



PLANNING COMMISSION MEETING

LOCATION: TOWNSHIP ANNEX, 7527 HIGHLAND ROAD, WHITE LAKE, MICHIGAN, 48383
(FORMER WHITE LAKE LIBRARY)
THURSDAY, OCTOBER 06, 2022 – 7:00 PM

White Lake Township | 7525 Highland Rd | White Lake, MI 48383 | Phone: (248) 698-3300 | www.whitelaketwp.com

AGENDA

1. CALL TO ORDER
2. ROLL CALL
3. PLEDGE OF ALLEGIANCE
4. APPROVAL OF AGENDA
5. APPROVAL OF MINUTES
 - A. Minutes of September 1, 2022
6. CALL TO THE PUBLIC (FOR ITEMS NOT ON THE AGENDA)
7. PUBLIC HEARING
 - A. **Cosmo's Car Wash**
Location: Property described as parcel number 12-20-276-034, located at the northwest corner of Highland Road (M-59) and Bogie Lake Road, consisting of approximately 1.88 acres, currently zoned (PB) Planned Business.
Request: **To receive public comment on the proposed preliminary site plan for the above Planned Business zoned property, consisting of a 4,535 square foot automobile wash establishment.**
Applicant: EWM- Miller Wash, LLC
201 East Ogden Ave, Ste #18-1
Hinsdale, IL 60521
 - B. **Black Rock**
Location: Property described as parcel number 12-23-129-018, located south of Highland Road and east of White Banks Blvd, consisting of approximately 1 acre. Currently zoned as (GB) General Business.
Request: **Preliminary Site Plan Approval**
Special Land Use Approval- The applicant is requesting to construct a restaurant with outdoor dining.
Applicant: Black Rock White Lake, LLC
30553 S Wixom Road #300
Wixom, MI 48393
8. CONTINUING BUSINESS
9. NEW BUSINESS
10. OTHER BUSINESS
 - A. New Hope Landscape Reduction Request
 - B. Master Plan Update
11. LIAISON'S REPORT
12. DIRECTOR'S REPORT
13. COMMUNICATIONS
14. NEXT MEETING DATE: October 20, 2022 & November 3, 2022



15. ADJOURNMENT

Procedures for accommodations for persons with disabilities: The Township will follow its normal procedures for individuals with disabilities needing accommodations for effective participation in this meeting. **Please contact the Township Clerk's office at (248) 698-3300 X-164 at least two days in advance of the meeting.** An attempt will be made to make reasonable accommodations.

WHITE LAKE TOWNSHIP PLANNING COMMISSION

Township Annex, 7527 Highland Road
White Lake, MI 48383
September 1, 2022 @ 7:00 PM

CALL TO ORDER

Commissioner Anderson called the meeting to order at 7:15 PM and led the Pledge of Allegiance. Roll was called.

ROLL CALL

Steve Anderson
Pete Meagher
Debby Dehart
Matt Slicker
Mark Fine

Absent: T. Joseph Seward
Scott Ruggles
Robert Seeley
Merrie Carlock

Also Present: Sean O'Neil, Community Development Director
Lisa Kane, Recording Secretary

Visitors: Approximately 4 members of the public were present

APPROVAL OF AGENDA

Commissioner Fine moved to approve the agenda of the September 1, 2022 Planning Commission Meeting.

Commissioner Meagher supported and the MOTION CARRIED with a voice vote: 5 yes votes.

APPROVAL OF MINUTES

- a. Regular meeting minutes of August 18, 2022

Commissioner Dehart moved to approve the amended Minutes of August 18, 2022.

Commissioner Meagher supported and the MOTION CARRIED with a voice vote: 5 yes votes.

CALL TO THE PUBLIC (FOR ITEMS NOT ON THE AGENDA)

None

PUBLIC HEARING

A. Haley Road Rezoning

Property identified as Parcel Number 12-15-300-005 (2110 Haley Road), located south of Hitchcock Road and east of Porter Road, consisting of approximately 68.93 acres.

Request: The applicant requests to rezone the parcel from AG (Agricultural) to SF (Suburban Farms) or any other appropriate zoning district.

Applicant: Charles Burt
2110 Haley Road
White Lake, MI 48383

Applicant present: Charles Burt of 2110 Haley Road

Director O'Neil gave a brief introduction to the rezoning request. The requested zoning is consistent with the master plan and harmonious with the surrounding area, which is surrounded by low density residential. Staff recommends approval. No utilities are available to this site and there is no need for a traffic study.

Commissioner Slicker inquired about the similarity between Suburban Farms zoning and Rural Estates as it is stated in the master plan.

Director O'Neil stated how Rural Estates relates to the Suburban Farms zoning in lot size and low density.

Mr. Burt stated that he has a conceptual idea of the development he will propose and shared it with the board members.

Deliberation on the lot size requirements for Suburban Farms zoning and requirements for frontage as it relates to roads and splitting of the property.

Commissioner Anderson opened public comment at 7:33 PM

No one from the audience spoke.

Commissioner Anderson closed public comment at 7:35 PM

Commissioner Fine moved to forward a favorable recommendation to the Township Board, the rezoning for parcel number 12-15-300-005 (2110 Haley Road), located south of Hitchcock Road and east of Porter Road, consisting of approximately 68.93 acres.

Request: The applicant requests to rezone the parcel from AG (Agricultural) to SF (Suburban Farms)

Commissioner Meagher supported and the motion carried unanimously with a roll call vote (5 yes votes) (Anderson/yes, Dehart/yes, Fine/yes, Meagher/yes, Slicker/yes)

B. Oakland Harvesters

Located on the north side of White Lake Road, west of Old White Lake Road and east of Orr Road, consisting of 2 acres. Currently zoned Light Manufacturing (LM). Identified as vacant parcel 12-01-127-001

Request: Special Land Use Approval
Applicant: Oakland Harvesters

840 Sherbrooke St
Commerce Township, MI 48382

Applicant present: Ty Nyottilla of Oakland Harvesters at 840 Sherbrooke St., Commerce

Director O'Neil introduced the request of special land use approval, which was previously granted on July 15, 2021. The approval expired in July of 2022 and the applicant has returned to request reinstatement of the approval. On May 5, 2022 the final site plan approval was granted, staff asks that the special land use expire May 5, 2023 to give the applicant the time needed to begin the project.

Mr. Nyottilla stated that his business has been very busy in the summer and asked for clarification with the May 5, 2023 target date.

Chairperson Anderson stated that the project only needs to be begun by that day and has recommended the applicant have a process timeline chart for the project.

Director O'Neil stated that the applicants engineer needs to submit some changes for the final site plan approval. The building permit for this project must be issued by May 5, 2023.

Commissioner Anderson opened public comment at 7:50 PM

No one from the audience spoke.

Commissioner Anderson closed public comment at 7:52 PM

Commissioner Slicker moved to approve the special land use, subject to all original conditions and with an expiration date of May 5, 2023, for the property described as parcel number 12-01-127-001, located on the north side of White Lake Road, west of Old White Lake Road and east of Orr Road, consisting of 2 acres. Currently zoned Light Manufacturing (LM)

Commissioner Meagher supported and the MOTION CARRIED with a roll call vote (5 yes votes): (Anderson/yes, Dehart/yes, Fine/yes, Meagher/yes, Slicker/yes)

C. 2023-2028 Capital Improvement Plan (CIP)

Director O'Neil presented the 2023-2028 Capital Improvement Plan, which is a tool used by the Township Board in the budgeting process. Director O'Neil thanked Justin Quagliata for all of his work updating the plan.

Commissioner Meagher inquired if the public had an opportunity to review the plan on the website.

Director O'Neil stated that the document has been available on the White Lake Township website for the public to view.

Commissioner Anderson thanked staff for the work that was put into updating this plan.

Commissioner Anderson opened public comment at 8:04 PM

John Hunt of 871 Oxhill Dr. requested a copy of the plan.

Commissioner Slicker inquired who makes the decision on which projects presented in the plan get selected for funding.

Director O'Neil stated that not all projects are expected to be completed, however the funding source helps to determine which ones can be funded. The Township Board makes the final decision on which projects are completed and in what order.

Commissioner Anderson closed public comment at 8:08 PM

Commissioner Meagher moved to adopt the 2023-2028 Capital Improvement Plan (CIP), resolution #22-027 and recommend that the Township Board accept 2023-2028 Capital Improvement Plan (CIP), resolution #22-027.

Commissioner Fine supported and the MOTION CARRIED with a roll call vote (5 yes votes): (Anderson/yes, Dehart/yes, Fine/yes, Meagher/yes, Slicker/yes)

CONTINUING BUSINESS

None

NEW BUSINESS

None

OTHER BUSINESS

None

LIAISON'S REPORT

Commissioner Ruggles Not in attendance, nothing to report.

Commissioner Dehart Nothing to report from the Zoning Board of Appeals.

Commissioner Carlock Director O'Neil reported that the Parks & Rec Committee will have a booth at the Fisk Farm Festival on Saturday, September 10 to collect input for the Parks & Rec plan. The online survey is available until September 15 and the public is encouraged to give input.

DIRECTOR'S REPORT

Director O'Neil reported on the Avalon project, which went to the Township Board and the Board asked the developer to make some minimal changes. The applicant was agreeable to making those changes and at the September 20, 2022 meeting the Township Board will consider the preliminary site plan. Black Rock has responded with a revised plan. They are close to demonstrating feasibility and will require a public hearing for special land use regarding outdoor seating. The RFP for the Master Plan update has been sent out to 7 companies. Interviews could occur at the October 20, 2022 meeting.

COMMUNICATIONS

NEXT MEETING DATES: September 15, 2022
October 6, 2022

ADJOURNMENT

Commissioner Slicker moved to adjourn the meeting at 8:21 PM

Commissioner Fine supported and the MOTION CARRIED with a voice vote: 5 yes votes

DRAFT

Director's Report

Project Name: Cosmo's Car Wash

Description: Preliminary Site Plan Approval

Date on Agenda this packet pertains to: October 6, 2022

☒ Public Hearing☐ Special Land Use☒ Initial Submittal☐ Rezoning☐ Revised Plans☐ Other:☒ Preliminary Approval☐ Final Approval

Contact	Consultants & Departments	Approval	Denial	Approved w/Conditions	Other	Comments
Sean O'Neil	Planning Director	☐	☐	☐	☒	
DLZ	Engineering Consultant	☐	☐	☐	☒	See letter dated 09/27/2022.
Justin Quagliata	Staff Planner	☐	☐	☐	☒	See letter dated 09/27/2022.
Jason Hanifen	WLT Fire Marshal	☐	☐	☒	☐	See letter dated 09/26/2022.
Aaron Potter	DPS Director	☐	☐	☐	☒	See letter dated 09/26/2022.



INNOVATIVE IDEAS
EXCEPTIONAL DESIGN
UNMATCHED CLIENT SERVICE

September 27, 2022

Sean O' Neil
Community Development Department
Charter Township of White Lake
7525 Highland Road
White Lake, Michigan 48383

RE: Cosmo's Car Wash- Preliminary Site Plan Review – 2nd Review

Ref: DLZ No. 2245-7382-08

Design Professional: Kimley-Horn of
Michigan, Inc.

Dear Mr. O' Neil,

Our office has performed a Preliminary Site Plan review for the above-mentioned revised plan dated August 30, 2022. The plans were reviewed for feasibility based on general conformance with the Township Engineering Design Standards.

General Site Information

This 1.881 acre site is located at the northwest corner of M-59 and Bogie Lake Road.

Site Improvement Information:

- Construction of an approximately 4,535 sf manned car wash.
- Associated paved and curbed parking area, including an ADA parking space.
- Water and sanitary sewer service.
- Storm water management facilities.

The following items should be noted with respect to Planning Commission review:

Note that comments from our review letter dated July 13, 2022 are in *italics*. Responses to those comments are in **bold**. New comments are in standard font.

- a) *Plan shall be sealed and signed by a State of Michigan Registered Professional Engineer.* **Comment addressed.**
- b) *A barrier free ramp placed next to the ADA parking space shall be required within the sidewalk that is proposed adjacent to the building. Note that 7' wide sidewalk adjacent to building shall be raised*

sidewalk. **Comment addressed. A barrier free ramp is now shown on plan. Design engineer states that the 7' wide sidewalk adjacent to the building shall be a raised sidewalk.**

- c) *ADA parking space shall be van accessible per Zoning Ordinance 5.11. O.iii. In addition, we recommend the proposed ADA space be relocated further north as the current location may present a safety hazard to ADA loading and unloading; the exit only lane is adjacent to the ADA loading area and drivers exiting the vacuum area through the exit only lane may either cut into the loading area or not see loading or unloading activities due to view obstruction from van type vehicles parked in the ADA space. We defer to Township Planning on the proposed 12' dimension for the exit only lane as typically 20' lanes are required.* **Comment partially addressed. The ADA space and associated loading area are now dimensioned for van accessibility per Township Zoning Ordinance. The space has also been located further north, and a curbed section has now been added between the loading area and the Exit Only Lane. We continue to defer to Township Planning on the proposed 12' dimension for the exit only lane as typically 20' lanes are required.**
- d) *Show drive thru stacking spaces and number requirement on plan per Zoning Ordinance 5.11. M.i. Additionally, stacking spaces shall be 9' wide and 20' long per Zoning Ordinance 5.11.M.i.e.* **Comment partially addressed. Stacking spaces per Ordinance are now shown; however, only 31 of the 35 required stacking spaces are shown. We defer to the Township regarding whether a variance shall be required for the 4 stacking spaces that cannot be provided.**
- e) *Additional details regarding the dumpster enclosure shall be required as outlined in Zoning Ordinance 5.19.N.i. a-d. Detail shown on architectural drawing is insufficient.* **Comment partially addressed. Items a.-c. of Zoning Ordinance 5.19.N.i. have been provided; however, Item d. details have not been shown on Site Plan Sheet C1.0 as indicated by the design engineer in their response letter.**
- f) *Show construction of northern sidewalk to western property line.* **Comment partially addressed; it now appears that the applicant is proposing sidewalk along the entire south side of Meijer Drive. Please clarify.**
- g) *Referencing Key Note 3 on Site Plan Sheet C1.0, dual parking lot striping is required per Zoning Ordinance 5.11.Q. xi.* **Comment addressed. Detail has now been provided on Sheet C6.0.**
- h) *The three proposed parking spaces to the north indicate there will be three employees maximum on site at one time. Is this number accurate and does it include persons drying vehicles after they exit the car wash? Does this number include on site management?* **Comment addressed. Parking space number has been updated and shown to reflect accurate number of onsite employees.**
- i) *Provide fire truck turning radii plan that also demonstrates ingress, internal circulation, and egress of fire trucks on the site.* **Comment partially addressed. A Fire Truck Exhibit Plan has been provided showing the required movements of a 40' long truck. DLZ notes that the movement requires the truck to traverse a "Compacted Gravel" section between mountable curbs from the stacking lane and the vacuum area. Please provide additional details regarding the "Compacted Gravel" cross section on the Construction Detail Sheet as referenced on the plans.**
- j) *Add note to plan indicating that applicant/ owner shall repair and /or clean up (a lot of grass growing in between existing sidewalk slabs) any of the existing sidewalks located along property frontages.* **Comment addressed. A note has been added to the plan.**

- k) *Show pre versus post development storm drainage that is being routed to the existing storm sewer structure near the corner of Highland Road and Bogie Lake Road. **Comment outstanding. Provide estimated pre- and post -development Q values. In addition, remove all references on this sheet (C4.0) to 13 Mile Road.***
- l) *It is recommended that the low area adjacent to the existing Meijer sign be regraded (in cooperation with Meijer) for positive drainage. **Comment remains. Design engineer indicates that they have discussed this item with Meijer and have received approval to do the regrading. A written agreement or written permission from Meijer will be required prior to FSP/FEP approval.***
- m) *The proposed sanitary sewer pipe diameter shall be required to be 8" diameter (8" required if pipe length > 150'). **Comment partially addressed. An 8" diameter pipe is now indicated; however, remove reference to 6" diameter pipe from S1 to Ex. MH on Sheet C3. 0.***
- n) *The applicant will need to provide information detailing whether this site falls under the Meijer Storm Water Management Facilities Easement, Maintenance Agreement and Lien document or if a new agreement will be required for this development. Likely a new agreement will be required and supporting exhibits will need to be provided. **Comment remains. Design engineer indicates this will be done at time of FSP/FEP submittal.***
- o) *The plans for the retention basin east of Bogie Lake Road do not show any form of pretreatment; Township engineering design standards require pretreatment of stormwater prior to release to a detention or retention basin therefore pretreatment will need to be provided at the site prior to release to the existing storm system. **Comment addressed. A Contech pretreatment structure is now proposed prior to discharge of storm water to the existing storm sewer system.***
- p) *Clarification on the water reclaim system will be required along with coordination with White Lake Township DPS and Oakland County WRC regarding the potential need for an additional external 1000-gallon oil/grit separator; a 4' diameter sampling MH located downstream of the oil/sand separator shall also be provided. **Comment partially addressed. An oil/grit separator has now been provided but the volume will need to be specified. A monitoring manhole has now been provided downstream of the oil/grit separator. We continue to note that clarification on the water reclaim system will be required with White Lake Township DPS and Oakland County WRC.***
- q) *The diameters of the two existing storm sewer stubs as shown on the survey sheet shall be verified. Our records indicate stub pipe diameters of 15". **Comment outstanding. Design engineer notes that they are in the process of having their surveyor confirm pipe size.***
- r) *We defer to the Township Fire Department regarding hydrant coverage. **Comment remains.***
- s) *ADA parking spaces will need to meet ADA standards in terms of slopes and dimensions; further details will be required at the time of Final Site Plan/Final Engineering Plan submittal. **Comment remains.***
- t) *Preliminary grading of the site has been proposed and demonstrates general drainage patterns; additional grades for greenspace areas will be required at time of Final Site Plan/Final Engineering*



INNOVATIVE IDEAS
EXCEPTIONAL DESIGN
UNMATCHED CLIENT SERVICE

WLT-Cosmo's Car Wash- PSP Review.02

September 27, 2022

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Plan review to ensure positive drainage on entire site. Comment remains. In addition, details regarding the proposed retaining walls shall be provided on the FSP/FEP.

- u) We note that the proposed curb type has been revised to a MDOT Type E curb which does not include an integrated gutter. This is not recommended when water will be collected and conveyed along the curb line which appears to be the intent with this plan set. DLZ recommends revising curb type to a MDOT Type C or F curb with an integrated gutter pan.

Recommendation

The revised plan submittal addressed many of our previous comments however there are several items that require further clarification prior to DLZ recommending approval. To help facilitate our review of the revised, resubmitted plan, please provide a response letter addressing the above comments.

Please feel free to contact our office should you have any questions.

Sincerely,

DLZ Michigan

Michael Leuffgen, P.E.
Department Manager

Victoria Loemker, P.E.
Senior Engineer

Cc: Justin Quagliata, Community Development, *via email*
Hannah Micallef, Community Development, *via email*
Aaron Potter, DPS Director, White Lake Township, *via email*
Jason Hanifen, Fire Marshall, White Lake Township, *via email*

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WHITE LAKE TOWNSHIP PLANNING COMMISSION

REPORT OF THE COMMUNITY DEVELOPMENT DEPARTMENT

TO: Planning Commission

FROM: Sean O'Neil, AICP, Community Development Director
Justin Quagliata, Staff Planner

DATE: September 27, 2022

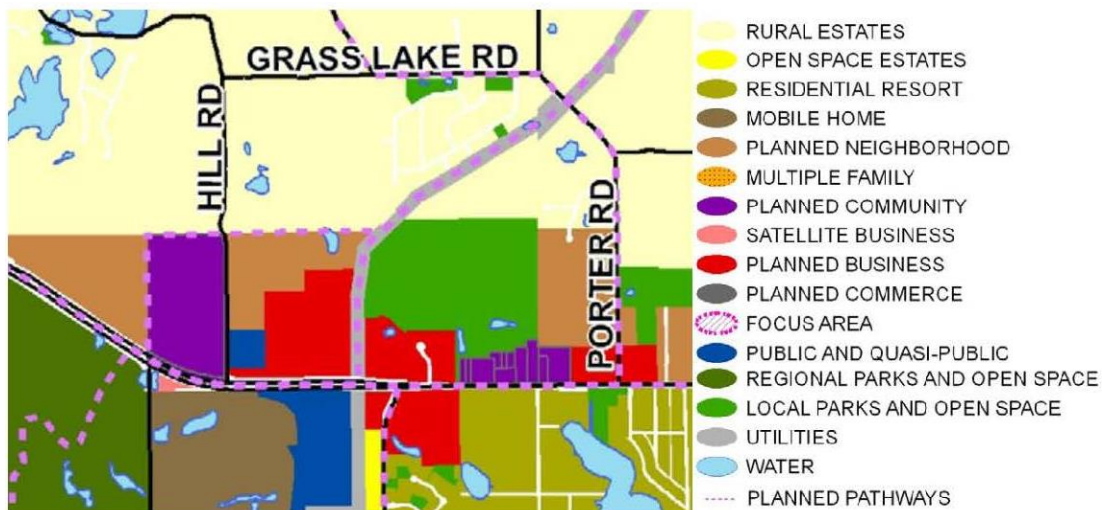
RE: Cosmo's Car Wash
Preliminary Site Plan – Review #2

EWM-Miller Wash, LLC has requested preliminary site plan approval to construct an approximately 4,535 square foot automobile wash establishment (the building dimensions shall be labeled on the site plan and the exact square footage provided) **(Comment partially addressed. Building dimensions have been added to the site plan. The ± symbol before the building square footage shall be removed)** on Parcel Number 12-20-276-034 (the parcel number shall be provided in the title on the Coversheet and in the title blocks on Sheets C1.0, C2.0, C3.0, L1.0, and L2.0). **(Comment addressed. The parcel number has been added to the title on the coversheet and title block).** The 1.88-acre subject site is a Meijer outlot, zoned PB (Planned Business), and located at the northwest corner of Bogie Lake Road and Highland Road (M-59). A legal description of the property shall be provided on the Coversheet. **(Comment addressed. The legal description has been added to the Coversheet).** Furthermore, the site plan shall be sealed by the civil engineer who prepared the plans (only Sheet C1.0 is sealed on the two submitted hard copies of the plan set; a seal is not provided on the digital plans submitted electronically). **(Comment partially addressed. The site plan has been sealed by an engineer. However, original (wet) seal and signature are required).** Similarly, the building elevations shall be sealed by the registered architect who prepared the plan. **(Comment partially addressed. The elevations have been signed and sealed by the registered architect who prepared the plan. However, original (wet) seal and signature are required).**

Master Plan

The Future Land Use Map from the Master Plan designates the subject site in the Planned Business category. All development in Planned Business is required to adhere to strict access management principles in order to minimize traffic conflict and maximize safety throughout the M-59 corridor. Connections to and segments of the Township community-wide pathway system are required as an integral part of all Planned Business development.

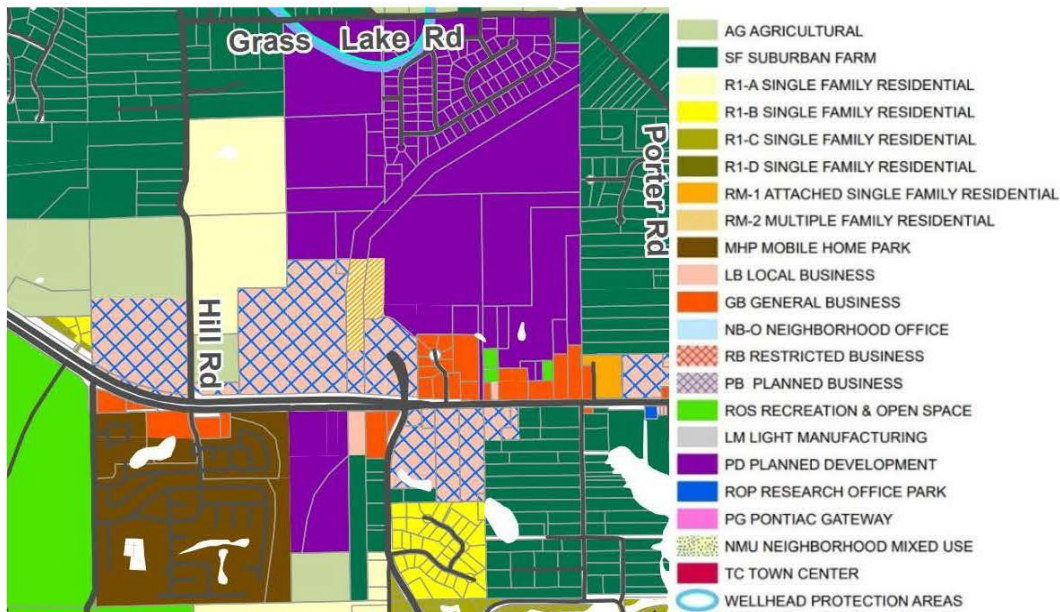
FUTURE LAND USE MAP



Zoning

Automobile wash establishments are principal permitted uses with site plan review and approval in the PB zoning district. A minimum lot area of 10 acres is required in the PB District (the PB district does not have a minimum lot width requirement). The subject site contains 194.53 feet of frontage along Highland Road (south), 383.91 feet of frontage along Bogie Lake Road (east), 170.11 feet of frontage along the Meijer private drive (north), and 1.88 acres of lot area. While the lot area does not meet the minimum requirement, the Meijer outlots were contemplated at the time of the initial development. A waiver from the minimum area requirement is not necessary.

ZONING MAP



Physical Features

Currently the site is undeveloped. The Michigan Department of Environment, Great Lakes, and Energy (EGLE) Wetland Map and the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map indicate neither wetlands nor floodplain are present on or near the site.

Access

The Meijer Development Agreement prohibits any outlot from having direct access and/or a curb-cut onto Highland Road (M-59). A proposed driveway to the Meijer private drive would provide access to the site. Two-way undivided driveways shall have a throat width of 25 feet. **The throat width shall be increased by one foot, from 24 feet to 25 feet** (throat length is the distance parallel to the centerline of a driveway from the public or private road right-of-way or access easement to the first on-site location at which a driver can make a right-turn or left-turn). **(Comment outstanding. See comment on following page regarding gutter pan).**

While the access arrangement proposed could serve the site, the Applicant shall work with a developer who submitted a concept plan for the yet to be divided Meijer outlot to the west of the subject site. A preliminary site plan for the neighboring property may be submitted in September. **A shared driveway/between-site service drive shall be planned and generally parallel the subject site's west property line.** (Comment outstanding. The Applicant is coordinating with a potential developer of the neighboring site on a shared driveway). The shared driveway/between-site service drive may straddle the property line to facilitate the most effective shared use of the drive, the sharing of construction and maintenance costs between involved property owners, and the minimization of impervious surfaces in a developing area. **An access easement ensuring cross-access rights for the general public shall be provided, in addition to a written agreement between the involved property owners assigning responsibilities for construction and long-term maintenance.** (Comment remains as a notation).

All dimensions for drive widths and vacuum bay/parking space depth shall be revised. The site plan measures drive widths to the face of curb; road measurement surface is taken between the edges of the gutter pan (drive width shall be provided between the edges of the gutter pan). Furthermore, gutter pan shall not be included in the measurement of parking space depth. (Comment outstanding. MDOT Type E concrete curb is proposed throughout the site, which is unacceptable. A curb type with integrated gutter pan shall be provided. Revise the plans and address the comment regarding road surface measurement and parking space depth accordingly.) **General Note 1 on the site plan shall be revised accordingly.** (Comment outstanding. See previous comment).

The zoning ordinance requires a minimum six-foot-wide sidewalk placed one-foot from the inside edge of the right-of-way along the Bogie Lake Road property frontage, and a minimum eight-foot-wide sidewalk along the Highland Road property frontage. Sidewalks along the aforementioned frontages were constructed by Meijer at the time of the initial development **(the widths of the existing sidewalks shall be dimensioned on the site plan).** (Comment addressed. Existing sidewalk widths are dimensioned on the site plan). **The Applicant shall be required to repair/replace any broken sections of concrete within the frontage sidewalks adjacent to the site along Bogie Lake Road and Highland Road, as determined by the Township Engineering Consultant.** (Comment remains as a notation).

A six-foot-wide sidewalk is required along the Meijer private drive. The site plan shows a proposed sidewalk (the width shall be dimensioned on the plan) extending partially across the northerly frontage; the concrete sections shall be constructed through the driveway to the west property line. (Comment partially addressed. The proposed sidewalk has been dimensioned along the Meijer private drive. While the concrete walk has been extended to the west property line, the site plan shows the sidewalk being constructed offsite along the south side of the Meijer private drive. The Applicant shall clarify the extent of sidewalk construction).

Utilities

Municipal water and sanitary sewer are available to serve the site. The Township Engineering Consultant will perform an analysis of utilities, stormwater, and grading to ensure compliance with all applicable ordinances as well as the Township Engineering Design Standards.

Staff Analysis

When reviewing the preliminary site plan, the Planning Commission should consider if the project meets the design standards for Planned Business developments found in Article 6, Section 7 of the zoning ordinance, the appropriateness of the requested waivers, and the site standards and development procedures for a PB development as outlined in Articles 5 and 6, respectively, of the zoning ordinance.

The Planned Business development review process is summarized by the following steps:

1. Preliminary Site Plan: During this review, the site layout and use(s) are established, the amount of open space is determined, and other project details are decided upon. The Planning Commission holds a public hearing, reviews the PB proposal, and makes a recommendation to the Township Board. The Township Board takes final action, approving or denying the preliminary site plan.
2. Final Site Plan: At this time building materials and colors, landscaping, and outdoor lighting are finalized and all conditions of preliminary site plan approval must be satisfied. The Planning Commission reviews and takes action to approve or deny the final site plan, and also reviews the proposed Development Agreement and makes a recommendation to the Township Board.
3. Development Agreement: Upon recommendation by the Planning Commission, the Township Board takes final action on the Development Agreement.

The following standards for automobile wash establishments found in Article 4, Section 11 of the zoning ordinance must also be utilized:

- A. *Buildings shall be set back sixty (60) feet from the existing or proposed right-of-way line. **Based on the dimension labeled on the site plan, the proposed front yard setback from the east property line is 50.6 feet (the setback listed in the Provided column in the Site Data Table shall be revised (approximations prohibited)) (Comment addressed. The Site Data Table has been revised); therefore, a waiver is required. (Comment remains as a notation. A 9.4-foot waiver is required).** Furthermore, the three other setbacks listed in the Provided column are also incorrect and shall be revised; setbacks are measured from the closest point of a building to the property line (approximations prohibited). (Comment partially addressed. The setback listed as provided from the Meijer private drive is 152 feet. The site plan shows 144.1 feet to the building corner. Revise for consistency). In addition to being listed in the aforementioned table, all setback dimensions shall be labeled on the site plan. (Comment addressed. All building setback dimensions have been labeled on the site plan). The Site Data Table shall also be revised to identify the two side setbacks as frontages. (Comment addressed. The Site Data Table has been revised). The Required column in the aforementioned table is also incorrect and shall be revised; the required setback from Bogie Lake Road and the Meijer private drive is 60 feet, not 50 feet. (Comment addressed. The Site Data Table has been revised). Per the Meijer Development Agreement, the Highland Road setback requirement for this outlot is 75 feet, not 50 feet as listed in the Site Data Table nor 60 feet as prescribed in the zoning ordinance. (Comment addressed. The Site Data Table has been revised).*
- B. *Entrance and exit drives shall be no less than one hundred (100) feet from any street intersection and at least two hundred (200) feet from any residential district. The nearest street intersection (Bogie Lake Road and Meijer private drive – to the east) is approximately 122 feet from the proposed driveway. Additionally, the proposed driveway exceeds the minimum 200-foot setback from a residential zoning district.*
- C. *Waiting spaces shall be provided in an amount equal to seven (7) times the maximum automobile capacity within the building. No vehicle shall be permitted to wait or stand within a dedicated right-of-way. **The site plan shall show nine-foot-wide and 20-foot-long stacking/waiting spaces, and an Off-Street Parking Requirements table shall be provided on the site plan showing the required and proposed stacking spaces and employee parking. (Comment addressed. However, only 31 of the 35 required stacking spaces are provided. A four-space waiver is required).***
- D. *The site shall be drained so as to dispose of all surface water in such a way as to preclude drainage of water onto adjacent property or heavy tracking onto a public street. A combination of alternatives may be used, including, but not limited to, blowers, hand-drying, length of exit drive and general site design. The Community Development Department defers to the Director of Public Services and Township Engineering Consultant on the stormwater management plan for the site.*

- E. *The site plan shall detail the location of all proposed vacuum stations. These areas shall be located so as not to conflict with any required parking, drive, or automobile standing areas. Self-contained, covered waste receptacles shall be provided at each proposed vacuum station to provide convenient disposal of customer refuse. Vacuum bays/stations (quantity: 21) are located west of the building (21 spaces – 14 feet by 20 feet in size); **however, waste receptacles for each vacuum station are not shown. A note shall be added to the site plan stating waste receptacles are mounted at each vacuum station. (Comment outstanding). Trash receptacles are required to be of commercial quality and complement the building design and style. A trash receptacle detail shall be provided at final site plan. (Comment remains as a notation).** The zoning ordinance states no noise, as measured from a property line, exceeding 70 dB(A) from 6:00 a.m. to 9:00 p.m. or 65 dB(A) from 9:00 p.m. to 6:00 a.m. shall be emitted. The Planning Commission may require a predictive noise analysis be submitted to demonstrate noise levels for the site will not exceed the performance standards. **Staff recommends reducing the number of vacuum stations by eliminating the westerly nine vacuum bays. (Comment remains as a notation. One vacuum station from the easterly bay has been eliminated. The response letter provided to the first review indicates the carwash operator will provide vacutech elevations once finalized with the equipment vendor).***
- F. *An outdoor lighting plan shall specify the type of fixtures to be used, light intensity, and method of shielding the fixtures so that light does not project onto adjoining properties or on any public or private street or right-of-way. Dropped fixtures shall not be allowed. The site plan shall include a photometric plan and catalog details for all proposed fixtures. Outdoor lights must meet the performance standards of Section 5.18. Information on site lighting will be provided and reviewed in detail during final site plan. **(A photometric plan was included with the latest submittal. See Pages 15 and 16 of this review).***
- G. *A screen wall or obscuring fence shall be provided on those sides abutting a residential district, in accordance with the provisions of this Ordinance. The site does not abut a residential district.*

Building Architecture and Design

In accordance with the M-59 architectural character requirements, exterior building materials shall be comprised primarily of high quality, durable, low maintenance material, such as masonry, stone, brick, glass, or equivalent materials. Buildings should be completed on all sides with acceptable materials (consideration should be given to the side and rear facade design as all sides of the proposed building are visible from a street). The proposed materials for the 30-foot-tall building are a mix of EFIS (exterior insulation finishing system), Trespa ventilated facade system, brick (likely veneer – not specified on the building elevations **(this clarification shall be made)**) **(Comment outstanding. No information on the brick type has been provided)**, split-face concrete masonry unit (CMU), and metal copings, trims, and canopies. **The building materials do not meet the architectural requirements of the Township, and the building is not designed to create a pleasing appearance. CMU, EFIS, and the Trespa facade system are not considered high-quality materials. (Comment addressed. The aforementioned materials are no longer proposed).**

Seventy (70) percent of all elevations of the building should be covered with some type of brick or cultured stone product. (Comment addressed. Material calculations have been provided on the building elevations showing a majority of the building is finished with glass, brick, and stone. Detailed information on the brick and stone shall be provided at final site plan). The currently proposed color scheme of the building should also be revised; black and grey building material colors are not compatible with or complimentary to the architectural character of surrounding buildings in the Meijer PB district. A brown/tan/taupe color scheme should be utilized on the building. (Comment addressed. An earth tone color scheme is proposed for the building). If any of the Trespa facade system is proposed on the revised building elevations, the color shall be revised to complement the brick and/or stone product utilized. The blue color is considered a sign, which would not be allowed on other buildings in the Township. (Comment addressed. The blue Trespa facade system is no longer proposed).

The color of the tile (it appears to be orange) shall be clarified. A neutral color tile shall be provided.

All buildings shall have windows at eye level covering at least 30 percent of the front facade (north, south, and east elevations of the building). The building elevations shall be revised to provide the required windows, and a window coverage calculation shall be provided in the materials table on the building elevations. (Comment addressed. However, the south facade has 29% window coverage. Therefore, a 1% waiver is required).

No overhead doors shall face the street, unless approved by the Planning Commission based upon a finding that the door is recessed back from the front facade and properly screened from public view. The overhead doors are not recessed back from the other portions of the facade; the plans shall be revised to achieve such recession. (Comment addressed. The carwash overhead doors are recessed anywhere from approximately two and no more than five feet back from the front (north and south facades). Additionally, the Planning Commission must determine if the overhead doors are properly screened from view; the doors should not be visible from the adjacent roadways. (Comments remain as a notation).

A sample board of building materials to be displayed at the Planning Commission meeting and elevations in color are required by the zoning ordinance and must be submitted at final site plan. Additionally, the address (street number) location shall be shown on the building. Six-inch-tall numbers visible from the street shall be required. The address location is subject to approval of the Fire Marshal. (Comments remain as a notation).

Parking

In addition to the required stacking spaces (which must be provided as described on Page 5 of this review), one parking space per each employee (working on the largest shift) must be provided. Three standard parking spaces are proposed north of the building. **The Applicant shall verify the number of employees working on the largest shift and provide this information on the Off-Street Parking Requirements table (which must be provided as described on Page 56 of this review).** (Comment partially addressed. The response letter provided to the first review indicates there will be four employees on site during the largest shift. An additional parking space has been added. However, the Site Data/Off-Street Parking Requirements table shall be updated to list four standard spaces in the Required column).

The zoning ordinance requires each individual parking space be delineated by dual stripes, two feet apart centered on the dividing lines and painted white. The site plan shall be revised to indicate the required striping. Additionally, a parking stall striping detail shall be provided for the barrier-free space and access aisle as well as the standard space. (Comment partially addressed. Dual striping has been indicated on the site plan. However, the standard parking stall striping detail on Sheet C6.0 shall be updated to indicate white striping). **A “Van Accessible” sign detail for the barrier-free parking shall also be provided.** (Comment outstanding, a “Van “Accessible” sign detail was not provided (a standard accessible parking sign detail has been provided). Revise accordingly). **A five-foot-wide access aisle south of the barrier-free space is proposed. In accordance with the zoning ordinance and Americans with Disabilities Act (ADA), the adjacent access aisle shall be eight-feet-wide.** (Comment addressed. The access aisle has been widened to eight feet). **Staff also concurs with the DLZ comment regarding the location of the barrier-free space. Currently the access aisle is adjacent to the “Exit Only” lane, which could be a safety issue. The barrier-free space shall be relocated north.** (Comment addressed. The ADA space has been moved further north and a curbed section (landscape island) has been added between the ADA space and “Exit Only” lane).

DLZ deferred compliance regarding the width of the “Exit Only” lane (Item C, Page 2 of the DLZ review letter dated July 13, 2022) to the Community Development Department. As this lane would serve as a bailout for vehicles not wishing to enter the car wash and not intended for general traffic circulation or emergency access, the 12-foot width is compliant. In terms of emergency access, it appears the purpose of the approximately 30-foot-wide area (which appears to be a rock bed – **(this clarification shall be made)**) (Comment partially addressed. An aggregate detail for the compacted gravel shall be provided on Sheet C6.0. The material shall accommodate fire apparatus and is subject to approval by the Fire Marshal) between the southerly drive aisle and vacuum bay/station area bordered by mountable curb could accommodate an emergency vehicle if necessary.

A snow storage plan was not provided. Information on method of snow storage shall be provided at final site plan. (Comment outstanding). Winter maintenance of parking lot landscape islands shall be required where heavy applications of salt and de-icing products occur through the use of salt tarps which minimize soil absorption and ultimately reduce plant disorders. (Comment remains as a notation).

Off-Street Loading Requirements

The zoning ordinance requires one loading space for a development of this size. Such loading and unloading space must be an area 10 feet by 50 feet, with a 15-foot height clearance. **No loading space is proposed; therefore, a waiver is required. (Comment outstanding. A waiver is required).** Item C, Page 2 of the DLZ review letter dated July 13, 2022 seems to suggest the “Exit Only” lane is intended to serve as the loading/unloading space. Unless DLZ received information not provided to the Township, nothing in the application or on the plans indicates this area is intended to serve as the loading/unloading space. Additionally, the length of the “Exit Only” lane is noncompliant with the requirement for a loading/unloading space. Furthermore, based on the building elevations it appears product deliveries would occur at the north side of the building. **The Applicant shall provide an explanation for the purpose of the second overhead door on the north elevation. (Comment rescinded. The building elevations show the second overhead door on the north elevation has been removed).**

Trash Receptacle Screening

The zoning ordinance requires dumpsters to be surrounded by a six-foot-tall wall on three sides and an obscuring wood gate on a steel frame on the fourth side, located on a six-inch concrete pad extending 10 feet in front of the gate, with six-inch concrete-filled steel bollards to protect the rear wall and gates. **A concrete pad extending 10 feet in front of the gate is not proposed; therefore, a 10-foot waiver is required. (Comment partially addressed. A cross-section detail displaying depth of the heavy-duty concrete pavement shall be provided on Sheet C6.0).** The zoning ordinance also states dumpsters and trash storage enclosures shall be constructed of the same decorative masonry materials as the buildings to which they are accessory. Brickform concrete (simulated brick pattern) or stained, decorative CMU block are not permitted where the principal building contains masonry. Plain CMU block is also prohibited. **As a condition of site plan approval, the dumpster enclosure shall match the same brick/cultured stone (which must be provided as described on Page 6 of this review) as the facade of the building with a steel-backed wood gate painted a complementary color to the brick/cultured stone. A trash enclosure detail shall be provided showing compliance with the zoning ordinance and incorporation of the aforementioned design elements. The enclosure detail on the building elevations is unacceptable. (Comment outstanding. A gate detail shall be provided (material not indicated on plan). A bollard detail shall be provided).**

The proposed enclosure is located northwest of the building. The zoning ordinance prohibits trash enclosures within a required front yard setback, and does not allow enclosures closer to the front lot line than the principal building. The proposed dumpster enclosure is located closer to the Meijer private drive than the automobile wash building. **A waiver is required to project into the front yard.** (Comment outstanding. A waiver is required (the extent of which shall be dimensioned on the site plan)).

At the time of trash pick-up, the location of the dumpster enclosure could cause conflict with traffic entering and exiting the site. The dumpster enclosure location should be evaluated when considering circulation around the site. (Comment remains as a notation. The response letter provided to the first review indicates the carwash operator prefers to coordinate off-hours pickup or manage traffic flow with site staff. The Community Development Department suggests the Planning Commission consider requiring a traffic engineer evaluate the proposed location of the dumpster enclosure relative to onsite traffic circulation).

Landscaping and Screening

Landscaping must comply with the provisions of the zoning ordinance and should be designed to preserve existing significant natural features and to buffer service areas, parking lots, and dumpsters. A mix of evergreen and deciduous plants and trees are preferred, along with seasonal accent plantings. A landscape plan is not required as part of the preliminary site plan, but was provided for consideration and will be reviewed in detail during final site plan review if the preliminary site plan is approved. Following are initial comments on the landscape plan:

- Interior Landscaping Requirements: for every new development requiring site plan review, except site condominiums as regulated in Article 6, Section 1, interior landscaping areas shall be provided, equal to at least 15 percent of the total lot area. These landscaped areas shall be grouped near all building entrances, building foundations, pedestrian walkways, and service areas, and may also be placed adjacent to fences, walls, or rights-of-way. These planting areas shall be so located as to breakup an otherwise continuous abutment of building facade with sidewalks and/or parking areas. All interior landscaping shall provide one large deciduous, small ornamental deciduous, or evergreen tree and five shrubs for every 300 square feet of required interior landscaping area.

- **Parking Lot Landscaping:** within every parking area containing 10 or more spaces, there shall be parking lot landscaping in accordance with this Subsection. These landscaping areas shall be located so as to better define parking spaces and drives. Landscaping on the perimeter of the parking lot does not satisfy the parking lot landscaping requirement. Island locations shall also be considered in a manner that will assist in controlling traffic movements. The requirements, for trees and islands, may be modified when it is found through careful coordination of parking lot landscaping with peripheral and building plantings an unnecessary duplication of plantings would be created. In addition, consideration shall be given to situations when an excess number of small islands would be created that would only serve to disrupt reasonable traffic patterns and maintenance activities. **The landscape island south and west of the vacuum bays/stations is considered parking lot landscaping. Both the interior landscaping and parking lot landscaping calculations on Sheet L2.0 shall be revised. Additionally, parking lot landscaping based on 25 spaces (unless reduced as recommended on Page 5 of this review) is required.** (Comments addressed. Interior landscaping and parking lot landscaping calculations have been modified).
- **Transformer and Mechanical Equipment Screening:** all ground mounted transformers, climate control, and similar equipment shall be screened from view from any street or adjacent property by a wall constructed of the same decorative exterior materials as the building and not less than the height of the equipment to be screened. As an alternative, the equipment may be screened by landscaping approved by the Planning Commission. All rooftop climate control equipment, transformer units, and similar equipment shall be screened. The materials used to screen the equipment shall be compatible in color and type with exterior finish materials of the building. All rooftop equipment shall conform to the maximum height regulations of this Ordinance. **The plans do not show proposed locations for mechanical units or provide the method of screening and shall be revised to provide the location(s) and method of screening.** (Comment addressed. Both transformers are now shown as being screened with ornamental grasses).
- Greenbelts are required between nonresidential parking areas adjacent to road rights-of-way and shall be at least 20-feet-wide and improved with one large deciduous or evergreen tree and eight shrubs for every 30 lineal feet, except they may be substituted in part with a masonry screen wall, 30 inches in height, at the discretion of the Planning Commission, in which case, a five-foot greenbelt adjacent to the screen wall must be provided. **See comments pertaining to the greenbelt plantings on the following page 14.**
- All required landscape areas in excess of 200 square feet shall be irrigated to assist in maintaining a healthy condition for all plantings and lawn areas. **An irrigation plan shall be provided at final site plan.** (Comment remains as a notation. This requirement was acknowledged by the Applicant's engineer in the response letter provided to the first review. A note has also been added to Sheet L2.0).

- All required site irrigation systems shall include a rain sensor or similar measure to ensure irrigation does not occur during or shortly after precipitation events. All site plans shall note installation of required irrigation. Add note to landscape plan at final site plan. (Comment remains as a notation. This requirement was acknowledged by the Applicant's engineer in the response letter provided to the first review. A note has also been added to Sheet L2.0).
- Trees shall not be planted closer than four feet to a property line. Add note to landscape plan at final site plan. (Comment remains as a notation. This requirement was acknowledged by the Applicant's engineer in the response letter provided to the first review. A note has also been added to Sheet L2.0).
- Trees identified for protection during construction and the means of protection shall be identified prior to final site plan. No construction shall occur until tree protection has been installed and approved by the Community Development Director. Add note to landscape plan at final site plan. (Comment remains as a notation. This requirement was acknowledged by the Applicant's engineer in the response letter provided to the first review. A note has also been added to Sheet L2.0).
- Six-inch straight-faced (vertical) curb of concrete construction shall be used around landscape and parking areas. The standard Michigan Department of Transportation (MDOT) detail for six-inch straight-faced curb shall be provided. (Comment outstanding. See comments pertaining to MDOT curb type on Page 4).
- Evergreen trees must be a minimum of seven feet in height at the time of planting. (Comment addressed. Evergreen tree installation height has been modified).
- Autumn Glow Japanese Zelkova is not an acceptable greenbelt tree. (Comment addressed. See Sheet L2.0 for an updated plant list).
- Soft Serve Sawara Cypress is not an acceptable evergreen tree. (Comment addressed. See Sheet L2.0 for an updated plant list).
- Vanderwolf's Pyramid Limber Pine is not an acceptable evergreen tree. Note pine trees are prohibited in the Township. (Comment addressed. See Sheet L2.0 for an updated plant list).
- Arctic Sun Dogwood is not an acceptable shrub. (Comment addressed. See Sheet L2.0 for an updated plant list).
- Little Devil Dwarf Ninebark is not an acceptable shrub. (Comment addressed. See Sheet L2.0 for an updated plant list).

- Grow-Low Sumac, when not maintained, loses aesthetic appeal. Use of Grow-Low Sumac is generally not preferred. (Comment addressed. See Sheet L2.0 for an updated plant list).
- Tor Birchleaf Spirea is not an acceptable greenbelt shrub. (Comment addressed. See Sheet L2.0 for an updated plant list).
- Sea Green Juniper is not an acceptable greenbelt shrub. (Comment addressed. See Sheet L2.0 for an updated plant list).
- Anglo-Japanese Yew is not an acceptable shrub. (Comment addressed. See Sheet L2.0 for an updated plant list).
- No more than two planted trees in a row shall be of the same species. (Comment addressed. Plant species have been modified).
- Within the Highland Road greenbelt, a double row of interlocking trees, primarily evergreens, shall be required. (Comment addressed. Evergreen trees have been added along Highland Road).
- Notes 12 and 17 on Sheet L2.0 mention seed; sod is required. The aforementioned notes shall be revised and the ground cover name “turf seed” shall be replaced with “sod.” (Comment addressed. Turf sod is now being proposed).
- Note 14 and the Tree, Shrub, and Perennial planting details on Sheet L2.0 mention mulch. The zoning ordinance states the mulch product itself shall be at least doubled-shredded quality. (Comment addressed. Double shredded hardwood mulch is now indicated).
- Based on the quality of the submitted landscape plan, the Applicant shall confirm if the plan was prepared by a registered landscape architect. (An original (wet) seal and signature of a registered landscape architect are required on the landscape plan at final site plan).
- All required landscape plantings shall be guaranteed for a period of two years and those which are diseased or dead must be replaced in conformance with the approved landscape plan. The diseased or dead plantings must be replaced with plantings of the same size as those which were removed. A cash bond or standby letter of credit in an amount equal to 125% of the cost to install any incomplete improvements and 100% of any installed improvements must be posted for the two years during which the guarantee is in effect. The Community Development Director or his designee shall review the amount of the guarantee for reasonableness prior to approval. (Comment remains as a notation. This requirement was acknowledged by the Applicant's engineer in the response letter provided to the first review. A note has also been added to Sheet L2.0).

Signs

The site plan does not show the location of a monument sign. General Note 5 on the site plan states refer to the architectural plans for monument sign details; **this note shall be removed.** **(Comment addressed. The note has been removed).** Per the Meijer Development Agreement, freestanding signs are prohibited from being located on any individual outlot. If allowed by Meijer, the car wash may be identified on the freestanding sign at the northwest corner of Bogie Lake Road and Highland Road.

A maximum of one wall sign is permitted for each principal building. In instances where a parcel has frontage on two streets, an additional wall sign may be permitted on the building facing the secondary thoroughfare, which is no greater than five percent of the wall area on which the sign is placed. Where permitted, wall signs must be located flat against the building's front facade or parallel to the front facade on a canopy. The building elevations show three wall signs on the building (north, east, and west facades). **The wall sign on the west elevation shall be removed, or a waiver is required.** **(Comment addressed. The sign on the west elevation has been removed. Page 2 of the preliminary sign package (site plan) shall be revised as it shows Sign B, which is intended to be placed on the east elevation, on the west elevation).** Additionally, wall signs cannot extend above the roofline of a building. **Waivers are required to install wall signs extending above the roofline of the building (all three-wall signs are above the roofline).** Staff does not support any waivers for signage. **The building elevations preliminary sign package should be revised to comply with the sign standards.** Note signage is not permitted on the canopies or vacuum stations.

Community/Public Benefit

A waiver from the Community Impact Statement (CIS) requirement is requested. While staff supports waiving submission of a CIS, **a community/public benefit must be provided to qualify for development in the PB district.** For PB developments, a public benefit(s) must be provided to offset the impact(s) of development on the Township. Community benefits are intended to be for the use and enjoyment of the public-at-large and must be commensurate with the waivers requested for the project. **A community/public benefit is not proposed.** **(Comment addressed. The Applicant is proposing to contribute \$15,000 to either the Parks and Recreation Fund or Sidewalk Fund. Based on the project, staff finds the proposed contribution acceptable).**

Outdoor Lighting

Site lighting is required to comply with the zoning ordinance. Information on site lighting was provided and will be reviewed in detail during final site plan review. Following are initial comments on the lighting (photometric) plan:

- Footcandles shall be measured at approximately six feet above grade. **Revise accordingly, and the plan must contain a note confirming footcandles are measured at six feet above grade.**
 - Only the area of illumination shall be used to calculate footcandle averages.

- **Complete catalog details (lighting fixture specification sheets) for all proposed fixtures shall be provided.**
- **Parking lot luminaries shall not exceed 16 feet in height within 25 feet of a lot line. The two western luminaries are within 25 feet of the lot line and shall be relocated, or a waiver is required.**
- **A light pole detail shall be provided consistent with height as labeled on the plan. Provide the total height including the base, pole, and light fixture. Be advised mounting height is measured from grade to the sky side of the fixture.**
- **The photometric plan shall be drawn to a scale of not less than 1 inch = 30 feet.**
- **The photometric plan shall be sealed by the person who prepared the plan.**
- **Lighting shall be shielded from adjacent properties and designed to reflect continuity with the pedestrian orientation of the area. Floodlights, wall pack units, and other types of unshielded lights, and lights where the lens or bulb is visible outside of the light fixture are not permitted except in service areas where the lights will not generally be visible by the public or adjacent residential properties. Lights underneath canopies must be fully recessed into the canopy to minimize glare from the light source.**

Planning Commission Options / Recommendation

The Planning Commission may recommend approval, approval with conditions, or denial of the preliminary site plan to the Township Board. **Staff recommends the plans be revised and resubmitted to address the items identified in this memorandum. A response letter detailing changes made to the plan shall be provided upon resubmission. A revised list of requested waivers shall also be provided, along with a proposed community/public benefit. A notarized signature of the Applicant shall also be provided on the site plan application.**



Fire Department
Charter Township
of White Lake

Site / Construction Plan Review

To: Sean O'Neil, Planning Department Director

Date: 09/26/2022

Project: Cosmo's Car Wash

Project #: 190125008

Date on Plans: 08/30/2022

The Fire Department has the following comments with regards to the 2nd review of preliminary site plans for the project known as Cosmo's Car Wash.

1. The Fire Department has no further comments at this time.

Jason Hanifen
Fire Marshal
Charter Township of White Lake
(248)698-3993
jhanifen@whitelaketwp.com

Plans are reviewed using the International Fire Code (IFC), 2015 Edition and Referenced NFPA Standards.

Rik Kowall, Supervisor
Anthony Noble, Clerk
Mike Roman, Treasurer



Item A.
T
Scott Ruggles
Michael Powell
Andrea C. Voorheis
Liz Fessler Smith

WHITE LAKE TOWNSHIP DEPARTMENT OF PUBLIC SERVICES

7525 Highland Road, White Lake, Michigan 48383-2900, (248) 698-7700, www.whitelaketwp.com

September 26, 2021

Sean O'Neil
Community Development Director
Charter Township of White Lake
7525 Highland Rd.
White Lake, MI 48383

RE: Cosmo's Car Wash Preliminary Site Plan Review

Sean,

Water:

Note 1 on C3.0 indicated $\geq 3"$ CL 52 DI pipe. Township standard is CL54 DI Pipe though I did not see any new water main proposed on this plan. The service is shown as 2" and may be K type copper or DR-9 (200 PSI) Poly meeting ASTM D2737-03 specification.

An RPZ backflow preventer will be required for this application.

Sanitary:

All manhole cores require Cor-N-Boot or link seal. An internal drop connection will be required.

Grease interceptor details were not submitted. It should be noted that the grease interceptor shall be of 1000 gal minimum capacity of the outdoor inline variety.

Stormwater:

A standard Storm Water Management Facilities Easement, Maintenance Agreement and Lien will be required for all onsite stormwater piping on-site as well as an agreement with Meijer to discharge into the Meijer stormwater basin. Easement Exhibits A and B showing legal description of the property, legal description of the easements, and a drawing of the easements on 8 ½ x 14 legal sizing should be submitted for review with the Final Site Plan. A resolution from the ownership corporation authorizing and identifying the signatory of the easement should be submitted with the Final Site Plan if you haven't already.

Some type of Stormceptor or other on-site pre-treatment will be required.

Below is an itemized preliminary estimate of water and sewer connection fees for a 4,535 SF car wash:

Water:

New Water Service Permit and Inspection	\$75.00
Irrigation System Permit and Inspection	\$50.00
Capital Connection Fee for 2"	\$2,607.15
Meter	\$583.66
Transmitter	\$96.00
Flanges	\$186.90
Meter Installation	\$75.00
Total	\$3,673.71

Sanitary:

Commerce Treatment Plant Capital Fee with 2" Water	\$15,278.00
White Lake Capital Connection Fee (\$2100 per REU, REU =6.95/1000SF)	\$66,150.00
Plumbing Inspection Permit	\$50.00
Oakland County Tap Inspection Permit	\$200.00
Total:	\$81,678.00

Please feel free to call with any questions.

Sincerely,



Aaron D. Potter
Director, Dept. of Public Services
Charter Township of White Lake

Drawing name: K:\GIS\DEV\190125008_CosmosCarWash\Drawings\PRELIMINARY\ENGINEERING\COVER SHEET.dwg Layout1 Aug 30, 2022 9:28am by: Sarah Strahl
This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



UTILITY AND GOVERNING AGENCY CONTACTS

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7525 HIGHLAND ROAD
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STORM SEWER SERVICE
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PROJECT TEAM

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OWNER
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450 WEST 17TH STREET
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ROADWAY AUTHORITY
MICHIGAN DEPARTMENT OF TRANSPORTATION
425 WEST OTTAWA STREET
P.O. BOX 30050
LANSING, MI 48909

ELECTRIC COMPANY
DTE ENERGY
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NATURAL GAS COMPANY
CONSUMERS ENERGY
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TELEPHONE/CABLE
AT&T
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4201 WINFIELD ROAD
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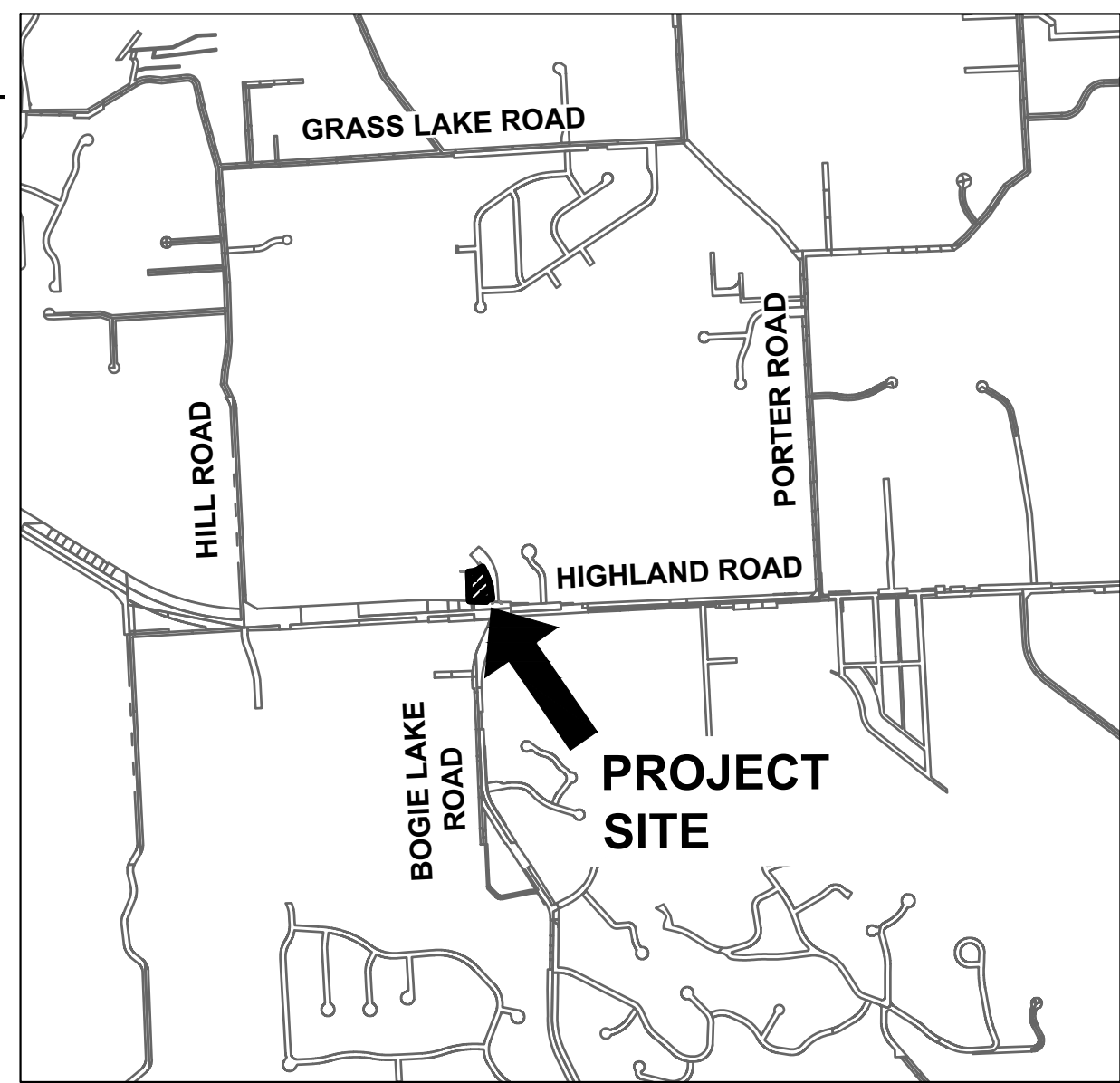
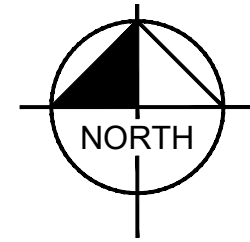
SURVEYOR
MONUMENT ENGINEERING GROUP
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298 VETERANS DRIVE
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SITE PLAN REVIEW COSMOS CAR WASH

HIGHLAND ROAD

TAX ID: 12-20-276-034

WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MI 48383



VICINITY MAP
1"=1000'

Sheet List Table	
Sheet Number	Sheet Title
C0.0	COVER SHEET
V1.0	SURVEY
C1.0	SITE PLAN
C2.0	GRADING AND EROSION CONTROL PLAN
C3.0	UTILITY PLAN
C4.0	DRAINAGE PLAN
C6.0	CONSTRUCTION DETAILS
L1.0	LANDSCAPE PLAN
L2.0	LANDSCAPE NOTES AND DETAILS

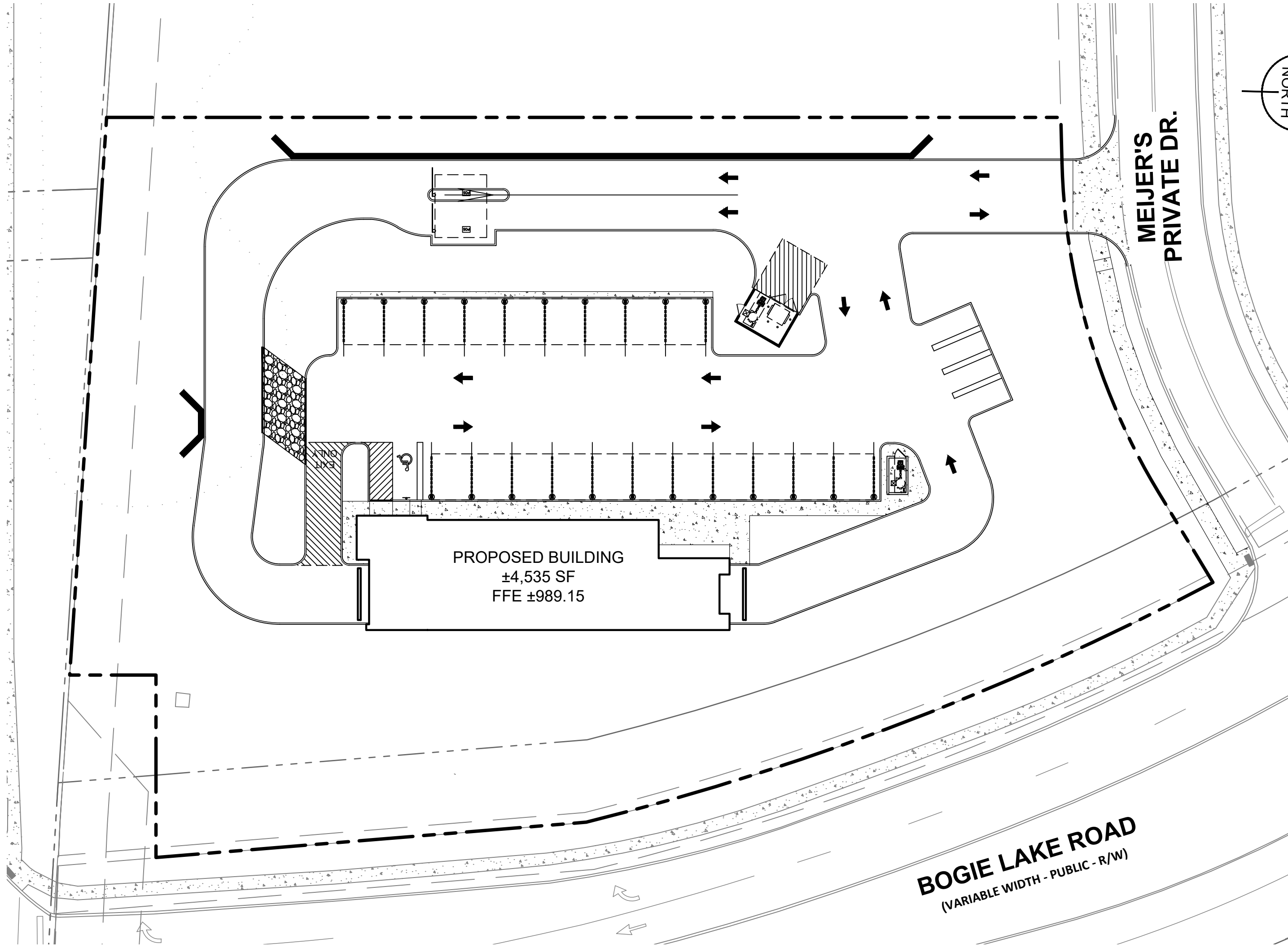
BENCHMARKS

SITE BENCHMARKS: DATUM NAVD88
(LOCATIONS SHOWN ON SURVEY)

BM A: TOP ARROW ON HYDRANT +/-16' WEST OF BACK OF CURB OF BOGIE LAKE ROAD AND 328.44' NORTH OF BACK OF CURB OF M-59.
ELEVATION=986.44

BM B: TOP ARROW ON HYDRANT +/-14' WEST OF BACK OF CURB OF BOGIE LAKE ROAD AND 75' NORTH OF BACK OF CURB OF M-59.
ELEVATION=980.35

BM C: TOP ARROW ON HYDRANT +/-35' WEST OF BACK OF CURB OF BOGIE LAKE ROAD AND 21' NORTH OF BACK OF CURB OF M-59.
ELEVATION=980.62



INDEX MAP

1"=30'

LEGAL DESCRIPTION

(PER TITLE AGENCY: FIDELITY TITLE INSURANCE COMPANY, TITLE COMMITMENT NO: GLT2200117, EFFECTIVE DATE: DECEMBER 15, 2021)

EXHIBIT "A" DESCRIPTION:

LAND SITUATED IN THE TOWNSHIP OF WHITE LAKE, COUNTY OF OAKLAND, STATE OF MICHIGAN, DESCRIBED AS FOLLOWS: COMMENCING AT THE CENTER POST OF SECTION 20, TOWN 3 NORTH, RANGE 8 EAST, WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN; SAID POINT BEING SOUTH 89 DEGREES 59 MINUTES 45 SECONDS WEST 2635.27 FEET FROM THE EAST 1/4 CORNER OF SAID SECTION 20; THENCE NORTH 00 DEGREES 31 MINUTES 08 SECONDS EAST 198.92 FEET ALONG THE NORTH-SOUTH 1/4 LINE OF SAID SECTION 20; THENCE NORTH 89 DEGREES 58 MINUTES 09 SECONDS EAST 519.78 FEET ALONG THE NORTHERLY RIGHT-OF-WAY LINE OF M-59 (HIGHLAND ROAD, VARIABLE WIDTH); THENCE 541.74 FEET ALONG THE ARC OF A 5821.52 FOOT RADIUS CIRCULAR CURVE TO THE RIGHT, CHORD BEARING SOUTH 87 DEGREES 21 MINUTES 59 SECONDS EAST 541.55 FEET ALONG THE NORTHERLY RIGHT-OF-WAY LINE OF SAID M-59; THENCE SOUTH 84 DEGREES 42 MINUTES 00 SECONDS EAST 189.40 FEET ALONG THE NORTHERLY RIGHT-OF-WAY LINE OF SAID M-59 FOR A PLACE OF BEGINNING; THENCE NORTH 01 DEGREES 30 MINUTES 56 SECONDS EAST 332.20 FEET; THENCE NORTH 90 DEGREES 00 MINUTES 00 SECONDS EAST 15.98 FEET; THENCE 120.47 FEET ALONG THE ARC OF A 233.00 FOOT RADIUS CIRCULAR CURVE TO THE LEFT, CHORD BEARING NORTH 75 DEGREES 11 MINUTES 17 SECONDS EAST 119.13 FEET; THENCE NORTH 60 DEGREES 22 MINUTES 37 SECONDS EAST 36.86 FEET; THENCE 234.17 FEET ALONG THE ARC OF A 966.50 FOOT RADIUS CIRCULAR CURVE TO THE RIGHT, CHORD BEARING SOUTH 19 DEGREES 25 MINUTES 09 SECONDS EAST 233.59 FEET; THENCE SOUTH 03 DEGREES 10 MINUTES 30 SECONDS EAST 150.32 FEET; THENCE NORTH 88 DEGREES 29 MINUTES 04 SECONDS WEST 63.50 FEET; THENCE SOUTH 01 DEGREES 30 MINUTES 56 SECONDS WEST 30.03 FEET; THENCE NORTH 84 DEGREES 30 MINUTES 46 SECONDS WEST 63.50 FEET; THENCE SOUTH 01 DEGREES 30 MINUTES 56 SECONDS WEST 30.03 FEET; THENCE NORTH 84 DEGREES 42 MINUTES 00 SECONDS WEST 194.54 FEET ALONG THE NORTHERLY RIGHT-OF-WAY LINE OF SAID M-59 TO THE PLACE OF BEGINNING.

PROFESSIONAL ENGINEER'S CERTIFICATION

I, DERIK LEARY, A LICENSED PROFESSIONAL ENGINEER OF MICHIGAN HEREBY CERTIFY THAT THIS SUBMISSION, PERTAINING ONLY TO THE CIVIL SHEETS LISTED ABOVE, WAS PREPARED ON BEHALF OF EWM-MILLER WASH, LLC BY KIMLEY-HORN OF MICHIGAN, INC. UNDER MY PERSONAL DIRECTION. THIS TECHNICAL SUBMISSION IS INTENDED TO BE USED AS AN INTEGRAL PART OF AND IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT DOCUMENTS.

DATED THIS 30TH DAY OF AUGUST, A.D., 2022.

6201066961 LICENSED PROFESSIONAL ENGINEER
MY LICENSE EXPIRES ON MARCH 12, 2023



COSMOS CAR WASH
HIGHLAND ROAD
PID: 12-20-276-034
WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN

ORIGINAL ISSUE:
8/30/2022
KHA PROJECT NO.
190125008
SHEET NUMBER

C0.0



COVER SHEET

NOT FOR
CONSTRUCTION

SCALE:

DESIGNED BY: SRS

DRAWN BY: SRS

CHECKED BY: DDL

Kimley»Horn
KIMLEY-HORN AND ASSOCIATES, INC.
3911 SIX MILE ROAD
LIVONIA, MI 48152
TEL: (614) 454-6697
WWW.KIMLEY-HORN.COM

Item A.
No.
REVISIONS
DATE

EX. SANITARY SEWER		
STRUCTURE	RIM ELEV.	PIPES
(50159) SMH	980.51	12" SW IE= 975.61 12" NE IE= 975.51
(50458) SMH	981.51	12" SW IE= 974.74 12" E IE= 974.64
(50565) SMH	980.28	8" N IE= 970.68 8" SE IE= 970.05



PHONE/CABLE: GPRS
CONTACT: KYLE HORN
EMAIL: KYLE.HORN@GPRSINC.COM
RECEIVED: 3/1/2022

- ## UTILITY/REFERENCE INFO

- ELEC: DTE ENERGY
CONTACT:
PHONE: 313-235-5824
RECEIVED: NOT RECEIVED

- PHONE/CABLE: GPRS
CONTACT: KYLE HORN
EMAIL: KYLE.HORN@GPRSINC.COM
RECEIVED: 3/1/2022

EX. ASPHALT

EX. CONCRETE

EX. GRAVEL

ELEV = 986.44

ELEV = 986.44

BM C:
TOP ARROW ON HYDRANT $\pm 35'$ WEST OF BACK OF CURB OF BOGIE LAKE ROAD AND 21' NORTH OF
BACK OF CURB OF M-59
ELEV = 980.62

UTILITY/REFERENCE INFO

- ELEC: DTE ENERGY
CONTACT:
PHONE: 313-235-5824
RECEIVED: NOT RECEIVED

- PHONE/CABLE: GPRS
CONTACT: KYLE HORN
EMAIL: KYLE.HORN@GPRSINC.COM
RECEIVED: 3/1/2022

DRAFT

CLIENT :

(312) 605-9290

[illegible]

ORIGINAL ISSUE DATE:
3/7/2022

PROJECT NO: 22-034

SCALE: 1"=30'



A horizontal scale bar with alternating black and white segments. It is marked with '0' at the left end, '1/2"' at the midpoint, and '1"' at the right end.

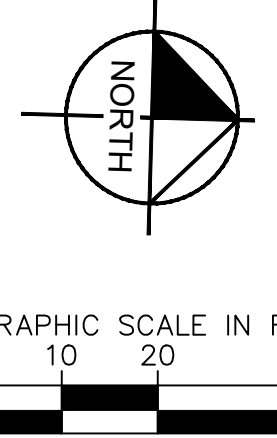
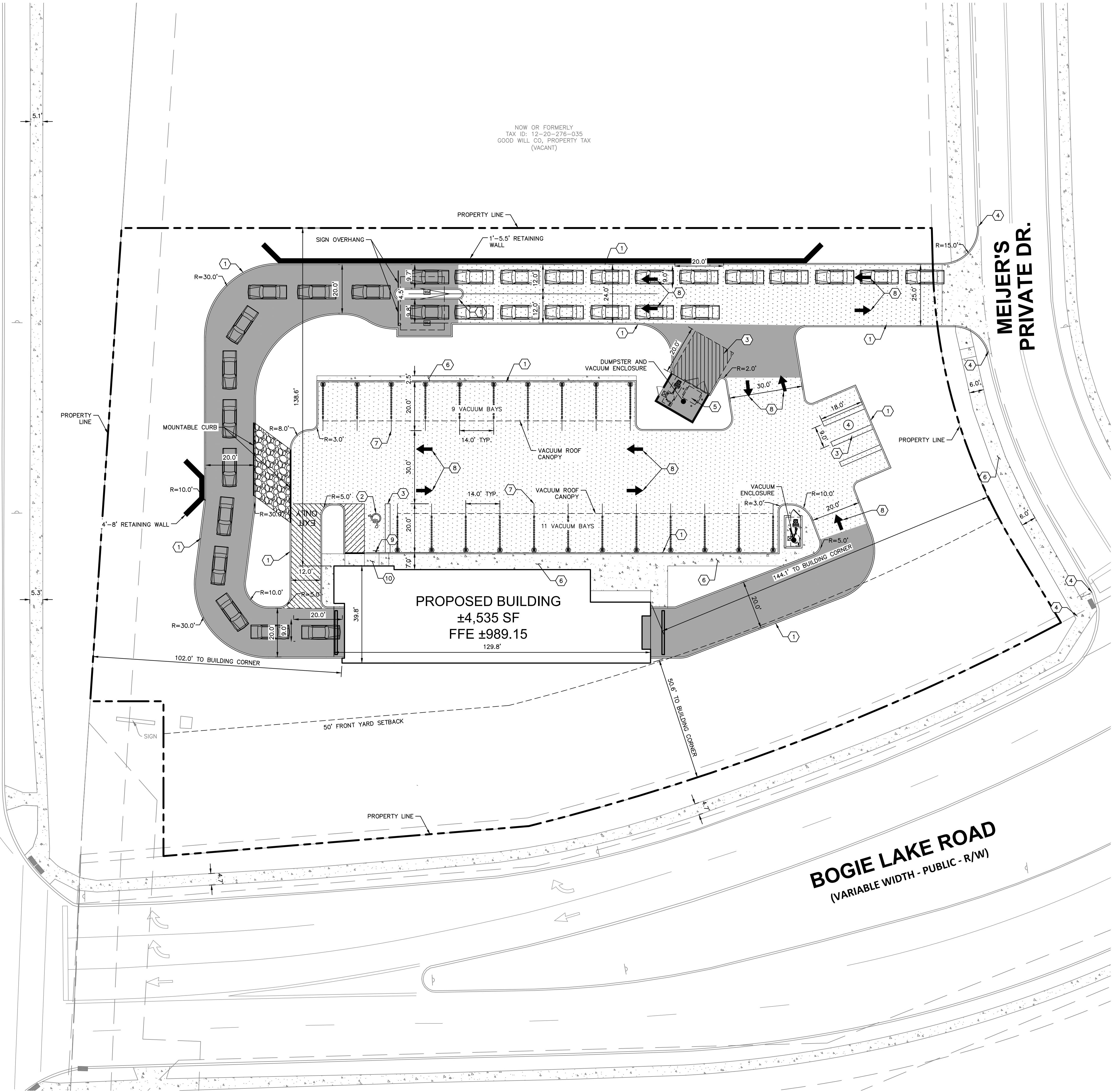
FIELD:	RZ & WH
DRAWN BY:	BN & DA
DESIGN BY:	N/A
CHECK BY:	PL & MB

V1.0

NOT FOR CONSTRUCTION

Drawing name: K:\GIS_DEV\190125008_CosmosCarWash_WhiteLake_MI\2_Design\CAD\Drawings\PRELIMINARY\ENGINEERING\SITE PLAN.dwg LAYOUT1 Aug 30, 2022 9:30am by: Sarah Strall
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HIGHLAND ROAD/M-59
(VARIABLE WD. - PUBLIC - R/W)



GENERAL NOTES

1. ALL DIMENSIONS REFER TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
2. BUILDING DIMENSIONS ARE TO THE OUTSIDE FACE OF BUILDING UNLESS OTHERWISE NOTED.
3. REFER TO ARCHITECTURAL AND STRUCTURAL PLANS TO VERIFY ALL BUILDING DIMENSIONS.
4. RADI NOT DIMENSIONED ON THIS PLAN SHALL BE 2'-FEET, TYPICAL.
5. ALL PROPOSED ON-SITE STRIPING SHALL BE PAINTED UNLESS OTHERWISE NOTED.
6. APPLICANT/OWNER SHALL REPAIR AND/OR CLEAN UP ANY OF THE EXISTING SIDEWALKS LOCATED ALONG PROPERTY FRONTAGES.
7. WASTE RECEPTACLES TO BE MOUNTED AT EACH VACUUM STATION.

SITE LEGEND

- STANDARD DUTY ASPHALT PAVEMENT
SEE CONSTRUCTION DETAILS FOR PAVEMENT SECTION
- HEAVY DUTY CONCRETE PAVEMENT
SEE CONSTRUCTION DETAILS FOR PAVEMENT SECTION
- COMPACTED GRAVEL
SEE CONSTRUCTION DETAILS FOR PAVEMENT SECTION
- CONCRETE SIDEWALK
SEE CONSTRUCTION DETAILS FOR PAVEMENT SECTION
- MDOT TYPE E CURB
- SETBACK LINE
- PROPERTY LINE
- ACCESSIBLE PARKING MARKING

SITE DATA TABLE

CURRENT ZONING: GENERAL BUSINESS		
	REQUIRED	PROVIDED
BUILDING SETBACKS		
FRONTAGE: (BOGIE LAKE ROAD)	60 FT	50.6 FT
FRONTAGE: (HIGHLAND ROAD)	75 FT	102.0 FT
FRONTAGE: (MEIJER'S PRIVATE DRIVE)	60 FT	152 FT
REAR: (WEST)	0 FT	138.6 FT
ADA SPACES	1	1
PARKING		
1 SPACE PER EMPLOYEE		
STANDARD SPACES (90°)	2	4
DRIVE THRU STACKING SPACES		
STACKING SPACES (9'x20')	35	31

SITE DATA TABLE

TOTAL LOT AREA	1.88 AC
TOTAL AREA DISTURBED	1.94 AC
EXISTING IMPERVIOUS AREA	0.00 AC
PROPOSED IMPERVIOUS AREA	0.88 AC

KEY NOTES

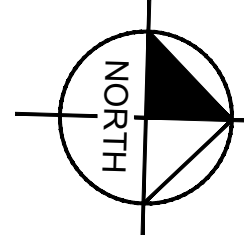
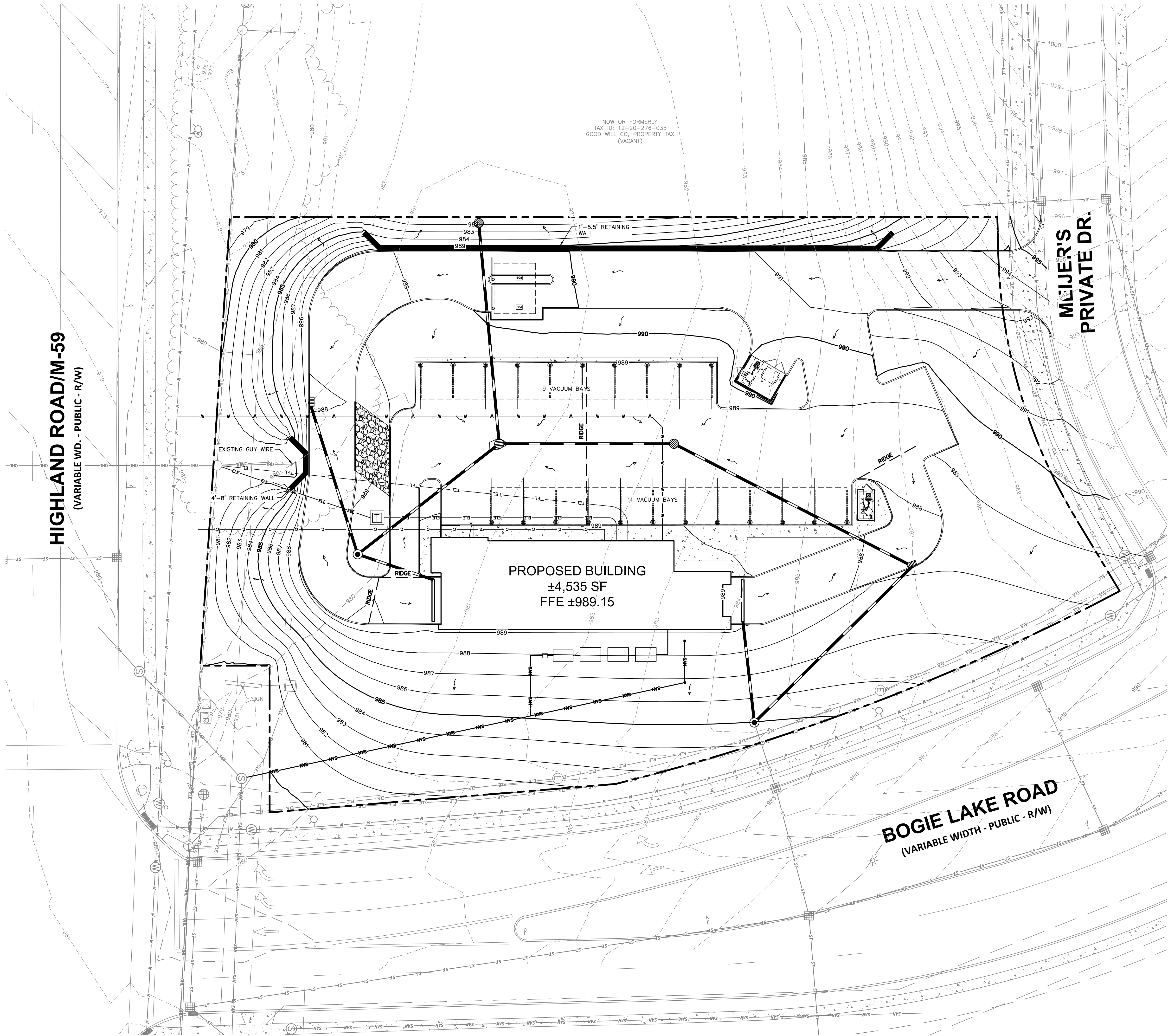
1. MDOT TYPE E CURB, TYP.
2. ACCESSIBLE PAVEMENT MARKINGS, TYP.
3. DUAL STRIPING, PER WHITE LAKE TOWNSHIP ZONING ORDINANCE 5.11.Q.xi
4. CONNECT TO EXISTING PAVEMENT, SIDEWALK, CURB, TYP.
5. TRASH ENCLOSURE (SEE ARCHITECTURAL PLANS FOR DETAILS)
6. CONCRETE SIDEWALK, TYP.
7. VACUUMS TYP.
8. DIRECTIONAL PAVEMENT MARKINGS
9. ACCESSIBLE PARKING SIGN
10. ACCESSIBLE RAMP

PAK



Item A.	DATE
REVISIONS	No.
Kimley»Horn	© 2022 KIMLEY-HORN AND ASSOCIATES, INC. 3911 SIX MILE ROAD LIVONIA, MI 48152 WWW.KIMLEY-HORN.COM
SCALE:	AS NOTED
DESIGNED BY:	SRS
DRAWN BY:	SRS
CHECKED BY:	DDL
NOT FOR CONSTRUCTION	
COSMOS CAR WASH	
HIGHLAND ROAD	
PID: 190125008	
WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN	
ORIGINAL ISSUE:	8/30/2022
KHA PROJECT NO.	190125008
SHEET NUMBER	C1.0

Drawing name: K:\GIS_DEV\190125008_CosmosCarWash_WhiteLake_MI_2_Design\CAD\DrawSheets\PRELIMINARY ENGINEERING\GRADING PLAN.dwg Layout1 Aug 30, 2022 9:30am by: Sarah Strahl
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GRADING NOTES

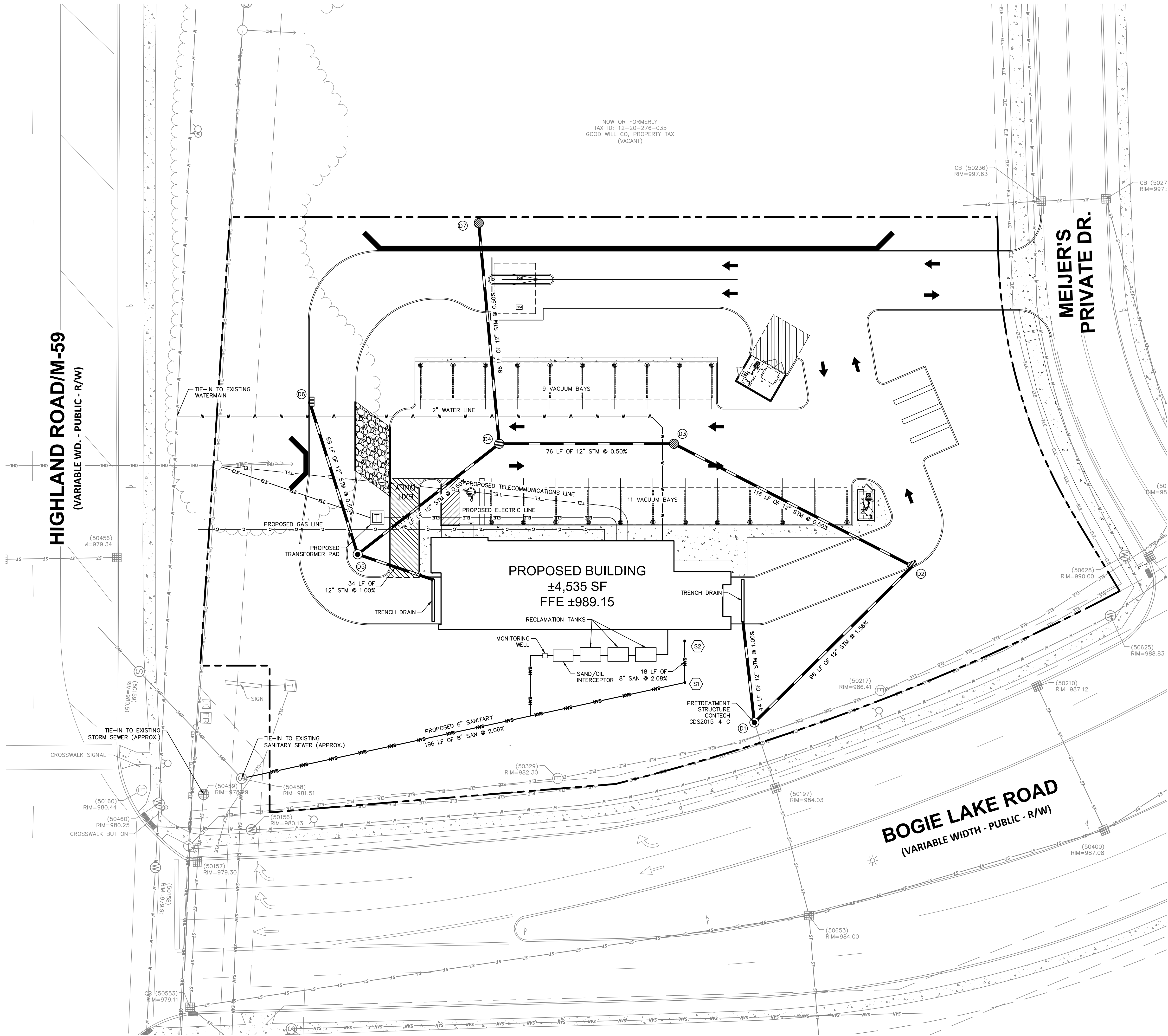
- CONTRACTOR TO VERIFY ALL EXISTING TOPOGRAPHY AND STRUCTURES ON THE SITE AND IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO STARTING WORK.
- ALL PAVEMENT SPOT GRADE ELEVATIONS AND RIM ELEVATIONS WITHIN OR ALONG CURB AND GUTTER REFER TO FLOW LINE ELEVATIONS UNLESS OTHERWISE NOTED.
- ALL ELEVATIONS SHOWN DEPICT FINISHED GRADE UNLESS OTHERWISE NOTED. GENERAL CONTRACTOR TO COORDINATE WITH EXCAVATION, LANDSCAPE AND PAVING SUBCONTRACTORS REGARDING TOPSOIL THICKNESS FOR LANDSCAPE AREAS AND PAVEMENT SECTION THICKNESS FOR PAVED AREAS TO PROPERLY ENSURE ADEQUATE CUT TO ESTABLISH SUBGRADE ELEVATIONS.
- NO EARTHEN SLOPE SHALL BE GREATER THAN 3:1, UNLESS OTHERWISE NOTED.
- MAXIMUM SLOPE IN ACCESSIBLE PARKING SPACES AND LOADING ZONES SHALL NOT EXCEED 2.0% IN ALL DIRECTIONS.
- MAXIMUM RUNNING SLOPE SHALL NOT EXCEED 5% AND CROSS SLOPE SHALL NOT EXCEED 2% ON ALL SIDEWALKS AND ACCESSIBLE ROUTES.
- WHEN NATURAL FLOW OF DRAINAGE IS AWAY FROM CURB, CONTRACTOR TO INSTALL REVERSE GUTTER PITCH.
- MATCH EXISTING ELEVATIONS AT THE PROPERTY LIMITS.

GRADING LEGEND

- | | |
|-----------|------------------|
| —XXX— | PROPOSED CONTOUR |
| - - - - - | EXISTING CONTOUR |
| —RIDGE— | RIDGE LINE |
| ↖ ↗ ↘ ↙ | FLOW DIRECTION |

Item A.		DATE
No.		REVISIONS
Kimley»Horn		
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DESIGNED BY:	SRS	
DRAWN BY:	SRS	
CHECKED BY:	DDL	
NOT FOR CONSTRUCTION		
COSMOS CAR WASH		
GRADING AND EROSION CONTROL PLAN		
COSMOS CAR WASH HIGHLAND ROAD PID: 12-20-276-034 WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN		
ORIGINAL ISSUE: 8/30/2022		
KHA PROJECT NO. 190125008		
SHEET NUMBER		
C2.0		35

Drawing name: K:\C3.0_DEV\19012508_CosmosCarWash\PRELIMINARY\ENGINEERING\UTILITY PLAN.dwg Layout1 Aug 30, 2022 9:35am by: Sarah Strall
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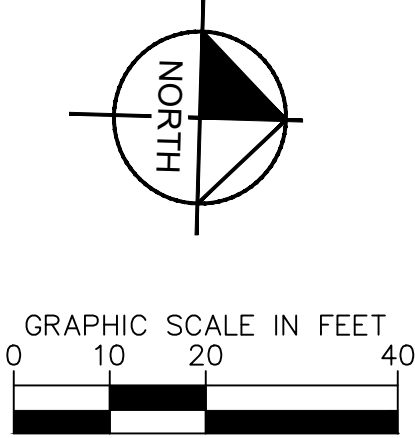
UTILITY LEGEND

W	EX. WATER LINE
W	EX. HYDRANT
W	EX. WATER VALVE
W	EX. WATER METER AND STOP BOX
SAN	EX. SANITARY SEWER LINE
SAN	EX. SANITARY SEWER MANHOLE
ST	EX. STORM DRAIN LINE
ST	EX. STORM MANHOLE
ST	EX. STORM STRUCTURE/INLET
G	EX. GAS LINE
G	EX. GAS METER
ELE	EX. UNDERGROUND ELECTRIC LINE
OHL	EX. OVERHEAD ELECTRIC LINE
TEL	EX. TELEPHONE LINE
TEL	EX. TELEPHONE POLE
TEL	EX. LIGHT POLE
TEL	EX. ELECTRIC STRUCTURE
ELE	PROPOSED UNDERGROUND ELECTRIC LINE
G	GAS LINE (BY GAS COMPANY)
TEL	PROPOSED PHONE LINE
ST	PROPOSED STORM SEWER LINE
ST	PROPOSED INLET STORM STRUCTURE
ST	PROPOSED CLOSED LID STORM STRUCTURE
ST	PROPOSED OPEN LID CURB STRUCTURE
SAN	PROPOSED SANITARY SEWER LINE
SAN	PROPOSED SANITARY MANHOLE
W	PROPOSED STORM/SANITARY CLEANOUT
W	PROPOSED WATER LINE
W	PROPOSED TRANSFORMER

UTILITY NOTES

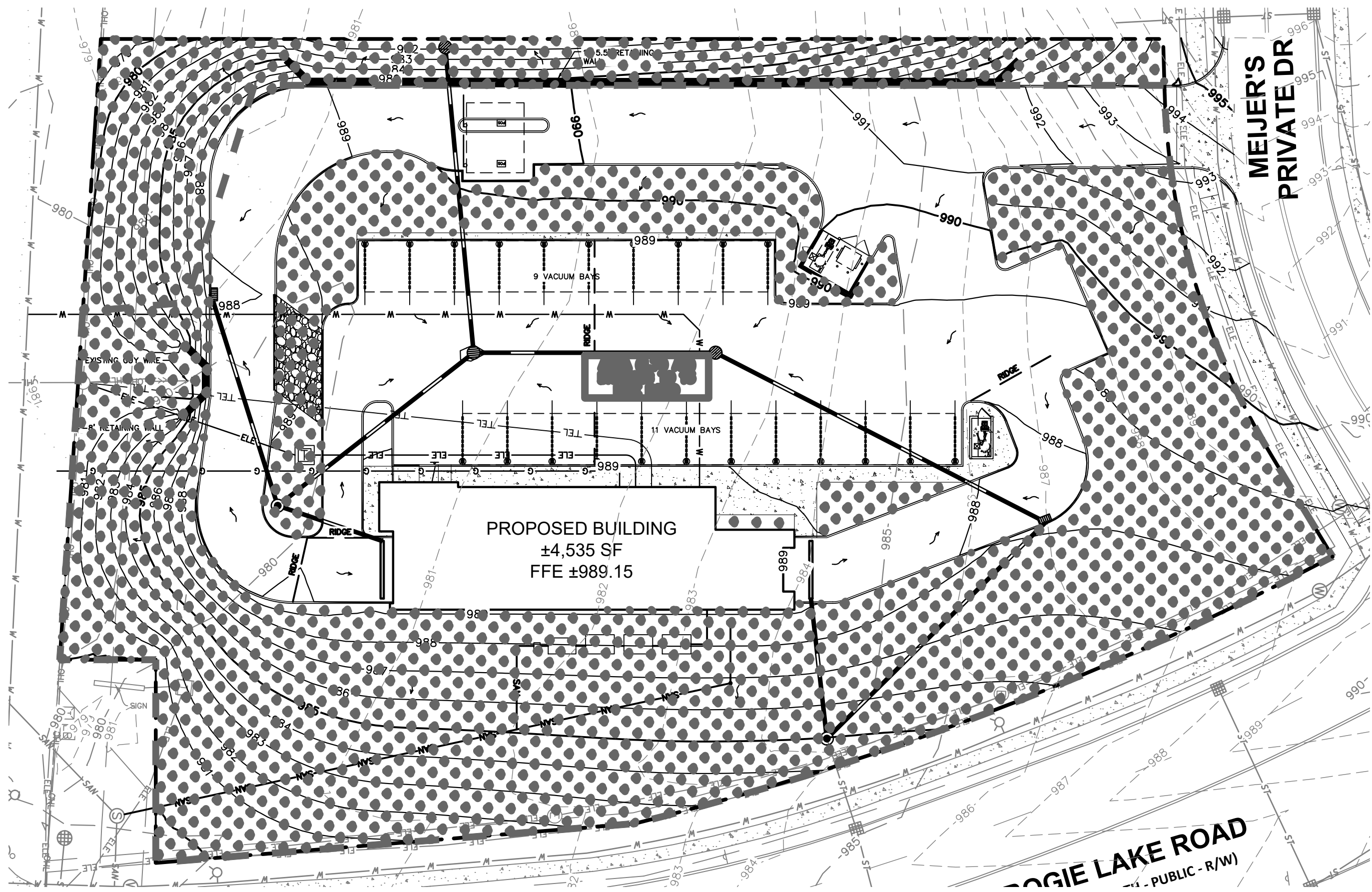
GENERAL UTILITY NOTES

- ALL WATER LINES $\geq 3"$ SHALL BE DUCTILE IRON PIPE, CLASS 52.
- ALL SANITARY SEWER LINES SHALL BE PVC MEETING, ASTM D-3034 SDR 26 EXCEPT FOR SANITARY SEWER THAT CROSSES ABOVE WATER MAIN, THIS PIPE SHALL BE AWWA C900 (UNLESS WATER MAIN CASING IS UTILIZED). PROVIDE 42" MINIMUM COVER.
- CONTRACTOR SHALL COORDINATE ANY DISRUPTIONS TO EXISTING UTILITY SERVICES WITH ADJACENT PROPERTY OWNERS.
- ALL ELECTRIC AND TELEPHONE EXTENSIONS INCLUDING SERVICE LINES SHALL BE CONSTRUCTED TO THE APPROPRIATE UTILITY COMPANY SPECIFICATIONS. ALL UTILITY DISCONNECTIONS SHALL BE COORDINATED WITH THE DESIGNATED UTILITY COMPANIES.
- CONSTRUCTION SHALL NOT START ON ANY PUBLIC UTILITY SYSTEM UNTIL WRITTEN APPROVAL HAS BEEN RECEIVED BY THE ENGINEER FROM THE APPROPRIATE GOVERNING AUTHORITY AND CONTRACTOR HAS BEEN NOTIFIED BY THE ENGINEER.
- CONTRACTOR TO CALL 811 TO COORDINATE FIELD LOCATIONS OF EXISTING UNDERGROUND UTILITIES BEFORE ORDERING MATERIALS OR COMMENCING CONSTRUCTION. NOTIFY ENGINEER OF ANY DISCREPANCIES IMMEDIATELY.
- PRIOR TO THE CONSTRUCTION OF OR CONNECTION TO ANY STORM DRAIN, SANITARY SEWER, WATER MAIN OR ANY OTHER UTILITIES, THE CONTRACTOR SHALL EXCAVATE, VERIFY AND CALCULATE ALL POINTS OF CONNECTION AND ALL UTILITY CROSSINGS AND INFORM THE ENGINEER AND THE OWNER/ DEVELOPER OF ANY CONFLICT OR REQUIRED DEVIATIONS FROM THE PLAN. NOTIFICATION SHALL BE MADE A MINIMUM OF 72 HOURS PRIOR TO CONSTRUCTION. THE ENGINEER AND ITS CLIENTS SHALL BE HELD HARMLESS IN THE EVENT THAT THE CONTRACTOR FAILS TO MAKE SUCH NOTIFICATION. THE TOWNSHIP OF WHITE LAKE SHALL BE NOTIFIED OF ANY AND ALL CHANGES TO THE DESIGN PLANS.
- CONTRACTOR SHALL COMPLY COMPLETELY WITH THE LATEST STANDARDS OF OSHA DIRECTIVES OR ANY OTHER AGENCY HAVING JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR SHALL USE SUPPORT SYSTEMS, SLOPING, BENCHING AND OTHER MEANS OF PROTECTION. THIS IS TO INCLUDE, BUT NOT LIMITED TO ACCESS AND EGRESS FROM ALL EXCAVATION AND TRENCHING. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH PERFORMANCE CRITERIA AS REQUIRED BY OSHA.
- CONTRACTOR TO AVOID DISRUPTION OF ANY ADJACENT TENANT'S TRAFFIC OPERATIONS DURING INSTALLATION OF UTILITIES.
- ALL DIMENSIONS ARE TO CENTERLINE OF PIPE OR CENTER OF MANHOLE UNLESS NOTED OTHERWISE.
- SEE ARCHITECTURAL AND MEP PLANS FOR EXACT UTILITY CONNECTION LOCATIONS AT BUILDING.
- LIGHT POLES SHOWN FOR COORDINATION PURPOSES ONLY AND DO NOT REPRESENT ACTUAL SIZE. SEE SITE LIGHTING PLANS BY OTHERS FOR MORE INFORMATION.
- SEE DETAILS FOR LOCATING STORM STRUCTURES WITHIN THE CURB LINE.
- STORMWATER FACILITIES MUST BE FUNCTIONAL BEFORE BUILDING CONSTRUCTION BEGINS.



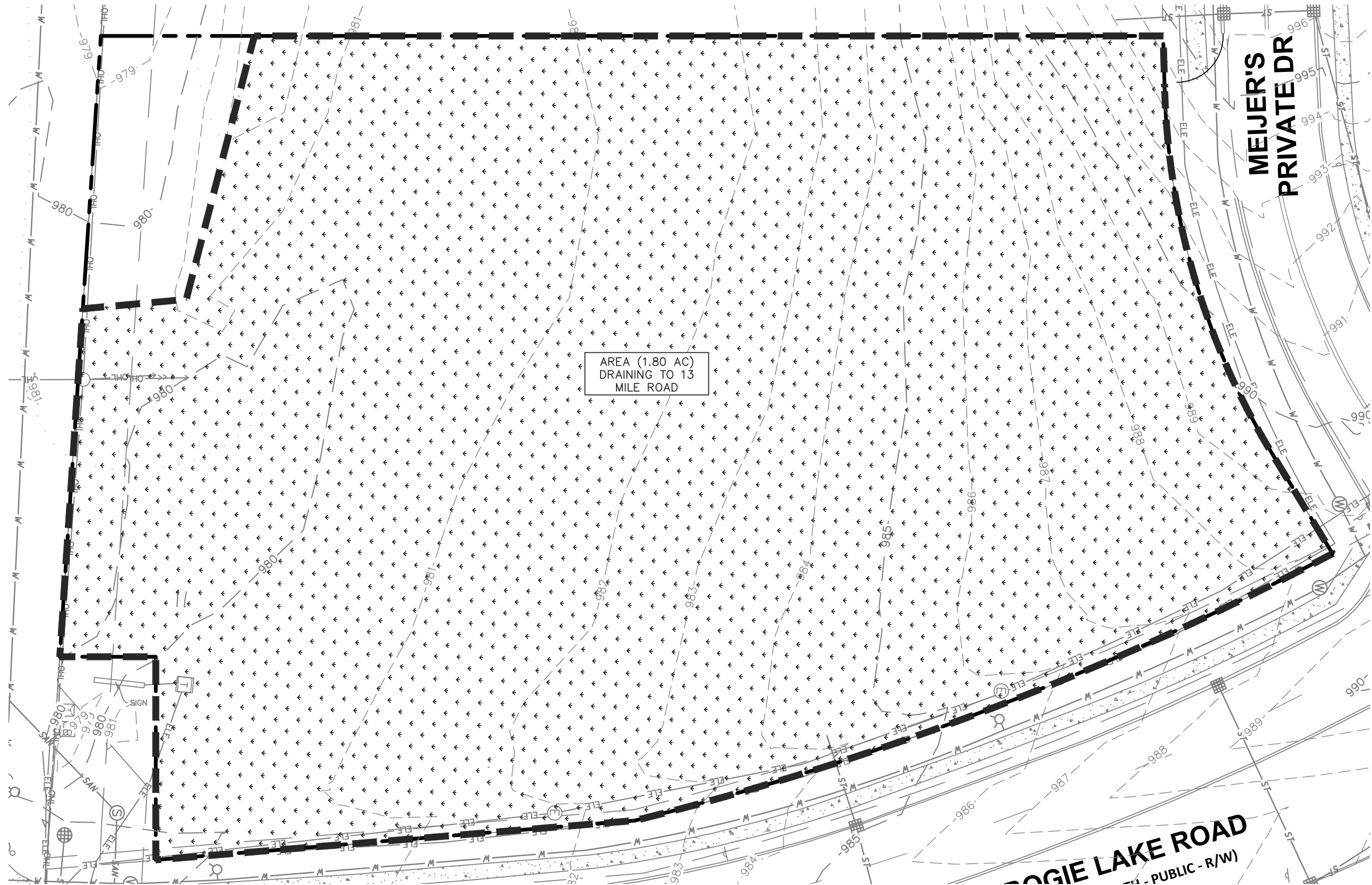
Item A.	
DATE	
REVISIONS	
No.	
Kimley»Horn © 2022 KIMLEY-HORN AND ASSOCIATES, INC. 3911 SIX MILE ROAD LIVONIA, MI 48152 WWW.KIMLEY-HORN.COM	
SCALE:	AS NOTED
DESIGNED BY:	SRS
DRAWN BY:	SRS
CHECKED BY:	DDL
NOT FOR CONSTRUCTION	
COSMOS CAR WASH	
UTILITY PLAN	
COSMOS CAR WASH HIGHLAND ROAD PID: 12-20-276-034 WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN	
ORIGINAL ISSUE: 8/30/2022	
KHA PROJECT NO. 190125008	
SHEET NUMBER C3.0	

Drawing name: K:\GLOB_DEV\190125008_CosmosCarWash\Drawings\PRELIMINARY ENGINEERING\DRAINAGE PLAN.dwg Layout1 Aug 30, 2022, 9:30am by: Sarah Strall
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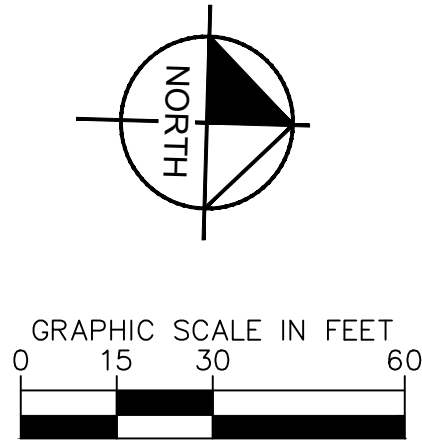
POST-DEVELOPMENT DRAINAGE AREA (TO 13 MILE ROAD)

POST-DEVELOPED DRAINAGE CHARACTERISTICS:
DRAINAGE AREA = 1.70 AC
EXISTING PERVIOUS AREA = 0.67 AC
EXISTING IMPERVIOUS AREA = 1.03 AC
TIME OF CONCENTRATION = 10 MINUTES



PRE-DEVELOPMENT DRAINAGE AREA (TO 13 MILE ROAD)

PRE-DEVELOPED DRAINAGE CHARACTERISTICS:
DRAINAGE AREA = 1.80 AC
EXISTING PERVIOUS AREA = 1.80 AC
EXISTING IMPERVIOUS AREA = 0.00 AC
TIME OF CONCENTRATION = 10 MINUTES



SITE LEGEND

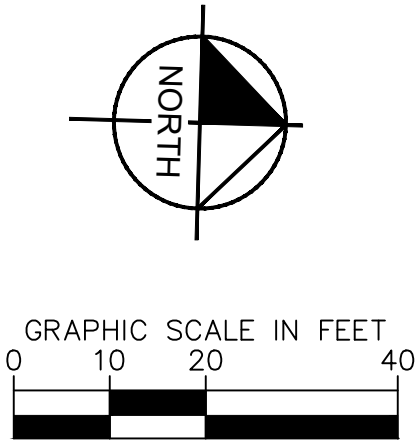
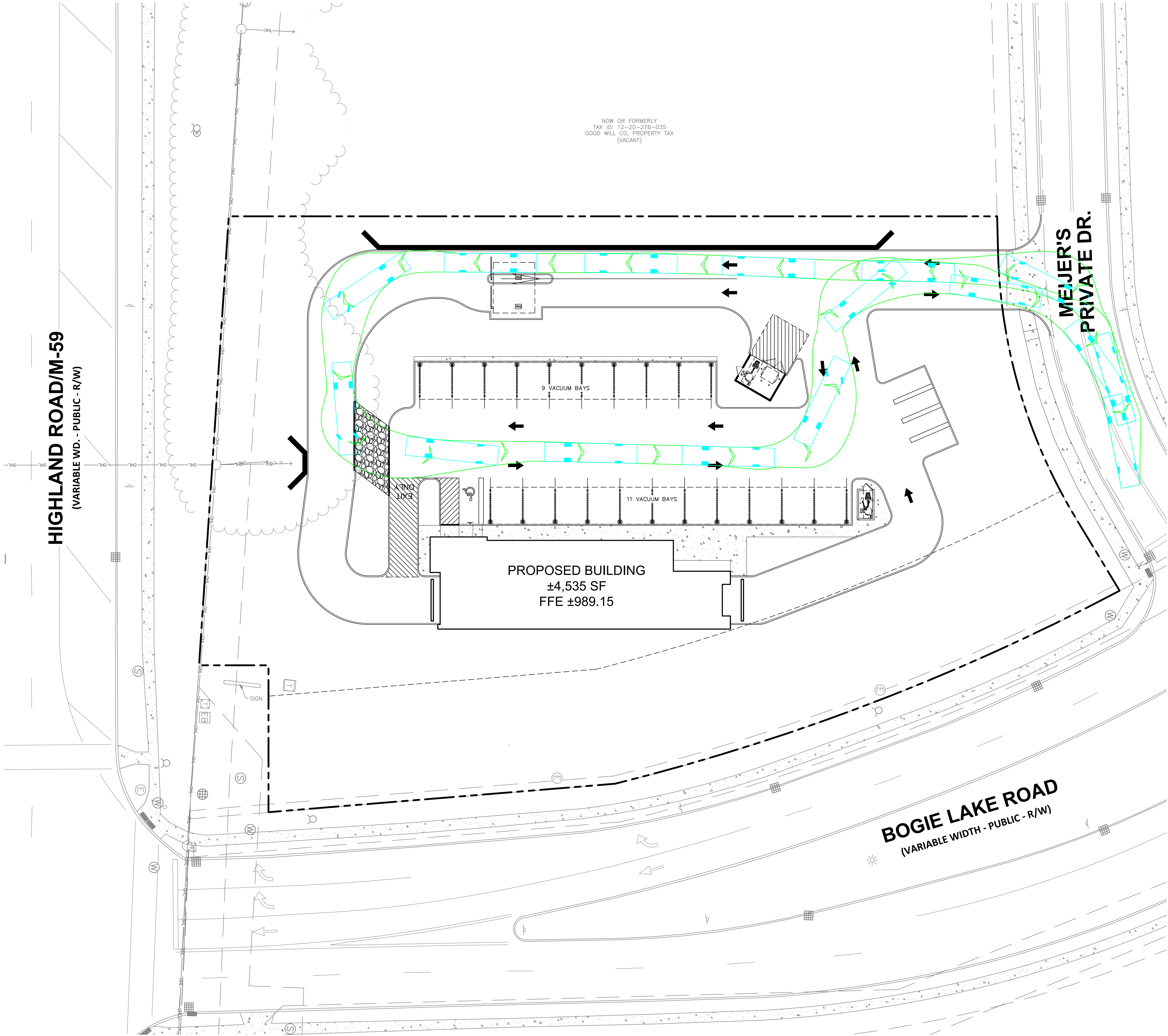
	DRAINAGE AREA
	IMPERVIOUS AREA
	PERVIOUS AREA
	EXISTING CONTOURS
	PROPOSED CONTOURS

STORMWATER NOTES

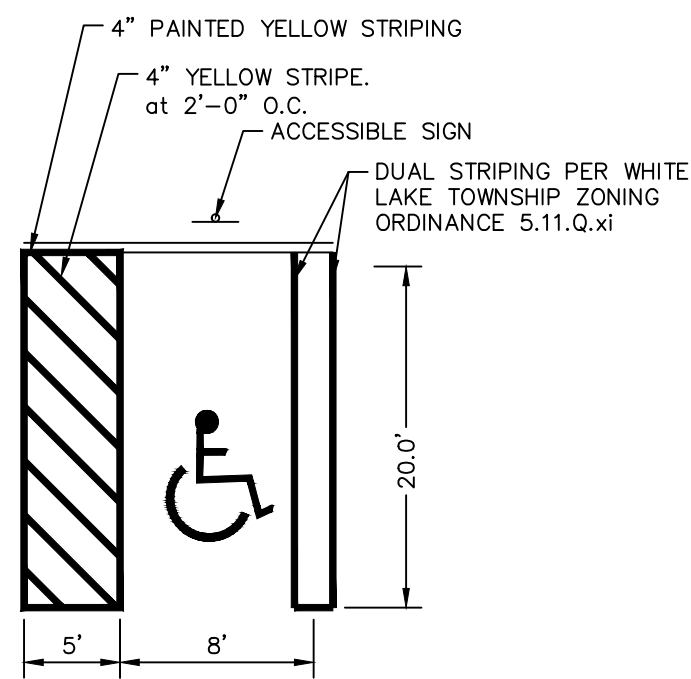
- ALL MATERIALS, CONSTRUCTION AND PLANS ARE TO COMPLY WITH CURRENT OAKLAND COUNTY STANDARD SPECIFICATIONS AND DETAILS.
- CONTACT MICHIGAN NOTIFICATION CENTER (MISS DIG) @ 811 OR (800) 482-7171, A MINIMUM OF 72 HOURS BEFORE DIGGING.

COSMOS CAR WASH HIGHLAND ROAD PID: 12/20/276-034 WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN		DRAINAGE PLAN		COSMOS CAR WASH HIGHLAND ROAD PID: 12/20/276-034 WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN		NOT FOR CONSTRUCTION		Kimley»Horn © 2022 KIMLEY-HORN AND ASSOCIATES, INC. 3911 SIX MILE ROAD LIVONIA, MI 48152 TEL: 734-466-6697 WWW.KIMLEY-HORN.COM		REVISIONS No. DATE		Item A.	
ORIGINAL ISSUE: 8/30/2022		KHA PROJECT NO. 190125008		SHEET NUMBER C4.0									

Drawing name: K:\CIB_DEV\190125008_CosmosCarWash_WhiteLake_MI\2_Design\CAD\PlanSheets\PRELIMINARY ENGINEERING SITE PLAN.dwg Layout: (2) Aug 30, 2022 9:30am by: Sarah Strall
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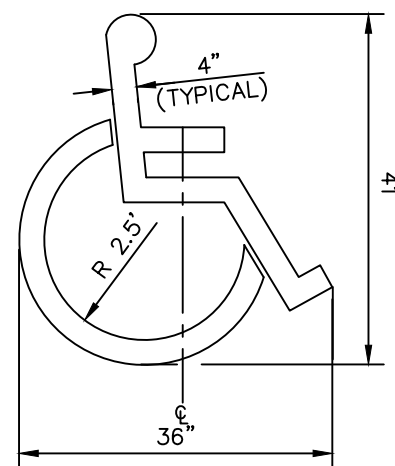
C5.0		SHEET NUMBER		KHA PROJECT NO. 190125008		ORIGINAL ISSUE: 8/30/2022		COSMOS CAR WASH HIGHLAND ROAD PID: 12-20-276-034 WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN		FIRE TRUCK EXHIBIT				NOT FOR CONSTRUCTION		SCALE: AS NOTED DESIGNED BY: SRS DRAWN BY: SRS CHECKED BY: DDL		© 2022 KIMLEY-HORN AND ASSOCIATES, INC. 3911 SIX MILE ROAD LIVONIA, MI 48152 WWW.KIMLEY-HORN.COM		Kimley»Horn		No. _____		REVISIONS		DATE		Item A.	
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NOTE: REFER TO PLAN FOR
DETAILED LAYOUT AND DIMENSIONS

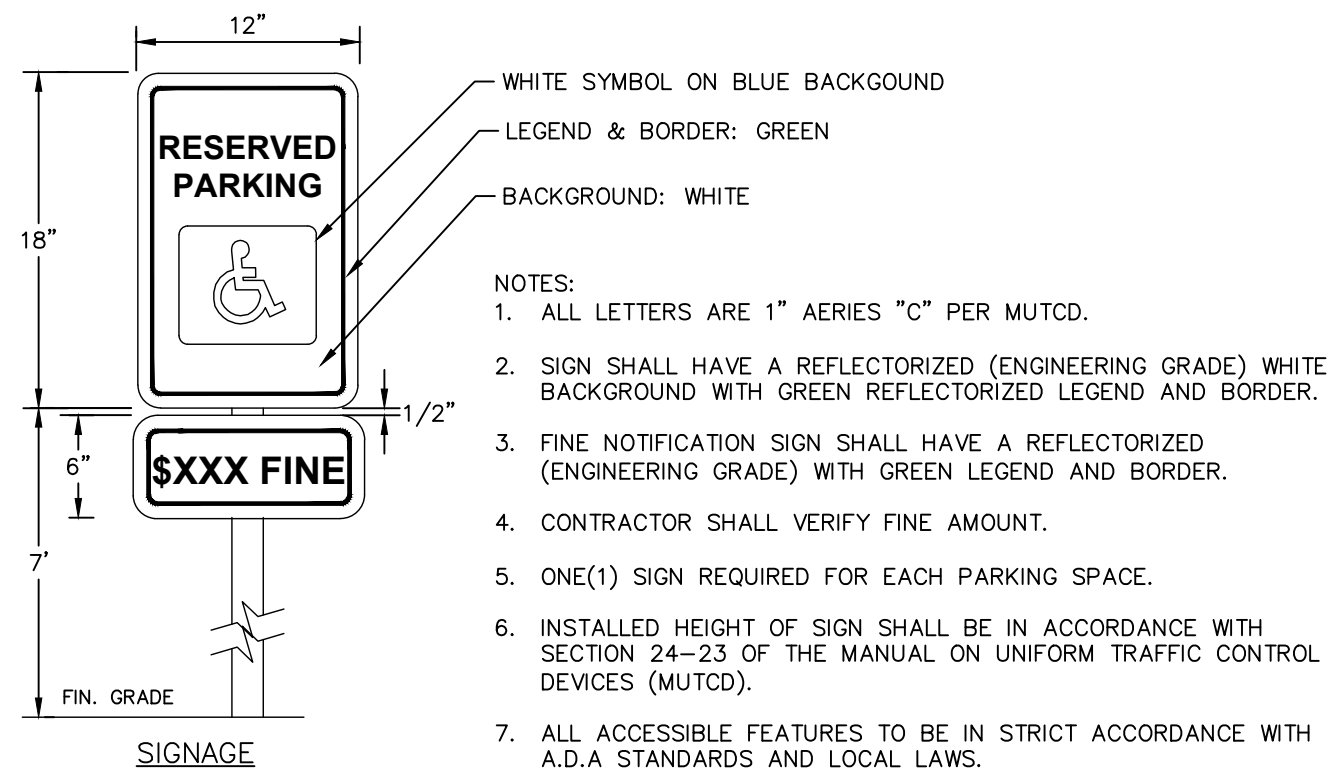
TYPICAL HANDICAP STRIPING

N.T.S



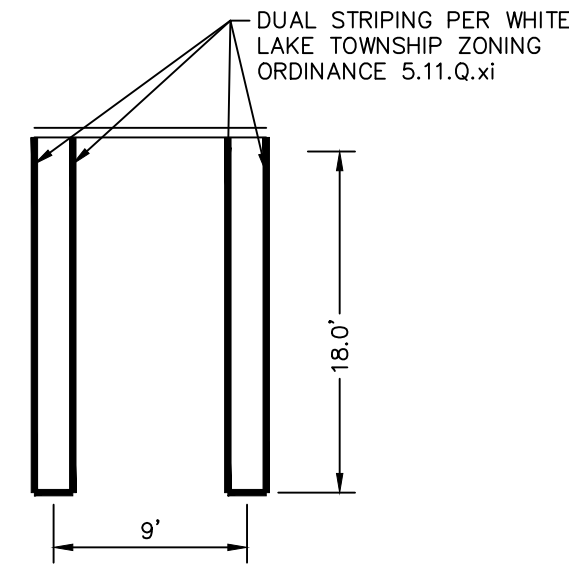
ACCESSIBLE PARKING SYMBOL

NTS



ACCESSIBLE PARKING SIGNAGE

N.T.S



NOTE: REFER TO PLAN FOR
DETAILED LAYOUT AND DIMENSIONS

STANDARD PARKING STALL STRIPING

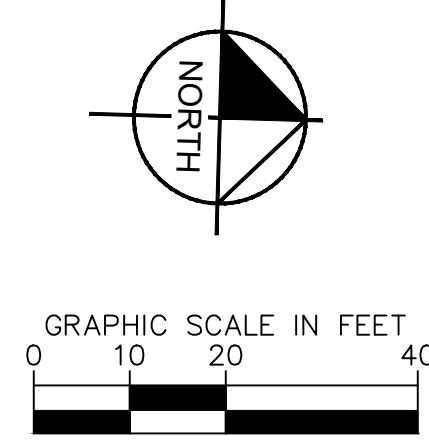
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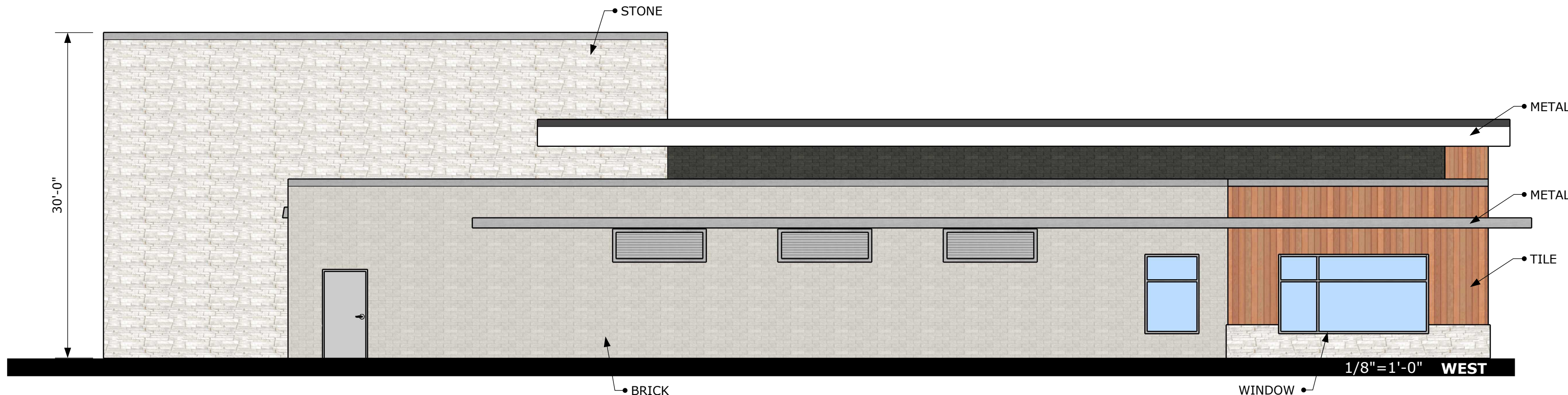
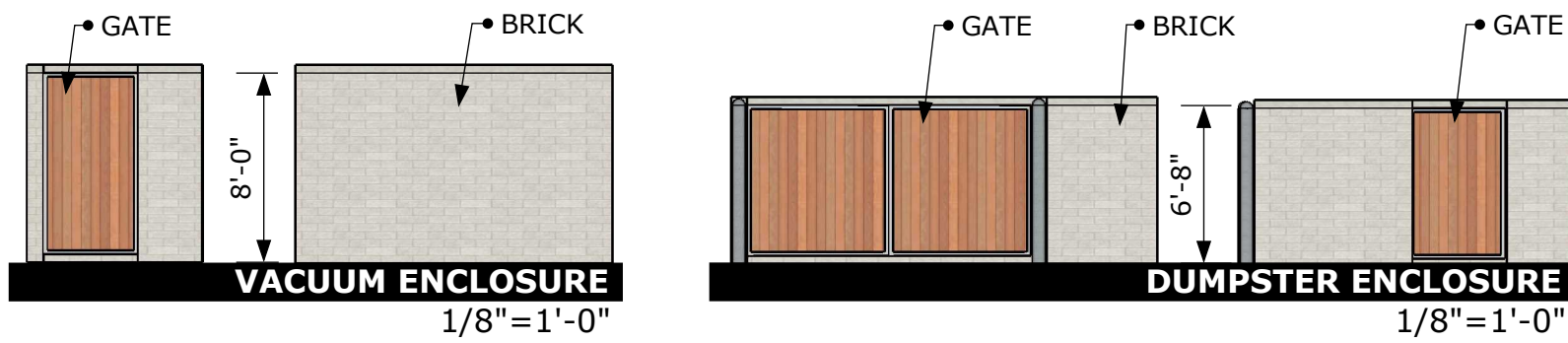
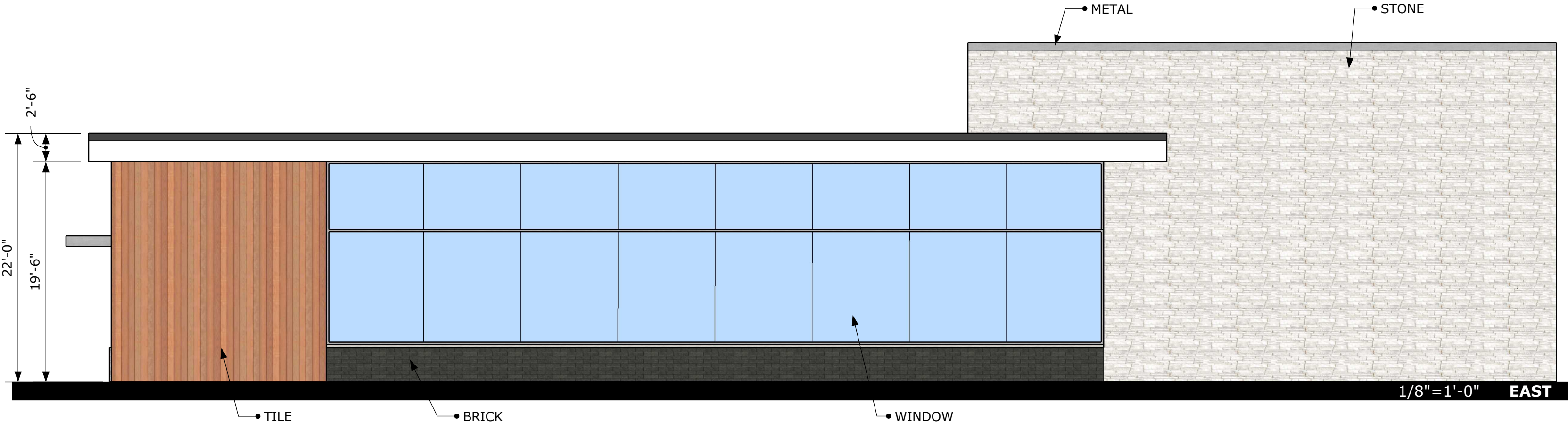
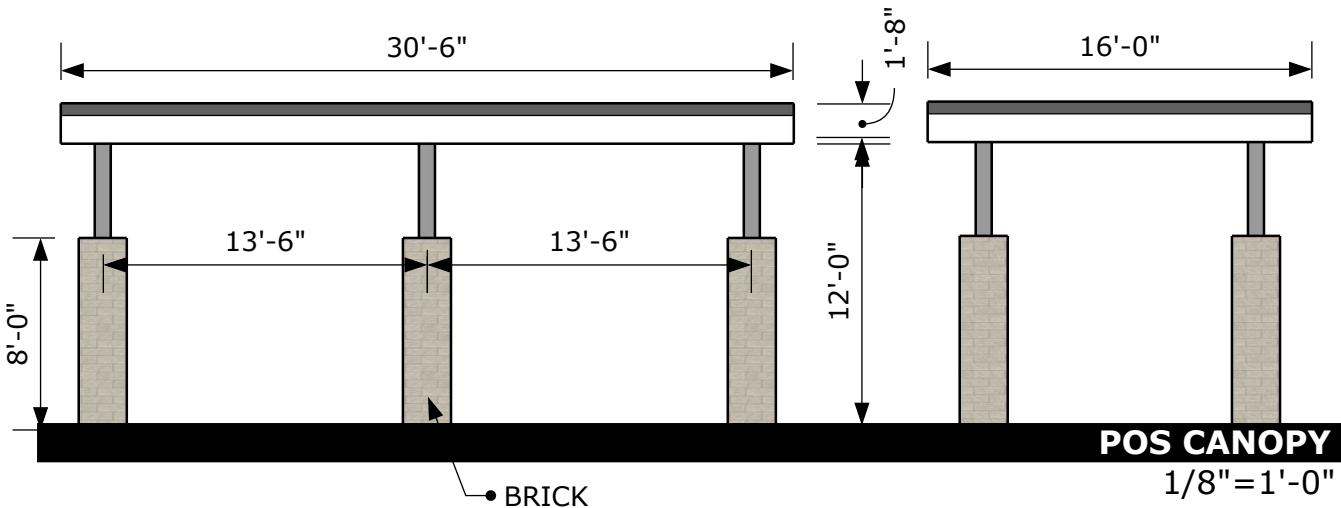
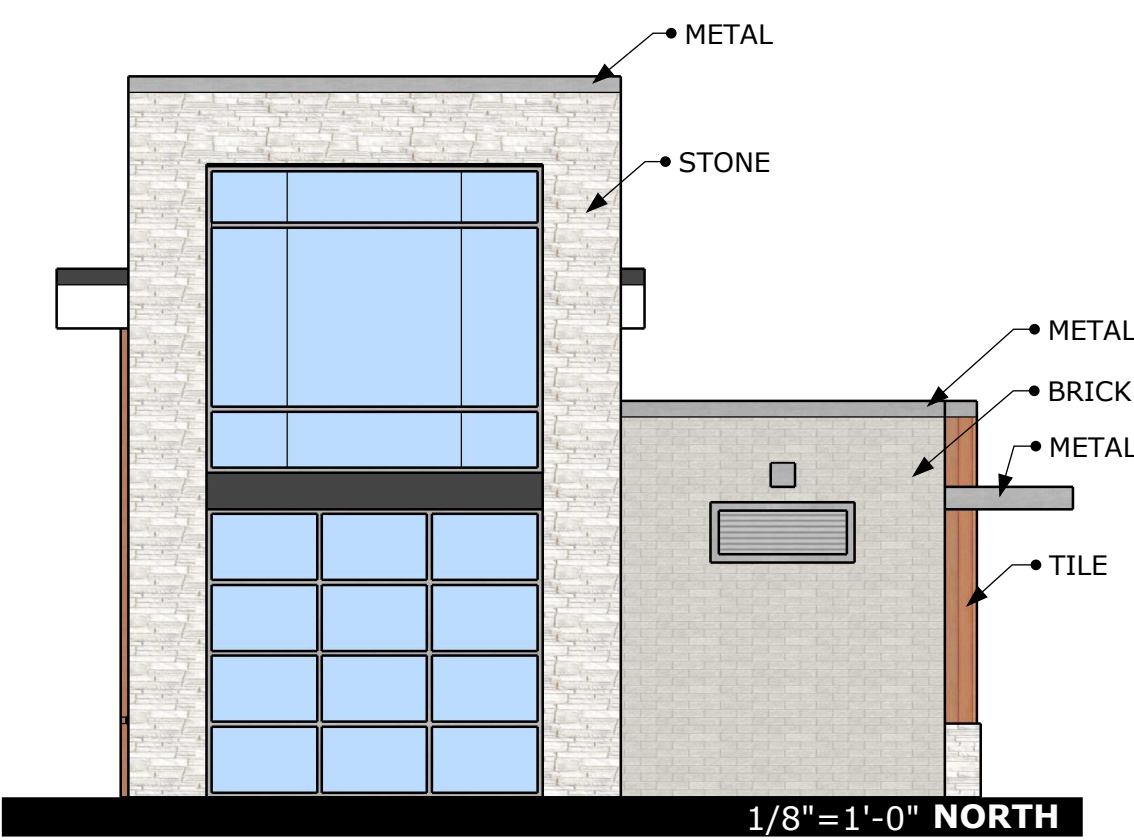
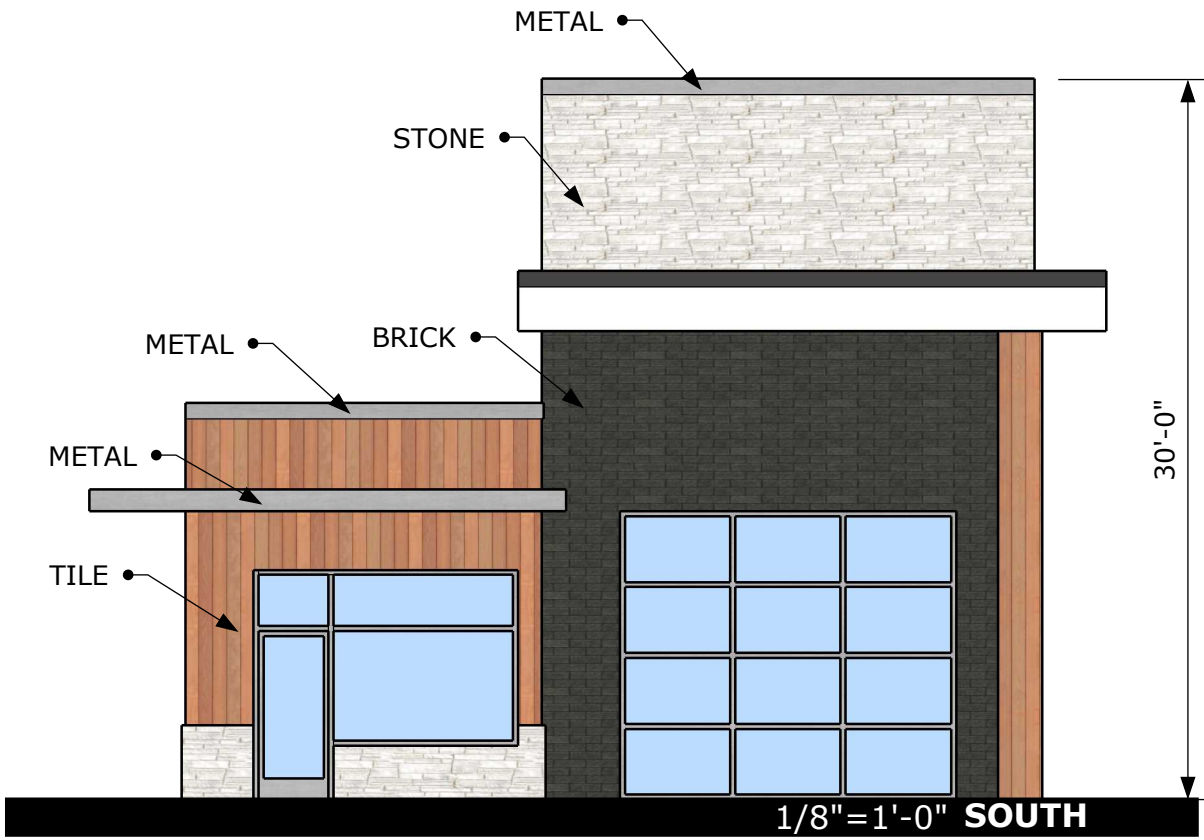
COSMOS CAR WASH HIGHLAND ROAD P.O. BOX 276-034 WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN ORIGINAL ISSUE: 8/30/2022 KHA PROJECT NO. 190125008 SHEET NUMBER	CONSTRUCTION DETAILS		NOT FOR CONSTRUCTION	SCALE: AS NOTED	Kimley»»Horn © 2022 KIMLEY-HORN AND ASSOCIATES, INC. 39111 SIX MILE ROAD LIVONIA, MI 48152 PH: 734.938.6697 WWW.KIMLEY-HORN.COM	No.	Item A.
				DESIGNED BY: SRS		REVISIONS	DATE
				DRAWN BY: SRS			
				CHECKED BY: DDL			
C6.0			39				

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kinley-Horn and Associates, Inc. shall be without liability to Kinley-Horn and Associates, Inc.

(VARIABLE WD. - PUBLIC - R/W)

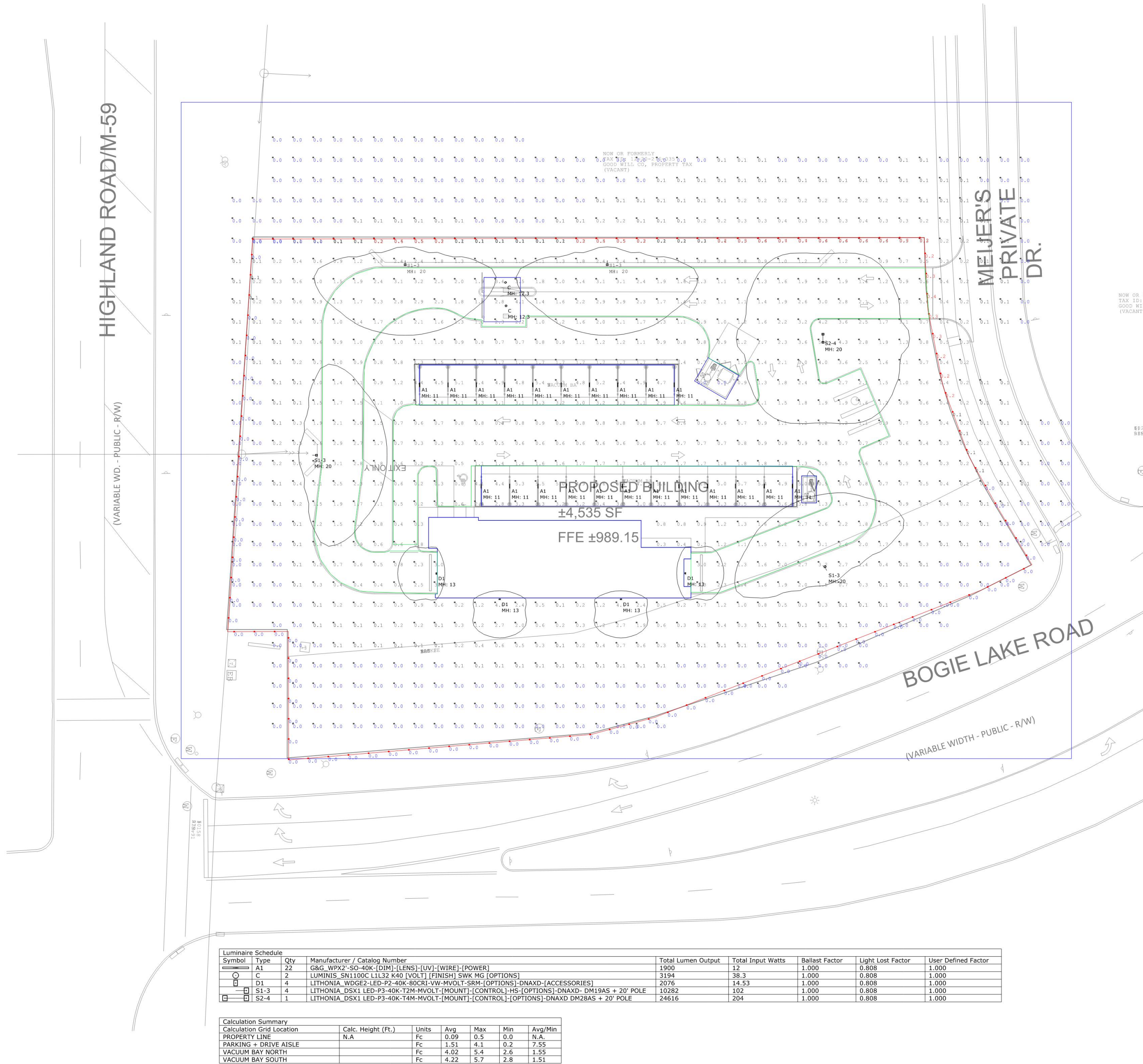
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North			EAST		
PRIMARY MATERIALS	Square Feet	Percent of total	PRIMARY MATERIALS	Square Feet	Percent of Total
Brick	199	23%	Brick	212	7%
Stone	237	27%	Stone	1247	39%
Tile	22	3%	Tile	371	12%
Glass	347	39%	Glass	1110	34%
Doors	0	0%	Doors	0	0%
Louvers	15	2%	Louvers	0	0%
Metal (Canopies and Coping)	60	7%	Metal (Canopies and Coping)	280	9%
Total	880	100%	Total	3220	100%
South			West		
PRIMARY MATERIALS			PRIMARY MATERIALS		
Brick	201	23%	Brick	1077	36%
Stone	180	20%	Stone	981	33%
Tile	140	16%	Tile	272	9%
Glass	256	29%	Glass	138	5%
Doors	0	0%	Doors	34	1%
Louvers	0	0%	Louvers	80	3%
Metal (Canopies and Coping)	103	12%	Metal (Canopies and Coping)	422	14%
Total	880	100%	Total	3004	100%





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A NEW CAR WASH FOR:



6001 HIGHLAND RD.
WHITE LAKE, MI. 48383

PHOTOMETRIC

PHOTOMETRIC



WHITE LAKE TOWNSHIP NOTICE OF PUBLIC HEARING

Item A.

Notice is hereby given the Planning Commission of the Charter Township of White Lake will hold a public hearing on **Thursday, October 6, 2022 at 7:00 P.M.** at the White Lake Township Annex, 7527 Highland Road, White Lake, Michigan, 48383 to consider an additional building to be constructed within the **Planned Business District**.

Property described as parcel number 12-20-276-034, located at the northwest corner of Highland Road (M-59) and Bogie Lake Road, consisting of approximately 1.88 acres, currently zoned (PB) Planned Business.

The purpose of this public hearing is to receive public comment on the proposed preliminary site plan for the above Planned Business zoned property, consisting of a 4,535 square foot automobile wash establishment.

Persons interested are requested to be present. Pertinent information relative to this request is on file at the Community Development Department and may be examined at any time during regular business hours of 8 a.m. to 5 p.m. Persons interested may visit the Community Development Department, contact the Community Development Department by telephone at 248-698-3300, ext. 5, or attend the Public Hearing on the date specified. Written comments are also welcome at 7525 Highland Road, White Lake, Michigan, 48383. Individuals with disabilities requiring auxiliary aids or services should contact the Clerk's Office as least 5 days before the hearing.

Sean O'Neil, AICP
Community Development Director
SCN 9/21/22

Director's Report

Project Name: Black Rock

Description: Preliminary site plan & special land use approvals

Date on Agenda this packet pertains to: October 6th, 2022

☒ Public Hearing

☒ Special Land Use

☒ Initial Submittal

☐ Rezoning

☐ Revised Plans

☐ Other:

☒ Preliminary Approval

☐ Final Approval

Contact	Consultants & Departments	Approval	Denial	Approved w/Conditions	Other	Comments
Sean O'Neil	Planning Director	☐	☐	☒	☐	Subject to all staff and consultant review comments being addressed.
DLZ	Engineering Consultant	☒	☐	☐	☐	See letter dated 09/06/2022.
Justin Quagliata	Staff Planner	☐	☐	☒	☐	See letter dated 09/06/2022.
Jason Hanifen	WLT Fire Marshal	☐	☐	☒	☐	See letter dated 09/06/2022.



INNOVATIVE IDEAS
EXCEPTIONAL DESIGN
UNMATCHED CLIENT SERVICE

September 6, 2022

Sean O' Neil
Community Development Department
Charter Township of White Lake
7525 Highland Road
White Lake, Michigan 48383

RE: Black Rock – Preliminary Site Plan Review – 2nd Review

Ref: DLZ No. 2245-7382-02

Design Professional: Desine Inc.

Dear Mr. O' Neil,

Our office has performed the above-mentioned revised Preliminary Site Plan review for the plan dated August 18, 2022. The plans were reviewed for feasibility based on general conformance with the Township Engineering Design Standards.

General Site Information

This site is located on the south side of Highland Road between Fisk and Teggerdine Lake Roads. The property is on the southeast corner of Highland Road and White Banks Boulevard. Total site acreage is approximately 2.78 acres.

Site Improvement Information:

- Construction of a (1) one story restaurant totaling 6,887 square feet.
- Associated paved and curbed parking including ADA accessible parking spaces and maneuvering aisles.
- Site to be serviced by watermain and sanitary sewer.
- Storm water runoff is proposed to be detained in two (2) underground detention units located under the parking lot on the eastern half of the parcel. Discharge is proposed to the existing MDOT storm system along Highland Road.



INNOVATIVE IDEAS
EXCEPTIONAL DESIGN
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WLT-Black Rock- PSP Review.02

September 6, 2022

Page 2 of 5

We offer the following comments:

Note that comments from our May 12, 2022 review are in *italics*. Responses to those comments are in **bold**. New comments are in standard font.

The following items should be noted with respect to Planning Commission review:

- a. *The majority of the overhead electrical is proposed to be removed. There is one portion of overhead electrical that runs along the property line between 12-23-129-017 and 12-23-129-007 and is not noted to be removed on the demolition page; however, it is not shown as existing on the proposed pages. Clarify if this portion of the overhead electrical is to be removed as well. DTE approval will be required for the removal and relocation of the overhead electrical.* **Comment addressed. Power line removal and relocation has been clarified.**
- b. *The design for the storm system proposes discharge into the MDOT storm sewer along Highland Road. MDOT approval will be required. If MDOT requires additional storage volume on site, there is room to accommodate additional underground storage volume within the parking lot without impacting the site layout.* **Comment remains as a notation.**
- c. *White Lake Township records show two nearby sites are possibly contaminated at 9640 Highland and 9601 Highland. The applicant should provide supporting documentation that the potential contaminants are not in the influence of the proposed storm sewer system, particularly the underground detention system.* **Comment addressed. Phase 1 and Phase 2 environmental reports have been provided and indicate the Black Rock site has not been contaminated by adjacent site usages.**
- d. *Please show the existing sanitary sewer force main and watermain along White Banks Blvd and ensure no conflicts with proposed landscaping.* **Comment addressed. Sanitary sewer force main and watermain are now shown.**
- e. *The 1-Foot Freeboard extends onto property 12-23-129-006. Drainage and detention must be contained to the site.* **Comment partially addressed. The berm proposed along the east side of the site will need to be extended southward until a point where the existing site grade exceeds the underground detention unit 1' freeboard elevation of 968.70. This item can be addressed at the time of Final Site Plan/ Final Engineering Plan submittal.**

The following comments can be addressed on the Final Site Plan/Final Engineering Plan and are provided at this time as a courtesy to the design engineer:

Final Site Plan/Final Engineering Plan Comments-



INNOVATIVE IDEAS
EXCEPTIONAL DESIGN
UNMATCHED CLIENT SERVICE

WLT-Black Rock- PSP Review.02

September 6, 2022

Page 3 of 5

General

1. *Plan shall contain notes per White Lake Township Engineering Design Standards Section A. 8. a.-d.*
Comment addressed.
2. *Provide parcel IDs on cover page.* **Comment addressed.**
3. *Include information regarding the sizes of the existing watermain, sanitary sewer, and storm sewer.*
Comment addressed.

Paving/Grading

1. *Additional grades will be required to confirm ramp slopes meet ADA requirements.* **Comment addressed. Grading details will be reviewed at time of FSP/FEP submittal.**
2. *The ground appears to be sloped back towards the building at the southwest corner of the building.*
Comment addressed. Grades have been adjusted for positive flow away from the building.

Watermain

1. *We defer to the Fire Department regarding items related to fire suppression and hydrant coverage.*
Comment addressed. Per design engineer response letter dated 08/18/2022, Fire Department review comments have been addressed.
2. *Fire suppression line connection shall be accomplished utilizing a tapping sleeve, valve, and well.*
Comment remains. Add a note regarding the TSV&W to the utility plan.
3. *The existing well on site is not noted to be removed; however, a connection to the municipal water is proposed. Indicate well removal on the plans.* **Comment addressed.**

Sanitary Sewer

1. *Total length of the sanitary sewer service lead including the existing portion to be connected to exceeds the maximum length of 150'.* **Comment addressed.**
2. *Cleanouts shall be located at a minimum interval of every 75'.* **Comment addressed.**
3. *A 4' diameter sampling manhole is required on the sewer service.* **Comment partially addressed; MH-1 (Observation Manhole) has been provided. Please clarify this as a 4' diameter manhole.**

Stormwater Management

1. *Minimum 24" inlet structure depth shall be 3.5' from top of frame and cover to invert. The three inlets (CB-123, CB-141, and CB-101) are less than 3.5' deep.* **Comment remains. Design engineer indicates**

in 08/18/2022 response letter that the storm system has been revised to address the cover issue. This item will be further reviewed at the time of FEP submittal.

2. *The design engineer will need to demonstrate that the proposed storm sewer material (HDPE-S) will maintain its integrity when located under proposed pavement, otherwise use CLIV Reinforced Concrete pipe within pavement influence. Comment remains. Design engineer states that documentation relative to the proposed HDPE-S pipe material will be provided at the time of FEP submittal.*
3. *The storm pipe from FES-210 to MH-200 is not identified with length, size, material, and slope on sheet UT. Comment rescinded. Proposed pipe FES-210 to MH-200 is no longer proposed.*
4. *Indicate length of roof drains. Comment addressed.*

Landscape Plan

1. *Landscaping shall be revised such that proposed trees are located a minimum of 10' horizontal separation from all watermain, sanitary sewer, and storm sewer. Comment addressed.*

Permits and Approvals

1. An easement will be required for the portion of M-59 frontage sidewalk proposed outside of the M-59 ROW.
2. An access easement will be required for the proposed future frontage road stub and drive to the east property line.
3. Soil Erosion Permit is required through Oakland County Water Resource Commissioners Office.
4. Sanitary Sewer tap permit is required through Oakland County Water Resource Commissioners Office.
5. MDOT permit is required for all work within the MDOT Right-of-Way.
6. Permit will be required from Road Commission for Oakland County for all work within the White Banks Boulevard Right-of-Way.

Recommendation

We now recommend approval of the Preliminary Site.



INNOVATIVE IDEAS
EXCEPTIONAL DESIGN
UNMATCHED CLIENT SERVICE

WLT-Black Rock- PSP Review.02

September 6, 2022

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Please feel free to contact our office should you have any questions.

Sincerely,

DLZ Michigan

Michael Leuffgen, P.E.
Department Manager

Victoria Loemker, P.E.
Senior Engineer

Cc: Justin Quagliata, Community Development, *via email*
Hannah Micallef, Community Development, *via email*
Aaron Potter, DPS Director, White Lake Township, *via email*
John Holland, Fire Chief, White Lake Township, *via email*
Jason Hanifen, Fire Marshal, White Lake Township, *via email*

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WHITE LAKE TOWNSHIP PLANNING COMMISSION

REPORT OF THE COMMUNITY DEVELOPMENT DEPARTMENT

TO: Planning Commission

FROM: Sean O'Neil, AICP, Community Development Director
Justin Quagliata, Staff Planner

DATE: September 6, 2022

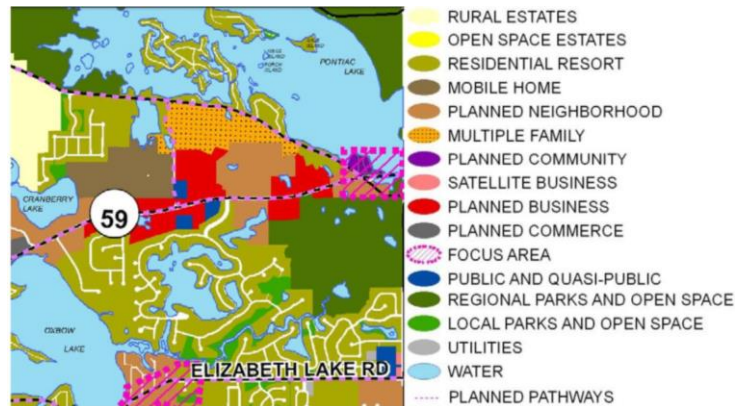
RE: Black Rock
Preliminary Site Plan and Special Land Use – Review #2

Black Rock White Lake, LLC has requested preliminary site plan approval to construct a ~~7,893~~ **6,887** square foot restaurant with alcohol service **(the Developer has reduced the proposed building footprint to accommodate interior changes)** at 9531 Highland Road (Parcel Number 12-23-129-018), located at the southeast corner of Highland Road and Whitebanks Boulevard **(the parcel number and address shall be provided on the plans).** **(Comment outstanding).** Special land use approval is also requested to allow outdoor dining at the restaurant.

Master Plan

The Future Land Use Map from the Master Plan designates the subject site in the Planned Business category. All development in Planned Business is required to adhere to strict access management principles in order to minimize traffic conflict and maximize safety throughout the M-59 corridor. Connections to and segments of the Township community-wide pathway system are required as an integral part of all Planned Business development.

FUTURE LAND USE MAP



Zoning

The subject site is located in the GB (General Business) zoning district, which requires a minimum of 200 feet of lot width and one acre of lot area. The subject site contains 337.6 feet of frontage along Highland Road, 289.11 feet of frontage on Whitebanks Boulevard, and 2.78 acres of lot area. At its meeting on May 17, 2022 the Township Board approved the final adoption for the rezoning of the former easterly parcel (9501 Highland Road) from Local Business (LB) to GB. Restaurants with alcohol service are a permitted principal use in the GB zoning district.

Physical Features

A vacant single-family house which would be demolished is located on the former easterly parcel (9501 Highland Road). The topography of the site is generally level, with elevations ranging from 971 feet above mean sea level near the west side of the site and declining to 967 feet above mean sea level near the east side of the site. The Michigan Department of Environment, Great Lakes, and Energy (EGLE) Wetland Map and the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map indicate neither wetlands nor floodplain are present on the site.

Access

The site fronts on Highland Road (state trunkline) and Whitebanks Boulevard. Along the property Highland Road is a five-lane road (two lanes each direction and a center turn lane). Whitebanks Boulevard is a divided two-lane public road with curb and gutter designated a local street by the National Functional Classification System (NFCS) utilized by the Road Commission for Oakland County (RCOC). As a preface to the comments on the following page regarding access management, the Planning Commission should note the zoning ordinance states direct access drives should generally be minimized in number and maximized in separation. Reasonable access is not necessarily the same as direct access. The number of driveways permitted for a site shall be the minimum number necessary to provide safe and efficient access for regular traffic and emergency vehicles.

The site would be accessed from driveways on Highland Road and Whitebanks Boulevard. Driveways must have a minimum of 455 feet of spacing provided from other driveways along the same side of the street, measured centerline to centerline. The centerline of the proposed Highland Road driveway would not be located 455 feet from the existing driveway to the east (property formerly occupied by Brendel's Septic). The zoning ordinance allows the Planning Commission to consider a waiver of the spacing requirement only after the Applicant has demonstrated both alternative access and access restriction have been seriously considered and incorporated in the site plan where feasible. **As the required spacing is not provided, a variance from the Zoning Board of Appeals is required.** (Comment outstanding; however, the Developer intends to seek a variance from the Zoning Board of Appeals).

The proposed Highland Road driveway must be aligned with the existing driveway on the opposite side of the street or offset 455 feet, measured centerline to centerline; said driveway is offset approximately 60 feet from the existing Famous Market driveway (to the west) and approximately 340 feet from the existing Salvation Army driveway (to the east). **As the required offset is not provided, a variance is required from the Zoning Board of Appeals.** (Comment outstanding; however, the Developer intends to seek a variance from the Zoning Board of Appeals). According to the submitted traffic impact assessment (TIA), the proposed Highland Road driveway does not meet the Michigan Department of Transportation (MDOT) offset criteria. However, the TIA states the proposed Highland Road driveway location creates a positive driveway offset for ingress left-turn traffic along Highland Road which provides the safest operations and minimizes conflict points.

The minimum distance between a proposed driveway and the nearest intersection shall not be less than the minimum required driveway-to-driveway spacing. Also, a proposed driveway on the approach to an intersection shall not be opposite a dedicated left-turn lane for the intersection, or within 100 feet upstream of that lane. This provision may be waived by the Planning Commission if supported by a traffic impact study. The nearest street intersection (Highland Road and Village Drive – to the west) is approximately 230 feet from the proposed Highland Road driveway. Additionally, the proposed Highland Road driveway is located approximately 340 feet from the intersection with Whitebanks Boulevard. **As the driveway is not located 455 feet from adjacent intersections, a variance from the Zoning Board of Appeals is required.** (Comment outstanding; however, the Developer intends to seek a variance from the Zoning Board of Appeals). According to the submitted traffic impact assessment (TIA), the proposed Highland Road driveway does not meet the MDOT spacing criteria from adjacent intersections. However, the proposed Highland Road driveway would be located as far east along the property frontage as possible; the TIA states this spacing provides the greatest distance from the intersections of Highland Road with Whitebanks Boulevard and Village Drive, both of which pose the greatest potential for conflict points between vehicles.

The zoning ordinance requires site plans incorporate, where feasible and appropriate, cross-access with neighboring sites via connected parking aisles or frontage roads, shared side service drives and/or site access drives, and rear service drives connecting to side roads. Any such cross-access should be supported by general-purpose (unrestricted) easements, as well as agreements regarding maintenance responsibilities. **The required frontage road shall be extended to the east property line. Furthermore, the site plan measures the frontage road width to the back of curb; the road surface measurement is taken between the edges of the gutter pan. Twenty-four feet of drive width shall be provided between the edges of the gutter pan.** (Comment addressed. The frontage road has been extended to the east property line and width of the proposed frontage road has been revised to provide 24 feet of pavement).

The zoning ordinance requires a minimum five-foot-wide sidewalk placed one-foot from the inside edge of the right-of-way along the Whitebanks Boulevard property frontage, and a minimum eight-foot-wide sidewalk along the Highland Road property frontage. The submitted site plan shows the required sidewalks (concrete). **A portion of the Highland Road sidewalk (east 85 feet) are proposed outside of the right-of-way; the sidewalk must be relocated inside the road right-of-way or an easement be provided. Right-of-way/easement widths for public walkways when not adjacent to or a part of street rights-of-way must be at least 15 feet and dedicated to the use of the public. Furthermore, the frontage sidewalks shall be constructed through the driveways (concrete sections through the approaches). Direct pedestrian access from the frontage sidewalks to the building should also be provided.** (Comment addressed. An easement dedicated to use of the public will be provided. The site plan also shows concrete walk through the approaches).

A TIA is required if the proposed use(s) would generate between 500 and 749 driveway trips per day, or between 50 and 99 peak-hour, peak-direction driveway trips. An average day is the average 24-hour total of all vehicle trips counted to and from a study site from Monday through Friday. A peak hour of traffic is the hour of highest volume of traffic entering and exiting the site during the morning and afternoon hours. A TIA prepared by Fleis & VandenBrink dated April 25, 2022 was submitted examining traffic generation, access management, safety, and sight distance for the proposed development. Based on the proposed restaurant use, the TIA evaluated weekday afternoon (4:45-5:45 p.m.) and Saturday (12:00-1:00 p.m.) peak hours in its analysis. The Institute of Transportation Engineers (ITE) trip generation rates for Fine Dining Restaurant (Land Use Code 931) were selected to represent the development. The following table summarizes traffic generation estimates for the proposed project:

Land Use	ITE Code	Amount	Units	Average Weekday Daily Traffic	PM Peak Hour (vph)			Average Weekend Daily Traffic	SAT Peak Hour (vph)		
					In	Out	Total		In	Out	Total
Fine Dining Restaurant	931	7,765	SF	651	41	20	61	699	49	34	83

According to the TIA, with the addition of the site-generated traffic resulting from the development the proposed Highland Road driveway meets the MDOT criteria warranting a right-turn deceleration taper. While the TIA recommends the installation of an eastbound right-turn deceleration taper at the proposed Highland Road driveway, the suggested improvement is not shown on the site plan.

Utilities

The project would be served by both the municipal water and sanitary sewer systems. The Township Engineering Consultant will perform an analysis of stormwater, location and capacity of utilities, and grading to ensure compliance with all applicable ordinances as well as the Township Engineering Design Standards.

Staff Analysis – Preliminary Site Plan

Building Architecture and Design

Generally, exterior building materials should be comprised primarily of high quality, durable, low maintenance material, such as masonry, stone, brick, glass, or equivalent materials. Buildings should be completed on all sides with acceptable materials. Overall, the single-story building is approximately 29 feet in height as measured to the peak of the parapet **(building height shall be dimensioned on the elevations at final site plan).** **(Comment addressed. Building height has been noted on all elevations of all top of walls).** The proposed building materials for the project are a mix of dark gray cultured stone (veneer) and light gray EFIS (exterior insulation finishing system).

Wherever a side or rear facade is visible from a street, or if parking is located at the side or rear of a building, the facade shall be designed to create a pleasing appearance, using materials and architectural features similar to those present on the front of the building. **On the east elevation of the building, the 4’-6” section of cultured stone veneer shall be increased in height by six feet, to 10’-6”.** **The exterior elevations shall be revised accordingly at final site plan.** **(Comment addressed. East elevation cultured stone has been raised six feet to a height of 10’-6”).**

The zoning ordinance requires all buildings have windows at eye level. Windows should cover at least 30% of a front facade. **Calculations for window coverage on the front facades shall be provided on the elevations at final site plan.** **(Comment partially addressed. Window coverage area has been noted on the west and north elevations. Insufficient window coverage is proposed on the west elevation (24.5% of the facade). Therefore, a variance is required from the Zoning Board of Appeals).**

A sample board of building materials to be displayed at the Planning Commission meeting and elevations in color are required by the zoning ordinance and must be submitted at final site plan. **(Comment remains as a notation. This requirement was acknowledged by the Developer’s engineer in the response letter provided to the first review).**

The address (street number) location shall be shown on the building. Six-inch-tall numbers visible from the street shall be required. The address location is subject to approval of the Township Fire Marshal. (Comment partially addressed. A note has been added to the plan indicating the proposed location of the address. While the location of the address is subject to approval of the Fire Marshal, staff suggests locating the street number away from the roofline of the building in a more visible location. Additionally, the street number is proposed to be black, which would not be in contrast with the immediate background on which it is mounted (dark gray). Therefore, the street number shall be the color white).

An outdoor patio is located on the west side of the building. Four-foot-tall cultured stone (veneer) walls with glass panels (upper wall) and limestone capped columns surround the patio. **Details for the items to be located on the patio and details for the patio surfacing shall be provided at final site plan. An ornamental paving treatment should be required by the Planning Commission.** (Comment remains as a notation. The response letter provided to the first review indicates stamped concrete shall be provided on the patio (a stamp detail is required at final site plan), and furniture pictures shall be provided). The treatment should be something either decorative or something to provide aesthetic quality to the patio. Potential options for ornamental paving treatments include, but are not limited to, CMU pavers; brick; stone; or stamped, stained, and sealed concrete. Accessory items such as railings, benches, trash receptacles, outdoor seating (such as tables and chairs), or sidewalk planters located in the vicinity of sidewalks and/or outdoor seating areas are required to be of commercial quality and complement the building design and style. **These details shall be provided at final site plan.** (Comment remains as a notation).

Landscaping and Screening

Landscaping must comply with the provisions of the zoning ordinance and should be designed to preserve existing significant natural features and to buffer service areas, parking lots, and dumpsters. A mix of evergreen and deciduous plants and trees are preferred, along with seasonal accent plantings. A landscape plan is not required as part of the preliminary site plan, but was provided for consideration and will be reviewed in detail during final site plan review if the preliminary site plan is approved.

Following are initial comments on the landscape plan:

- Interior Landscaping Requirements: For every new development requiring site plan review, except site condominiums as regulated in Article 6, Section 1, interior landscaping areas shall be provided, equal to at least 15 percent of the total lot area. These landscaped areas shall be grouped near all building entrances, building foundations, pedestrian walkways, and service areas, and may also be placed adjacent to fences, walls, or rights-of-way. These planting areas shall be so located as to breakup an otherwise continuous abutment of building facade with sidewalks and/or parking areas. All interior landscaping shall provide one large deciduous, small ornamental deciduous, or evergreen tree and five shrubs for every 300 square feet of required interior landscaping area.

- **Parking Lot Landscaping:** Within every parking area containing 10 or more spaces, there shall be parking lot landscaping in accordance with this Subsection. These landscaping areas shall be located so as to better define parking spaces and drives. Landscaping on the perimeter of the parking lot does not satisfy the parking lot landscaping requirement. Island locations shall also be considered in a manner that will assist in controlling traffic movements. The requirements, for trees and islands, may be modified when it is found through careful coordination of parking lot landscaping with peripheral and building plantings an unnecessary duplication of plantings would be created. In addition, consideration shall be given to situations when an excess number of small islands would be created that would only serve to disrupt reasonable traffic patterns and maintenance activities. One hundred square feet of parking lot landscaping containing one large deciduous tree or small deciduous ornamental tree and three shrubs is required for every 100 square feet of required parking lot landscaping area.
- **Transformer and Mechanical Equipment Screening:** All ground mounted transformers, climate control, and similar equipment shall be screened from view from any street or adjacent property by a wall constructed of the same decorative exterior materials as the building and not less than the height of the equipment to be screened. As an alternative, the equipment may be screened by landscaping approved by the Planning Commission. All rooftop climate control equipment, transformer units, and similar equipment shall be screened. The materials used to screen the equipment shall be compatible in color and type with exterior finish materials of the building. All rooftop equipment shall conform to the maximum height regulations of this Ordinance. **The plans do not show proposed locations for mechanical units or provide the method of screening. The plans shall be revised accordingly to provide the location(s) and method of screening at final site plan.** (Comment partially addressed. The plan now shows a proposed transformer on the south side of the building screened with nine arborvitae. It seems rooftop mechanical units are proposed (units not shown on the ground); therefore, the method of screening shall be provided for consideration).
- Trees shall not be planted closer than four feet to a property line. **Add note to landscape plan at final site plan.** (Comment addressed. A note has been added to the plan).
- All required landscape areas in excess of 200 square feet shall be irrigated to assist in maintaining a healthy condition for all plantings and lawn areas. **An irrigation plan shall be provided at final site plan.** (Comment remains as a notation. This requirement was acknowledged by the Developer's landscape architect in the response letter provided to the first review).
- All required site irrigation systems shall include a rain sensor or similar measure to ensure irrigation does not occur during or shortly after precipitation events. All site plans shall note installation of required irrigation. **Add note to plan at final site plan.** (Comment addressed. A note has been added to the plan).

- The landscape plan denotes seed, and sod is required (particularly in the front yards). **Revise accordingly.** (Comment addressed. Sod has now been specified on the plan).
- The landscape plan denotes mulch. The zoning ordinance states the mulch product itself shall be at least doubled-shredded quality. **Revise accordingly.** (Comment addressed. A note has been added to the plan).
- Trees identified for protection during construction and the means of protection shall be identified on the landscape plan. No construction shall occur until tree protection has been installed and approved by the Community Development Director.
- A screen wall is provided to buffer the adjacent residentially zoned properties to the south from the parking lot **(a wall detail shall be provided at final site plan).** (Comment remains as a notation). The zoning ordinance requires a screen wall be six feet in height, eight inches in width (faced with a decorative masonry product), with a five-foot greenbelt adjacent to the screen wall for its entire length planted with one large deciduous or evergreen tree and eight shrubs for every 30 linear feet. **No landscaping is provided in the screen wall greenbelt; therefore, a variance is required from the Zoning Board of Appeals.** (Comment partially addressed. The required screen wall greenbelt and landscaping must be provided on the exterior sides of the wall facing adjacent properties. Insufficient landscaping is proposed; therefore, a variance is required from the Zoning Board of Appeals).
- **The screen wall along the south property line (north of 847 W. Oxhill Drive) shall be extended 10 feet westward. Revise accordingly.** (Comment addressed. The proposed screen wall has been extended to the west approximately 10 feet to align with the end of the proposed parking spaces).
- **At least six evergreen trees shall be provided generally west of the screen wall described above. The Red Oak tree in said area shall be replaced with an evergreen tree.** (Comment partially addressed. Three White Pines have been specified in the aforementioned area. In the response letter provided to the first review, the Developer's landscape architect stated six trees were unable to be provided due to the existing overhead utilities and pole. Note pine trees are prohibited in the Township; a different species of evergreen tree shall be proposed).
- **Staff does not recommend use of the proposed Grey Owl Juniper in front of the monument sign. A combination of Francee Hosta and Stella D' Oro Daylily would be more pleasing in appearance; other plantings around the monument sign may be proposed for consideration. Furthermore, the landscape bed should be located around all sides of the monument sign, with plantings provided on all sides of the sign.** (Comment partially addressed. Landscaping is now proposed on all sides of the sign. The number of Grey Owl Juniper has been reduced and additional plantings have been proposed. Staff still does not recommend use of the proposed Grey Owl Juniper in front of the monument sign).

- The Planning Commission should note three of the parking lot landscape islands are proposed to be completely covered with Grow-Low Sumac. A different groundcover should be proposed to add diversity among plantings. Grow-Low Sumac, when not maintained, loses aesthetic appeal. Use of Grow-Low Sumac is generally not preferred. (Comment partially addressed. Additional plants have been proposed in the parking lot islands. Staff maintains use of Grow-Low Sumac is generally not preferred).
- A snow storage plan was not provided. Information on method of snow storage shall be provided at final site plan. Winter maintenance of parking lot landscape islands shall be required where heavy applications of salt and de-icing products occur through the use of salt tarps which minimize soil absorption and ultimately reduce plant disorders. (Comment addressed. Snow storage areas are now indicated on the plan).
- No landscaping is shown in the stone beds at the north side (and northwest corner) of the building. The width of the bed shall be increased to four feet and furnished with plantings. (Comment addressed. Additional plantings have been added to the north side of the building).
- There are labels identifying a certain number of plantings with inconsistent symbols for those plantings depicted on the plan. Revise accordingly.

Trash Receptacle Screening

The zoning ordinance requires dumpsters be surrounded by a six-foot-tall wall (but not more than eight feet high) on three sides and an obscuring wood gate on a steel frame on the fourth side, located on a six-inch concrete pad extending 10 feet in front of the gate, with six-inch concrete-filled steel bollards to protect the rear wall and gates. The proposed enclosure is located adjacent to the south side of the building. An 8'-10" wall (cultured stone over block screen wall) is proposed on the sides of the dumpster enclosure, with a steel backed wood gate on the south side of the enclosure (the color of the gate shall be provided at final site plan). (Comment addressed. The color of the gate and posts is to be black). The depth of the concrete where the dumpsters are located shall also be indicated at final site plan. (Comment partially addressed. The depth of the concrete shall be six inches. The "prop. heavy duty concrete pavement" designation shall be used within the delivery and dumpster area. Revise accordingly). A concrete pad does not extend 10 feet in front of the dumpster gates; therefore, a variance is required from the Zoning Board of Appeals. (Comment addressed. A 10-foot-wide concrete pad in front of the dumpster enclosure has been added). Additionally, the screen wall shall be reduced 10 inches in height or a variance is required. (Comment addressed. Screen wall height has been reduced ten inches to eight feet in height).

Parking

The zoning ordinance requires restaurants with alcohol service to provide one parking space per 60 square feet of gross floor area. For the proposed 7,893 square foot restaurant, 132 parking spaces are required. Parking for the outdoor patio is described later in this report. In total, 159 parking spaces are provided (153 standard spaces and 6 accessible spaces).

The zoning ordinance requires each individual parking space be delineated by dual stripes, two feet apart centered on the dividing lines and painted white. The plan shall be revised to indicate the required striping, or a variance be requested from the Zoning Board of Appeals. (Comment addressed. Parking space striping has been depicted by dual stripes). Note 1 on the pavement marking plan shall be revised to indicate the color of the required parking stall striping. (Comment addressed. Paint color has been revised to white).

The pavement marking plan shows the easternmost tier of parking spaces 17.5 feet in length and the site plan shows the same tier of parking spaces 17 feet in length. The plans shall be revised for consistency. (Comment partially addressed. Parking space dimensioning has been revised to be consistent. However, gutter pan shall not be included in the measurement of parking space depth. Revise accordingly). Additionally, staff recommends the 15 southeasternmost parking spaces be restricted to employee parking and designated/marked accordingly. (Comment outstanding. Only eight of the southeasternmost parking spaces have been designated as employee parking. Revise accordingly).

Off-Street Loading Requirements

The zoning ordinance requires one loading spaces for a development of this size. Such loading and unloading space must be an area 10 feet by 50 feet, with a 15-foot height clearance. The proposed loading area is located at the south side of the building and 10 feet by 50 feet; **however, the proposed loading area is located in a drive aisle. The applicant previously indicated loading/unloading would occur off-hours as to not conflict with customer traffic flow; a note stating such shall be provided on the final site plan. (Comment addressed. A note pertaining to loading area use limitation has been added to the plan). The loading area shall not block a fire lane and its location is subject to the approval of the Township Fire Marshal. (Comment remains as a notation).**

Signs

The zoning ordinance requires the area, quantity, location, and dimensions of all signs to be provided with the preliminary site plan. The site plan shows the location of a monument sign setback 23 feet from the Highland Road right-of-way line. Overall, the sign is 45.28 square feet in size. An approximately 26 square foot electronic message center comprises one-half of the sign. **The zoning ordinance requires the upper 25% of electronic message board signs not include an electronic component; as proposed, the current sign would require a variance from this requirement. (Comment outstanding. A variance is required from the Zoning Board of Appeals).**

A maximum of one wall sign is permitted for each principal building. In instances where a parcel has frontage on two streets, an additional wall sign may be permitted on the building facing the secondary thoroughfare, which is no greater than 5% of the wall area on which the sign is placed. Where permitted, wall signs must be located flat against the building's front facade or parallel to the front facade on a canopy. A wall sign is shown on the west elevation, which would be permitted since the building contains frontage on Whitebanks Boulevard. A 63 square foot wall sign is shown on the east elevation, which is not permitted. **The wall sign on the east elevation shall be removed, or a variance is required from the Zoning Board of Appeals.** (Comment outstanding; however, the Developer intends to seek a variance from the Zoning Board of Appeals).

Total area of a primary wall sign cannot exceed 10% of the front facade of the building. The primary wall sign (63 square feet in size) is located on the north facade of the building; however, said sign extends above the roofline of the building. The zoning ordinance prohibits signs from extending above the roofline of a building. **A variance from the Zoning Board of Appeals is required to install the north wall sign extending above the roofline of the building.** (Comment outstanding; however, the Developer intends to seek a variance from the Zoning Board of Appeals).

Both the east and west sides of the building contain four metal canopies with the Black Rock logo (BR). **The logos on the canopies shall be removed, or variances are required from the Zoning Board of Appeals.** (Comment addressed. The logos have been removed from all the canopies). Furthermore, the elevations of all four sides of the building indicate the EIFS cornice contains LED lighting under the bottom edge. As the proposed LED lighting would attract attention to the building, the zoning ordinance considers the lighting prohibited signage. **A variance from the Zoning Board of Appeals would be required to install the LED lighting; such a variance request would likely be denied by the Zoning Board of Appeals. Staff recommends as a condition of approval the plans be revised to remove the trim LED lighting.** (Comment addressed. The LED lighting has been removed from the cornice around the top of the building).

On the east elevation, the public entrance to the building contains doorhandles with the Black Rock logo (BR). **The doorhandles meet the zoning ordinance definition of a sign; therefore, a variance is required from the Zoning Board of Appeals.** (Comment outstanding; however, the Developer intends to seek a variance from the Zoning Board of Appeals).

Lighting

Site lighting is required to comply with the zoning ordinance. Information on site lighting was provided and will be reviewed in detail during final site plan review. Following are initial comments on the lighting (photometric) plan:

- Lighting shall be shielded from adjacent properties and designed to reflect continuity with the pedestrian orientation of the area. Floodlights, wall pack units, and other types of unshielded lights, and lights where the lens or bulb is visible outside of the light fixture are not permitted except in service areas where the lights will not generally be visible by the public or adjacent residential properties. Lights underneath canopies must be fully recessed into the canopy to minimize glare from the light source.
- Footcandles shall be measured at approximately six feet above grade. **Revise accordingly, and the plan must contain a note (revise General Note 2) confirming footcandles are measured at six feet above grade. (Comment addressed. Footcandle calculations are shown at six feet above grade).**
- Partial lighting fixture specifications were provided on the photometric plan. **Complete catalog details (lighting fixture specification sheets) for all proposed fixtures shall be provided. Light fixture selections and colors are subject to review and approval by the Township. (Comment outstanding – shall be addressed at final site plan).**
- The preliminary elevations show wall-mounted decorative or architectural lighting proposed on the building. However, said fixtures are not shown on the photometric plan. **Revise accordingly, and see previous comment. Additionally, up-lighting or outward shining lighting are not permitted on the building (see first bullet point on this page). (Comment outstanding. The building lighting, including the now proposed recessed LED light strips, require variances from the Zoning Board of Appeals).**
- Mounting height is measured from grade to the sky side of the fixture. **Revise mounting height on the plan accordingly. (Comment addressed. A mounting height note has been added to the plan).**
- The Planning Commission may require special conditions for properties adjacent to residential uses and districts.
 - Six pole-mounted luminaries are proposed adjacent to residentially zoned property. Ground-mounted lighting can be used as area lighting to illuminate pedestrian areas and walkways. **Staff recommends the Planning Commission require the aforementioned six pole-mounted luminaries be replaced with ground-mounted lighting (such as a bollard light or path light) which is fully shielded and directed downward. Said light fixtures should not exceed three to four feet in height above grade. (Comment partially addressed. Ten pole-mounted luminaries six feet in height are proposed in the aforementioned area. No details were provided for the proposed luminaries, and the proposed height is taller than recommended by staff. Revise accordingly).**

Staff Analysis – Special Land Use

Special land uses for outdoor dining are evaluated using the general standards for all special land uses listed in Article 6, Section 10 of the zoning ordinance and the following specific standards for outdoor dining found in Article 4, Section 18 of the zoning ordinance:

A. *The Planning Commission shall determine that the use is designed and will be operated so as not to create a nuisance to property owners adjacent to or nearby the eating establishment. As such, the proposed use shall meet the following minimum criteria:*

i. The establishment may operate only during the following hours:

- *Monday thru Thursday: 8:00 a.m. – 12:00 midnight*
- *Friday: 8:00 a.m. – 2:00 a.m.*
- *Saturday: 10:00 a.m. – 2:00 a.m.*
- *Sunday: 10:00 a.m. – 10:00 p.m.*

Black Rock would be required to adhere to said hours of operation.

ii. The use of exterior loudspeakers is prohibited where the site abuts a residential district or use. The noise level at the lot line shall not exceed 70 dB.

Black Rock would be required to adhere to said performance standard.

iii. An outdoor lighting plan shall specify the type of fixtures to be used, light intensity, and method of shielding the fixtures so that light does not project onto adjoining properties or on any public or private street or right-of-way. Dropped fixtures shall not be allowed. The site plan shall include a photometric plan and catalog details for all proposed fixtures. Outdoor lights must meet the performance standards of Section 5.18.

Information on site lighting was provided and will be reviewed in detail during final site plan if the preliminary site plan and special land use are approved. Initial comments on the lighting (photometric) plan were previously provided in this report.

B. *Additional parking spaces must be provided according to the following:*

i. Outdoor dining areas for more than 30 people or which include either permanent or seasonal structures, such as awning, roofs, or canopies, may be required to provide additional parking according to the following:

- a. If the outdoor seating is 25% of the indoor seating or less, no additional parking is necessary.*
- b. If the outdoor seating is 26%-50% of the indoor seating, the restaurant may be required to provide up to 125% of the parking required for the indoor space.*
- c. If the outdoor seating is over 50% of the indoor seating capacity, the restaurant may be required to provide up to 150% of the parking required for the indoor space.*

According to the site plan, a 762.2 square foot patio is proposed on the west side of the building. From an occupancy perspective, the Building Code states assembly without fixed seating – unconcentrated (tables and chairs) is 15 square feet per person. For a 762 square foot patio, that would be a maximum 50 seat capacity. The floor plan shows seating for 36 patrons on the patio (nine, four-top tables). Maximum patio occupancy is subject to approval of the Building Official. For patio parking, the site plan notes 13 parking spaces are required. Based on a restaurant capacity of 276–232, the outdoor seating does not warrant additional parking.

Planning Commission Options / Recommendation

The Planning Commission may recommend approval, approval with conditions, or denial of the preliminary site plan to the Township Board. The Planning Commission may approve, approve with conditions, or deny the special land use. ~~Staff recommends the plans be revised and resubmitted to address the items identified in this memorandum. All site plan review submittals, following the initial preliminary site plan review, shall include a response letter detailing the changes made to the plan since the previous submittal. A list of any requested variances shall also be provided.~~ (Staff recommends approval of the preliminary site plan and approval of the special land use conditioned on the Developer addressing all staff and consultant review comments and recommendations, and requesting and receiving the necessary variances from the Zoning Board of Appeals. An updated list of requested variances shall be provided).

The following notations summarize the preliminary site plan review:

- Recommendation of approval is in accordance with the plans prepared by Desine Inc. (revision date August 18, 2022), subject to revisions as required. Utility, grading, and storm drainage plans for the site are subject to the approval of the Township Engineering Consultant and shall be completed in accordance with the Township Engineering Design Standards.
- Recommendation of approval is in accordance with the exterior elevations and floor plan prepared by Creekwood Architecture, Inc. dated August 15, 2022, subject to revisions as required.
- Recommendation of approval is in accordance with the photometric plan prepared by Gasser Bush dated August 8, 2022, subject to revisions as required.
- Recommendation of approval is in accordance with the landscape plan (north and south) prepared by Vert Verde Landscape Architecture dated January 2022 (revision date August 17, 2022 (Sheet L-1) and July 18, 2022 (Sheet L-2)), subject to revisions as required.



Fire Department
Charter Township
of White Lake

Site / Construction Plan Review

To: Sean O'Neil, Planning Department Director

Date: 09/06/2022

Project: Black Rock Br & Grill

Project #: 214182

Date on Plans: 08/18/2022

The Fire Department has the following comments with regards to the 2nd review of preliminary site plans for the project known as Black Rock Bar & Grill.

1. The Fire Department has no further comments at this time

Jason Hanifen
Fire Marshal
Charter Township of White Lake
(248)698-3993
jhanifen@whitelaketwp.com

Plans are reviewed using the International Fire Code (IFC), 2015 Edition and Referenced NFPA Standards.

PRELIMINARY SITE PLAN FOR

*Black Rock
Bar & Grill*

WHITE LAKE TOWNSHIP

A PART OF THE EAST 1/2 OF THE NW 1/4 SECTION 23, T 3 N, R 8 E,
WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN

LEGAL DESCRIPTION

A parcel of land being a part of the Northwest 1/4 of Section 23, Town 3 North, Range 8 East, White Lake Township, Oakland County Michigan and all of Lots 8 through 10, inclusive, of "Suburban Knolls Subdivision No. 1, according to the plat thereof, as recorded in Liber 130 of Plats, Pages 42 through 44, inclusive, Oakland County records, being more particularly described as: Commencing at the North 1/4 Corner of Section 23, Town 3 North, Range 8 East, White Lake Township, Oakland County, Michigan; thence S00°15'04"W 498.83 feet along the North-South 1/4 line of said Section 23 as previously platted in said "Suburban Knolls Subdivision No. 1;" thence S89°07'59"W 82.72 feet (recorded as S88°35'26"W 85 feet) along the Southerly line of Highland Road a.k.a. M-59 Highway to the **PLACE OF BEGINNING**; thence S00°32'33"W (recorded as S00°30'26"W) 512.50 feet to the North line of Lot 54 of said "Suburban Knolls Subdivision No. 1;" thence S88°00'07"W (recorded as S87°58'30"W & platted as S87°58'00"W) 85.00 feet along the North line of said Lot 54; thence N00°32'33"E (recorded & platted N00°30'26"E) 191.93 feet along the East line of Lot 11 of said "Suburban Knolls Subdivision No. 1;" to the Southeast Corner of Lot 8 of said "Suburban Knolls Subdivision No. 1;" thence S84°25'28"W (platted S84°23'21"E) 261.49 feet along the South line of said Lot 8 to the East line of White Banks Boulevard (100-foot wide Right-of-Way); thence along the Easterly line of said White Banks Boulevard the following two courses:

1) N00°32'33"E (platted N00°30'26"E) 289.11 feet and

2) Northerly 14.35 feet along the arc of a 10.00 foot radius curve to the right, through a central angle of 82°12'08" and having a chord bearing N41°38'37"E (platted N41°36'30"E) to the Southerly line of said Highland road a.k.a. M-59 Highway;

thence along the Southerly line of Highland Road a.k.a. M-59 Highway (variable width Right-of-Way) the following four courses:

1) Easterly 252.60 feet along the arc of a 3207.84 foot radius curve to the right, through a central angle of 04°30'42" and having a chord bearing N85°00'02"E (platted as N84°57'55"E) 252.54 feet,

2) N00°32'33"E (platted as N0030'26"E) 25.12 feet,

3) Easterly 38.98 feet along the arc of a 3224.00 foot radius curve to the right, through a central angle of 00°41'35" and having a chord bearing N86°47'04"E (recorded as N87°53'52"E) 38.98 feet and

4) N89°07'59"E (recorded as N88°35'26"E) 46.02 feet to the Place of Beginning.

Being a part of the Northwest 1/4 of Section 23, Town 3 North, Range 8 East, White Lake Township, Oakland County, Michigan. Containing 2.78 acres of land, more or less. Subject to and together with all easements and restrictions affecting title to the above-described premises.

PARCEL I.D. #: 12-23-129-007
12-23-129-017

BENCHMARKS

DATUM BASED ON RTK-GPS OBSERVATIONS,
DATE NOVEMBER 5, 2021 AT 1:28 PM

BENCHMARK #200
ARROW ON HYDRANT, LOCATED 11± FEET
WESTERLY OF THE NWLY CORNER OF LOT 8.
ELEVATION = 972.75 (NAVD 88)
NOTE: ORIGINAL PROJECT #30106
ELEVATION = 973.21 (NGVD 29) DIFFERENCE OF
0.4586.

BENCHMARK #201
ARROW ON HYDRANT, LOCATED NEAR THE
SOUTH SIDE OF HIGHLAND RD (M-59), 32±
FEET NORTHERLY OF THE NELY CORNER OF
LOT 10.
ELEVATION = 971.33 (NAVD 88)

BENCHMARK #202
NAIL IN CONCRETE, LOCATED NEAR THE WEST
SIDE OF #9501 BLDG, 123± SOUTHERLY OF THE
NELY CORNER OF LOT 10 AND 14± EAST OF
THE WEST PROPERTY LINE.
ELEVATION = 968.79 (NAVD 88)

NOTES:

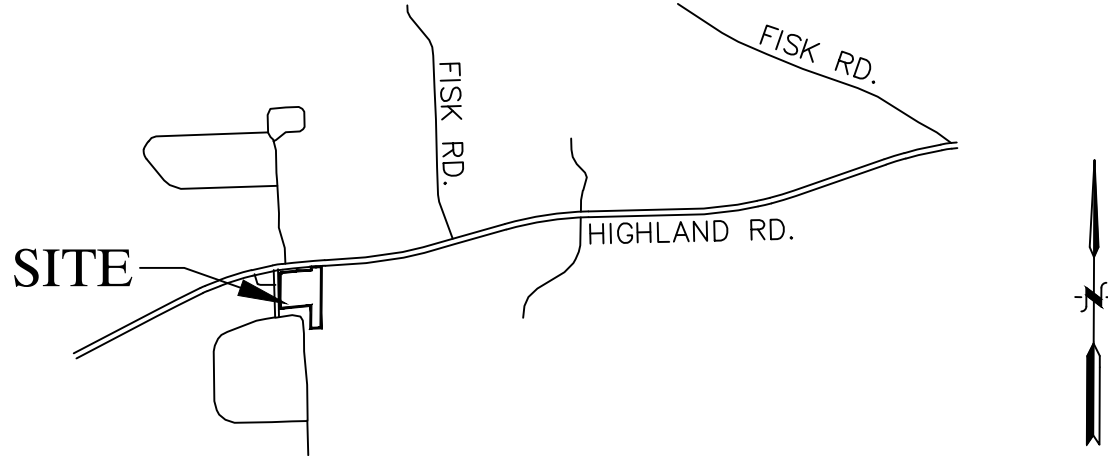
- A. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWNSHIP'S CURRENT STANDARDS AND SPECIFICATIONS.
- B. THE CONTRACTOR SHALL NOTIFY THE TOWNSHIP ENGINEER AND/OR THE AUTHORITY HAVING JURISDICTION, 48 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- C. CONTRACTOR SHALL CALL MISS DIG AT 800-482-7171, 72 HOURS IN ADVANCE OF CONSTRUCTION, FOR EXISTING UNDERGROUND UTILITY LOCATIONS.
- D. IN ORDER TO VERIFY COMPLIANCE WITH THE APPROVED PLANS, FULL-TIME CONSTRUCTION OBSERVATION WILL GENERALLY BE REQUIRED DURING ALL PHASES OF UNDERGROUND SITE CONSTRUCTION INCLUDING INSTALLATION OF SANITARY SEWER, STORM SEWERS, DRAINS, WATERMAINS AND APPURTENANCES AS WELL AS PRIVATE STREET CURBING AND PAVING CONSTRUCTION. INTERMITTENT OBSERVATIONS WILL BE MADE FOR SITE GRADING, PARKING LOT CURBING AND PAVING, RETAINING WALL CONSTRUCTION AND OTHER SURFACE ACTIVITY.

OWNER/DEVELOPER
BRANDENBROOKE INVESTMENTS
30553 WIXOM ROAD
WIXOM, MI, 48393

ARCHITECT
CREEKWOOD ARCHITECTURE INC.
1111 CREEKWOOD TRAIL
BURTON, MI, 48509
(810) 742-0480

CIVIL ENGINEER/LAND SURVEYOR
DESINE INC.
2183 PLESS DRIVE
BRIGHTON, MI. 48114
(810) 227-9533

LANDSCAPE ARCHITECT
VERT VERDE LANDSCAPE ARCHITECTURE LLC
44960 ALBERT DRIVE
PLYMOUTH, MI. 48170
(734) 249-3568



LOCATION MAP
SCALE: 1in. = 2000ft.

SHEET INDEX

- | | |
|--------|--|
| EX | EXISTING CONDITIONS & DEMOLITION PLAN |
| AD | ADJACENT DRIVEWAY LOCATIONS |
| SP | SITE PLAN |
| UT1 | UTILITY PLAN |
| UT2 | STORM WATER MANAGEMENT CALCULATIONS |
| GR | GRADING & PAVING PLAN |
| SW | STORM WATER PLAN |
| SG | SIGNAGE & PAVEMENT MARKING PLAN PLAN |
| DT | SITE PAVEMENT NOTES & DETAILS |
| L-1 | LANDSCAPE PLAN |
| L-2 | LANDSCAPE PLAN |
| 1 of 1 | PHOTOMETRIC PLAN |
| LT | BUILDING MOUNTED LIGHT FIXTURE DETAILS |
| A1 | COMPOSITE FLOOR PLAN |
| A2 | EXTERIOR ELEVATIONS |
| A3 | EXTERIOR ELEVATIONS |





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(810) 227-9533
CIVIL ENGINEERS
LAND SURVEYORS
2183 PLESS DRIVE
BRIGHTON, MICHIGAN 48114

REVISED	SCALE: AS NOTED
04-20-2022	PROJECT No.: 214182
08-18-2022	DWG NAME: COV
	PRINT: AUG. 18, 2022

EXISTING UTILITY INVENTORY

STORM MANHOLE #1		
WESTERLY RIM	970.69	
INVERTS		
SOUTHWESTERLY 12" RCP	965.39	
EASTERLY 12" RCP	965.44	
CATCH BASIN #3		
ROAD SIDE RIM	969.93	
INVERTS		
NORTHEASTERLY 12" RCP	965.53	
NORTHERLY 12" RCP	965.83	
SOUTHERLY 12" RCP	965.53	
SANITARY SEWER MANHOLE #101		
SOUTHERLY RIM	969.19	
INVERTS		
TOP OF WATER	966.89	
INVERTS ARE AVAILABLE		
WATER GATE VALVE WELL #102		
EASTERLY RIM	970.04	
INVERTS		
TOP OF PIPE	IRON 961.84	
SANITARY SEWER MANHOLE #106		
SWLY RIM	969.27	
INVERTS		
WATER LEVEL	967.57	
PIPE INVERTS NOT AVAILABLE		
SANITARY SEWER MANHOLE #107		
NORTHERLY 971.51		
INVERTS		
WATER LEVEL	967.61	
PIPE INVERTS NOT AVAILABLE		
CATCH BASIN #1556		
ROAD SIDE RIM	968.98	
INVERTS		
NORTHERLY 12" RCP	965.78	
SOUTHERLY 12" RCP	NOT AVAILABLE	
WATER LEVEL	965.78	
SANITARY SEWER MANHOLE #1159		
RIM	970.40	
INVERTS		
EAST 8" PVC	963.30	
WEST 8" PVC	963.10	
SANITARY SEWER MANHOLE #1318		
SELY RIM	969.13	
INVERTS		
WEST 8" PVC	963.06	
SOUTH 8" PVC	963.06	
SANITARY SEWER MANHOLE #1331		
SELY RIM	970.83	
INVERTS		
SOUTH 8" PVC	961.86	
NORTH 8" PVC	962.01	
CATCH BASIN #1401		
CENTER	970.23	
INVERTS		
SOUTH 15" CONCRETE	940.23	
CATCH BASIN #1534		
RIM	968.98	
INVERTS		
SOUTHWEST 12" CONCRETE	966.98	

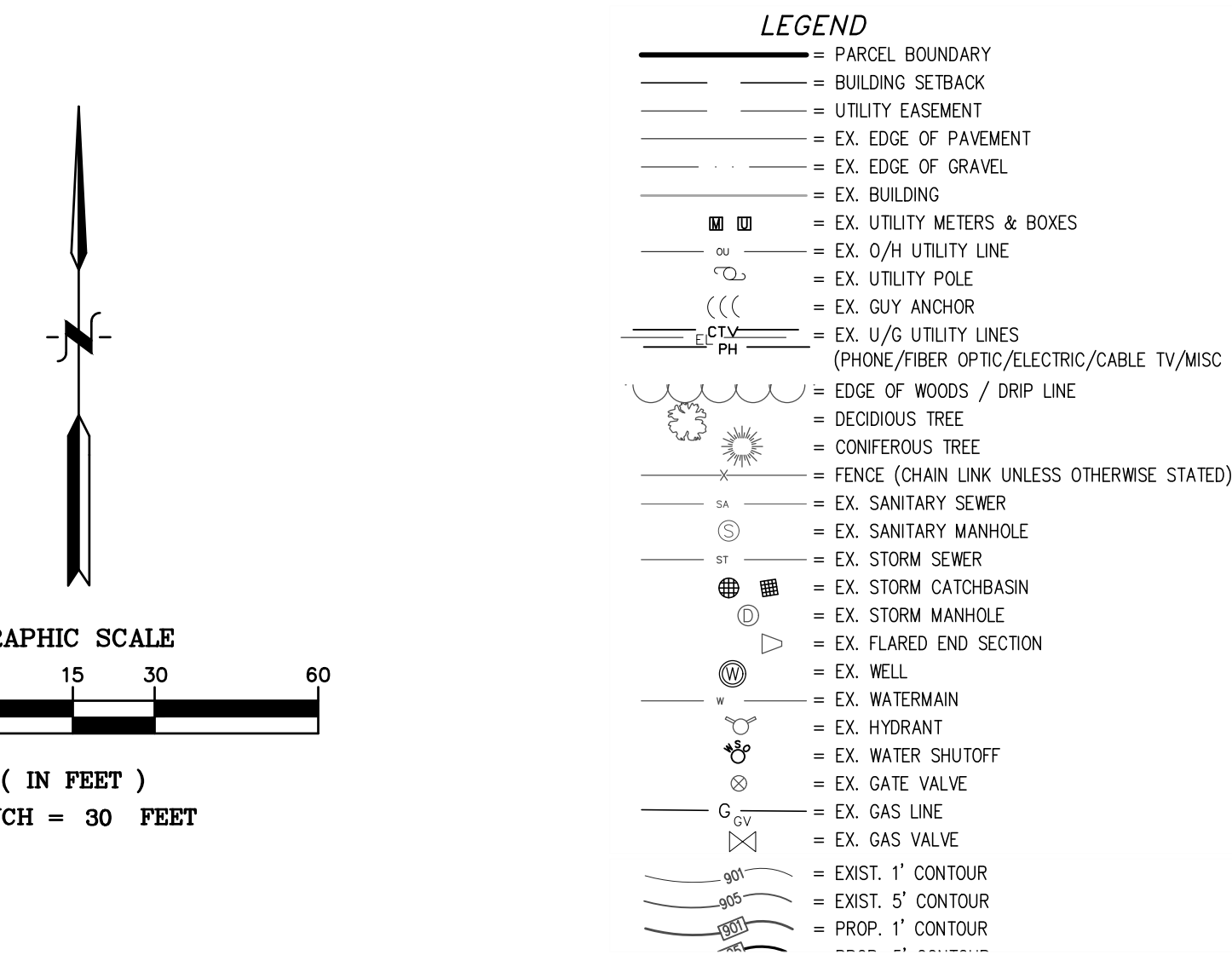
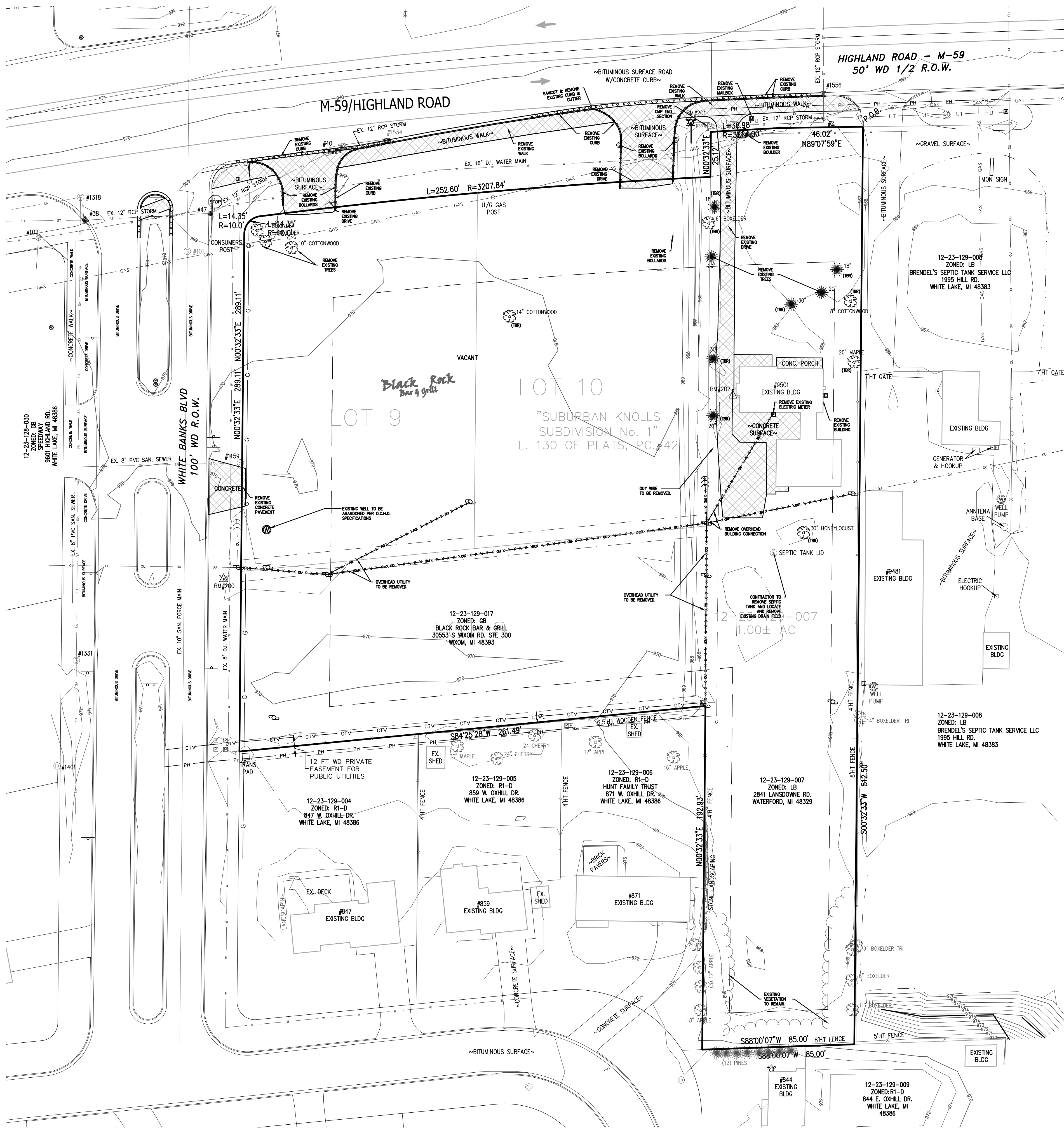
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THE WEST PROPERTY LINE.
ELEVATION = 968.79 (NAVD 88)



DEMOLITION NOTES:

- The demolition specifications of the Local Municipality are a part of this work. Refer to the General Notes on the project plans for additional requirements.
- Contractor shall contact the 811 Underground Public Utility Locating System or other appropriate local underground utility locating Agency, a minimum of three (3) working days prior to performing demolition work. Existing utility information on the project plans may be from information disclosed to this firm by the Utility Companies, Local, County or State Agencies, and/or various other sources. No guarantee is given as to the completeness or accuracy thereof. Prior to construction, locations and depths of all existing utilities (in possible conflict with the proposed improvements) shall be verified in the field.
- Contractor shall contact the appropriate Agencies to coordinate disconnect of the electric, gas, phone, cable and other public utilities as necessary prior to performing demolition work.
- Contractor shall contact the appropriate Agencies to coordinate removal and/or relocation of any underground and/or overhead public utility lines as necessary prior to performing demolition work.
- Contractor shall recycle and/or dispose of all demolition material and debris in accordance with the appropriate Local, County, State and Federal regulations.
- All bituminous and concrete pavement that is to be removed shall be saw cut at the limits of removal to provide for a clean straight edge for future abutment.
- All existing irrigation lines that are to be removed shall be terminated at the limits of demolition or as necessary to allow for construction of the proposed site improvements. Ends of pipe shall be capped and the location of marked for future connection.
- All existing water main and sanitary sewer that is to be removed shall be terminated at the limits of demolition or as indicated on the project plans. Temporary plugs shall be installed in the ends of pipe in accordance with the appropriate Agency and the locations of marked for future connection. Permanent plugs shall be installed in the ends of pipe in accordance with the appropriate Agency. The Contractor shall record the location of all permanent plugs and provide the location information to the appropriate Agency.
- All existing storm sewer that is to be removed shall be terminated at the limits of demolition or as indicated on the project plans. Temporary plugs shall be installed in the ends of pipe in accordance with the appropriate Agency and the locations of marked for future connection. Permanent bulkheads shall be installed in the ends of pipe and/or openings in terminating structures in accordance with the appropriate Agency. The Contractor shall record the location of all permanent bulkheads and provide the location information to the appropriate Agency.
- All existing light sources to be removed shall have their power cables removed up to the power source or properly terminated for future connection at the limits of demolition or as necessary to allow for construction of the proposed site improvements. Removal and termination of power cables shall be performed in accordance with local electric codes.
- All existing utility meters that are to be removed shall be properly removed to allow for reuse. Any existing utility meters that are not to be reused as a part of this project shall be returned to the appropriate Agency.
- All trenches and/or excavations resulting from the demolition of underground utilities, building foundations, etc., that are located within the 1 on 1 influence zone of proposed structures, paved areas and/or other areas subject to vehicular traffic shall be backfilled with MDOT Class III granular material (or better) to the proposed subgrade elevation. Backfill shall be placed using the controlled density method (12" maximum lifts, compacted to 95% maximum unit weight, Modified Proctor).



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DESIGN:WMP	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: L.F.		08-18-22	REVISED PER REVIEW COMMENTS			
CHECK: WMP						

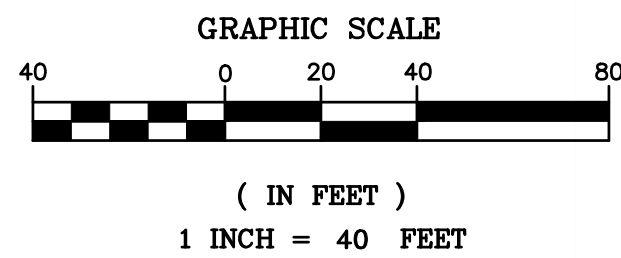
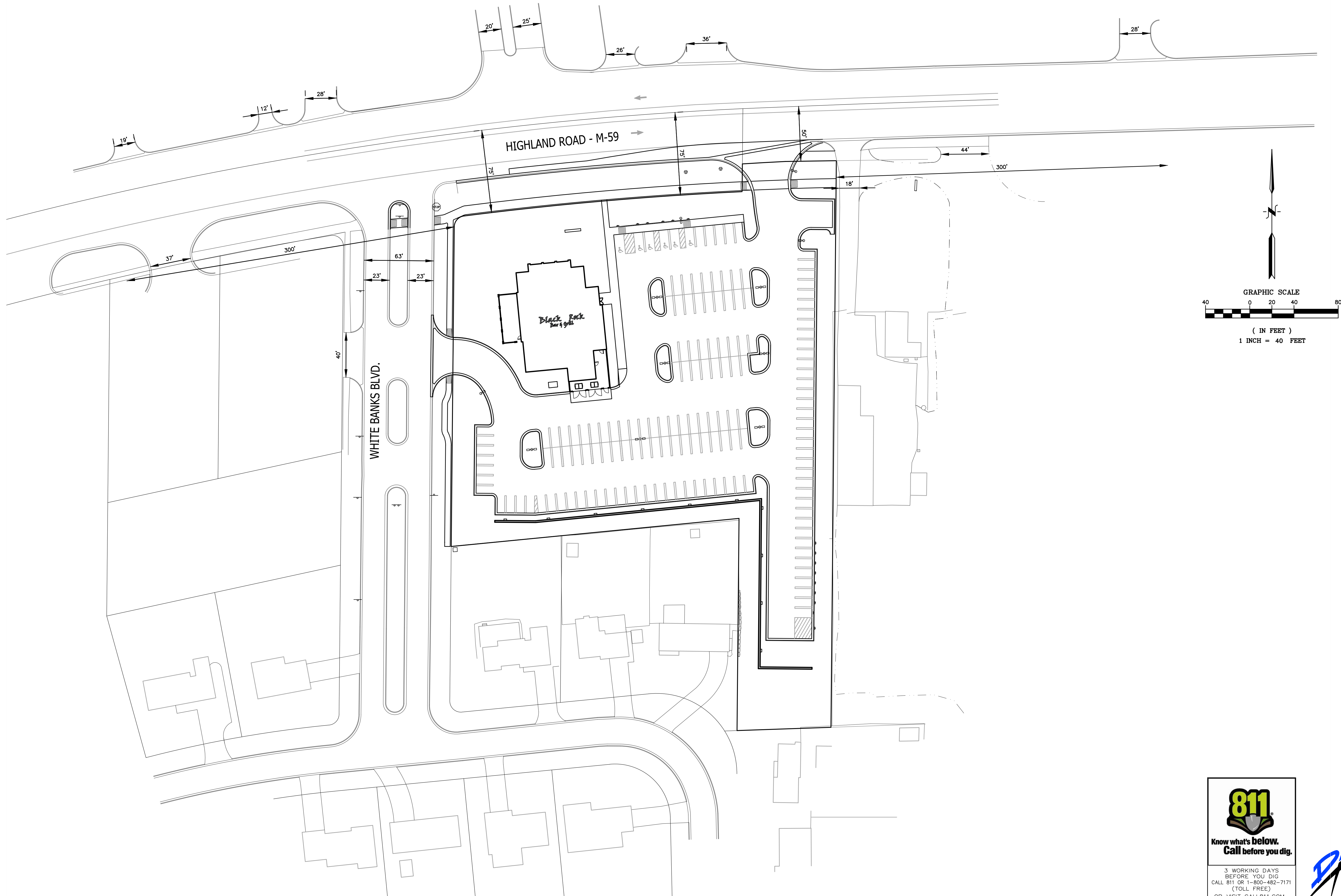
BLACK ROCK
WHITE LAKE TOWNSHIP

EXISTING CONDITIONS &
DEMOLITION PLAN

CLIENT:
BRANDENBROOKE INVESTMENTS
30553 WIXOM ROAD
WIXOM, MI, 48393

SCALE: 1"=30'
PROJECT No.: 214182
DWG NAME: 4182 EX
ISSUED: AUG. 18, 2022

EX





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2183 PLESS DRIVE
BRIGHTON, MICHIGAN 48114

DESIGN: AJL DRAFT: O.M. CHECK: WMP	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION	BLACK ROCK WHITE LAKE TOWNSHIP	ADJACENT DRIVEWAY LOCATIONS	CLIENT: BRANDENBROOKE INVESTMENTS 30553 WIXOM ROAD WIXOM, MI, 48393	SCALE: 1" = 40'	AD
										PROJECT No.: 214182	
										DWG NAME: 4182-AREA	
										ISSUED: AUG. 18, 2022	

DESIGN: AJL DRAFT: AJL CHECK: WMP	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
		08-18-22	REVISED PER REVIEW COMMENTS			

BLACK ROCK
WHITE LAKE TOWNSHIP

SITE PLAN

CLIENT:
BRANDENBROOKE INVESTMENTS

30553 WIXOM ROAD
WIXOM, MI, 48393

SCALE: 1" = 30'

PROJECT No.: 214182

DWG NAME: 4182 SP

ISSUED: AUG. 18, 202

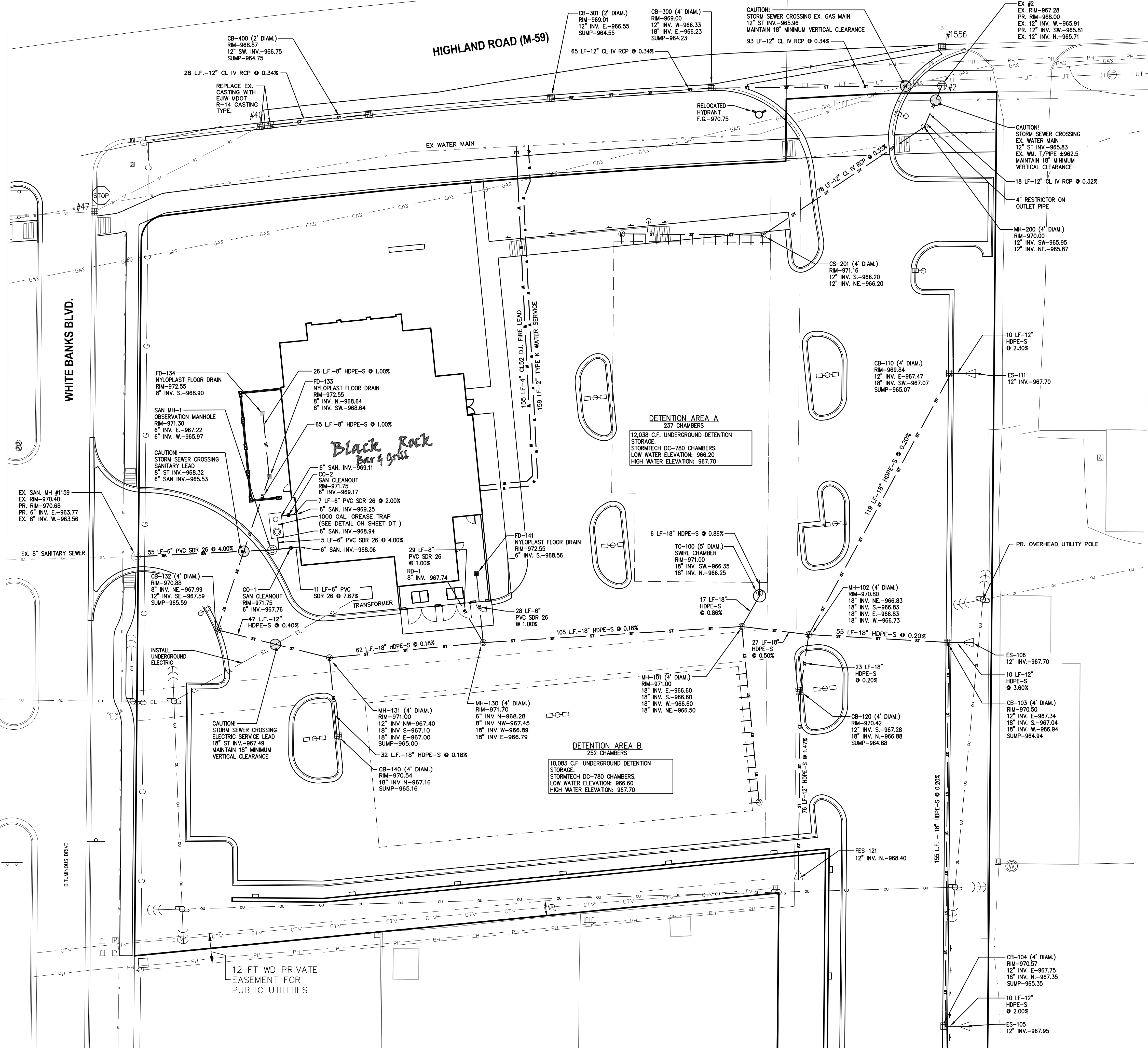


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SP

EXISTING STRUCTURE INVENTORY

CATCH BASIN #1	RM	969.23	
INVERTS			
NOT AVAILABLE			
YARD BASIN #2			
EASTERLY RIM	967.28		
INVERTS			
NORTH	12" CONCRETE	965.71	
WEST	12" CONCRETE	965.91	
CATCH BASIN #38			
ROAD SIDE RIM	968.81		
INVERTS			
EAST	12" CONCRETE	965.24	
WEST	12" CONCRETE	965.34	
CATCH BASIN #40			
ROAD SIDE RIM	968.97		
INVERTS			
SOUTHWEST	12" CONCRETE	966.66	
NORTHEAST	12" CONCRETE	966.66	
CATCH BASIN #47			
ROAD SIDE RIM	968.55		
INVERTS			
WEST	12" CONCRETE	966.42	
NORTHEAST	12" CONCRETE	966.22	
SANITARY SEWER MANHOLE #1159			
RM	970.40		
INVERTS			
EAST	8" PVC	963.30	
WEST	8" PVC	963.10	
SANITARY SEWER MANHOLE #1318			
SE'LY RIM	969.13		
INVERTS			
WEST	8" PVC	963.06	
SOUTH	8" PVC	963.06	
SANITARY SEWER MANHOLE #1331			
SE'LY RIM	970.83		
INVERTS			
SOUTH	8" PVC	961.86	
NORTH	8" PVC	962.01	
CATCH BASIN #1401			
CENTER	970.23		
INVERTS			
SOUTH	15" CONCRETE	940.23	
CATCH BASIN #1534			
RIM	968.98		
INVERTS			
SOUTHWEST	12" CONCRETE	966.98	



SANITARY DESIGN FLOW		
Building Use	Unit Factor	REU
Restaurant w/ Liquor	0.35 per fixture	9.8

The design per capita sewage contribution per REU is 100 GPD

Wastewater Flow Rates:
Average Flow = 980 GPD
Peak Flow = 0.0124 cfs

BENCHMARK
DATUM BASED ON RTK-GPS OBSERVATIONS,
DATE NOVEMBER 5, 2021 AT 1:28 PM

BENCHMARK #200
ARROW ON HYDRANT, LOCATED 11± FEET
WESTERLY OF THE NWLY CORNER OF LOT 8.
ELEVATION = 972.75 (NAVD 88)
NOTE: ORIGINAL PROJECT #30106
ELEVATION = 973.21 (NGVD 29) DIFFERENCE OF 0.456.

BENCHMARK #201
ARROW ON HYDRANT, LOCATED NEAR THE
SOUTH SIDE OF HIGHLAND RD (M-59), 32±
FEET NORTHERLY OF THE NE'LY CORNER OF
LOT 10.
ELEVATION = 971.33 (NAVD 88)

BENCHMARK #202
NAIL IN CONCRETE, LOCATED NEAR THE WEST
SIDE OF #9501 BLDG, 123± SOUTHERLY OF THE
NE'LY CORNER OF LOT 10 AND 14± EAST OF THE
WEST PROPERTY LINE.
ELEVATION = 968.79 (NAVD 88)



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LAND SURVEYORS
2183 PLESS DRIVE
BRIGHTON, MICHIGAN 48114

REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DESIGN: AJL	08-18-22	REVISED PER REVIEW COMMENTS			
DRAFT: AJL					
CHECK: WMP					

BLACK ROCK
WHITE LAKE TOWNSHIP

UTILITY PLAN

CLIENT: BRANDENBROOKE INVESTMENTS	SCALE: 1" = 20'
30553 WIXOM ROAD WIXOM, MI, 48393	PROJECT No.: 214182
	DWG NAME: 4182 UT
	ISSUED: AUG. 18, 2022
	UT1

DETENTION BASIN DESIGN CALCULATIONS

TRIBUTARY AREA (A) = 3.22 ACRES

COMPOUND RUN-OFF COEFFICIENT (C) = 0.56

ALLOWABLE OUTFLOW RATE PER ACRE = 0.20 CFS/A
ALLOWABLE OUTFLOW RATE (Qa) = 0.64 CFS

MDOT ALLOWABLE DISCHARGE RATE = 0.56 CFS

Qo = ALLOWABLE CFS/ACRE IMPERVIOUSNESS = Qa/A*C = 0.31 CFS/ACRE IMPERVIOUSNESS

100 YEAR STORM FREQUENCY EQUATIONS:

RAINFALL INTENSITY (I) = 275/(T+25) = 1.51 INCHES PER HOUR

STORAGE TIME (T) = -25 + (10312.5/Qo)*1/2 = 157 MINUTES

STORAGE VOL. PER ACRE IMPERV. (Vs) = ((16500*T)/T+25)) - 40*Qo*T = 12,272 CF PER ACRE IMPERV.

TOTAL STORAGE REQUIRED (Vi) = Vs*A*C = 22,000 CUBIC FEET

1 YEAR STORM FREQUENCY EQUATIONS:

RAINFALL INTENSITY (I) = 72/(T+25) = 0.77 INCHES PER HOUR

STORAGE TIME (T) = -25 + (2700.0/Qo)*1/2 = 68 MINUTES

STORAGE VOL. PER ACRE IMPERV. (Vs) = ((4320*T)/T+25)) - 40*Qo*T = 2,309 CF PER ACRE IMPERV.

TOTAL STORAGE REQUIRED (Vi) = Vs*A*C = 4,139 CUBIC FEET

Project: BLACK ROCK - DETENTON AREA A

Chamber Model -
Units -DC-780
Imperial[Click Here for Metric](#)Number of chambers -
Voids in the stone (porosity) -
Base of STONE Elevation -
Amount of Stone Above Chambers -
Amount of Stone Below Chambers -
Area of system -237
35
965.45
12
9
8345

%

ft

in

in

sf

Min. Area = 8012 sf min. area

☒ Include Perimeter Stone in Calculations

StormTech DC-780 Cumulative Storage Volumes

Height of System (inches)	Incremental Single Chamber (cubic feet)	Incremental Total Chamber (cubic feet)	Incremental Stone (cubic feet)	Incremental Ch & St (cubic feet)	Cumulative Chamber (cubic feet)	Elevation (feet)
51	0.00	0.00	243.40	243.40	19540.82	969.70
50	0.00	0.00	243.40	243.40	19297.42	969.62
49	0.00	0.00	243.40	243.40	19054.03	969.53
48	0.00	0.00	243.40	243.40	18810.63	969.45
47	0.00	0.00	243.40	243.40	18567.24	969.37
46	0.00	0.00	243.40	243.40	18323.84	969.28
45	0.00	0.00	243.40	243.40	18080.44	969.20
44	0.00	0.00	243.40	243.40	17837.05	969.12
43	0.00	0.00	243.40	243.40	17593.65	969.03
42	0.00	0.00	243.40	243.40	17350.26	968.95
41	0.00	0.00	243.40	243.40	17106.86	968.87
40	0.00	0.00	243.40	243.40	16863.46	968.78
39	0.06	13.72	238.59	252.31	16620.07	968.70
38	0.17	39.51	229.57	269.08	16367.75	968.62
37	0.29	67.93	219.62	287.55	16098.68	968.53
36	0.61	144.82	192.71	337.53	15811.13	968.45
35	0.81	192.06	176.17	368.24	15473.60	968.37
34	0.96	227.30	163.84	391.14	15105.37	968.28
33	1.08	256.67	153.56	410.23	14714.23	968.20
32	1.19	281.48	144.88	426.36	14304.00	968.12
31	1.27	301.93	137.72	439.65	13877.64	968.03
30	1.36	323.28	130.25	453.53	13437.99	967.95
29	1.45	344.69	122.75	467.45	12984.46	967.87
28	1.53	361.91	116.73	478.64	12517.01	967.78
27	1.59	377.08	111.42	488.50	12038.38	967.70
26	1.65	391.41	106.40	497.81	11549.88	967.62
25	1.71	405.00	101.64	506.65	11052.07	967.53
24	1.76	417.74	97.19	514.93	10545.42	967.45
23	1.81	429.69	93.01	522.69	10030.50	967.37
22	1.86	440.87	89.09	529.96	9507.80	967.28
21	1.90	451.38	85.41	536.80	8977.84	967.20
20	1.95	461.24	81.96	543.20	8441.04	967.12
19	1.99	470.50	78.72	549.22	7897.84	967.03
18	2.02	479.19	75.68	554.87	7348.62	966.95
17	2.06	487.34	72.83	560.17	6793.75	966.87
16	2.09	494.97	70.16	565.13	6233.59	966.78
15	2.12	502.09	67.66	569.76	5668.46	966.70
14	2.15	508.74	65.34	574.08	5098.70	966.62
13	2.17	514.93	63.17	578.10	4524.62	966.53
12	2.20	520.66	61.17	581.82	3946.53	966.45
11	2.22	525.95	59.31	585.26	3364.70	966.37
10	2.24	531.51	57.37	588.88	2779.44	966.28
9	0.00	0.00	243.40	243.40	2190.56	966.20
8	0.00	0.00	243.40	243.40	1947.17	966.12
7	0.00	0.00	243.40	243.40	1703.77	966.03
6	0.00	0.00	243.40	243.40	1460.38	965.95
5	0.00	0.00	243.40	243.40	1216.98	965.87
4	0.00	0.00	243.40	243.40	973.58	965.78
3	0.00	0.00	243.40	243.40	730.19	965.70
2	0.00	0.00	243.40	243.40	486.79	965.62
1	0.00	0.00	243.40	243.40	243.40	965.53

HWL

Project: BLACK ROCK - DETENTON AREA B

Chamber Model -
Units -DC-780
Imperial[Click Here for Metric](#)Number of chambers -
Voids in the stone (porosity) -
Base of STONE Elevation -
Amount of Stone Above Chambers -
Amount of Stone Below Chambers -
Area of system -251
35
965.85
12
9
8860

%

ft

in

in

sf

Min. Area = 8485 sf min. area

☒ Include Perimeter Stone in Calculations

StormTech DC-780 Cumulative Storage Volumes

Height of System (inches)	Incremental Single Chamber (cubic feet)	Incremental Total Chamber (cubic feet)	Incremental Stone (cubic feet)	Incremental Ch & St (cubic feet)	Cumulative Chamber (cubic feet)	Elevation (feet)
51	0.00	0.00	258.42	258.42	20727.92	970.10
50	0.00	0.00	258.42	258.42	20469.51	970.02
49	0.00	0.00	258.42	258.42	20211.09	969.93
48	0.00	0.00	258.42	258.42	19952.67	969.85
47	0.00	0.00	258.42	258.42	19694.26	969.77
46	0.00	0.00	258.42	258.42	19435.84	969.68
45	0.00	0.00	258.42	258.42	19177.42	969.60
44	0.00	0.00	258.42	258.42	18919.01	969.52
43	0.00	0.00	258.42	258.42	18660.59	969.43
42	0.00	0.00	258.42	258.42	18402.17	969.35
41	0.00	0.00	258.42	258.42	18143.76	969.27
40	0.00	0.00	258.42	258.42	17885.34	969.18
39	0.06	14.53	253.33	267.86	17626.92	969.10
38	0.17	41.84	243.77	285.61	17359.06	969.02
37	0.29	71.94	233.24	305.18	17073.45	968.93
36	0.61	153.37	204.74	358.11	16768.27	968.85
35	0.81	203.41	187.22	390.63	16410.16	968.77
34	0.96	240.72	174.16	414.89	16019.53	968.68
33	1.08	271.83	163.28	435.11	15604.64	968.60
32	1.19	298.11	154.08	452.19	15169.54	968.52
31	1.27	319.77	146.50	466.26	14717.35	968.43
30	1.36	342.38	138.58	480.96	14251.09	968.35
29	1.45	365.06	130.65	495.70	13770.12	968.27
28	1.53	383.29	124.27	507.55	13274.42	968.18
27	1.59	399.35	118.64	518.00	12766.86	968.10
26	1.65	414.53	113.33	527.86	12248.87	968.02
25	1.71	428.93	108.29	537.22	11721.01	967.93
24	1.76	442.41	103.57	545.99	11183.79	967.85
23	1.81	455.07	99.14	554.21	10637.80	967.77
22	1.86	466.92	95.00	561.91	10083.59	967.68
21	1.90	478.05	91.10	569.15	9521.68	967.60
20	1.95	488.48	87.45	575.93	8952.53	967.52
19	1.99	498.29	84.01	582.31	8376.60	967.43
18	2.02	507.50	80.79	588.29	7794.29	967.35
17	2.06	516.13	77.77	593.90	7206.00	967.27
16	2.09	524.21	74.94	599.15	6612.10	967.18
15	2.12	531.75	72.30	604.06	6012.95	967.10
14	2.15	538.80	69.84	608.63	5408.89	967.02
13	2.17	545.34	67.55	612.89	4800.26	966.93
12	2.20	551.41	65.42	616.83	4187.37	966.85
11	2.22	557.02	63.46	620.48	3570.54	966.77
10	2.24	562.91	61.40	624.31	2950.06	966.68
9	0.00	0.00	258.42	258.42	2325.75	966.60
8	0.00	0.00	258.42	258.42	2067.33	966.52
7	0.00	0.00	258.42	258.42	1808.92	966.43
6	0.00	0.00	258.42	258.42	1550.50	966.35
5	0.00	0.00	258.42	258.42	1292.08	966.27
4	0.00	0.00	258.42	258.42	1033.67	966.18
3	0.00	0.00	258.42	258.42	775.25	966.10
2	0.00	0.00	258.42	258.42	516.83	966.02
1	0.00	0.00	258.42	258.42	258.42	965.93

HWL

FIRST FLUSH ORIFICE CALCULATION

TOTAL STORAGE REQUIRED = 4,139 CF
DESIGN OUTFLOW RATE (Qa) = 0.03 CFS1 YEAR STORM ELEVATION = 966.30
OUTLET INVERT ELEVATION = 966.20

ORIFICE EQUATION:

$$Q = CdA\sqrt{2gh} \quad \text{WHERE}$$

D = 1.00 INCHES, DIAMETER OF THE ORIFICE
 $Q \leq 0.03$ CFS, ALLOWABLE OUTFLOW RATE
 $Cd = 0.62$ FOR SHARP EDGE CIRCULAR ORIFICE
 $2g = 64.4$ FT/SEC²
 $A = 0.0055$ FT², AREA OF 1.0 INCH DIAMETER ORIFICE
 $h = 0.06$ FT, VERTICAL DISTANCE FROM 1 YEAR ELEVATION TO CENTER OF ORIFICE
 BASED ON BOTTOM OF ORIFICE LOCATED AT BOTTOM OF OUTLET PIPE

N = 4 orifices required, Dia. = 1"

DETENTION ORIFICE CALCULATION

TRIBUTARY AREA (A) = 3.22 ACRES

DESIGN OUTFLOW RATE PER ACRE = 0.200 CFS/A
DESIGN OUTFLOW RATE (Qa) = 0.64 CFS100 YEAR ELEVATION = 967.70
OUTLET INVERT ELEVATION = 966.20

ORIFICE EQUATION:

$$Q = CdA\sqrt{2gh} \quad \text{WHERE}$$

$Q \leq 0.64$ CFS, ALLOWABLE OUTFLOW RATE
 $Cd = 0.62$ FOR SHARP EDGE CIRCULAR ORIFICE
 $2g = 64.4$ FT/SEC²
 $A = 0.0873$ FT², AREA OF ORIFICE
 $h = 1.33$ FT, VERTICAL DISTANCE FROM 100 YEAR ELEVATION TO CENTER OF ORIFICE
 BASED ON BOTTOM OF ORIFICE LOCATED AT BOTTOM OF OUTLET PIPE

FOR A 4 INCH ORIFICE DIAMETER
A = 0.0873 FT²
h = 1.33 FT
Q = 0.50 CFS

A 4 INCH DIAMETER ORIFICE IS SPECIFIED

MDOT DISCHARGE RATE CALCULATION

TRIBUTARY AREA (A) = 3.22 ACRES

100 YEAR ELEVATION = 967.70
OUTLET INVERT ELEVATION = 965.87

ORIFICE EQUATION:

$$Q = CdA\sqrt{2gh} \quad \text{WHERE}$$

$Q \leq$ CFS, ALLOWABLE OUTFLOW RATE
 $Cd = 0.62$ FOR SHARP EDGE CIRCULAR ORIFICE
 $2g = 64.4$ FT/SEC²
 $A = 0.0873$ FT², AREA OF 4" DIA. ORIFICE
 $h = 1.66$ FT, VERTICAL DISTANCE FROM 100 YEAR ELEVATION TO CENTER OF ORIFICE
 BASED ON BOTTOM OF ORIFICE LOCATED AT BOTTOM OF OUTLET PIPE

FOR A 4.0 INCH ORIFICE DIAMETER
A = 0.0873 FT²
h = 1.66 FT

Q = 0.56 CFS

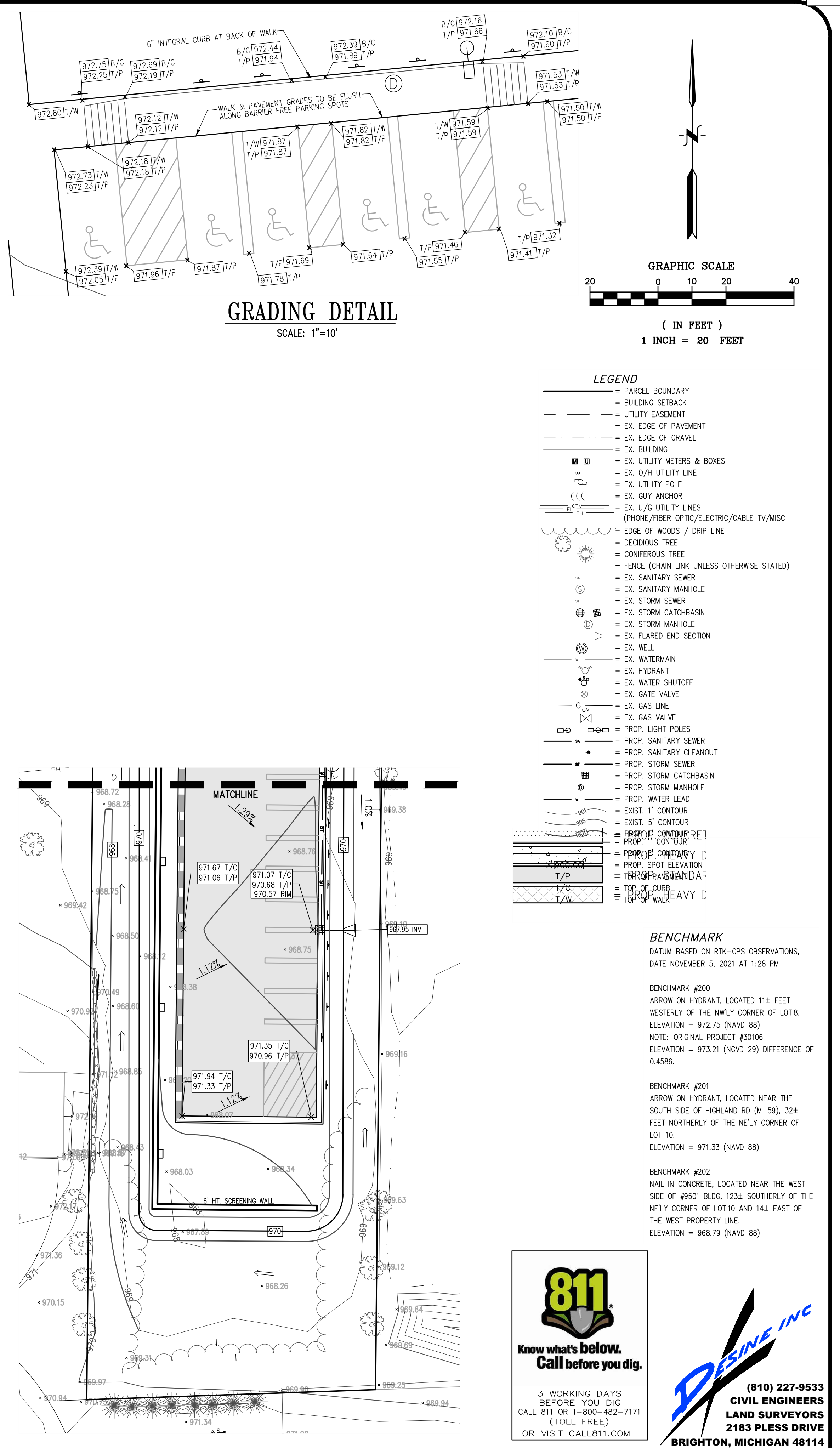
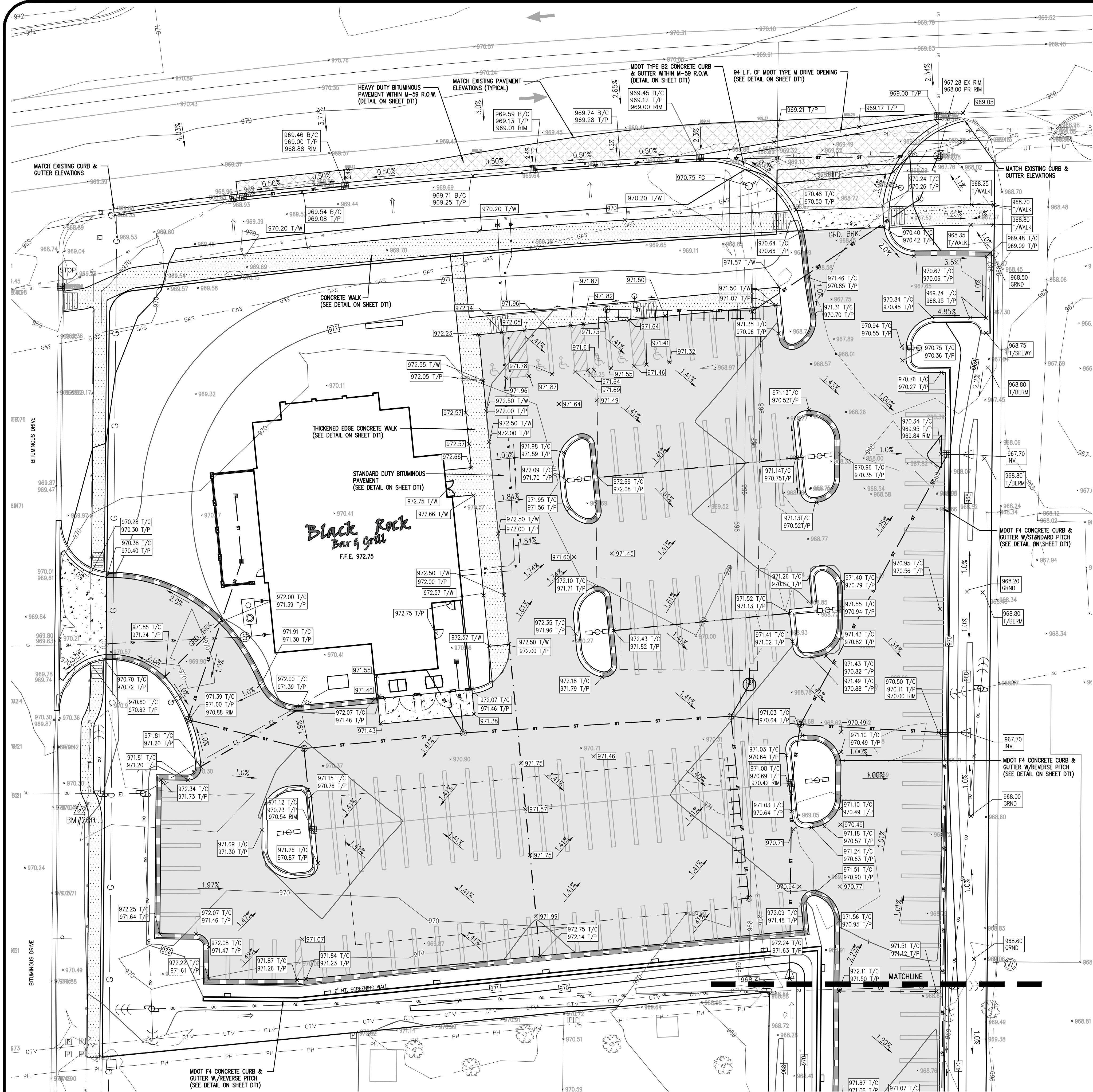
Design Criteria:

10 yr event (I = 175/t + 25)

HDPE n= 0.010

RCP n= 0.013

From MH# CB# FES#	To MH# CB# FES#	Inc. 0.00 "A"		Equiv. Area 100% CA	Total Area 100% CA	T Time Min.	I Inch Per Hour	Q (CIA) c.f.s.	Dia. of pipe inch	Slope pipe %	Slope H.G. %	Length of line ft.	Vel. Flow full ft./sec.	Time of flow min.	Cap of pipe c.f.s.	H.G. Elev. upper end	Ground Elev. Upper end Lower end	Invert Elev. Upper end Lower end	
ES 111 CB 110	CB 110 MH 102	0.08 0.53	0.54 0.92	0.04 0.49	0.04 0.53	10.0 10.0	5.00 5.00	0.20 2.64	12 18	2.30 0.20	0.00 0.06	10 119	6.88 2.66	0.0 0.7	5.40 4.70	968.47 968.41	967.70 969.84	967.70 967.07	967.47 966.83
ES 105 CB 104	CB 104 CB 103	0.09 0.15	0.34 0.75	0.03 0.11	0.03 0.14	10.0 10.0	5.00 5.00	0.16 0.70	12 18	2.00 0.20	0.00 0.00	10 155	6.42 2.66	0.0 1.0	5.04 4.70	968.75 968.55	967.95 970.57	970.57 970.50	967.95 967.34
ES 106 CB 103	CB 103 MH 102	0.11 0.25	0.47 0.88	0.05 0.22	0.05 0.41	10.0 11.0	5.00 4.86	0.26 1.99	12 18	3.60 0.20	0.01 0.04	55	8.61 2.66	0.0 0.3	6.76 4.70	968.35 968.35	967.70 970.50	970.50 970.80	967.70 966.94
ES 121 CB 120 MH 102	CB 120 MH 102	1.11 0.26	0.28 0.92	0.31 0.24	0.31 0.55	5.00 10.2	5.00 4.97	1.56 2.74	12 18	1.47 0.20	0.19 0.07	76 23	5.51 2.66	0.2 0.1	4.33 4.70	968.49 968.35	968.40 970.42	970.42 970.80	968.40 966.88
MH 102	MH 101	0.00	0.00	0.00	1.49	11.3	4.82	7.16	18	0.50	0.46	27	4.20	0.1	7.43	968.22	970.80	971.00	966.73
FD 134 FD 133 FD 132	FD 133 CB 132 MH 131	0.01 0.01 0.04	0.95 0.95 0.76	0.01 0.01 0.03	0.01 0.02 0.05	10.0 10.1 10.4	5.00 4.98 4.94	0.04 0.09 0.24	8 8 12	1.00 1.00 0.40	0.00 0.00 0.00	26 65 47	3.46 3.46 2.87	0.1 0.3 0.3	1.21 1.21 2.25	969.30 968.66 968.41	972.55 972.55 970.88	972.55 970.88 971.00	968.90 968.64 967.99
CB 140 MH 131	MH 131 MH 130	0.39 0.00	0.83 0.00	0.33 0.00	0.33 0.37	10.0 10.7	5.00 4.90	1.63 1.83	18 18	0.18 0.18	0.02 0.03	32 62	2.52 2.52	0.2 0.4	4.46 4.46	968.61 968.41	970.54 971.00	971.00 971.70	967.16 967.00
FD 141	MH 130	0.01	0.95	0.01	0.01	10.0	5.00	0.07	6	1.00	0.01	28	2.86	0.2	0.56	968.78	972.55	971.70	968.56
RD 1	MH 130	0.18	0.95	0.17	0.17	10.0	5.00	0.86	8	1.00	0.51	29	3.46	0.1	1.21	968.31	972.75	971.70	967.74
MH 130 MH 101 TC 100	MH 101 TC 100 Storage	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.56 2.05 2.05	11.1 11.8 11.9	4.84 4.75 4.75	2.71 9.72 9.71	18 18 18	0.18 0.86 0.86	0.07 0.86 0.85	105 17 6	2.52 5.51 5.51	0.7 0.1 0.0	4.46 9.74 9.74	968.17 968.00 967.75	971.70 971.00 971.00	971.00 971.00 971.00	966.79 966.50 966.25
OUTLET																			
CS 201 MH 200	MH 200 #2							0.59 0.59	12 12	0.32 0.32	0.03 0.03	78 18	2.57 2.57	0.5 0.1	2.02 2.02	966.97 966.81	971.16 970.00	970.00 968.00	966.20 965.87
CB 301 CB 300	CB 300 #2	0.22 0.07	0.30 0.95	0.07 0.07	0.07 0.13	10.0 10.4	5.00 4.94	0.33 0.66	12 12	0.34 0.34	0.01 0.03	65 93	2.65 2.65	0.4 0.6	2.08 2.08	967.33 966.94	969.01 969.00	969.00 968.00	966.55 966.23
#2	#1556							1.25	12	0.19	0.12	16	1.98	0.1	1.55	966.70	968.00	968.98	965.71



DESIGN: A/JL	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: A/JL	08-18-22		REVISED PER REVIEW COMMENTS
CHECK: WMP			

BLACK ROCK WHITE LAKE TOWNSHIP

GRADING & PAVING PLAN

CLIENT:
BRANDENBROOKE INVESTMENTS

30553 WIXOM ROAD
WIXOM, MI, 48393

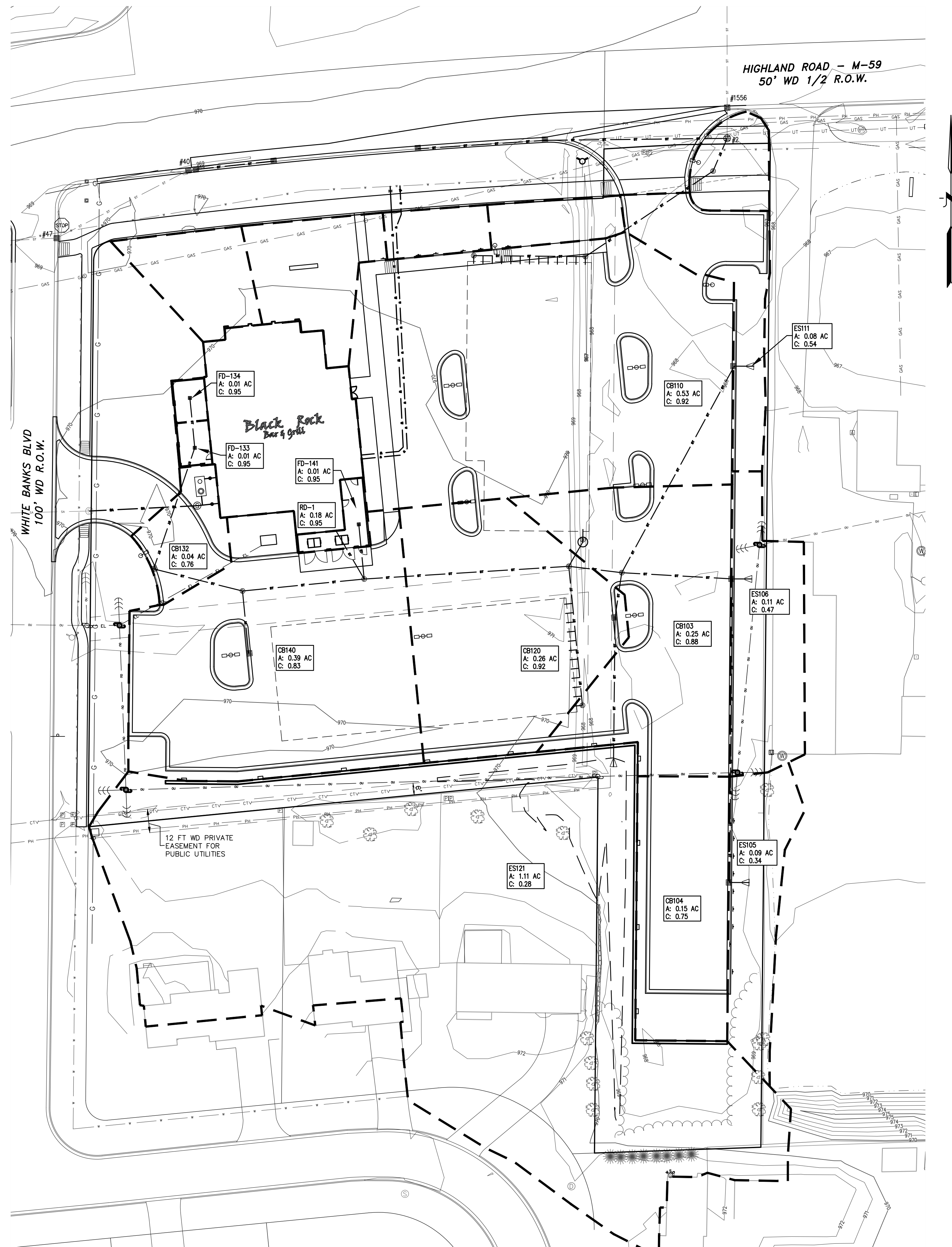
SCALE: 1" = 20'

PROJECT No.: 214182

DWG NAME: 4182 GR

ISSUED: AUG. 18, 2022

GR



STORM WATER RUNOFF COEFFICIENT CALCULATIONS							
SURFACE TYPE	Pavement	Building	Lawn		Water	TOTAL AREA (ACRES)	CALCULATE D RUNOFF COEFFICIENT "C"
SURFACE RUNOFF COEFFICIENT	0.80	0.90	0.20		1.00		
DRAINAGE AREA	SURFACE TYPE AREA (ACRES)						
141	0.014					0.01	0.80
140	0.330		0.060			0.39	0.71
134	0.009					0.01	0.80
133	0.009					0.01	0.80
132	0.030		0.010			0.04	0.65
121	0.066	0.052	0.996			1.11	0.27
120	0.250		0.010			0.26	0.78
111	0.034		0.041			0.08	0.47
110	0.508		0.024			0.53	0.77
106		0.04	0.073			0.11	0.45
105	0.017		0.075			0.09	0.31
104	0.107		0.038			0.15	0.64
103	0.222		0.024			0.25	0.74
RD-1		0.18				0.18	0.90
Totals	1.596	0.273	1.351	0.000	0.000	3.22	0.56

TOTAL DRAINAGE AREA (A) = 3.22
COMPOSITE RUNOFF COEFFICIENT (C) = 0.56

STORM WATER RUNOFF COEFFICIENT CALCULATIONS - UNDETAINED							
SURFACE TYPE	Pavement	Building	Lawn		Water	TOTAL AREA (ACRES)	CALCULATE D RUNOFF COEFFICIENT "C"
SURFACE RUNOFF COEFFICIENT	0.80	0.90	0.20		1.00		
DRAINAGE AREA	SURFACE TYPE AREA (ACRES)						
CB300	0.071					0.07	0.80
CB301	0.029		0.195			0.22	0.28
#2	0.007		0.033			0.04	0.31
Totals	0.107	0.000	0.228	0.000	0.000	0.34	0.39

TOTAL DRAINAGE AREA (A) = 0.34
COMPOSITE RUNOFF COEFFICIENT (C) = 0.39



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LAND SURVEYORS
2183 PLESS DRIVE
BRIGHTON, MICHIGAN 48114

DESIGN: AJL DRAFT: AJL CHECK: WMP	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION	BLACK ROCK WHITE LAKE TOWNSHIP	STORM WATER PLAN	CLIENT: BRANDENBROOKE INVESTMENTS 30553 WIXOM ROAD WIXOM, MI 48393	SCALE: 1" = 30' PROJECT No.: 214182 DWG NAME: 4182 SW ISSUED: AUG. 18, 2022	SW
		08-18-22	REVISED PER REVIEW COMMENTS								

NOTES:
1. SEE PLAN VIEW FOR BARRIER FREE PARKING SPACE DIMENSIONS.
2. STANDARD SPACES SHALL USE WHITE PAINT, BARRIER FREE SPACES SHALL USE BLUE PAINT.

3" TO 4" WIDE PAINTED PARKING STRIPES (USE WATERBORNE TRAFFIC PAINT MEETING SPECIFICATION TT-P-1952D TYPE II OR APPROVED EQUAL)

24" WIDE

Diagram illustrating the dimensions and specifications for a Handicap Parking symbol:

- Overall Dimensions:**
 - Overall width: 42"
 - Overall height: 27 DIA.
- Symbol Components and Dimensions:**
 - Top horizontal bar: 9" DIA.
 - Seat backrest: 6"
 - Seat cushion: 6"
 - Wheelchair base: 3" TYP.
 - Wheel: 15° angle
 - Footrest: 7"
 - Blue Paint: Indicated on the footrest area.
 - White Paint: Indicated on the base of the symbol.
 - 6" TYP.: Dimension for the base of the symbol.
- Centerline:** Indicated by a vertical dashed line.

HANDICAP PARKING STRIPING DETAIL

N.T.S.

3. Pavement markings shall be in accordance with the type, color, size and locations shown on the plans. If the information on the plans is not complete and the authority having jurisdiction does not have specific requirements, then use the following: Paint shall be supplied in accordance with AASHTO: M 248 latest addition. Colors shall be as follows: (WHITE - parking stalls, loading zones, parking islands, no parking zones, fire lanes, stop bars, pedestrian crossings, lane demarcations, directional arrows and lettering) (BLUE - handicap parking stalls and symbols). Stripe widths shall be as follows: (4" - parking spaces, driveway lanes, barrier free loading zones and no parking zones) (12" - crosswalks) (24" - stop bars).
2. The pavement shall be clean and free of dust, moisture, oils and other foreign materials at time of marking application. Any existing pavement markings shall be removed or blacked out as acceptable to the engineer. Unless paints are compatible and overlay identically. The surface of the pavement prior to application shall be a minimum of 45 degrees F and rising unless the Manufacturer's recommendations are greater.
3. The signage shall be in accordance with the type, color, size and locations shown on the plans and in accordance with AASHTO M268. The signage shall be provided in accordance with the Local Municipality and the Michigan Manual of Uniform Traffic Devices latest edition.
4. Posts, brackets and frames shall be steel per ASTM A-36, A-242, A-441, A-572, A588, Grade 50 and hot dip galvanized in accordance with ASTM A123. All cutting, drilling and/or other pole modifications shall be painted with galvanizing paint. All mounting hardware shall be stainless steel.
5. Sign post footings shall be provided when specified on the project plans. Sign post footings shall be a minimum of 3'-6" deep and 8" in diameter unless poor soils or frost conditions require greater depth and/or diameter. Sign posts shall be kept plumb, 6 inches off the bottom of footing excavation and centered as 3000-psi concrete is placed under and around the sign post. The overall sign and post system should be able to withstand 33 pounds per square foot. Signs shall not be mounted on posts until after concrete has cured for a minimum of seven days or 75% strength is achieved.
6. Sign posts shall be installed in pipe bollards where specified on the project plans. Pipe bollards shall be 6" diameter schedule 40 steel pipe. Pipe bollards shall be filled with concrete that is rounded at the top of the bollard. Pipe bollard footings shall be a minimum of 3'-8" deep and 18" in diameter unless poor soils or frost conditions require greater depth and/or diameter. Embed the bollard into the concrete footing a minimum of 2 feet below proposed finish grade. Bollards and sign posts shall be kept plumb while concrete cures. Signs shall not be mounted on posts until after concrete has cured for a minimum of seven days or 75% strength is achieved. Bollards located within the main parking area shall be painted traffic yellow. Bollards located within the sidewalk adjacent to the building shall be painted shade grey.
7. All barrier free striping and signage shall meet the Americans with Disabilities Act (ADA) requirements.
8. All Fire Lane signs shall have a Red Border and Red Letters on White Background. All Fire Lane signs shall be Reflective. Fire lane striping and signage shall meet the requirements of the Local Building Inspector and Fire Department.
9. "Mounting Height" shall be the minimum height of the bottom of the sign above finish grade. When signs are located downhill from the roadway, driveway and/or parking area, then the "Mounting Height" shall be the height of the bottom of the sign above the top of pavement finish grade at the nearest edge of pavement adjacent to the sign.
10. All Traffic Control and Fire Lane signs shall be installed at 3 feet behind the back of curb (and/or edge of pavement) to the centerline of the sign post unless noted otherwise on the project plans.
11. The Contractor(s) and/or Subcontractor(s) responsible for installation of the sign posts shall contact the 811 Public Underground Utility Locating System a minimum of three (3) working days prior to installation of the signs. The sign posts in the locations specified on the project plans. When underground utilities are located in conflict with the proposed sign post locations, field adjust the sign locations the minimum amount necessary to safely clear the underground utilities. Maintain a minimum of 2 feet of clearance between the edge of sign and the back of curb and/or edge of sidewalk.

SIGN SCHEDULE					
SIGN	KEY	SIZE (W x H)	TYPE OR MOUNT	MOUNTING HEIGHT	QUANTITY
	R7-8	12" x 18"	POST MOUNTED	7'-6"	6
	R7-8a	12" x 6"	BUILDING MOUNTED	7'-0"	1
	R8-3a	12" x 12"	POST MOUNTED	7'-0"	1
		12" x 18"	POST MOUNTED	7'-0"	8

SIGN SCHEDULE

SIGN	KEY	SIZE (W x H)	TYPE OR MOUNT	MOUNTING HEIGHT	QUANTITY
	R7-8	12" x 18"	POST MOUNTED	7'-6"	6
	R7-8a	12" x 6"	BUILDING MOUNTED	7'-0"	1
	R8-3a	12" x 12"	POST MOUNTED	7'-0"	1
		12" x 18"	POST MOUNTED	7'-0"	8

LED ILLUMINATED D/F BLACK ALUMINUM CABINET W/
ALUM ROUTED OUT FACES
WHITE ACRYLIC BACKED
OVERLAIN WITH PRINTED VINYL GRAPHICS
PUSH THRU ACRYLIC COPY

96 X 256 X 10MM
37-3/4" 100-3/4" AREA
FULL COLOR THINK EMC
MOUNTED BACK TO BACK ROAD SIGN
(ROCK BASE BY OTHER)

72"

100-3/4"

SIDE VIEW
24"

37-3/4"

60"

2"

20-1/4"

IT IS MORE THAN JUST A
MEAL, IT IS AN EXPERIENCE!
WHY EAT ORDINARY WHEN
**YOU CAN EAT
ON A ROCK!?**

ELECTRICAL CONDUIT
WITH (2) 30 A. & (1) 20A.
120 PER. FOOT

3" STEEL SQ TUBE
TO SUPPORT SIGNS

1-1/2" STEEL ANGLE

3'-6" X 14'-5" X 2' CONCRETE FOUNDATION

100-3/4"

3'-6"

(1) 3'-1 3/4" X 14'-4 3/4" D/F MONUMENT SIGN @ 45.28 SQ. FT.

SIGNAGE & PAVEMENT MARKING PLAN

CLIENT:
BRANDENBROOKE INVESTMENTS

30553 WIXOM ROAD
WIXOM, MI, 48393

SCALE: 1" = 30'

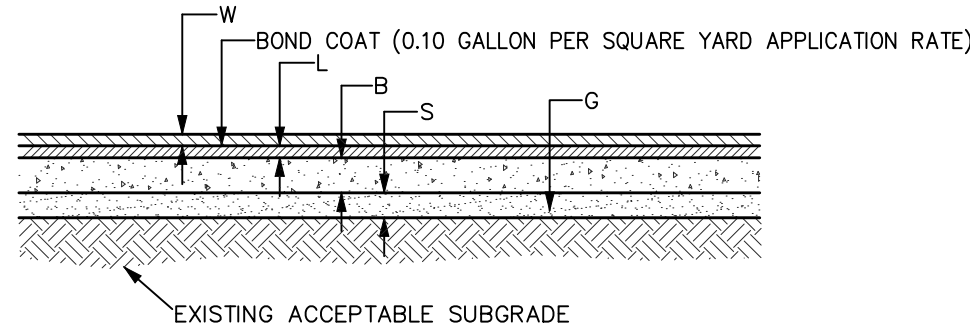
PROJECT No.: 214182

DWG NAME: 4182-SIGN

ISSUED: **AUG. 18, 2022**

SG

DESINE INC.
(810) 227-9500
CIVIL ENGINEER
LAND SURVEYOR
2183 PLESS DRIVE
BRIGHTON, MICHIGAN 48116



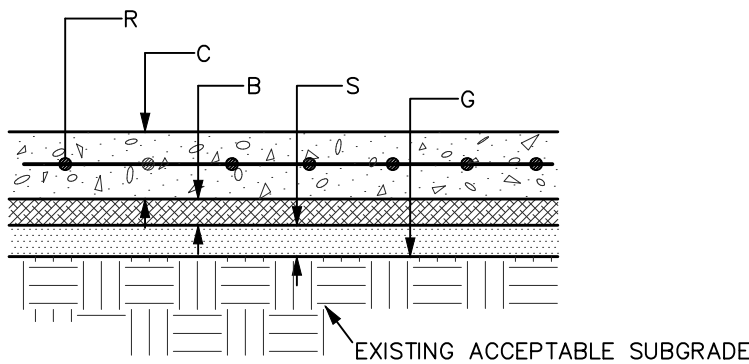
STANDARD DUTY BITUMINOUS PAVEMENT CROSS SECTION

NOT TO SCALE

KEY	DESCRIPTION	MATERIAL SPECIFICATION	MINIMUM COMPACTED THICKNESS
W	WEARING COURSE	MDOT 36A	1.5"
L	LEVELING COURSE	MDOT 13A	1.5"
B	AGGREGATE BASE	MDOT 21AA	8"
S	GRANULAR SUBBASE	MDOT CLASS II	6"
G	GEOGRID	N/A	N/A

BITUMINOUS PAVEMENT NOTES:

- The construction specifications of the appropriate Local Municipality are a part of this work. Refer to the General Notes, Road and/or Parking Lot Construction Notes and Typical Road and/or Pavement Cross Section details on the project plans for additional requirements.
- Unsuitable soils found within the 1 on 1 influence zone of the pavement, such as muck, peat, topsoil, marl, silt or other unstable materials shall be excavated and replaced up to the proposed subgrade elevation with MDOT Class III granular material compacted to 95% maximum unit weight, modified proctor.
- Contractor shall proof roll prepared subgrade as directed by Engineer. Unacceptable areas of subgrade shall be undercut and replaced as directed by Engineer.
- Owner/Developer may delay placement of the bituminous wearing course outside of the public road right of way. Repair of the bituminous leveling course may be necessary due to any delay in placement of the bituminous wearing course. Substantial repair to the bituminous leveling course may be necessary if placement of the bituminous wearing course is delayed for more than 12 months after placement of the bituminous leveling course. The bituminous leveling course shall be repaired as directed by Engineer prior to placement of the bituminous wearing course.



HEAVY DUTY CONCRETE PAVEMENT CROSS-SECTION

NOT TO SCALE

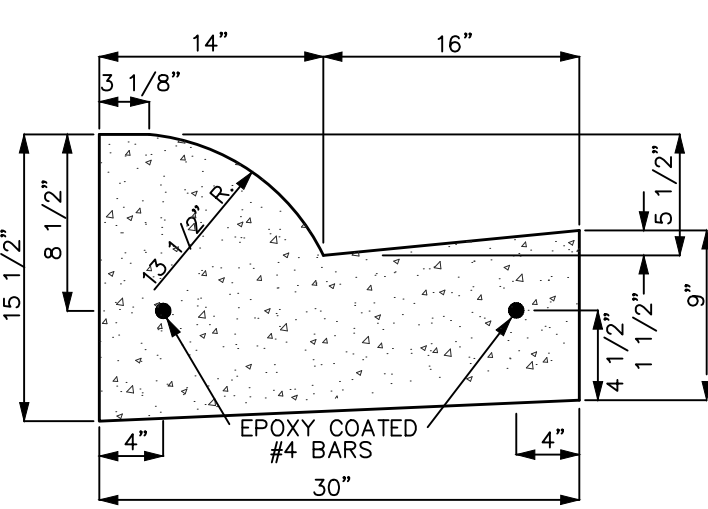
KEY	DESCRIPTION	MATERIAL SPEC.	MIN. THICKNESS
R	REINFORCEMENT	N/A	N/A
C	CONCRETE	MDOT P1-1A - 6 SACK	8"
B	AGGREGATE BASE	MDOT 21AA	6"
S	GRANULAR SUBBASE	MDOT CLASS II	6"
G	GEOGRID	N/A	N/A

CONCRETE PAVEMENT NOTES:

- The construction specifications of the appropriate Local Municipality are a part of this work. Refer to the General Notes, Road and/or Parking Lot Construction Notes and Typical Road and/or Pavement Cross Section details on the project plans for additional requirements.
- Unsuitable soils found within the 1 on 1 influence zone of the pavement, such as muck, peat, topsoil, marl, silt or other unstable materials shall be excavated and replaced up to the proposed subgrade elevation with MDOT Class II granular material compacted to 95% maximum unit weight, modified proctor.
- Contractor shall proof roll prepared subgrade as directed by Engineer. Unacceptable areas of subgrade shall be undercut and replaced as directed by Engineer.
- Concrete material shall meet or exceed the specification requirements of the appropriate Local Municipality. If not specified by the Local Municipality, then the concrete material shall be MDOT P1 (I-A) 6.0 sack concrete pavement mixture with a minimum 28 day design compressive strength of 4,000 PSI and 6.5% (+/-1.5%) entrained air. Contractor shall submit concrete mix design and aggregate mechanical analysis report to the Local Municipality and Engineer for review and approval prior to use.
- Install transverse contraction control joints in accordance with the Local Municipality requirements. If not specified by the Local Municipality, then install transverse contraction control joints in curb with 1" minimum depth at 10' on center. Tool joints in fresh concrete or saw cut within 8 hours.
- Install transverse expansion control joints in accordance with the Local Municipality requirements. If not specified by the Local Municipality, then install transverse expansion control joints as follows: 300' maximum on center. Transverse expansion control joints shall be 1" thick asphalt fiber joint filler matching entire concrete cross section.
- Provide lane ties when specified on the Project Plans, otherwise provide 0.5" asphalt fiber control joint between concrete pavement and all other concrete structures, such as concrete curb, sidewalks and concrete driveways.

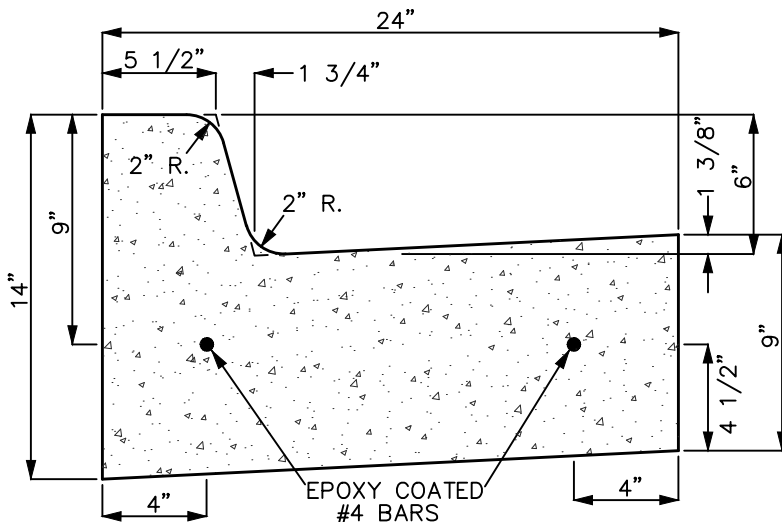
CONCRETE CURB NOTES:

- Refer to the project plans for the proposed locations of the specific curb types.
- The construction specifications of the appropriate Local Municipality are a part of this work. Refer to the General Notes and Curb Cross Section Details on the project plans for additional requirements.
- Extend the base and/or subbase material of the appropriate adjacent pavement cross-section horizontally to 1 foot behind the back of curb. Concrete curb shall be constructed on no less than 6" of combined depth of compacted base/subbase material.
- Concrete material shall meet or exceed the specification requirements of the appropriate Local Municipality. If not specified by the Local Municipality, then the concrete material shall be MDOT P1 (I-A) 6.0 sack concrete pavement mixture with a minimum 28 day design compressive strength of 4,000 PSI and 6.5% (+/-1.5%) entrained air. Contractor shall submit concrete mix design and aggregate mechanical analysis report to the Local Municipality and Engineer for review and approval prior to use.
- Install transverse contraction control joints in accordance with the Local Municipality requirements. If not specified by the Local Municipality, then install transverse contraction control joints in curb with 1" minimum depth at 10' on center. Tool joints in fresh concrete or saw cut within 8 hours.
- Install transverse expansion control joints in accordance with the Local Municipality requirements. If not specified by the Local Municipality, then install transverse expansion control joints in curb as follows: 400' maximum on center, at spring points of intersecting streets and within 10' on each side of catch basins. Transverse expansion control joints shall be 1" thick asphalt fiber joint filler matching entire curb cross section.
- Provide 1" asphalt fiber control joint between back of curb and all other concrete structures, such as concrete sidewalks and concrete driveways.
- Curb Contractor shall provide final adjustment of catch basin castings in curb line. Castings shall be tucked pointed to structure water tight with concrete or mortar inside and outside of casting.
- Install curb cuts for all existing and proposed sidewalks and pedestrian ramps in accordance with the American Disabilities Act and the Barrier Free Design requirements of the appropriate Local, County and/or State Agency. Refer to MDOT Standard Plan R-28, latest revision. Install curb cuts for all existing and proposed vehicular ramps and drives as noted on the project plans.



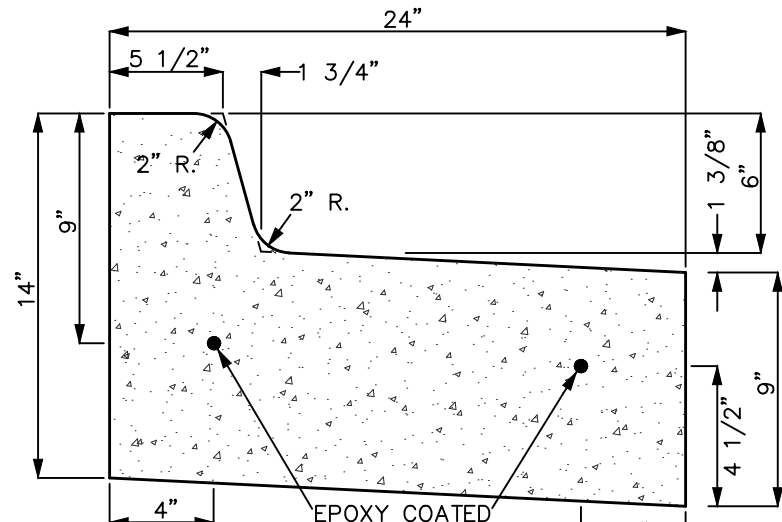
MDOT TYPE B2 CURB

NOT TO SCALE



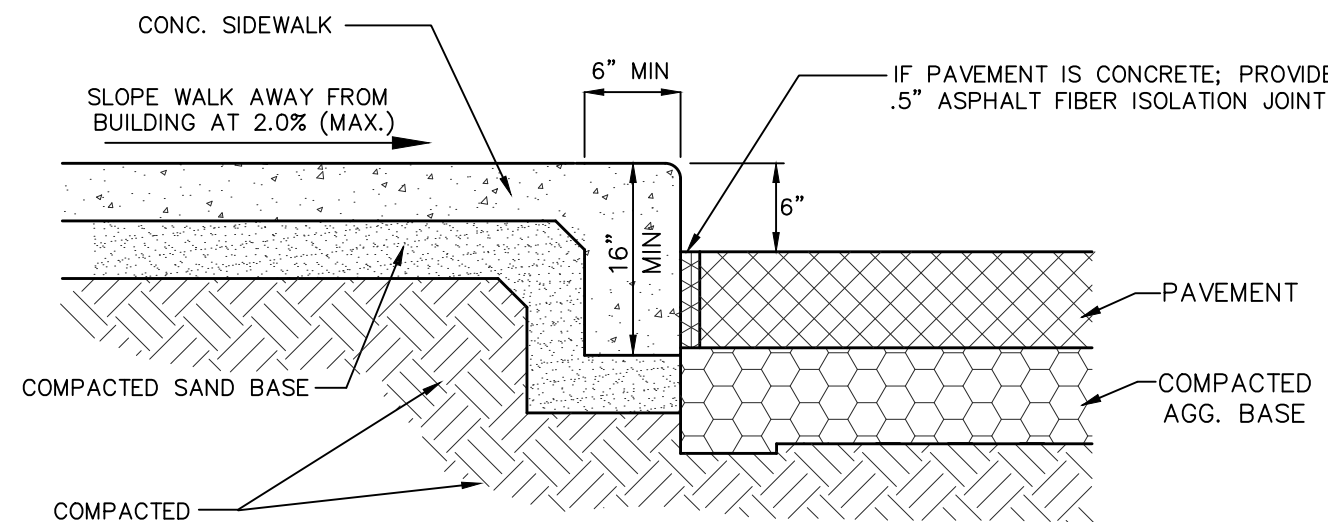
MDOT TYPE F4 CURB

NOT TO SCALE



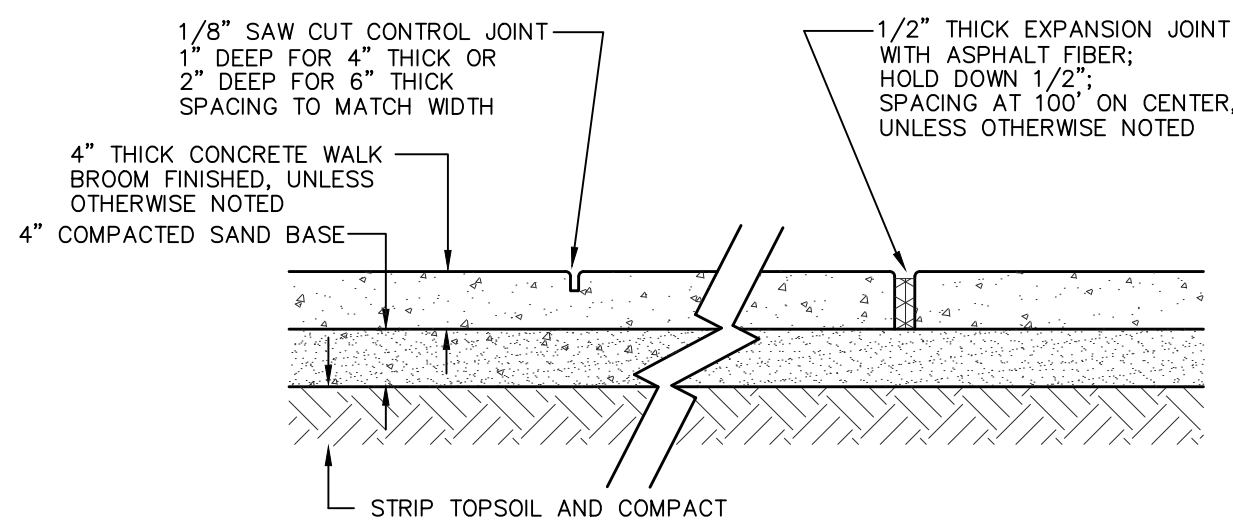
MDOT TYPE F4 CURB REVERSE PITCH

NOT TO SCALE



SIDEWALK WITH INTEGRAL CURB & ISOLATION JOINT DETAIL

NOT TO SCALE



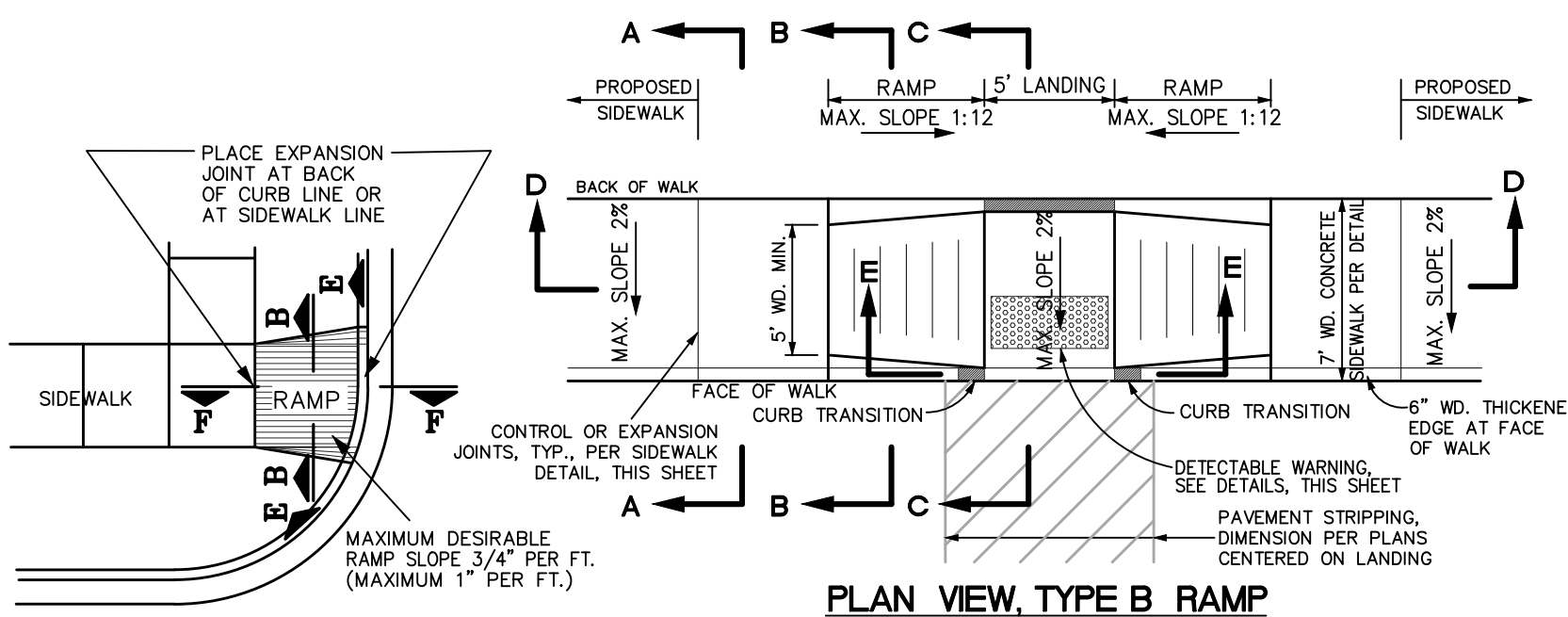
SIDEWALK CROSS SECTION

NOT TO SCALE

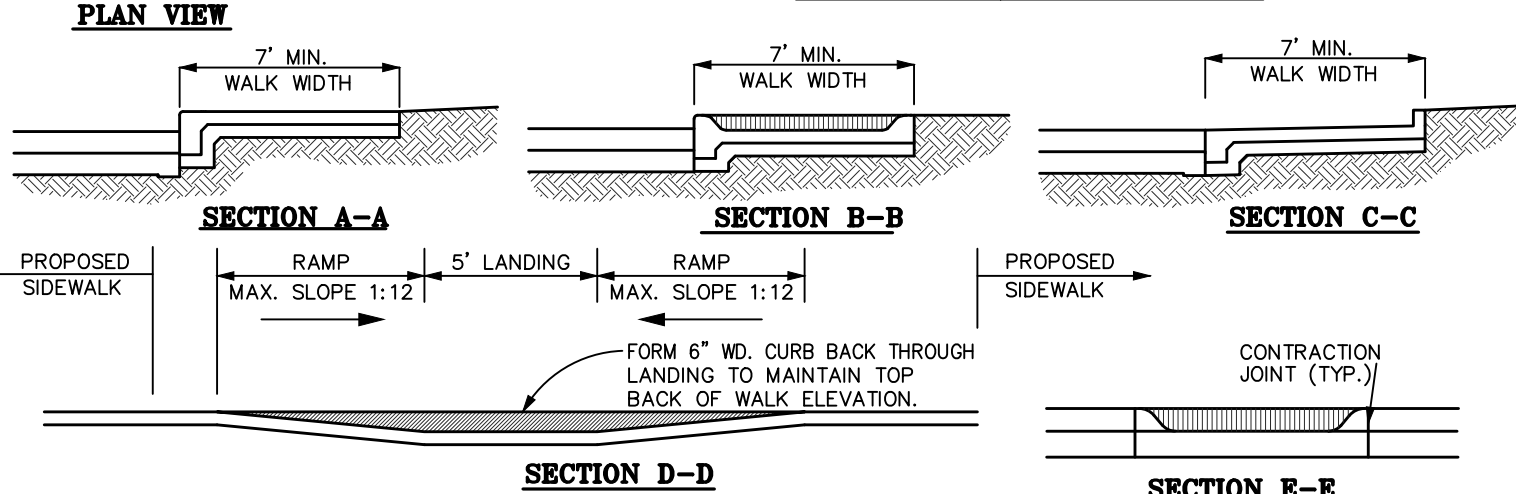
- NOTES:
- SEE PLAN FOR WIDTH OF SIDEWALK.
 - PROVIDE CONCRETE TYPE PER LOCAL CODE. (3500 PSI AIR ENTRAINED)
 - WALK TO BE 6" THICK AT ENTRY DRIVES

SIDEWALK CROSS SECTION NOTES:

- The construction specifications of the Local Municipality are a part of this work. Refer to the General Notes and the Sidewalk Cross Section Details on the Project Plans for additional requirements.
- Sidewalk widths may vary. See the Project Plans for the proposed sidewalk width at each location. Increase sidewalks to 6" minimum thickness at driveways and other areas exposed to vehicular traffic.
- The existing subgrade soils shall be prepared prior to placement of the granular subbase. Unsuitable soils found within the 1 on 1 influence zone of the proposed sidewalk areas, such as muck, peat, topsoil, marl, silt or other unstable materials shall be excavated and replaced with structural fill. Structural fill shall be MDOT Class II granular material placed in accordance with the General Notes on the Project Plans.
- The sidewalk compacted subbase material shall be MDOT CL II sand. No subbase material substitutions shall be permitted without prior written approval of the Project Engineer and receipt of the Owner's Authorization. The subbase shall be compacted to a minimum of 95% of the maximum unit weight, modified proctor.
- Concrete material shall be MDOT P1 (I-A) 6.0 sack concrete pavement mixture with a minimum 28 day design compressive strength of 4,000 PSI and 6.5% (+/-1.5%) entrained air. The Contractor shall submit the concrete mix design and aggregate mechanical analysis report to the Material Testing Engineer and/or Project Engineer for review and approval prior to use.
- Install transverse contraction control joints in accordance with the Sidewalk Cross Section Detail. Space contraction control joints to match sidewalk width, but no greater than 10' on center. Tool joints in fresh concrete or saw cut within 8 hours.
- Install transverse expansion control joints in accordance with the Sidewalk Cross Section Detail. Space expansion control joints at 50 feet on center maximum. Transverse expansion control joints shall be 1/2" thick asphalt fiber joint filler matching entire sidewalk cross section.
- Provide 1" asphalt fiber control joint between concrete sidewalks and all other concrete structures, such as concrete building foundations, concrete curb and concrete driveways.
- Construct all Barrier Free Sidewalk Ramps in accordance with the American Disabilities Act and the Barrier Free Design Requirements of the appropriate Local, County or State Agency with jurisdiction over the project. Refer to MDOT Standard Plan R-28, latest revision.
- The concrete sidewalk shall not be exposed to vehicular traffic until the concrete has reached at least 75% of the design flexural strength.

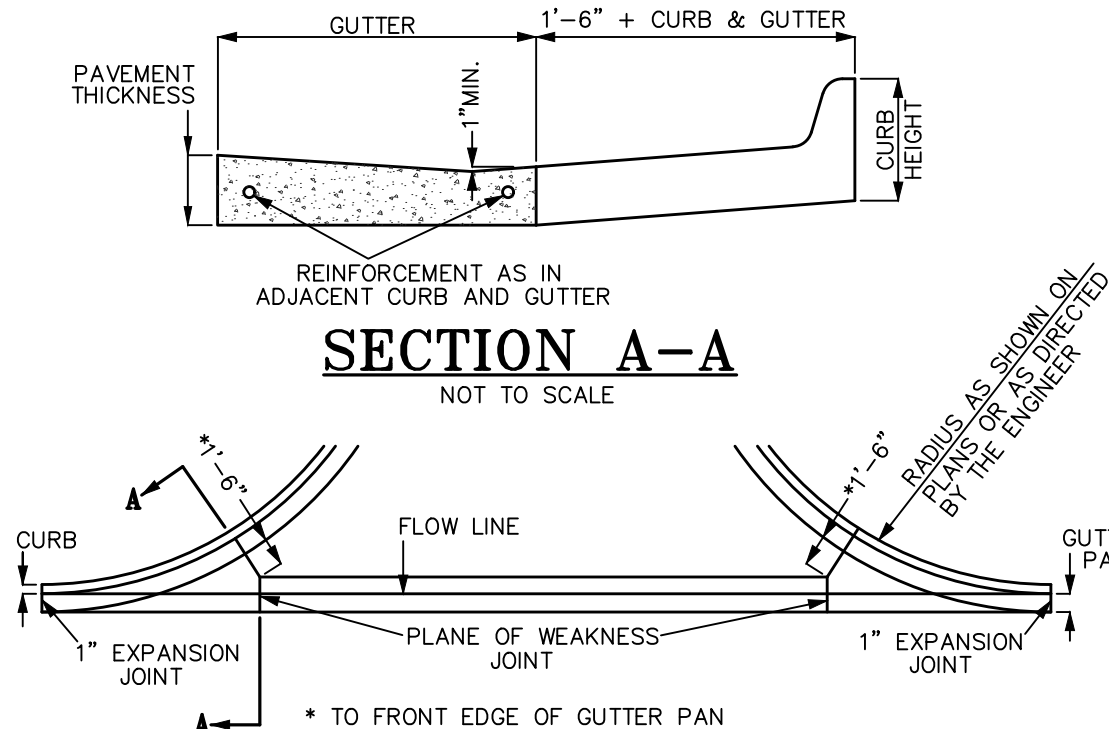


PLAN VIEW, TYPE B RAMP



BARRIER FREE RAMP

NOT TO SCALE



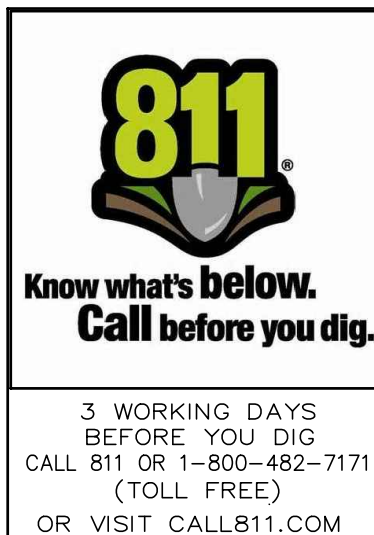
CONCRETE DRIVEWAY OPENING MDOT DETAIL "M"

NOT TO SCALE

GENERAL NOTES:

- Contractor shall perform the work in accordance with the requirements of the appropriate Local, County and State Agencies and all other Government and Regulatory Agencies with jurisdiction over the project. Contractor shall notify the appropriate Agencies in advance of each stage of work in accordance with each Agency's requirements.
- Contractor shall comply with all permit, insurance, licensing and inspection requirements associated with the work. Prior to construction, Contractor and Owner/Developer shall determine who is responsible for obtaining each required permit. Contractor shall verify that the each required permit has been obtained prior to commencement of the stage of work associated with the required permit(s).
- Contractor shall furnish liability insurance and property damage insurance to save harmless the Owner, Developer, Architect, Engineer, Surveyor and Government Agencies for any accident occurring during the construction period. Refer to the appropriate Local, County and State Agencies for additional requirements. Copies of insurance certifications shall be made available to the Owner/Developer.
- Contractor shall conduct and perform work in a safe and competent manner. Contractor shall perform all necessary measures to provide for traffic and pedestrian safety from the start of work and through substantial completion. Contractor shall determine procedures and provide safety equipment such as traffic controls, warning devices, temporary pavement markings and signs as needed. Contractor shall comply with the safety standards of the State Department of Labor, the occupational health standards of the State Department of Health and safety regulations of the appropriate Local, County, State and Federal Agencies. Refer to the safety specifications of the appropriate Regulatory Agencies. The Contractor shall designate a qualified employee with complete job site authority over the work and safety precautions; said designated employee shall be on site at all times during the work.
- Contractor shall coordinate scheduling of all work in the proper sequence, including work by Subcontractors. Additional costs due to improper planning by Contractor or work done out of sequence as determined by standard acceptable construction practices, shall be Contractor's responsibility.
- Contractor shall contact the 811 Underground Public Utility Locating System or other appropriate local underground utility locating Agency, a minimum of three (3) working days prior to construction. Existing utility information on the project plans may be from information disclosed to this firm by the Utility Companies, Local, County or State Agencies, and/or various other sources. No guarantee is given as to the completeness or accuracy thereof. Prior to construction, locations and depths of all existing utilities (in possible conflict with the proposed improvements) shall be verified in the field.
- Contractor shall coordinate scheduling a Pre-Construction Meeting with Engineer prior to commencement of work.
- The Local Municipality, County and/or State in which the project is located may require an Engineer's Certification of construction of the proposed site improvements. Contractor shall verify the certification requirements with Engineer prior to commencement of work. Contractor shall coordinate construction staking, testing, documentation submittal and observation with the appropriate Agency, Surveyor and/or Engineer as required for Engineer's Certification and Government Agency Acceptance. All materials used and work done shall meet or exceed the requirements of certification and acceptance, the contract documents and the material specifications noted on the project plans. Any materials used or work done that does not meet said requirements, contract documents and/or specifications shall be replaced and/or redone at Contractor's expense. The Owner/Developer may wait for test results, certifications and/or Agency reviews prior to accepting work.

- Engineer may provide subsurface soil evaluation results, if available, to Contractor upon request. Subsurface soil evaluation results, soils maps and/or any other documentation does NOT guarantee existing soil conditions or that sufficient, acceptable on-site granular material is available for use as structural fill, pipe bedding, pipe backfill, road subbase or use as any other granular material specified on the project plans. On-site granular material that meets or exceeds the material specifications noted on the project plans may be used as structural fill, pipe bedding, pipe backfill and/or road subbase material. On-site granular material shall be stockpiled and tested as acceptable to the appropriate Agency and/or Engineer prior to use.
- During the performance of their work, Contractor shall be solely responsible for determining soil conditions and appropriate construction methods based on the actual field conditions. Contractor shall furnish, install and maintain sheeting, shoring, bracing and/or other tools and equipment and/or construction techniques as needed for the safety and protection of the workers, pedestrians and vehicular traffic and for protection of adjacent structures and site improvements.
- Contractor shall install temporary and permanent soil erosion and sedimentation control devices at the appropriate stages of construction in accordance with the appropriate regulatory Agencies. Refer to Soil Erosion and Sedimentation Control Plans and Notes on the project plans.
- Structural fill shall be placed as specified on the project plans and within the 1 on 1 influence zone of all structures, paved areas and other areas subject to vehicular traffic. Structural fill shall be placed using the controlled density method (12" maximum lifts, compacted to 95% maximum unit weight, modified proctor). Fill material shall meet or exceed the specifications noted on the project plans or as directed by Engineer when not specified on the project plans.
- All existing monuments, property corners, ground control and benchmarks shall be protected and preserved; and if disturbed by Contractor, shall be restored at Contractor's expense. Contractor shall notify Surveyor of any conflicts between existing monuments, property corners, ground control and/or benchmarks and the proposed site improvements.
- Contractor shall notify Owner/Developer and Engineer immediately upon encountering any field conditions, which are inconsistent with the project plans and/or specifications.
- When noted on the project plans for demolition and/or removal, Contractor shall remove existing structures, building and debris and recycle and/or dispose of in accordance with Local, County, State and Federal regulations.
- Contractor shall remove excess construction materials and debris from site and perform restoration in accordance with the project plans and specifications. Disposing of excess materials and debris shall be performed in accordance with Local, County, State and Federal regulations.
- Construction access to the site shall be located as acceptable to the Owner/Developer and to the appropriate Local, County and/or State Agency with jurisdiction over the road(s) providing access to the site. Construction access shall be maintained and cleaned in accordance with the appropriate Local, County and/or State Agencies and as directed by Owner/Developer and/or Engineer.
- Contractor shall take necessary precautions to protect all site improvements from heavy equipment and construction procedures. Damage resulting from Contractor actions shall be repaired at Contractor's expense.



DESIGN: AJL	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: O.M.		08-18-22	REVISED PER TOWNSHIP REVIEW COMMENTS
CHECK: WMP			

REVISION #	DATE	REVISION-DESCRIPTION

BLACK ROCK
WHITE LAKE TOWNSHIP

SITE PAVEMENT
NOTES & DETAILS

CLIENT: BRANDENBROOKE INVESTMENTS	SCALE: N/A
30553 WIXOM ROAD WIXOM, MI, 48393	PROJECT No.: 214182
	DWG NAME: 4182 DT
	ISSUED: AUG. 18, 2022

DT

02.02.2022 Prelim Site Plan Review
02.10.2022 Revision per Owner
04.20.2022 Revision
07.18.2022 Revision
08.17.2022 Revision

Black Rock
Bar & Grill

Highland Drive
White Lake Township, Michigan

Landscape Plan North

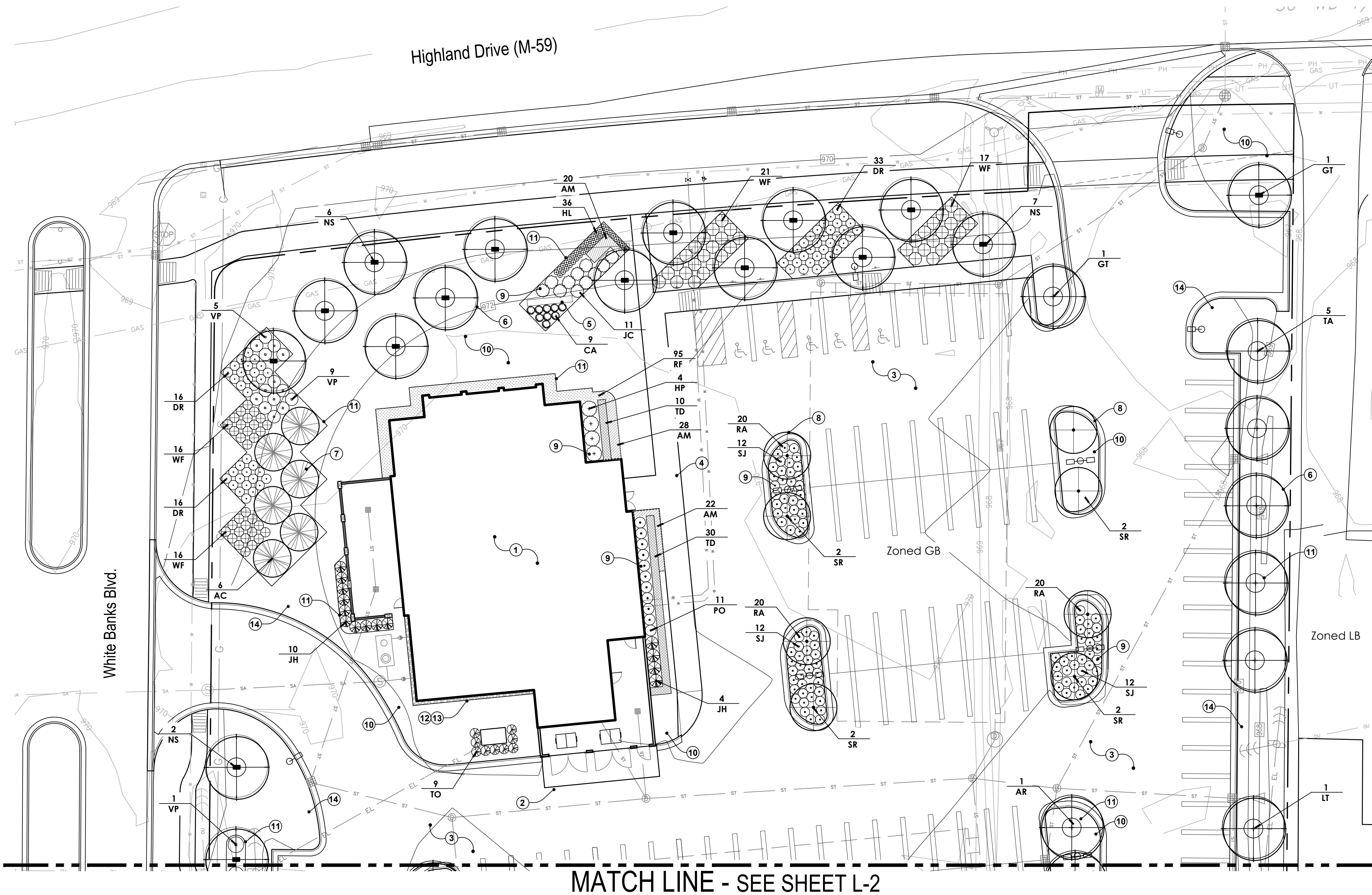
**NOT FOR
CONSTRUCTION**



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Date: 01.2022
Scale: 1" = 20'-0"

22.003

L-1



Notes

ALL LANDSCAPE MATERIALS, INSTALLATION, AND MAINTENANCE SHALL COMPLY W/ ZONING ORDINANCE.

ALL PLANT MATERIAL SHALL BE LOCALLY GROWN OR OF THIS NORTH MIDWEST AMERICAN REGION AND CONFORM TO THE CURRENT AAN STANDARDS. USE NO.1 GRADE PLANT MATERIAL.

ALL PLANT MATERIAL SHALL BE MAINTAINED IN A HEALTHY GROWING CONDITION FREE OF WEEDS AND DEBRIS. THIS ESTABLISHMENT PERIOD SHALL BE TWO (2) YEARS FROM THE DATE OF APPROVAL OF PLANTINGS BY THE TOWNSHIP. FAILING PLANT MATERIAL SHALL BE REPLACED WITHIN THREE MONTHS, OR THE NEXT GROWING SEASON.

ALL LANDSCAPE AREAS GREATER THAN 200 SF SHALL BE IRRIGATED BY AN AUTOMATIC IRRIGATION SYSTEM. THE IRRIGATION SYSTEM SHALL HAVE A RAIN SENSOR OR SIMILAR DEVICE INSTALLED TO PREVENT WATERING AFTER A PRECIPITATION EVENT.

ALL TREE WRAP, STAKES AND GUY WIRES SHALL BE REMOVED AFTER ONE WINTER SEASON.

NATURAL COLOR, DOUBLE SHREDDED HARDWOOD BARK MULCH - SEE PLANTING DETAILS FOR DEPTH.

TREES SHALL NOT BE PLANTED CLOSER THAN 4' TO THE PROPERTY LINE

ALL TREES SHALL MAINTAIN A MINIMUM 10' HORIZONTAL DISTANCE FROM ALL WATERMAIN, STORM SEWER, AND SANITARY SEWER LINES

ALL PARKING LOT ISLANDS CONTAINING SHRUBS SHALL BE PROTECTED IN THE WINTER BY THE USE OF SALT TARPS TO PREVENT SALT BUILD-UP AND DESICCATION

PLANT SCHEDULE

TREES							
QTY	SYM	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	ROOT	COMMENTS
6	AC	<i>Abies concolor</i>	Concolor Fir	7" ht.	as shown	B&B	Unsheared, branched to ground
4	AR	<i>Acer r. 'Redpointe'</i>	Redpointe Red Maple	2.5" cal.	as shown	B&B	Single straight trunk
2	GT	<i>Gleditsia t. 'Skyline'</i>	Skyline Honeylocust	2.5" cal.	as shown	B&B	Single straight trunk
6	LT	<i>Liriodendron tulipifera</i>	Tulip Tree	2.5" cal.	as shown	B&B	Single straight trunk
17	NS	<i>Nyssa sylvatica</i>	Blackgum	2.5" cal.	as shown	B&B	Single straight trunk
11	PA	<i>Picea abies</i>	Norway Spruce	7" ht.	as shown	B&B	Unsheared, branched to ground
3	PS	<i>Pinus strobus</i>	Eastern White Pine	7" ht.	as shown	B&B	Unsheared, branched to ground
4	QR	<i>Quercus rubra</i>	Red Oak	2.5" cal.	as shown	B&B	Single straight trunk
8	SR	<i>Syringa r. 'Ivory Silk'</i>	Japanese Tree Lilac	2" cal.	as shown	B&B	Single straight trunk
5	TA	<i>Tilia americana 'Redmond'</i>	Redmond American Basswood	2.5" cal.	as shown	B&B	Single straight trunk
SHRUBS							
65	DR	<i>Diervilla rivularis 'Kodiak Orange'</i>	Kodiak Orange Bush Honeysuckle	30" ht.	as shown	cont.	Well rooted
21	FI	<i>Forsythia x l. 'Spring Glory'</i>	Spring Glory Forsythia	30" ht.	as shown	cont.	Well rooted
5	HP	<i>Hydrangea p. 'Little Lime'</i>	Little Lime Hydrangea	30" ht.	as shown	cont.	Well rooted
11	JH	<i>Juniperus c. 'Grey Owl'</i>	Grey Owl Juniper	24" spd.	as shown	cont.	Well rooted
14	JH	<i>Juniperus c. 'Hetz Columnar'</i>	Hetz Columnar Juniper	48" ht.	as shown	B&B	
39	JS	<i>Juniperus c. 'Sea Green'</i>	Sea Green Juniper	24" spd.	as shown	cont.	Well rooted
11	PO	<i>Physocarpus o. 'Summer Wine'</i>	Summer Wine Ninebark	30" ht.	as shown	cont.	Well rooted
60	RA	<i>Rhus aromatica 'Gro-Low'</i>	Gro-Low Sumac	24" spd.	as shown	cont.	Well rooted
36	SJ	<i>Spiraea japonica 'Neon Flash'</i>	Neon Flash Spirea	24" ht.	as shown	cont.	Well rooted
15	SP	<i>Syringa p. 'Miss Kim'</i>	Miss Kim Dwarf Korean Lilac	30" ht.	as shown	cont.	Well rooted
40	TD	<i>Taxus x m. 'Densiflora'</i>	Dense Yew	24" ht.	24" o.c.	cont.	Trim to Hedge
9	TO	<i>Thuja o. 'Nigra'</i>	Dark Green American Arborvitae	5" ht.	as shown	B&B	Trim to Hedge
26	VP	<i>Viburnum p.t. 'Shasta'</i>	Shasta Doublefile Viburnum	30" ht.	as shown	cont.	Well rooted
20	VT	<i>Viburnum trilobum 'Bailey's Compact'</i>	Bailey's Compact Cranberry Bush	30" ht.	as shown	cont.	Well rooted
70	WF	<i>Weigela f. 'Wine & Roses'</i>	Wine & Roses Weigela	24" ht.	as shown	cont.	Well rooted
22	WR	<i>Weigela f. 'Red Prince'</i>	Red Prince Weigela	30" ht.	as shown	cont.	Well rooted
PERENNIALS							
70	AM	<i>Allium 'Millenium'</i>	Millenium Ornamental Onion	#1	18" o.c.	cont.	Well rooted
9	CA	<i>Calamagrostis a. 'Overdam'</i>	Overdam Feather Reed Grass	#2	as shown	cont.	Well rooted
36	HL	<i>Heimericalls 'Little Grapette'</i>	Little Grapette Daylily	#1	as shown	cont.	Well rooted
95	RF	<i>Rudbeckia f. 'Goldstrum'</i>	Black-eyed Susan	#1	24" o.c.	cont.	Well rooted

Highland Drive (M-59)

White Banks Blvd.

Zoned GB

Zoned LB

MATCH LINE - SEE SHEET L-2

SITE LANDSCAPE CALCULATIONS

INTERIOR LANDSCAPING:

15% of the total lot area

Total lot area: 2.78 ac (121,143 sf)

Total Area Required: 18,171 sf (121,143 x .15)

Total Area Provided: **43,141 (35.6%)**

One (1) tree & (5) five shrubs per 300 sf of area required

Total Trees Required: 61 (18,171 / 300)

Total Trees Provided: **61** (3 are existing to remain)

Total Shrubs Required: 303 (18,171 / 300)*5

Total Shrubs Provided: **328**

INTERIOR PARKING LOT LANDSCAPE:

20 sf. of landscape area per space

Number of Spaces: 159

Landscape Area Required: 3,180 sf (159 x 20)

Landscape Area Provided: **3,327 sf**

Tree Planting:

(1) Deciduous or Ornamental Tree and (3) Shrubs per 100 SF of landscape area required

Trees Required: 32 (3,180 / 100)

Trees Provided: **33**

Shrubs Required: 96 (3,180 / 100)*3

shrubs provided: **96**

SCREENING REQUIREMENTS:

North & West Property Line - Type "E"

(1) Tree and (8) Shrubs per 30 lf

North Property Line: 337.6 lf

West Property Line: 289 lf

Trees Required (North): 12

Trees Provided (North): **13**

Shrubs Required (North): 90

Shrubs Provided (North): **90**

Trees Required (West): 10

Trees Provided (West): **11**

Shrubs Required (West): 77

Shrubs Provided (West): **77**

South & Portion of West Property Line - Type "E"

A 6' height obscuring wall is provided, see sheet L-2 and civil engineering drawings. (1) Tree and (8) Shrubs per 30 lf. are also required.

South Property Line: 288 lf

West Property Line: 152 lf

Trees Required (South): 10

Trees Provided (South): **5***

Shrubs Required (South): 77

Shrubs Provided (South): **77**

Trees Required (West): 5

Trees Provided (West): **6**

Shrubs Required (West): 41

Shrubs Provided (West): **41**

*NOTE: Due to the overhead power lines, the required trees could not be planted along a portion of the south property line. See sheet L-2

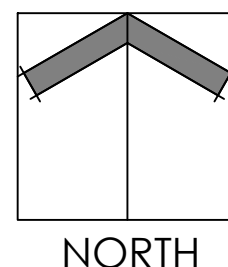
East Property Line: N/A

NOTE KEY:

- PROPOSED BUILDING
- PROPOSED DUMPSTER ENCLOSURE AND SERVICE ENTRANCE
- PROPOSED ASPHALT PARKING LOT, SEE CIVIL ENGINEERING DRAWINGS
- PROPOSED CONCRETE SIDEWALK
- PROPOSED MONUMENT SIGN
- DECIDUOUS CANOPY TREE, SEE TYPICAL DETAIL SHEET L-2
- EVERGREEN TREE, SEE TYPICAL DETAIL SHEET L-2
- PROPOSED ORNAMENTAL TREE PLANTING, SEE TYPICAL DETAIL SHEET L-2
- PROPOSED SHRUB PLANTING, SEE TYPICAL DETAIL SHEET L-2
- SODDED LAWN OVER MINIMUM 3" DEPTH TOPSOIL TO LIMITS OF DISTURBANCE. CROWN ALL PARKING LOT ISLANDS 6" TO THE CENTER
- SHOVEL CUT EDGE BETWEEN LAWN AND LANDSCAPE BED
- METAL EDGING BETWEEN LAWN AND STONE MAINTENANCE STRIP
- 12" WIDE 3" DEPTH CRUSHED STONE MAINTENANCE STRIP OVER FILTER FABRIC
- SNOW STORAGE AREA



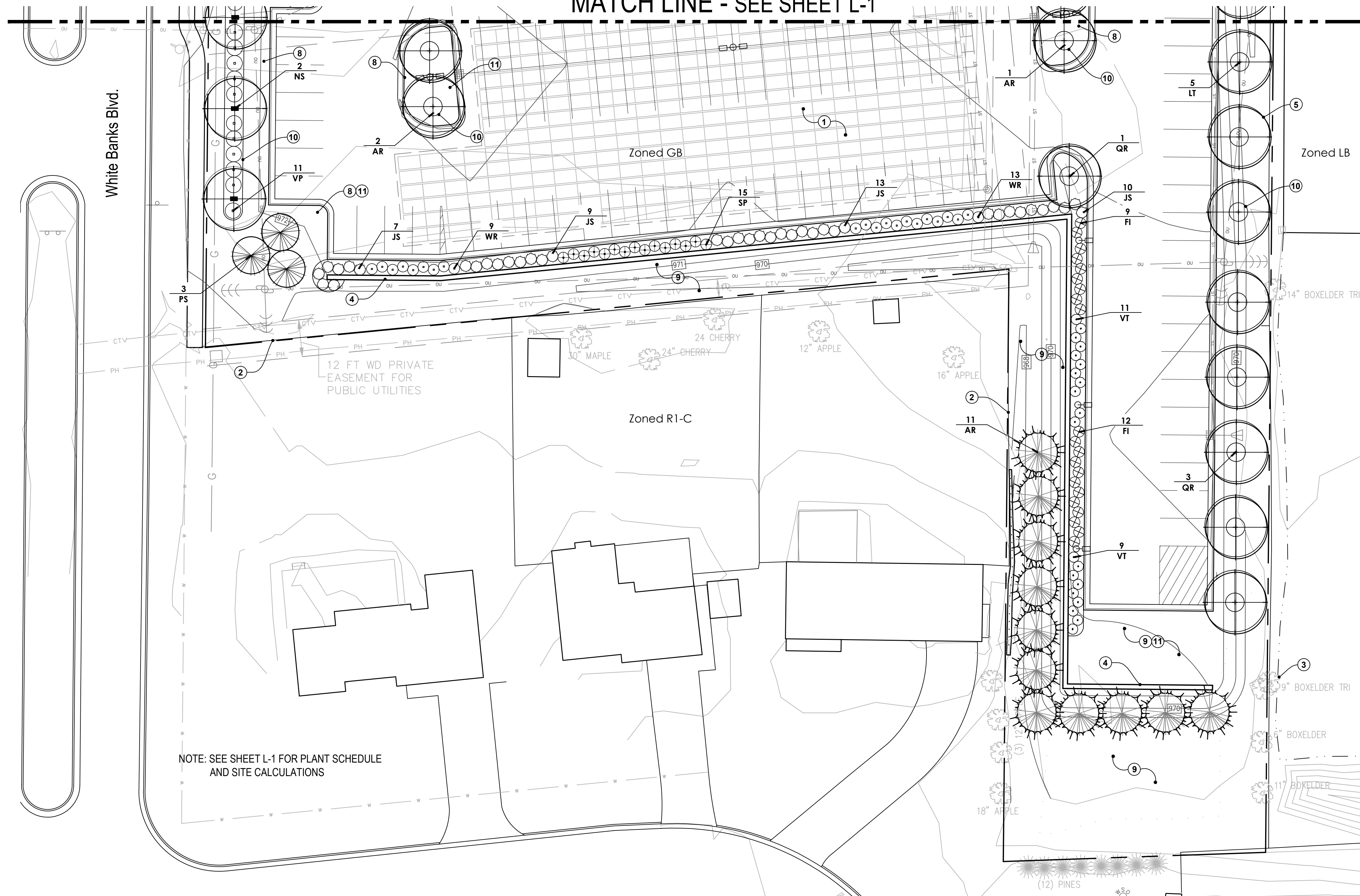
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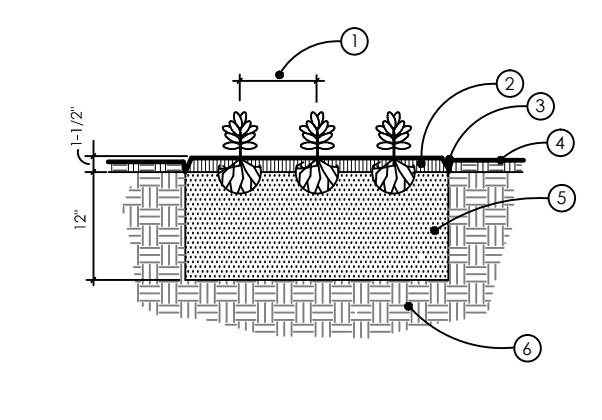
MATCH LINE - SEE SHEET L-1



NOTE: SEE SHEET L-1 FOR PLANT SCHEDULE
AND SITE CALCULATIONS

NOTES:
1. CONTRACTOR TO VERIFY PERCOLATION OF
PLANTING PIT PRIOR TO INSTALLATION

1. SEE PLANT SCHEDULE FOR SPACING
2. 2" DEPTH CANADIAN PEAT TOP DRESSING
OR 2" DEPTH DOUBLE SHREDDED
HARDWOOD MULCH
3. SHOVEL CUT OR METAL EDGE, SEE PLAN
4. FINISH GRADE
5. EXCAVATE EXISTING SOIL TO 12" DEPTH,
REPLACE WITH PLANT MIX
6. UNDISTURBED SUBGRADE



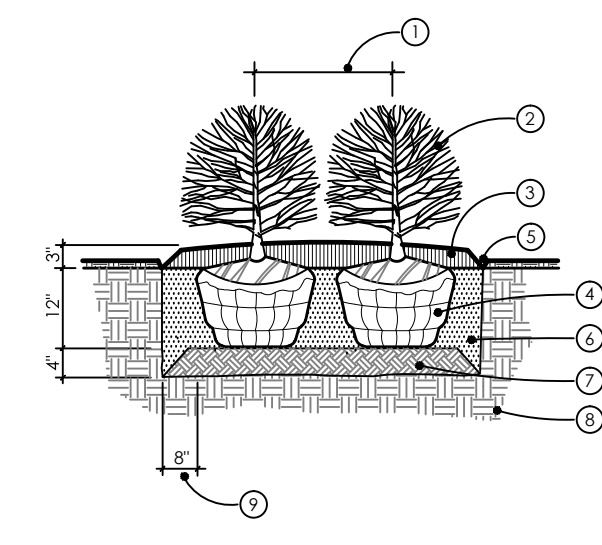
PERENNIAL / GROUNDCOVER PLANTING

NOT TO SCALE

NOTES:
1. CONTRACTOR TO VERIFY PERCOLATION OF
PLANTING PIT PRIOR TO INSTALLATION

2. SET TOP OF ROOTBALL 2" ABOVE FINISH GRADE

1. SEE PLAN FOR SPACING
2. SHRUBS, SEE PLANT SCHEDULE
3. 3" DEPTH DOUBLE SHREDDED HARDWOOD
MULCH, TYPICAL
4. REMOVE ALL NON-BIODEGRADABLE
TWINE FROM ENTIRE ROOTBALL. REMOVE
BURLAP FROM TOP 1/2 OF ROOTBALL.
5. SHOVEL CUT OR METAL EDGE, SEE PLAN
6. EXCAVATE EXISTING SOIL TO 12" DEPTH,
REPLACE WITH PLANT MIX
7. SCARIFY TO 4" DEPTH AND RECOMPACT
8. UNDISTURBED SUBGRADE
9. MINIMUM 8" BETWEEN ROOTBALL AND
EDGE OF PLANTING PIT



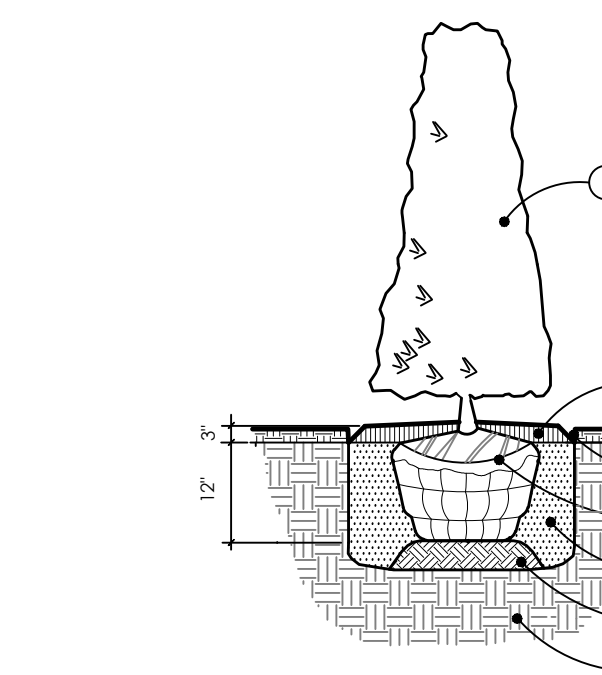
SHRUB PLANTING

NOT TO SCALE

NOTES:
1. CONTRACTOR TO VERIFY PERCOLATION OF
PLANTING PIT PRIOR TO INSTALLATION

2. SET TOP OF ROOTBALL 2" ABOVE FINISH GRADE

1. HEDGE MATERIAL, SEE PLAN FOR
LOCATION AND PLANT SCHEDULE
2. 3" DEPTH DOUBLE SHREDDED HARDWOOD
MULCH, TYPICAL
3. REMOVE ALL NON-BIODEGRADABLE
TWINE FROM ENTIRE ROOTBALL. REMOVE
BURLAP FROM TOP 1/2 OF ROOTBALL.
4. SHOVEL CUT OR METAL EDGE, SEE PLAN
5. FINISH GRADE
6. EXCAVATE EXISTING SOIL TO 12" DEPTH,
REPLACE WITH PLANT MIX
7. SCARIFY TO 4" DEPTH AND RECOMPACT
8. UNDISTURBED SUBGRADE



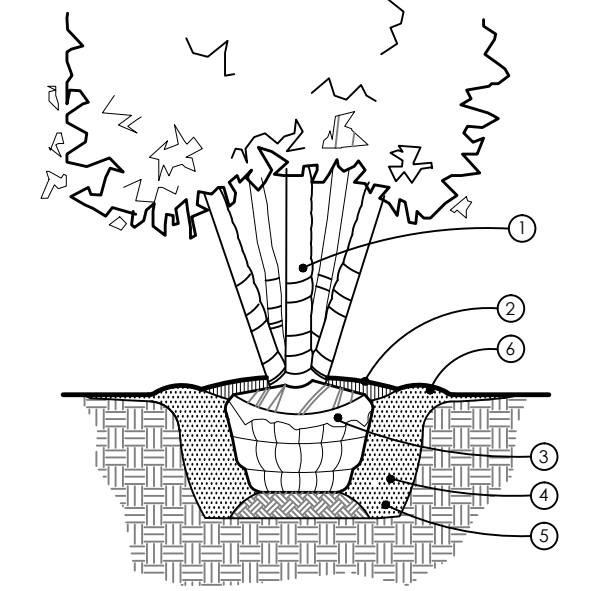
HEDGE PLANTING

NOT TO SCALE

NOTES:
1. CONTRACTOR TO VERIFY PERCOLATION OF
PLANTING PIT PRIOR TO INSTALLATION

2. SET TOP OF ROOTBALL 3" ABOVE FINISH GRADE

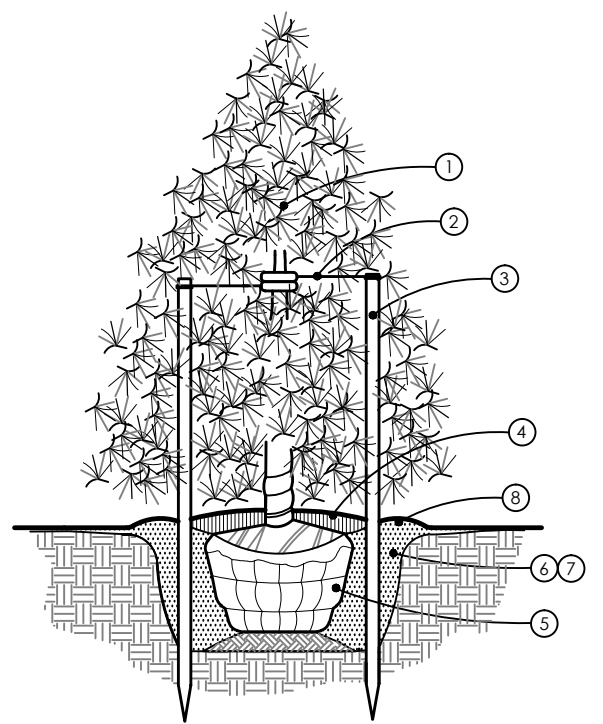
1. REMOVE ALL TAGS, STRINGS, PLASTICS,
AND ANY OTHER MATERIALS WHICH ARE
UNUSUALLY OR COULD CAUSE GIRDING.
2. COVER PLANTING W/ 3" DOUBLE
SHREDDED HARDWOOD BARK MULCH,
MINIMUM 6" DIA. LEAVE 3" CIRCLE OF
BARE SOIL AROUND BASE OF THE STEMS.
3. REMOVE ALL NON-BIODEGRADABLE
MATERIALS FROM THE ROOTBALL. FOLD
DOWN ALL BURLAP AND REMOVE WIRE
BASKET FROM THE TOP 1/3 OF THE
ROOTBALL.
4. PLANT MIX
5. TREE PIT TO BE THREE TIMES WIDTH OF
ROOTBALL
6. 4" TOPSOIL SAUCER



MULTISTEM TREE PLANTING

NOT TO SCALE

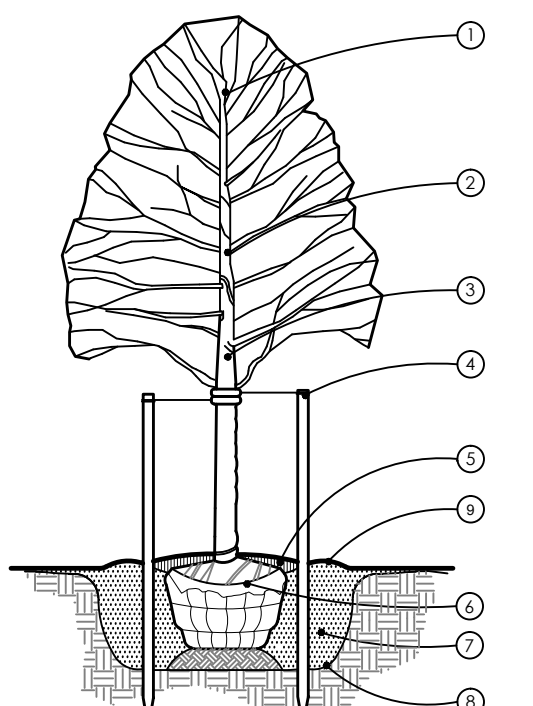
1. REMOVE ALL TAGS, STRINGS, PLASTICS,
AND ANY OTHER MATERIALS WHICH ARE
UNUSUALLY OR COULD CAUSE GIRDING.
2. STAKE TREES WITH 2-3" WIDE BELT-LIKE
FABRIC STRAPS ONLY. ARBOR TRE OR
APPROVED EQUAL. (CONNECT FROM
TREE TO STAKE OPPOSITE FROM EACH
OTHER, AND ALLOW FOR SOME TILTING)
DO NOT USE WIRE OR ROPE THROUGH A
HOLE. REMOVE AFTER ONE YEAR.
3. (3) 2"x2" HARDWOOD STAKES OR
EQUIVALENT DRIVEN 6-8" OUTSIDE OF
ROOTBALL. REMOVE AFTER ONE YEAR.
4. COVER PLANTING W/ 3" SHREDDED
HARDWOOD BARK MULCH, MINIMUM 6"
DIAMETER, CONNECT EVERGREEN
PLANTINGS WHERE POSSIBLE
5. REMOVE ALL NON-BIODEGRADABLE
MATERIALS FROM THE ROOTBALL. FOLD
DOWN ALL BURLAP AND REMOVE WIRE
BASKET FROM THE TOP 1/3 OF THE
ROOTBALL.
6. PLANT MIX
7. TREE PIT TO BE 3 TIMES WIDTH OF
ROOTBALL
8. 4" TOPSOIL SAUCER



EVERGREEN TREE PLANTING

NOT TO SCALE

- NOTES:
1. STAKE EVERGREENS UNDER 12' HEIGHT
2. GUY EVERGREENS 12' HEIGHT AND
OVER
3. NEVER CUT OR PRUNE CENTRAL LEADER
4. SET STAKES VERTICAL AND EVENLY
SPACED
5. PRUNE ONLY TO REMOVE DEAD OR
BROKEN BRANCHES



DECIDUOUS TREE PLANTING

NOT TO SCALE

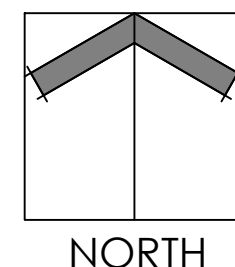
1. REMOVE SECONDARY LEADERS. DO NOT
PRUNE TERMINAL LEADER OR BRANCH TOPS.
PRUNE ALL DEAD AND BROKEN BRANCHES.
2. REMOVE ALL TAGS, STRINGS, PLASTICS, AND
ANY OTHER MATERIALS WHICH ARE
UNUSUALLY OR COULD CAUSE GIRDING.
3. STAKE TREES JUST BELOW FIRST BRANCH W/
2-3" WIDE BELT-LIKE FABRIC STRAPS ONLY.
ARBOR TRE OR APPROVED EQUAL.
(CONNECT FROM TREE TO STAKE OPPOSITE
FROM EACH OTHER, AND ALLOW FOR
SOME TILTING) DO NOT USE WIRE OR
ROPE THROUGH A HOLE. REMOVE AFTER
ONE YEAR.
4. (2) 2"x2" HARDWOOD STAKES OR
EQUIVALENT DRIVEN 6-8" OUTSIDE OF
ROOTBALL. REMOVE AFTER ONE YEAR.
5. COVER PLANTING W/ 3" DOUBLE SHREDDED
HARDWOOD BARK MULCH, MINIMUM 6"
DIA. LEAVE 3" CIRCLE OF BARE SOIL
AROUND THE BASE OF THE TRUNK.
6. REMOVE ALL NON-BIODEGRADABLE
MATERIALS FROM THE ROOTBALL. FOLD
DOWN ALL BURLAP AND REMOVE WIRE
BASKET FROM THE TOP 1/3 OF THE
ROOTBALL.
7. PLANT MIX
8. TREE PIT TO BE 3 TIMES WIDTH OF ROOTBALL
9. 4" TOPSOIL SAUCER

- NOTE:
TREE SHALL BEAR SAME RELATION TO FINISH
GRADE AS IT BORE ORIGINALLY OR SLIGHTLY
HIGHER THAN FINISH GRADE UP TO 4" ABOVE
GRADE. IF DIRECTED BY LANDSCAPE ARCHITECT
FOR HEAVY CLAY SOIL AREAS.

NOTE KEY:

1. PROPOSED ASPHALT PARKING LOT, SEE CIVIL ENGINEERING
DRAWINGS
2. EXISTING FENCE TO REMAIN
3. EXISTING TREES TO REMAIN, PROTECT AS REQUIRED DURING
CONSTRUCTION
4. PROPOSED 6' HT. OBSCURING WALL, SEE CIVIL ENGINEERING
DRAWINGS FOR TYPICAL DETAIL
5. DECIDUOUS CANOPY TREE, SEE TYPICAL DETAIL
6. EVERGREEN TREE, SEE TYPICAL DETAIL
7. PROPOSED SHRUB PLANTING, SEE TYPICAL DETAIL
8. SODDED LAWN OVER MINIMUM 3" DEPTH TOPSOIL TO LIMITS OF
DISTURBANCE. CROWN ALL PARKING LOT ISLANDS 6" TO THE
CENTER
9. SEEDDED LAWN OVER MINIMUM 3" DEPTH TOPSOIL TO LIMITS OF
DISTURBANCE.
10. SHOVEL CUT EDGE BETWEEN LAWN AND LANDSCAPE BED
11. SNOW STORAGE AREA

0 10 20 40
SCALE: 1" = 20'-0"



BASELINE SIGN LIGHTS CATALOG

PROJECT NAME: _____
PROJECT TYPE: _____

C - MOUNTING OPTIONS

1/2" ARM EXTENSIONS

*ARMS RATED FOR W/LOCATION * MAXIMUM SECTIONS OF ARMS ARE DIMENSIONED

3/4" ARM EXTENSIONS

*ARMS RATED FOR W/LOCATION * MAXIMUM SECTIONS OF ARMS ARE DIMENSIONED

B&L ELECTROCORPORATION 15300 STATE AVENUE • CHINO, CA 91710 PH: (917) 999-1099 FAX: (917) 994-4774 EMAIL: SALES@B&L.COM (714) 970-0000 B&L ELECTRON PAGE 2

BASELITE SIGN LIGHT'S CATALOG

PROJECT NAME: _____
PROJECT TYPE: _____

C - MOUNTING OPTIONS (CONTINUED)

STEM MOUNTS

*STEM RATIO FOR DAM LOCATION

DP24 DOUBLE PENDANT 20" H(24" W)

DP24 COMES STANDARD WITH 20" H(24" W)

ST(XX) STEM-1/2" NPT

20" LENGTH STEM

(EXAMPLE - "STB" IS STEM MOUNT'S LENGTH)
CANOPY NOT INCLUDED. ADD IN SECTION 2.
1/4" NPT ARM (24" NPT) AVAILABLE UPON REQUEST

LED CORD MOUNTS

FOR LED & COMBINATION RECESSED OPTIONS, CANOPIES WILL VARY IN SIZE DUE TO SIZE OF THE DRIVER/BALLAST THAT WILL BE LOCATED INSIDE OF THE CANOPY.
CANOPY DIMENSIONS: 2" H(6" W)

LBLC 2" BLACK CORD

LVHWC 2" WHITE CORD

LTCB 2" BLACK CORD, CABLE, & LOOP

LTCW 2" WHITE CORD, CABLE, & LOOP

LTCHB 2" BLACK CORD, 2" CHAIN, & LOOP

LTCHW 2" WHITE CORD, 2" CHAIN, & LOOP

LTLB 2" BLACK TELEPHONE CORD AND CABLE

LTLW 2" WHITE TELEPHONE CORD AND CABLE

Not available with compact fluorescent

LRCB 2" BLACK CORD, CABLE, & LOOP

LRCW 2" WHITE CORD, CABLE, & LOOP

LRCHB 2" BLACK CORD, 2" CHAIN, & LOOP

LRCHW 2" WHITE CORD, 2" CHAIN, & LOOP

LFHB 2" BLACK CORD WITH FLAT HUB

LFHW 2" WHITE CORD WITH FLAT HUB

LCLC 2" BLACK CORD AND CABLE

LCWH 2" WHITE CORD AND CABLE

D - MOUNTING ADD-ONS (CONTINUED)

LED - STEM AND ARM ADD-ONS

* FOR LED & COMBINATION RECESSED OPTIONS, CANOPIES WILL VARY IN SIZE DUE TO SIZE OF THE DRIVER/BALLAST THAT WILL BE LOCATED INSIDE OF THE CANOPY.

LWTM W/ARM (RIGHT SIDE WALL MOUNT)

LSLC LED SIDE CEILING CANOPY

LSTC LED STEM MOUNT CANOPY

BASELITE CORPORATION 1220 5TH STREET AVE. (CITY) CA 91710 PH (714) 939-1300 FAX (951) 646-4174 EMAIL info@baselite.com (1) 800 250-0130 (1) 800 250-0130

PAGE 3



BASELITE SIGN LIGHTS CATALOG

PROJECT NAME _____
PROJECT TYPE _____

D - MOUNTING ADD-ONS (CONTINUED)

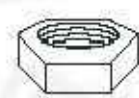
UNIVERSAL STEM AND ARM ADD-ONS

*** EXAMPLE FOR MULTIPLE MOUNTING ADD-ONS:**



SWVL 1/2" NPTxSWVL
FOR A HUB SIZE OF 1" OR 1 1/2"

1.65 SWVL 1/2" NPTxSWVL
FOR A HUB SIZE OF 1" OR 1 1/2"



FH 1/2" FLAT HEX 1/2"
FH 3/4" FLAT HEX 3/4"



TWB 1/2"-4' Cable SUPPORT
TWB 3/4"-4' Cable SUPPORT

E - LIGHT SOURCE

BASELITE'S PUBLISHED LUMINAIRE PHOTOMETRIC TESTING WAS PERFORMED IN A 3-METER INTEGRATING SPHERE USING THE 4TT GONIOMETRY METHOD. DATA IS CONSIDERED TO BE REPRESENTATIVE OF THE CONFIGURATIONS SHOWN, WITHIN THE TOLERANCES ALLOWED BY LIGHTING FACTS. TO OBTAIN AN RS FILE SPECIFIC TO YOUR PROJECT, PLEASE CONTACT THE FACTORY.

LIGHT EMITTING DIODE (LED)					
LED 12W (M4-X) - A807, A810			(IMPORT NOTE - FOR LIGHT EMITTED COLOR [CCT] LIGHT SOURCE OPTION RETURN IS APPLICABLE ONLY TO SET OF THE FIXTURE AND THE CORRESPONDING RESTRICTIONS. PLEASE SEE AVAILABILITY CHART TO THE LEFT.) * SAMPLE: LED12W /		
LED 25W (M4-X) - A812, A814					
QUANTITY	WEIGHT (LB)	LUMENS	CRI	SIZE (IN)	DIMENSIONS
LED12W	12W	1375	90	120-217 VAC	See Section "H"
LED25W	25W	2760	90	120-217 VAC	See Section "H"
@ 2X00R					

H - ELECTRICAL OPTION

MOST BASELITE'S ELECTRICAL OPTIONS ARE ONLY COMPATIBLE FOR CERTAIN FIXTURES. PLEASE SEE NOTES BELOW AND FOR FURTHER DETAILS CONTACT THE FACTORY.
FOR DIMMING BALLASTS PTO R PLEASE CHOOSE MARK VI, SO RESTRICTIONS APPLY DUE TO THE SIZE OF THE BALLAST AND FIXTURE.

LED DRIVING OPTIONS

FOR TRIAC OR 0-10V OPTO FROM CHOICE FROM THE FOLLOWING CONTACT DRIVER MANUFACTURER FOR SPECIFICATIONS:

- LDML20 - TRIAC DRIVING AT 120 VOLT
- LDML77 - TRIAC DRIVING AT 277 VOLT
- LDMD10V-0 - 0-10v

BASELITE CORPORATION 12200 EAST END AVE., CHINO, CA 91710 PH 977-999-1800 FAX 909-648-4714 EMAIL sales@baselite.com USBSTEM110.BASELITE.COM

PAGE 4

BASELITE SIGN LIGHTS CATALOG

PROJECT NAME: _____
PROJECT TYPE: _____

I - GLASS OPTIONS

NOTE: MUST USE TEMPERED GLASS FOR ALL STRUCTURES USING HIGH INTENSITY DISCHARGE (HID) OR DISCHARGE OPTIC.

CL3 3" CLEAR GLASS
CLT3 3" CLEAR TEMPERED

PR3 3" FROSTED GLASS

RE3 3" RED GLASS

BL3 3" BLUE GLASS

FR3 3" FROSTED GLASS
FRT3 3" FROSTED TEMPERED

AH3 3" AMBER FROSTED GLASS

GR3 3" GREEN GLASS

GLASS - DIMENSIONS
3" GLASS
CROWN: 0.24"
HIGHEST: 0.20"
FEET: 0.25"

GLASS - MAX WEIGHTS
3" GLASS - 500W INC / LED / CW

J - ACCESSORIES

GR07 7" WIRE MESH
GR10 10" WIRE MESH
GR12 12" WIRE MESH
GR14 14" WIRE MESH

GU-1 CAST ALUMINUM GUARD

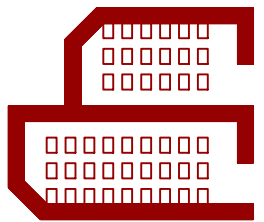
GU-2 CAST ALUMINUM GUARD

BASELITE CORPORATION 12260 EAST END AVE CHINO, CA 91710 PH: 977-599-1980 FAX: 909-548-4174 EMAIL: SALES@BASELITE.COM WWW.BASELITE.COM USERS@WWW.BASELITE.COM PAGE 5

REGISTERED DESIGN PROFESSIONAL
IN RESPONSIBLE CHARGE:
JEFFREY J. CAMERON
LICENSE NO. 1301047808
EXPIRATION DATE 5-21-2024



CREEKWOOD ARCHITECTURE, INC.
11111 s. creekwood
burton, michigan 48509
tel. (810) 742-0480 fax (810) 742-8393

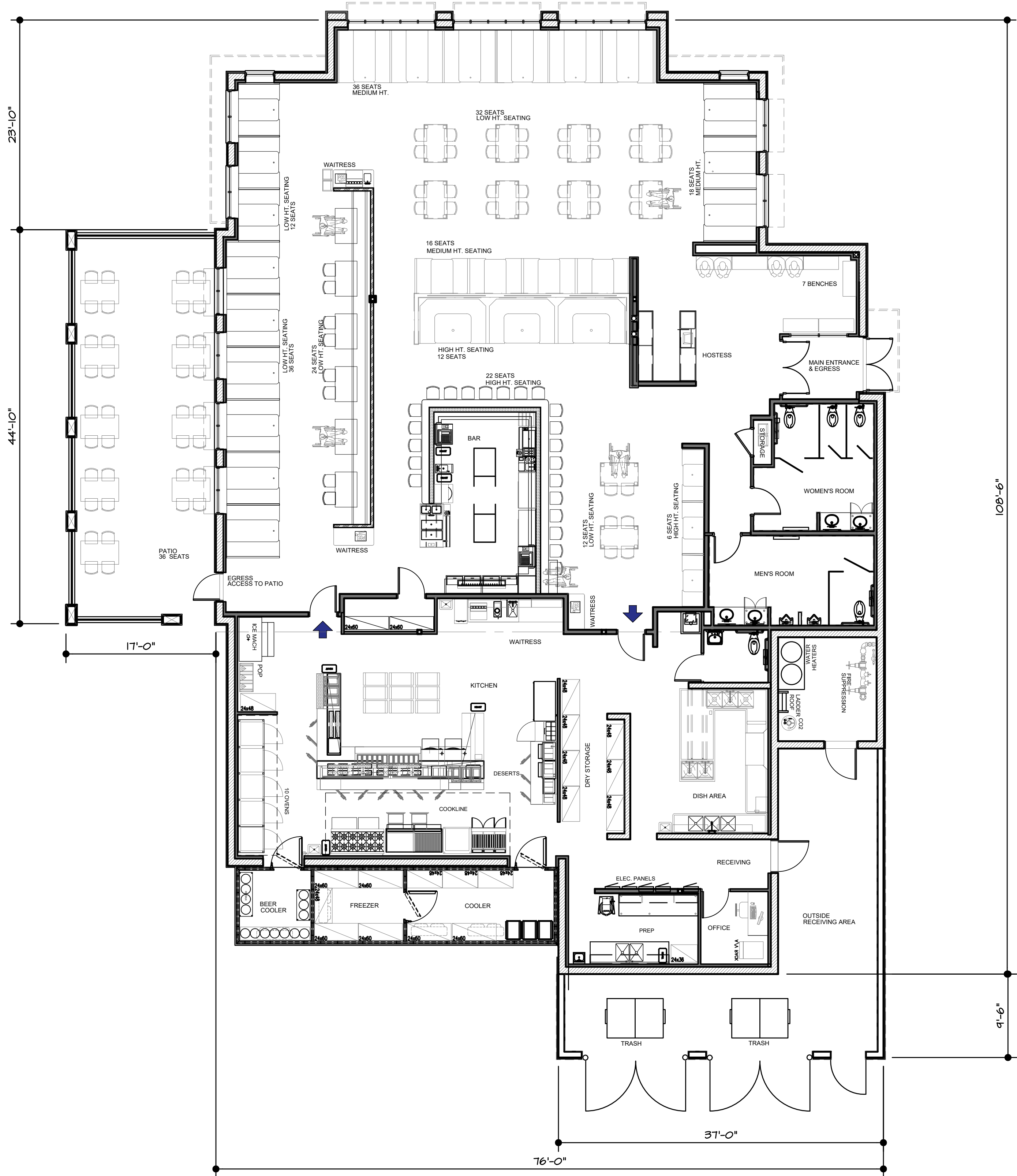


SHEET TITLE
COMPOSITE FLOOR PLAN

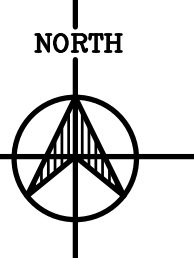
PROJECT
**NEW BUILDING for
BLACK ROCK RESTAURANT WHITE LAKE**
HIGHLAND ROAD WHITE LAKE MI
DRAWN BY B.A.C. CHECKED BY R.A.S.

JOB NO. 2002TRT
DATE 15 AUG 2022
SHEET NO.

A1
OF 3

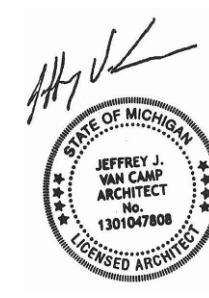


6,887 SQ FT- 232 SEATS
COMPOSITE FLOOR PLAN
SCALE: 1/8" = 1'-0"

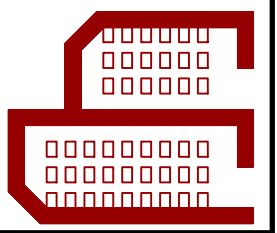


Black Rock

REGISTERED DESIGN PROFESSIONAL
IN RESPONSIBLE CHARGE:
REGISTERED ARCHITECT
JEFFERY VANCAMP
LICENSE NO. 1301047808
EXPIRATION DATE 5-21-2024



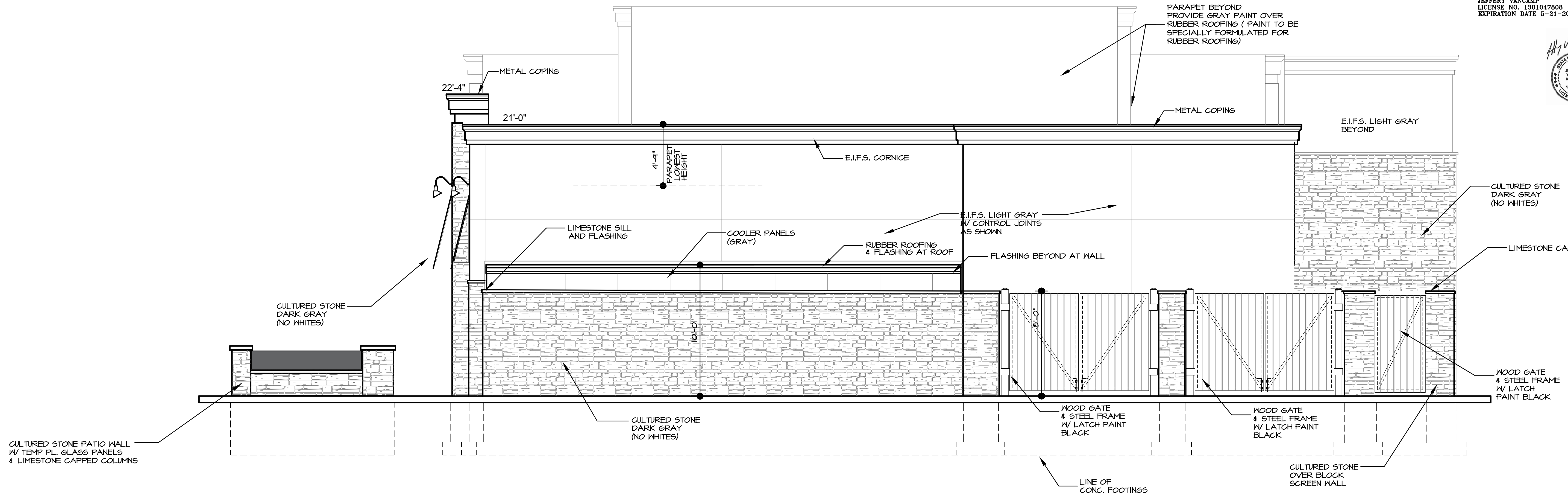
REVISIONS			
CREEKWOOD ARCHITECTURE, INC.			
11111 s. creekwood			
burton, michigan 48509			
tel. (810) 742-0480		fax (810) 742-8393	



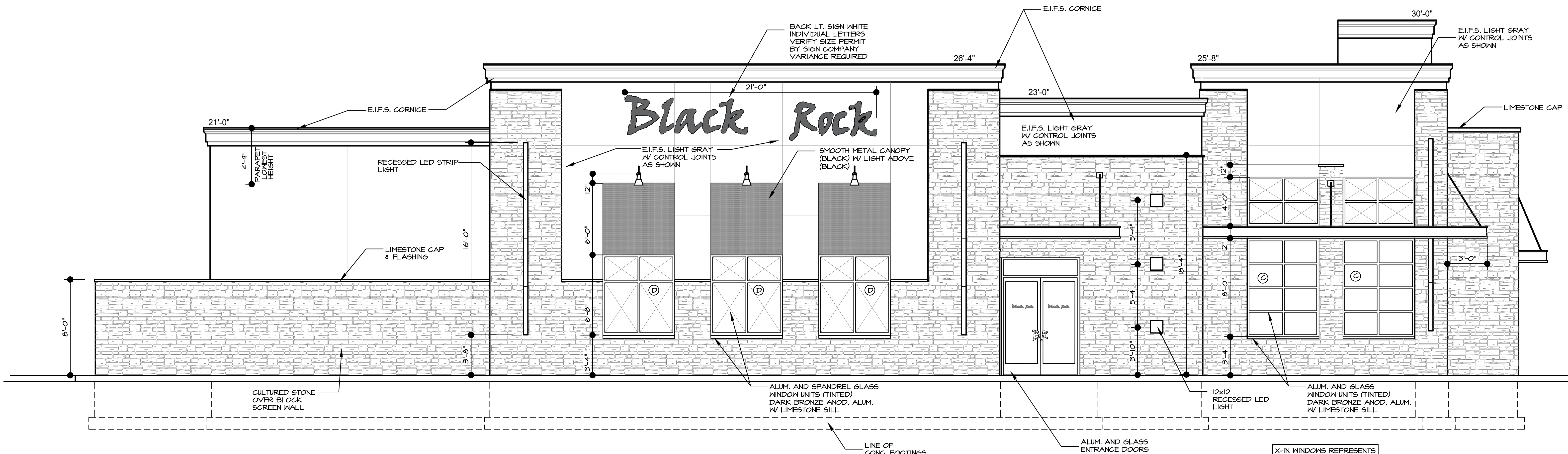
SHEET TITLE
EXTERIOR ELEVATIONS

PROJECT
**NEW BUILDING for
BLACK ROCK RESTAURANT WHITE LAKE**
HIGHLAND ROAD WHITE LAKE MI
DRAWN BY B.A.S.
CHECKED BY B.A.S.
JOB NO. 2002TRT
DATE 15 AUG 2022
SHEET NO.

A2
OF 3



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



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

Black Rock



WHITE LAKE TOWNSHIP NOTICE OF PUBLIC HEARING

Item B.

Notice is hereby given the Planning Commission of the Charter Township of White Lake will hold a public hearing on Thursday, October 6th, 2022 at 7:00 P.M. at the Township Annex, 7527 Highland Road, White Lake, Michigan 48383, to consider the following request for Special Land Use Approval, under Zoning Ordinance No. 58 – Article 4, Section 18, Eating Establishments with Entertainment and/or Outdoor Dining.

Property described as parcel number 12-23-129-018 (9531 Highland Road), located south of Highland Road and east of White Banks Blvd, consisting of approximately 3 acres.

Applicant is requesting to **construct a restaurant with outdoor dining.**

Persons interested are requested to be present. Pertinent information relative to this rezoning request is on file at the Community Development Department and may be examined at any time during regular business hours of 8:00 a.m. to 5:00 p.m. Persons interested may visit the Community Development Department, contact the Community Development Department by telephone at 248-698-3300, ext. 5, or attend the Public Hearing on the date specified. Written comments are also welcome at 7525 Highland Road, White Lake, MI 48383. Individuals with disabilities requiring auxiliary aids or services should contact the Clerk's Office at least 5 days before the hearing.

Sean O'Neil, AICP
Community Development Director
SCN 9/21/22

WHITE LAKE TOWNSHIP PLANNING COMMISSION

REPORT OF THE COMMUNITY DEVELOPMENT DEPARTMENT

TO: Planning Commission

FROM: Sean O'Neil, AICP, Community Development Director
Justin Quagliata, Staff Planner

DATE: September 29, 2022

RE: New Hope – 450 S. Williams Lake Road
Landscape Modifications

On July 16, 2020 the Planning Commission granted New Hope final site plan approval. The landscape plan presented with the final site plan was included in the approval. At this time, the Applicant is requesting the Planning Commission allow a reduction in the required landscaping. An as-built landscape plan has been submitted which shows the landscaping currently installed on the site. In comparison to the approved landscape plan, the as-built plan shows an approximate sixty percent reduction in plant material. The Applicant intends to state reasons to support the request at the Planning Commission meeting.

Development Agreement Amendment

The Applicant has not submitted an amendment to the development agreement. The amended landscape plan would be incorporated into the agreement. The Planning Commission could make a recommendation on the amendment to the development agreement to the Township Board, conditioned on administrative review of the agreement.

Planning Commission Options

The Planning Commission has the option to approve, approve with conditions, or deny the amended landscape plan and recommend approval, approval with modifications, or denial of the development agreement amendment to the Township Board.

Attachments

1. Approved landscape plan.
2. As-built landscape plan.



NEW HOPE
— SENIOR COMMUNITIES —

September 30th, 2022

Planning Commission
White Lake Township,
7525 Highland Road,
White Lake, MI 48363

Dear Planning Commission Members,

The purpose of this letter is to formally request a scaling back of the Landscaping Plan for the New Hope White Lake Project.

As you may recall the project is built within a 21-acre lot on Williams Lake Road as part of a Planned Development Agreement (PDA). New Hope White Lake has successfully preserved the majority of the thickly wooded area by building a retaining wall around the 3-acre built area of building and courtyards. This built area is set back approximately one-third of a mile (2,200 feet) from Williams Lake road. We welcome you to visit the site at your convenience. This project is a great example of what collaboration between the township officials and businesses can achieve.

1/ In order to preserve the acres of established trees around built areas, we petitioned our partners to agree to a \$500,000 retaining wall around the north, west and south side of the property. These established trees are a permanent cornerstone of the landscaping for our site. As part of the PDA, we have committed to not build any further, and we do not want to build further, as we (and our neighbors) love the surrounding woods - it is something we very happily point out to and share with prospective residents.

2/ New Hope White Lake has voluntarily installed a 500-feet long fence along the property line to the closest neighbor, in addition to the berm that was required in the PDA. Please note that this fence is to accommodate the **one** neighbor who can see our building from his house. All the other neighbors are agreeable to the

natural screening provided by the heavily wooded site. An additional cost of \$25,000 above PDA was incurred in installing this fence.

3/ Skyrocketing costs due to material price increases and delays caused by Covid-19 have added over \$800,000 in additional costs that we were unable to control, to the project.

In summary, due to intended design, a larger than required portion of the original woods is preserved. In spite of the unforeseen challenges and escalating costs over the last two years, we have fought to keep and replant as much green as possible. Our landscaper worked to ensure that the landscape area square footage and tree and shrub requirements are met by utilizing the existing site features. As part of the PDA, these woodland areas will be protected and will not be developed in the future.

A video of the site is provided and will be available at the Planning Commission meeting along with pictures of the site. A link to the video is provided below.

<https://vimeo.com/imageworksltd/review/748080070/68a206a17c>

New Hope White Lake is requesting that the preserved woodland count towards the tree and shrub totals to bring the landscaping plan into compliance with the zoning ordinance. We respectfully request that the as-built landscaping plan be approved and be made part of the Planned Development Agreement.

Sincerely,



Rumi Shahzad
Managing Director
New Hope White Lake, LLC



TRIUMPH

Triumph Engineering
& Design, Inc.

10775 S. SAGINAW ST.
SUITE D
GRAND BLANC, MI 48439
(PH) 810.584.7364
(F) 810.584.7362



NEW HOPE
WHITE LAKE

— ASSISTED PLANNING & DESIGN CARE —

NEW HOPE WHITE LAKE
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MICHIGAN

THE OWNER HAS BEEN ADVISED THAT THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL, STATE, AND FEDERAL AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL, STATE, AND FEDERAL AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL, STATE, AND FEDERAL AGENCIES.

ISSUED FOR	DATE
FSPA	06/04/20
SPA	06/15/20
SPA	07/27/20
ENGINEERING #2	08/31/20
ENGINEERING #3	09/25/20
ENGINEERING #4	10/05/20
CONSTRUCTION	11/16/20

DATE: 10/05/20
DRAWN: ACA
CHECKED: JT
SCALE: 1"=40'
JOB NO: TED-NHWL

SHEET TITLE:
LANDSCAPE PLAN -
WEST SHEET

L1.0

CARE FOR PLANTS BEFORE PLANTING
PLANTS DESIGNATED "BB" SHALL BE BALLED AND BURLAPPED WITH FIRM NATURAL BALLS OF EARTH. CRACKED, LOOSENED OR BROKEN BALLS SHALL NOT BE PLANTED. THEY SHALL BE MARKED WITH SPRAY PAINT AND IMMEDIATELY REMOVED FROM THE JOB SITE. IMMEDIATELY FOLLOWING DELIVERY AT THE JOB SITE, ALL PLANTS THAT WILL NOT BE PLANTED THAT SAME DAY SHALL BE "HEELED IN" WITH SHREDDED BARK OR MOIST SOIL AND KEPT MOIST UNTIL PLANTED.

THE TRUNKS AND BRANCHES OF ALL TREES SHALL BE PROTECTED FROM INJURY OF ANY KIND DURING ALL OPERATIONS. THE OWNER'S REPRESENTATIVE SHALL REJECT ANY TREES THAT ARE INJURED.

PLANTING
THE CONTRACTOR IS RESPONSIBLE FOR PLANTING MATERIALS PLUMB. SET THE TOP OF THE ROOT BALL AT OR SLIGHTLY HIGHER THAN THE SURROUNDING GRADE. PLANTS SHALL BE FACED TO GIVE THE BEST APPEARANCE OR RELATIONSHIP TO ADJACENT STRUCTURES. NO FILLING WILL BE PERMITTED AROUND TRUNK OR STEMS. WHEN THE PLANT HAS BEEN PROPERLY SET, THE HOLE SHALL BE BACKFILLED TO 1/2 THE DEPTH OF THE BALL WITH PREPARED TOPSOIL MIXTURE, FIRMLY PACKED AND WATERED-IN AT TIME OF PLANTING. LOOSE AND REMOVE BURLAP AND LACING FROM UPPER 1/3 OF THE ROOT BALL. BACKFILL WITH PREPARED TOPSOIL, WHICH AFTER COMPACTION IS FLUSH WITH THE SURROUNDING GROUND.

MULCHING
ALL PLANT MATERIAL SHALL BE ENCIRCLED WITH A 4" MINIMUM COVERING OF NON-DYED SHREDDED BARK MULCH TO 6" OUTSIDE THE PLANTING HOLE, TAPERING MULCH TO 2" AROUND THE TRUNK OF ALL PLANTS. SUBMIT SAMPLE TO THE OWNER'S REPRESENTATIVE FOR APPROVAL BEFORE PLACEMENT. WOOD CHIPS SHALL NOT BE ALLOWED ON THIS JOB.

WRAPPING DECIDUOUS TREES
TREE WRAP SHALL COVER TRUNKS OF ALL DECIDUOUS TREES BEGINNING BELOW THE SOIL LINE JUST ABOVE THE ROOTS. TIE WITH TWINE IN 5 PLACES, INCLUDING THE TOP AND BOTTOM OF WRAPPING. MASKING TAPE OR WIRE WILL NOT BE ALLOWED.

BRACING AND GUYING
GUYING SHALL BE EMPLOYED TO PREVENT LEANING OR LOOSENING OF THE TREE FROM THE BALL. BRACING MATERIAL SHALL BE T-POSTS PAINTED GREEN. GUYING MATERIAL SHALL BE 2 GAUGE WIRE AND GUY WIRE SHALL BE 1/2 INCH DIAMETER. GUY WIRE SHALL BE ENCASED IN HOSE TO PREVENT DIRECT CONTACT WITH THE TREE. DECIDUOUS TREES SHALL BE BRACED OR GUYED IMMEDIATELY AFTER THE TREE WRAPPING IS COMPLETE. TREE STAKES, GUY WIRES AND TREE WRAP ARE TO BE REMOVED AFTER ONE YEAR.

STEEL LANDSCAPE EDGING
4" STEEL LANDSCAPE EDGING SHALL BE USED ON THIS PROJECT. ALUMINUM OR PLASTIC EDGING WILL NOT BE ALLOWED. STEEL EDGING SHALL BE PLACED WHEREVER A LANDSCAPED BED HAS AN INTERFACE WITH A TURFGRASS OR OTHER SOFTSCAPE AREA. THIS DOES NOT INCLUDE INDIVIDUAL TREES PLANTED IN LAWN.

PRUNING
UPON COMPLETION, ALL PLANT MATERIAL MUST BE PRUNED. THE AMOUNT OF PRUNING SHALL BE LIMITED TO THE MINIMUM NECESSARY TO REMOVE DEAD OR INJURED BRANCHES AND TO COMPENSATE FOR THE LOSS OF ROOTS FROM TRANSPLANTING. ALL CUTS SHALL BE MADE FLUSH LEAVING NO STUBS. PRUNING PAINT SHALL NOT BE USED.

FINISHING AND CLEANING UP
IMMEDIATELY UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL CLEAN UP THE AREA OF SURPLUS MATERIALS. THE CONTRACTOR SHALL REPAIR AND RE-ESTABLISH TURF IN RUINED AREAS.

WARRANTY
THE LANDSCAPE INSTALLATION CONTRACTOR SHALL REPLACE ALL UNHEALTHY VEGETATION WITHIN TWO (2) YEAR OF INITIAL PLANTING OR SUBSEQUENT PLANTING PERIOD.

DESCRIPTION
THIS WORK SHALL CONSIST OF PROVIDING ALL NECESSARY MATERIALS, LABOR, EQUIPMENT, TOOLS AND SUPERVISION REQUIRED FOR THE EXECUTION AND GUARANTEE OF ALL PLANTINGS AND RELATED WORK AS SHOWN ON THE DRAWINGS.

PLANT MATERIALS SHALL CONFORM TO THE SIZES STATED ON THE PLANT LIST AND SHALL BE OF A MINIMUM SIZE OR LARGER. ALL MEASUREMENTS OF SPREAD, CALIPER, BALL SIZE, TRUNK CROWN RATIO, QUALITY DESIGNATIONS, ETC., SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "ANSI STANDARDS FOR NURSERY STOCK". PLANT MATERIAL SHALL BE NURSERY GROWN AND INSPECTED BY THE OWNER'S REPRESENTATIVE AT THE SITE PRIOR TO PLANTING. THE OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO REJECT ANY PLANT MATERIAL AT ANY TIME.

NURSERY STOCK SHALL BE PREPARED FOR SHIPMENT IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT AND SPECIFICATION 260.1 AND SHALL BE ENCLOSED OR COVERED DURING TRANSPORTATION TO PREVENT DRYING.

SITE PREPARATION
THE CONTRACTOR SHALL VERIFY ALL EXISTING AND PROPOSED UTILITY LOCATIONS PRIOR TO CONSTRUCTION AND PROTECT AND REPAIR UTILITIES ENCOUNTERED DURING CONSTRUCTION WHETHER SHOWN ON THE PLANS OR NOT.

INDIVIDUAL HOLES SHALL BE CENTERED AT STAKED PLANT LOCATIONS. CONTRACTOR IS TO STAKE PRIOR TO PLACEMENT OF PLANT MATERIAL AND OBTAIN APPROVAL FROM THE OWNER'S REPRESENTATIVE. PLANTING HOLES SHALL BE DIG LARGE ENOUGH TO PERMIT PLACING PREPARED TOPSOIL 18" LATERALLY BEYOND THE ENDS OF THE ROOT BALLS FOR SHADE AND EVERGREEN TREES AND 6" LATERALLY FOR SHRUBS UNLESS OTHERWISE SPECIFIED.

EXCAVATED MATERIAL SHALL BE REMOVED FROM THE SITE AT THE TIME THE HOLE IS DUG. THE PLANTING HOLE SHALL BE BACKFILLED WITH PREPARED TOPSOIL THE SAME DAY THEY ARE DUG.

TOPSOIL SHALL AT FERTILE, FRIABLE NATURAL TOPSOIL OF CLAY LOAM CHARACTER CONTAINING AT LEAST 5% BUT NOT MORE THAN 20% BY WEIGHT OF ORGANIC MATTER WITH A PH RANGE FROM 6.0 TO 7.0. TOPSOIL SHALL BE FREE OF CLAY LUMPS, COARSE SAND, STONES, PLANT ROOTS, STICKS OR OTHER FOREIGN MATTER.

CONTRACTOR SHALL TAKE CARE NOT TO COMPACT SOILS IN PLANTING AREAS. ANY COMPACTED SOILS TO BE SCARIFIED TO A DEPTH OF 6" TO ELIMINATE ANY SOIL COMPACTION CREATED DURING CONSTRUCTION. CONTRACTOR MAY BE REQUIRED TO FURTHER AMEND SOIL IN AREAS WHERE EXCESSIVE COMPACTION HAS OCCURRED.

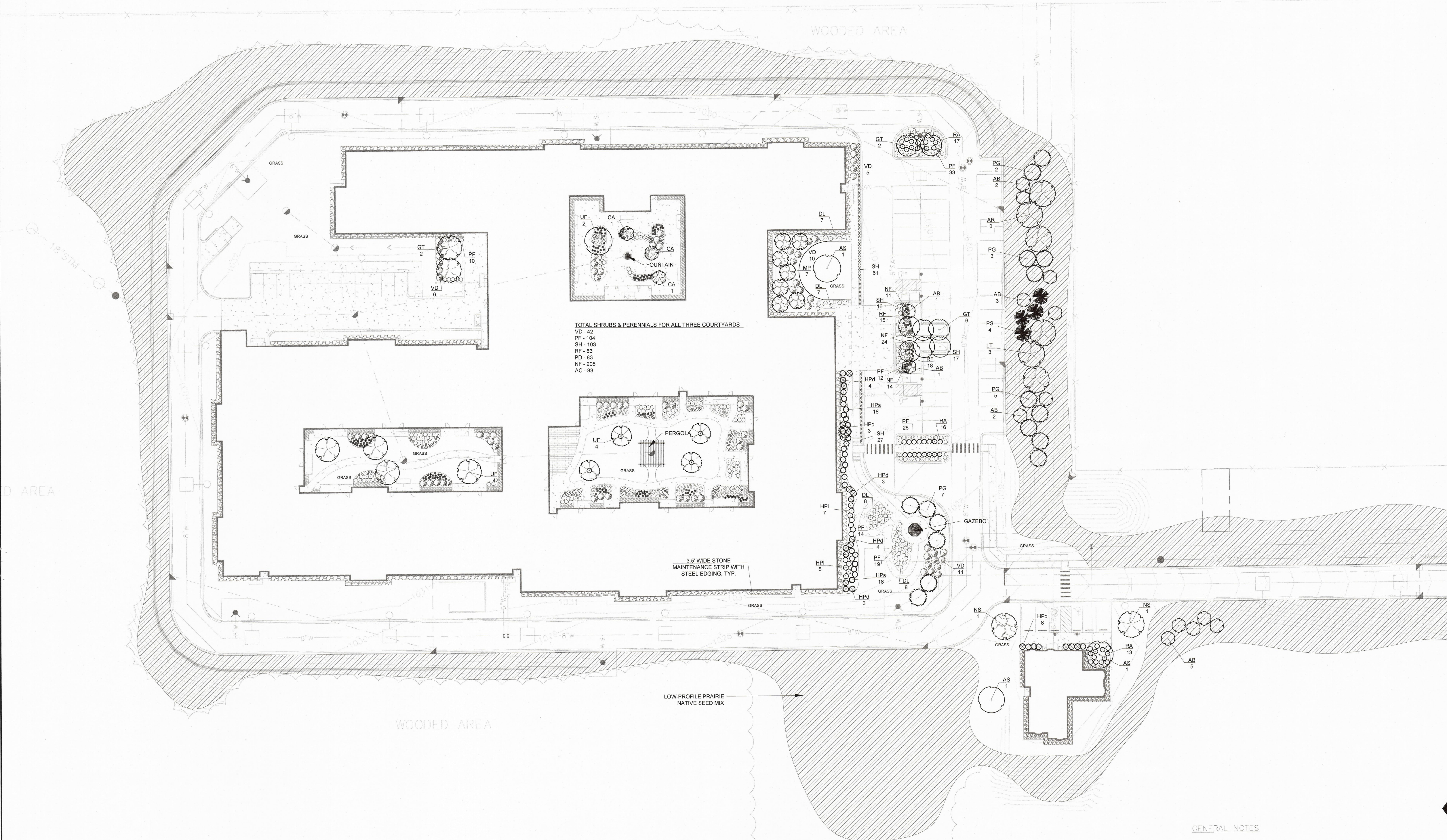
NATIVE SEED MIX AREAS TO BE PREPARED IN ACCORDANCE WITH THE GUIDELINES PROVIDED IN THE PRAIRIE NURSERY SEED MIX ESTABLISHMENT GUIDE. THIS GUIDE (OR APPROVED EQUIVALENT) SHALL BE USED TO GUIDE THE PREPARATION, INSTALLATION, AND MAINTENANCE OF THE SEED MIX AREA. THE ESTABLISHMENT GUIDE CAN BE FOUND ON THE PRAIRIE NURSERY WEBSITE AT: <https://www.prairienursery.com/resources-and-guides/seed-and-seed-mixes/documents/seed-mix-establishment.pdf>

SLOPE STABILIZATION
NO SLOPES SHALL BE STEEPER THAN 3(H):1(V). ALL SLOPES TO BE STABILIZED WITH C-125BN EROSION CONTROL BLANKET OR APPROVED EQUIVALENT. BLANKET ONLY TO BE INSTALLED ON DISTURBED AREAS. IF BLANKET IS INSTALLED BEFORE SEED MIX IS INSTALLED IT SHALL BE PULLED BACK TO ALLOW THE SEED MIX TO BE INSTALLED AND REPLACED IMMEDIATELY AFTER SEED MIX IS INSTALLED. NATIVE SEED MIX IS PROPOSED SHALL ALSO BE PROTECTED WITH EROSION CONTROL BLANKET BEFORE SEED MIX IS INSTALLED. SWALES WHICH HAVE A SLOPE OF 5(H):1(V) OR STEEPER TO HAVE CHECK DAMS INSTALLED EVERY 100 LINEAR FEET AT THE DIRECTION OF THE PROJECT ENGINEER. CHECK DAMS TO BE CONSTRUCTED FROM 4-8" RIPRAP AND SHALL BE A MINIMUM OF 12" ABOVE THE BOTTOM ELEVATION OF THE SWALE WITH A 12" TOP WITH EXTENDING TO EITHER SIDE OF THE SWALE, AND HAVING 1:1 SIDE SLOPES PERPENDICULAR TO THE

GENERAL NOTES

- CONTRACTOR TO PROVIDE DESIGN AND INSTALLATION OF UNDERGROUND IRRIGATION SYSTEM IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND REGULATORY AGENCY REQUIREMENTS. ALL LANDSCAPING AND GRASS AREAS TO BE IRRIGATED, AND THE IRRIGATION SYSTEM SHALL BE EQUIPPED WITH A RAIN SENSOR TO CONSERVE WATER.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO SECURE ALL PERMITS AND POST ALL BONDS PRIOR TO CONSTRUCTION.
- ALL GREEN SPACES WHERE A GROUND COVER IS NOT SPECIFIED SHALL BE PLANTED WITH GRASS.
- ALL GRASS AREAS TO BE SODDED.
- SPACE ALL SHRUBS AT SPACING INDICATED ON PLANT LISTS.
- NO TREES SHALL BE PLANTED OVER OR WITHIN 10' OF SANITARY SEWER, STORM SEWER, OR WATER MAIN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INDEPENDENTLY VERIFY TREES ARE NOT IN CONFLICT WITH BURIED UTILITIES REGARDLESS OF WHAT IS DEPICTED ON THE PLANS.
- ALL DISTURBED LAWN AREAS SHALL BE RESTORED TO AT LEAST PREVIOUS CONDITION IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
- THE GENERAL CONTRACTOR SHALL INCLUDE TOPSOIL IN BASE BID. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE AMOUNT OF TOPSOIL AVAILABLE ON-SITE.
- PERGOLA, GAZEBO, FOUNTAIN, AND OTHER BUILT STRUCTURES WILL BE DETAIL BY LANDSCAPE ARCHITECT, OR LANDSCAPE CONTRACTOR

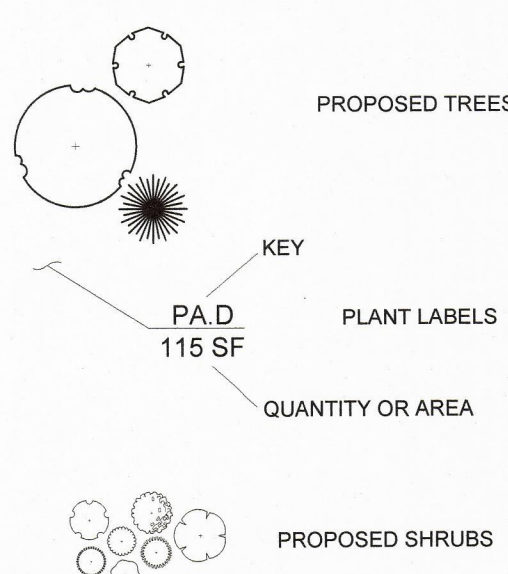
LANDSCAPE PLAN PREPARED BY:
WESLEY LONDON, ASLA - LICENSED LANDSCAPE ARCHITECT
NATIVE EDGE, LLC
(616) 717-0658
WESLEY@NATIVEEDGE.CO.COM



TOTAL SHRUBS & PERENNIALS FOR ALL THREE COURTYARDS

VT - 42
PF - 104
SH - 103
RF - 83
PD - 83
NF - 205
AC - 83

LEGEND



PERENNIAL PLANTING AREA A - PA.A (4,655 SF) (SEE SHEET L2.0)
PERENNIAL PLANTING AREA A CONSISTS OF THE FOLLOWING SPECIES, PLANTED IN GROUPS OF 15-20 AND REPEATED THROUGHOUT THE PLANTING AREA:
NODDING WILD ONION, CATMINT, BROWN EYED SUSAN, PURPLE CONEFLOWER, PRAIRIE DROPSIDE, RUSSIAN SAGE, LITTLE BLUESTEM, PALE PURPLE CONEFLOWER, WILD GERANIUM, AND MOUNTAIN MINT. THE PERENNIAL PLANTING AREA WILL BE STAKED BY THE LANDSCAPE ARCHITECT PRIOR TO PLANTING.

LOW-PROFILE PRAIRIE NATIVE SEED MIX (165,243 SF)

DETENTION BASIN NATIVE SEED MIX (44,058 SF) (SEE SHEET L2.0)

LANDSCAPING REQUIREMENTS

SCREENING

BASED ON THE SITE ZONING THE ORDINANCE REQUIRES SCREENING AND/OR LANDSCAPING EQUAL TO SCREENING STRATEGIES A-2 OR B & D OR C. HOWEVER, DUE TO THE HEAVILY WOODED NATURE OF THE SITE, AND THE SITE TOPOGRAPHY, THE DEVELOPMENT WILL BE NATURALLY SCREENED WE BELIEVE THIS WILL EASILY SATISFY THE INTENT OF THIS REQUIREMENT.

INTERIOR LANDSCAPING REQUIREMENTS

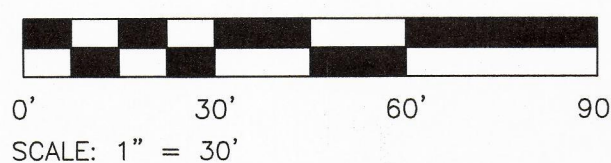
TOTAL LOT AREA = 21.57 AC, 939,589 SF
INTERIOR LANDSCAPING PROVIDED: 15% OF TOTAL LOT AREA, 959,589 SF
INTERIOR LANDSCAPING PROVIDED: 733,959 SF
INTERIOR LANDSCAPING TREE REQUIRED (1 PER 300 SF OF REQUIRED AREA): 140,938/300 = 470 TREES
INTERIOR LANDSCAPING SHRUBS REQUIRED (5 PER 300 SF OF REQUIRED AREA): 140,938/300 * 5 = 2,349 SHRUBS
DUE TO THE HEAVILY WOODED NATURE OF THIS SITE, A MAJORITY OF THE SITE IS BEING LEFT UNDISTURBED AND THE LANDSCAPE AREA SQUARE FOOTAGE AND TREE AND SHRUB REQUIREMENTS ARE LARGELY MET BY UTILIZING THE EXISTING SITE FEATURES.
** IN ADDITION TO THE EXISTING TREES AND SHRUBS ON-SITE, THIS PLAN PROPOSES TO PLANT AN ADDITIONAL 127 TREES AND 944 SHRUBS.

PARKING LOT LANDSCAPING

TOTAL PARKING SPACES: 70
REQUIRED PARKING LOT LANDSCAPING: 70*15=1,050 SF
PROVIDED PARKING LOT LANDSCAPING: 2,307 SF
REQUIRED TREES: 1,050 / 100=10
PROVIDED TREES: 10
REQUIRED SHRUBS: 1,050 / 100=105
PROVIDED SHRUBS: 230



Know what's below.
Call before you dig.



THE LOCATION OF ALL UNDERGROUND UTILITIES AS SHOWN ON THESE DRAWINGS ARE BASED ON RECORDS PROVIDED BY THE UTILITY OWNERS AND VISIBLE EVIDENCE OBTAINED IN THE FIELD. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED TO THE COMPLETENESS OR ACCURACY THEREOF.

LOW-PROFILE PRAIRIE NATIVE SEED MIX

Total Seeding Rate: 31 lbs per acre
3.75 lbs grasses + 2.25 lbs forbs + 25 lbs nurse crop
41 native seeds per sq ft

Call, email or visit our website for pricing.

Grasses	Side-cats Gramma	PLS Oz/acre	Seeds/sq ft
<i>Bromus tectorum</i>	20.00	2.75	
<i>Bromus inermis</i>	4.00	0.73	
<i>Elymus canadensis</i>	7.50	0.90	
<i>Agrostis alba</i>	0.25	1.15	
<i>Schizachyrium scoparium</i>	28.00	9.64	
<i>Sporobolus heterolepis</i>	0.25	0.09	
Total Grasses	60.00	15.27	

Forbs	Butterfly Milkweed	PLS Oz/acre	Seeds/sq ft
<i>Asclepias tuberosa</i>	0.50	0.05	
<i>Aster multiflorus</i>	0.50	1.55	
<i>Castilleja coccinea</i> (Chamaecrista f.)	8.00	0.50	
<i>Coreopsis lanceolata</i>	7.00	3.21	
<i>Echinacea purpurea</i>	7.00	1.06	
<i>Kuhnia eupatorioides</i>	0.60	0.44	
<i>Monarda fistulosa</i>	0.50	0.80	
<i>Penstemon digitalis</i>	0.50	1.49	
<i>Psilostemum purpureum</i> (Dalea p.)	4.00	1.65	
<i>Potentilla arguta</i> (Dymocallis a.)	0.50	2.64	
<i>Rudbeckia hirta</i>	0.70	0.48	
<i>Rudbeckia hirta</i>	4.90	10.35	
<i>Solidago rigida</i>	0.70	0.66	
<i>Verbena stricta</i>	0.60	0.39	
Total Forbs	36.00	25.27	

Temporary Grass Cover	Oz/acre	Seeds/sq ft
<i>Lolium multiflorum</i>	80.00	24.75
<i>Avena sativa</i>	320.00	7.35
Total Temp Grasses	400.00	32.14

THIS NATIVE SEED MIX WAS PROVIDED BY NATIVE CONNECTIONS IN KALAMAZOO, MI, AND CAN BE SOURCED FROM THIS NURSERY OR APPROVED EQUIVALENT. THIS MIX IS KNOWN AS THEIR 'BASIC SHORTGRASS PRAIRIE MIX'. CONTRACTOR TO CONSULT WITH NATIVE SEED SUPPLIER OR QUALIFIED LANDSCAPE CONTRACTOR ABOUT THE NECESSARY SITE PREPARATION AND INSTALLATION STRATEGIES TO BE IMPLEMENTED BASED ON THE EXISTING SITE CONDITIONS.

DETENTION BASIN NATIVE SEED MIX

Total Seeding Rate: 34 lbs per acre
2.5 lbs grasses + 1.5 lbs forbs + 30 lbs nurse crop
101 native seeds per sq ft

Call, email or visit our website for pricing.

Grasses, Sedges & Rushes	Big Bluestem	PLS Oz/acre	Seeds/sq ft
<i>Andropogon gerardii</i>	4.00	0.92	
<i>Carex bebbii</i>	1.75	1.37	
<i>Carex vulpinoidea</i>	2.00	4.59	
<i>Eleocharis palustris</i>	1.00	1.17	
<i>Elymus virginicus</i>	17.00	1.64	
<i>Juncus effusus</i>	0.50	11.48	
<i>Juncus tenuis</i>	0.50	11.48	
<i>Juncus torreyi</i>	0.25	9.18	
<i>Panicum virgatum</i>	7.00	2.25	
<i>Scirpus americanus</i> (S. americanus)	1.00	2.87	
<i>Scirpus validus</i> (S. laevicaulis)	1.00	0.71	
<i>Sorghastrum nutans</i>	4.00	1.10	
Total Grasses	40.00	48.76	

Forbs	Common Water Plantain	PLS Oz/acre	Seeds/sq ft
<i>Allisma subcordatum</i>	2.00	2.75	
<i>Asclepias incarnata</i>	1.00	0.11	
<i>Aster novae-angliae</i>	0.25	0.38	
<i>Aster umbellatus</i>	0.25	0.38	
<i>Bidens serotina</i>	1.00	0.48	
<i>Echinacea purpurea</i>	4.00	0.61	
<i>Helenium autumnale</i>	0.75	2.24	
<i>Liatris pycnostachya</i>	1.25	0.32	
<i>Lythrum americanum</i>	0.50	1.49	
<i>Mimulus ringens</i>	0.25	13.20	
<i>Monarda fistulosa</i>	0.50	0.80	
<i>Oenothera biennis</i>	1.00	2.07	
<i>Penstemon sedoides</i>	0.50	14.92	
<i>Phlox pilularis</i>	0.50	0.13	
<i>Polygonum pennsylvanicum</i> (Persicaria p.)	2.75	0.82	
<i>Rudbeckia hirta</i>	2.50	5.28	
<i>Verbena hastata</i>	2.50	5.34	
<i>Zizia aurea</i>	2.50	0.63	
Total Forbs	24.00	61.95	

Temporary Grass Cover	Oz/acre	Seeds/sq ft
<i>Lolium multiflorum</i>	112.00	34.71
<i>Avena sativa</i>	328.00	8.45
Total Temp Grasses	440.00	43.16

THIS NATIVE SEED MIX WAS PROVIDED BY NATIVE CONNECTIONS IN KALAMAZOO, MI, AND CAN BE SOURCED FROM THIS NURSERY OR APPROVED EQUIVALENT. THIS MIX IS KNOWN AS THEIR 'STORMWATER MIX'. CONTRACTOR TO CONSULT WITH NATIVE SEED SUPPLIER OR QUALIFIED LANDSCAPE CONTRACTOR ABOUT THE NECESSARY SITE PREPARATION AND INSTALLATION STRATEGIES TO BE IMPLEMENTED BASED ON THE EXISTING SITE CONDITIONS.

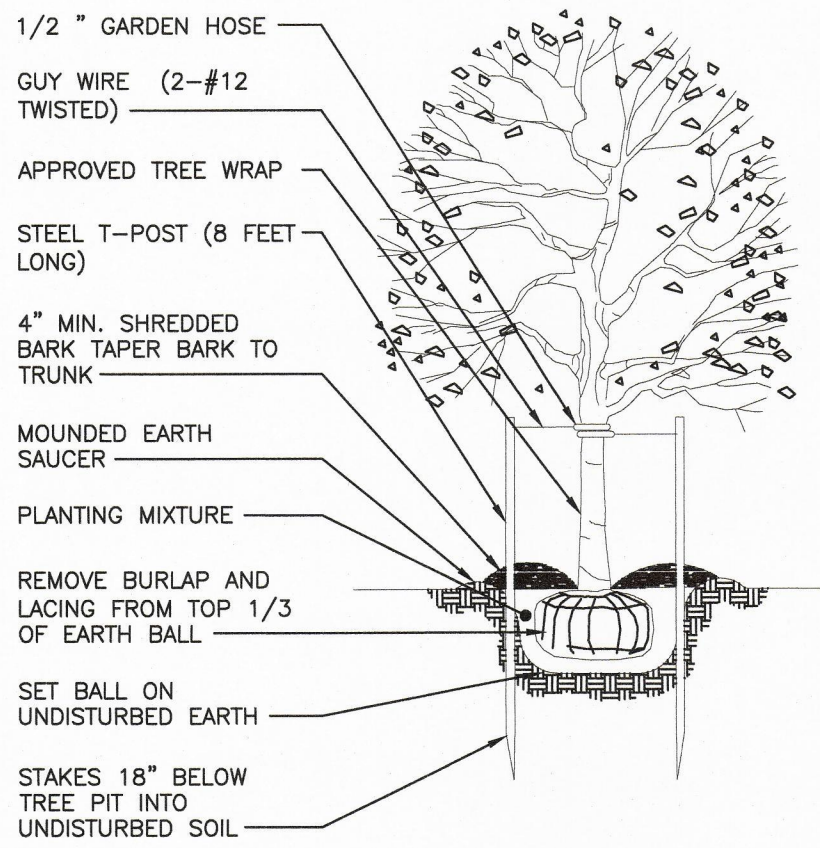
QTY	KEY	BOTANICAL NAME / COMMON NAME	SIZE / SPACING (MINIMUM)
9	AR	<i>Acer rubrum</i> 'October Glory' / October Glory Red Maple	2.5" Cal. B&B, As Shown
10	AS	<i>Acer saccharum</i> 'Green Mountain' / Green Mountain Sugar Maple	2.5" Cal. B&B, As Shown
24	AB	<i>Amelanchier</i> 'Autumn Brilliance' / Autumn Brilliance Serviceberry	1.5 Cal. B&B, As Shown
3	CA	<i>Cornus alternifolia</i> / Pagoda Dogwood	1.5 Cal. B&B, As Shown
10	GT	<i>Gleditsia tricanthos var. inermis</i> 'Suncole' / Sunburst Honeylocust	2.5" Cal. B&B, As Shown
3	LT	<i>Liriodendron tulipifera</i> / Tuliptree	2.5" Cal. B&B, As Shown
17	MP	<i>Malus</i> 'Prairie Fire' / Praire Fire Crabapple	1.5 Cal. B&B, As Shown
2	NS	<i>Nyssa sylvatica</i> / Black Gum	2.5" Cal. B&B, As Shown
31	PG	<i>Picea glauca</i> 'Densata' / Black Hills Spruce	7" Ht. B&B, As Shown
9	PS	<i>Pinus strobus</i> / Eastern White Pine	7" Ht. B&B, As Shown
9	UF	<i>Ulmus carpinifolia x parvifolia</i> 'Frontier' / Frontier Elm	2.5" Cal. B&B, As Shown
127	Total		

QTY	KEY	BOTANICAL NAME / COMMON NAME	SIZE / SPACING
67	AM	<i>Aronia melanocarpa</i> 'Autumn Magic' / Autumn Magic Black Chokeberry	30" Ht. 5-Gal. Container / 4' O.C.
79	CS	<i>Cornus sericea</i> 'Arctic Fire' / Arctic Fire Red Twig Dogwood	30" Ht. 5-Gal. Container / 3' O.C.
106	DL	<i>Diervilla lonicera</i> / Northern Bush Honeysuckle	30" Ht. 5-Gal. Container / 3' O.C.
25	HPd	<i>Hydrangea paniculata</i> 'Diamond Rouge' / Diamond Rouge Hydrangea	30" Ht. 5-Gal. Container / 3' O.C.
12	HPl	<i>Hydrangea paniculata</i> 'Limelight' / Limelight Hydrangea	30" Ht. 5-Gal. Container / 3' O.C.
24	HPs	<i>Hydrangea paniculata</i> 'Strawberry Sundae' / Strawberry Sundae Hydrangea	30" Ht. 5-Gal. Container / 3' O.C.
48	PO	<i>Physocarpus opulifolius</i> / Common Ninebark	30" Ht. 5-Gal. Container / 5' O.C.
387	PF	<i>Potentilla fruticosa</i> / Shrubby Cinquefoil	30" Ht. 5-Gal. Container / 3' O.C.
46	RA	<i>Rhus aromatica</i> 'Gro-low' / Low Grow Fragrant Sumac	30" Ht. 5-Gal. Container / 3' O.C.
150	VD	<i>Viburnum dentatum</i> 'Blue Muffin' / Blue Muffin Viburnum	30" Ht. 5-Gal. Container / 5' O.C.

QTY	KEY	BOTANICAL NAME / COMMON NAME	SIZE / SPACING
232	AC	<i>Allium cernuum</i> / Nodding Wild Onion	Quart / 12" O.C.
232	EP	<i>Echinacea pallida</i> / Pale Purple Coneflower	Quart / 12" O.C.
232	EcP	<i>Echinacea purpurea</i> / Purple Coneflower	Quart / 12" O.C.
232	GM	<i>Geranium maculatum</i> / Wild Geranium	Quart / 12" O.C.
514	NF	<i>Nepeta faassenii</i> 'Kit Kat' / Kit Kat Catmint	Quart / 12" O.C.
315	PD	<i>Penstemon digitalis</i> / Beardtongue	Quart / 12" O.C.
232	PA	<i>Perovskia atriplicifolia</i> / Russian Sage	Quart / 18" O.C.
232	PyV	<i>Pycnanthemum virginianum</i> / Mountain Mint	Quart / 12" O.C.
370	RF	<i>Rudbeckia fulgida</i> / Brown Eyed Susan	Quart / 12" O.C.
464	SH	<i>Sporobolus heterolepis</i> / Prairie Dropseed	Quart / 12" O.C.
232	SS	<i>Schizachyrium scoparium</i> / Little Bluestem	Quart / 12" O.C.

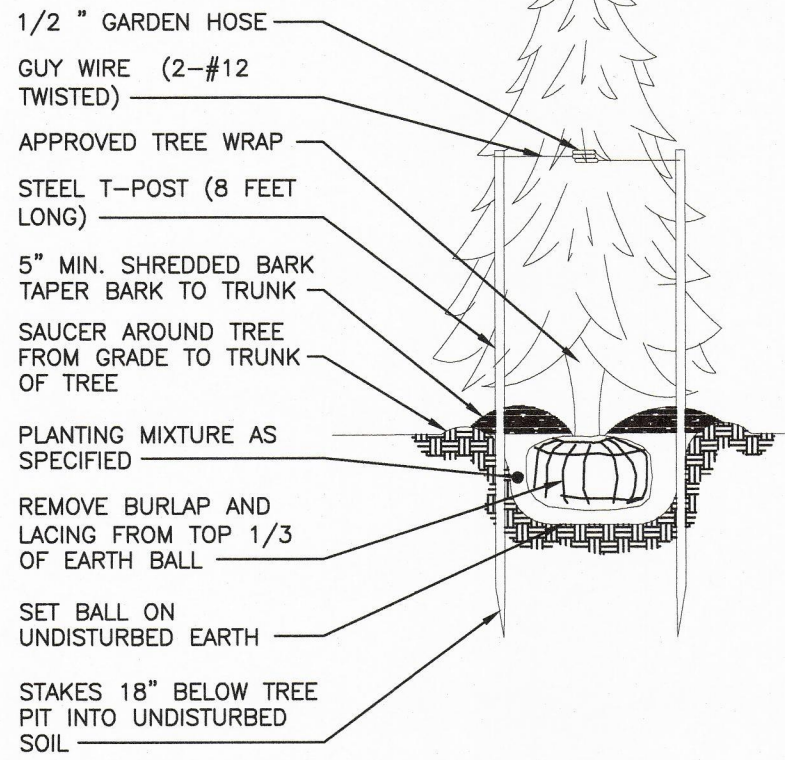
*Not all species above may be identified by their key on the plans. Some of the species above only exist in the PA.A planting area, and will be repeated in clumps throughout this planting zone.

**The above species list may be modified by the landscape architect, or with approval from the landscape architect based on plant availability. This list and the planting strategy must be approved with the landscape architect prior to placing the plant order.

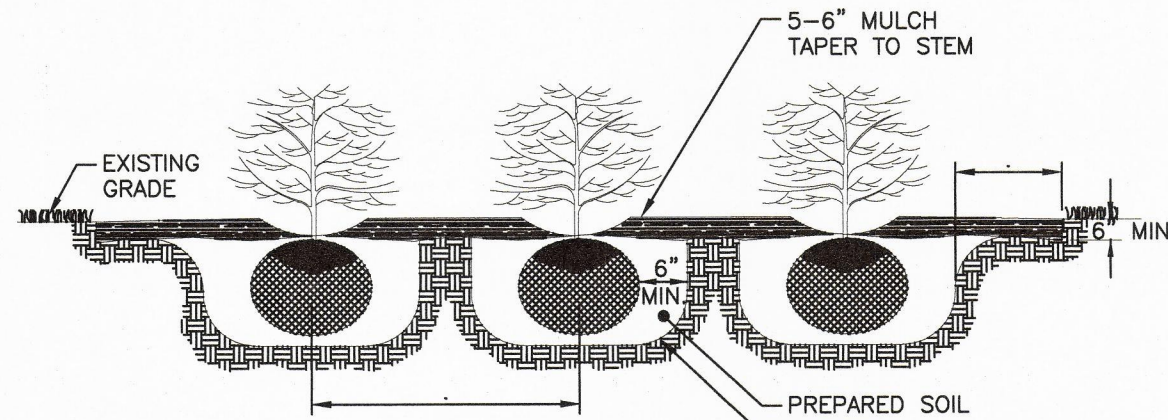


DECIDUOUS TREE PLANTING
NO SCALE

EVERGREEN TREES 6' & UNDER STAKE WITH STEEL T-POSTS, 2 PER TREE. EVERGREEN TREES OVER 6' HIGH GUY AS SPECIFIED FOR DECIDUOUS TREES NEVER CUT LEADERS.



EVERGREEN TREE PLANTING
NO SCALE



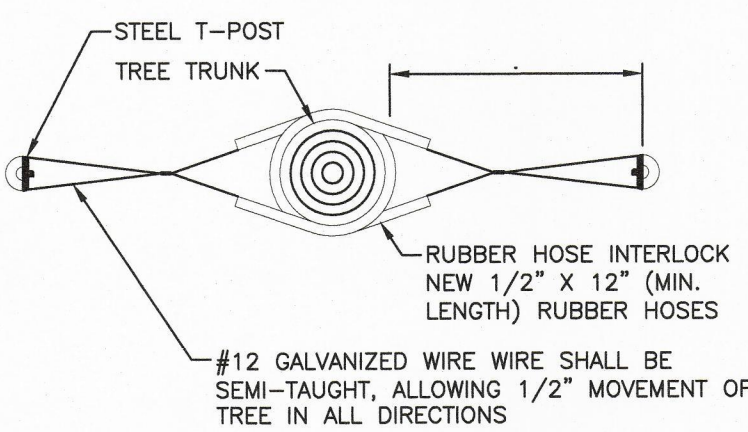
-FIRST AND SECOND WATERING AND CULTIVATION SHALL INCLUDE SHRUB BEDS.

-CUT 6" X 12" (MIN.) EDGING AROUND THE PERIMETER OF ALL SHRUB BEDS SHOWN ON THE PLANS. SPRAY A NON-PERSISTENT GLYPHOSATE HERBICIDE TO ENTIRE SHRUB BEDS PRIOR TO PLANTING AND BARK PLACEMENT.

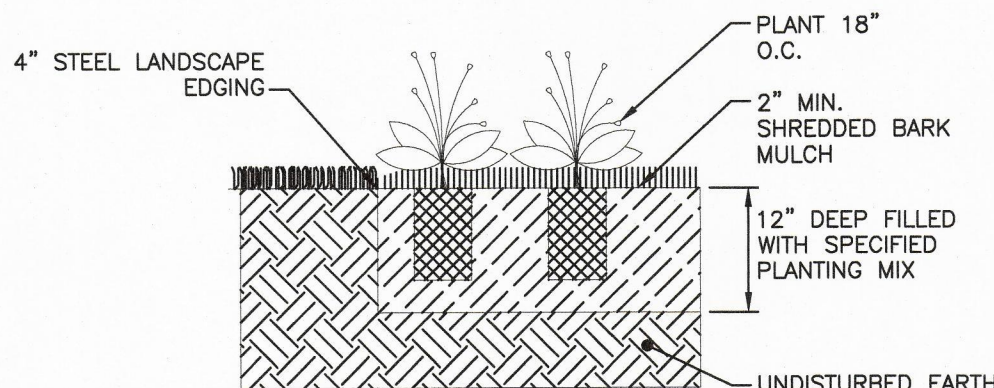
-SHRUB BEDS ARE TO BE PAID FOR BY THE PAY ITEM 'SITE PREPARATION'.

-ALL PLANTS SHALL BE SET PLUMB AND HAVE THE BEST SIDE OF PLANT FACING THE MAIN VIEWING DIRECTION.

SHRUB BED PLANTING
NO SCALE



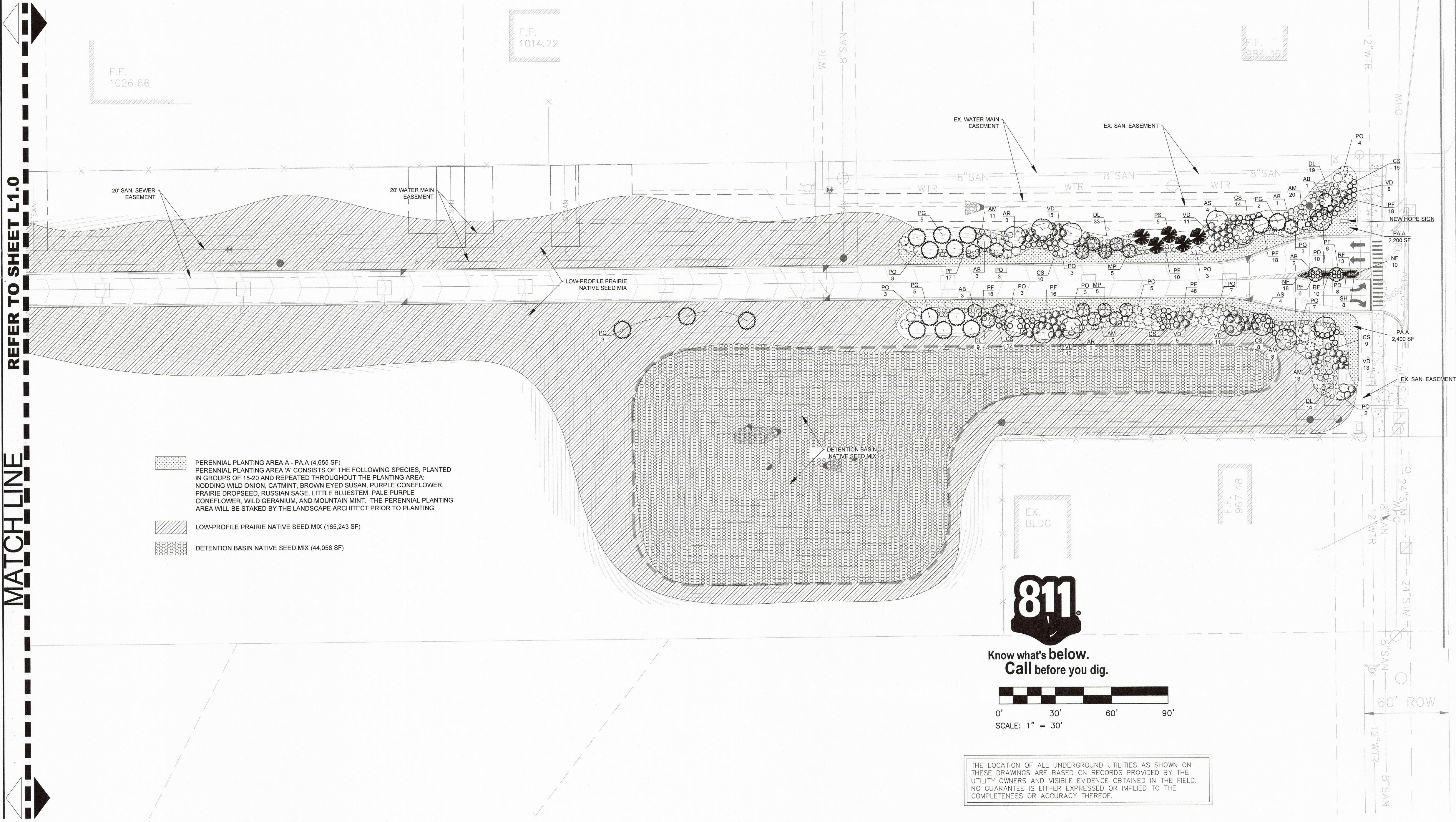
BRACING DETAIL
NO SCALE



PERENNIAL PLANTING BED
NO SCALE

REFER TO SHEET L1.0

MATCHLINE



TRIUMPH

Triumph Engineering
& Design, Inc.

10775 S. SAGINAW ST.
SUITE D
GRAND BLANC, MI 48439
(PH) 810.584.7364
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NEW HOPE
ASSISTED LIVING & NURSERY CARE

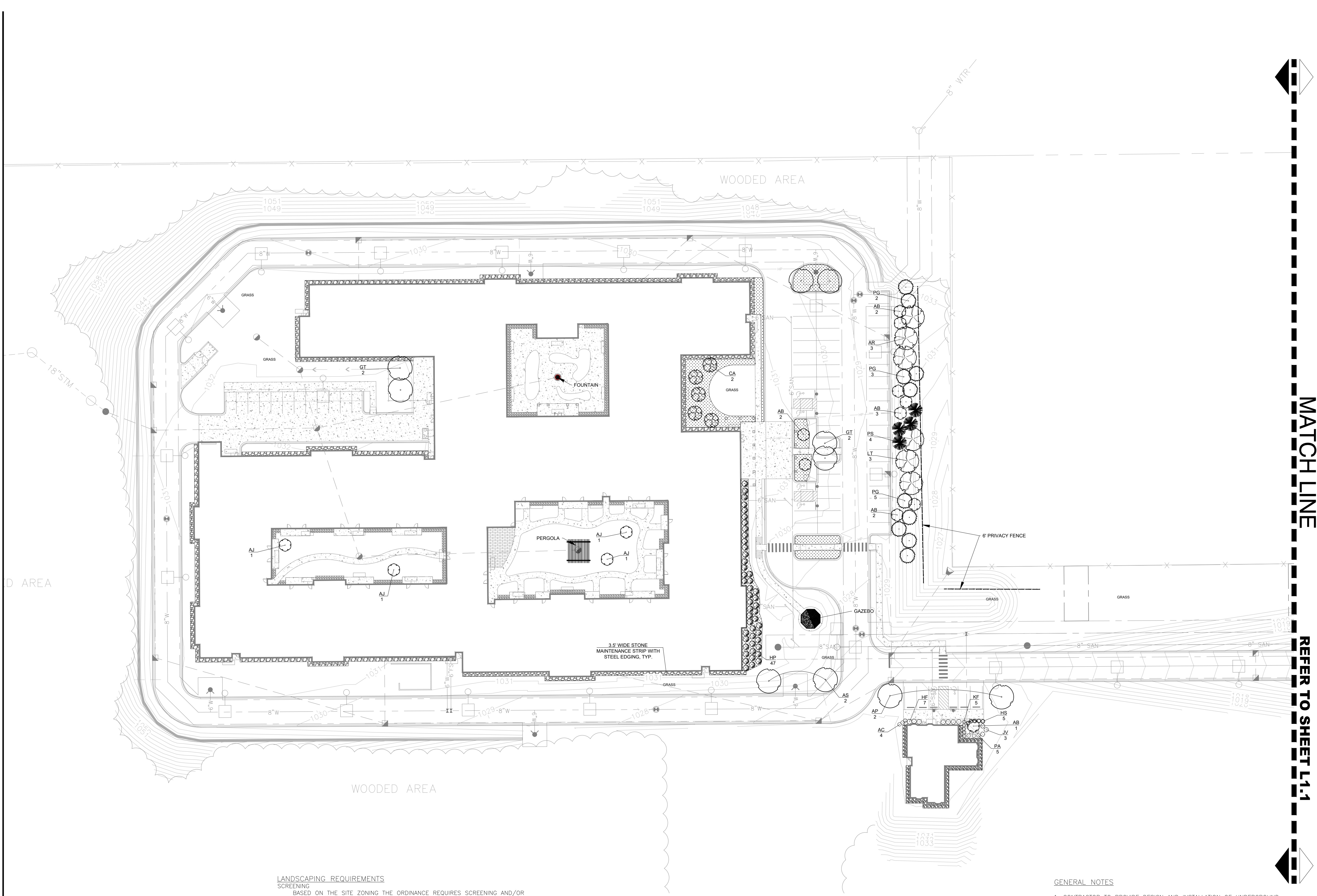
**NEW HOPE WHITE LAKE
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MICHIGAN**

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ISSUED FOR	DATE
FSPA	06/04/20
SPA	06/15/20
SPA	07/27/20
ENGINEERING #2	08/31/20
ENGINEERING #3	09/25/20
ENGINEERING #4	10/05/20
CONSTRUCTION	11/16/20

DATE: 10/05/20
DRAWN: ACA
CHECKED: JT
SCALE: 1"=40'
JOB NO: TED-NHWL
SHEET TITLE:
LANDSCAPE PLAN -
EAST & DETAILS
SHEET

L2.0



**Know what's below.
Call before you dig.**

0' 30' 60' 90'

SCALE: 1" = 30'

THE LOCATION OF ALL UNDERGROUND UTILITIES AS SHOWN ON THESE DRAWINGS ARE BASED ON RECORDS PROVIDED BY THE UTILITY OWNERS AND VISIBLE EVIDENCE OBTAINED IN THE FIELD. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED TO THE COMPLETENESS OR ACCURACY THEREOF.

LANDSCAPING REQUIREMENTS
SCREENING
BASED ON THE SITE ZONING THE ORDINANCE REQUIRES SCREENING AND/OR LANDSCAPING EQUAL TO SCREENING STRATEGIES A-2 OR B & D OR C. HOWEVER, DUE TO THE HEAVILY WOODED NATURE OF THE SITE, AND THE SITE TOPOGRAPHY, THE DEVELOPMENT WILL BE NATURALLY SCREENED WE BELIEVE THIS WILL EASILY SATISFY THE INTENT OF THIS REQUIREMENT. A 6" TALL VINYL FENCE WAS VOLUNTARILY INSTALLED TO SCREEN A RESIDENTIAL PROPERTY TO THE NORTH EAST OF THE PRIMARY BUILDING AND PARKING AREA TO HELP ENHANCE THE SITE SCREENING TO ADJACENT PROPERTIES.

INTERIOR LANDSCAPING REQUIREMENTS
TOTAL LOT ARE = 21.57 AC; 939,589 SF.
INTERIOR LANDSCAPING REQUIRED: 15% OF TOTAL LOT AREA. 959,589*15=140,938.
INTERIOR LANDSCAPING PROVIDED: 732,959 SF
INTERIOR LANDSCAPING TREE REQUIRED (1 PER 300 SF OF REQUIRED AREA): 140,938/300 = 470 TREES
INTERIOR LANDSCAPING SHRUBS REQUIRED (5 PER 300 SF OF REQUIRED AREA): 140,938/300 *5 =2,349 SHRUBS
•DUE TO THE HEAVILY WOODED NATURE OF THIS SITE, A MAJORITY OF THE SITE IS BEING LEFT UNDISTURBED AND THE LANDSCAPE AREA SQUARE FOOTAGE AND TREE AND SHRUB REQUIREMENTS ARE LARGELY MET BY UTILIZING THE EXISTING SITE FEATURES. AS A PART OF THE CONSTRUCTION AGREEMENT, THESE WOODLAND AREAS WILL BE PROTECTED AND WILL NOT BE DEVELOPED IN THE FUTURE, ENSURING THIS SCREEN WILL REMAIN IN THE FUTURE.
** IN ADDITION TO THE EXISTING TREES AND SHRUBS ON-SITE, THIS PLAN PROPOSES TO PLANT AN ADDITIONAL 88 TREES AND 50 SHRUBS.

PARKING LOT LANDSCAPING
TOTAL PARKING SPACES: 70
REQUIRED PARKING LOT LANDSCAPING: 70*15=1,050 SF
PROVIDED PARKING LOT LANDSCAPING: 2,307 SF
REQUIRED TREES: 1,050 / 100=10
PROVIDED TREES: 10 (PARKING LOT ISLANDS AND EAST SIDE OF PARKING LOT)
REQUIRED SHRUBS: 1,050 / 100; *3=32
PROVIDED SHRUBS: 47 (BOBO HYDRANGEA ON SE SIDE OF BLDG)

LEGEND

PROPOSED TREES

PROPOSED SHRUBS

MULCH

PLANT LABELS

QUANTITY OR AREA

KEY

PA D 115 SF

AS-BUILT NOTE

THIS LANDSCAPE PLAN IS TO SERVE AS AN AS-BUILT DRAWING BASED ON THE ACTUAL LANDSCAPE MATERIALS WHICH WERE INSTALLED BY BELL LANDSCAPING AT THE DIRECTION OF THE OWNER. THIS DRAWING IS BEING PROVIDED TO ADDRESS DIFFERENCES BETWEEN THE APPROVED LANDSCAPE PLAN WHICH WAS SUBMITTED ON 10/5/20, AND THE MATERIALS AND QUANTITIES WHICH WERE ACTUALLY INSTALLED ON-SITE. LANDSCAPING LOCATION, SPECIES, AND QUANTITIES PROVIDED BY BELL LANDSCAPING AND ARE REFLECTED ON THIS PLAN. ALL PLANT MATERIALS AND INSTALLATION TO BE IN COMPLIANCE WITH THE INFORMATION AND SPECIFICATIONS PROVIDED IN THE LANDSCAPE PLAN, REGARDLESS OF INSTALLATION STATUS.

THE LANDSCAPE QUANTITIES, SPECIFICALLY TREE AND SHRUB NUMBERS, ARE LESS THAN WHAT IS REQUIRED BY THE ZONING ORDINANCE. HOWEVER, DUE TO THE AMOUNT OF WOODLAND AREAS SURROUNDING THE PROPERTY, AND THE TOPOGRAPHY AROUND THE PERIMETER OF THE SITE, THE CLIENT IS REQUESTING THAT THE PRESERVED WOODLANDS COUNT TOWARDS THE TREE AND SHRUB TOTALS TO BRING THE LANDSCAPE PLAN INTO COMPLIANCE WITH THE ZONING ORDINANCE.

LANDSCAPE PLAN PREPARED BY:
WESLEY LONDON, ASLA - LICENSED LANDSCAPE ARCHITECT
NATIVE EDGE, LLC
(616) 717-0656
WESLEY@NATIVEDEGECO.COM

- GENERAL NOTES**
- CONTRACTOR TO PROVIDE DESIGN AND INSTALLATION OF UNDERGROUND IRRIGATION SYSTEM IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND REGULATORY AGENCY REQUIREMENTS. ALL LANDSCAPING AND GRASS AREAS TO BE IRRIGATED, AND THE IRRIGATION SYSTEM SHALL BE EQUIPPED WITH A RAIN SENSOR TO CONSERVE WATER.
 - IT IS THE CONTRACTOR'S RESPONSIBILITY TO SECURE ALL PERMITS AND POST ALL BONDS PRIOR TO CONSTRUCTION.
 - ALL GREEN SPACES WHERE A GROUND COVER IS NOT SPECIFIED SHALL BE PLANTED WITH GRASS.
 - ALL GRASS AREAS TO BE SODDED.
 - SPACE ALL SHRUBS AT SPACING INDICATED ON PLANT LISTS.
 - NO TREES SHALL BE PLANTED OVER OR WITHIN 10' OF SANITARY SEWER, STORM SEWER, OR WATER MAIN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INDEPENDENTLY VERIFY TREES ARE NOT IN CONFLICT WITH BURIED UTILITIES REGARDLESS OF WHAT IS DEPICTED ON THE PLANS.
 - ALL DISTURBED LAWN AREAS SHALL BE RESTORED TO AT LEAST PREVIOUS CONDITION IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
 - THE GENERAL CONTRACTOR SHALL INCLUDE TOPSOIL IN BASE BID. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE AMOUNT OF TOPSOIL AVAILABLE ON-SITE.
 - EXACT COURTYARD DESIGN AND PLANT MATERIAL IN THE COURTYARD AREAS IS SUBJECT TO CHANGE.
 - PERGOLA, GAZEBO, FOUNTAIN, AND OTHER BUILT STRUCTURES WILL BE DETAILED BY OWNER OR LANDSCAPE CONTRACTOR PRIOR TO CONSTRUCTION.

CARE FOR PLANTS BEFORE PLANTING
PLANTS DESIGNATED "BB" SHALL BE BALLED AND BURLAPPED WITH FIRM NATURAL BALLS OF EARTH. CRACKED, LOOSENED OR BROKEN BALLS SHALL NOT BE PLANTED. THEY SHALL BE MARKED WITH SPRAY PAINT AND IMMEDIATELY REMOVED FROM THE JOB SITE. IMMEDIATELY FOLLOWING DELIVERY AT THE JOB SITE, ALL PLANTS THAT WILL NOT BE PLANTED THAT SAME DAY SHALL BE "HEELER IN" WITH SHREDDED BARK OR MOIST SOIL AND KEPT MOIST UNTIL PLANTED.

THE TRUNKS AND BRANCHES OF ALL TREES SHALL BE PROTECTED FROM INJURY OF ANY KIND DURING ALL OPERATIONS. THE OWNER'S REPRESENTATIVE SHALL REJECT ANY TREES THAT ARE INJURED.

PLANTING
THE CONTRACTOR IS RESPONSIBLE FOR PLANTING MATERIALS PLUMB. SET THE TOP OF THE ROOT BALL AT OR SLIGHTLY HIGHER THAN THE SURROUNDING GRADE. PLANTS SHALL BE FACED TO GIVE THE BEST APPEARANCE OR RELATIONSHIP TO ADJACENT STRUCTURES. NO FILLING WILL BE PERMITTED AROUND TRUNK OR STEMS. WHEN THE PLANT HAS BEEN PROPERLY SET, THE HOLE SHALL BE BACKFILLED TO 1/2 THE DEPTH OF THE BALL WITH PREPARED TOPSOIL MIXTURE, FIRMLY PACKED AND WATERED-IN AT TIME OF PLANTING. LOOSED AND REMOVE BURLAP AND LACING FROM UPPER 1/3 OF THE ROOT BALL. BACKFILL WITH PREPARED TOPSOIL, WHICH AFTER COMPACTION IS FLUSH WITH THE SURROUNDING GROUND.

MULCHING
ALL PLANT MATERIAL SHALL BE ENCIRCLED WITH A 4" MINIMUM COVERING OF NON-DYED SHREDDED BARK MULCH TO 6" OUTSIDE THE PLANTING HOLE, TAPERING MULCH TO 2" AROUND THE TRUNK OF ALL PLANTS. SUBMIT SAMPLE TO THE OWNER'S REPRESENTATIVE FOR APPROVAL BEFORE PLACEMENT. WOOD CHIPS SHALL NOT BE ALLOWED ON THIS JOB.

WRAPPING DECIDUOUS TREES
TREE WRAP SHALL COVER TRUNKS OF ALL DECIDUOUS TREES BEGINNING BELOW THE SOIL LINE JUST ABOVE THE ROOTS. TIE WITH TWINE IN 5 PLACES, INCLUDING THE TOP AND BOTTOM OF WRAPPING. MASKING TAPE OR WIRE WILL NOT BE ALLOWED.

BRACING AND GUYING
GUYING SHALL BE EMPLOYED TO PREVENT LEANING OR LOOSENING OF THE TREE FROM THE BALL. BRACING MATERIAL SHALL BE T-POSTS PAINTED GREEN. GUYING MATERIAL SHALL BE 12 GAUGE WIRE AND GARDEN HOSE 1/2 INCH DIAMETER. GUY WIRE SHALL BE ENCASED IN HOSE TO PREVENT DIRECT CONTACT WITH THE TREE. DECIDUOUS TREES SHALL BE BRACED OR GUYED IMMEDIATELY AFTER THE TREE WRAPPING IS COMPLETE. TREE STAKES, GUY WIRES AND TREE WRAP ARE TO BE REMOVED AFTER ONE YEAR.

STEEL LANDSCAPE EDGING
4" STEEL LANDSCAPE EDGING SHALL BE USED ON THIS PROJECT. ALUMINUM OR PLASTIC EDGING WILL NOT BE ALLOWED. STEEL EDGING SHALL BE PLACED WHEREVER A LANDSCAPED BED HAS AN INTERFACE WITH A TURFGRASS OR OTHER SOFTSCAPE AREA. THIS DOES NOT INCLUDE INDIVIDUAL TREES PLANTED IN LAWN.

PRUNING
UPON COMPLETION, ALL PLANT MATERIAL MUST BE PRUNED. THE AMOUNT OF PRUNING SHALL BE LIMITED TO THE MINIMUM NECESSARY TO REMOVE DEAD OR INJURED BRANCHES AND TO COMPENSATE FOR THE LOSS OF ROOTS FROM TRANSPLANTING. ALL CUTS SHALL BE MADE FLUSH LEAVING NOT STUBS. PRUNING PAINT SHALL NOT BE USED.

FINISHING AND CLEANING UP
IMMEDIATELY UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL CLEAN UP THE AREA OF SURPLUS MATERIALS. THE CONTRACTOR SHALL REPAIR AND RE-ESTABLISH TURF IN RUTTED AREAS.

WARRANTY
THE LANDSCAPE INSTALLATION CONTRACTOR SHALL REPLACE ALL UNHEALTHY VEGETATION AND PLANTINGS WITHIN TWO (2) YEAR OF INITIAL PLANTING OR SUBSEQUENT PLANTING PERIOD.

DESCRIPTION
THIS WORK SHALL CONSIST OF PROVIDING ALL NECESSARY MATERIALS, LABOR, EQUIPMENT, TOOLS AND SUPERVISION REQUIRED FOR THE EXECUTION AND GUARANTEE OF ALL PLANTINGS AND RELATED WORK AS SHOWN ON THE DRAWINGS.

PLANT MATERIALS SHALL CONFORM TO THE SIZES STATED ON THE PLANT LIST AND BE OF A MINIMUM SIZE OR LARGER. ALL MEASUREMENTS OF SPREAD, CALIPER, BALL SIZE, TRUNK GROWN RATIO, QUALITY DESIGNATIONS, ETC., SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "ANSI STANDARDS FOR NURSERY STOCK". PLANT MATERIAL SHALL BE NURSERY GROWN AND INSPECTED BY THE OWNER'S REPRESENTATIVE AT THE SITE PRIOR TO PLANTING. THE OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO REJECT ANY PLANT MATERIAL AT ANY TIME.

NURSERY STOCK SHALL BE PREPARED FOR SHIPMENT IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT ANSI SPECIFICATION Z60.1 AND SHALL BE ENCLOSED OR COVERED DURING TRANSPORTATION TO PREVENT DRYING.

SITE PREPARATION
THE CONTRACTOR SHALL VERIFY ALL EXISTING AND PROPOSED UTILITY LOCATIONS PRIOR TO CONSTRUCTION AND PROTECT AND REPAIR UTILITIES ENCOUNTERED DURING CONSTRUCTION WHETHER SHOWN ON THE PLANS OR NOT.

INDIVIDUAL HOLES SHALL BE CENTERED AT STAKED PLANT LOCATIONS. CONTRACTOR IS TO STAKE PRIOR TO PLACEMENT OF PLANT MATERIAL AND OBTAIN APPROVAL FROM THE OWNER'S REPRESENTATIVE. PLANTING HOLES SHALL BE DUG LARGE ENOUGH TO PERMIT PLACING PREPARED TOPSOIL 18" LATERALLY BEYOND THE ENDS OF THE ROOT BALLS FOR SHADE AND EVERGREEN TREES AND 6" LATERALLY FOR SHRUBS UNLESS OTHERWISE SPECIFIED.

EXCAVATED MATERIAL SHALL BE REMOVED FROM THE SITE AT THE TIME THE HOLE IS DUG. THE PLANTING HOLE SHALL BE BACKFILLED WITH PREPARED TOPSOIL THE SAME DAY THEY ARE DUG.

TOPSOIL SHALL AT FERTILE, FRIABLE, NATURAL TOPSOIL OF CLAY LOAM CHARACTER CONTAINING AT LEAST 5% BUT NOT MORE THAN 20% BY WEIGHT OF ORGANIC MATTER WITH A PH RANGE FROM 6.0 TO 7.0. TOPSOIL SHALL BE FREE OF CLAY LUMPS, COARSE SAND, STONES, PLANT ROOTS, STICKS OR OTHER FOREIGN MATTER.

CONTRACTOR SHALL TAKE CARE NOT TO COMPACT SOILS IN PLANTING AREAS. ANY COMPACTED SOILS TO BE SCARIFIED TO A DEPTH OF 8" TO ELIMINATE ANY SOIL COMPACTION CREATED DURING CONSTRUCTION. CONTRACTOR MAY BE REQUIRED TO FURTHER AMEND SOIL IN AREAS WHERE EXCESSIVE COMPACTION HAS OCCURRED.

SLOPE STABILIZATION
NO SLOPES SHALL BE STEEPER THAN 3(H):1(V). ALL SLOPES TO BE STABILIZED WITH C-125BN EROSION CONTROL BLANKET OR APPROVED EQUIVALENT. BLANKET ONLY TO BE INSTALLED ON UNDISTURBED AREAS. IF BLANKET IS INSTALLED BEFORE SEED MIX IS INSTALLED IT SHALL BE PULLED BACK TO ALLOW THE SEED MIX TO BE INSTALLED AND REPLACED IMMEDIATELY AFTER SEEDING. ANY SWALES WHERE NATIVE SEED MIX IS PROPOSED SHALL ALSO BE PROTECTED WITH EROSION CONTROL BLANKET REGARDLESS OF SLOPE. SWALES WHICH HAVE A SLOPE OF 5(H):1(V) OR STEEPER TO HAVE CHECK DAMS INSTALLED EVERY 100 LINEAR FEET OR AT THE DIRECTION OF THE PROJECT ENGINEER. CHECK DAMS TO BE CONSTRUCTED FROM 4-8" RIPRAP AND SHALL BE A MINIMUM OF 12" ABOVE THE BOTTOM ELEVATION OF THE SWALE WITH A 12" TOP WITH EXTENDING TO EITHER SIDE OF THE SWALE, AND HAVING 1:1 SIDE SLOPES PERPENDICULAR TO THE DIRECTION OF FLOW.

TRIUMPH

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NEW HOPE
— ASSISTED LIVING & MEMORY CARE —

**NEW HOPE WHITE LAKE
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MICHIGAN**

ISSUED FOR

FSPA	06/04/20
SPA	06/15/20
SPA	07/27/20
ENGINEERING #2	08/31/20
ENGINEERING #3	09/25/20
ENGINEERING #4	10/05/20
LANDSCAPE UPD.	9/1/22

DATE: 9/1/22

DRAWN: ACA

CHECKED: JT

SCALE: 1"=40'

JOB NO: TED-NHWL

SHEET TITLE:
LANDSCAPE PLAN - WEST

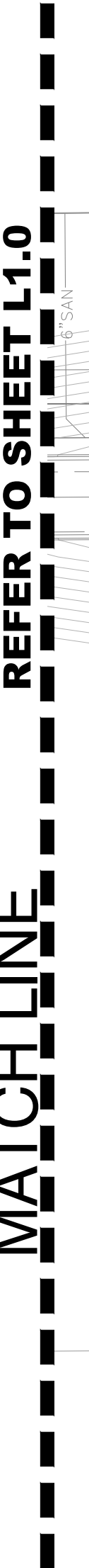
SHEET

L1.0

811

MATCH LINE

REFER TO SHEET L1.0



10' SHW

