-10	J-11	120.0	47.80	48.29	2.00	0.70	3.67
P-12	8.0	448.00	PVC	J-11	J-12	120.0	48.29	49.15	2.00	3.77	3.64
P-13	8.0	404.00	PVC	J-12	J-67	120.0	49.15	49.56	2.00	3.39	3.61
P-64	8.0	59.00	PVC	J-55	J-56	120.0	47.36	48.39	2.00	0.78	3.48
P-63	8.0	444.00	PVC	J-54	J-55	120.0	45.62	47.36	2.00	3.38	3.45
P-62	8.0	522.00	PVC	Residental F	J-54	120.0	42.76	45.62	2.00	3.84	3.42
P-59	8.0	314.00	PVC	J-48	J-51	120.0	49.18	46.94	2.00	1.95	3.02
P-60	8.0	463.00	PVC	J-51	J-52	120.0	46.94	44.70	2.00	2.69	2.99
P-61	8.0	480.00	PVC	J-52	Residental FH	120.0	44.70	42.76	2.00	2.73	2.96
P-79	8.0	141.00	PVC	J-67	J-56	120.0	49.56	48.39	2.00	0.85	2.73
P-48	8.0	179.00	PVC	J-31	J-41	120.0	51.63	50.95	2.00	0.80	2.40
P-5	8.0	266.00	PVC	J-4	J-5	120.0	49.36	49.93	2.00	1.00	2.29
P-6	8.0	208.00	PVC	J-5	J-6	120.0	49.93	50.71	2.00	0.80	2.26
P-9	8.0	162.00	PVC	J-8	J-9	120.0	49.81	49.23	2.00	0.58	2.10
P-34	8.0	222.00	PVC	J-29	J-26	120.0	52.26	51.02	2.00	0.65	1.96
P-32	8.0	398.00	PVC	J-8	J-28	120.0	49.81	50.99	2.00	0.94	1.83
P-33	8.0	353.00	PVC	J-28	J-29	120.0	50.99	52.26	2.00	0.82	1.80
P-17	8.0	463.00	PVC	J-4	J-16	120.0	49.36	50.34	2.00	0.97	1.73
P-18	8.0	407.00	PVC	J-16	J-6	120.0	50.34	50.71	2.00	0.84	1.70
P-75	8.0	134.00	PVC	J-64	J-60	120.0	53.16	51.82	2.00	0.31	1.63
P-55	8.0	295.00	PVC	J-47	J-48	120.0	48.11	49.18	2.00	0.53	1.56
P-58	8.0	410.00	PVC	J-50	J-41	120.0	51.10	50.95	2.00	0.68	1.52
P-57	8.0	354.00	PVC	J-49	J-50	120.0	49.74	51.10	2.00	0.58	1.49
P-56	8.0	27.00	PVC	J-48	J-49	120.0	49.18	49.74	2.00	0.10	1.46
P-54	8.0	307.00	PVC	J-46	J-47	120.0	50.41	48.11	2.00	0.38	1.28
P-27	8.0	93.00	PVC	J-27	J-9	120.0	49.87	49.23	2.00	0.13	1.17
P-26	8.0	416.00	PVC	J-26	J-27	120.0	51.02	49.87	2.00	0.40	1.14
P-74	8.0	287.00	PVC	J-63	J-64	120.0	54.40	53.16	2.00	0.28	1.13
P-73	8.0	247.00	PVC	J-39	J-63	120.0	53.42	54.40	2.00	0.25	1.13
P-69	8.0	64.00	PVC	J-59	J-60	120.0	51.85	51.82	2.00	0.09	1.12
P-68	8.0	430.00	PVC	J-56	J-59	120.0	48.39	51.85	2.00	0.38	1.09
P-19	8.0	245.00	PVC	J-9	J-17	120.0	49.23	51.76	2.00	0.21	1.02
C-118	8.0	147.00	PVC	FH3	Retail	120.0	43.45	42.11	0.80	0.10	0.93
C-119	8.0	316.00	PVC	Retail	J-103	120.0	42.11	46.78	1.99	0.21	0.91
P-49	8.0	61.00	PVC	J-41	J-42	120.0	50.95	51.41	2.00	0.06	0.88

Scenario: NFF
Steady State Analysis
Pipe Report

Label	Diameter (in)	Length (ft)	Material	Start Node	Stop Node	Hazen-Williams C	Upstream Calculated Pressure (psi)	Downstream Calculated Pressure (psi)	Minor Loss Coefficient	Pressure Pipe Headloss (ft)	Velocity (ft/s)
P-25	8.0	245.00	PVC	J-23	J-26	120.0	53.77	51.02	2.00	0.15	0.85
P-50	8.0	261.00	PVC	J-42	J-43	120.0	51.41	51.99	2.00	0.15	0.85
C-111	8.0	252.00	PVC	J-103	FH4	120.0	46.78	43.26	0.59	0.13	0.83
P-53	8.0	461.00	PVC	J-43	J-46	120.0	51.99	50.41	2.00	0.24	0.82
P-37	8.0	195.00	PVC	J-31	J-32	120.0	51.63	52.49	2.00	0.08	0.68
P-45	8.0	352.00	PVC	J-40	J-31	120.0	52.65	51.63	2.00	0.11	0.62
P-44	8.0	338.00	PVC	J-39	J-40	120.0	53.42	52.65	2.00	0.11	0.62
P-30	8.0	58.00	PVC	J-25	J-17	120.0	52.90	51.76	2.00	0.03	0.59
P-29	8.0	252.00	PVC	J-24	J-25	120.0	52.96	52.90	2.00	0.07	0.56
P-28	8.0	330.00	PVC	J-23	J-24	120.0	53.77	52.96	2.00	0.08	0.54
P-43	8.0	199.00	PVC	J-37	J-39	120.0	53.74	53.42	2.00	0.05	0.53
P-70	8.0	417.00	PVC	J-60	J-61	120.0	51.82	51.59	2.00	0.09	0.52
P-80	8.0	195.00	PVC	J-67	J-68	120.0	49.56	50.47	2.00	0.04	0.50
P-71	8.0	362.00	PVC	J-61	J-62	120.0	51.59	50.97	2.00	0.07	0.49
P-72	8.0	70.00	PVC	J-62	J-46	120.0	50.97	50.41	2.00	0.02	0.46
P-20	8.0	244.00	PVC	J-17	J-18	120.0	51.76	54.55	2.00	0.04	0.43
P-21	8.0	65.00	PVC	J-18	J-19	120.0	54.55	54.60	2.00	0.02	0.43
P-22	8.0	359.00	PVC	J-19	J-20	120.0	54.60	54.53	2.00	0.05	0.40
P-78	8.0	26.00	PVC	J-66	J-67	120.0	49.76	49.56	2.00	0.01	0.39
P-47	8.0	424.00	PVC	J-38	J-32	120.0	53.75	52.49	2.00	0.05	0.38
P-23	8.0	347.00	PVC	J-20	J-21	120.0	54.53	55.40	2.00	0.04	0.37
P-77	8.0	459.00	PVC	J-65	J-66	120.0	52.68	49.76	2.00	0.05	0.36
P-46	8.0	379.00	PVC	J-37	J-38	120.0	53.74	53.75	2.00	0.04	0.35
P-24	8.0	257.00	PVC	J-21	J-23	120.0	55.40	53.77	2.00	0.03	0.34
P-65	8.0	472.00	PVC	J-56	J-57	120.0	48.39	47.46	2.00	0.05	0.34
P-76	8.0	71.00	PVC	J-64	J-65	120.0	53.16	52.68	2.00	0.01	0.33
P-66	8.0	470.00	PVC	J-57	J-58	120.0	47.46	47.25	2.00	0.04	0.31
P-38	8.0	176.00	PVC	J-32	J-33	120.0	52.49	53.81	2.00	0.02	0.30
P-67	8.0	62.00	PVC	J-58	J-47	120.0	47.25	48.11	2.00	0.01	0.28
P-39	8.0	502.00	PVC	J-33	J-34	120.0	53.81	54.72	2.00	0.03	0.27
P-40	8.0	417.00	PVC	J-34	J-35	120.0	54.72	53.90	2.00	0.02	0.24
P-41	8.0	429.00	PVC	J-35	J-36	120.0	53.90	54.29	2.00	0.02	0.21
P-81	8.0	302.00	PVC	J-68	J-69	120.0	50.47	52.08	2.00	0.01	0.20
P-42	8.0	82.00	PVC	J-36	J-37	120.0	54.29	53.74	2.00	0.00	0.18
P-84	8.0	209.00	PVC	J-71	J-64	120.0	44.42	53.16	2.00	0.01	0.18
P-85	8.0	71.00	PVC	J-68	J-72	120.0	50.47	50.98	2.00	0.00	0.15
P-99	8.0	356.00	PVC	J-83	J-68	120.0	49.01	50.47	2.00	0.01	0.14
P-82	8.0	265.00	PVC	J-69	J-70	120.0	52.08	53.61	2.00	0.01	0.14
P-86	8.0	426.00	PVC	J-72	J-73	120.0	50.98	51.89	2.00	0.01	0.12
P-83	8.0	52.00	PVC	J-70	J-71	120.0	53.61	44.42	2.00	0.00	0.11
P-87	8.0	60.00	PVC	J-73	J-74	120.0	51.89	53.03	2.00	0.00	0.09
P-88	8.0	313.00	PVC	J-74	J-76	120.0	53.03	53.25	2.00	0.00	0.09
P-93	8.0	505.00	PVC	J-79	J-76	120.0	54.75	53.25	2.00	0.00	0.09
P-115	8.0	668.00	PVC	J-9	J-103	120.0	49.23	46.78	0.39	0.00	0.09
P-92	8.0	340.00	PVC	J-71	J-79	120.0	44.42	54.75	2.00	0.00	0.06
P-98	8.0	362.00	PVC	J-82	J-83	120.0	48.84	49.01	2.00	0.00	0.06
P-101	8.0	453.00	PVC	J-84	J-83	120.0	51.73	49.01	2.00	0.00	0.06
P-91	8.0	63.00	PVC	J-78	J-69	120.0	52.73	52.08	2.00	0.00	0.06
P-51	8.0	68.00	PVC	J-43	J-44	120.0	51.99	51.96	2.00	0.00	0.03
P-31	8.0	59.00	PVC	J-22	J-21	120.0	55.63	55.40	2.00	0.00	0.03
P-94	8.0	147.00	PVC	J-74	J-75	120.0	53.03	52.95	2.00	0.00	0.03
P-97	8.0	396.00	PVC	J-81	J-82	120.0	50.90	48.84	2.00	0.00	0.03
P-100	8.0	78.00	PVC	J-80	J-84	120.0	51.70	51.73	2.00	0.00	0.03

Scenario: NFF
Steady State Analysis
Pipe Report

Label	Diameter (in)	Length (ft)	Material	Start Node	Stop Node	Hazen-Williams C	Upstream Calculated Pressure (psi)	Downstream Calculated Pressure (psi)	Minor Loss Coefficient	Pressure Pipe Headloss (ft)	Velocity (ft/s)
P-90	8.0	423.00	PVC	J-77	J-78	120.0	53.56	52.73	2.00	0.00	0.03
P-95	8.0	380.00	PVC	J-74	J-80	120.0	53.03	51.70	2.00	0.00	0.03
P-89	8.0	66.00	PVC	J-76	J-77	120.0	53.25	53.56	2.00	0.00	0.00
P-96	8.0	397.00	PVC	J-80	J-81	120.0	51.70	50.90	2.00	0.00	0.00
P-52	8.0	234.00	PVC	J-44	J-45	120.0	51.96	52.58	2.00	0.00	0.00

Scenario: NFF
Steady State Analysis
Reservoir Report

Label	Elevation (ft)	Calculated Hydraulic Grade (ft)	Outflow (gpm)	Description
R-1	230.40	230.40	1,218.46	
R-2	240.40	240.40	1,282.68	
R-3	215.40	215.40	1,376.34	

APPENDIX D

Peak Hour Flow Demand Hydraulic Analysis

Scenario: NFF
Steady State Analysis
Junction Report

Label	Base Flow (gpm)	Elevation (ft)	Type	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Description
J-56	0.00	82.12	Demand	0.00	223.31	61.09	
Residental FH	0.00	87.14	Demand	0.00	223.29	58.91	
J-48	0.00	79.68	Demand	0.00	223.29	62.13	
J-64	0.00	71.89	Demand	0.00	223.30	65.51	
J-63	0.00	69.30	Demand	0.00	223.30	66.63	
J-60	0.00	74.66	Demand	0.00	223.30	64.31	
J-47	0.00	82.68	Demand	0.00	223.29	60.84	
J-41	0.00	76.94	Demand	0.00	223.29	63.32	
J-40	0.00	73.71	Demand	0.00	223.30	64.72	
J-37	0.00	71.13	Demand	0.00	223.29	65.83	
J-46	0.00	77.74	Demand	0.00	223.29	62.97	
J-45	0.00	72.97	Demand	0.00	223.29	65.04	
J-43	0.00	74.32	Demand	0.00	223.29	64.45	
FH2	0.00	103.50	Demand	0.00	235.96	57.31	
FH1	0.00	111.00	Demand	0.00	238.77	55.28	
J-10	0.00	92.19	Demand	0.00	224.65	57.31	
FH4	0.00	101.00	Demand	0.00	219.96	51.47	
J-103	0.00	93.00	Demand	0.00	223.29	56.37	
FH3	0.00	101.00	Demand	0.00	228.59	55.20	
J-80	0.00	75.28	Demand	0.00	223.29	64.04	
J-69	0.00	74.40	Demand	0.00	223.29	64.42	
J-68	0.00	78.12	Demand	0.00	223.30	62.81	
J-67	0.00	80.27	Demand	0.00	223.34	61.90	
J-76	0.00	71.68	Demand	0.00	223.29	65.59	
J-74	0.00	72.19	Demand	0.00	223.29	65.37	
J-71	0.00	92.08	Demand	0.00	223.29	56.77	
J-32	0.00	74.10	Demand	0.00	223.30	64.55	
J-17	0.00	81.27	Demand	0.00	223.44	61.51	
J-18	0.00	74.79	Demand	0.00	223.44	64.31	
J-29	0.00	79.15	Demand	0.00	223.43	62.43	
J-4	0.00	94.23	Demand	0.00	225.10	56.62	
J-8	0.00	86.57	Demand	0.00	223.64	59.30	
J-9	0.00	87.33	Demand	0.00	223.46	58.90	
J-21	0.00	72.72	Demand	0.00	223.43	65.21	
J-6	0.00	89.32	Demand	0.00	224.68	58.56	
OP-C	5.83	118.00	Demand	5.83	238.11	51.97	
OP-A	5.83	101.00	Demand	5.83	219.64	51.33	
Retail	5.83	104.00	Demand	5.83	226.92	53.18	
OP-D	5.83	120.00	Demand	5.83	235.58	50.00	
OP-B	5.83	103.00	Demand	5.83	217.54	49.56	
J-78	9.11	72.88	Demand	9.11	223.29	65.08	
J-77	9.11	70.97	Demand	9.11	223.29	65.90	
J-73	9.11	74.84	Demand	9.11	223.29	64.23	
J-70	9.11	70.85	Demand	9.11	223.29	65.96	
J-16	9.11	91.00	Demand	9.11	224.86	57.92	
J-72	9.11	76.94	Demand	9.11	223.30	63.32	
J-66	9.11	79.80	Demand	9.11	223.34	62.10	
J-79	9.11	68.21	Demand	9.11	223.29	67.10	
J-5	9.11	91.92	Demand	9.11	224.86	57.51	
J-12	9.11	84.60	Demand	9.11	223.89	60.26	
J-11	9.11	90.36	Demand	9.11	224.53	58.05	
J-1	9.11	100.31	Demand	9.11	227.12	54.87	
J-2	9.11	97.68	Demand	9.11	226.14	55.58	
J-3	9.11	95.14	Demand	9.11	225.38	56.35	

Scenario: NFF
Steady State Analysis
Junction Report

Label	Base Flow (gpm)	Elevation (ft)	Type	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Description
J-81	9.11	77.11	Demand	9.11	223.29	63.24	
J-7	9.11	88.68	Demand	9.11	224.35	58.70	
J-75	9.11	72.38	Demand	9.11	223.29	65.29	
J-84	9.11	75.21	Demand	9.11	223.29	64.07	
J-83	9.11	81.50	Demand	9.11	223.29	61.35	
J-82	9.11	81.89	Demand	9.11	223.29	61.18	
J-44	9.11	74.40	Demand	9.11	223.29	64.42	
J-22	9.11	72.18	Demand	9.11	223.43	65.44	
J-42	9.11	75.83	Demand	9.11	223.29	63.80	
J-28	9.11	82.90	Demand	9.11	223.52	60.84	
J-27	9.11	85.73	Demand	9.11	223.45	59.59	
J-49	9.11	78.48	Demand	9.11	223.29	62.65	
J-25	9.11	78.61	Demand	9.11	223.44	62.66	
J-24	9.11	78.41	Demand	9.11	223.44	62.75	
J-35	9.11	70.78	Demand	9.11	223.29	65.98	
J-36	9.11	69.86	Demand	9.11	223.29	66.38	
J-33	9.11	71.03	Demand	9.11	223.29	65.88	
J-34	9.11	68.89	Demand	9.11	223.29	66.80	
J-30	9.11	78.86	Demand	9.11	223.40	62.54	
J-38	9.11	71.13	Demand	9.11	223.29	65.83	
J-31	9.11	76.16	Demand	9.11	223.30	63.66	
J-39	9.11	71.82	Demand	9.11	223.30	65.54	
J-59	9.11	74.50	Demand	9.11	223.30	64.38	
J-61	9.11	75.10	Demand	9.11	223.29	64.12	
J-57	9.11	84.23	Demand	9.11	223.30	60.17	
J-58	9.11	84.67	Demand	9.11	223.29	59.97	
J-19	9.11	74.65	Demand	9.11	223.44	64.37	
J-65	9.11	73.00	Demand	9.11	223.30	65.03	
J-62	9.11	76.47	Demand	9.11	223.29	63.52	
J-20	9.11	74.77	Demand	9.11	223.43	64.32	
J-52	9.11	85.38	Demand	9.11	223.29	59.67	
J-26	9.11	82.67	Demand	9.11	223.44	60.90	
J-50	9.11	75.91	Demand	9.11	223.29	63.76	
J-51	9.11	82.89	Demand	9.11	223.29	60.74	
J-54	9.11	84.37	Demand	9.11	223.30	60.11	
J-55	9.11	83.73	Demand	9.11	223.30	60.39	
J-23	9.11	76.45	Demand	9.11	223.44	63.59	
Publix	11.67	104.00	Demand	11.67	234.95	56.66	

Scenario: NFF
Steady State Analysis
Pipe Report

Label	Diameter (in)	Length (ft)	Material	Start Node	Stop Node	Hazen-Williams C	Upstream Calculated Pressure (psi)	Downstream Calculated Pressure (psi)	Minor Loss Coefficient	Pressure Pipe Headloss (ft)	Velocity (ft/s)
C-112	8.0	26.00	PVC	FH4	OP-A	120.0	51.47	51.33	0.00	0.32	4.78
C-111	8.0	252.00	PVC	J-103	FH4	120.0	56.37	51.47	0.59	3.33	4.78
C-113	8.0	172.00	PVC	OP-A	OP-B	120.0	51.33	49.56	0.00	2.10	4.74
C-114	8.0	167.00	PVC	OP-B	R-3	120.0	49.56	0.00	0.39	2.14	4.70
C-105	8.0	143.00	PVC	R-2	FH1	120.0	0.00	55.28	0.39	1.63	4.38
C-106	8.0	63.00	PVC	FH1	OP-C	120.0	55.28	51.97	0.00	0.67	4.38
C-107	8.0	173.00	PVC	OP-C	FH2	120.0	51.97	57.31	1.19	2.15	4.35
C-108	8.0	37.00	PVC	FH2	OP-D	120.0	57.31	50.00	0.00	0.38	4.35
C-116	8.0	61.00	PVC	OP-D	Publix	120.0	50.00	56.66	0.00	0.62	4.31
C-118	8.0	147.00	PVC	FH3	Retail	120.0	55.20	53.18	0.80	1.68	4.23
C-117	8.0	597.00	PVC	Publix	FH3	120.0	56.66	55.20	1.60	6.36	4.23
C-119	8.0	316.00	PVC	Retail	J-103	120.0	53.18	56.37	1.99	3.62	4.20
P-1	8.0	405.00	PVC	R-1	J-1	120.0	0.00	54.87	2.00	3.28	3.54
P-2	8.0	342.00	PVC	J-1	J-2	120.0	54.87	55.58	2.00	0.98	2.01
P-3	8.0	272.00	PVC	J-2	J-3	120.0	55.58	56.35	2.00	0.76	1.96
P-4	8.0	74.00	PVC	J-3	J-4	120.0	56.35	56.62	2.00	0.28	1.90
P-7	8.0	113.00	PVC	J-6	J-7	120.0	58.56	58.70	2.00	0.32	1.78
P-8	8.0	332.00	PVC	J-7	J-8	120.0	58.70	59.30	2.00	0.71	1.72
P-10	8.0	1,716.00	PVC	J-1	J-10	120.0	54.87	57.31	2.00	2.47	1.47
P-11	8.0	37.00	PVC	J-10	J-11	120.0	57.31	58.05	2.00	0.12	1.47
P-12	8.0	448.00	PVC	J-11	J-12	120.0	58.05	60.26	2.00	0.64	1.41
P-13	8.0	404.00	PVC	J-12	J-67	120.0	60.26	61.90	2.00	0.54	1.36
P-9	8.0	162.00	PVC	J-8	J-9	120.0	59.30	58.90	2.00	0.18	1.12
P-5	8.0	266.00	PVC	J-4	J-5	120.0	56.62	57.51	2.00	0.25	1.08
P-6	8.0	208.00	PVC	J-5	J-6	120.0	57.51	58.56	2.00	0.18	1.02
P-17	8.0	463.00	PVC	J-4	J-16	120.0	56.62	57.92	2.00	0.24	0.82
P-18	8.0	407.00	PVC	J-16	J-6	120.0	57.92	58.56	2.00	0.19	0.76
P-35	8.0	72.00	PVC	J-29	J-30	120.0	62.43	62.54	2.00	0.03	0.62
P-32	8.0	398.00	PVC	J-8	J-28	120.0	59.30	60.84	2.00	0.12	0.60
P-115	8.0	668.00	PVC	J-9	J-103	120.0	58.90	56.37	0.39	0.17	0.58
P-36	8.0	383.00	PVC	J-30	J-31	120.0	62.54	63.66	2.00	0.10	0.56
P-33	8.0	353.00	PVC	J-28	J-29	120.0	60.84	62.43	2.00	0.09	0.54
P-79	8.0	141.00	PVC	J-67	J-56	120.0	61.90	61.09	2.00	0.04	0.51
P-80	8.0	195.00	PVC	J-67	J-68	120.0	61.90	62.81	2.00	0.04	0.50
P-78	8.0	26.00	PVC	J-66	J-67	120.0	62.10	61.90	2.00	0.01	0.35
P-77	8.0	459.00	PVC	J-65	J-66	120.0	65.03	62.10	2.00	0.03	0.29
P-19	8.0	245.00	PVC	J-9	J-17	120.0	58.90	61.51	2.00	0.02	0.28
P-27	8.0	93.00	PVC	J-27	J-9	120.0	59.59	58.90	2.00	0.01	0.26
P-76	8.0	71.00	PVC	J-64	J-65	120.0	65.51	65.03	2.00	0.00	0.23
P-48	8.0	179.00	PVC	J-31	J-41	120.0	63.66	63.32	2.00	0.01	0.22
P-26	8.0	416.00	PVC	J-26	J-27	120.0	60.90	59.59	2.00	0.02	0.20
P-64	8.0	59.00	PVC	J-55	J-56	120.0	60.39	61.09	2.00	0.00	0.20
P-37	8.0	195.00	PVC	J-31	J-32	120.0	63.66	64.55	2.00	0.01	0.19
P-85	8.0	71.00	PVC	J-68	J-72	120.0	62.81	63.32	2.00	0.00	0.18
P-99	8.0	356.00	PVC	J-83	J-68	120.0	61.35	62.81	2.00	0.01	0.18
P-65	8.0	472.00	PVC	J-56	J-57	120.0	61.09	60.17	2.00	0.01	0.16
P-30	8.0	58.00	PVC	J-25	J-17	120.0	62.66	61.51	2.00	0.00	0.16
P-68	8.0	430.00	PVC	J-56	J-59	120.0	61.09	64.38	2.00	0.01	0.15
P-84	8.0	209.00	PVC	J-71	J-64	120.0	56.77	65.51	2.00	0.00	0.14
P-63	8.0	444.00	PVC	J-54	J-55	120.0	60.11	60.39	2.00	0.01	0.14
P-81	8.0	302.00	PVC	J-68	J-69	120.0	62.81	64.42	2.00	0.01	0.14
P-91	8.0	63.00	PVC	J-78	J-69	120.0	65.08	64.42	2.00	0.00	0.13
P-49	8.0	61.00	PVC	J-41	J-42	120.0	63.32	63.80	2.00	0.00	0.13

Scenario: NFF
Steady State Analysis
Pipe Report

Label	Diameter (in)	Length (ft)	Material	Start Node	Stop Node	Hazen-Williams C	Upstream Calculated Pressure (psi)	Downstream Calculated Pressure (psi)	Minor Loss Coefficient	Pressure Pipe Headloss (ft)	Velocity (ft/s)
P-86	8.0	426.00	PVC	J-72	J-73	120.0	63.32	64.23	2.00	0.01	0.13
P-21	8.0	65.00	PVC	J-18	J-19	120.0	64.31	64.37	2.00	0.00	0.12
P-20	8.0	244.00	PVC	J-17	J-18	120.0	61.51	64.31	2.00	0.00	0.12
P-38	8.0	176.00	PVC	J-32	J-33	120.0	64.55	65.88	2.00	0.00	0.12
P-70	8.0	417.00	PVC	J-60	J-61	120.0	64.31	64.12	2.00	0.01	0.12
P-42	8.0	82.00	PVC	J-36	J-37	120.0	66.38	65.83	2.00	0.00	0.11
P-66	8.0	470.00	PVC	J-57	J-58	120.0	60.17	59.97	2.00	0.01	0.10
P-29	8.0	252.00	PVC	J-24	J-25	120.0	62.75	62.66	2.00	0.00	0.10
P-43	8.0	199.00	PVC	J-37	J-39	120.0	65.83	65.54	2.00	0.00	0.10
P-45	8.0	352.00	PVC	J-40	J-31	120.0	64.72	63.66	2.00	0.00	0.10
P-44	8.0	338.00	PVC	J-39	J-40	120.0	65.54	64.72	2.00	0.00	0.10
P-92	8.0	340.00	PVC	J-71	J-79	120.0	56.77	67.10	2.00	0.00	0.09
P-58	8.0	410.00	PVC	J-50	J-41	120.0	63.76	63.32	2.00	0.00	0.09
P-69	8.0	64.00	PVC	J-59	J-60	120.0	64.38	64.31	2.00	0.00	0.09
P-61	8.0	480.00	PVC	J-52	Residental FH	120.0	59.67	58.91	2.00	0.00	0.08
P-62	8.0	522.00	PVC	Residental F	J-54	120.0	58.91	60.11	2.00	0.00	0.08
P-34	8.0	222.00	PVC	J-29	J-26	120.0	62.43	60.90	2.00	0.00	0.08
P-98	8.0	362.00	PVC	J-82	J-83	120.0	61.18	61.35	2.00	0.00	0.07
P-90	8.0	423.00	PVC	J-77	J-78	120.0	65.90	65.08	2.00	0.00	0.07
P-50	8.0	261.00	PVC	J-42	J-43	120.0	63.80	64.45	2.00	0.00	0.07
P-87	8.0	60.00	PVC	J-73	J-74	120.0	64.23	65.37	2.00	0.00	0.07
P-47	8.0	424.00	PVC	J-38	J-32	120.0	65.83	64.55	2.00	0.00	0.07
P-25	8.0	245.00	PVC	J-23	J-26	120.0	63.59	60.90	2.00	0.00	0.06
P-73	8.0	247.00	PVC	J-39	J-63	120.0	65.54	66.63	2.00	0.00	0.06
P-74	8.0	287.00	PVC	J-63	J-64	120.0	66.63	65.51	2.00	0.00	0.06
P-22	8.0	359.00	PVC	J-19	J-20	120.0	64.37	64.32	2.00	0.00	0.06
P-39	8.0	502.00	PVC	J-33	J-34	120.0	65.88	66.80	2.00	0.00	0.06
P-71	8.0	362.00	PVC	J-61	J-62	120.0	64.12	63.52	2.00	0.00	0.06
P-55	8.0	295.00	PVC	J-47	J-48	120.0	60.84	62.13	2.00	0.00	0.06
P-51	8.0	68.00	PVC	J-43	J-44	120.0	64.45	64.42	2.00	0.00	0.06
P-94	8.0	147.00	PVC	J-74	J-75	120.0	65.37	65.29	2.00	0.00	0.06
P-31	8.0	59.00	PVC	J-22	J-21	120.0	65.44	65.21	2.00	0.00	0.06
P-95	8.0	380.00	PVC	J-74	J-80	120.0	65.37	64.04	2.00	0.00	0.06
P-41	8.0	429.00	PVC	J-35	J-36	120.0	65.98	66.38	2.00	0.00	0.05
P-24	8.0	257.00	PVC	J-21	J-23	120.0	65.21	63.59	2.00	0.00	0.05
P-83	8.0	52.00	PVC	J-70	J-71	120.0	65.96	56.77	2.00	0.00	0.05
P-88	8.0	313.00	PVC	J-74	J-76	120.0	65.37	65.59	2.00	0.00	0.05
P-101	8.0	453.00	PVC	J-84	J-83	120.0	64.07	61.35	2.00	0.00	0.05
P-67	8.0	62.00	PVC	J-58	J-47	120.0	59.97	60.84	2.00	0.00	0.05
P-28	8.0	330.00	PVC	J-23	J-24	120.0	63.59	62.75	2.00	0.00	0.05
P-96	8.0	397.00	PVC	J-80	J-81	120.0	64.04	63.24	2.00	0.00	0.05
P-93	8.0	505.00	PVC	J-79	J-76	120.0	67.10	65.59	2.00	0.00	0.04
P-59	8.0	314.00	PVC	J-48	J-51	120.0	62.13	60.74	2.00	0.00	0.03
P-57	8.0	354.00	PVC	J-49	J-50	120.0	62.65	63.76	2.00	0.00	0.03
P-75	8.0	134.00	PVC	J-64	J-60	120.0	65.51	64.31	2.00	0.00	0.03
P-56	8.0	27.00	PVC	J-48	J-49	120.0	62.13	62.65	2.00	0.00	0.02
P-60	8.0	463.00	PVC	J-51	J-52	120.0	60.74	59.67	2.00	0.00	0.02
P-97	8.0	396.00	PVC	J-81	J-82	120.0	63.24	61.18	2.00	0.00	0.01
P-54	8.0	307.00	PVC	J-46	J-47	120.0	62.97	60.84	2.00	0.00	0.01
P-89	8.0	66.00	PVC	J-76	J-77	120.0	65.59	65.90	2.00	0.00	0.01
P-100	8.0	78.00	PVC	J-80	J-84	120.0	64.04	64.07	2.00	0.00	0.01
P-53	8.0	461.00	PVC	J-43	J-46	120.0	64.45	62.97	2.00	0.00	0.01
P-82	8.0	265.00	PVC	J-69	J-70	120.0	64.42	65.96	2.00	0.00	0.01

Scenario: NFF
Steady State Analysis
Pipe Report

Label	Diameter (in)	Length (ft)	Material	Start Node	Stop Node	Hazen-Williams C	Upstream Calculated Pressure (psi)	Downstream Calculated Pressure (psi)	Minor Loss Coefficient	Pressure Pipe Headloss (ft)	Velocity (ft/s)
P-46	8.0	379.00	PVC	J-37	J-38	120.0	65.83	65.83	2.00	0.00	0.01
P-23	8.0	347.00	PVC	J-20	J-21	120.0	64.32	65.21	2.00	0.00	0.01
P-40	8.0	417.00	PVC	J-34	J-35	120.0	66.80	65.98	2.00	0.00	0.00
P-72	8.0	70.00	PVC	J-62	J-46	120.0	63.52	62.97	2.00	0.00	0.00
P-52	8.0	234.00	PVC	J-44	J-45	120.0	64.42	65.04	2.00	0.00	0.00

Scenario: NFF
Steady State Analysis
Reservoir Report

Label	Elevation (ft)	Calculated Hydraulic Grade (ft)	Outflow (gpm)	Description
R-1	230.40	230.40	555.36	
R-2	240.40	240.40	686.65	
R-3	215.40	215.40	-736.58	

APPENDIX E

HGL Tie-In Calculations

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Hydraulic Grade Line Calculations

R1

Tie-In Elevation	125.0	Ft	
Connection Pressure	115.4	Ft	50 PSI
Total Head	**240.4**	**Ft**	

R2

Tie-In Elevation	93.0	Ft	
Connection Pressure	115.4	Ft	50 PSI
Total Head	**208.4**	**Ft**	

APPENDIX F

Lake Hills Main Blvd. Water Main Report

Lake Hills Main Blvd. & Mass Grading

Water Main Report

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS

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November, 2024

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Certificate of Authorization No. EB-0007723

APPENDIX

A Potable Water Demand and Needed Fire Flow Demand Summaries
B Water Main Schematic
C Needed Fire Flow plus Max Day Flow WaterCAD Hydraulic Analysis
D Peak Hour Flow WaterCAD Hydraulic Analysis
E HGL Calculations

WATER MAIN ANALYSIS

The proposed development consists of a spine road for future development. The future development consists of +/- 560 senior living homes. The project has an 8" system that will be looped with a future phase. The connection point is the proposed Water Treatment Plant for the Town of Howey-In-The-Hills. The water main will be owned and maintained by the town.

The water main has been modeled under two conditions: (1) needed fire flow (NFF) per NFPA of 1,000 gpm plus max day flow, and (2) peak hour flow. The model analyses presented in Appendices C and D demonstrate minimum system pressures greater than 20 psi for the needed fire flow plus max day condition.

Appendix A

Potable Water Demand and Needed Fire Flow Demand Summaries

Lake Hills

POTABLE WATER DEMANDS

TYPE	DEMAND PER UNIT (GPD)	# OF UNITS	DEMAND TOTAL (GPD)
Lake Hills	300.00	558	167400
			0
			0
		558	167400

FLOW SUMMARY

AVG DAILY	167400 GPD	116.25 GPM
MAX DAY (x2)	334800 GPD	232.50 GPM
PEAK HOUR (x4)	669600 GPD	465.00 GPM

Lake Hills

NEEDED FIRE FLOW DEMANDS

Needed Fire Flow = 1,000 GPM

Needed fire flow for single family dwellings shall be as follows: homes 5,000SF or less shall provide 1,000 GPM for 1 hour, homes exceeding 5,000 SF shall provide fire flow in accordance with Table 18.4.5.1.2 of NFPQ 1 (FFPC 2012).

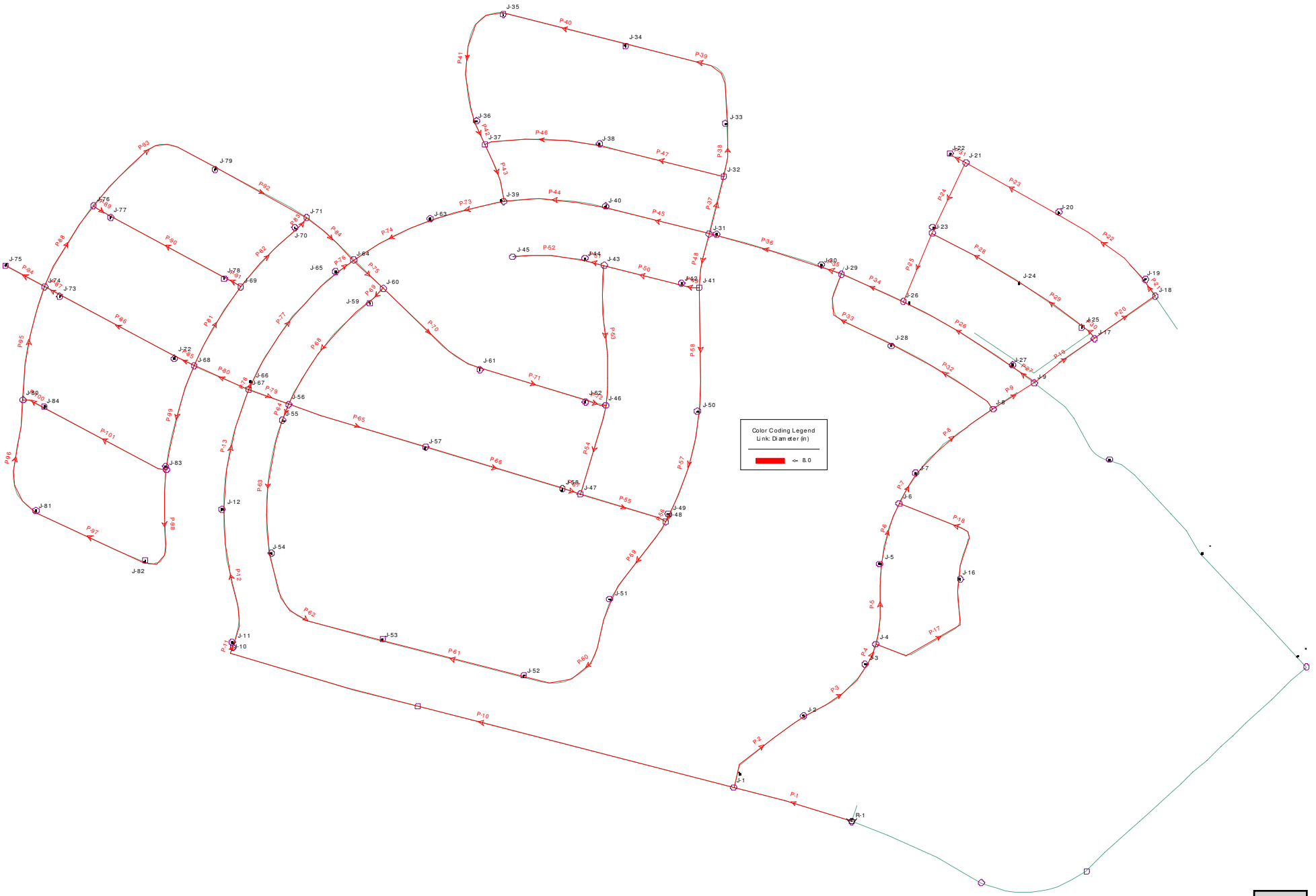
Needed Fire Flow per NFPA = 1,000 GPM
Max Day Demand = 232.50 GPM

TOTAL NFF + MAX DAY DEMAND = 1,232.50 GPM

Appendix B

Water Main Schematic

Scenario: NFF



Appendix C

Needed Fire Flow plus Max Day Flow WaterCAD Hydraulic Analysis

Scenario: NFF
Steady State Analysis
Junction Report

Label	Base Flow (gpm)	Elevation (ft)	Type	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Description
J-1	4.48	100.31	Demand	4.48	215.84	49.99	
J-2	4.48	97.68	Demand	4.48	212.07	49.49	
J-3	4.48	95.14	Demand	4.48	209.00	49.26	
J-4	0.00	94.23	Demand	0.00	207.80	49.14	
J-5	4.48	91.92	Demand	4.48	206.77	49.69	
J-6	0.00	89.32	Demand	0.00	205.94	50.46	
J-7	4.48	88.68	Demand	4.48	204.42	50.08	
J-8	0.00	86.57	Demand	0.00	200.98	49.50	
J-9	0.00	87.33	Demand	0.00	200.37	48.91	
J-10	0.00	92.19	Demand	0.00	202.15	47.58	
J-11	4.48	90.36	Demand	4.48	201.44	48.06	
J-12	4.47	84.60	Demand	4.47	197.61	48.89	
J-16	4.47	91.00	Demand	4.47	206.80	50.10	
J-17	0.00	81.27	Demand	0.00	200.17	51.44	
J-18	0.00	74.79	Demand	0.00	200.13	54.23	
J-19	4.47	74.65	Demand	4.47	200.11	54.28	
J-20	4.47	74.77	Demand	4.47	200.06	54.21	
J-21	0.00	72.72	Demand	0.00	200.02	55.08	
J-22	4.47	72.18	Demand	4.47	200.02	55.31	
J-23	4.47	76.45	Demand	4.47	200.00	53.45	
J-24	4.47	78.41	Demand	4.47	200.07	52.64	
J-25	4.47	78.61	Demand	4.47	200.14	52.58	
J-26	4.47	82.67	Demand	4.47	199.85	50.70	
J-27	4.47	85.73	Demand	4.47	200.25	49.55	
J-28	4.47	82.90	Demand	4.47	200.04	50.68	
J-29	0.00	79.15	Demand	0.00	199.22	51.95	
J-30	4.47	78.86	Demand	4.47	198.22	51.64	
J-31	4.47	76.16	Demand	4.47	194.83	51.34	
J-32	0.00	74.10	Demand	0.00	194.75	52.20	
J-33	4.47	71.03	Demand	4.47	194.74	53.52	
J-34	4.47	68.89	Demand	4.47	194.71	54.43	
J-35	4.47	70.78	Demand	4.47	194.68	53.61	
J-36	4.47	69.86	Demand	4.47	194.67	54.00	
J-37	0.00	71.13	Demand	0.00	194.66	53.45	
J-38	4.47	71.13	Demand	4.47	194.70	53.46	
J-39	4.47	71.82	Demand	4.47	194.61	53.13	
J-40	0.00	73.71	Demand	0.00	194.72	52.36	
J-41	0.00	76.94	Demand	0.00	194.03	50.66	
J-42	4.47	75.83	Demand	4.47	193.98	51.12	
J-43	0.00	74.32	Demand	0.00	193.83	51.70	
J-44	4.47	74.40	Demand	4.47	193.83	51.67	
J-45	0.00	72.97	Demand	0.00	193.83	52.29	
J-46	0.00	77.74	Demand	0.00	193.59	50.12	
J-47	0.00	82.68	Demand	0.00	193.21	47.82	
J-48	0.00	79.68	Demand	0.00	192.67	48.88	
J-49	4.47	78.48	Demand	4.47	192.77	49.45	
J-50	4.47	75.91	Demand	4.47	193.35	50.81	
J-51	4.47	82.89	Demand	4.47	190.70	46.65	
J-52	4.47	85.38	Demand	4.47	187.99	44.39	
J-53	1,004.47	87.14	Demand	1,004.47	185.24	42.44	
J-54	4.47	84.37	Demand	4.47	189.11	45.32	
J-55	4.47	83.73	Demand	4.47	192.52	47.07	
J-56	0.00	82.12	Demand	0.00	193.30	48.10	
J-57	4.47	84.23	Demand	4.47	193.26	47.17	

Scenario: NFF
Steady State Analysis
Junction Report

Label	Base Flow (gpm)	Elevation (ft)	Type	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Description
J-58	4.47	84.67	Demand	4.47	193.21	46.96	
J-59	4.47	74.50	Demand	4.47	193.69	51.57	
J-60	0.00	74.66	Demand	0.00	193.78	51.54	
J-61	4.47	75.10	Demand	4.47	193.68	51.31	
J-62	4.47	76.47	Demand	4.47	193.61	50.68	
J-63	0.00	69.30	Demand	0.00	194.37	54.11	
J-64	0.00	71.89	Demand	0.00	194.09	52.87	
J-65	4.47	73.00	Demand	4.47	194.10	52.39	
J-66	4.47	79.80	Demand	4.47	194.16	49.48	
J-67	0.00	80.27	Demand	0.00	194.16	49.28	
J-68	0.00	78.12	Demand	0.00	194.12	50.19	
J-69	0.00	74.40	Demand	0.00	194.11	51.79	
J-70	4.47	70.85	Demand	4.47	194.10	53.32	
J-71	0.00	92.08	Demand	0.00	194.10	44.14	
J-72	4.47	76.94	Demand	4.47	194.12	50.70	
J-73	4.47	74.84	Demand	4.47	194.11	51.60	
J-74	0.00	72.19	Demand	0.00	194.11	52.75	
J-75	4.47	72.38	Demand	4.47	194.11	52.67	
J-76	0.00	71.68	Demand	0.00	194.11	52.97	
J-77	4.47	70.97	Demand	4.47	194.11	53.27	
J-78	4.47	72.88	Demand	4.47	194.11	52.45	
J-79	4.47	68.21	Demand	4.47	194.10	54.47	
J-80	0.00	75.28	Demand	0.00	194.11	51.41	
J-81	4.47	77.11	Demand	4.47	194.11	50.62	
J-82	4.47	81.89	Demand	4.47	194.11	48.55	
J-83	4.47	81.50	Demand	4.47	194.11	48.72	
J-84	4.47	75.21	Demand	4.47	194.11	51.44	

Scenario: NFF
Steady State Analysis
Pipe Report

Label	Diameter (in)	Length (ft)	Material	Start Node	Stop Node	Hazen-Williams C	Upstream Calculated Pressure (psi)	Downstream Calculated Pressure (psi)	Minor Loss Coefficient	Pressure Pipe Headloss (ft)	Velocity (ft/s)
P-1	8.0	405.00	PVC	R-1	J-1	120.0	0.00	49.99	2.00	14.56	7.87
P-2	8.0	342.00	PVC	J-1	J-2	120.0	49.99	49.49	2.00	3.77	4.14
P-3	8.0	272.00	PVC	J-2	J-3	120.0	49.49	49.26	2.00	3.07	4.11
P-4	8.0	74.00	PVC	J-3	J-4	120.0	49.26	49.14	2.00	1.20	4.08
P-5	8.0	266.00	PVC	J-4	J-5	120.0	49.14	49.69	2.00	1.03	2.32
P-6	8.0	208.00	PVC	J-5	J-6	120.0	49.69	50.46	2.00	0.82	2.29
P-7	8.0	113.00	PVC	J-6	J-7	120.0	50.46	50.08	2.00	1.52	4.02
P-8	8.0	332.00	PVC	J-7	J-8	120.0	50.08	49.50	2.00	3.44	3.99
P-9	8.0	162.00	PVC	J-8	J-9	120.0	49.50	48.91	2.00	0.61	2.16
P-10	8.0	1,716.00	PVC	J-1	J-10	120.0	49.99	47.58	2.00	13.69	3.70
P-11	8.0	37.00	PVC	J-10	J-11	120.0	47.58	48.06	2.00	0.71	3.70
P-12	8.0	448.00	PVC	J-11	J-12	120.0	48.06	48.89	2.00	3.83	3.67
P-13	8.0	404.00	PVC	J-12	J-67	120.0	48.89	49.28	2.00	3.45	3.65
P-17	8.0	463.00	PVC	J-4	J-16	120.0	49.14	50.10	2.00	1.00	1.76
P-18	8.0	407.00	PVC	J-16	J-6	120.0	50.10	50.46	2.00	0.86	1.73
P-19	8.0	245.00	PVC	J-9	J-17	120.0	48.91	51.44	2.00	0.20	1.01
P-20	8.0	244.00	PVC	J-17	J-18	120.0	51.44	54.23	2.00	0.04	0.42
P-21	8.0	65.00	PVC	J-18	J-19	120.0	54.23	54.28	2.00	0.01	0.42
P-22	8.0	359.00	PVC	J-19	J-20	120.0	54.28	54.21	2.00	0.05	0.40
P-23	8.0	347.00	PVC	J-20	J-21	120.0	54.21	55.08	2.00	0.04	0.37
P-24	8.0	257.00	PVC	J-21	J-23	120.0	55.08	53.45	2.00	0.03	0.34
P-25	8.0	245.00	PVC	J-23	J-26	120.0	53.45	50.70	2.00	0.14	0.84
P-26	8.0	416.00	PVC	J-26	J-27	120.0	50.70	49.55	2.00	0.39	1.12
P-27	8.0	93.00	PVC	J-27	J-9	120.0	49.55	48.91	2.00	0.12	1.15
P-28	8.0	330.00	PVC	J-23	J-24	120.0	53.45	52.64	2.00	0.08	0.53
P-29	8.0	252.00	PVC	J-24	J-25	120.0	52.64	52.58	2.00	0.07	0.56
P-30	8.0	58.00	PVC	J-25	J-17	120.0	52.58	51.44	2.00	0.03	0.59
P-31	8.0	59.00	PVC	J-22	J-21	120.0	55.31	55.08	2.00	0.00	0.03
P-32	8.0	398.00	PVC	J-8	J-28	120.0	49.50	50.68	2.00	0.94	1.83
P-33	8.0	353.00	PVC	J-28	J-29	120.0	50.68	51.95	2.00	0.82	1.80
P-34	8.0	222.00	PVC	J-29	J-26	120.0	51.95	50.70	2.00	0.63	1.93
P-35	8.0	72.00	PVC	J-29	J-30	120.0	51.95	51.64	2.00	1.00	3.74
P-36	8.0	383.00	PVC	J-30	J-31	120.0	51.64	51.34	2.00	3.39	3.71
P-37	8.0	195.00	PVC	J-31	J-32	120.0	51.34	52.20	2.00	0.08	0.67
P-38	8.0	176.00	PVC	J-32	J-33	120.0	52.20	53.52	2.00	0.02	0.30
P-39	8.0	502.00	PVC	J-33	J-34	120.0	53.52	54.43	2.00	0.03	0.27
P-40	8.0	417.00	PVC	J-34	J-35	120.0	54.43	53.61	2.00	0.02	0.24
P-41	8.0	429.00	PVC	J-35	J-36	120.0	53.61	54.00	2.00	0.02	0.21
P-42	8.0	82.00	PVC	J-36	J-37	120.0	54.00	53.45	2.00	0.00	0.18
P-43	8.0	199.00	PVC	J-37	J-39	120.0	53.45	53.13	2.00	0.05	0.52
P-44	8.0	338.00	PVC	J-39	J-40	120.0	53.13	52.36	2.00	0.11	0.62
P-45	8.0	352.00	PVC	J-40	J-31	120.0	52.36	51.34	2.00	0.11	0.62
P-46	8.0	379.00	PVC	J-37	J-38	120.0	53.45	53.46	2.00	0.04	0.34
P-47	8.0	424.00	PVC	J-38	J-32	120.0	53.46	52.20	2.00	0.05	0.37
P-48	8.0	179.00	PVC	J-31	J-41	120.0	51.34	50.66	2.00	0.80	2.39
P-49	8.0	61.00	PVC	J-41	J-42	120.0	50.66	51.12	2.00	0.06	0.87
P-50	8.0	261.00	PVC	J-42	J-43	120.0	51.12	51.70	2.00	0.15	0.84
P-51	8.0	68.00	PVC	J-43	J-44	120.0	51.70	51.67	2.00	0.00	0.03
P-52	8.0	234.00	PVC	J-44	J-45	120.0	51.67	52.29	2.00	0.00	0.00
P-53	8.0	461.00	PVC	J-43	J-46	120.0	51.70	50.12	2.00	0.24	0.81
P-54	8.0	307.00	PVC	J-46	J-47	120.0	50.12	47.82	2.00	0.38	1.28
P-55	8.0	295.00	PVC	J-47	J-48	120.0	47.82	48.88	2.00	0.54	1.57
P-56	8.0	27.00	PVC	J-48	J-49	120.0	48.88	49.45	2.00	0.10	1.47

Scenario: NFF
Steady State Analysis
Pipe Report

Label	Diameter (in)	Length (ft)	Material	Start Node	Stop Node	Hazen-Williams C	Upstream Calculated Pressure (psi)	Downstream Calculated Pressure (psi)	Minor Loss Coefficient	Pressure Pipe Headloss (ft)	Velocity (ft/s)
P-57	8.0	354.00	PVC	J-49	J-50	120.0	49.45	50.81	2.00	0.58	1.50
P-58	8.0	410.00	PVC	J-50	J-41	120.0	50.81	50.66	2.00	0.68	1.52
P-59	8.0	314.00	PVC	J-48	J-51	120.0	48.88	46.65	2.00	1.96	3.03
P-60	8.0	463.00	PVC	J-51	J-52	120.0	46.65	44.39	2.00	2.71	3.01
P-61	8.0	480.00	PVC	J-52	J-53	120.0	44.39	42.44	2.00	2.75	2.98
P-62	8.0	522.00	PVC	J-53	J-54	120.0	42.44	45.32	2.00	3.87	3.43
P-63	8.0	444.00	PVC	J-54	J-55	120.0	45.32	47.07	2.00	3.40	3.46
P-64	8.0	59.00	PVC	J-55	J-56	120.0	47.07	48.10	2.00	0.79	3.49
P-65	8.0	472.00	PVC	J-56	J-57	120.0	48.10	47.17	2.00	0.05	0.34
P-66	8.0	470.00	PVC	J-57	J-58	120.0	47.17	46.96	2.00	0.04	0.32
P-67	8.0	62.00	PVC	J-58	J-47	120.0	46.96	47.82	2.00	0.01	0.29
P-68	8.0	430.00	PVC	J-56	J-59	120.0	48.10	51.57	2.00	0.38	1.09
P-69	8.0	64.00	PVC	J-59	J-60	120.0	51.57	51.54	2.00	0.09	1.12
P-70	8.0	417.00	PVC	J-60	J-61	120.0	51.54	51.31	2.00	0.09	0.52
P-71	8.0	362.00	PVC	J-61	J-62	120.0	51.31	50.68	2.00	0.07	0.49
P-72	8.0	70.00	PVC	J-62	J-46	120.0	50.68	50.12	2.00	0.02	0.47
P-73	8.0	247.00	PVC	J-39	J-63	120.0	53.13	54.11	2.00	0.24	1.11
P-74	8.0	287.00	PVC	J-63	J-64	120.0	54.11	52.87	2.00	0.28	1.11
P-75	8.0	134.00	PVC	J-64	J-60	120.0	52.87	51.54	2.00	0.31	1.64
P-76	8.0	71.00	PVC	J-64	J-65	120.0	52.87	52.39	2.00	0.01	0.34
P-77	8.0	459.00	PVC	J-65	J-66	120.0	52.39	49.48	2.00	0.05	0.37
P-78	8.0	26.00	PVC	J-66	J-67	120.0	49.48	49.28	2.00	0.01	0.40
P-79	8.0	141.00	PVC	J-67	J-56	120.0	49.28	48.10	2.00	0.86	2.75
P-80	8.0	195.00	PVC	J-67	J-68	120.0	49.28	50.19	2.00	0.05	0.50
P-81	8.0	302.00	PVC	J-68	J-69	120.0	50.19	51.79	2.00	0.01	0.20
P-82	8.0	265.00	PVC	J-69	J-70	120.0	51.79	53.32	2.00	0.01	0.15
P-83	8.0	52.00	PVC	J-70	J-71	120.0	53.32	44.14	2.00	0.00	0.12
P-84	8.0	209.00	PVC	J-71	J-64	120.0	44.14	52.87	2.00	0.01	0.19
P-85	8.0	71.00	PVC	J-68	J-72	120.0	50.19	50.70	2.00	0.00	0.15
P-86	8.0	426.00	PVC	J-72	J-73	120.0	50.70	51.60	2.00	0.01	0.12
P-87	8.0	60.00	PVC	J-73	J-74	120.0	51.60	52.75	2.00	0.00	0.10
P-88	8.0	313.00	PVC	J-74	J-76	120.0	52.75	52.97	2.00	0.00	0.10
P-89	8.0	66.00	PVC	J-76	J-77	120.0	52.97	53.27	2.00	0.00	0.00
P-90	8.0	423.00	PVC	J-77	J-78	120.0	53.27	52.45	2.00	0.00	0.03
P-91	8.0	63.00	PVC	J-78	J-69	120.0	52.45	51.79	2.00	0.00	0.06
P-92	8.0	340.00	PVC	J-71	J-79	120.0	44.14	54.47	2.00	0.00	0.07
P-93	8.0	505.00	PVC	J-79	J-76	120.0	54.47	52.97	2.00	0.00	0.10
P-94	8.0	147.00	PVC	J-74	J-75	120.0	52.75	52.67	2.00	0.00	0.03
P-95	8.0	380.00	PVC	J-74	J-80	120.0	52.75	51.41	2.00	0.00	0.03
P-96	8.0	397.00	PVC	J-80	J-81	120.0	51.41	50.62	2.00	0.00	0.00
P-97	8.0	396.00	PVC	J-81	J-82	120.0	50.62	48.55	2.00	0.00	0.03
P-98	8.0	362.00	PVC	J-82	J-83	120.0	48.55	48.72	2.00	0.00	0.06
P-99	8.0	356.00	PVC	J-83	J-68	120.0	48.72	50.19	2.00	0.01	0.14
P-100	8.0	78.00	PVC	J-80	J-84	120.0	51.41	51.44	2.00	0.00	0.03
P-101	8.0	453.00	PVC	J-84	J-83	120.0	51.44	48.72	2.00	0.00	0.06

Scenario: NFF
Steady State Analysis
Reservoir Report

Label	Elevation (ft)	Calculated Hydraulic Grade (ft)	Outflow (gpm)	Description
R-1	230.40	230.40	1,232.50	

Appendix D

Peak Hour Flow WaterCAD Hydraulic Analysis

Scenario: NFF
Steady State Analysis
Junction Report

Label	Base Flow (gpm)	Elevation (ft)	Type	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Description
J-1	9.30	100.31	Demand	9.30	230.33	56.25	
J-2	9.30	97.68	Demand	9.30	229.92	57.21	
J-3	9.30	95.14	Demand	9.30	229.62	58.18	
J-4	0.00	94.23	Demand	0.00	229.51	58.53	
J-5	9.30	91.92	Demand	9.30	229.42	59.49	
J-6	0.00	89.32	Demand	0.00	229.36	60.59	
J-7	9.30	88.68	Demand	9.30	229.25	60.82	
J-8	0.00	86.57	Demand	0.00	229.01	61.63	
J-9	0.00	87.33	Demand	0.00	229.00	61.29	
J-10	0.00	87.20	Demand	0.00	229.25	61.46	
J-11	0.00	88.40	Demand	0.00	229.54	61.07	
J-12	0.00	98.10	Demand	0.00	229.85	57.00	
J-13	0.00	105.80	Demand	0.00	229.91	53.70	
J-14	0.00	131.78	Demand	0.00	230.16	42.57	
J-15	0.00	130.96	Demand	0.00	230.27	42.97	
J-16	9.30	91.00	Demand	9.30	229.42	59.89	
J-17	0.00	81.27	Demand	0.00	228.90	63.87	
J-18	0.00	74.79	Demand	0.00	228.88	66.67	
J-19	9.30	74.65	Demand	9.30	228.88	66.73	
J-20	9.30	74.77	Demand	9.30	228.86	66.67	
J-21	0.00	72.72	Demand	0.00	228.85	67.55	
J-22	9.30	72.18	Demand	9.30	228.85	67.78	
J-23	9.30	76.45	Demand	9.30	228.84	65.93	
J-24	9.30	78.41	Demand	9.30	228.87	65.09	
J-25	9.30	78.61	Demand	9.30	228.89	65.02	
J-26	9.30	82.67	Demand	9.30	228.82	63.23	
J-27	9.30	85.73	Demand	9.30	228.95	61.97	
J-28	9.30	82.90	Demand	9.30	228.83	63.14	
J-29	0.00	79.15	Demand	0.00	228.70	64.70	
J-30	9.30	78.86	Demand	9.30	228.58	64.78	
J-31	9.30	76.16	Demand	9.30	228.20	65.78	
J-32	0.00	74.10	Demand	0.00	228.16	66.65	
J-33	9.30	71.03	Demand	9.30	228.15	67.98	
J-34	9.30	68.89	Demand	9.30	228.13	68.90	
J-35	9.30	70.78	Demand	9.30	228.13	68.08	
J-36	9.30	69.86	Demand	9.30	228.12	68.47	
J-37	0.00	71.13	Demand	0.00	228.12	67.92	
J-38	9.30	71.13	Demand	9.30	228.14	67.93	
J-39	9.30	71.82	Demand	9.30	228.12	67.62	
J-40	0.00	73.71	Demand	0.00	228.16	66.82	
J-41	0.00	76.94	Demand	0.00	228.10	65.40	
J-42	9.30	75.83	Demand	9.30	228.09	65.88	
J-43	0.00	74.32	Demand	0.00	228.06	66.52	
J-44	9.30	74.40	Demand	9.30	228.06	66.48	
J-45	0.00	72.97	Demand	0.00	228.06	67.10	
J-46	0.00	77.74	Demand	0.00	228.02	65.02	
J-47	0.00	82.68	Demand	0.00	228.02	62.88	
J-48	0.00	79.68	Demand	0.00	228.02	64.18	
J-49	9.30	78.48	Demand	9.30	228.02	64.70	
J-50	9.30	75.91	Demand	9.30	228.05	65.83	
J-51	9.30	82.89	Demand	9.30	228.01	62.79	
J-52	9.30	85.38	Demand	9.30	228.00	61.71	
J-53	9.30	87.14	Demand	9.30	228.00	60.94	
J-54	9.30	84.37	Demand	9.30	228.00	62.14	

Scenario: NFF
Steady State Analysis
Junction Report

Label	Base Flow (gpm)	Elevation (ft)	Type	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Description
J-55	9.30	83.73	Demand	9.30	228.00	62.42	
J-56	0.00	82.12	Demand	0.00	228.00	63.12	
J-57	9.30	84.23	Demand	9.30	228.00	62.20	
J-58	9.30	84.67	Demand	9.30	228.01	62.02	
J-59	9.30	74.50	Demand	9.30	228.01	66.42	
J-60	0.00	74.66	Demand	0.00	228.01	66.35	
J-61	9.30	75.10	Demand	9.30	228.01	66.16	
J-62	9.30	76.47	Demand	9.30	228.02	65.57	
J-63	0.00	69.30	Demand	0.00	228.07	68.69	
J-64	0.00	71.89	Demand	0.00	228.02	67.55	
J-65	9.30	73.00	Demand	9.30	228.01	67.07	
J-66	9.30	79.80	Demand	9.30	228.00	64.12	
J-67	0.00	80.27	Demand	0.00	228.00	63.92	
J-68	0.00	78.12	Demand	0.00	227.98	64.84	
J-69	0.00	74.40	Demand	0.00	227.98	66.45	
J-70	9.30	70.85	Demand	9.30	227.99	67.99	
J-71	0.00	92.08	Demand	0.00	227.99	58.80	
J-72	9.30	76.94	Demand	9.30	227.98	65.35	
J-73	9.30	74.84	Demand	9.30	227.98	66.25	
J-74	0.00	72.19	Demand	0.00	227.98	67.40	
J-75	9.30	72.38	Demand	9.30	227.98	67.32	
J-76	0.00	71.68	Demand	0.00	227.98	67.62	
J-77	9.30	70.97	Demand	9.30	227.98	67.93	
J-78	9.30	72.88	Demand	9.30	227.98	67.11	
J-79	9.30	68.21	Demand	9.30	227.98	69.13	
J-80	0.00	75.28	Demand	0.00	227.97	66.06	
J-81	9.30	77.11	Demand	9.30	227.97	65.27	
J-82	9.30	81.89	Demand	9.30	227.97	63.20	
J-83	9.30	81.50	Demand	9.30	227.97	63.37	
J-84	9.30	75.21	Demand	9.30	227.97	66.09	

Scenario: NFF
Steady State Analysis
Pipe Report

Label	Diameter (in)	Length (ft)	Material	Start Node	Stop Node	Hazen-Williams C	Upstream Calculated Pressure (psi)	Downstream Calculated Pressure (psi)	Minor Loss Coefficient	Pressure Pipe Headloss (ft)	Velocity (ft/s)
P-1	12.0	405.00	PVC	R-1	J-1	120.0	0.00	56.25	2.00	0.07	0.58
P-2	8.0	342.00	PVC	J-1	J-2	120.0	56.25	57.21	2.00	0.40	1.25
P-3	8.0	272.00	PVC	J-2	J-3	120.0	57.21	58.18	2.00	0.30	1.19
P-4	8.0	74.00	PVC	J-3	J-4	120.0	58.18	58.53	2.00	0.10	1.14
P-5	8.0	266.00	PVC	J-4	J-5	120.0	58.53	59.49	2.00	0.09	0.64
P-6	8.0	208.00	PVC	J-5	J-6	120.0	59.49	60.59	2.00	0.06	0.58
P-7	8.0	113.00	PVC	J-6	J-7	120.0	60.59	60.82	2.00	0.11	1.02
P-8	8.0	332.00	PVC	J-7	J-8	120.0	60.82	61.63	2.00	0.24	0.96
P-9	8.0	162.00	PVC	J-8	J-9	120.0	61.63	61.29	2.00	0.01	0.21
P-10	10.0	364.00	PVC	J-9	J-10	120.0	61.29	61.46	2.00	0.25	1.06
P-11	10.0	440.00	PVC	J-10	J-11	120.0	61.46	61.07	2.00	0.29	1.06
P-12	10.0	463.00	PVC	J-11	J-12	120.0	61.07	57.00	2.00	0.31	1.06
P-13	10.0	46.00	PVC	J-12	J-13	120.0	57.00	53.70	2.00	0.06	1.06
P-14	12.0	990.00	PVC	J-13	J-14	120.0	53.70	42.57	2.00	0.26	0.74
P-15	12.0	365.00	PVC	J-14	J-15	120.0	42.57	42.97	2.00	0.10	0.74
P-16	12.0	470.00	PVC	J-15	R-1	120.0	42.97	0.00	2.00	0.13	0.74
P-17	8.0	463.00	PVC	J-4	J-16	120.0	58.53	59.89	2.00	0.09	0.49
P-18	8.0	407.00	PVC	J-16	J-6	120.0	59.89	60.59	2.00	0.06	0.43
P-19	8.0	245.00	PVC	J-9	J-17	120.0	61.29	63.87	2.00	0.10	0.68
P-20	8.0	244.00	PVC	J-17	J-18	120.0	63.87	66.67	2.00	0.02	0.29
P-21	8.0	65.00	PVC	J-18	J-19	120.0	66.67	66.73	2.00	0.01	0.29
P-22	8.0	359.00	PVC	J-19	J-20	120.0	66.73	66.67	2.00	0.02	0.23
P-23	8.0	347.00	PVC	J-20	J-21	120.0	66.67	67.55	2.00	0.01	0.18
P-24	8.0	257.00	PVC	J-21	J-23	120.0	67.55	65.93	2.00	0.00	0.12
P-25	8.0	245.00	PVC	J-23	J-26	120.0	65.93	63.23	2.00	0.02	0.33
P-26	10.0	416.00	PVC	J-26	J-27	120.0	63.23	61.97	2.00	0.14	0.72
P-27	10.0	93.00	PVC	J-27	J-9	120.0	61.97	61.29	2.00	0.05	0.76
P-28	8.0	330.00	PVC	J-23	J-24	120.0	65.93	65.09	2.00	0.02	0.27
P-29	8.0	252.00	PVC	J-24	J-25	120.0	65.09	65.02	2.00	0.03	0.33
P-30	8.0	58.00	PVC	J-25	J-17	120.0	65.02	63.87	2.00	0.01	0.39
P-31	8.0	59.00	PVC	J-22	J-21	120.0	67.78	67.55	2.00	0.00	0.06
P-32	8.0	398.00	PVC	J-8	J-28	120.0	61.63	63.14	2.00	0.17	0.74
P-33	8.0	353.00	PVC	J-28	J-29	120.0	63.14	64.70	2.00	0.13	0.68
P-34	10.0	222.00	PVC	J-29	J-26	120.0	64.70	63.23	2.00	0.12	0.89
P-35	10.0	72.00	PVC	J-29	J-30	120.0	64.70	64.78	2.00	0.12	1.33
P-36	10.0	383.00	PVC	J-30	J-31	120.0	64.78	65.78	2.00	0.38	1.29
P-37	8.0	195.00	PVC	J-31	J-32	120.0	65.78	66.65	2.00	0.04	0.49
P-38	8.0	176.00	PVC	J-32	J-33	120.0	66.65	67.98	2.00	0.01	0.25
P-39	8.0	502.00	PVC	J-33	J-34	120.0	67.98	68.90	2.00	0.02	0.19
P-40	8.0	417.00	PVC	J-34	J-35	120.0	68.90	68.08	2.00	0.01	0.13
P-41	8.0	429.00	PVC	J-35	J-36	120.0	68.08	68.47	2.00	0.00	0.07
P-42	8.0	82.00	PVC	J-36	J-37	120.0	68.47	67.92	2.00	0.00	0.01
P-43	8.0	199.00	PVC	J-37	J-39	120.0	67.92	67.62	2.00	0.01	0.20
P-44	10.0	338.00	PVC	J-39	J-40	120.0	67.62	66.82	2.00	0.04	0.43
P-45	10.0	352.00	PVC	J-40	J-31	120.0	66.82	65.78	2.00	0.04	0.43
P-46	8.0	379.00	PVC	J-37	J-38	120.0	67.92	67.93	2.00	0.01	0.19
P-47	8.0	424.00	PVC	J-38	J-32	120.0	67.93	66.65	2.00	0.02	0.25
P-48	8.0	179.00	PVC	J-31	J-41	120.0	65.78	65.40	2.00	0.10	0.79
P-49	8.0	61.00	PVC	J-41	J-42	120.0	65.40	65.88	2.00	0.01	0.42
P-50	8.0	261.00	PVC	J-42	J-43	120.0	65.88	66.52	2.00	0.03	0.36
P-51	8.0	68.00	PVC	J-43	J-44	120.0	66.52	66.48	2.00	0.00	0.06
P-52	8.0	234.00	PVC	J-44	J-45	120.0	66.48	67.10	2.00	0.00	0.00
P-53	8.0	461.00	PVC	J-43	J-46	120.0	66.52	65.02	2.00	0.04	0.30

Scenario: NFF
Steady State Analysis
Pipe Report

Label	Diameter (in)	Length (ft)	Material	Start Node	Stop Node	Hazen-Williams C	Upstream Calculated Pressure (psi)	Downstream Calculated Pressure (psi)	Minor Loss Coefficient	Pressure Pipe Headloss (ft)	Velocity (ft/s)
P-54	8.0	307.00	PVC	J-46	J-47	120.0	65.02	62.88	2.00	0.00	0.13
P-55	8.0	295.00	PVC	J-47	J-48	120.0	62.88	64.18	2.00	0.00	0.07
P-56	8.0	27.00	PVC	J-48	J-49	120.0	64.18	64.70	2.00	0.00	0.26
P-57	8.0	354.00	PVC	J-49	J-50	120.0	64.70	65.83	2.00	0.03	0.31
P-58	8.0	410.00	PVC	J-50	J-41	120.0	65.83	65.40	2.00	0.05	0.37
P-59	8.0	314.00	PVC	J-48	J-51	120.0	64.18	62.79	2.00	0.01	0.18
P-60	8.0	463.00	PVC	J-51	J-52	120.0	62.79	61.71	2.00	0.01	0.12
P-61	8.0	480.00	PVC	J-52	J-53	120.0	61.71	60.94	2.00	0.00	0.06
P-62	8.0	522.00	PVC	J-53	J-54	120.0	60.94	62.14	2.00	0.00	0.01
P-63	8.0	444.00	PVC	J-54	J-55	120.0	62.14	62.42	2.00	0.00	0.05
P-64	8.0	59.00	PVC	J-55	J-56	120.0	62.42	63.12	2.00	0.00	0.11
P-65	8.0	472.00	PVC	J-56	J-57	120.0	63.12	62.20	2.00	0.00	0.08
P-66	8.0	470.00	PVC	J-57	J-58	120.0	62.20	62.02	2.00	0.01	0.14
P-67	8.0	62.00	PVC	J-58	J-47	120.0	62.02	62.88	2.00	0.00	0.20
P-68	8.0	430.00	PVC	J-56	J-59	120.0	63.12	66.42	2.00	0.01	0.13
P-69	8.0	64.00	PVC	J-59	J-60	120.0	66.42	66.35	2.00	0.00	0.19
P-70	8.0	417.00	PVC	J-60	J-61	120.0	66.35	66.16	2.00	0.00	0.06
P-71	8.0	362.00	PVC	J-61	J-62	120.0	66.16	65.57	2.00	0.01	0.12
P-72	8.0	70.00	PVC	J-62	J-46	120.0	65.57	65.02	2.00	0.00	0.18
P-73	10.0	247.00	PVC	J-39	J-63	120.0	67.62	68.69	2.00	0.05	0.52
P-74	10.0	287.00	PVC	J-63	J-64	120.0	68.69	67.55	2.00	0.05	0.52
P-75	8.0	134.00	PVC	J-64	J-60	120.0	67.55	66.35	2.00	0.00	0.14
P-76	10.0	71.00	PVC	J-64	J-65	120.0	67.55	67.07	2.00	0.00	0.21
P-77	10.0	459.00	PVC	J-65	J-66	120.0	67.07	64.12	2.00	0.01	0.17
P-78	8.0	26.00	PVC	J-66	J-67	120.0	64.12	63.92	2.00	0.00	0.20
P-79	8.0	141.00	PVC	J-67	J-56	120.0	63.92	63.12	2.00	0.00	0.10
P-80	8.0	195.00	PVC	J-67	J-68	120.0	63.92	64.84	2.00	0.02	0.30
P-81	8.0	302.00	PVC	J-68	J-69	120.0	64.84	66.45	2.00	0.00	0.01
P-82	8.0	265.00	PVC	J-69	J-70	120.0	66.45	67.99	2.00	0.01	0.14
P-83	8.0	52.00	PVC	J-70	J-71	120.0	67.99	58.80	2.00	0.00	0.20
P-84	8.0	209.00	PVC	J-71	J-64	120.0	58.80	67.55	2.00	0.02	0.35
P-85	8.0	71.00	PVC	J-68	J-72	120.0	64.84	65.35	2.00	0.00	0.16
P-86	8.0	426.00	PVC	J-72	J-73	120.0	65.35	66.25	2.00	0.00	0.10
P-87	8.0	60.00	PVC	J-73	J-74	120.0	66.25	67.40	2.00	0.00	0.04
P-88	8.0	313.00	PVC	J-74	J-76	120.0	67.40	67.62	2.00	0.00	0.10
P-89	8.0	66.00	PVC	J-76	J-77	120.0	67.62	67.93	2.00	0.00	0.01
P-90	8.0	423.00	PVC	J-77	J-78	120.0	67.93	67.11	2.00	0.00	0.07
P-91	8.0	63.00	PVC	J-78	J-69	120.0	67.11	66.45	2.00	0.00	0.13
P-92	8.0	340.00	PVC	J-71	J-79	120.0	58.80	69.13	2.00	0.01	0.15
P-93	8.0	505.00	PVC	J-79	J-76	120.0	69.13	67.62	2.00	0.00	0.09
P-94	8.0	147.00	PVC	J-74	J-75	120.0	67.40	67.32	2.00	0.00	0.06
P-95	8.0	380.00	PVC	J-74	J-80	120.0	67.40	66.06	2.00	0.00	0.08
P-96	8.0	397.00	PVC	J-80	J-81	120.0	66.06	65.27	2.00	0.00	0.05
P-97	8.0	396.00	PVC	J-81	J-82	120.0	65.27	63.20	2.00	0.00	0.01
P-98	8.0	362.00	PVC	J-82	J-83	120.0	63.20	63.37	2.00	0.00	0.07
P-99	8.0	356.00	PVC	J-83	J-68	120.0	63.37	64.84	2.00	0.01	0.16
P-100	8.0	78.00	PVC	J-80	J-84	120.0	66.06	66.09	2.00	0.00	0.03
P-101	8.0	453.00	PVC	J-84	J-83	120.0	66.09	63.37	2.00	0.00	0.03

Scenario: NFF
Steady State Analysis
Reservoir Report

Label	Elevation (ft)	Calculated Hydraulic Grade (ft)	Outflow (gpm)	Description
R-1	230.40	230.40	465.00	

Appendix E

HGL Calculations

HGL CALCULATIONS

Lake Hills

PEAK HOUR FLOW HGL

PEAK HOUR FLOW = 465.00 GPM
TIE-IN PRESSURE AT 465.00 GPM = 50 PSI = 115.4 FT
EXISTING PIPE ELEVATION AT TIE-IN = 115 FT

HGL = 115.4 + 115 = 230.4 FT

NEEDED FIRE FLOW HGL

NEEDED FIRE FLOW + MAX DAY FLOW(LARGEST NEEDED FIRE FLOW USED) = 1,232.50 GPM
TIE-IN PRESSURE AT 1,232.50 GPM = 50 PSI = 115.4 FT
EXISTING PIPE ELEVATION AT TIE-IN = 115 FT

HGL = 115.4 + 115 = 230.4 FT

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:
Final Site Plan for shopping center with commercial outparcel and associated parking and utilities.

APPLICANT INFORMATION:

Name: Tom Murray, Principal
E-Mail: tmurray@windcrestinc.com
Address: WindCrest Development Group, Inc.
605 E. Robinson St., Suite 340, Orlando, FL 32801
Phone: 407-219-3540 Fax: _____

☐ Owner ☑ Agent for Owner ☐ Attorney for Owner

OWNER INFORMATION:

Name: PUBLIX SUPERMARKETS INC
E-Mail: _____
Address: PO BOX 32018
LAKELAND, FL33802
Phone: _____
Fax: _____

PROPERTY INFORMATION:

Address: northwest corner of intersection of C.R. 48 and S.R. 19

General Location: northwest corner of intersection of C.R. 48 and S.R. 19

Current Zoning: PUD

Current Land Use: vacant

Parcel Size: 18.43 acres

Tax Parcel #: 23-20-25-0004-000-01600
23-20-25-0004-000-01700
23-20-25-0004-000-01800

Legal Description Attached ☑ Yes ☐ No

Survey Attached ☑ Yes ☐ No

Pre-Application Meeting Date: _____

(Attach Pre-Application Form)

Application Fee: $_____

Applicant's Signature: _____ 01/07/2025

(Signature) *(Date)*

Tom Murray, Principal

(Print)

Owner's Signature: _____ _____

(Provide letter of Authorization) *(Signature)* *(Date)*

_____

(Print)

Applications must be complete to initiate the review process.

TOWN OF HOWEY-IN-THE-HILLS, FLORIDA

FINAL SITE PLAN
CHECKLIST AND REQUIREMENTS

FINAL SITE PLAN APPLICATION CHECKLIST

- ☐ General Land Development Application
- ☐ Application Fee and Estimated Deposit
- ☐ Ten (10) Sets of Plans
- ☐ Two (2) Copies of Architectural Plans
- ☐ Two (2) Copies of Landscaping, Hardscaping and Irrigation Plans
- ☐ Two (2) Copies of Stormwater Calculations
- ☐ Two (2) Copies of Water System Hydraulic Model (If Applicable)
- ☐ Two (2) Copies of Sanitary Lift Station Calculations (If Applicable)
- ☐ One (1) Electronic copy
- ☐ Concurrency Application

FINAL SITE PLAN REVIEW PROCESS (Sec. 4.03.12)

Once a preliminary site plan approval has been granted by the Town Council, the applicant shall submit an application for final site plan approval within one year of the approval date for the preliminary site plan. Once a completed application is received, the final site plan will be reviewed by the Development Review Committee (DRC), the Lake County School Board (for residential projects) and the Florida Department of Transportation as applicable. The DRC will review and provide comments on the final site plan in writing to the applicant. The applicant will have 90 days to resubmit the final plan with amendments for review by the DRC. Once the DRC has completed its review of the final plan a report will be prepared for the Planning and Zoning Board.

The Planning and Zoning Board shall review the final site plan and shall make a recommendation to the Town Council as to whether to approve, approve with changes, or deny the final site plan. Upon receipt of the recommendation from the Planning and Zoning Board, the Town Council shall review the application for final site plan approval and shall approve, approve with changes, or deny the site plan.

Following approval of a final site plan by the Town Council, the applicant shall submit an application for construction of the project within eighteen (18) months.

Town of Howey-in-the-Hills, Florida

Final Site Plan Requirements

The following checklist is based on Section 4.03.18 of the Land Development Code. The checklist is provided as general guidance for the applicant. The applicant should consult this section to verify full compliance with the code requirements.

1. Title page including the name of the project; the name and address of the property owner and the engineer. All plans and support documents shall be sealed.
2. Location map.
3. Title of the project, date, scale, and north arrow.
4. Legal description.
5. A survey of the subject property, prepared by a registered surveyor, showing the boundaries of the project, and any existing streets, buildings, water courses, easements, and elevations at one-foot contours.
6. A tree survey at the same scale as the site plan which identifies trees with a DBH of 6-inches or greater by location, common name and DBH.
7. 100 year flood elevation information and first floor elevation of all structures
8. Soils information.
9. Wetland areas.
10. Location and dimension of all proposed buildings with setbacks illustrated.
11. Proposed contour lines at one-foot intervals.
12. Any existing improvements that are planned to remain.
13. Open space areas summarized by tract, acreage and use.
14. Vehicle accommodation areas including proposed surface material and showing the dimensions and layout of proposed parking spaces and the dimensions and direction of travel lanes, aisles and driveways. Proposed number of off-street parking and loading spaces with each space individually numbered.
15. Location and height of all structures and total floor area with dimensions to lot lines, and designation of use.
16. All adjacent rights-of-way, with indication of centerline and width, paving width, existing median cuts, driveways, street light poles and power company facilities.
17. Stormwater drainage facilities including curbs, gutters, inlets, and retention areas.
18. Sidewalks, walkways or trails with width and surface material including cross-sections.
19. Planned water system including mains, valves and hydrants.
20. Planned wastewater system including the location of lines and lift stations.
21. All underground and above ground utility lines, street lights and other facilities.
22. Dumpster pad locations with details for the enclosure.
23. Location, dimension and materials of all signs, fencing and walls.
24. Street signs (per the Town's Manual of Standards).
25. Traffic signs and markings.
26. Any proposed easements.
27. If the project is to be phased, phases are to be clearly delineated on the plan.
28. Any additional information deemed necessary by any reviewing department or agency, or deemed appropriate by the developer.

RE: **Lake Hills Shopping Center**
Parcel #23-20-25-0004-000-01600, 23-20-25-0004-000-01700, 23-20-25-0004-000-01800

To Whom It May Concern:

I hereby authorize WindCrest Development Group, Inc. (APPLICANT) and Madden, Moorhead & Stokes, LLC (ENGINEER) to apply for and obtain permits from County/City Government, Water Management District, Florida Department of Environmental Protection, Florida Department of Transportation, Army Corps of Engineers and any other municipality or regulatory entity requiring permits be issued.

Bridgid O'Connor — 12.6.24
Owner Signature — Date

Print Name: Bridgid A. O'Connor

Print Phone #: 863-688-7407 x 58513

Print Email Address: Bridgid.Oconnor@publix.com

For:
Publix Super Markets, Inc.
3300 Publix Corporate Pkwy
Lakeland, FL 33811

Sworn to and subscribed before me this 6 day of December, 2024, by Bridgid O'Connor. He/She is personally known to me or has produced identification. Type of identification _____.

Jessica Hernandez
Notary Public Signature

Name: JESSICA HERNANDEZ
Commission No: Commission # HH 253135
Commission Expires: Expires April 14, 2026

NOTARY PUBLIC STATE OF FLORIDA

RE: **Lake Hills Shopping Center**
Parcel #23-20-25-0004-000-01600, 23-20-25-0004-000-01700,
23-20-25-0004-000-01800

To Whom It May Concern:

I hereby authorize Madden, Moorhead & Stokes, LLC (ENGINEER) to apply for and obtain permits from County/City Government, Water Management District, Florida Department of Environmental Protection, Florida Department of Transportation, Army Corps of Engineers and any other municipality or regulatory entity requiring permits be issued.

Applicant Signature 12-9-2024 Date

WindCrest Development Group, Inc.
Thomas J. Murray, Principal
605 E. Robinson St., Suite 340, Orlando, FL 32801
407-219-3540
tmurray@windcrestinc.com

Sworn to and subscribed before me this 9th day of December, 2024, by Thomas Murray. He/She is personally known to me or has produced identification. Type of identification _____.

Notary Public Signature

Name: Kimberly Jean Micale
Commission No: HH199981
Commission Expires: March 4, 2026

KIMBERLY JEAN MICALE
MY COMMISSION # HH 199981
EXPIRES: March 4, 2026
Bonded Thru Notary Public Underwriters

INSTRUMENT#: 2024087906 OR BK 6372 PG 835 PAGES: 9 7/26/2024 9:48:34 AM
GARY J. COONEY, CLERK OF THE CIRCUIT COURT & COMPTROLLER, LAKE COUNTY, FLORIDA
REC FEES: $78.00 DEED DOC:$13762.70

This instrument prepared by
(or under the supervision of)
and after recording return to:

Robert Gebaide, Esq.
Spottswood, Spottswood, Spottswood & Sterling PLLC
500 Fleming Street
Key West, Florida 33040
(305) 294-9556
NCS 1113629A
PARCEL IDENTIFICATION NO(S).: 23-20-25-00004-000-00200
Consideration: $1,966,020.00

SPECIAL WARRANTY DEED

THIS SPECIAL WARRANTY DEED is made this 23rd day of July, 2024, by and between **LAKE HARRIS (ORLANDO) ASLI VII OWNER #1, LLC**, a Delaware limited liability company and **LAKE HARRIS (ORLANDO) ASLI VII OWNER #3, LLC**, a Delaware limited liability company (hereinafter collectively called "**Grantor**"), whose address is 923 N. Pennsylvania Avenue, Winter Park, Florida 32789, and **PUBLIX SUPER MARKETS, INC.**, a Florida corporation (hereinafter called "**Grantee**"), whose address is 3300 Publix Corporate Parkway, Lakeland, Florida 33811.

WITNESSETH

The Grantor, for and in consideration of the sum of Ten Dollars ($10.00), to it in hand paid by the Grantee, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, has granted, bargained and sold and does hereby grant, bargain and sell to Grantee the following described real estate, situated, lying and being in the County of Lake, State of Florida, more particularly described on **Exhibit "A"** attached hereto and made a part hereof, together with all buildings, improvements and fixtures located thereon and owned by Grantor as of the date hereof and all right, title and interest, if any, that Grantor may have in and to all rights, privileges and appurtenances pertaining thereto including all of Grantor's right, title and interest, if any, in and to all rights-of-way, open or proposed streets, alleys, easements, strips or gores of land adjacent thereto (herein collectively called the "**Real Property**").

SUBJECT TO only those matters set forth on **Exhibit "B"** attached hereto and made a part hereof (the "**Permitted Exceptions**"), without reimposing same, and the Deed Restriction recited below.

TO HAVE AND TO HOLD the aforesaid Real Property, together with all the improvements, licenses, tenements, hereditaments, easements and appurtenances thereto belonging or in anywise appertaining unto Grantee, its successors and assigns in fee simple forever.

And Grantor hereby covenants with Grantee that Grantor is lawfully seized in fee simple of the aforesaid Real Property; that Grantor has good right to sell and convey the same; that the same is unencumbered except for the Permitted Exceptions, to all of which this conveyance is expressly made.

Grantor hereby warrants the title to the aforesaid real estate and will defend same against the lawful claims of all persons claiming by, through or under Grantor, but no others.

(When used herein the terms "Grantor" and "Grantee" shall be construed to include, masculine, feminine, singular or plural as the context permits or requires, and shall include heirs, personal representatives, successors or assigns.)

[the remainder of the page is intentionally left blank]

IN WITNESS WHEREOF, the Grantor has caused this Indenture to be executed in its name and caused its seal to be affixed as of the day and year first above written.

Signed, sealed and delivered in the presence of:

WITNESSES:

Robert Gelwicks
Print Name: Robert Gelwicks
Address: 500 Fleming Street
Key West FL 33040

Connie Cummins
Print Name: Connie Cummins
Address: 923 N. Pennsylvania Ave
Winter Park, FL 32789

GRANTOR:

LAKE HARRIS (ORLANDO) ASLI VII OWNER #1, LLC, a Delaware limited liability company

By: LAKE HARRIS (ORLANDO) ASLI VII HOLDINGS, LLC, a Delaware limited liability company, on behalf of and as the sole member of Grantor entity listed above

By: Avanti Strategic Land Investors, VII, L.L.L.P., a Delaware limited liability partnership, its Sole Member

By: Avanti Properties Group II, L.L.L.P., a Delaware limited liability limited partnership, its Managing General Partner

By: Avanti Management Corporation, a Florida corporation, its sole General Partner

By: _____
Ryan J. Lefkowitz, Vice President

THE STATE OF FLORIDA)
) ss.
COUNTY OF Orange)

The foregoing instrument was acknowledged before me by (✓) means of physical presence or ( ) online notarization on July 23, 2024, by Ryan J. Lefkowitz, the Vice President of Avanti Management Corporation, a Florida corporation, the sole General Partner of Avanti Properties Group II, L.L.L.P., a Delaware limited liability limited partnership, the Managing General Partner of Avanti Strategic Land Investors, VII, L.L.L.P., a Delaware limited liability partnership, the Sole Member of Lake Harris (Orlando) ASLI VI Holdings, LLC, the Sole Member of **LAKE HARRIS (ORLANDO) ASLI VII OWNER #1, LLC**, a Delaware limited liability company, on behalf said corporation, limited liability limited partnership, and limited liability companies. He is personally known to me or produced _____ as identification.

Connie Cummins
Notary Public, State of Florida

My Commission Expires: 4/21/25

Connie Cummins
Printed/Typed Name

CONNIE CUMMINS
MY COMMISSION # HH 119940
EXPIRES: April 21, 2025
Bonded Thru Notary Public Underwriters

[Signature Page to Special Warranty Deed]

Signed, sealed and delivered in the presence of:

WITNESSES:

Robert Gebaide
Print Name: Robert Gebaide
Address: 500 Fleming Street
Key West FL 33040

Connie Cummins
Print Name: Connie Cummins
Address: 923 N. Pennsylvania Ave
Winter Park, FL 32789

GRANTOR:

LAKE HARRIS (ORLANDO) ASLI VII OWNER #3, LLC, a Delaware limited liability company

By: LAKE HARRIS (ORLANDO) ASLI VII HOLDINGS, LLC, a Delaware limited liability company, on behalf of and as the sole member of Grantor entity listed above

By: Avanti Strategic Land Investors, VII, L.L.L.P., a Delaware limited liability partnership, its Sole Member

By: Avanti Properties Group II, L.L.L.P., a Delaware limited liability limited partnership, its Managing General Partner

By: Avanti Management Corporation, a Florida corporation, its sole General Partner

By: _____
Ryan J. Lefkowitz, Vice President

THE STATE OF FLORIDA)
) ss.
COUNTY OF Orange)

The foregoing instrument was acknowledged before me by (✓) means of physical presence or ( ) online notarization on _____, 2024, by Ryan J. Lefkowitz, the Vice President of Avanti Management Corporation, a Florida corporation, the sole General Partner of Avanti Properties Group II, L.L.L.P., a Delaware limited liability limited partnership, the Managing General Partner of Avanti Strategic Land Investors, VII, L.L.L.P., a Delaware limited liability partnership, the Sole Member of Lake Harris (Orlando) ASLI VI Holdings, LLC, the Sole Member of **LAKE HARRIS (ORLANDO) ASLI VII OWNER #3, LLC**, a Delaware limited liability company, on behalf said corporation, limited liability limited partnership, and limited liability companies. He is personally known to me or produced _____ as identification.

Connie Cummins
Notary Public, State of Florida

My Commission Expires: 4/21/25

Connie Cummins
Printed/Typed Name

CONNIE CUMMINS
MY COMMISSION # HH 119940
EXPIRES: April 21, 2025
Bonded Thru Notary Public Underwriters

EXHIBIT "A"

Legal Description

COMMERCIAL PARCEL 1: (FEE SIMPLE)

A TRACT OF LAND BEING PART OF SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

A PORTION OF GOVERNMENT LOTS 2, 8, AND 9 LYING WESTERLY OF HIGHWAY 19, ALL LYING IN SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: AS A POINT OF REFERENCE COMMENCE AT SOUTHWEST CORNER OF THE SOUTHWEST ¼ OF SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA AND PROCEED N 00°53'14" E, ALONG THE WEST BOUNDARY OF THE SOUTHWEST 1/4 OF SAID SECTION 23, A DISTANCE OF 1171.08 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY LINE OF COUNTY ROAD 48 SAID POINT LYING ON A CURVE CONCAVE NORTHEASTERLY HAVING A RADIUS OF 5679.58 FEET AND A CHORD BEARING AND DISTANCE OF S 69°35'43" E, A DISTANCE OF 1186.12 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT AND SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 1188.29 FEET; THENCE S 75°35'20" E, ALONG SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 1460.31 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 2341.83 FEET AND A CHORD BEARING AND DISTANCE OF S 72°35'58" E, A DISTANCE OF 223.25 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE RIGHT AND ALONG SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 223.33 FEET; THENCE LEAVING SAID NORTHERLY RIGHT OF WAY LINE, N 15°36'38" E, A DISTANCE OF 52.62 FEET; THENCE N 75°08'12" E, A DISTANCE OF 258.80 FEET TO THE POINT OF BEGINNING; THENCE N 15°36'16" E, A DISTANCE OF 306.32 FEET; THENCE N 60°15'03" E, A DISTANCE OF 218.37 FEET; THENCE N 46°59'01" E, A DISTANCE OF 705.92 FEET; THENCE S 43°00'59" E, A DISTANCE OF 404.25 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 100.00 FEET AND A CHORD BEARING AND DISTANCE OF S 27°52'48" E, A DISTANCE OF 52.22 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE RIGHT, A DISTANCE OF 52.84 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE CONCAVE NORTHEASTERLY HAVING A RADIUS OF 120.00 FEET AND A CHORD BEARING AND DISTANCE OF S 27°52'48" E, A DISTANCE OF 62.67 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT, A DISTANCE OF 63.40 FEET; THENCE S 43°00'59" E, A DISTANCE OF 125.00 FEET TO A POINT ON THE WESTERLY RIGHT OF WAY LINE OF STATE ROAD 19; THENCE S 46°59'01" W, ALONG SAID WESTERLY RIGHT OF WAY LINE, A DISTANCE OF 650.20 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY LINE OF STATE ROAD 19; THENCE S 75°06'54" W, ALONG SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 210.88; THENCE LEAVING SAID NORTHERLY RIGHT OF WAY LINE, N 41°20'52" W, A

DISTANCE OF 270.98 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE NORTHWESTERLY HAVING A RADIUS OF 133.42 FEET AND A CHORD BEARING AND DISTANCE OF S 62°15'27" W, A DISTANCE OF 62.77 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE RIGHT, A DISTANCE OF 63.36 FEET; THENCE S 75°51'45" W, A DISTANCE OF 298.35 FEET TO THE POINT OF BEGINNING.

COMMERCIAL PARCEL 2: (FEE SIMPLE)

A TRACT OF LAND BEING PART OF SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

A PORTION OF GOVERNMENT LOT 9 LYING WESTERLY OF HIGHWAY 19, ALL LYING IN SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: AS A POINT OF REFERENCE COMMENCE AT SOUTHWEST CORNER OF THE SOUTHWEST ¼ OF SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA AND PROCEED N 00°53'14" E, ALONG THE WEST BOUNDARY OF THE SOUTHWEST 1/4 OF SAID SECTION 23, A DISTANCE OF 1171.08 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY LINE OF COUNTY ROAD 48 SAID POINT LYING ON A CURVE CONCAVE NORTHEASTERLY HAVING A RADIUS OF 5679.58 FEET AND A CHORD BEARING AND DISTANCE OF S 69°35'43" E, A DISTANCE OF 1186.12 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT AND SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 1188.29 FEET; THENCE S 75°35'20" E, ALONG SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 1460.31 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 2341.83 FEET AND A CHORD BEARING AND DISTANCE OF S 68°56'00" E, A DISTANCE OF 521.94 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE RIGHT AND ALONG SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 523.03 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY LINE OF STATE ROAD 19; THENCE N 75°06'54" E, ALONG SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 742.75 FEET TO A POINT ON THE WESTERLY RIGHT OF WAY LINE OF STATE ROAD 19; THENCE N 46°59'01" E, ALONG SAID WESTERLY RIGHT OF WAY LINE, A DISTANCE OF 1328.28 TO THE POINT OF BEGINNING; THENCE LEAVING SAID WESTERLY RIGHT OF WAY LINE, N 89°48'40" W, A DISTANCE OF 738.20; THENCE S 46°59'01" W, A DISTANCE OF 50.00 FEET; THENCE S 43°00'59" E, A DISTANCE OF 269.49 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE NORTHEASTERLY HAVING A RADIUS OF 100.00 FEET AND A CHORD BEARING AND DISTANCE OF S 58°09'10" E, A DISTANCE OF 52.22 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT, A DISTANCE OF 52.84 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 120.00 FEET AND A CHORD BEARING AND DISTANCE OF S 58°09'10" E, A DISTANCE OF 62.67 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE RIGHT, A DISTANCE OF 63.40 FEET; THENCE S 43°00'59" E, A DISTANCE OF 125.00 FEET TO A POINT ON THE AFOREMENTIONED WESTERLY RIGHT OF WAY OF

STATE ROAD 19; THENCE N 46°59'01" E, ALONG SAID RIGHT OF WAY LINE, A DISTANCE OF 558.08 FEET TO THE POINT OF BEGINNING.

ACCESS EASEMENT PARCEL: (FEE SIMPLE)

A TRACT OF LAND BEING PART OF SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE NORTHEAST CORNER OF THE SOUTHEAST 1/4 SECTION 23-20-25; THENCE SOUTH 00°28'42" WEST ALONG THE EAST LINE OF THE SOUTHEAST 1/4 OF SECTION 25, A DISTANCE OF 765.11 FEET TO THE NORTHERLY RIGHT OF WAY OF STATE ROAD 19; THENCE SOUTH 46°59'01" WEST ALONG THE NORTHERLY RIGHT OF WAY, A DISTANCE OF 1,350.12 FEET TO THE POINT OF BEGINNING; THENCE CONTINUE SOUTH 46°59'01" WEST, A DISTANCE OF 120.00 FEET; THENCE NORTH 43°00'59" WEST, A DISTANCE OF 125.00 FEET; TO A POINT OF CURVATURE OF A CURVE CONCAVE NORTHEASTERLY, HAVING A RADIUS OF 120.00 FEET AND A CHORD WHICH BEARS NORTH 27°52'48" WEST, A DISTANCE 62.67 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE RIGHT, A DISTANCE OF 63.40 FEET; TO A POINT OF REVERSE CURVATURE OF A CURVE HAVING A RADIUS OF 100.00 FEET AND A CHORD WHICH BEARS NORTH 27°52'48" WEST, AND A DISTANCE OF 52.22 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT, A DISTANCE OF 52.84 FEET; THENCE NORTH 43°00'59" WEST, A DISTANCE OF 404.25 FEET; THENCE NORTH 46°59'01" EAST, A DISTANCE OF 60.00 FEET; THENCE SOUTH 43°00'59" EAST, A DISTANCE OF 404.25 FEET; TO A POINT OF CURVATURE OF A CURVE CONCAVE NORTHEASTERLY, HAVING A RADIUS OF 100.00 FEET AND A CHORD WHICH BEARS SOUTH 58°09'10" EAST, A DISTANCE 52.22 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT, A DISTANCE OF 52.84 FEET; TO A POINT OF REVERSE CURVATURE OF A CURVE HAVING A RADIUS OF 120.00 FEET AND A CHORD WHICH BEARS SOUTH 58°09'10" EAST, AND A DISTANCE OF 62.67 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE RIGHT, A DISTANCE OF 63.40 FEET; THENCE SOUTH 43°00'59" EAST, A DISTANCE OF 125.00 FEE; TO THE POINT OF BEGINNING.

THE ABOVE-DESCRIBED PARCELS BEING A PORTION OF THE FOLLOWING DESCRIBED TRACTS OF LAND:

TRACT 1:

GOVERNMENT LOTS 2, 4, 5, 6, 7, 8 AND 9, LYING NORTH OF HIGHWAY 48 AND THE WESTERLY OF HIGHWAY 19, ALL LYING IN SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA, LESS THE FOLLOWING DESCRIBED PARCEL OF LAND:

BEGIN AT SOUTHEAST CORNER OF THE NORTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA, AND RUN NORTH 00°04'21" EAST 1314.20 FEET, MORE OR LESS, TO THE SOUTHERLY WATERS EDGE OF LAKE HARRIS AND A POINT HEREBY DESIGNATED AS POINT "A"; RETURN TO THE POINT OF BEGINNING AND RUN SOUTH 89°35'28" WEST ALONG THE SOUTH LINE OF THE NORTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 23 A DISTANCE OF 1100.00 FEET; THENCE NORTH 00°27'54" EAST 1484.76 FEET, MORE OR LESS, TO THE SOUTHERLY WATERS EDGE OF LAKE HARRIS; THENCE EASTERLY ALONG SAID SOUTHERLY WATERS EDGE OF LAKE HARRIS TO POINT "A".

TRACT 2:

THAT PART OF THE N.W. 1/4 OF THE S.E. 1/4 OF SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, IN LAKE COUNTY, FLORIDA, BOUNDED AND DESCRIBED AS FOLLOWS:

BEGIN AT A CONCRETE MONUMENT (NO NUMBER) AT THE SOUTHEAST CORNER OF THE N.W. 1/4 OF THE S.E. 1/4 OF SAID SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, AND RUN N.00°04'21"E ALONG THE EAST LINE OF THE N.W. 1/4 OF THE S.E. 1/4 A DISTANCE OF 1202.20 FEET TO AN IRON PIN LABELED L.B. 707; THENCE CONTINUE N.00°04'21"E ALONG THE EAST LINE OF THE N.W. 1/4 OF THE S.E. 1/4 A DISTANCE OF 112 FEET, MORE OR LESS, TO A POINT ON THE SOUTHERLY WATERS EDGE OF LAKE HARRIS AND A POINT HEREBY DESIGNATED AS POINT "A", RETURN TO THE POINT OF BEGINNING AND RUN S.89°35'28"W, ALONG THE SOUTH LINE OF THE N.W. 1/4 OF THE S.E. 1/4 OF SAID SECTION 23 A DISTANCE OF 1100.00 FEET TO AN IRON,PIN LABELED L.B. 707; THENCE N.00°27'54"E. 1451.76 FEET TO AN IRON ROD PIN LABELED L.B. 707; THENCE CONTINUE N00°27'54"E, 33 FEET, MORE OR LESS, TO A POINT ON THE SOUTHERLY WATERS EDGE OF LAKE HARRIS; THENCE EASTERLY ALONG AND WITH SAID SOUTHERLY WATERS EDGE OF LAKE HARRIS TO INTERSECT THE AFOREMENTIONED POINT "A".

Exhibit "B"

Permitted Exceptions

1. Taxes and assessments for the year 2024 and subsequent years, which are not yet due and payable.

2. Distribution Easement in favor of Florida Power Corporation, a Florida corporation, recorded September 13, 1988 in Official Records Book 980, Page 145. (as to Parcels 1 and 2)

3. Grant of Restrictive Covenant in favor of Town of Howey-in-the-Hills, recorded December 14, 1988 in Official Records Book 991, Page 1056. (as to Parcel 1)

4. County Ordinance No. 2013-29, related to adoption of an Interlocal Service Boundary Agreement, recorded November 15, 2013 in Official Records Book 4404, Page 477. (as to Parcels 1 and 2)

5. Lake Hills PUD Development Agreement, recorded February 24, 2016 in Official Records Book 4744, Page 1032. (as to Parcels 1 and 2)

6. Perpetual Access and Temporary Construction Easement by and between Lake Harris (Orlando) ASLI VII Owner #1, LLC and the Town of Howey-in-the-Hills, Florida, recorded in Official Records Book 6069, Page 242, as amended and restated by that certain Amended and Restated Perpetual Access and Temporary Construction Easement Agreement, recorded in Official Records Book 6371, Page 2297, of the Public Records of Lake County, Florida.

7. Terms and conditions of Access Easement by and between PUBLIX SUPER MARKETS, INC., a Florida corporation ("Grantor") whose address is 3300 Publix Corporate Parkway, Lakeland, Florida 33811; and Lake Harris (Orlando) ASLI VII Owner #1, LLC, a Delaware limited liability company, whose mailing address is 923 N. Pennsylvania Avenue, Winter Park, Florida 32789 and Lake Harris (Orlando) ASLI VII Owner #3, LLC, a Delaware limited liability company, recorded on even date herewith in the Official Records of Lake County, Florida.

GEOTECHNICAL EXPLORATION

PUBLIX AT LAKE HARRIS
HOWEY-IN-THE-HILLS, LAKE COUNTY, FLORIDA

UES PROJECT NO. 0130.2200302.0001
UES REPORT NO. 2059341

PREPARED FOR:

Publix Super Markets, Inc.
c/o WindCrest Development Group, Inc.
605 East Robinson Street, STE 340
Orlando, Florida 32801

Attention: Mr. Tom Murray, P.E.

PREPARED BY:

UES
3532 Maggie Boulevard
Orlando, Florida 32811
(407) 423-0504

December 18, 2023

December 18, 2023

Publix Super Markets, Inc.
c/o WindCrest Development Group, Inc.
605 East Robinson Street, STE 340
Orlando, Florida 32801

Attention: Mr. Tom Murray, P.E., Principal/Vice President
tmurray@windcrestinc.com

Reference: **Geotechnical Exploration**
Publix at Lake Harris
Howey-In-The-Hills, Lake County, Florida
UES Project No. 0130.2200302.0001
UES Report No. 2059341

Dear Mr. Murray:

UES has completed the supplemental geotechnical exploration at the above referenced site in Lake County, 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. 2050865v2 dated November 7, 2023 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 soil and groundwater conditions at the boring locations and geotechnical recommendations for foundation design, pavement design, site preparation, and stormwater pond design. *The site was found to be generally suitable for the proposed development following typical site preparation procedures as 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,
UNIVERSAL ENGINEERING SCIENCES, LLC
Certificate of Authorization No. 549

Ricardo C. Kiriakidis, PhD., P.E.
Geotechnical Department Manager

ZACHARY W. ADAMS LICENSE NO. 82935 STATE OF FLORIDA PROFESSIONAL ENGINEER
12/18/23

Zachary W. Adams, P.E.
Senior Geotechnical Project Manager
Florida Registration No. 82935

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APPENDICES

1.0 PROJECT DESCRIPTION

We understand that the proposed project will include the construction of a new Publix grocery store in Lake County, Florida. The site is located at the northwest corner of State Road 48 & State Road 19 in Howey-In-The-Hills, Florida. We were provided with a conceptual site plan showing the property and the proposed improvements. The plan identified one (1) 50,800 square foot Publix grocery store, one (1) 8,400 square foot retail store, one (1) stormwater pond, four (4) outparcels, and associated paved parking and drive areas. **Our exploration was performed in general accordance with the Publix Site Development Manual dated April 2023.**

UES previously completed a preliminary exploration of the subject site (UES Report No. 1988906, dated November 23, 2022). At this time, UES has been asked to perform a supplemental design level exploration to evaluate the subsurface conditions for the subject property in support of the proposed site improvements.

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 foundation design, pavement design, site preparation, stormwater pond design, and retaining wall design.

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 23, Township 20 South, and Range 25 East in Lake County, Florida. More specifically, the subject site is located at the northwest corner of State Road 48 and State Road 19 in Howey-In-The-Hills, Florida, as shown in the attached Figure A-1. At the time of drilling, the site consisted of an existing citrus grove.

3.1 SOIL SURVEY

There are six (6) native soil type mapped within the site area according to the USDA NRCS Soil Survey of Lake County. A brief summary of the mapped surficial soil type(s) is presented in Table I below. *Please note that the native soil types and their associated engineering properties have likely been altered by past development in the vicinity of the site.*

TABLE I
SUMMARY OF PUBLISHED SOIL DATA

Soil Symbol	Soil Type	Hydrologic Group	Drainage Characteristics	Depth of Published Seasonal High GWT (feet)
8	Candler sand, 0 to 5 percent slopes	A	Excessively drained	>6½
9	Candler sand, 5 to 12 percent slopes	A	Excessively drained	>6½
10	Candler sand, 12 to 40 percent slopes	A	Excessively drained	>6½
17	Arents	B	Somewhat poorly drained	2½ to 5
21	Lake sand, 0 to 5 percent slopes	A	Excessively drained	>6½
22	Lake sand, 5 to 12 percent slopes	A	Excessively drained	>6½

[1] Data obtained from the NRCS online webpage, accessed on 12/15/2023

3.2 TOPOGRAPHY

According to information obtained from the United States Geologic Survey (USGS) "Howey-In-The-Hills, Florida" quadrangle map and the topographic information provided by the client, the predevelopment ground surface elevation across the site area ranges from approximately +80 to +145 feet National Geodetic Vertical Datum (NGVD). The site is located ¼ mile south of Little Lake Harris. According to the USGS map, the normal water level in the lake is noted at +63 feet NGVD. A copy of the portion of the USGS Map is included in Appendix A.

4.0 SCOPE OF SERVICES

The services conducted by UES during our final geotechnical exploration were as follows:

- Drilled eighteen (18) Standard Penetration Test (SPT) borings within the proposed structure, pond, retaining wall, and pavement areas to depths of 25 to 40 feet below existing grades in December 2023.

- Performed three (3) Hand Auger Borings (due to inaccessibility of drill rig) within the proposed structure, retaining wall, and pavement areas to depths of 10 feet below existing grades in December 2023.

- Drilled nine (9) Standard Penetration Test (SPT) borings scattered across the site to depths of 15 to 35 feet below existing grades in November 2022.

- 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 provide 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

5.1 STANDARD PENETRATION TEST (SPT) BORINGS

The SPT soil borings were performed with an ATV-mounted drilling rig. The borings were located using the provided site plan, measuring from existing on-site landmarks shown on an aerial photograph, and by using handheld GPS devices. No survey control was provided prior to performing our field work. Hence, the indicated test boring locations should be considered accurate to the degree of the methodologies used. The approximate boring locations are shown in Appendix B.

The SPT borings, designated B-02 through B-08, OP-01 through OP-04, P-01 through P-03, P-05 through P-09, SW-01, SW-02, and W-02 through W-07 as shown on the attached Boring Location Plan in Appendix B, 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 within the top 10 feet to detect variations in the near surface soil profile and on approximate 5 feet centers thereafter.

Ground surface elevations at the boring locations would be beneficial to help us to identify any anomalies in our measured and estimated seasonal high groundwater levels, as well as improve the usefulness the groundwater information during the civil engineering design of the site.

5.2 HAND AUGER BORINGS

UES performed three (3) hand auger borings, designated B-01, P-04, and W-01, within the proposed building, pavement, and retaining wall area due to accessibility issues with the drill rig (steep slope). The approximate boring location are shown in the Appendix B. The hand auger borings were performed in general accordance with the latest revision of ASTM D 1452, "Standard Practice for Soil Investigation and Sampling by Auger Borings". In this

procedure, the boring was advanced by rotating a hand-held bucket type auger until the receiving end of the auger filled with soil.

Once the bucket was filled, the auger assembly was removed from the borehole and the sample was retrieved from the bucket, placed in labeled plastic containers, and sealed. After completing the auger borings, the samples obtained from each boring were transported to our laboratory where they were examined by a member of our geotechnical staff.

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 below.

TABLE II
LABORATORY METHODOLOGIES

Test Performed	Number Performed	Reference
Wash No. 200 Sieve Determination	25	ASTM D 1140 "Standard Test Methods for Amount of Material in Soils Finer than No. 200 (75-μm) Sieve"
Permeability Test	2	Using the D10 method obtained from a Full Gradation
Moisture Content	27	ASTM D 2216 "Laboratory Determination of Water (Moisture) Content of Soil by Mass"

7.0 SUBSURFACE CONDITIONS

The results of our field exploration and laboratory analysis, together with pertinent information obtained from the SPT 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 on the following page. 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		
Surface	4 to 40*	Very loose to dense fine SAND [SP] and fine SAND with clay [SP-SC]	WOH to 47
4 to 40	40*	Loose to dense clayey fine SAND [SC, SP-SC]	4 to 42

* denotes maximum termination depth of the borings

7.1 NOTABLE FINDINGS – VERY LOOSE SOIL CONDITIONS

A notable finding during the exploration program was the presence of very loose to loose soil conditions observed in the several of our borings across the site. The loose, near surface soils, within approximately 15 feet of the surface, exhibited SPT "N" blow count values ranging from Weight of Hammer (WOH) to 5 blows per foot.

It has been our experience that soils with SPT "N" blow counts less than about 5 bpf may not provide adequate support for the structures without some soil improvement. Larger sized compaction equipment may be required to achieve the in-place soil densities recommended in the site preparation section of this report. The site contractor should select their equipment appropriately.

Although the use of conventional shallow footing foundations is viable, in our opinion, the loose soil conditions found across the majority of the site could require higher compactive effort and soil moisture conditioning than is typical using conventional site preparation techniques.

8.0 GROUNDWATER CONDITIONS

8.1 EXISTING GROUNDWATER LEVEL

We measured the water levels in the boreholes on November 14 & 15, 2022 and December 4 through 12, 2023 during our drilling operations. Groundwater was not encountered at our boring locations to a depth of 10 feet at which point drilling slurry had to be introduced to stabilize the walls of the boring. The encountered groundwater level at each boring is shown on the individual boring logs in Appendix B.

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 as a transient, perched condition on top of the hydraulically restrictive clayey soils encountered at varying depths across the site*. We estimate that the perched seasonal high groundwater levels will generally form at depths ranging from approximately 3½ feet to greater than 15 feet below existing grade. The estimated seasonal high groundwater levels at the boring locations are shown on the attached boring logs.

Please note, ground surface elevations at the boring locations would be beneficial to allow us to identify any anomalies in both our measured and estimated seasonal high groundwater levels, as well as improve the usefulness the groundwater information during the civil engineering design of the site.

It should be noted that the estimated seasonal high water levels provided should be considered accurate to about 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 FOUNDATION DESIGN RECOMMENDATIONS

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, if subsurface conditions are encountered during construction, which were not encountered in the borings, report those conditions immediately to us for observation and recommendations.

9.1 STRUCTURAL AND GRADING INFORMATION

It is our understanding that the project will include the construction of a new Publix grocery store in Howey-In-The-Hills, Florida. We were provided with a site plan showing the property and the proposed improvements. The site plan identified one (1) 50,800 square foot Publix grocery store, one (1) 8,400 square foot retail store, one (1) stormwater pond, four (4) outparcels, and associated paved parking and drive areas

Based on Publix standard specifications, the loads on the slabs are anticipated to be 150 to 200 psf, the maximum wall loads will not exceed 5 kips per linear foot, and the maximum column loads will not exceed 180 kips. Typical footings will bear at about 3'-0" below finished grade except near the truck well, where the footings will bear 6'-4".

For the remaining buildings, structural loads were not available at the time of this report. However, based upon our experience with similar projects, we have assumed a maximum column load of 50 kips, maximum wall loads of 4 kips per linear foot.

Prior to finalizing any design, the structural/grading information outlined above should be confirmed by the project structural/civil engineer. This is crucial to our evaluation and estimates of settlements. If any of this information is incorrect or if you anticipate any changes, please inform UES immediately so that we may review and modify our recommendations as appropriate.

9.2 Analysis

Based on the results of the soil borings, the near surface soils within the proposed building areas appear to be mostly very loose to medium dense fine sand [SP, SP-SC] overlying loose to dense clayey fine SAND [SP-SC, SC] to a depth of approximately 35 feet below current grades.

It is our opinion that proposed structures can be supported on properly designed and constructed shallow foundation systems. Provided that the site preparation recommendations outlined in this report are followed, and any loose surficial soils are properly densified, the parameters outlined below may be used for foundation design.

9.3 Bearing Pressure

Provided our suggested site preparation procedures are followed, we recommend designing shallow footing foundations for a **maximum allowable net soil bearing pressure of 2,500 pounds per square foot (psf)**. The allowable net 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. The foundations should be designed for the most unfavorable effects due to the combinations of loads specified in the FLBC.

9.4 Foundation Size

The minimum width recommended for an isolated column footing is 24 inches. For continuous wall or slab on grade foundations, the minimum footing width should comply with the current FLBC, but under no circumstances should be less than 12 inches. Even though the maximum allowable soil bearing pressure may not be achieved, these width recommendations should control the size of the foundations.

9.5 Bearing Depth

The base of all footings should be at least 12 inches below finished grade elevation in accordance with the FLBC. We recommend stormwater and surface water be diverted away from the building exterior, both during and after construction, to reduce the possibility of erosion beneath the exterior footings. We understand that the typical footing bearing depth for the anchor building is 3 feet below finished grade for the main building and 6'-4" for the truck well.

9.6 Bearing Material

The foundations may bear on either the compacted suitable native soils or compacted structural fill. The bearing level soils should 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 foundation level** as described in this report. In addition to compaction, the bearing soils must exhibit stability and be free of "pumping" conditions.

9.7 Settlement Estimates

Post-construction settlement of the structures will be influenced by several interrelated factors, such as (1) subsurface stratification and strength/compressibility characteristics of the bearing soils to a depth of approximately twice the width of the footing; (2) footing size, bearing level, applied loads, and resulting bearing pressures beneath the foundation; (3) site preparation and earthwork construction techniques used by the contractor, and (4) external factors, including but not limited to vibration from off-site sources and groundwater fluctuations beyond those normally anticipated for the naturally-occurring site and soil conditions which are present.

Our settlement estimates for the structure are based upon adherence to our recommended site preparation procedures presented in this report. Any deviation from these recommendations could result in an increase in the estimated post-construction settlement of the structures. Furthermore, should building loads change from those assumed by us, greater settlements may be expected.

Due to the sandy nature of the surficial soils following the compaction operations, we expect the majority of settlement to be elastic in nature and occur relatively quickly, on application of the loads, during and immediately following construction. Using the recommended maximum allowable bearing pressure, the assumed maximum structural loads, and the field and laboratory test data which we have correlated into the strength and compressibility characteristics of the subsurface soils, **we estimate the total vertical settlement of the proposed structure to be on the order of 1 inch or less.**

Differential settlement results from differences in applied bearing pressures and the variations in the compressibility characteristics of the subsurface soils. Assuming our site preparation recommendations are followed, **we anticipate differential settlement of less than ½ inch.**

9.8 Floor Slabs

Conventional floor slabs may be supported upon the compacted naïve soils or fill and should be structurally isolated from other foundation elements or adequately reinforced to prevent distress due to differential movements. For the slab design, we recommend using a subgrade modulus (k) of 100 pounds per cubic inch, which can be achieved by compacting the subgrade soils as recommended in this report. We recommend using 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.

9.9 TRUCK DOCK WALLS

Assuming that retaining walls for any depressed loading docks or other similar structures will be smooth concrete and backfill soils consist of clean sandy soil compacted to at least 95% of the Modified Proctor test maximum dry density (as recommended in the following section), we recommend using the following parameters for retaining wall design.

K_a (coef. of active earth pressure)	= 0.33
K_p (coef. of passive earth pressure)	= 3.00
K_o (coef. of earth pressure at rest)	= 0.50
Coefficient of Friction (Sliding)	= 0.35
Unit weight of Soil (moist)	= 110 pounds per cubic foot
Unit weight of Soil (submerged)	= 55 pounds per cubic foot

Please note that uplift and lateral hydrostatic pressures will be exerted on such structures during the time the groundwater level is at or near its seasonal high level. These forces should also be included in the proposed design. Appropriate factors of safety should also be incorporated.

Where constructed below the estimated seasonal high groundwater table, the truck dock area should include underdrains (routed to positive outfall) to maintain the groundwater at least 12 inches below the bottom of the concrete pavement section. In addition, the walls will need to be waterproofed.

10.0 PAVEMENT RECOMMENDATIONS

10.1 GENERAL

We understand that the proposed parking and drive areas will consist of a combination of flexible asphaltic and rigid concrete pavement sections with typical light and some heavy duty traffic. Our recommendations for both pavement types are listed in the following sections. The following recommendations are based on the pavement areas being prepared as recommended in this report.

10.2 ASPHALTIC PAVEMENTS

10.2.1 Layer Components

At the time of this exploration, specific traffic loading information was not provided to us. We have assumed the following conditions for our recommended minimum pavement design.

- the subgrade soils are prepared as described in this report
- a twenty (20) year design life
- terminal serviceability index (P_t) of 2.5
- reliability of 90 percent
- total equivalent 18-kip single axle loads (E_{18}SAL) up to 50,000 for light duty pavements - car and pickup truck traffic
- total equivalent 18-kip single axle loads (E_{18}SAL) up to 250,000 for heavy duty pavements – occasional heavy truck traffic (delivery, trash collection, service lanes, etc.)

We recommend using a three-layer pavement section for the proposed asphaltic parking/drive areas consisting of stabilized subgrade, base course, and surface course. Based on the results of our soil borings, the assumed traffic loading information and review of the 2020 FDOT Flexible Pavement Design Manual, our minimum recommended pavement component thicknesses are presented in Table IV below. Where applicable, the local municipality minimum standards should be followed when more stringent than the recommendations herein.

TABLE IV
MINIMUM ASPHALTIC PAVEMENT COMPONENT THICKNESSES

Service Level	Layer Component		
	Surface Course (inches)	Base Course (inches)	Stabilized Subgrade (inches)
Light Duty	2	6	12
Heavy Duty	2½	8	12

10.2.2 Stabilized 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. Based on the results of the LBR tests performed on the surficial soils at boring locations R-05 and R-06, the existing soils exhibit max LBR values of 23 and 24. Therefore, additional stabilization will be necessary. The LBR Sheets are presented in Appendix B.

Compaction testing of the stabilized subgrade should be performed to full depth at a frequency of at least one (1) test per 10,000 square feet, or a minimum of 4 tests, whichever is greater.

10.2.3 Base Course

Based on the results of our exploration and our experience in the project area, limerock and crushed concrete are suitable base course materials for this project. However, local municipality standards may govern the use of 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.

Recycled concrete aggregate (RCA) may provide a cost-effective alternative material in lieu of a limerock base course. Local availability, along with municipality standards, typically governs the use of crushed concrete use as an alternative base course material. The

advantages of using RCA 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 a 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 criteria listed in 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. We recommend that the seasonal high groundwater and the bottom of the base course be separated by at least 12 inches for RCA base courses, and at least 18 inches for a limerock base course. **Based on the groundwater conditions encountered, the separation criteria should not be an issue at this site unless the site is cut into the hydraulically restrictive clayey soils.**

10.2.6 Landscape Areas

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.

10.2.7 Construction Traffic

A temporary stabilized all-weather truck route with a minimum width of 15 feet shall be used during construction until permanent access to the Publix is available. This truck route shall consist of a minimum of 12 inches of aggregate base. The material should consist of graded aggregate base or RCA and have a minimum LBR value of 100. The base material should be placed in maximum 6-inch lifts and compacted to a minimum density of 98 percent of the modified Proctor maximum dry density (AASHTO T-180). We recommend that positive drainage be established and maintained on the temporary stabilized truck route during construction. It is the Contractor's responsibility to maintain and service this temporary truck route as needed with additional fill and compaction.

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 stipulations:

1. Prior to placement of concrete, the subgrade soils should be prepared as recommended in 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 our exploration and review of the FDOT Rigid Pavement Design Manual, our recommended minimum concrete pavement design is shown in Table V below.

TABLE V
MINIMUM CONCRETE PAVEMENT THICKNESSES

Service Level	Minimum Pavement Thickness	Maximum Control Joint Spacing	Recommended Saw Cut Depth
Normal/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 3,500 pounds per square inch and contain fiber reinforcement. 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, organics, debris, 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. If necessary, perform any 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. **Deeper stripping may be necessary within heavily vegetated or depressional areas of the site**. 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) 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 5 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 roadway, 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 damages occur. 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 SEWER AND UTILITY LINES

12.1 General Considerations

We assume that proposed underground utility lines at the site may have invert elevations on the order of 2 to 5 feet below existing grades. Based on the results of our test borings performed across the subject site, the soils encountered at these depths consist of fine sands which are suitable for re-use as trench backfill.

12.2 Trench Excavation and Backfill Recommendations

The following are our recommendations for construction of the proposed utility lines.

1. As appropriate, install a temporary dewatering system capable of maintaining the groundwater level at least 2 feet below the bottom of the utility invert. Based on groundwater conditions encountered, dewatering should not be necessary for this project.

2. After excavation to design invert elevations, the in-situ bedding soils should be compacted to at least 95 percent of the Modified Proctor test maximum dry density (ASTM D 1557) to a depth of 12 inches below the bedding level. Compaction in confined areas can probably be achieved using jumping jacks or light weight walk-behind vibratory sleds and/or rollers. However, contractor is responsible for selecting the appropriate compaction equipment. Any unsuitable soils (i.e. organics, excessively soft, highly plastic soils, etc.) encountered at trench bottom level should be removed and replaced with compacted approved backfill.

3. If difficult compaction operations are encountered for the soils beneath the utility invert elevations due to excessive fines content and/or saturated soil conditions, contractor may use aggregate/stone to stabilize the bottom the excavation. This can be accomplished by undercutting 6 inches of the subgrade, placing coarse aggregate (FDOT 57 stone) in 6 inch loose lifts in the bottom of the excavation, and "beating" or "pounding" each lift of the stone into the saturated subgrade with compaction equipment (i.e. jumping jack) until it is absorbed, and another 6" 'lift of stone is pounded into the subgrade. Repeat until a firm, non-yielding subgrade is achieved. The non-yielding aggregate/soil subgrade should be probed to verify compaction (i.e. firm and stable) in lieu of density testing.

4. After stabilizing the bedding level soils and constructing the utility line, backfill the excavation with suitable native soils or imported fill placed in maximum 6-inch thick compacted lifts. Suitable native soils or imported fill material should consist of relatively clean sandy soils containing less than 10 percent passing the No. 200 sieve. The on-site soils found within the upper 10 feet of pre-development site meet this criterion. Each lift of backfill should be compacted to at least 95 percent of the Modified Proctor test maximum dry density (ASTM D 1557). Beneath pavement areas, the top 12 inches of backfill should be compacted to at least 98 percent. Additionally, local jurisdictional compaction requirements should be followed when stricter than the recommendations herein.

5. All excavation work must meet OSHA Excavation Standard Subpart P regulations. Either a trench box, braced sheet pile structure or an excavation with temporary side slopes should be designed according to OSHA requirements for the on-site soils. Provisions for maintaining workman safety within excavations is the sole responsibility of the contractor.

13.0 STORMWATER POND DESIGN

We understand that the project will include one (1) dry bottom stormwater pond within the northern portion of the site. Two (2) borings (SW-01 and SW-02) were performed within the proposed pond. Our recommended stormwater design parameters are shown on the following page in Table VI on the following page.

TABLE VI
STORMWATER MANAGEMENT DESIGN PARAMETERS

Design Parameter	Recommended Values	
Relevant Boring Logs	SW-01	SW-02
Estimated Depth to Base of Surficial Aquifer (feet)	30*	30*
Estimated Fillable Porosity of Surficial in-situ sands (percent)	25	25
Estimated Seasonal High Groundwater Level (feet)	15+	15+
Estimated Horizontal Saturated Hydraulic Conductivity of Surficial Aquifer (feet per day)	40	40
Estimated Vertical Unsaturated Hydraulic Conductivity of Surficial Aquifer (feet per day)	26	26

*Depth to base of surficial aquifer based on termination depth of borings

Please note that survey control was not provided at our boring locations. The estimated depths in Table VI are referenced to the existing ground surface at the time of our exploration. Appropriate factors of safety should be included in the design. UES can provide the drawdown/recovery analysis once the pond configuration and treatment volumes have been finalized.

14.0 EARTH RETAINING WALLS

Earth pressures on retaining walls are influenced by the structural design of walls, conditions of wall restraint, construction methods, and the strength of the materials being restrained. The most common conditions assumed for earth retaining wall design are the active and at-rest conditions.

Active conditions apply to relatively flexible earth retention structures, such as freestanding walls, where some movement and rotation may occur to mobilize shear strength. Walls which are rigidly restrained should be designed for the at-rest condition. However, if the walls will be backfilled before they are braced, they should also be designed to withstand active earth pressures as self-supporting cantilever walls. The wall designer must select the appropriate earth pressure based upon site and design constraints.

Development of the full active earth pressure case requires a magnitude of horizontal wall movement that often cannot be tolerated or cannot occur due to the rigidity of the wall and other design restrictions such as the impact on adjacent structures. In such cases, walls are often designed for either the at-rest condition or a condition intermediate of the active and at-rest conditions, depending on the amount of permissible wall movement.

Passive earth pressure represents the maximum possible pressure when a structure is pushed against the soil, and is used in wall foundation design to help resist active or at-rest pressures. Because significant wall movements are required to develop the passive pressure, the total calculated passive pressure is usually reduced by one-half for design purposes.

Our recommendations assume that the ground surface behind the earth retaining structures is level and that native or imported soils consisting of clean sandy soils containing less than 12 percent passing the No. 200 sieve. We recommend that the soils selected for use as backfill be tested as specified prior to commencement of wall construction. Recommended soil parameters for design of earth retaining structures have been presented in Table VII.

TABLE VII
LATERAL EARTH PRESSURE DESIGN PARAMETERS (LEVEL BACKFILL)*

Design Parameter	Recommended Value
At-rest Earth Pressure Coefficient, Ko	0.50
Active Earth Pressure Coefficient, Ka	0.33
Passive Earth Pressure Coefficient, Kp	3.0
Moist Unit Soil Weight (pcf)	115 for SP, SP-SM
Submerged Unit Weight of Soil (pcf)	52
Coefficient of Friction (sliding)	0.35
Angle of Internal Friction, ϕ	30
Table Notes: * For sloping backfill the table values must be adjusted. **Hydrostatic pressure should be accounted for based on seasonal high water table estimates and other site drainage considerations	

Positive wall drainage must be provided for all earth retaining structures to prevent the build-up of excess hydrostatic pressures. These drainage systems can be constructed of open-graded washed stone isolated from the soil backfill with a geosynthetic filter fabric and drained by perforated pipe, or with one of several wall drainage products made specifically for this application.

Lateral earth pressures arising from surcharge loading (i.e. traffic loading, building/structure loads, etc.) should be added to the above earth pressures to determine the total lateral pressure. Additional consideration must also be given for sloped backfill at the top of the wall. In each circumstance the earth pressures for active and at-rest conditions will increase based upon the amount of surcharge and angle above horizontal of the sloped backfill. Retaining walls should also be analyzed for both internal and global stability.

15.0 DEWATERING AND EXCAVATION CONSIDERATIONS

Shallow groundwater is not anticipated within 10 feet of existing grades. However, if encountered, 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 the 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.

16.0 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.

17.0 LIMITATIONS

This report has been prepared for the exclusive use of ***Publix Supermarkets, Inc., WindCrest Development Group, Inc.,*** 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.

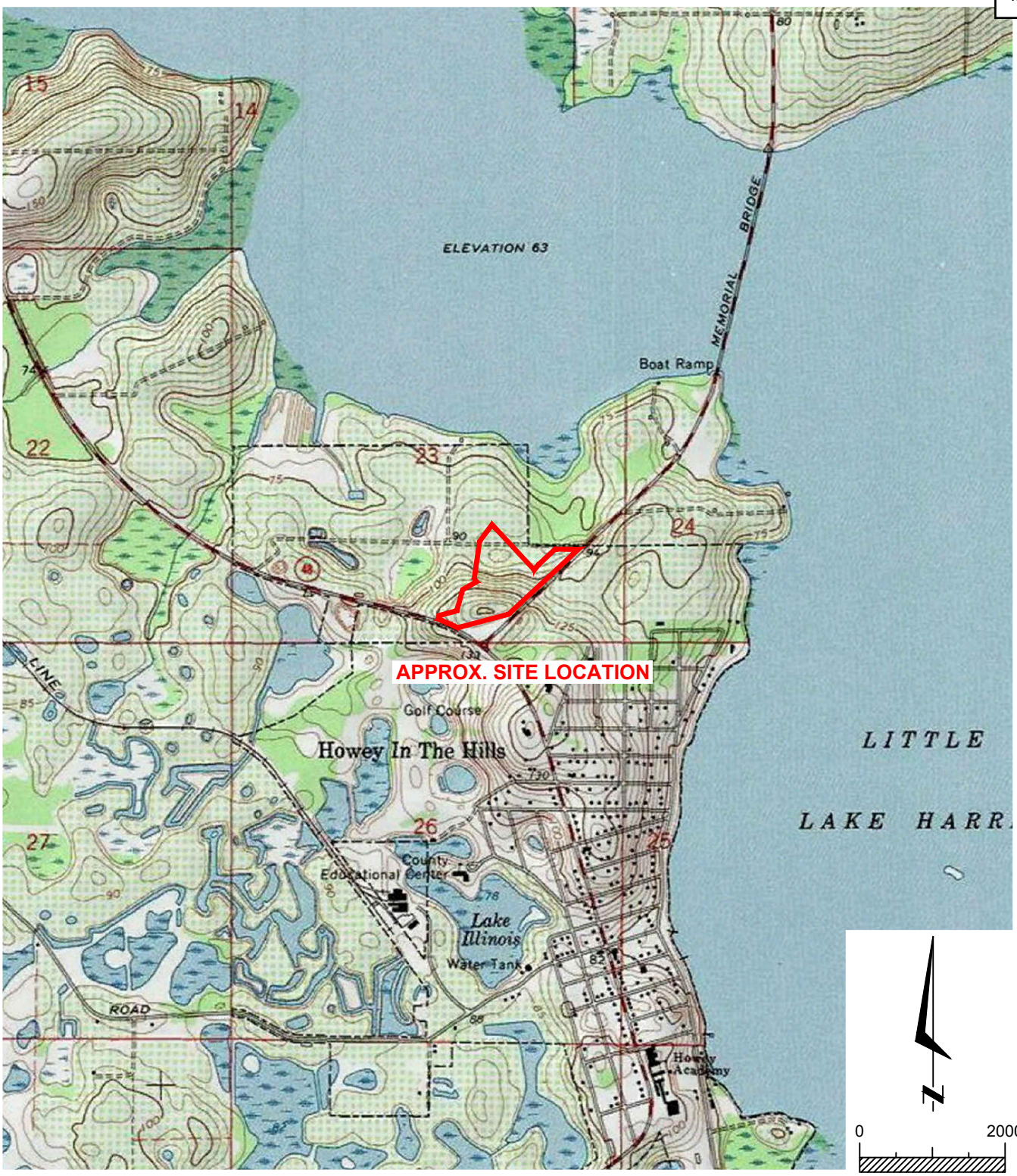
During the early stages of most construction projects, geotechnical issues not addressed in this report may arise. Because of the natural limitations inherent in working with the subsurface, it is not possible for a geotechnical engineer to predict and address all possible problems. A Geotechnical Business 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

SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, LAKE COUNTY, FLORIDA

SITE LOCATION MAP

DRAWN BY:	N.F.	**DATE:**	12 - 6 - 2023	**CHECKED BY:**	Z.W.A.	**DATE:**	12 - 13 - 2023
SCALE:	AS SHOWN	**PROJECT NO:**	0130.2200302.0001	**REPORT NO:**	2059341	**PAGE NO:**	A-1

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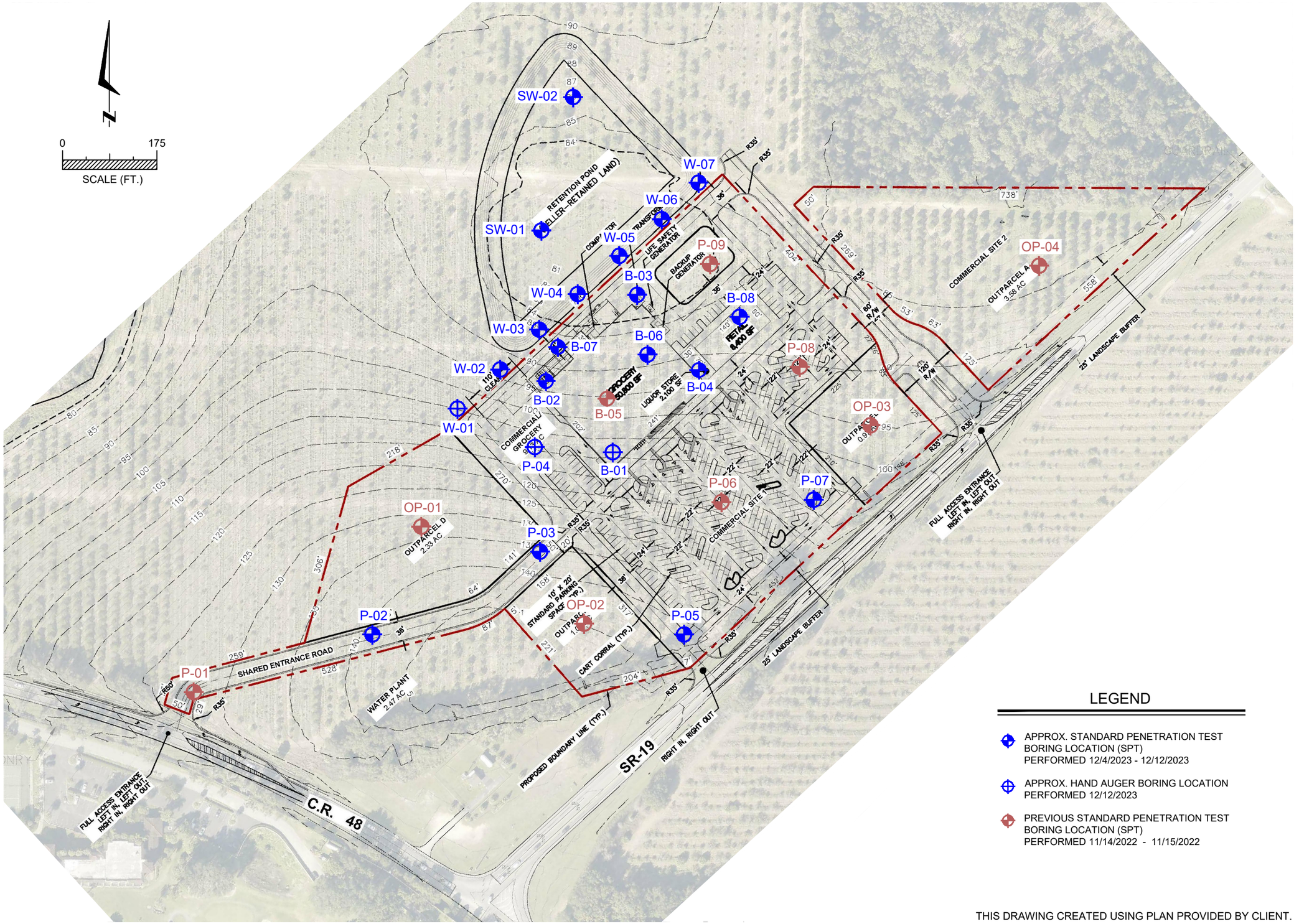
APPENDIX B

UES™



LEGEND

- APPROX. STANDARD PENETRATION TEST BORING LOCATION (SPT) PERFORMED 12/4/2023 - 12/12/2023
- APPROX. HAND AUGER BORING LOCATION PERFORMED 12/12/2023
- PREVIOUS STANDARD PENETRATION TEST BORING LOCATION (SPT) PERFORMED 11/14/2022 - 11/15/2022

THIS DRAWING CREATED USING PLAN PROVIDED BY CLIENT.

22-0608-02

FOR: WINDCREST DEVELOPMENT GROUP

DRAWN BY:	N.F.	DATE:	12 - 6 - 2023
CHECKED BY:	Z.W.A.	DATE:	12 - 13 - 2023
REPORT NO:	2059341	SCALE:	AS SHOWN
PROJECT NO:	0130.2200302.0001		

SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, LAKE COUNTY, FLORIDA

BORING LOCATION PLAN

UES

PAGE NO: B-2

UES
BORING LOG

PROJECT NO.:	0130.220
REPORT NO.:	2059431
PAGE:	B-2.1

PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **B-01** SHEET: **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.

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): NE
DATE OF READING: 12/12/2023
EST. SHGWT (ft): 10.0+

DATE STARTED: 12/12/23
DATE FINISHED: 12/12/23
DRILLED BY: ORL - AI/M
TYPE OF SAMPLING: ASTM D 1452

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						Brown fine SAND [SP]						
5							2	3				
10				▽		BORING TERMINATED AT 10.0 FEET						
15												
20												
25												
30												
35												
40												

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UES
BORING LOG

PROJECT NO.:	0130.220
REPORT NO.:	2059431
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PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **B-02** SHEET: **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.

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): NE
DATE OF READING: 12/6/2023
EST. SHGWT (ft): 10.0+

DATE STARTED: 12/6/23
DATE FINISHED: 12/6/23
DRILLED BY: ORL - AI/MW
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 brown fine SAND [SP]						
		2-3-3	6									
		3-2-2	4			-- orange brown						
5		2-2-2	4									
		2-2-2	4									
		2-2-2	4				3	4				
		2-2-3	5	▽								
10												
		3-3-3	6									
15												
		4-3-7	10			Loose orange brown fine SAND with clay [SP-SC]						
20												
		8-9-11	20			Medium dense orange brown fine SAND [SP]						
25						BORING TERMINATED AT 25.0 FEET						
30												
35												
40												

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UES
BORING LOG

PROJECT NO.:	0130.220
REPORT NO.:	2059431
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PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **B-03** SHEET: **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.

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): 23.0
DATE OF READING: 12/6/2023
EST. SHGWT (ft): 10.0+

DATE STARTED: 12/6/23
DATE FINISHED: 12/6/23
DRILLED BY: ORL - AI/MW
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 brown fine SAND [SP]						
		2-2-2	4									
		2-2-2	4				2	4				
5		1-1-1	2			-- very loose -- orange brown						
		1-2-1	3			-- loose						
		2-2-2	4									
10		2-2-2	4	▽								
		2-2-3	5									
15												
		3-3-3	6									
20				▼								
		6-6-8	14			-- medium dense, light brown						
25						BORING TERMINATED AT 25.0 FEET						
30												
35												
40												

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UES
BORING LOG

PROJECT NO.:	0130.220
REPORT NO.:	2059431
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PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **B-04** SHEET: **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.

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): NE
DATE OF READING: 12/7/2023
EST. SHGWT (ft): 10.0+

DATE STARTED: 12/7/23
DATE FINISHED: 12/7/23
DRILLED BY: ORL - AI/MW
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 brown fine SAND [SP]						
		1-2-1	3									
		2-1-1	2									
5		1-1-2	3									
		1-1-1	2				3	3				
		1-2-1	3									
		2-2-2	4	▽		Loose brown fine SAND with clay [SP-SC]						
10												
						-- orange brown						
15		3-3-4	7									
						Loose dark orange clayey fine SAND [SC]						
20		4-3-4	7									
						-- medium dense, mix orange brown						
25		8-7-7	14			BORING TERMINATED AT 25.0 FEET						
30												
35												
40												

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BORING LOG

PROJECT NO.:	0130.220
REPORT NO.:	2059431
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Item 2.

PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **B-05** SHEET: **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.

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): NE
DATE OF READING: 11/15/2022
EST. SHGWT (ft): 10.0+

DATE STARTED: 11/15/22
DATE FINISHED: 11/15/22
DRILLED BY: ORL - JB/DM/JB
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 orange brown fine SAND [SP]						
		2-2-2	4									
		1-1-1	2			-- very loose, orange brown						
5		1-1-1	2									
		1-1-1	2				3	6				
		1-1-1	2									
		1-1-2	3	▽								
10												
		3-3-3	6			-- loose						
15												
		5-7-8	15			-- medium dense						
20												
		6-6-11	17									
25						BORING TERMINATED AT 25.0 FEET						
30												
35												
40												

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BORING LOG

PROJECT NO.:	0130.220
REPORT NO.:	2059431
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PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **B-06** SHEET: **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.

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): NE
DATE OF READING: 12/6/2023
EST. SHGWT (ft): 10.0+

DATE STARTED: 12/6/23
DATE FINISHED: 12/6/23
DRILLED BY: ORL - AI/MW
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 orange brown fine SAND [SP]						
		2-2-1	3									
		1-2-1	3									
5		1-1-1	2				3	4				
		1-2-2	4			-- loose						
		2-2-2	4									
10		2-3-3	6	▽								
		3-4-3	7									
20		5-5-5	10									
		5-7-5	12			-- medium dense						
25						BORING TERMINATED AT 25.0 FEET						
30												
35												
40												

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UES
BORING LOG

PROJECT NO.:	0130.220
REPORT NO.:	2059431
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PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **B-07** SHEET: **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.

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): NE
DATE OF READING: 12/5/2023
EST. SHGWT (ft): 10.0+

DATE STARTED: 12/5/23
DATE FINISHED: 12/5/23
DRILLED BY: ORL - AI/M
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 brown fine SAND [SP]						
		2-2-2	4									
		2-2-2	4			-- brown						
						-- very loose						
5		2-1-1	2			-- orange brown						
		1-1-1	2				3	4				
		2-1-2	3									
		2-2-2	4	▽		-- loose						
10												
		2-2-3	5									
15												
						-- medium dense						
20		5-6-7	13									
		7-8-8	16									
25						BORING TERMINATED AT 25.0 FEET						
30												
35												
40												

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UES
BORING LOG

PROJECT NO.:	0130.220
REPORT NO.:	2059431
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PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **B-08** SHEET: **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.

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): NE
DATE OF READING: 12/7/2023
EST. SHGWT (ft): 10.0+

DATE STARTED: 12/7/23
DATE FINISHED: 12/7/23
DRILLED BY: ORL - AI/MW
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 orange brown fine SAND [SP]						
		2-2-2	4									
		2-2-2	4									
5		2-1-1	2			-- very loose	3	4				
		1-1-2	3									
		2-2-2	4			-- loose						
		3-3-3	6	▽		Loose orange brown fine SAND with clay [SP-SC]						
10												
		3-2-3	5			Loose orange brown clayey fine SAND [SC]						
15												
		9-10-13	23			-- medium dense						
20												
		11-10-17	27									
25						BORING TERMINATED AT 25.0 FEET						
30												
35												
40												

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UES
BORING LOG

PROJECT NO.:	0130.220
REPORT NO.:	2059431
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PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **OP-01** SHEET **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.
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): NE
DATE OF READING: 11/14/2022
EST. SHGWT (ft): 5.0

DATE STARTED: 11/14/22
DATE FINISHED: 11/14/22
DRILLED BY: ORL - JB/DM/JB
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 brown fine SAND [SP]						
		1-2-2	4									
						-- very loose, orange brown						
		1-1-1	2									
5		1-2-1	3	▽								
						Loose dark orange brown clayey fine SAND [SC]	18	10				
		3-2-2	4									
		4-4-4	8									
						-- medium dense						
10		6-7-6	13									
15		13-14-13	27									
20		12-16-17	33			Dense mix orange brown fine SAND with clay [SP-SC]						
						-- medium dense						
25		8-10-11	21									
						-- dense, grey light orange brown						
30		13-19-23	42									
35		8-11-13	24			Meidum dense orange brown clayey fine SAND [SC]						
						BORING TERMINATED AT 35.0 FEET						
40												

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UES
BORING LOG

PROJECT NO.:	0130.220
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PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **OP-02** SHEET: **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.

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): NE
DATE OF READING: 11/14/2022
EST. SHGWT (ft): 6.5

DATE STARTED: 11/14/22
DATE FINISHED: 11/14/22
DRILLED BY: ORL - JB/DM/JB
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 orange brown fine SAND [SP]						
		2-3-2	5			-- very loose						
		1-1-1	2									
5		1-1-1	2			-- loose						
		1-2-2	4	▽			2	3				
		4-5-5	10			Loose dark orange brown clayey fine SAND [SC]						
		5-6-5	11			-- medium dense						
10												
						Medium dense orange brown fine SAND [SP]						
		9-8-8	16									
15												
						-- grey orange brown						
20		4-6-6	12									
25		5-7-7	14									
						-- grey very light orange brown						
30		4-6-6	12									
35		6-10-10	20			BORING TERMINATED AT 35.0 FEET						
40												

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UES
BORING LOG

PROJECT NO.:	0130.220
REPORT NO.:	2059431
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PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **OP-03** SHEET: **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.

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): NE
DATE OF READING: 11/14/2022
EST. SHGWT (ft): 10.0+

DATE STARTED: 11/14/22
DATE FINISHED: 11/14/22
DRILLED BY: ORL - JB/DM/JB
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 orange brown fine SAND [SP]						
		1-2-1	3									
		1-1-1	2									
5		1-1-1	2				3	5				
		2-1-1	2			-- loose						
		2-2-2	4									
10		2-2-3	5	▽								
15		3-3-5	8									
20		6-8-10	18			Medium dense orange brown fine SAND with clay [SP-SC]						
25		10-11-13	24			BORING TERMINATED AT 25.0 FEET						
30												
35												
40												

W-12517.GPJ

UES
BORING LOG

PROJECT NO.:	0130.220
REPORT NO.:	2059431
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Item 2.

PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **OP-04** SHEET: **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.

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): NE
DATE OF READING: 11/15/2022
EST. SHGWT (ft): 10.0+

DATE STARTED: 11/15/22
DATE FINISHED: 11/15/22
DRILLED BY: ORL - JB/DM/JB
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 orange brown fine SAND [SP]						
		2-2-2	4									
		2-1-1	2			-- very loose	3	4				
5		1-1-1	2									
		2-1-1	2									
		2-1-2	3									
10		2-1-2	3	▽								
		3-4-5	9			-- loose						
15												
		5-5-7	12			-- medium dense						
20												
		7-8-10	18									
25						BORING TERMINATED AT 25.0 FEET						
30												
35												
40												

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UES
BORING LOG

PROJECT NO.:	0130.220
REPORT NO.:	2059431
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PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **P-01** SHEET: **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.
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): NE
DATE OF READING: 11/14/2022
EST. SHGWT (ft): 8.0

DATE STARTED: 11/14/22
DATE FINISHED: 11/14/22
DRILLED BY: ORL - JB/DM/JB
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 brown fine SAND [SP]						
		2-2-2	4			-- very loose, orange brown						
		1-1-1	2									
5		2-1-2	3									
		2-1-2	3									
		2-3-2	5	▽		Loose dark orange brown fine SAND with clay [SP-SC]						
10		6-8-8	16			Medium dense dark orange brown clayey fine SAND [SC]	24	13				
		15-16-12	28			-- grey dark orange brown						
20		8-8-8	16			Medium dense grey dark orange brown fine SAND with clay [SP-SC]						
25		5-6-7	13			BORING TERMINATED AT 25.0 FEET						
30												
35												
40												

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UES
BORING LOG

PROJECT NO.:	0130.220
REPORT NO.:	2059431
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PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **P-02** SHEET: **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.
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): NE
DATE OF READING: 12/7/2023
EST. SHGWT (ft): 3.5

DATE STARTED: 12/7/23
DATE FINISHED: 12/7/23
DRILLED BY: ORL - AI/MW
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												
		2-2-2	4			Loose brown fine SAND [SP]						
		2-2-4	6	▽								
5		4-3-4	7			Loose orange clayey fine SAND [SC]						
		4-5-5	10			-- medium dense						
		4-5-6	11									
10		5-6-7	13									
		5-5-5	10			-- loose						
15												
		5-6-5	11			-- medium dense						
20												
		6-6-5	11									
25						BORING TERMINATED AT 25.0 FEET						
30												
35												
40												

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UES
BORING LOG

PROJECT NO.:	0130.220
REPORT NO.:	2059431
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PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **P-03** SHEET: **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.

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): NE
DATE OF READING: 12/7/2023
EST. SHGWT (ft): 6.5

DATE STARTED: 12/7/23
DATE FINISHED: 12/7/23
DRILLED BY: ORL - AI/MW
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 brown fine SAND [SP]						
		1-2-2	4									
		2-2-2	4			-- very loose, orange						
5		1-1-1	2									
		1-1-2	3	▽								
		2-3-6	9			Loose orange clayey fine SAND [SC]						
		11-13-14	27			-- medium dense						
10												
		15-15-21	36			-- dense						
15												
		17-14-16	30			-- medium dense						
20												
		16-18-21	39			-- dense						
25						BORING TERMINATED AT 25.0 FEET						
30												
35												
40												

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UES
BORING LOG

PROJECT NO.:	0130.220
REPORT NO.:	2059431
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Item 2.

PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **P-04** SHEET: **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.

LOCATION: SEE BORING LOCATION PLAN

REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED

G.S. ELEVATION (ft):	N.S.	DATE STARTED:	12/12/23
WATER TABLE (ft):	NE	DATE FINISHED:	12/12/23
DATE OF READING:	12/12/2023	DRILLED BY:	ORL - AI/M
EST. SHGWT (ft):	8.0+	TYPE OF SAMPLING:	ASTM D 1452

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						Orange brown fine SAND [SP]						
5				▽								
10						BORING TERMINATED AT 10.0 FEET						
15												
20												
25												
30												
35												
40												

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UES
BORING LOG

PROJECT NO.:	0130.220
REPORT NO.:	2059431
PAGE:	B-2.17

PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **P-05** SHEET: **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.

LOCATION: SEE BORING LOCATION PLAN

REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED

G.S. ELEVATION (ft):	N.S.	DATE STARTED:	12/7/23
WATER TABLE (ft):	NE	DATE FINISHED:	12/7/23
DATE OF READING:	12/7/2023	DRILLED BY:	ORL - AI/MW
EST. SHGWT (ft):	6.5	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 brown fine SAND [SP]~~						
		2-2-3	5									
		3-2-3	5			-- orange brown						
5		2-1-3	5									
		3-8-11	19	▽		Medium dense orange brown fine SAND with clay [SP-SC]						
		16-18-20	38			Dense orange clayey fine SAND [SC]						
		22-20-21	41									
10												
						-- medium dense						
15		13-14-13	27									
						Dense orange fine SAND with clay [SP-SC]						
20		16-16-25	41									
		16-19-21	40									
25						BORING TERMINATED AT 25.0 FEET						
30												
35												
40												

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BORING LOG

PROJECT NO.:	0130.220
REPORT NO.:	2059431
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PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **P-06** SHEET: **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.

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): NE
DATE OF READING: 11/14/2022
EST. SHGWT (ft): 5.0

DATE STARTED: 11/14/22
DATE FINISHED: 11/14/22
DRILLED BY: ORL - JB/DM/JB
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 orange brown fine SAND [SP]						
		2-2-2	4									
		1-1-1	2			-- very loose	2	5				
5		1-2-1	3	▽								
		2-4-5	9			Loose dark orange brown clayey fine SAND [SC]						
		7-7-9	16			-- medium dense						
		9-14-17	31			-- dense						
10												
						-- medium dense						
15		11-13-17	30									
		10-11-10	21									
20												
						Medium dense orange brown fine SAND with clay [SP-SC]						
		5-6-7	13			BORING TERMINATED AT 25.0 FEET						
25												
30												
35												
40												

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BORING LOG

PROJECT NO.:	0130.220
REPORT NO.:	2059431
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PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **P-07** SHEET: **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.

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): NE
DATE OF READING: 12/7/2023
EST. SHGWT (ft): 10.0+

DATE STARTED: 12/7/23
DATE FINISHED: 12/7/23
DRILLED BY: ORL - AI/MW
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 orange brown fine SAND [SP]						
		2-2-2	4									
		2-2-2	4									
5		1-1-1	2			-- very loose						
		2-2-2	4			-- loose						
		2-1-2	3			-- very loose						
10		2-2-2	4	▽		-- loose						
		3-3-3	6									
15												
		3-3-4	7									
20												
		3-4-4	8									
25						BORING TERMINATED AT 25.0 FEET						
30												
35												
40												

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UES
BORING LOG

PROJECT NO.:	0130.220
REPORT NO.:	2059431
PAGE:	B-2.20

PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **P-08** SHEET: **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.

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): NE
DATE OF READING: 11/15/2022
EST. SHGWT (ft): 10.0+

DATE STARTED: 11/15/22
DATE FINISHED: 11/15/22
DRILLED BY: ORL - JB/DM/JB
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 orange brown fine SAND [SP]						
		3-3-2	5									
		2-1-1	2			-- very loose						
5		1-1-2	3									
		1-1-2	3									
		2-2-2	4			-- loose						
		2-2-3	5	▽								
10												
		4-5-6	11			Medium dense orange brown fine SAND with clay [SP-SC]						
15												
		8-11-13	24			Medium dense orange brown clayey fine SAND [SC]	17	13				
20												
		8-7-13	20									
25						BORING TERMINATED AT 25.0 FEET						
30												
35												
40												

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BORING LOG

PROJECT NO.:	0130.220
REPORT NO.:	2059431
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PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **P-09** SHEET: **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.

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): NE
DATE OF READING: 11/14/2022
EST. SHGWT (ft): 10.0+

DATE STARTED: 11/14/22
DATE FINISHED: 11/14/22
DRILLED BY: ORL - JB/DM/JB
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 orange brown fine SAND [SP]						
		2-2-2	4									
		1-1-1	2			-- very loose, orange brown						
5		1-1-1	2									
		1-0-0	0				3	4				
		0-1-1	2									
		1-1-2	3	▽								
10												
		3-3-3	6			-- loose						
15						BORING TERMINATED AT 15.0 FEET						
20												
25												
30												
35												
40												

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UES
BORING LOG

PROJECT NO.:	0130.220
REPORT NO.:	2059431
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PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **SW-01** SHEET: **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.

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): 20.0
DATE OF READING: 12/5/2023
EST. SHGWT (ft): 15.0+

DATE STARTED: 12/5/23
DATE FINISHED: 12/5/23
DRILLED BY: ORL - AI/M
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 brown fine SAND [SP]						
		2-1-2	3									
		1-2-1	3									
5		1-1-1	2			-- orange						
		1-2-2	4			-- loose	3	4			40	
		2-2-2	4			-- brown						
		2-2-3	5									
10												
		3-3-3	6	▽								
15												
		3-3-3	6	▼								
20												
		4-3-7	10			-- grey brown	3	16				
25												
		5-5-8	13			-- medium dense						
30						BORING TERMINATED AT 30.0 FEET						
35												
40												

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UES
BORING LOG

PROJECT NO.:	0130.220
REPORT NO.:	2059431
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PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **SW-02** SHEET: **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.

LOCATION: SEE BORING LOCATION PLAN

REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED

G.S. ELEVATION (ft):	N.S.	DATE STARTED:	12/5/23
WATER TABLE (ft):	NE	DATE FINISHED:	12/5/23
DATE OF READING:	12/5/2023	DRILLED BY:	ORL - AI/M
EST. SHGWT (ft):	15.0+	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 orange brown fine SAND [SP]						
		2-2-2	4									
		2-2-2	4			-- very loose						
5		1-2-1	3									
		1-2-3	5			-- loose						
		3-2-3	5				1	4			40	
		3-3-3	6									
10												
		3-3-3	6	▽								
15												
		5-5-6	11			-- medium dense, very light brown	2	5				
20												
		5-4-7	11			-- grey						
25												
		5-5-7	12									
30						BORING TERMINATED AT 30.0 FEET						
35												
40												

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UES
BORING LOG

PROJECT NO.:	0130.220
REPORT NO.:	2059431
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PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **W-01** SHEET: **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.

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): NE
DATE OF READING: 12/12/2023
EST. SHGWT (ft): 6.5

DATE STARTED: 12/12/23
DATE FINISHED: 12/12/23
DRILLED BY: ORL - AI/M
TYPE OF SAMPLING: ASTM D 1452

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						Brown fine SAND [SP]						
5				▽		Brown fine SAND with clay [SP-SC] -- orange						
						Orange clayey fine SAND [SC]	25	12				
10						BORING TERMINATED AT 10.0 FEET						
15												
20												
25												
30												
35												
40												

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UES
BORING LOG

PROJECT NO.:	0130.220
REPORT NO.:	2059431
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PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **W-02** SHEET: **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.

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): NE
DATE OF READING: 12/6/2023
EST. SHGWT (ft): 10.0+

DATE STARTED: 12/6/23
DATE FINISHED: 12/6/23
DRILLED BY: ORL - AI/MW
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 brown fine SAND [SP]						
		2-2-2	4									
		2-2-3	5			-- orange brown -- very loose						
5		1-1-1	2									
		1-1-1	2									
		2-1-1	2				3	5				
		2-1-3	4	▽		-- loose						
10												
		3-3-3	6									
15												
		5-5-5	10			Loose orange brown fine SAND with clay [SP-SC]						
20												
		8-11-11	22			-- medium dense						
25												
		10-18-27	45			-- dense						
30												
		20-24-22	46									
35												
		16-20-27	47									
40						BORING TERMINATED AT 40.0 FEET						

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UES
BORING LOG

PROJECT NO.:	0130.220
REPORT NO.:	2059431
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PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **W-03** SHEET: **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.

LOCATION: SEE BORING LOCATION PLAN

REMARKS: SHGWT = SEASONAL HIGH GROUNDWATER TABLE, N.S. = NOT SURVEYED, NE = NOT ENCOUNTERED

G.S. ELEVATION (ft): N.S. DATE STARTED: 12/5/23
WATER TABLE (ft): NE DATE FINISHED: 12/5/23
DATE OF READING: 12/5/2023 DRILLED BY: ORL - AI/M
EST. SHGWT (ft): 10.0+ 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 brown fine SAND [SP]						
		2-2-2	4			-- orange						
		2-2-2	4			-- very loose						
5		2-1-2	3			-- loose	3	4				
		2-3-2	5			-- very loose						
		2-1-2	3									
10		2-1-2	3	▽								
						-- loose						
15		3-4-3	7									
20		3-3-4	7									
						-- medium dense, grey brown						
25		6-10-12	22									
30		10-12-15	27									
35		11-10-11	21									
40		9-10-16	26			BORING TERMINATED AT 40.0 FEET						

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UES
BORING LOG

PROJECT NO.:	0130.220
REPORT NO.:	2059431
PAGE:	B-2.27

PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **W-04** SHEET: **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.

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): NE
DATE OF READING: 12/4/2023
EST. SHGWT (ft): 10.0+

DATE STARTED: 12/4/23
DATE FINISHED: 12/4/23
DRILLED BY: ORL - AI/M
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 brown fine SAND [SP]						
		1-2-1	3									
		2-2-2	4			-- loose -- brown						
5		2-1-1	2			-- very loose -- orange brown						
		1-2-2	4			-- loose						
		2-2-2	4				1	4				
		2-3-3	6	▽								
10												
		2-2-2	4									
15												
		3-3-3	6									
20												
		8-9-8	17			-- medium dense, brown						
25												
		4-6-7	13									
30												
		7-8-9	17			-- grey brown						
35												
		7-9-11	20									
40						BORING TERMINATED AT 40.0 FEET						

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BORING LOG

PROJECT NO.:	0130.220
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PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **W-05** SHEET: **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.

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): NE
DATE OF READING: 12/4/2023
EST. SHGWT (ft): 10.0+

DATE STARTED: 12/4/23
DATE FINISHED: 12/4/23
DRILLED BY: ORL - AI/M
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 brown fine SAND [SP]						
		2-2-2	4									
		1-2-1	3			-- very loose, orange brown						
5		1-1-2	3				1	4				
		1-2-3	5			-- loose						
		3-3-3	6									
10		3-2-3	5	▽								
		3-3-3	6									
15												
		3-4-3	7			-- very light brown						
20												
		5-6-6	12			-- medium dense						
25												
		3-5-5	10			-- loose						
30												
		5-4-4	8			-- light brown						
35												
		8-7-9	16			-- medium dense						
40						BORING TERMINATED AT 40.0 FEET						

W-12517.GPJ

UES
BORING LOG

PROJECT NO.:	0130.220
REPORT NO.:	2059431
PAGE:	B-2.29

Item 2.

PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **W-06** SHEET: **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.

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): NE
DATE OF READING: 12/4/2023
EST. SHGWT (ft): 10.0+

DATE STARTED: 12/4/23
DATE FINISHED: 12/4/23
DRILLED BY: ORL - AI/M
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 orange brown fine SAND [SP]						
		2-2-2	4									
		1-1-1	2			-- very loose						
5		1-2-1	3									
		1-1-1	2									
		1-2-3	5			-- loose						
10		2-2-2	4	▽								
		2-3-2	5			-- light orange brown	2	4				
15												
		3-3-5	8			-- very light brown						
20												
		5-8-7	15			-- medium dense, light brown						
25												
		6-6-7	13									
30												
		5-5-5	10			-- loose						
35												
		3-5-6	11			-- medium dense						
40						BORING TERMINATED AT 40.0 FEET						

W-12517.GPJ

UES
BORING LOG

PROJECT NO.:	0130.220
REPORT NO.:	2059431
PAGE:	B-2.30

Item 2.

PROJECT: SUPPLEMENTAL GEOTECHNICAL EXPLORATION
PUBLIX RETAIL DEVELOPMENT
HOWEY-IN-THE-HILLS, FLORIDA

BORING I.D.: **W-07** SHEET: **1 of 1**
SECTION: 23 TOWNSHIP: 20 RANGE: 25

CLIENT: PUBLIX SUPER MARKETS, INC.

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): NE
DATE OF READING: 12/4/2023
EST. SHGWT (ft): 10.0+

DATE STARTED: 12/4/23
DATE FINISHED: 12/4/23
DRILLED BY: ORL - AI/M
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 brown fine SAND [SP]						
		3-3-4	7									
		2-2-1	3			-- very loose, orange						
5		2-2-3	5			-- loose						
		3-2-3	5									
		3-2-3	5									
		3-3-2	5	▽			2	4				
10												
		2-2-2	4									
15												
		5-8-10	18			-- medium dense, very light brown						
20												
		5-5-5	10			-- loose						
25												
		4-4-5	9									
30												
		3-4-4	8									
35												
		3-3-4	7									
40						BORING TERMINATED AT 40.0 FEET						

W-12517.GPJ

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

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.

Property Record Card

General Information

Name:	PUBLIX SUPER MARKETS INC	**Alternate Key:**	3954259
Mailing Address:	PO BOX 32018 LAKELAND, FL 33802-2018 *Update Mailing Address*	**Parcel Number:**	23-20-25-0004-000-01600
		Millage Group and City:	000H Howey in the Hills
		2024 Total Certified Millage Rate:	20.5764
		Trash/Recycling/Water/Info:	*My Public Services Map*
Property Location:	0 UNASSIGNED HOWEY IN THE HILLS FL, 34737	**Property Name:**	-- *Submit Property Name*
		School Information:	*School Locator & Bus Stop Map* *School Boundary Maps*

Property Description:	FROM THE SOUTHWEST CORNER OF THE SOUTHWEST 1/4 OF SECTION 23 TOWNSHIP 20 SOUTH RANGE 25 EAST RUN NORTH 00-53-14 EAST ALONG THE WEST LINE 1171.08 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY LINE OF COUNTY ROAD 48 SAID POINT LYING ON A CURVE CONCAVE NORTHEASTERLY HAVING A RADIUS OF 5679.58 FEET AND A CHORD BEARING AND DISTANCE OF SOUTH 69-35-43 EAST 1186.12 FEET THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT AND SAID NORTHERLY RIGHT OF WAY LINE A DISTANCE OF 1188.29 FEET SOUTH 75-35-20 EAST ALONG SAID NORTHERLY RIGHT OF WAY LINE 1460.31 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 2341.83 FEET AND A CHORD BEARING AND DISTANCE OF SOUTH 72-35-58 EAST 223.25 FEET THENCE ALONG THE ARC OF SAID CURVE TO THE RIGHT AND ALONG SAID NORTHERLY RIGHT OF WAY LINE A DISTANCE OF 223.33 FEET THENCE LEAVING SAID NORTHERLY RIGHT OF WAY LINE NORTH 15-36-38 EAST 52.62 FEET THENCE NORTH 75-08-12 EAST 258.80 FEET FOR POINT OF BEGINNING THENCE NORTH 15-36-16 EAST 306.32 FEET NORTH 60-15-03 EAST 218.37 FEET NORTH 46-59-01 EAST 705.92 FEET SOUTH 43-00-59 EAST 404.25 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 100 FEET AND A CHORD BEARING AND DISTANCE OF SOUTH 27-52-48 EAST 52.22 FEET THENCE ALONG THE ARC OF SAID CURVE TO THE RIGHT A DISTANCE OF 52.84 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE CONCAVE NORTHEASTERLY HAVING A RADIUS OF 120 FEET AND A CHORD BEARING AND DISTANCE OF SOUTH 27-52-48 EAST 62.67 FEET THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT AND A DISTANCE OF 63.40 FEET SOUTH 43-00-59 EAST 125 FEET TO A POINT ON THE WESTERLY RIGHT OF WAY LINE OF STATE ROAD 19 THENCE SOUTH 46-59-01 WEST ALONG SAID WESTERLY RIGHT OF WAY LINE 650.20 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY LINE OF STATE ROAD 19 THENCE SOUTH 75-06-54 WEST ALONG SAID NORTHERLY RIGHT OF WAY LINE 210.88 FEET THENCE NORTH 41-20-52 WEST 270.98 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE NORTHWESTERLY HAVING A RADIUS OF 133.42 FEET AND A CHORD BEARING AND DISTANCE OF SOUTH 62-15-27 WEST 62.77 FEET THENCE ALONG THE ARC OF SAID CURVE TO THE RIGHT A DISTANCE OF 63.36 FEET THENCE SOUTH 75-51-45 WEST 298.35 FEET TO THE POINT OF BEGINNING ORB 6372 PG 835

NOTE: This property description is a condensed/abbreviated version of the original description as recorded on deeds or other legal instruments in the public records of the Lake County Clerk of Court. It may not include the Public Land Survey System's Section, Township, Range information or the county in which the property is located. It is intended to represent the land boundary only and does not include easements or other interests of record. This description should not be used for purposes of conveying property title. The Property Appraiser assumes no responsibility for the consequences of inappropriate uses or interpretations of the property description.

Land Data

Line	Land Use	Frontage	Depth	Notes	No. Units	Type	Class Value	Land Value
1	VACANT COMMERCIAL (1000)	0	0		13.720	Acre	$1,328,096.00	$1,328,096.00

Click here for Zoning Info Map FEMA Flood

Miscellaneous Improvements

There is no improvement information to display.

Sales History

NOTE: This section is not intended to be a complete chain of title. Additional official book/page numbers may be listed in the property description above and/or recorded and indexed with the Clerk of Court. Follow this link to search all documents by owner's name.

Book/Page	Sale Date	Instrument	Qualified/Unqualified	Vacant/Improved	Sale Price
6372 / 835	07/23/2024	Warranty Deed	Qualified	Vacant	$1,966,100.00
4394 / 1276	10/21/2013	Warranty Deed	Unqualified	Vacant	$5,775,500.00

Click here to search for mortgages, liens, and other legal documents.

Values and Estimated Ad Valorem Taxes

Values shown below are 2025 WORKING VALUES which are subject to change until certified. The Market Value listed below is not intended to represent the anticipated selling price of the property and should not be relied upon by any individual or entity as a determination of current market value.

Tax Authority	Market Value	Assessed Value	Taxable Value	Millage	Estimated Taxes
LAKE COUNTY BCC GENERAL FUND	$1,328,096	$1,328,096	$1,328,096	5.0364	$6,688.82
SCHOOL BOARD STATE	$1,328,096	$1,328,096	$1,328,096	3.1240	$4,148.97
SCHOOL BOARD LOCAL	$1,328,096	$1,328,096	$1,328,096	2.9980	$3,981.63
LAKE COUNTY WATER AUTHORITY	$1,328,096	$1,328,096	$1,328,096	0.2940	$390.46
NORTH LAKE HOSPITAL DIST	$1,328,096	$1,328,096	$1,328,096	0.4100	$544.52
ST JOHNS RIVER FL WATER MGMT DIST	$1,328,096	$1,328,096	$1,328,096	0.1793	$238.13
TOWN OF HOWEY IN THE HILLS	$1,328,096	$1,328,096	$1,328,096	7.5000	$9,960.72
LAKE COUNTY MSTU AMBULANCE	$1,328,096	$1,328,096	$1,328,096	0.4629	$614.78
LAKE COUNTY VOTED DEBT SERVICE	$1,328,096	$1,328,096	$1,328,096	0.0918	$121.92
LAKE COUNTY MSTU FIRE	$1,328,096	$1,328,096	$1,328,096	0.4800	$637.49
				Total: 20.5764	**Total:** $27,327.44

Exemptions Information

This property is benefitting from the following exemptions with a checkmark ✓

Homestead Exemption (first exemption up to $25,000)	*Learn More* *View the Law*
Additional Homestead Exemption (up to an additional $25,000)	*Learn More* *View the Law*
Limited Income Senior Exemption (applied to county millage - up to $50,000)	*Learn More* *View the Law*
Limited Income Senior Exemption (applied to city millage - up to $25,000)	*Learn More* *View the Law*
Limited Income Senior 25 Year Residency (county millage only-exemption amount varies)	*Learn More* *View the Law*
Widow / Widower Exemption (up to $5,000)	*Learn More* *View the Law*
Blind Exemption (up to $500)	*Learn More* *View the Law*
Disability Exemption (up to $5,000)	*Learn More* *View the Law*
Total and Permanent Disability Exemption (amount varies)	*Learn More* *View the Law*
Veteran's Disability Exemption ($5,000)	*Learn More* *View the Law*
Veteran's Total and Permanent Disability Exemption (amount varies)	*Learn More* *View the Law*
Veteran's Combat Related Disability Exemption (amount varies)	*Learn More* *View the Law*
Deployed Servicemember Exemption (amount varies)	*Learn More* *View the Law*
First Responder Total and Permanent Disability Exemption (amount varies)	*Learn More* *View the Law*

Surviving Spouse of First Responder Exemption (amount varies)	Learn More View the Law
Conservation Exemption (amount varies)	Learn More View the Law
Tangible Personal Property Exemption (up to $25,000)	Learn More View the Law
Religious, Charitable, Institutional, and Organizational Exemptions (amount varies)	Learn More View the Law
Economic Development Exemption	Learn More View the Law
Government Exemption (amount varies)	Learn More View the Law

Property Record Card

General Information

Name:	PUBLIX SUPER MARKETS INC	**Alternate Key:**	3954260
Mailing Address:	PO BOX 32018 LAKELAND, FL 33802-2018 *Update Mailing Address*	**Parcel Number:**	23-20-25-0004-000-01700
		Millage Group and City:	000H Howey in the Hills
		2024 Total Certified Millage Rate:	20.5764
		Trash/Recycling/Water/Info:	*My Public Services Map*
Property Location:	0 UNASSIGNED HOWEY IN THE HILLS FL, 34737	**Property Name:**	-- *Submit Property Name*
		School Information:	*School Locator & Bus Stop Map* *School Boundary Maps*
Property Description:	FROM THE SOUTHWEST CORNER OF THE SOUTHWEST 1/4 OF SECTION 23 TOWHSHIP 20 SOUTH RANGE 25 EAST RUN NORTH 00-53-14 EAST ALONG THE WEST BOUNDARY LINE 1171.08 FEET TO A POINT ON THE ORTHERLY RIGHT OF WAY LINE OF COUNTY ROAD 48 SAID POINT LYING ON A CURVE CONCAVE NORTHEASTERLY HAVING A RADIUS OF 5679.58 FEET AND A CHORD BEARING AND DISTANCE OF SOUTH 69-35-43 EAST 1186.12 FEET THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT AND SAID NORTHERLY RIGHT OF WAY LINE 1188.29 FEET SOUTH 75-35-20 EAST ALONG SAID NORTHERLY RIGHT OF WAY LINE 1460.31 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 2341.83 FEET AND A CHORD BEARING AND DISTANCE OF SOUTH 68-56-00 EAST A DISTANCE OF 521.94 FEET THENCE ALONG THE ARC OF SAID CURVE TO A POINT ON THE NORTHERLY RIGHT OF WAY LINE OF STATE ROAD 19 THENCE NORTH 75-06-54 EAST ALONG SAID NORTHERLY RIGHT OF WAY LINE 742.75 FEET TO A POINT ON THE WESTERLY RIGHT OF WAY LINE OF STATE ROAD 19 THENCE NORTH 46-59-01 EAST ALONG SAID WESTERLY RIGHT OF WAY LINE 1328.28 FEET FOR POINT OF BEGINNING THENCE RUN NORTH 89-48-40 WEST 738.20 FEET SOUTH 46-59-01 WEST 50 FEET SOUTH 43-00-59 EAST 269.49 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE NORTHEASTERLY HAVING A RADIUS OF 100 FEET AND A CHORD BEARING AND A DISTANCE OF SOUTH 58-09-10 EAT 52.22 FEET THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT A DISTANCE OF 52.84 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 120 FEET AND A CHORD BEARING AND DISTANCE OF SOUTH 58-09-10 EAST A DISTANCE OF 62.67 FEET THENCE ALONG THE ARC OF SAID CURVE TO THE RIGHT A DISTANCE OF 63.40 FEET SOUTH 43-00-59 EAST 125 FEET TO A POINT ON THE WESTERLY RIGHT OF WAY OF STATE ROAD 19 THENCE NORTH 46-59-01 EAST ALONG SAID RIGHT OF WAY LINE 558.08 FEET TO THE POINT OF BEGINNING ORB 6372 PG 835		

Land Data

Line	Land Use	Frontage	Depth	Notes	No. Units	Type	Class Value	Land Value
1	VACANT COMMERCIAL (1000)	0	0		3.580	Acre	$346,544.00	$346,544.00

Click here for Zoning Info Map

FEMA Flood

Miscellaneous Improvements

There is no improvement information to display.

Sales History

NOTE: This section is not intended to be a complete chain of title. Additional official book/page numbers may be listed in the property description above and/or recorded and indexed with the Clerk of Court. Follow this link to search all documents by owner's name.

Book/Page	Sale Date	Instrument	Qualified/Unqualified	Vacant/Improved	Sale Price
6372 / 835	07/23/2024	Warranty Deed	Qualified	Vacant	$1,966,100.00
4394 / 1276	10/21/2013	Warranty Deed	Unqualified	Vacant	$5,775,500.00

Click here to search for mortgages, liens, and other legal documents.

Values and Estimated Ad Valorem Taxes

Values shown below are 2025 WORKING VALUES which are subject to change until certified. The Market Value listed below is not intended to represent the anticipated selling price of the property and should not be relied upon by any individual or entity as a determination of current market value.

Tax Authority	Market Value	Assessed Value	Taxable Value	Millage	Estimated Taxes
LAKE COUNTY BCC GENERAL FUND	$346,544	$346,544	$346,544	5.0364	$1,745.33
SCHOOL BOARD STATE	$346,544	$346,544	$346,544	3.1240	$1,082.60
SCHOOL BOARD LOCAL	$346,544	$346,544	$346,544	2.9980	$1,038.94
LAKE COUNTY WATER AUTHORITY	$346,544	$346,544	$346,544	0.2940	$101.88
NORTH LAKE HOSPITAL DIST	$346,544	$346,544	$346,544	0.4100	$142.08
ST JOHNS RIVER FL WATER MGMT DIST	$346,544	$346,544	$346,544	0.1793	$62.14
TOWN OF HOWEY IN THE HILLS	$346,544	$346,544	$346,544	7.5000	$2,599.08
LAKE COUNTY MSTU AMBULANCE	$346,544	$346,544	$346,544	0.4629	$160.42
LAKE COUNTY VOTED DEBT SERVICE	$346,544	$346,544	$346,544	0.0918	$31.81
LAKE COUNTY MSTU FIRE	$346,544	$346,544	$346,544	0.4800	$166.34
				Total: 20.5764	**Total:** $7,130.62

Exemptions Information

This property is benefitting from the following exemptions with a checkmark ✓

Homestead Exemption (first exemption up to $25,000)	*Learn More*	*View the Law*
Additional Homestead Exemption (up to an additional $25,000)	*Learn More*	*View the Law*
Limited Income Senior Exemption (applied to county millage - up to $50,000)	*Learn More*	*View the Law*

Limited Income Senior Exemption (applied to city millage - up to $25,000)	Learn More View the Law
Limited Income Senior 25 Year Residency (county millage only-exemption amount varies)	Learn More View the Law
Widow / Widower Exemption (up to $5,000)	Learn More View the Law
Blind Exemption (up to $500)	Learn More View the Law
Disability Exemption (up to $5,000)	Learn More View the Law
Total and Permanent Disability Exemption (amount varies)	Learn More View the Law
Veteran's Disability Exemption ($5,000)	Learn More View the Law
Veteran's Total and Permanent Disability Exemption (amount varies)	Learn More View the Law
Veteran's Combat Related Disability Exemption (amount varies)	Learn More View the Law
Deployed Servicemember Exemption (amount varies)	Learn More View the Law
First Responder Total and Permanent Disability Exemption (amount varies)	Learn More View the Law
Surviving Spouse of First Responder Exemption (amount varies)	Learn More View the Law
Conservation Exemption (amount varies)	Learn More View the Law
Tangible Personal Property Exemption (up to $25,000)	Learn More View the Law
Religious, Charitable, Institutional, and Organizational Exemptions (amount varies)	Learn More View the Law
Economic Development Exemption	Learn More View the Law
Government Exemption (amount varies)	Learn More View the Law

Property Record Card

General Information

Name:	PUBLIX SUPER MARKETS INC	**Alternate Key:**	3954261
Mailing Address:	PO BOX 32018 LAKELAND, FL 33802-2018 *Update Mailing Address*	**Parcel Number:**	23-20-25-0004-000-01800
		Millage Group and City:	000H Howey in the Hills
		2024 Total Certified Millage Rate:	20.5764
		Trash/Recycling/Water/Info:	*My Public Services Map*
Property Location:	0 UNASSIGNED HOWEY IN THE HILLS FL, 34737	**Property Name:**	-- *Submit Property Name*
		School Information:	*School Locator & Bus Stop Map* *School Boundary Maps*
Property Description:	FROM THE NORTHEAST CORNER OF THE SOUTHEAST 1/4 OF SECTION 23 TOWNSHIP 20 SOUTH RANGE 25 EAST RUN SOUTH 00-28-42 WEST ALONG THE EAST LINE 765.11 FEET TO THE NORTHERLY RIGHT OF WAY OF STATE ROAD 19 THENCE SOUTH 46-59-01 WST ALONG THE NORTHERLY RIGHT OF WAY 1350.12 FEET FOR POINT OF BEGINNING THENCE CONTINUE SOUTH 46-59-01 WEST 120 FEET NORTH 43-00-59 WEST 125 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE NORTHEASTERLY HAVING A RADIUS OF 120 FEET AND A CHORD WHICH BEARS NORTH 27-52-48 WEST 62.67 FEET THENCE ALONG THE ARC OF SAID CURVE TO THE RIGHT A DISTANCE OF 63.40 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE HAVING A RADIUS OF 100 FEET AND A CHORD WHICH BEARS NORTH 27-52-48 WEST AND A DISTANCE OF 52.22 FEET THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT A DISTANCE OF 52.84 FEET THENCE RUN NORTH 43-00-59 WEST 404.25 FEET NORTH 46-59-01 EAST 60 FEET SOUTH 43-00-59 EAST 404.25 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE NORTHEASTERLY HAVING A RADIUS OF 100 FEET AND A CHORD WHICH BEARS SOUTH 58-09-10 EAST 52.22 FEET THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT A DISTANCE OF 52.84 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE HAVING A RADIUS OF 120 FEET AND A CHORD WHICH BEARS OUTH 58-09-10 EAST AND A DISTANCE OF 62.67 FEET THENCE ALONG THE ARC OF SAID CURVE TO THE RIGHT A DISTANCE OF 63.40 FEET THENCE SOUTH 43-00-59 EAST 125 FEET TO THE POINT OF BEGINNING ORB 6372 PG 835		

Land Data

Line	Land Use	Frontage	Depth	Notes	No. Units	Type	Class Value	Land Value
1	RESIDENTIAL COMMON ELEMENTS/AREA (0900)	0	0		1.000	Lot	$1,000.00	$1,000.00

Click here for Zoning Info Map **FEMA Flood**

Miscellaneous Improvements

There is no improvement information to display.

Sales History

NOTE: This section is not intended to be a complete chain of title. Additional official book/page numbers may be listed in the property description above and/or recorded and indexed with the Clerk of Court. Follow this link to search all documents by owner's name.

Book/Page	Sale Date	Instrument	Qualified/Unqualified	Vacant/Improved	Sale Price
6372 / 835	07/23/2024	Warranty Deed	Qualified	Vacant	$1,966,100.00
4394 / 1276	10/21/2013	Warranty Deed	Unqualified	Vacant	$5,775,500.00

Click here to search for mortgages, liens, and other legal documents.

Values and Estimated Ad Valorem Taxes

Values shown below are 2025 WORKING VALUES which are subject to change until certified. The Market Value listed below is not intended to represent the anticipated selling price of the property and should not be relied upon by any individual or entity as a determination of current market value.

Tax Authority	Market Value	Assessed Value	Taxable Value	Millage	Estimated Taxes
LAKE COUNTY BCC GENERAL FUND	$0	$0	$0	5.0364	$0.00
SCHOOL BOARD STATE	$0	$0	$0	3.1240	$0.00
SCHOOL BOARD LOCAL	$0	$0	$0	2.9980	$0.00
LAKE COUNTY WATER AUTHORITY	$0	$0	$0	0.2940	$0.00
NORTH LAKE HOSPITAL DIST	$0	$0	$0	0.4100	$0.00
ST JOHNS RIVER FL WATER MGMT DIST	$0	$0	$0	0.1793	$0.00
TOWN OF HOWEY IN THE HILLS	$0	$0	$0	7.5000	$0.00
LAKE COUNTY MSTU AMBULANCE	$0	$0	$0	0.4629	$0.00
LAKE COUNTY VOTED DEBT SERVICE	$0	$0	$0	0.0918	$0.00
LAKE COUNTY MSTU FIRE	$0	$0	$0	0.4800	$0.00
				Total: 20.5764	**Total:** $0.00

Exemptions Information

This property is benefitting from the following exemptions with a checkmark ✓

Homestead Exemption (first exemption up to $25,000)	*Learn More*	*View the Law*
Additional Homestead Exemption (up to an additional $25,000)	*Learn More*	*View the Law*
Limited Income Senior Exemption (applied to county millage - up to $50,000)	*Learn More*	*View the Law*
Limited Income Senior Exemption (applied to city millage - up to $25,000)	*Learn More*	*View the Law*
Limited Income Senior 25 Year Residency (county millage only-exemption amount varies)	*Learn More*	*View the Law*
Widow / Widower Exemption (up to $5,000)	*Learn More*	*View the Law*
Blind Exemption (up to $500)	*Learn More*	*View the Law*
Disability Exemption (up to $5,000)	*Learn More*	*View the Law*
Total and Permanent Disability Exemption (amount varies)	*Learn More*	*View the Law*

Veteran's Disability Exemption ($5,000)	Learn More View the Law
Veteran's Total and Permanent Disability Exemption (amount varies)	Learn More View the Law
Veteran's Combat Related Disability Exemption (amount varies)	Learn More View the Law
Deployed Servicemember Exemption (amount varies)	Learn More View the Law
First Responder Total and Permanent Disability Exemption (amount varies)	Learn More View the Law
Surviving Spouse of First Responder Exemption (amount varies)	Learn More View the Law
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Economic Development Exemption	Learn More View the Law
Government Exemption (amount varies)	Learn More View the Law