

HOWELL TOWNSHIP PLANNING COMMISSION

REGULAR MEETING

3525 Byron Road

Howell, MI 48855

April 23, 2024

6:30 pm

1. Call to Order
2. Roll Call: () Wayne Williams - Chair () Denise Markham
 () Robert Spaulding – Vice Chair () Paul Pominville
 () Mike Newstead – Secretary () Tim Boal
 () Matthew Counts – Board Rep.
3. Pledge of Allegiance
4. Approval of the Agenda:
 Planning Commission Regular Meeting: April 23, 2024
5. Approval of the Minutes:
 Special Meeting April 2, 2024
6. Zoning Board of Appeals Report:
7. Township Board Report:
8. Scheduled Public Hearings
 A. Kory Leppek, PC2024-04, 4640 W. Grand River Ave. Howell, MI 48855, Parcel #
 4706-20-100-027. Request to rezone property from NSC to IFZ with conditions.
9. Other Matters to be Reviewed by the Planning Commission:
10. Old Business:
 A. Michigan Storage Barns, PC2023-06, 675 E. Highland Rd. Howell, MI
 48855, Parcel # 4706-25-200-011. Major Changes to Site Plan.
11. New Business:
 A. Wrangler Saloon, PC2024-05, 4020 W. Grand River Ave. Howell, MI 48855, Parcel # 4706-
 20-400-004. Preliminary Site Plan Review.

 B. Storage Container Ordinance - Discussion
12. Call to the Public:
13. Adjournment

**HOWELL TOWNSHIP PLANNING COMMISSION
SPECIAL MEETING MINUTES**

3525 Byron Road Howell, MI 48855

April 2, 2024

6:30 P.M.

MEMBERS PRESENT:

Wayne Williams Chair

Mike Newstead Secretary
Matthew Counts Board Rep.
Denise Markham Commissioner
Paul Pominville Commissioner
Tim Boal Commissioner

MEMBERS ABSENT:

Robert Spaulding Vice Chair

Also in Attendance:

Township Planner Paul Montagno, Zoning Administrator Jonathan Hohenstein

Chairman Williams called the meeting to order at 6:30 pm. The roll was called. Chairman Williams requested members rise for the Pledge of Allegiance.

CALL TO THE BOARD:

Motion by Counts, **Second** by Pominville, **"To move item 10-A, Solar Ordinance discussion, after 11-A, Old Glory preliminary site plan review."** Motion carried.

Motion by Boal, **Second** by Newstead, **"To add under number 11, new business letter C, a discussion concerning storage containers."** Motion carried.

APPROVAL OF THE AGENDA:

Motion by Pominville, **Second** by Newstead, **"To approve the updated agenda."** Motion carried.

APPROVAL OF THE MEETING MINUTES:

December 19, 2023

Commissioner Boal requested some edits concerning some misspellings and to include the roll call vote for New Business – A. **Motion** by Boal, **Second** by Counts, **"To accept the minutes with corrections."** Motion carried.

ZONING BOARD OF APPEALS REPORT:

No meeting to report.

TOWNSHIP BOARD REPORT:

Board Representative Counts took questions on the Board synopsis. Commissioner Boal asked a question regarding the Board's action on appointing the new Zoning Administrator.

SCHEDULED PUBLIC HEARINGS:

None

OTHER MATTERS TO BE REVIEWED BY THE PLANNING COMMISSION:

A. Officer Elections

Motion by Boal, **Second** by Pominville, **“To maintain our current President, Vice-President and Treasurer for the 2024 year.”** Friendly amendment to change Treasurer to Secretary. Amendment accepted by Boal and Pominville. Motion carried.

OLD BUSINESS:

A. Solar Ordinance – Discussion

Township Planner Montagno presented his report on the solar ordinance. Discussion followed. It was the consensus of the Commission to have Planner Montagno come back with a draft solar ordinance addressing commercial scale production, a CREO for anything over a specified name plate capacity, and regulation for residential accessory use.

NEW BUSINESS:

A. Old Glory, File # PC2024-03, 4120 W. Grand River Ave. Parcel # 4706-20-201-015. Preliminary Site Plan Review

Township Planner Montagno presented his report on the request. Applicant’s engineer Al Pruss addressed the Commission and answered questions. Applicant Martin addressed the Commission and answered questions. **Motion** by Newstead, **Second** by Boal, **“To approve preliminary site plan for the Old Glory car wash expansion, file # PC2024-03, 4120 W. Grand River Ave., Parcel # 4706-20-201-015 subject to conditions in the Planner’s report dated 1.25.24, Engineer’s report dated 2.28.24.”** Discussion followed. Accepted friendly amendment from Counts and Williams, **“To include the Drain Commissioner’s report dated 3.27.24 and the Fire Marshall’s report dated 2.26.24.”** Roll call vote: Pominville – Yes, Newstead – Yes, Counts – Yes, Markham – Yes, Boal – Yes, Williams – Yes. Motion passed 6-0.

B. ADU Ordinance – Discussion

Commissioners discussed the ADU ordinance from the County Planning Department. Consensus of the Commission was for Planner Montagno to come back with more information at a future meeting.

C. Storage Containers – Discussion

Commissioners discussed the issues with storage containers in the Township and possible regulations. Planner Montagno agreed to bring a few similar ordinances he has worked on to the next meeting.

CALL TO THE PUBLIC:

None

ADJOURNMENT:

Motion by Newstead, **Second** by Markham, **“To adjourn.”** Motion carried. The meeting was adjourned at 8:11 pm.

Date

Mike Newstead
Planning Commission Secretary

HOWELL TOWNSHIP BOARD
April 8, 2024
Regular Meeting
Synopsis

The April 8, 2024 Howell Township regular meeting, held at the Township Hall, 3525 Byron Road, was called to order by Supervisor Coddington at 6:30 PM. Members present: Coddington, Daus, Hohenstein, Counts, Melton, Wilson. The following actions were taken: 1) Approved the agenda 2) Approved the March 4, 2024 Regular Board meeting minutes 3) Approved the sewer clarifier repair project 4) Approved the County to take over addressing duties 5) Approved the agreement to collect summer taxes for Fowlerville Schools 6) Approved road chloride bid 7) Denied request to allow marijuana dispensaries in the Township 8) Approved MHOG budget and allocation percentage 9) Accepted the disbursements and customary payments for the month 10) Adjourned at 8:15 pm

Tanya Davidson
Recording Secretary



Carlisle | Wortman
ASSOCIATES, INC.

117 NORTH FIRST STREET SUITE 70 ANN ARBOR, MI 48104 734.662.2200 734.662.1935 FAX

Date: April 18, 2024

Land Use and Zoning Analysis For Howell Township, Michigan

Applicant:	Kory Leppek
Project Name:	Leppek Landscapes Rezoning
Location:	4640 W Grand River
Current Zoning:	NSC, Neighborhood Service Commercial
Action Requested:	Rezoning from NSC (Neighborhood Service Commercial) to IFZ Conditional (Industrial Flex Zone)
Required Information:	As noted in the following review.

PETITION

The applicant is requesting a rezoning for parcel 4706-20-100-027. Located South of Warner Road and West of North Burkhart Road, approximately two (2) miles West of M-59/W. Highland Road. The petitioner requests that the parcel be re-designated from NCS, Neighborhood Service Commercial to IFZ, Industrial Flex Zone. The applicant has indicated an increase in use at the site, which is proposed to be used for landscape design, lawn care services, equipment storage, and a small amount of retail if approved. The proposed conditions include a 6,000 square foot retail building, several acres of outdoor sales and storage space, three (3) large greenhouses, an office building, and a pole barn.

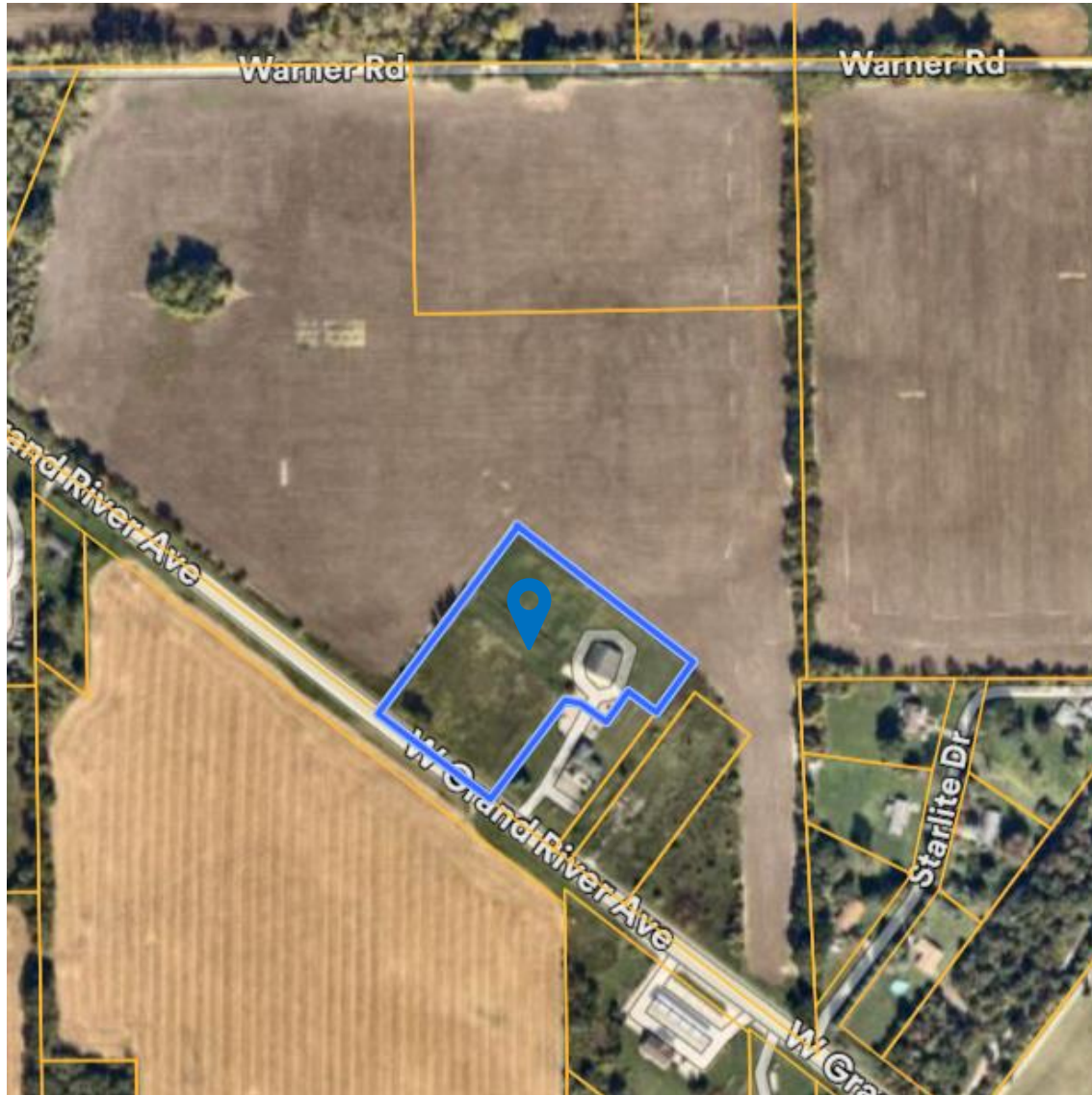
SITE DESCRIPTION/CURRENT USE

The subject site is 4.19 acres. The parcel is primarily open space with a 4,032 square foot commercial building currently used as a dog training facility. The site sits up against parcel 4706-20-100-026 which currently operates as Livingston Veterinary Clinic. The sites remaining boundaries

Benjamin R. Carlisle, *President* John L. Enos, *Vice President* Douglas J. Lewan, *Principal*
David Scurto, *Principal* Sally M. Elmiger, *Principal* R. Donald Wortman, *Principal* Craig Strong, *Principal*
Paul Montagno, *Principal* Megan Masson-Minock, *Principal* Laura Kreps, *Principal*
Richard K. Carlisle, *Past President/Senior Principal*

on the north, east, and west side are surrounded by vacant land. The Livingston County Airport is approximately one (1) mile East of the site.

Figure 1 - Aerial Image of Site and Surroundings



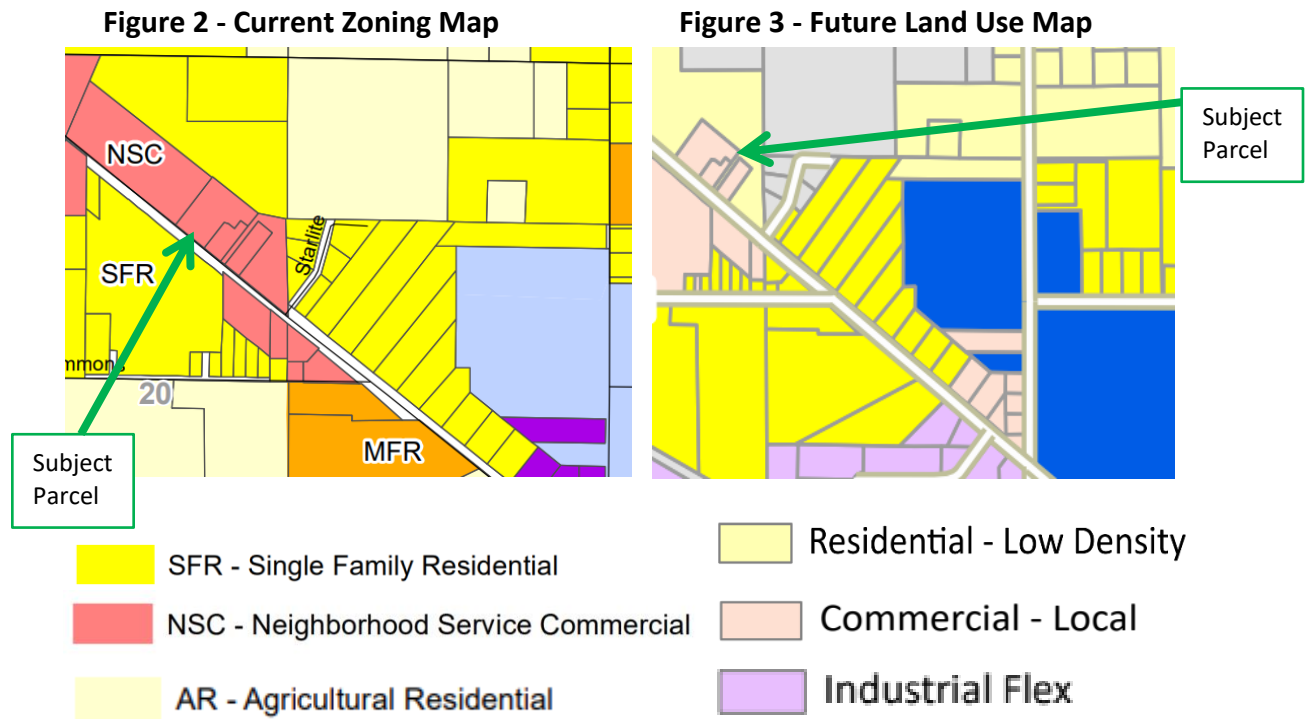
Source: Nearmap

SURROUNDING ZONING AND LAND USE

The following chart compares zoning, future land use designation per the Master Plan, and existing land use for the subject parcel and its adjacent parcels.

	Zoning	Existing Land Use	Future Land Use Designation
Subject parcel	Neighborhood Service Commercial	Commercial	Commercial, Local
North	Single Family Residential	Vacant/Open Space	Residential-Low Density
South	Single Family Residential	Vacant/Open Space	Residential, Low Density
East	Neighborhood Service Commercial	Commercial	Commercial, Local
West	Neighborhood Service Commercial	Vacant/Open Space	Residential, Low Density

MASTER PLAN



As noted above and depicted in Figure 2, which portrays the current zoning map, the subject site is presently zoned NSC-Neighborhood Service Commercial. Figure 3 depicts the Future Land Use Map from the adopted 2023 Howell Township Master Plan. The Future Land Use Plan designates the subject site as being Commercial – Local, which the Master Plan defines as areas that service retail, restaurants, personal service, office uses, and small contractors. The proposed zoning IFZ-Industrial Flex Zone is defined in the Master Plan as an area that is intended to be flexible with regard to specific uses that might be permitted while being more prescriptive with regard to design and quality of development. It is recognized that some of the uses permitted in the industrial and commercial districts could be compatible land uses.

DEVELOPMENT POTENTIAL

Current Zoning: Neighborhood Service Commercial

A very small portion of the Township is zoned for Neighborhood Service Commercial, with the majority being clustered along busy roadways. The Neighborhood Service Commercial District's intent is to provide areas wherein retail trade and service outlets can be located in order to satisfy the day to day needs of the residents in the immediate neighborhood. Currently, this includes uses such as retail establishments selling goods such as groceries, hardware materials, or clothing in addition to, restaurants, vehicle service and repair facilities, and services establishments including, but not limited to medical, financial, or personal repair shops.

Proposed Zoning: Industrial Flex Zone

The IFZ-Industrial Flex Zone is to provide flexibility for land uses while being more prescriptive regarding design and quality of development. Many industrial or large format commercial uses could be compatible, because such uses often have the same or similar building and spatial requirements such as floor area and building height.

The design requirements of this district are intended to allow for the mixing of certain industrial and commercial uses, and promote the reuse of buildings and sites for multiple such uses. The flexibility of this district is intended to foster economic development, create employment opportunities, and increase the tax base by promoting the development, redevelopment, or continued use of land adjacent to existing industrial and commercially developed property.

It is also the intent of the Industrial Flex Zone to allow development of property that eliminates blighted properties, ensures safe and complementary vehicular and pedestrian circulation patterns, improves environmental quality and remediates degraded properties, while also providing an attractive transition between residential and non-residential properties.

Permitted uses within the IFZ district include general office buildings, educational and training facilities, research and testing laboratories, photography and art studios, sale of new vehicles, warehouses or distribution centers, and retail sales in conjunction with wholesale of parts equipment for plumbing, electrical, home appliances, or gardening/landscaping.

FINDINGS FOR REZONING

In reviewing an application for the rezoning of land, whether the application be made with or without an offer of conditions, factors that should be considered by the Planning Commission and the Township Board include, but are not limited to, the following:

- a) Whether the rezoning is consistent with the policies and uses proposed for that area in the Township’s Master Land Use Plan;

CWA The Future Land Use Map in the Master Plan designates this area as being Commercial – Local. These areas are intended to have smaller scale commercial uses that serve the needs of the immediately surrounding neighborhoods. These areas are intended to support small scale retail, personal service establishments, small offices, and low intensity local contractors such as plumbers, electricians or similar service providers such that the uses would not create a nuisance for neighboring businesses or residence.

The Master Plan encourages development along Grand River. The proposed use does maintain commercial qualities and is intended to serve the immediate neighborhood through small scale retail and residential services. The Master Plan recognizes that some of the uses permitted in the industrial flex zoning district could be compatible in commercial districts. The master plan contemplates updating the local commercial district to allow for additional uses such as low intensity contractor uses intended to serve the local residence. However, this update to the zoning ordinance has not yet taken place.

- b) Whether all uses allowed under the proposed rezoning would be compatible with other zones and uses in the surrounding area;

CWA The site is situated between commercial use and vacant land, with the intent of the area mapped out in the Master Plan as continuing to develop. The Future Land Use Map does plan for Medium Density Residential on adjacent parcels. With the applicant’s proposed conditions to eliminate other higher intensity uses that would normally be permitted in the industrial flex zone, the future development on the property of could be compatible with the planned local commercial and residential development surrounding the parcel. However, it may be necessary to review a site plan for the eventual proposed use to really understand the intensity of the use. Unless offered by the applicant as part of the condition of the rezoning, the site plan evaluation would come after the rezoning is completed.

- c) Whether any public services and facilities would be significantly adversely impacted by a development or use allowed under the requested rezoning; and

CWA The proposed use would not adversely impact public services and facilities.

- d) Whether the uses allowed under the proposed rezoning would be equally or better suited to the area than uses allowed under the current zoning of the land.

CWA The permitted local commercial uses and the proposed landscaping contractors use from the industrial flex zone could be compatible with this area. The site is situated along the Grand River corridor, which currently supports several outdoor-oriented businesses.

The current conditional rezoning request voluntarily eliminates any more intense uses from being developed in the future. The development of this proposed use would require site plan approval. Through the site plan review the Planning Commission would need to evaluate the proposed layout, the scope of the outdoor activity potential including deliveries, storage and loading of bulk material.

RECOMMENDATIONS

The Planning Commission should review each of the findings in this report to determine if the proposed rezoning is appropriate before making a recommendation to the Township Board.



CARLISLE/WORTMAN ASSOC., INC.
Paul Montagno, AICP
Principal



CARLISLE/WORTMAN ASSOC., INC.
Grayson Moore
Community Planner

#PC-2024-04

HOWELL TOWNSHIP
Application for Re-Zoning/Text Amendment

3525 Byron Road Howell, MI 48855
Phone: 517-546-2817 ext. 108
Email: inspector@howelltownshipmi.org

Fee: \$1000.00

Parcel ID #: 4706- <u>20</u> - <u>100</u> - <u>027</u>	Date <u>03/18/24</u>
Applicant Name <u>Kory Leppek</u> Applicant Address <u>601 S. Hacker Rd., Brighton 48114</u>	
Phone <u>(810) 343-3575</u> Fax _____	Email <u>kleppek97@yahoo.com</u>
Property Owner Name <u>Einstein Dog Training, LLC/Rachael Brinkman</u>	
Phone _____ Fax _____	Email <u>croleyr@yahoo.com</u>

Current Zoning Classification <u>NSC</u>	Proposed Zoning Classification <u>IFZ (Conditional)</u>
Existing Use <u>Dog Training</u>	Proposed Use <u>Landscape, Equip & Material Storage</u>
Legal Description (attach copy if necessary): Please see attached Exhibit A	

Requested change in Ordinance / Zoning Map: Applicant requests a conditional rezoning of the subject parcel from NSC to IFZ pursuant to Zoning Ordinance Section 23.03.
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Reason for Requested Change:
Please see attached Exhibit B

Has the Applicant made a previous request to rezone the property?

Yes

No

If yes, state when and the decision of the Township Board:

Applicant, being first fully sworn, on oath deposes and says that all of the above statements in this application herewith are true.

Applicant Signature: [Signature]
Printed Name: Kory Leppek

Subscribed and sworn to before me

This 20 day of March, 2024

Notary Public Sherry Ann Mixer (Sherry Ann MIXTER)
Livingston County, Michigan

My commission expires: October 20, 2024

SHERRY ANN MIXTER
NOTARY PUBLIC-STATE OF MICHIGAN
COUNTY OF LIVINGSTON
My Commission Expires October 20, 2024

Owner, being first fully sworn, on oath deposes and says that all of the above statements in this application herewith are true.

Owner Signature: Rachael Brinkman
Printed Name: Rachael Brinkman

Date 3/20/24

Subscribed and sworn to before me

This 20th day of March, 2024

Robin Burge
Notary Public
Livingston County, Michigan

My commission expires: January 27, 2029

ROBIN BURGE
Notary Public, State of Michigan
County of Livingston
My Commission Expires Jan. 27, 2029
Acting in the County of Livingston

EXHIBIT A

LEPPEK APPLICATION FOR CONDITIONAL RE-ZONING

Legal Description

Land situated in the Township of Howell, County of Livingston, State of Michigan, more particularly described as:

SEC 20 T3N R4E COM N1/4 COR, TH S 00*17'43" W 1324.37 FT ALG N/S 1/4 LINE OF SEC, TH CONT ALG N/S LINE S 00*02'52" E 796.59 FT TO C/L OF GRAND RIVER, TH ALG C/L OF GRAND RIVER N 51*30'40" W 192.50 FT, TH N 51*10'00" W 691.89 FT TO POB, TH CONT ALG C/L OF GRAND RIVER N 51*10'00" W 304.58 FT, TH N 38*50'00" E 500.00 FT, TH S 51*10'00" E 479.16 FT, TH S 38*50'00" W 135.11 FT, TH N 49*53'39" W 78.89 FT, TH S 37*25'32" W 79.54 FT, TH N 54*24'47" W 65.64 FT, TH N 78*29'28" W 36.17 FT, TH S 38*50'00" W 266.80 FT TO POB. 4.22 AC PAR A SUBJ TO ESEMPTS OF RECORD SPLIT/COMBINED ON 01/13/2014 FROM 4706-20-100-020

Commonly known as: 4640 W. Grand River Ave., Howell, MI 48855

Parcel ID number: 4706-20-100-027

EXHIBIT B

LEPPEK APPLICATION FOR CONDITIONAL RE-ZONING

PROPOSED NEW USE

Applicant Kory Leppek (“Leppek” or “Applicant”) is the proposed purchaser of the subject parcel. He is looking to downsize and relocate his existing business, Leppek Landscapes, which he currently operates in Genoa Township at 7341 Grand River Road, Brighton, with his wife Lindsay Leppek. Leppek’s existing site is 7 acres and includes a 6,000 square foot retail building, several acres of outdoor sales and storage space, 3 large greenhouses, an office building, and pole barn. Leppek is looking to downsize in a new location and focus his operations primarily on landscape design and build. He anticipates continuing to provide lawn care services, snowplow services, and a small amount of retail in the new location.

At 4640 W. Grand River, Leppek will propose the addition of an approximately 60 x 40 foot pole barn for the storage of equipment and vehicles. He anticipates utilizing 6-7 bins for the storage of topsoil, mulch, and stone, and maintaining a stock of trees and shrubs for use on landscape jobs and retail. Landscape designer offices would be located in the existing building, along with service staff to assist customers with their lawn maintenance, irrigation, fertilizing, pond, and snowplowing needs.

CURRENT ZONING

The site is currently zoned Neighborhood Service Commercial (NSC). This district is intended to provide areas where “retail trade and service outlets can be located in order to satisfy the day to day needs of the residents in the immediate neighborhood.” Permitted uses include retail establishments for hardware goods, service establishments for household equipment repair, vehicle service and repair for cars and trucks, gas stations, and shopping centers. See Zoning Ordinance, sect. 9.01. Leppek’s proposed use will provide services to local residents, with the majority of customers coming to the property for office meetings with designers, to sign up for services to be performed at their residences, or to purchase trees, shrubs, or supplies for their homes. The site will house the supplies and equipment necessary to support Leppek’s landscape business, which is performed off-site at residential and commercial properties in the immediate and neighboring communities. This re-zoning application is required, however, because the retail sales of gardening and landscaping supplies, as well as contractor building and materials storage, are permitted uses in the Industrial Flex Zone (IFZ) and not in the NSC. Compare Zoning Ordinance Sect. 12.02 and 9.02-9.03.

VOLUNTARY OFFER OF CONDITIONS

The Howell Township Zoning Ordinance (“Zoning Ordinance”) Section 23.03(B) allows an applicant to voluntarily offer in writing conditions relating to the use and/or development of land for which a rezoning is requested. Leppek is requesting rezoning to IFZ to allow its proposed use, which is not an intense industrial use and is much more aligned with the commercial, office, and light retail uses permitted in NSC. Therefore, in support of the current request, Leppek is proposing

a commitment not to use an IFZ zoning classification for the development of any of the more intense industrial uses that might not be compatible with the area. Accordingly, Leppek offers to be bound by the following conditions should the re-zoning application be approved:

1. The property shall not be used for the following purposes (which would otherwise be permitted with or without special use approval in the IFZ zone):
 - a. Sale or leasing of new motorized passenger vehicles including cars, and trucks.
 - b. Sale or leasing of used motorized passenger vehicles in conjunction with a new car dealership.
 - c. Warehouses and distribution centers.
 - d. Mini-warehousing, when conducted completely within a building, or structure.
 - e. Woodworking or furniture making shops.
 - f. Tool and die, machine shops, light assembly, injection molding.
 - g. Any manufacturing plants.
 - h. Water Parks.
 - i. Fabricating metal products, except heavy machinery and transportation equipment.
 - j. Contract plastic material processing, molding and extrusion.
 - k. Propane Storage/Distribution.
 - l. Sale, leasing, or rental of used motorized vehicles not in conjunction with a new car dealership.

2. Additional screening and landscaping elements beyond the minimum requirements of the Zoning Ordinance (to be further determined/defined prior to approval).

APPLICATION OF 23.02(D)(5) FACTORS

In reviewing an application for the conditional rezoning of land, the Zoning Ordinance requires the Planning Commission and the Township Board to consider certain factors set forth in Section 23.02(D)(5). The Township has flexibility to consider these, set forth as (a) through (d) below, and other factors in its evaluation of the rezoning request. The factors favor approval of the application.

a) Whether the rezoning is consistent with the policies and uses proposed for that area in the Township's Master Land Use Plan.

The Howell Township Master Plan confirms the Township's intent to develop land along Grand River in the area of the subject property for commercial and light industrial uses. Master Plan, p 18. The Future Land Use Map anticipates Industrial Flex and Commercial uses as you head northwest on Grand River from M-59 toward Fowlerville. Master Plan, p 17. This specific site is identified in the Master Plan as Commercial-Local, and described as intended to include smaller scale commercial, office, retail, and service establishments, and low intensity local contractors such as plumbers or electricians. Master Plan, p 19. The district proposed by Leppek, Industrial Flex Zone, is likewise planned along this corridor of Grand River, slightly to the southeast of the subject site. The Master Plan describes the IFZ district as follows:

This area is intended to be flexible with regard to specific uses that might be permitted while being more prescriptive with regard to design and quality of

development. It is recognized that some of the uses permitted in the industrial and commercial districts could be compatible land uses. In fact, often, such uses have the same or similar building and special requirements. The flexibility of the district is intended to foster economic development, create employment opportunities, and increase the tax base by promoting the development or redevelopment of land that is adjacent to existing industrial and commercially developed property.

Master Plan, p 20. The proposed use in this case does have many commercial development qualities, and will serve the immediate neighborhood through small scale retail and valuable residential services including irrigation, fertilization, snow removal, and lawn care. One of the conditions offered is to provide additional landscape and screening components to make the property more attractive, with the other conditions being a prohibition on more intense industrial uses. The industrial characteristic of Leppek's proposed use is very light, limited to the outdoor storage of landscape supplies which will be entirely screened from view. The use fits the spirit of the current NSC zoning and the vision of the Master Plan for this area of Grand River. This factor favors approval.

b) Whether all of the uses allowed under the proposed rezoning would be compatible with other zones and uses in the surrounding area.

Many of the current uses in the surrounding area involve mixed commercial and industrial components like those of the current application. Many likewise include the provision of outdoor services and/or the storage of supplies and equipment such as tractor sales, lawn mower sales and service, a gas station, garage door sales, fence sales, machining manufacturer, and a landscape/garden center. Bethel Suites is across the street and slightly south of the subject property. Leppek Landscapes provides landscaping, lawn mowing, and snow plowing services to Bethel Suites. This kind of relationship is exactly the kind envisioned for the NSC district but involves a use that requires the flexibility of the IFZ district. And it is for this reason that Leppek has filed a conditional rezoning application. It is Leppek's intent to eliminate from future development on the property those more intense industrial uses that are not aligned with the current characteristics of the area. This factor favors approval.

c) Whether any public services and facilities would be significantly adversely impacted by a development or use allowed under the requested rezoning.

The proposed use and rezoning request would have no impact on the current facilities in the area, which currently support several outdoor oriented businesses along the Grand River corridor. This factor favors approval.

d) Whether the uses allowed under the proposed rezoning would be equally or better suited to the area than uses allowed under the current zoning of the land.

The area currently contains many outdoor home services-oriented businesses including installation, service, and sales of tractors, lawnmowers, fences, garage doors, and garden supplies. These businesses contain both commercial and industrial components, like the proposed landscape use. Leppek's support of residents' home improvement and care needs will fit right in. Because

Leppok's current conditional rezoning request voluntarily eliminates any of the more intense, non-compatible uses from becoming a possibility in the future, the Township and neighboring property owners can be assured this compatibility will continue. Uses that remain allowable are those kinds of service, retail, and office uses that would bring value to residents in the area and complement the current community of primarily outdoor service-related businesses that currently exist up and down Grand River. This factor favors approval.

APPROVAL OF THE CONDITIONAL REZONING IS WARRANTED

For all of the above reasons, the Planning Commission should recommend approval of the conditional re-zoning request to the Township Board.

Thank you for your time and consideration.



Carlisle | Wortman
ASSOCIATES, INC.

117 NORTH FIRST STREET SUITE 70 ANN ARBOR, MI 48104 734.662.2200 734.662.1935 FAX

TO: Howell Township Planning Commission

FROM: Paul Montagno, AICP, Township Planner
Grayson Moore, Community Planner

DATE: 3/19/2024

RE: Michigan Storage Barns, Site Plan Amendment

We received new plans from Michigan Storage Barns with a revision date of 3/19/24. We have reviewed these plans for consistency with the previously approved plans and offer the following:

Proposed Changes:

Review of the amended site plans provided by Michigan Storage Barns, (file #PC2023-06, parcel# 4706-25-200-011), showed the following changes have been made: removal of additional proposed building, extended removal of pavement and pipe, as well as a shift in parking location to infill space from the removed building. Additionally, the stormwater facilities have been changed which has affected the landscaping plan.

Ordinance Requirements:

Section 20.10 Amendment of an Approved Site Plan requires the Planning Commission to determine if a proposed major change requires an amendment to the approved site plan based on the criteria in that section. The following criteria appears to apply and would therefore require approval of the revised plan by the Planning Commission:

Section 20.10. A.9):

Variations in the development represented on the approved site plan involving the deletion, relocation or addition of on-site improvements, including drives, parking areas, structures on, above and below the ground surface, berms, curbs and gutters, screen plantings and other landscaping, fencing, water supply, wastewater disposal or storm water drainage systems.

The removal of the proposed 704 square foot building as well as the changes in the landscape plan from the approved site plan requires action to be taken by the Township Planning Commission.

Recommendation:

The proposed amendment does not appear to negatively effect the proposed use of the site, the surrounding parcels or pose any environmental impacts. Further, we have reviewed the landscape calculations and find them to be consistent with the requirements in the zoning ordinance. Therefore, we recommend approval of the amended site plan as currently presented.



CARLISLE/WORTMAN ASSOC., INC.
Paul Montagno, AICP
Principal



CARLISLE/WORTMAN ASSOC., INC.
Grayson Moore
Community Planner

Tuesday, April 9, 2024

Jonathan Hohenstein, Treasurer
Howell Township
3525 Byron Road
Howell, MI 48855

RE: Michigan Storage Barns
675 E Highland Rd (M-59)
Site Plan Review

Dear Mr. Hohenstein,

We have received and reviewed the site plan for the Michigan Storage Barns at the corner of M-59 and Fairlawn Drive. The plans were prepared by Livingston Engineering and are dated November 21, 2023. Based on our review, we offer the following comments:

General

The proposed site use is for sales of Amish sheds and other Amish-produced products. The site plan shows the property to consist primarily of a gravel lot for storage and display of sheds/barns. Additionally, it includes an existing 30'x30' barn to remain in place and a paved parking area with four regular and one handicap-accessible parking space. The plans indicate the property is zoned "Industrial Flex Zone" however per the Howell Township Zoning Districts Map, the site is zoned "Neighborhood Service Commercial" (NSC).

We note that Section 9.05.F.3 of the Zoning Ordinance states, "The storage of goods or materials is not permitted outside of the principal structure" and defer to the Township Planner for interpretation of this requirement and whether this is a permitted use. Are the display models for purchase or are they intended for permanent display?

The existing site includes a gravel lot with a single shed near the west property line. The site is accessed via a gated driveway from the neighboring Ferrellgas property, which is accessible from M-59. There is reference on the plans to a recorded ingress/egress easement allowing access to the Ferrellgas driveway.

The site consists of two parcels and has frontage along both E. Highland Road (M-59) and Fairlawn Drive. The frontages along both roads are primarily wooded, providing screening for the property. Topographic contours have been provided from a survey completed on October 24, 2023. The site drains generally to the Northeast.

A location map is provided on the plans.

The lot coverage is shown on the plans.

The correct setbacks are shown on the plans
Legal descriptions for each of the two parcels and the easement for the ingress/ egress are provided on the plans and close within acceptable limits.

The plans have been signed and sealed by a professional engineer.

April 9, 2024

Page 2 of 3

Dimensional requirements based on the NSC zoning district are provided on the plan sheet for comparison to what is being provided. The applicant should update the requirements shown to reflect a required front setback of 50 feet, rather than 35 feet, for frontage along M-59 per section 26.05. This requirement is met by the proposed site plan.

Sanitary

A 6-inch sanitary service lead connecting to an existing 6-inch lead in the M-59 right-of-way is proposed. No information is provided on the pipe material or connection detail. We defer further comments to Livingston County Health Department.

Water

A 1-1/2-inch water service tapping into an existing 12-inch watermain in the M-59 right-of-way is proposed. We defer further comments to MHOG.

Grading and Drainage

The proposed grading generally flows north and east to the proposed on-site detention basins Stormwater detention calculations are included.

The creation of the east pond and the gravel expansion appear to disturb the identified unregulated wetlands. We would expect that an EGLE permit and possibly mitigation will be required.

Much of the site isn't included in the detention calculations. It's unclear from the provided email correspondence if this appropriately reflects what was discussed with LCDC.

Grading in the parking area as slope arrows that contradict the spot elevations provided.

No information is provided regarding the outlet pipe. Provide detailed information on the proposed discharge pipe to determine adequacy of capacity and conveyance of storm water.

Details are provided for the detention basin outlet control structure and the forebay filter berm.

Parking and Landscaping

A small, curbed, asphalt parking area is shown on the plan near the southwest corner of the site.

Four regular and one handicap-accessible space are provided. This meets the minimum required number of parking stalls for a general office building. We defer to the township planner on the required number of spaces for this use but note that the "Use Statement" on the plan indicates up to three full-time employees are anticipated to occupy the site. If each employee drives separately to work, that leaves only two parking spaces for visitors, one of which may be handicap-accessible.

Details are included for asphalt and gravel paving as well as details for the concrete sidewalks and curbs. The details meet the minimum requirements of the Howell Township Engineering Standards

Sidewalks ramps and openings shall meet ADA requirements.

April 9, 2024
Page 3 of 3

An emergency maneuvering plan is included. We defer further comments on the maneuvering plan to the Fire Marshal.

Landscaping is provided around the proposed building, parking area and detention basin. We defer to the Township Planner for further comment on the landscaping plan.

Three wall-mounted lights are proposed. A photometric plan is provided but the plan does not seem to reflect the layout of the parking area on other pages of the site plan. We defer to the Township planner for further comment on the lighting plan.

Recommendation

We recommend the Township consider withholding approval, pending the following items and our subsequent review:

1. Plans should be reviewed and approved by:
 - a. Fire Marshal
 - b. Township Planner
 - c. Livingston County Drain Commissioner
2. Additional parking spaces may be necessary.
3. Please include information about the proposed discharge pipe.
4. Please confirm the property's zoning is correctly identified on the plans.
5. Endure slopes are consistent with elevations on the grading plan.
6. An EGLE permit may be required for the disturbance of the wetlands.

If you have any questions or need anything further, please feel free to contact our office.

Sincerely,



Adam C. Jacqmain
Phone: (989) 598-6196
Mailto: adamj@spicergroup.com



John W. Bradley
Phone: (517) 719-5503
Mailto: johnb@spicergroup.com

SPICER GROUP, INC.
1595 W Lake Lansing Rd Suite 200
East Lansing, MI 48823

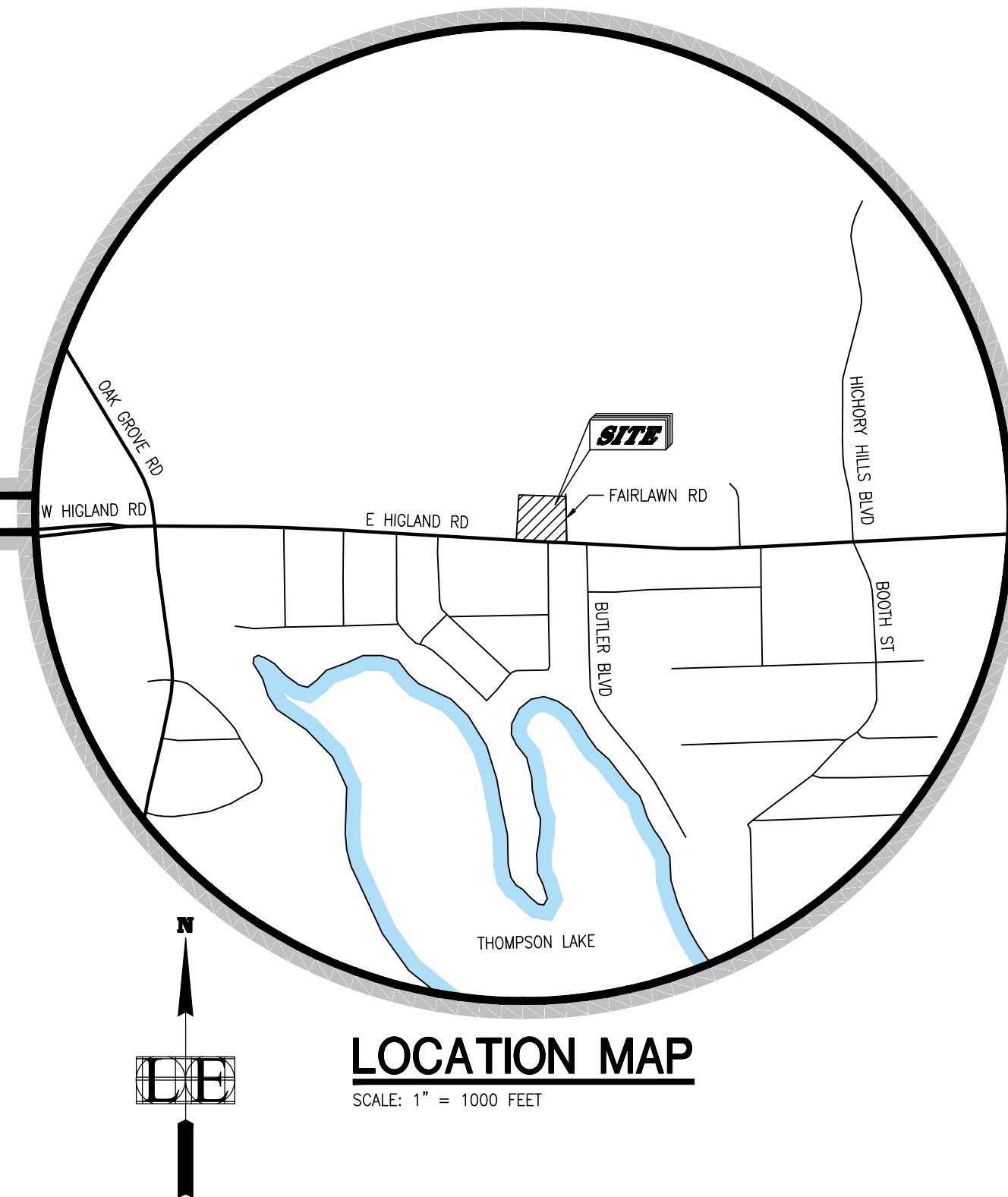
CC: SGI File
Livingston County Road Commission
Ken Recker, Livingston County Chief Deputy Drain Commissioner

SITE PLAN FOR MICHIGAN STORAGE BARNs LLC

PARCEL ID# 4706-25-200-011
HOWELL TOWNSHIP,
LIVINGSTON COUNTY, MICHIGAN

ADJACENT PROPERTY TABLE

Direction	Lot	Zoning	Use
North	Mobile Homes	SFR	Single-Family Residential
North East	Apartment	RM PUD	Multi-Family Residential
South East	Vacant	RM PUD	Vacant
South	Highland Road		Road
West	Ferrelgas	NSC	Propane



LOCATION MAP
SCALE: 1" = 1000 FEET

SITE DATA & GENERAL NOTES

- PROPERTY IS ZONED: INDUSTRIAL FLEX ZONE (IF)
- CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING AND PROPOSED UTILITIES FROM DAMAGE DURING ALL STAGES OF CONSTRUCTION.
- THE ENGINEER AND APPLICABLE AGENCY MUST APPROVE, PRIOR TO CONSTRUCTION, ANY ALTERATION, OR VARIANCE FROM THESE PLANS.
- PROPERTY TO BE SERVICED BY CONNECTION TO PUBLIC SANITARY AND WATER.
- UNDERGROUND DRY UTILITIES SHALL BE EXTENDED FROM EXISTING LOCATIONS TO SERVICE THIS SITE AS REQUIRED BY UTILITY COMPANIES.
- ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT STANDARDS AND SPECIFICATIONS OF HOWELL TOWNSHIP AND LIVINGSTON COUNTY.
- THREE WORKING DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL TELEPHONE MISS DIG (800-482-7171) FOR THE LOCATION OF UNDERGROUND UTILITIES AND SHALL ALSO NOTIFY REPRESENTATIVES OF OTHER UTILITIES LOCATED IN THE VICINITY OF THE WORK. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY AND/OR OBTAIN ANY INFORMATION NECESSARY REGARDING THE PRESENCE OF UNDERGROUND UTILITIES WHICH MIGHT AFFECT THIS JOB.
- SITE PLAN USE: STORAGE SHEDS
- PROPOSED DETENTION POND TO OUTLET TO EXISTING DRAINAGE PATH AT NORTH PROPERTY LINE.
- TRASH DISPOSAL WILL BE BI-WEEKLY RESIDENTIAL-TYPE PICKUP THROUGH LOCAL SERVICE PROVIDER.
- THE APPLICANT IS REQUESTING THE PLANNING COMMISSION ALLOW GRAVEL PAVEMENT IN THE PRODUCT DISPLAY YARD DUE TO ANTICIPATED WEAR AND TEAR ON ASPHALT PAVEMENT FROM REGULAR OPERATIONS THAT INCLUDES ORGANIZING/MOVING SHEDS IN THE YARD. ACCESS AISLES SHALL BE MARKED WITH PERMANENT 4X4 TREATED POSTS PLACED AT THE END OF DRIVE AISLES THROUGHOUT THE YARD ACCEPTABLE TO THE TOWNSHIP.
- THE EXISTING BUILDING TO REMAIN ON THE SITE SHALL BE USED FOR GENERAL STORAGE OF GOODS, SEASONAL STOCK AND OPERATIONS EQUIPMENT.
- EXAMPLE PICTURES OF THE PROPOSED STORAGE SHEDS TO BE DISPLAYED/SOLD ON-SITE CAN BE VIEWED AT THE APPLICANT'S WEBSITE BY VISITING www.michiganstoragebarns.com
- BUILDING(S) SHALL HAVE APPROVED ADDRESS NUMBERS, BUILDING NUMBERS OR APPROVED BUILDING IDENTIFICATION PLACED IN A POSITION THAT IS PLAINLY LEGIBLE AND VISIBLE FROM THE STREET OR ROAD FRONTING THE PROPERTY. THESE NUMBERS SHALL BE AT LEAST 6" HIGH AND SHALL CONTRAST WITH THEIR BACKGROUND.
- THE FIRE DEPARTMENT ACCESS DRIVE SHALL MEET THE FOLLOWING CONDITIONS:
 - THE MINIMUM UNOBSTRUCTED WIDTH SHALL BE 20 FEET.
 - THE MINIMUM UNOBSTRUCTED HEIGHT SHALL BE 13 FEET.
 - THE ACCESS DRIVE SHALL BE ACCESSIBLE AT ALL TIMES (I.E. SNOW REMOVAL) AND POSTED AS A FIRE LANE.
 - THE USE OF THE KNOX RAPID ENTRY SYSTEM PADLOCK OR KNOX KEY SWITCH WILL BE REQUIRED IF ANY GATES ARE GOING TO BE INSTALLED.
 - THE ACCESS DRIVE SHALL BE CONSTRUCTED SO IT CAN SUPPORT UP TO 100,000 POUND FIRE APPARATUS.
- FIRE EXTINGUISHERS SHALL BE INSTALLED IN THE REMAINING BARN AND PROPOSED OFFICE BUILDING AND BE A DRY CHEMICAL 4A:80B:C TYPE, AT A MINIMUM.
- A FINAL INSPECTION OF THE BUILDINGS, GATES AND SITE SHALL BE PERFORMED BY THE FIRE DEPARTMENT BEFORE C OF O IS ISSUED.

LEGAL DESCRIPTIONS:

(AS PROVIDED BY OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY, COMMITMENT NO. 414888LCTS, COMMITMENT DATE: MAY 25, 2023 @ 8:00 A.M.)

PARCEL 1:
A PART OF THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4 OF SECTION 25, TOWN 3 NORTH, RANGE 4 EAST, HOWELL TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN, DESCRIBED AS FOLLOWS: BEGINNING AT THE INTERSECTION OF THE CENTERLINE OF HIGHWAY M-59 AND THE CENTERLINE OF FAIRLAWN ROAD AT A POINT 24.5 FEET NORTH OF THE EAST 1/4 POST OF SAID SECTION 25; THENCE NORTH 321.8 FEET ALONG THE CENTERLINE OF FAIRLAWN ROAD AND THE EAST LINE OF SECTION 25; THENCE NORTH 86 DEGREES 48 MINUTES WEST 210.4 FEET; THENCE SOUTH 4 DEGREES 53 MINUTES WEST 314 FEET TO THE CENTERLINE OF HIGHWAY M-59; THENCE SOUTH 85 DEGREES 07 MINUTES EAST 238.1 FEET ALONG THE CENTERLINE OF M-59 TO THE POINT OF BEGINNING.

PARCEL 2:
PART OF THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4 OF SECTION 25, TOWN 3 NORTH, RANGE 4 EAST, HOWELL TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN, BEGINNING IN THE CENTERLINE OF HIGHWAY M-59 AT A POINT 24.5 FEET NORTH AND 238.1 FEET NORTH 85 DEGREES 07 MINUTES WEST FROM THE EAST 1/4 POST OF SAID SECTION 25; THENCE NORTH 4 DEGREES 53 MINUTES EAST 314 FEET; THENCE NORTH 86 DEGREES 48 MINUTES WEST 110.05 FEET; THENCE SOUTH 4 DEGREES 53 MINUTES WEST 310.85 FEET TO THE CENTERLINE OF HIGHWAY M-59; THENCE SOUTH 85 DEGREES 07 MINUTES EAST 110 FEET ALONG CENTERLINE OF HIGHWAY M-59 TO THE POINT OF BEGINNING.

EASEMENT:
A NON-EXCLUSIVE EASEMENT FOR INGRESS AND EGRESS DESCRIBED AS: COMMENCING AT THE EAST 1/4 POST OF SAID SECTION 25; THENCE NORTH 24.5 FEET; THENCE NORTH 85 DEGREES 07 MINUTES WEST 348.1 FEET; THENCE NORTH 4 DEGREES 53 MINUTES EAST 60 FEET TO THE NORTHERLY RIGHT-OF-WAY LINE OF HIGHWAY M-59 FOR A POINT OF BEGINNING OF THE LAND TO BE DESCRIBED; THENCE NORTH 4 DEGREES 53 MINUTES EAST 40 FEET; THENCE NORTH 85 DEGREES 07 MINUTES WEST 45 FEET; THENCE SOUTH 4 DEGREES 53 MINUTES WEST 40 FEET TO THE NORTHERLY RIGHT-OF-WAY LINE OF HIGHWAY M-59; THENCE SOUTH 85 DEGREES 07 MINUTES EAST 45 FEET TO THE POINT OF BEGINNING.

SITE DATA TABLE

	REQUIRED	PROVIDED
LOT AREA (GROSS)	2.43 AC.	105,652 SF
ROW AREA	0.80 AC.	34,662 SF
LOT AREA (NET)	40,000 SF (MIN)	1.63 AC. (70,996 SF)
LOT WIDTH	120 FT	387.53 FT
LOT COVERAGE	75% MAX	1,152 SF/70,996 SF = 1.62%
IMPERVIOUS SURFACE AREA		40,085 SF
% IMPERVIOUS SURFACE AREA		40,085 SF/70,996 SF = 56.5%
YARD SETBACKS:		
FRONT	35 FT	35 FT
SOUTH	35 FT	35 FT
EAST	10 FT	10 FT
SIDE	10 FT	10 FT
REAR	50 FT	50 FT
BUILDING DATA:		
EXST. BUILDING ENVELOPE	REQUIRED	PROVIDED
PROP. BUILDING ENVELOPE	672 SF	672 SF
HEIGHT	70 FT MAX	704 SF
		14.2 FT EX. BUILDING

PARKING CALCULATIONS

REQUIRED PARKING PER ORDINANCE		
GENERAL OFFICE BUILDING:		
704 S.F. @ 1 SP. PER 150 S.F.	=	704/150
	=	4.69 SPACES
PLUS 3 EMPLOYEE @ 1 SP. PER 1 EMPLOYEE	=	3/1
	=	3 SPACES
TOTAL SPACES REQUIRED	=	8 SPACES
ADA REQUIRED SPACES FOR 1 TO 25 TOTAL SPACES		
	=	1 BARRIER FREE SPACES
PROVIDED PARKING		
TOTAL SPACES PROPOSED:	=	8 SPACES
	=	INCL/ 1 BARRIER FREE SPACES

USE STATEMENT

MICHIGAN STORAGE BARNs IS A SALES DEALER FOR AMISH SHEDS AND OTHER AMISH PRODUCED PRODUCTS. WE SELL OUR PRODUCTS DIRECTLY TO LOCAL CUSTOMERS AND CUSTOMERS FROM AROUND THE STATE. WE SPECIALIZE IN THE SALES OF AMISH BUILT SHEDS, CHICKEN COOPS, ANIMAL SHELTERS AND POLY FURNITURE. WE HAVE BEEN IN BUSINESS SINCE 2015. WE HAVE MULTIPLE DISPLAY LOCATIONS IN LAPEER, GENESEE, AND TUSCOLA COUNTIES. OUR MAIN SALES OFFICE AT THIS TIME IS IN LAPEER COUNTY AND WE ARE EXCITED TO ADD A SALES LOCATION IN LIVINGSTON COUNTY.

OUR HOURS OF OPERATION AT THE PROPOSED 675 E. HIGHLAND RD. HOWELL, MI LOCATION WOULD BE MONDAY THROUGH FRIDAY 10AM-5:30PM AND SATURDAY (BY APPOINTMENT ONLY). THE NUMBER OF EMPLOYEES AT THIS LOCATION DURING THE FIRST 6 MONTHS OF OPENING AND OPERATION WOULD BE 1 FULL TIME EMPLOYEE WITH THE ADDITION OF ANOTHER SALES ASSOCIATE AFTER 6 MONTHS OF OPENING AND A PART TIME OR FULL TIME SALES LOT ATTENDANT WHO WOULD BE RESPONSIBLE FOR MAINTAINING SHEDS AND PRODUCTS AND DOING LANDSCAPING AND OTHER LOT MAINTENANCE ON THE LOT, WHICH WOULD PUT US AT 2 TO 3 FULL TIME EMPLOYEES. WE WOULD MORE THAN LIKELY STAY WITH 2 TO 3 FULL-TIME EMPLOYEES FOR THE FIRST 3 YEARS DEPENDING ON GROWTH. OUR DELIVERIES ARE CONDUCTED BY A SEPARATE COMPANY AND ARE NOT DIRECTLY EMPLOYED BY MICHIGAN STORAGE BARNs.

UTILITY DISCLAIMER



Utilities as shown indicate approximate location of facilities only, as described by the various companies and no guarantee is given either as to the completeness or accuracy thereof. Contractor shall call "MISS DIG" 1-800-482-7171 prior to the start of construction. Electric, gas, phone and television companies should be contacted prior to the commencement of field activities.

SITE SHEET INDEX

C1.0	COVER SHEET
C2.0	EXISTING CONDITIONS & REMOVALS
C3.0	SITE LAYOUT & UTILITIES
C5.0	SITE GRADING PLAN
C6.0	STORM WATER MANAGEMENT PLAN
C7.0	DETAILS & EMERGENCY MANEUVERING PLAN
C8.0	LANDSCAPE PLAN
P1	PHOTOMETRIC PLAN
A1-01	FLOOR PLAN & ELEVATIONS

LEGEND

	EXISTING	PROPOSED
SPOT GRADE	x 000.00	x 000.00
CONTOUR	--- 000 ---	--- 000 ---
SPOT GRADE		x (IP: 811.4)
DRAINAGE ARROW		-1.5%
SANITARY SEWER	--- SAN ---	--- SAN ---
SANITARY SEWER STRUCTURE LABEL		--- SAN ---
STORM SEWER	--- ST ---	--- ST ---
STORM SEWER STRUCTURE LABEL		--- ST ---
WATER	--- W ---	--- W ---
WATER STRUCTURE LABEL		--- W ---
OVERHEAD		
FENCE	--- X ---	--- X ---
GAS	--- G ---	--- G ---
ELECTRIC	--- E ---	--- E ---
DRAINAGE AREA BOUNDARY		
LIMITS OF DISTURBANCE		
RIDGE LINE		
SWALE LINE		
SILT FENCE		
LOW POINT INLET FILTER		
SIGN		
LIGHT POLE		
UTILITY POLE		
DECIDUOUS TREE		
GATE VALVE IN WELL		

ARCHITECT

FIKA ARCHITECTS
502 S. MAIN ST
ANN ARBOR, MI 48105
PHONE: (248) 946-1622

OWNER/DEVELOPER

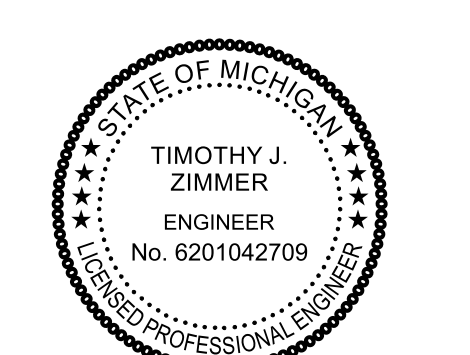
TOM KOHLMAN
5464 N. LAPEER RD.
COLUMBIAVILLE, MI 48421
PHONE: (810) 358-7725

ENGINEER

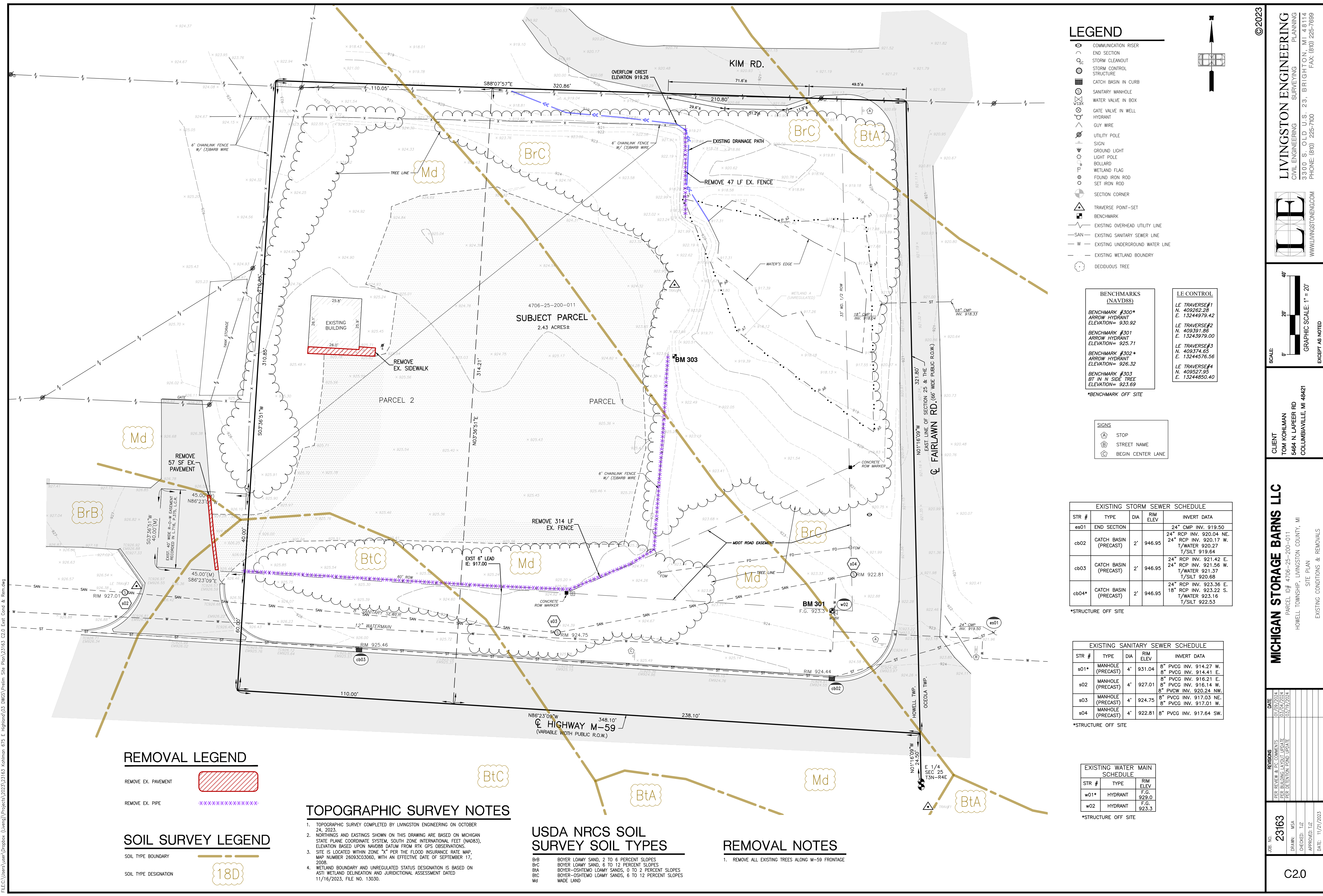
LE LIVINGSTON ENGINEERING
CIVIL ENGINEERING SURVEYING PLANNING
3300 S. OLD U.S. 23, BRIGHTON, MI 48114
www.livingstoneng.com PHONE: (810) 225-7100 FAX: (810) 225-7699

MICHIGAN STORAGE BARNs LLC
HOWELL TOWNSHIP
LIVINGSTON COUNTY, MICHIGAN
SITE PLAN

ENGINEER'S SEAL



REVISIONS	DATE	PROJECT No.
PER REVIEW & PC COMMENTS	01/09/2024	23163
PER BUILDING LAYOUT UPDATE	03/06/2024	
PER DETENTION POND UPDATE	03/19/2024	
		SHEET C10
		DATE: 11/21/2023



LEGEND

- COMMUNICATION RISER
- END SECTION
- STORM CLEANOUT
- STORM CONTROL STRUCTURE
- CATCH BASIN IN CURB
- SANITARY MANHOLE
- WATER VALVE IN BOX
- GATE VALVE IN WELL
- HYDRANT
- GUY WIRE
- UTILITY POLE
- SIGN
- GROUND LIGHT
- LIGHT POLE
- BOLLARD
- WETLAND FLAG
- FOUND IRON ROD
- SET IRON ROD
- SECTION CORNER
- △ TRAVERSE POINT—SET
- BENCHMARK
- EXISTING OVERHEAD UTILITY LINE
- SAN EXISTING SANITARY SEWER LINE
- W EXISTING UNDERGROUND WATER LINE
- EXISTING WETLAND BOUNDARY
- DECIDUOUS TREE

BENCHMARKS (NAVD83)

BENCHMARK #300*
ARROW HYDRANT
ELEVATION= 930.92

BENCHMARK #301
ARROW HYDRANT
ELEVATION= 925.71

BENCHMARK #302*
ARROW HYDRANT
ELEVATION= 926.32

BENCHMARK #303
BT IN N SIDE TREE
ELEVATION= 923.69

*BENCHMARK OFF SITE

LE CONTROL

LE TRAVERSE#1
N. 409262.28
E. 13244979.42

LE TRAVERSE#2
N. 409391.96
E. 13243979.00

LE TRAVERSE#3
N. 409374.65
E. 13244576.56

LE TRAVERSE#4
N. 409527.95
E. 13244850.40

SIGNS

△ STOP

□ STREET NAME

○ BEGIN CENTER LANE

EXISTING STORM SEWER SCHEDULE

STR #	TYPE	DIA	RIM ELEV	INVERT DATA
es01	END SECTION			24" CMP INV. 919.50
cb02	CATCH BASIN (PRECAST)	2'	946.95	24" RCP INV. 920.04 NE. T/WATER 920.27 T/SILT 919.64
cb03	CATCH BASIN (PRECAST)	2'	946.95	24" RCP INV. 921.42 E. T/WATER 921.37 T/SILT 920.68
cb04*	CATCH BASIN (PRECAST)	2'	946.95	24" RCP INV. 923.36 E. 18" RCP INV. 923.22 S. T/WATER 923.16 T/SILT 922.53

*STRUCTURE OFF SITE

EXISTING SANITARY SEWER SCHEDULE

STR #	TYPE	DIA	RIM ELEV	INVERT DATA
s01*	MANHOLE (PRECAST)	4'	931.04	8" PVC INV. 914.27 W. 8" PVC INV. 914.41 E.
s02	MANHOLE (PRECAST)	4'	927.01	8" PVC INV. 916.21 E. 8" PVC INV. 916.14 W. 8" PVC INV. 920.24 NW.
s03	MANHOLE (PRECAST)	4'	924.75	8" PVC INV. 917.03 NE. 8" PVC INV. 917.01 W.
s04	MANHOLE (PRECAST)	4'	922.81	8" PVC INV. 917.64 SW.

*STRUCTURE OFF SITE

EXISTING WATER MAIN SCHEDULE

STR #	TYPE	RIM ELEV
w01*	HYDRANT	F.G. 929.0
w02	HYDRANT	F.G. 923.3

*STRUCTURE OFF SITE

REMOVAL LEGEND

- REMOVE EX. PAVEMENT
- REMOVE EX. PIPE

SOIL SURVEY LEGEND

- SOIL TYPE BOUNDARY
- SOIL TYPE DESIGNATION

TOPOGRAPHIC SURVEY NOTES

- TOPOGRAPHIC SURVEY COMPLETED BY LIVINGSTON ENGINEERING ON OCTOBER 24, 2023.
- NORTHINGS AND EASTINGS SHOWN ON THIS DRAWING ARE BASED ON MICHIGAN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE INTERNATIONAL FEET (NAD83), ELEVATION BASED UPON NAVD83 DATUM FROM RTK GPS OBSERVATIONS.
- SITE IS LOCATED WITHIN ZONE "X" PER THE FLOOD INSURANCE RATE MAP, MAP NUMBER 26093C03060, WITH AN EFFECTIVE DATE OF SEPTEMBER 17, 2008.
- WETLAND BOUNDARY AND UNREGULATED STATUS DESIGNATION IS BASED ON ASTI WETLAND DELINEATION AND JURISDICTIONAL ASSESSMENT DATED 11/16/2023, FILE NO. 13030.

USDA NRCS SOIL SURVEY SOIL TYPES

- BrB BOYER LOAMY SAND, 2 TO 6 PERCENT SLOPES
- BrC BOYER LOAMY SAND, 6 TO 12 PERCENT SLOPES
- BrA BOYER-OCHTOMO LOAMY SANDS, 0 TO 2 PERCENT SLOPES
- BrC BOYER-OCHTOMO LOAMY SANDS, 6 TO 12 PERCENT SLOPES
- Md MADE LAND

REMOVAL NOTES

- REMOVE ALL EXISTING TREES ALONG M-59 FRONTAGE

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LIVINGSTON ENGINEERING
CIVIL ENGINEERING SURVEYING PLANNING
3300 S. OLD U.S. 23, BRIGHTON, MI 48114
PHONE: (810) 225-7000
WWW.LIVINGSTONENG.COM

LE

SCALE: 1" = 20'
GRAPHIC SCALE: 1" = 20'
EXCEPT AS NOTED

CLIENT
TOM KOHLMAN
5464 N LAPEER RD
COLUMBIANVILLE, MI 48421

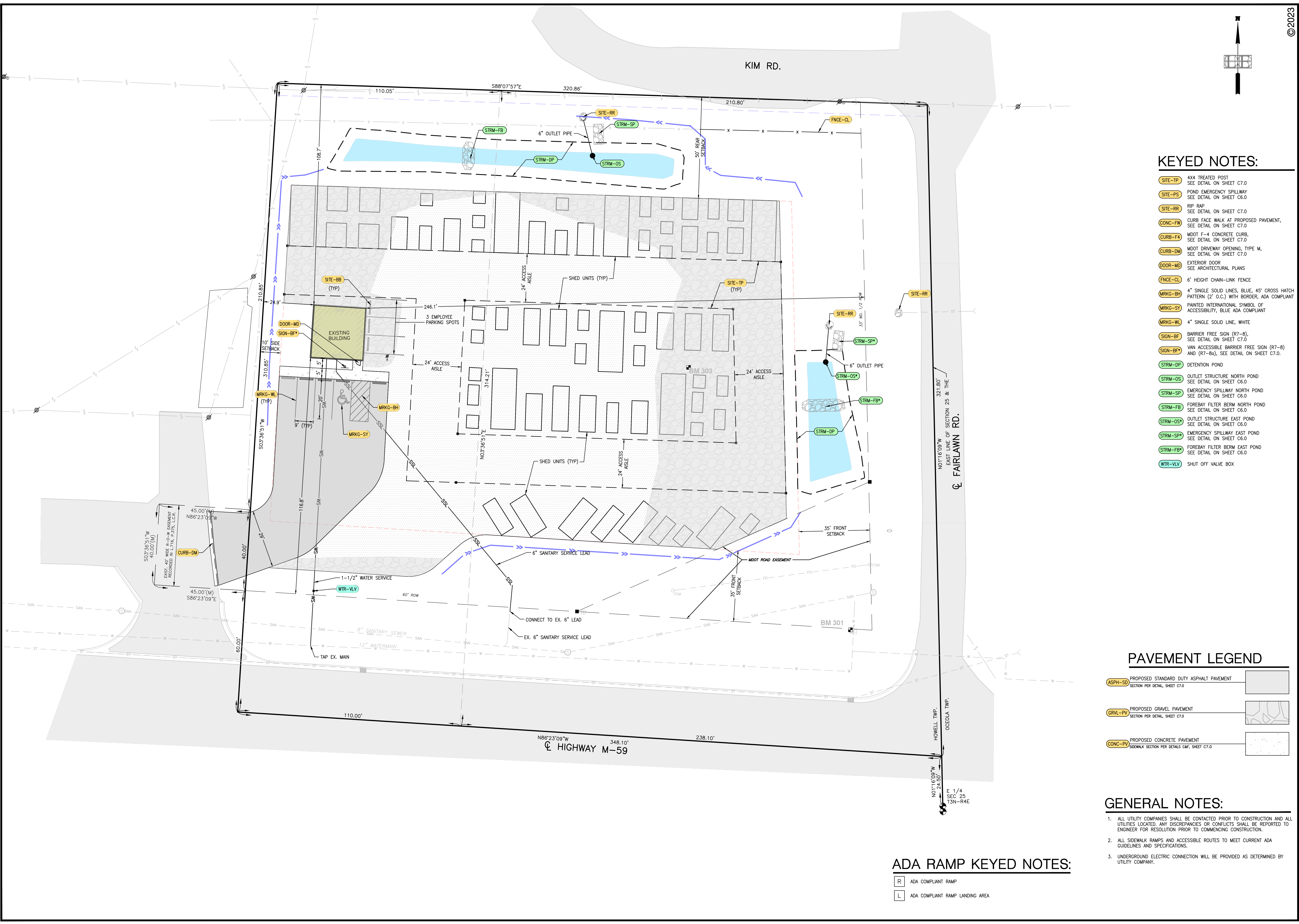
MICHIGAN STORAGE BARNES LLC
PARCEL ID# 4706-25-200-011
HOWELL TOWNSHIP, LIVINGSTON COUNTY, MI
SITE PLAN
EXISTING CONDITIONS & REMOVALS

DATE: 11/21/2023

JOB NO: 23163
DRAWN: MSA
CHECKED: TIZ
APPROVED: TIZ

C20

FILE:C:\Users\jviera\OneDrive\Projects\2023\23163_Kohlman_675 E Highland\03_DWG\3\23163_C3.0_Site_Layout.dwg



KEYED NOTES:

- SITE-TP** 4x4 TREATED POST
SEE DETAIL ON SHEET C7.0
- SITE-PS** POND EMERGENCY SPILLWAY
SEE DETAIL ON SHEET C6.0
- SITE-RR** RIP RAMP
SEE DETAIL ON SHEET C7.0
- CONC-FW** CURB FACE WALK AT PROPOSED PAVEMENT.
SEE DETAIL ON SHEET C7.0
- CURB-FA** MOOT F-4 CONCRETE CURB.
SEE DETAIL ON SHEET C7.0
- CURB-DM** MOOT DRIVEWAY OPENING, TYPE M.
SEE DETAIL ON SHEET C7.0
- DOOR-MD** EXTERIOR DOOR
SEE ARCHITECTURAL PLANS
- FENCE-CL** 6' HEIGHT CHAIN-LINK FENCE
- MRKG-BH** 4" SINGLE SOLID LINES, BLUE, 45° CROSS HATCH PATTERN (2' O.C.) WITH BORDER, ADA COMPLIANT
- MRKG-SY** PAINTED INTERNATIONAL SYMBOL OF ACCESSIBILITY, BLUE ADA COMPLIANT
- MRKG-WL** 4" SINGLE SOLID LINE, WHITE
- SIGN-BF** BARRIER FREE SIGN (R7-8).
SEE DETAIL ON SHEET C7.0
- SIGN-BF*** VAN ACCESSIBLE BARRIER FREE SIGN (R7-8) AND (R7-8a).
SEE DETAIL ON SHEET C7.0.
- STRM-DP** DETENTION POND
- STRM-OS** OUTLET STRUCTURE NORTH POND
SEE DETAIL ON SHEET C6.0
- STRM-SP** EMERGENCY SPILLWAY NORTH POND
SEE DETAIL ON SHEET C6.0
- STRM-FB** FOREBAY FILTER BERM NORTH POND
SEE DETAIL ON SHEET C6.0
- STRM-OS*** OUTLET STRUCTURE EAST POND
SEE DETAIL ON SHEET C6.0
- STRM-SP*** EMERGENCY SPILLWAY EAST POND
SEE DETAIL ON SHEET C6.0
- STRM-FB*** FOREBAY FILTER BERM EAST POND
SEE DETAIL ON SHEET C6.0
- WTR-VLV** SHUT OFF VALVE BOX

PAVEMENT LEGEND

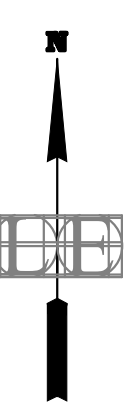
- ASPH-SB** PROPOSED STANDARD DUTY ASPHALT PAVEMENT
SECTION PER DETAIL, SHEET C7.0
- GRVL-PV** PROPOSED GRAVEL PAVEMENT
SECTION PER DETAIL, SHEET C7.0
- CONC-PA** PROPOSED CONCRETE PAVEMENT
SIDEWALK SECTION PER DETAILS C&F, SHEET C7.0

GENERAL NOTES:

1. ALL UTILITY COMPANIES SHALL BE CONTACTED PRIOR TO CONSTRUCTION AND ALL UTILITIES LOCATED. ANY DISCREPANCIES OR CONFLICTS SHALL BE REPORTED TO ENGINEER FOR RESOLUTION PRIOR TO COMMENCING CONSTRUCTION.
2. ALL SIDEWALK RAMP AND ACCESSIBLE ROUTES TO MEET CURRENT ADA GUIDELINES AND SPECIFICATIONS.
3. UNDERGROUND ELECTRIC CONNECTION WILL BE PROVIDED AS DETERMINED BY UTILITY COMPANY.

ADA RAMP KEYED NOTES:

- R** ADA COMPLIANT RAMP
- L** ADA COMPLIANT RAMP LANDING AREA



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SCALE: 1" = 20'

GRAPHIC SCALE: 1" = 20'
EXCEPT AS NOTED

CLIENT
TOM KOHLMAN
5464 N LAPEER RD
COLUMBIANVILLE, MI 48421

MICHIGAN STORAGE BARNs LLC
PARCEL ID# 4706-25-200-011
HOWELL TOWNSHIP, LIVINGSTON COUNTY, MI
SITE PLAN
SITE LAYOUT & UTILITIES

REVISIONS	DATE
PER REVIEW & P&C COMMENTS	07/09/2024
PER BUILDING LAYOUT UPDATE	03/04/2024
PER RETENTION POND UPDATE	03/19/2024

JOB NO.
23163

DRAWN: MSA

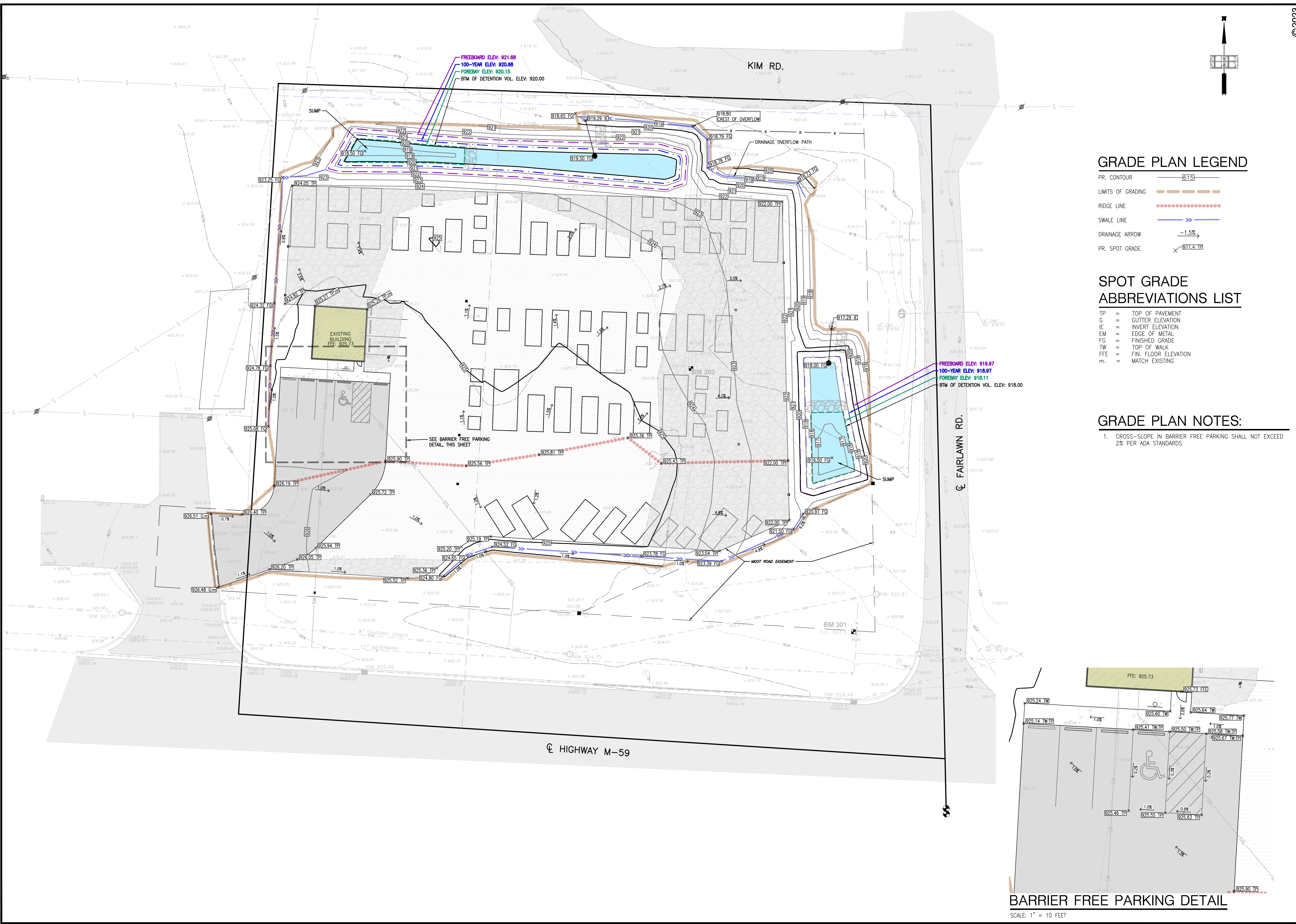
CHECKED: TIZ

APPROVED: TIZ

DATE: 11/21/2023

C3.0

FILE:C:\Users\jv\Dropbox (Living)\Projects\2023\23163_Kohlman_675 E Highland\03_DWG\Site Plan\23163_C5.0_Grading.dwg



GRADE PLAN LEGEND

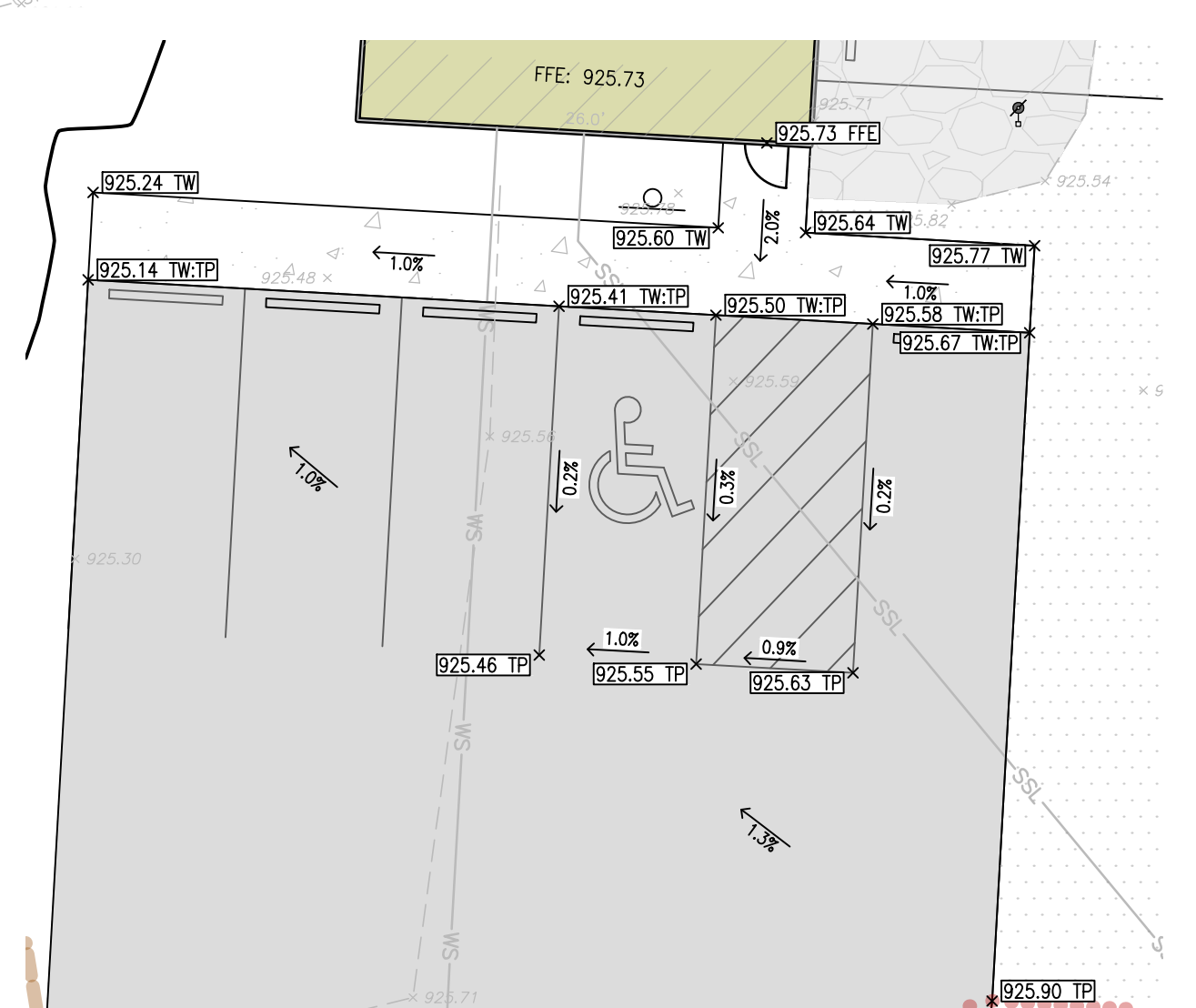
- PR. CONTOUR 615
- LIMITS OF GRADING
- RIDGE LINE
- SWALE LINE
- DRAINAGE ARROW
→
 -1.5%
- PR. SPOT GRADE
x
 911.4 TP

SPOT GRADE ABBREVIATIONS LIST

- TP = TOP OF PAVEMENT
- G = GUTTER ELEVATION
- I = INVERT ELEVATION
- EM = EDGE OF METAL
- FG = FINISHED GRADE
- TW = TOP OF WALK
- FFE = FIN. FLOOR ELEVATION
- m = MATCH EXISTING

GRADE PLAN NOTES:

1. CROSS-SLOPE IN BARRIER FREE PARKING SHALL NOT EXCEED 2% PER ADA STANDARDS



BARRIER FREE PARKING DETAIL
SCALE: 1" = 10 FEET

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PHONE: (810) 225-7000
WWW.LIVINGSTONENGINEERING.COM

SCALE: 0' 20' 40'

GRAPHIC SCALE: 1" = 20'

EXCEPT AS NOTED

MICHIGAN STORAGE BARNs LLC
PARCEL ID# 4706-25-200-011
HOWELL TOWNSHIP, LIVINGSTON COUNTY, MI

CLIENT
TOM KOHLMAN
5464 N LAPEER RD
COLUMBIANVILLE, MI 48421

DATE
01/09/2024
03/04/2024
05/12/2024

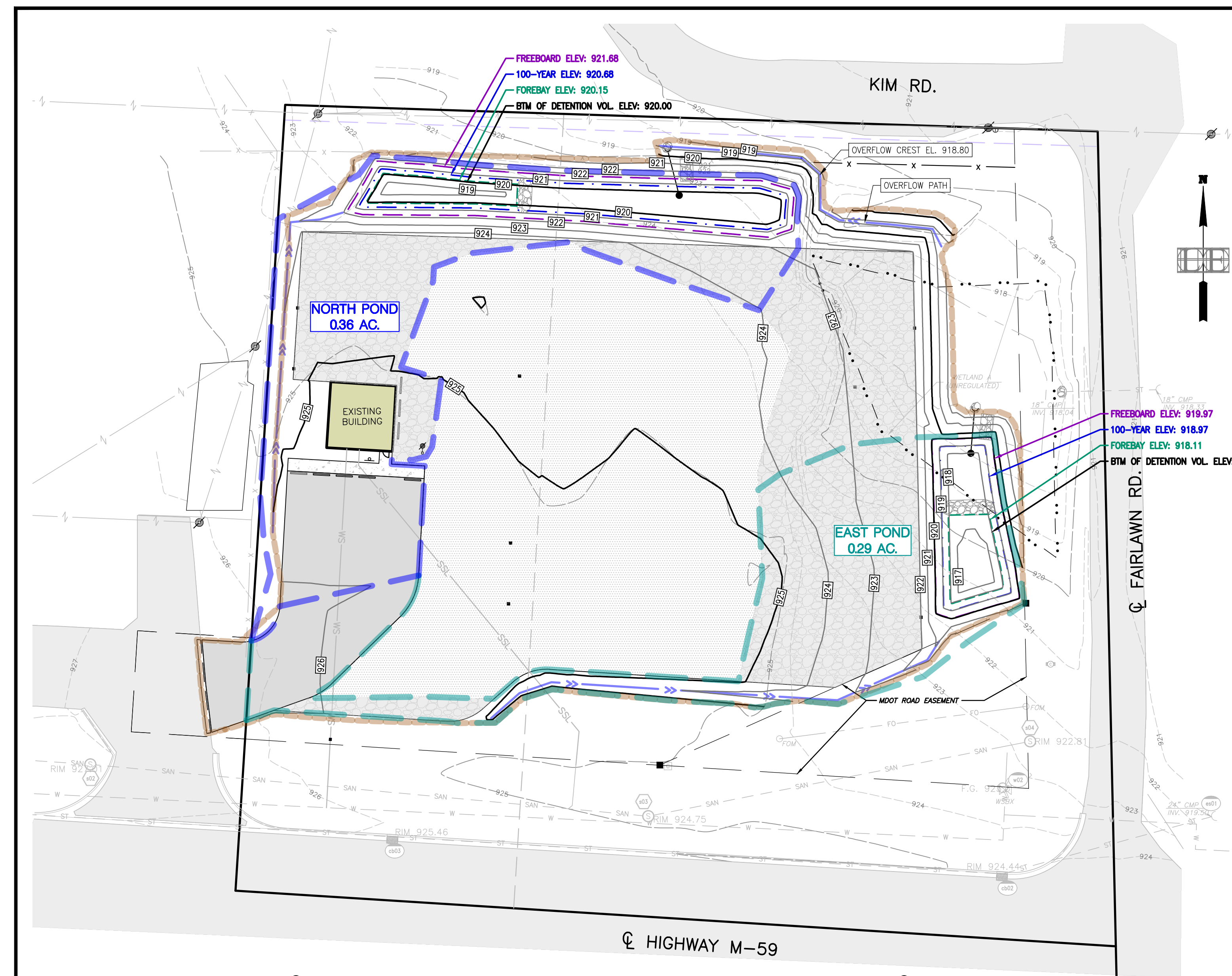
REVISIONS

NO.	DESCRIPTION	DATE
1	FOR REVIEW & P&C COMMENTS	01/09/2024
2	FOR BUILDING LAYOUT UPDATE	03/04/2024
3	FOR DETENTION POND UPDATE	05/12/2024

JOB NO.
23163

DRAWN: MSA
CHECKED: TIZ
APPROVED: TIZ
DATE: 11/21/2023

C5.0



STORM WATER NARRATIVE

THE PROPOSED STORM WATER MANAGEMENT SYSTEM DRAINAGE AREA IS COMPOSED OF 1.29 ACRES OF LAND WITH MODERATELY ROLLING TOPOGRAPHY AND, IN ITS EXISTING STATE IS PREDOMINANTLY COVERED BY GRAVEL WITH SOME GRASSED AREAS AND TREES.

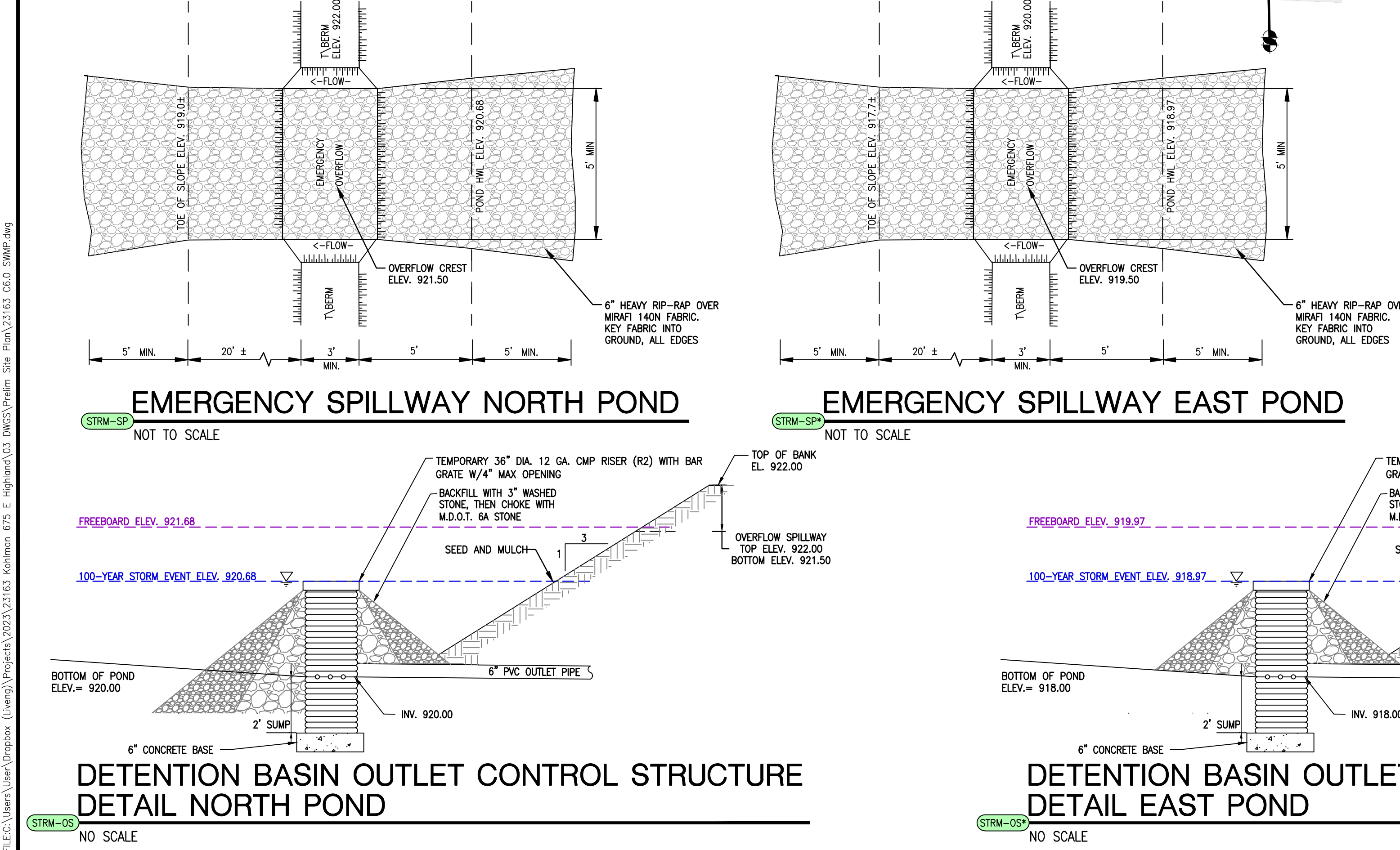
THE EXISTING DRAINAGE PATTERN FOR THE SITE PRIMARILY FLOWS INTO THE EXISTING POND AREA ON THE NORTHEASTERLY PORTION OF THE PROPERTY.

TWO ONSITE DETENTION PONDS HAVE BEEN PROPOSED, ONE ON THE EAST SIDE OF THE SITE AND ONE ON THE NORTH SIDE OF THE SITE. RUNOFF FROM ALL NEW IMPERVIOUS SURFACES WILL BE DETAINED IN THE POND BY USE OF A RESTRICTED OUTLET STANDPIPE PER COUNTY STANDARDS. THE PONDS ARE DESIGNED TO RETAIN THE FIRST FLUSH WATER QUALITY VOLUME RUNOFF FROM THE SITE FOR 24 HOURS MINIMUM TO ALLOW SUSPENDED SOLIDS TO SETTLE OUT PRIOR TO RELEASE AT A CONTROLLED, RESTRICTED RATE TO THE DOWNSTREAM SYSTEM.

IN ACCORDANCE WITH DIRECTION FROM THE LIVINGSTON COUNTY DRAIN COMMISSION ENGINEER, A PATH HAS BEEN PROVIDED IN THE DESIGN TO ALLOW OFFSITE DRAINAGE TRIBUTARY TO THE NATURAL DRAINAGE POND IN THE NORTHEAST PORTION OF THE SITE TO CONTINUE TO OVERFLOW TO THE NORTHEAST. CREST OF THE OVERFLOW PATH HAS BEEN SET PER LDCG AT ELEV. 918.80.

Storm Water Detention Calculations			
Project: Michigan Storage Barns LLC North Pond			
LE Project Number: 23163			
Livingston County Method			
I Composite Runoff Coefficient Calculations			
IA Runoff Coefficient Summary			
Type of Surface	C Factor	Area, ac	
Water	1	0.03	
Roofs	0.9	0.02	
Asphalt or Concrete Pavements	0.9	0.06	
Gravel	0.6	0.11	
Greenspace (Hydrologic Soil Group B)	0.2	0.13	
I.B Total Contributing Area, A	0.36	ac	
I.C Composite Runoff Coefficient, C	0.55		
II Time of Concentration			
$t_c =$	10.0	min	
$t_c =$ 10 minutes per county standard for sites that are 2 acres or less			
III 100-year Peak Intensity			
$I_{100} = 83.3 / (9.17 + t_c)^{0.811}$	7.6	in/hr	
IV Channel Protection Control (CPVC), Site Runoff from First 1.3" of Rainfall, V_{CPVC}			
$V_{CPVC} = 1.3" \times (1'12") \times (43,560 \text{ sf/acre}) \times C \times A$			
$V_{CPVC} = 4,719 \times C \times A$	936	cf	
V Channel Protection Rate Control (CPRC), Extended Detention for the Site Runoff from a 1.9" Rainfall Event, V_{ED}			
V.A $V_{ED} = 1.9" \times (1'12") \times (43,560 \text{ sf/acre}) \times C \times A$			
$V_{ED} = 6,897 \times C \times A$	1,368	cf	
V.B Extended Detention Volume Discharge Rate, Q_{ED}			
$Q_{ED} = V_{ED} / (48 \text{ hr} \times 60 \text{ min} \times 60 \text{ sec})$	0.01	cfs	
VI Variable Release Rate, Q_{VRR}			
$Q_{VRR} = 1.1055 - 0.206 \ln(A)$	1.32	cfs/ac	
VII 100 Year Allowable Peak Flow Rate, Q_{100P}			
$Q_{100P} = Q_{VRR} \times A$	0.47	cfs	
VIII 100-year Peak Inflow Rate, Q_{100IN}			
$Q_{100IN} = C \times I_{100} \times A$	1.5	cfs	
IX 100-year Storage Volume, V_D			
IX.A 100-year Peak Runoff Volume, V_{100R}			
$V_{100R} = 18,985 \times C \times A$	3,765	cf	
IX.B Storage Curve Factor (R)			
$R = 0.206 - 0.15 \ln(Q_{100IN} / Q_{100P})$	0.381		
IX.C $V_D = (V_{100R} \times R) - V_{CPVC}$	(2,540)	cf	
X First Flush (Sediment Forebay) Storage Volume, V_{FF}			
X.A Water Quality Control Volume, V_{WQC}			
$V_{WQC} = 3,630 \times C \times A$	720	cf	
X.B Forebay Min. Storage of 15% of V_{WQC}	108	cf	
The Site Plan must be designed to accommodate the following volumes:			
CPVC	936	cf	
CPRC, Extended Detention	1,368	cf	
Flood Control	1,368	cf	

Storm Water Detention Calculations			
Project: Michigan Storage Barns LLC East Pond			
LE Project Number: 23163			
Livingston County Method			
I Composite Runoff Coefficient Calculations			
IA Runoff Coefficient Summary			
Type of Surface	C Factor	Area, ac	
Water	1	0.02	
Asphalt or Concrete Pavements	0.9	0.04	
Gravel	0.6	0.15	
Greenspace (Hydrologic Soil Group B)	0.2	0.08	
I.B Total Contributing Area, A	0.29	ac	
I.C Composite Runoff Coefficient, C	0.56		
II Time of Concentration			
$t_c =$	10.0	min	
$t_c =$ 10 minutes per county standard for sites that are 2 acres or less			
III 100-year Peak Intensity			
$I_{100} = 83.3 / (9.17 + t_c)^{0.811}$	7.6	in/hr	
IV Channel Protection Control (CPVC), Site Runoff from First 1.3" of Rainfall, V_{CPVC}			
$V_{CPVC} = 1.3" \times (1'12") \times (43,560 \text{ sf/acre}) \times C \times A$			
$V_{CPVC} = 4,719 \times C \times A$	768	cf	
V Channel Protection Rate Control (CPRC), Extended Detention for the Site Runoff from a 1.9" Rainfall Event, V_{ED}			
V.A $V_{ED} = 1.9" \times (1'12") \times (43,560 \text{ sf/acre}) \times C \times A$			
$V_{ED} = 6,897 \times C \times A$	1,123	cf	
V.B Extended Detention Volume Discharge Rate, Q_{ED}			
$Q_{ED} = V_{ED} / (48 \text{ hr} \times 60 \text{ min} \times 60 \text{ sec})$	0.01	cfs	
VI Variable Release Rate, Q_{VRR}			
$Q_{VRR} = 1.1055 - 0.206 \ln(A)$	1.36	cfs/ac	
VII 100 Year Allowable Peak Flow Rate, Q_{100P}			
$Q_{100P} = Q_{VRR} \times A$	0.39	cfs	
VIII 100-year Peak Inflow Rate, Q_{100IN}			
$Q_{100IN} = C \times I_{100} \times A$	1.2	cfs	
IX 100-year Storage Volume, V_D			
IX.A 100-year Peak Runoff Volume, V_{100R}			
$V_{100R} = 18,985 \times C \times A$	3,090	cf	
IX.B Storage Curve Factor (R)			
$R = 0.206 - 0.15 \ln(Q_{100IN} / Q_{100P})$	0.378		
IX.C $V_D = (V_{100R} \times R) - V_{CPVC}$	(2,806)	cf	
X First Flush (Sediment Forebay) Storage Volume, V_{FF}			
X.A Water Quality Control Volume, V_{WQC}			
$V_{WQC} = 3,630 \times C \times A$	591	cf	
X.B Forebay Min. Storage of 15% of V_{WQC}	89	cf	
The Site Plan must be designed to accommodate the following volumes:			
CPVC	768	cf	
CPRC, Extended Detention	1,123	cf	
Flood Control	1,123	cf	



FOREBAY FILTER BERM NORTH POND
STRM-FB NOT TO SCALE

FOREBAY FILTER BERM EAST POND
STRM-FB NOT TO SCALE

EMERGENCY SPILLWAY NORTH POND
STRM-SP NOT TO SCALE

EMERGENCY SPILLWAY EAST POND
STRM-SP NOT TO SCALE

DETENTION BASIN OUTLET CONTROL STRUCTURE DETAIL NORTH POND
STRM-OS NO SCALE

DETENTION BASIN OUTLET CONTROL STRUCTURE DETAIL EAST POND
STRM-OS NO SCALE

XI Proposed Basin Volumes					
Elevation	Forebay		North Detention Pond		Total Accumulated Volume (cf)
	Area (sf)	Volume (cf)	Area (sf)	Volume (cf)	
920.00	534	920.00	943		
921.00	944	739	921.00	1,589	2,005

XII Design Storm Elevations					
The following interpolations determine the pond water elevations for the different storm events:					
XII.A Forebay Elevation, V_{FF}					
Elevation	921.00	-	920.00	=	x_1 - 920.00
Volume	739	0	108	0	
Elev V_{FF}					= x_1 = 920.15
XII.B Extended Detention Elevation, Elev V_{ED}					
Elevation	921.00	-	920.00	=	x_2 - 920.00
Volume	2005	0	1368	0	
Elev V_{ED}					= x_2 = 920.68
XII.C 100-Year Storm Event Elevation, Elev V_{100P}					
Elevation	921.00	-	920.00	=	x_3 - 920.00
Volume	2005	0	1368	0	
Elev V_{100P}					= x_3 = 920.68

XI Proposed Basin Volumes					
Elevation	Forebay		East Detention Pond		Total Accumulated Volume (cf)
	Area (sf)	Volume (cf)	Area (sf)	Volume (cf)	
918.00	630	918.00	289		
919.00	921	775	919.00	474	1,157

XII Design Storm Elevations					
The following interpolations determine the pond water elevations for the different storm events:					
XII.A Forebay Elevation, V_{FF}					
Elevation	919.00	-	918.00	=	x_1 - 918.00
Volume	775	0	89	0	
Elev V_{FF}					= x_1 = 918.11
XII.B Extended Detention Elevation, Elev V_{ED}					
Elevation	919.00	-	918.00	=	x_2 - 918.00
Volume	1157	0	1123	0	
Elev V_{ED}					= x_2 = 918.97
XII.C 100-Year Storm Event Elevation, Elev V_{100P}					
Elevation	919.00	-	918.00	=	x_3 - 918.00
Volume	1157	0	1123	0	
Elev V_{100P}					= x_3 = 918.97

Design Calculation for Infiltration Volume (North Detention Pond)
 V_{CPVC} (from detention calcs IV) 936 cf

Design Infiltration Rate, I_r * 5.5 in/hr

A. Max Total Water Storage Depth, $I_r \times 72$ hr	396	in
B. Max Surface Water Storage Depth, $I_r \times 24$ hr	132	in
C. Infiltration Depth During Storm, $I_r \times 6$ hr	33	in
D. Potential Soil Storage Depth, $I_r \times 48$ hr	264	in
E. Potential Soil Storage Depth EQV, $I_r \times 48$ hr / 0.25 porosity	66	in
	5.5	ft

Detention Basin Bottom Infiltration Area Required (Below the basin Outlet Elevation) 68 sf

Detention Basin Bottom Infiltration Area Provided (Below the basin Outlet Elevation), A_p 943 sf

Calculated VCP Credit, $V_{CP} = A_p \times (B+C)$ 12,966 cf

Design Calculation for Infiltration Volume (East Detention Pond)
 V_{CPVC} (from detention calcs IV) 768 cf

Design Infiltration Rate, I_r * 5.5 in/hr

A. Max Total Water Storage Depth, $I_r \times 72$ hr	396	in
B. Max Surface Water Storage Depth, $I_r \times 24$ hr	132	in
C. Infiltration Depth During Storm, $I_r \times 6$ hr	33	in
D. Potential Soil Storage Depth, $I_r \times 48$ hr	264	in
E. Potential Soil Storage Depth EQV, $I_r \times 48$ hr / 0.25 porosity	66	in
	5.5	ft

Detention Basin Bottom Infiltration Area Required (Below the basin Outlet Elevation) 56 sf

Detention Basin Bottom Infiltration Area Provided (Below the basin Outlet Elevation), A_p 289 sf

Calculated VCP Credit, $V_{CP} = A_p \times (B+C)$ 3,974 cf

* In-situ rates determined from field testing by Hastings Testing were 0.94 in/hr and 10.2 in/hr, average value of 5.5 in/hr for design was used.

* In-situ rates determined from field testing by Hastings Testing were 0.94 in/hr and 10.2 in/hr, average value of 5.5 in/hr for design was used.

FILE:C:\Users\jason\Dropbox\Projects\2023\23163_Kohman\625 E. Highland\03 DWG\SS\Plan_Site_Plan\23163_C6.0_SWMP.dwg

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WWW.LIVINGSTONE.COM

LE

SCALE: 0" = 30'
GRAPHIC SCALE: 1" = 30'
EXCEPT AS NOTED

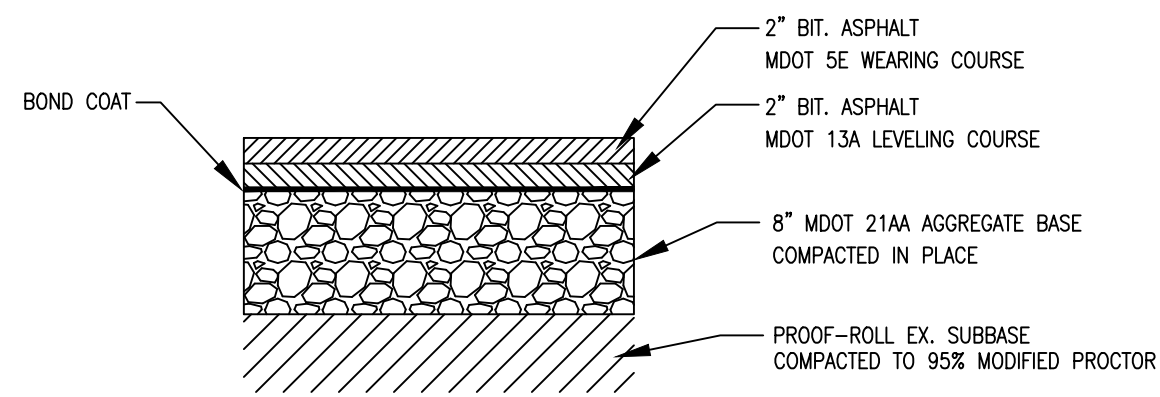
MICHIGAN STORAGE BARNS LLC
CLIENT: TOM KOHLMAN
5464 N LAPEER RD
COLUMBIANVILLE, MI 48421

STORM WATER MANAGEMENT PLAN

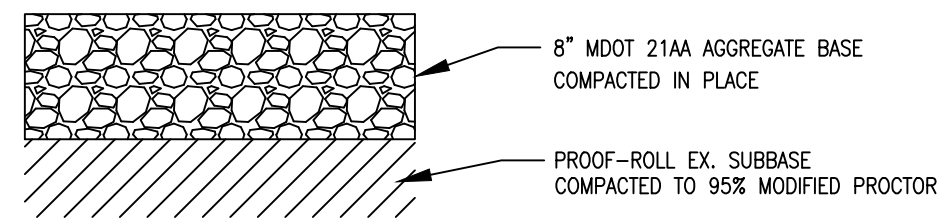
DATE: 01/09/2024
PER REVIEW & P.L. COMMENTS: 02/07/2024
PER BUILDING LAYOUT UPDATE: 02/07/2024
PER DETENTION POND UPDATE: 02/07/2024

JOB NO: 23163
DRAWN: MSA
CHECKED: TIZ
APPROVED: TIZ
DATE: 11/21/2023

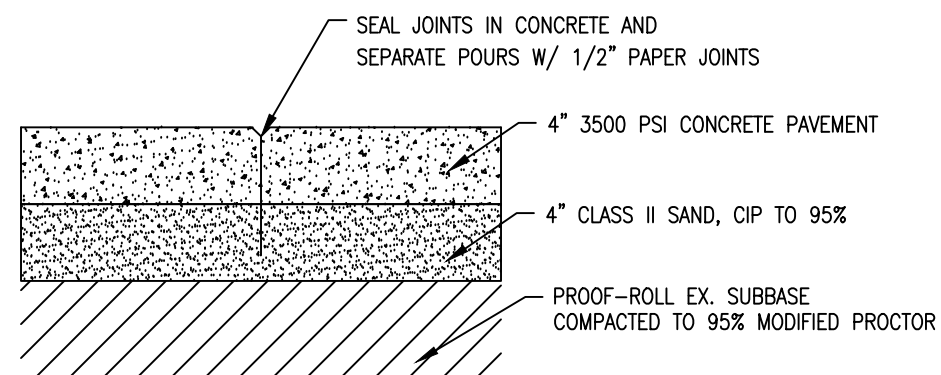
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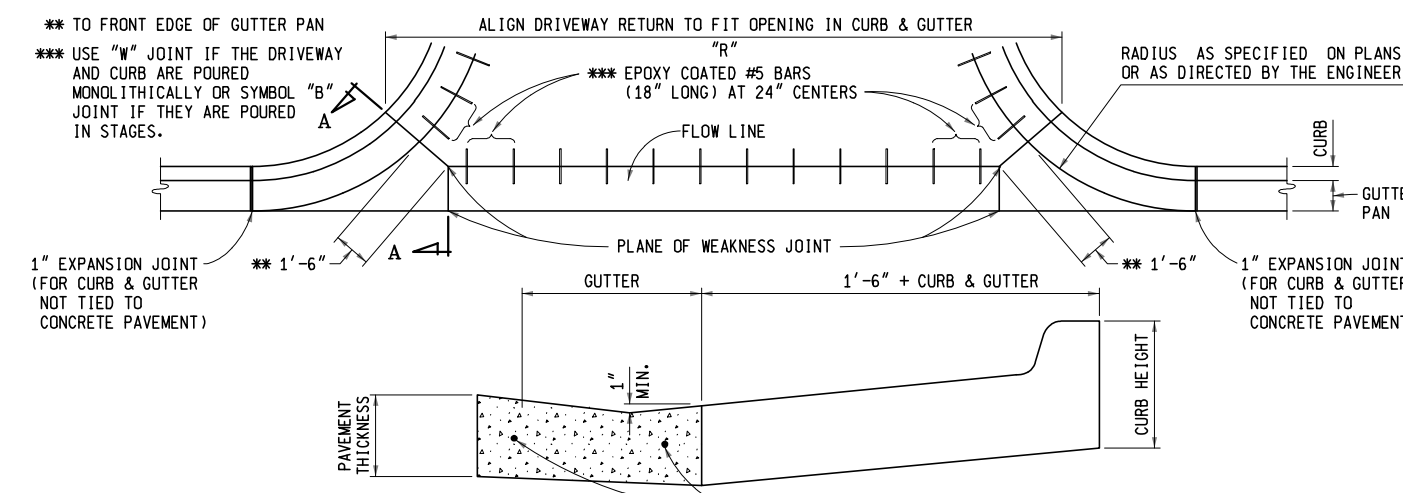
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GRAVEL PAVEMENT SECTION
NOT TO SCALE



CONCRETE SIDEWALK SECTION
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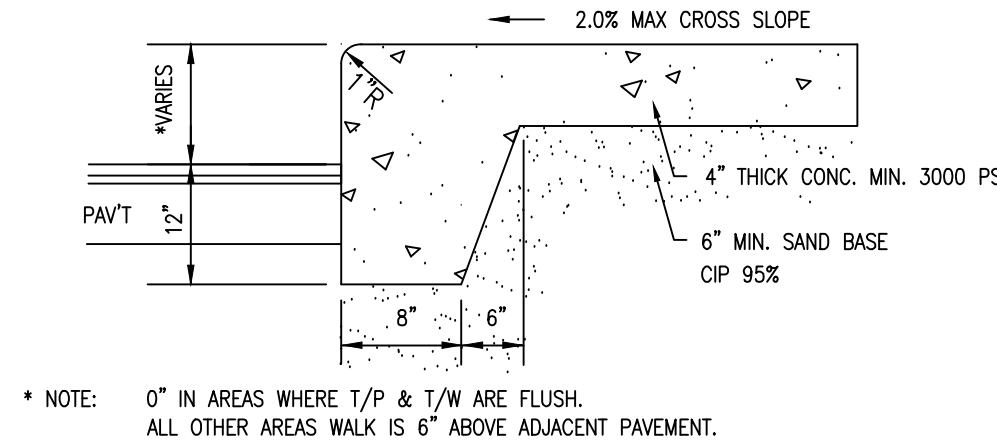
CONCRETE DRIVEWAY OPENING, DETAIL M

NOTE:
FOR ROADWAYS WITH CONCRETE PAVEMENTS, LONGITUDINAL LANE TIES WILL BE CONTINUOUS THROUGH THE DRIVEWAY OPENING AND THE SPACING OF THE #5 BARS IN CONCRETE DRIVEWAYS SHALL BE ADJUSTED TO AVOID CONFLICT WITH THE LONGITUDINAL LANE TIES.

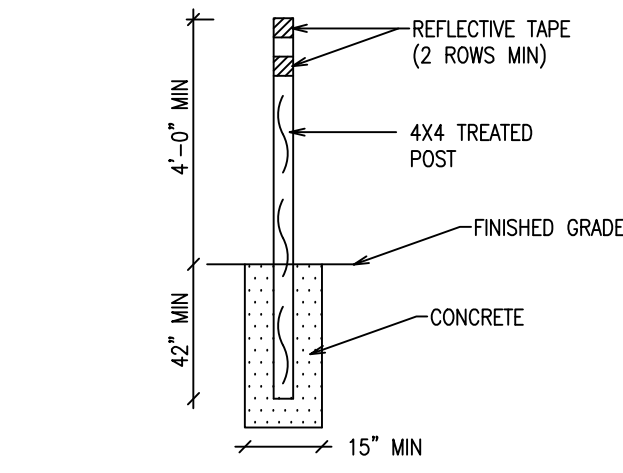
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
DRIVEWAY OPENINGS & APPROACHES, AND CONCRETE SIDEWALK

9-30-2014 F.H.W.A. APPROVAL 7-1-2014 PLAN DATE R-29-I SHEET 2 OF 4

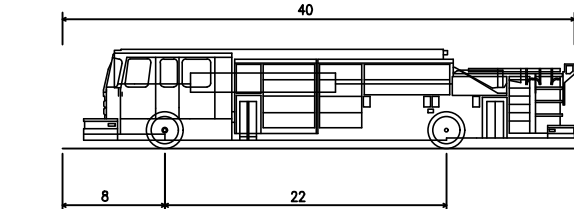
TYPE M CURB DETAIL
NOT TO SCALE



CURB FACE WALK
NOT TO SCALE

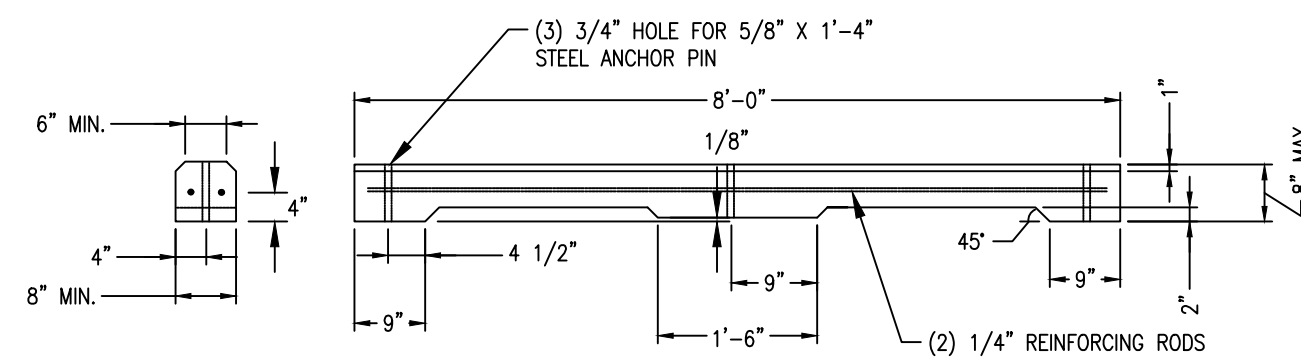


4X4 TREATED POST
NOT TO SCALE

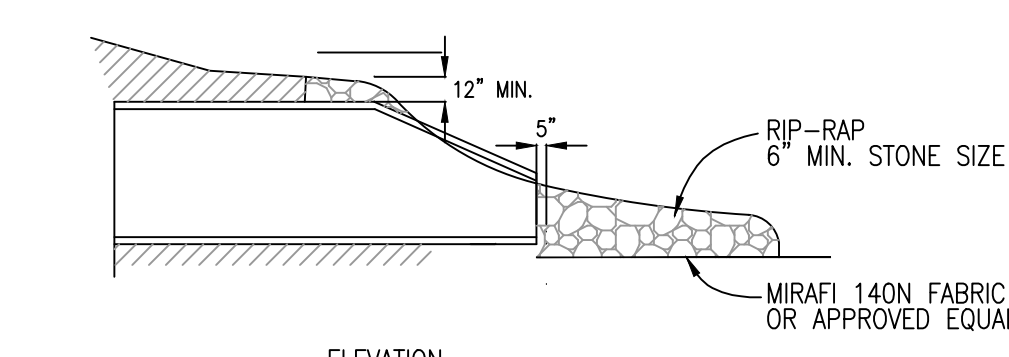


PUMPER FIRE TRUCK PROFILE

Overall Length	40.000ft
Overall Width	8.167ft
Overall Body Height	7.745ft
Min. Body Ground Clearance	0.656ft
Track Width	8.167ft
Lock-to-lock time	5.00s
Max Wheel Angle	45.00°

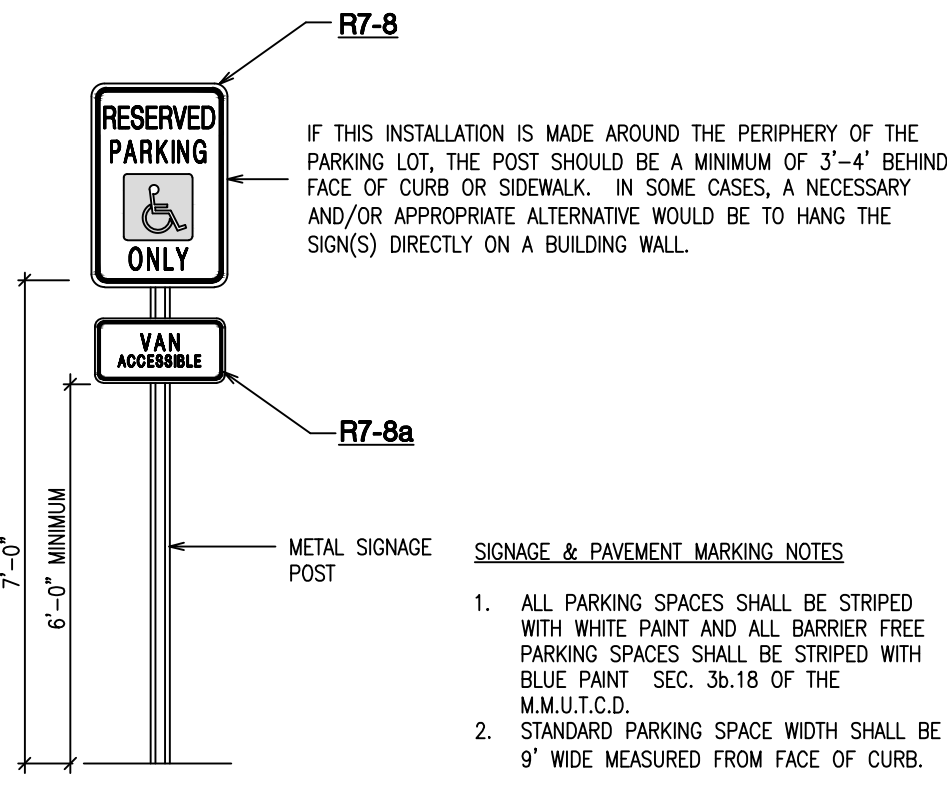


CONCRETE BUMPER BLOCK
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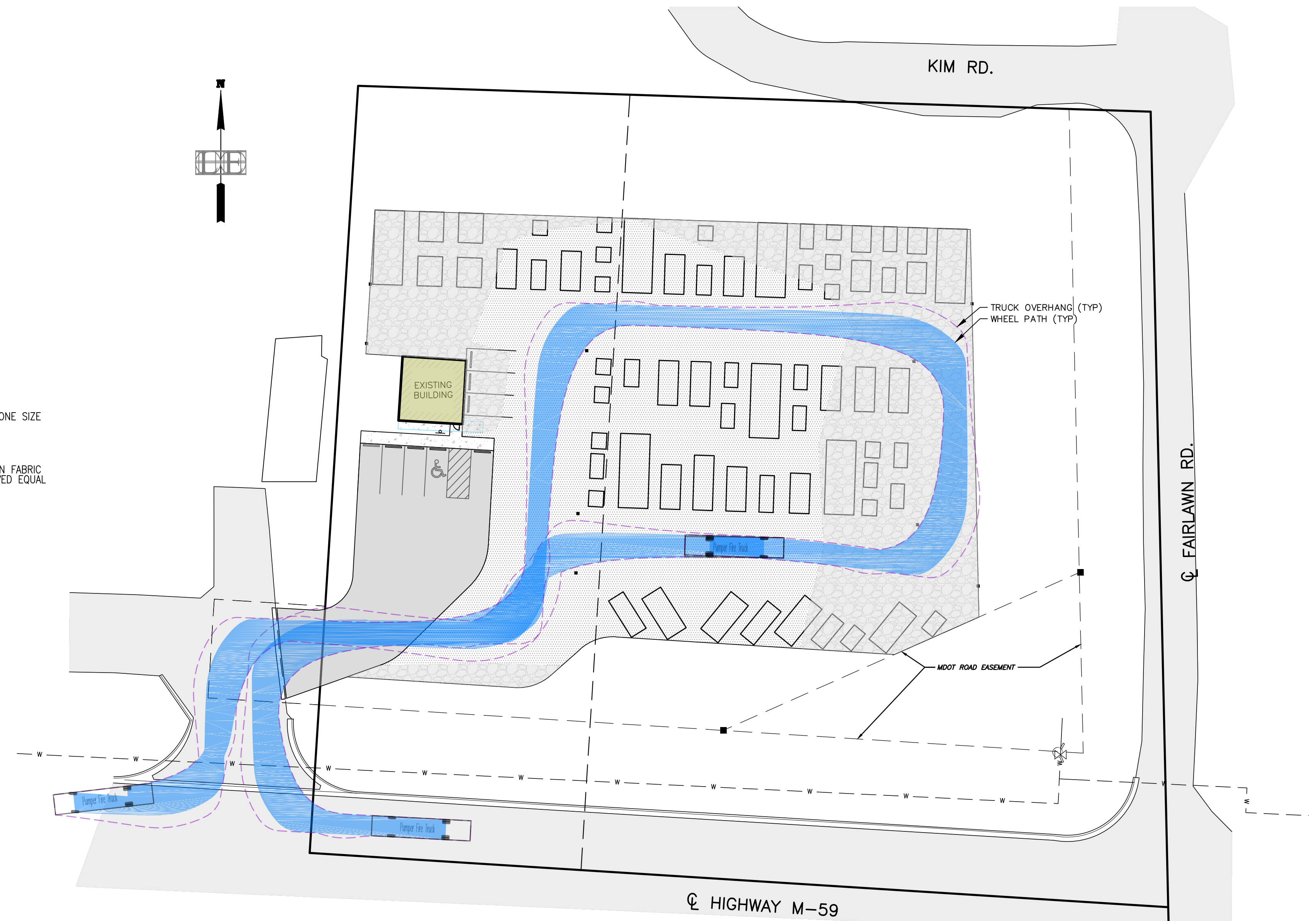


RIP-RAP DETAIL
NOT TO SCALE

PIPE DIAMETER	"A"	"B"	"C"	SQUARE YARDS
12"	5'-0"	6'-6"	3'-0"	15 MIN
15"	5'-0"	7'-0"	3'-0"	15 MIN
18"	5'-0"	7'-6"	3'-6"	15 MIN
21"	5'-6"	8'-0"	4'-0"	15 MIN
24"	6'-0"	8'-6"	4'-6"	15 MIN



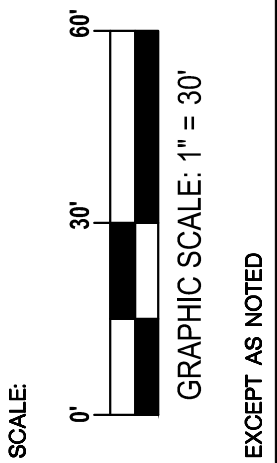
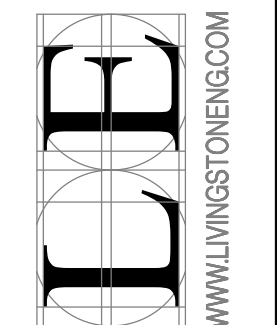
BARRIER FREE SIGN
NOT TO SCALE



EMERGENCY MANEUVERING PLANS
SCALE: 1" = 40 FEET

FILE:C:\Users\user\Desktop (User)\Projects\2023\23163_Kohlman_Plan\23163_C7.0_Rev01.dwg

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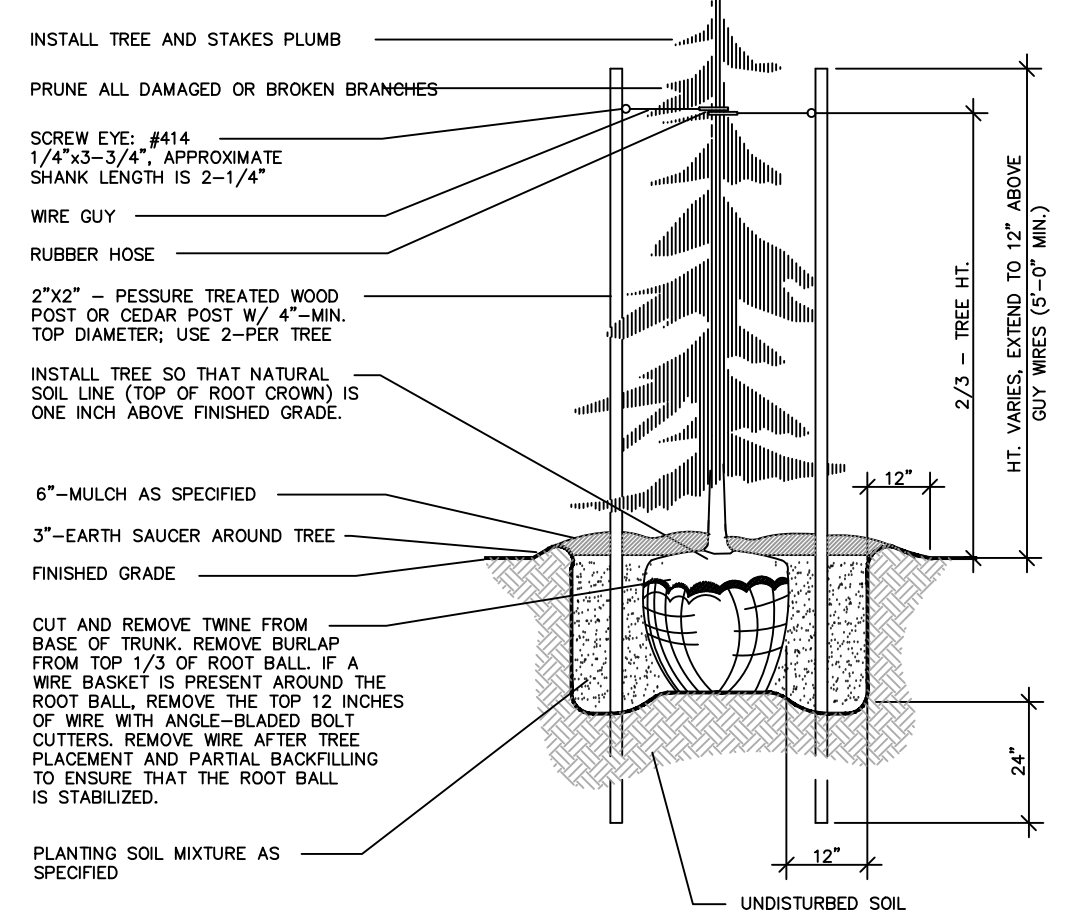
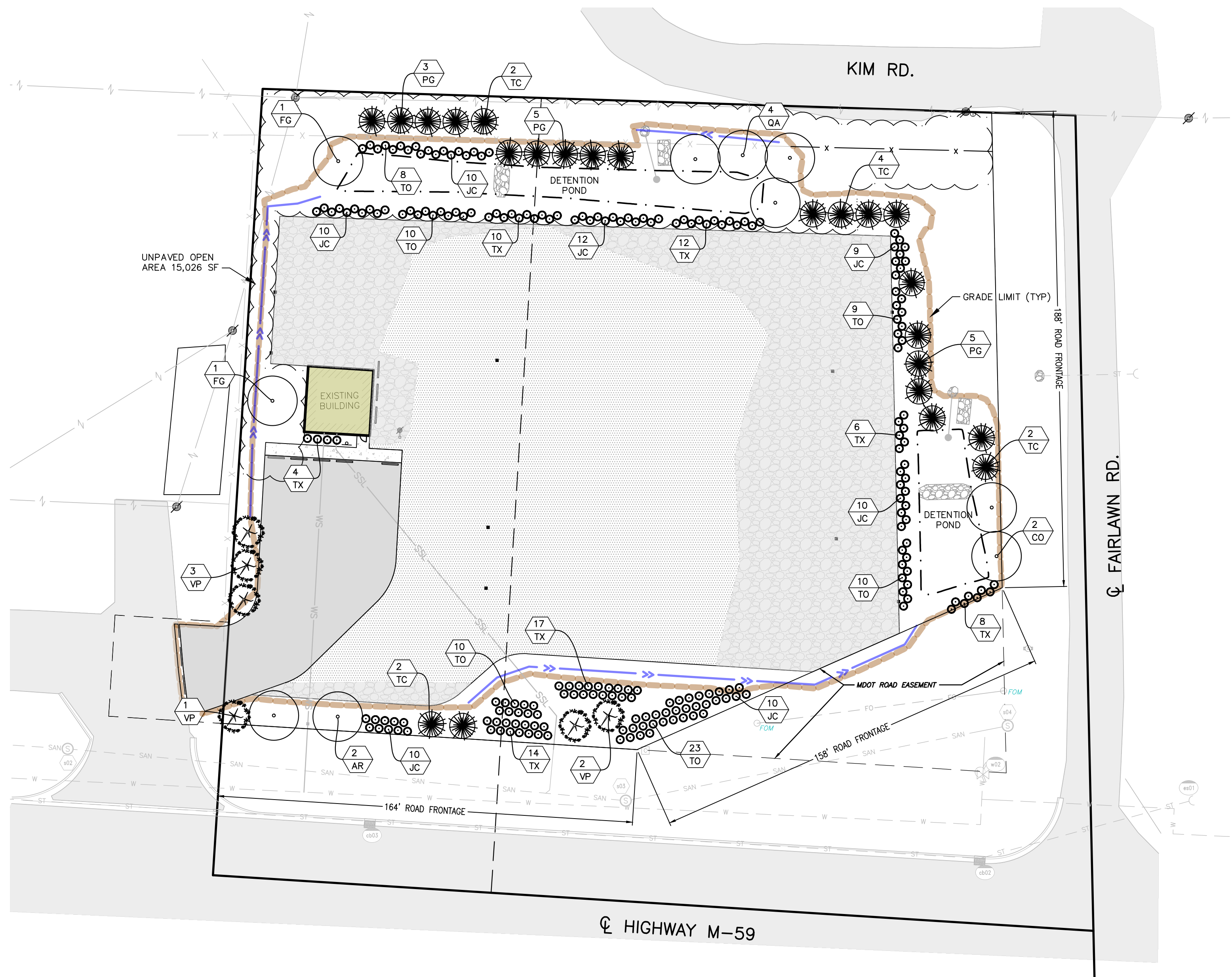
CLIENT
TOM KOHLMAN
6464 N LAPEER RD
COLUMBIANVILLE MI 48421

MICHIGAN STORAGE BARNES LLC
PARCEL ID# 4706-25-200-011
HOWELL TOWNSHIP, LIVINGSTON COUNTY, MI
SITE PLAN
DETAILS & EMERGENCY MANEUVERING PLAN

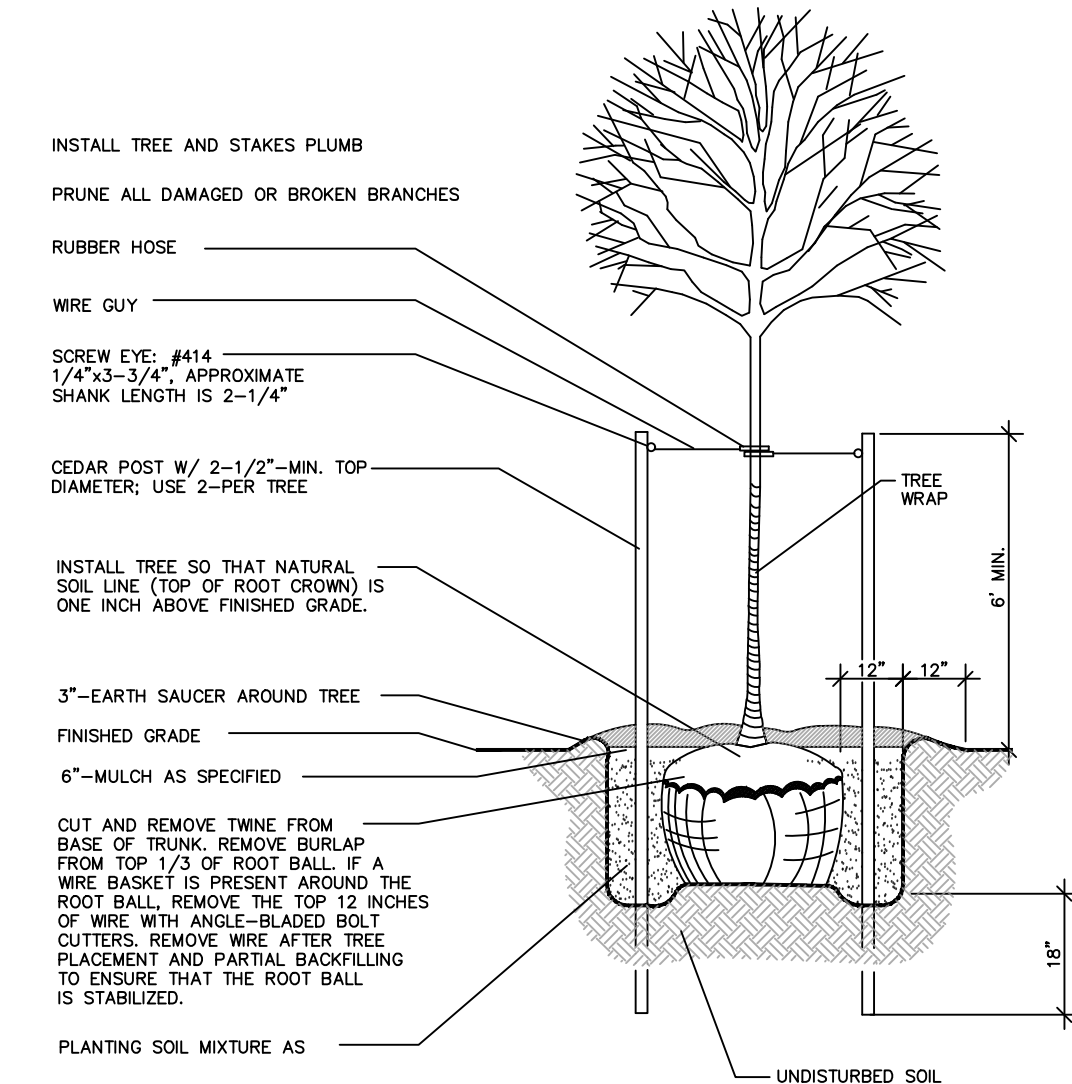
REVISIONS	DATE
PER REVIEW & P.C. COMMENTS	07/02/2024
PER BUILDING LAYOUT UPDATE	02/02/2024
PER RETENTION FUND UPDATE	02/12/2024

JOB NO. **23163**
DRAWN: MSA
CHECKED: TIZ
APPROVED: TIZ
DATE: 11/21/2023

C7.0



Evergreen Tree Planting/Staking Detail
 6" IN HEIGHT AND ABOVE



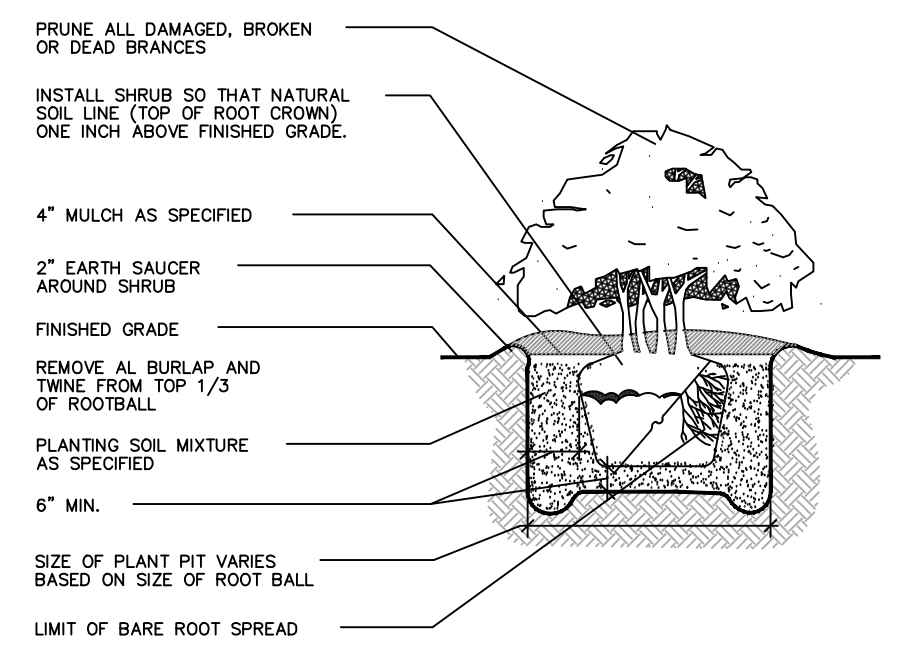
DECIDUOUS TREE PLANTING/ STAKING DETAIL
 UNDER 3" IN CALIPER

LANDSCAPING NOTES:

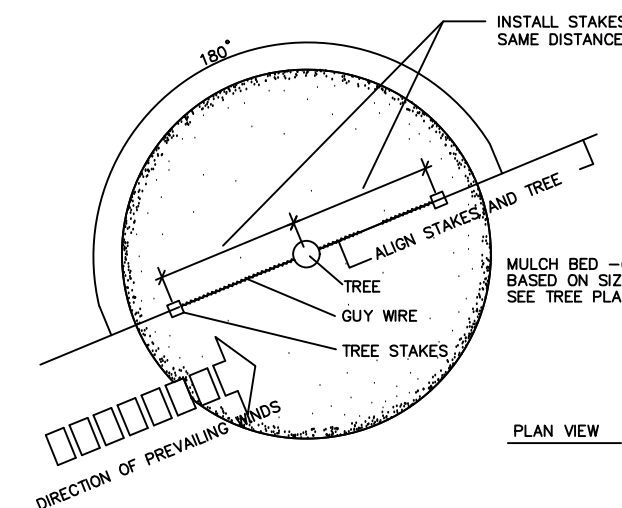
- THE CONTRACTOR(S) SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.
- ALL PLANT BEDS ARE SPADE EDGED AND TO BE MULCHED WITH SHREDDED BARK.
- PLANTS SHALL CONFORM TO THE SIZES AS SHOWN ON THE DRAWINGS AND SHALL BE OF SOUND HEALTH. ALL MEASUREMENTS SUCH AS SPREAD, BALL SIZE, HEIGHT, CALIPER AND QUALITY DESIGNATIONS SHALL BE IN CONFORMANCE TO THE LATEST EDITION OF THE AMERICAN STANDARDS FOR NURSERY STOCK.
- ALL EVERGREEN TREE SPECIES ARE TO BE FULL, DENSE PLANTS BRANCHED FULLY TO THE GROUND.
- PRUNE ALL DEAD AND BROKEN BRANCHES FROM ALL PLANTS IMMEDIATELY AFTER INSTALLATION.
- PLANTING SOIL MIXTURE SHALL BE PREPARED ON-SITE BY MIXING 3 PARTS TOPSOIL TO 1 PART EXISTING SITE SOILS TO 1 PART PEAT, ADDING 5 LBS. OF SUPERPHOSPHATE TO EACH CUBIC YARD OF THE MIXTURE.
- ORGANIC MULCH REQUIREMENTS: SHADE TREES, ORNAMENTAL TREES AND EVERGREEN TREES - 6" OF SHREDDED BARK; SHRUBS AND SHRUB BEDS - 4" OF SHREDDED BARK; GROUND COVER BEDS AND PERENNIAL FLOWERS - MULCH WITH 1" OF PEAT.
- ALL SITE LANDSCAPING SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH HOWELL TOWNSHIP CODE OF ORDINANCES
- SIDE SLOPES AND BOTTOM OF THE STORMWATER DETENTION POND SHALL BE SODDED OR SEEDED WITH GROUND COVER

LANDSCAPE LEGEND

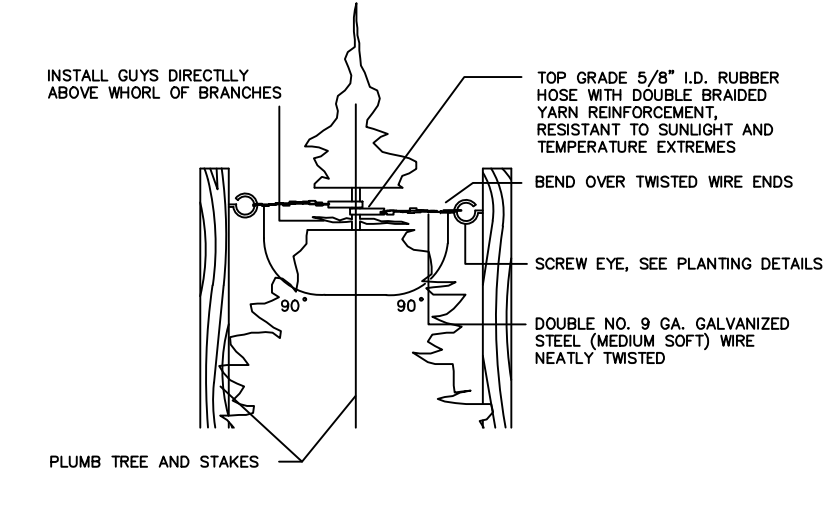
DECIDUOUS:	ALL SPECIES
○	○
CONIFEROUS:	ALL SPECIES
●	●
ORNAMENTAL:	ALL SPECIES
⊗	⊗
SHRUB:	ALL SPECIES
○	○
LABEL:	QUANTITY
AR	1



SHRUB PLANTING DETAIL
 SCALE: NO SCALE



Stake Placement Detail
 FOR EVERGREEN AND DECIDUOUS TREES



Guy Installation Detail
 FOR EVERGREEN AND DECIDUOUS TREES

Howell Township Zoning Ordinance
 Sec. 28.02 General Site Requirements

- A) General site requirements
- One tree per three thousand square feet or portion thereof of any unpaved open area.

Unpaved Open Area:	21888 SF	3000 SF/Tree =	7.30 Tree(s)
Trees Required:	21888 SF /	3000 SF/Tree =	7.30 Tree(s)
Provided:	6 Evergreen Tree(s)	2 Deciduous Tree(s)	
- I) Storm water detention areas and retention ponds
- One tree per 50 lineal feet of detention area's perimeter

North Detention Area Perimeter:	356 LF	50 LF/Tree =	7.13 Tree(s)
Trees Required:	356 LF /	50 LF/Tree =	7.13 Tree(s)
Ten shrubs per 50 lineal feet of detention area's perimeter			
Shrubs Required:	356 LF /	50 LF/10 Shrubs =	71.3 Shrub(s)
Provided:	4 Evergreen Tree(s)	4 Deciduous Tree(s)	72 Shrubs
 - East Detention Area Perimeter: 168 LF

Trees Required:	168 LF /	50 LF/Tree =	3.36 Tree(s)
Ten shrubs per 50 lineal feet of detention area's perimeter			
Shrubs Required:	168 LF /	50 LF/10 Shrubs =	33.6 Shrub(s)
Provided:	2 Evergreen Tree(s)	2 Deciduous Tree(s)	34 Shrubs

Sec. 28.03 Specific landscaping for zoning districts

- A) Requirements for commercial and industrial districts
- Landscaping adjacent to road, one tree per 40 lineal feet of road frontage, one ornamental tree per 100 lineal feet of road frontage, 8 shrubs per 40 lineal feet of road frontage.

Road Frontage:	510 LF		
Trees Required:	510 LF /	40 LF/Tree =	12.75 Tree(s)
Ornamental Trees Required:	510 LF /	100 LF/Tree =	5.10 Tree(s)
Shrubs Required:	510 LF /	40 LF/8 Shrubs =	102.0 Shrub(s)
Provided:	11 Evergreen Tree(s)	2 Deciduous Tree(s)	5 Ornamental Tree(s)
			102 Shrubs
 - Landscaping adjacent to building, one ornamental tree per 35 lineal feet of building frontage facing the road, 5 shrubs per 35 lineal feet of building frontage

Building Frontage:	26 LF		
Ornamental Trees Required:	26 LF /	35 LF/Tree =	0.74 Tree(s)
Shrubs Required:	26 LF /	35 LF/5 Shrubs =	3.7 Shrub(s)
Provided:	1 Ornamental Tree(s)	4 Shrubs	

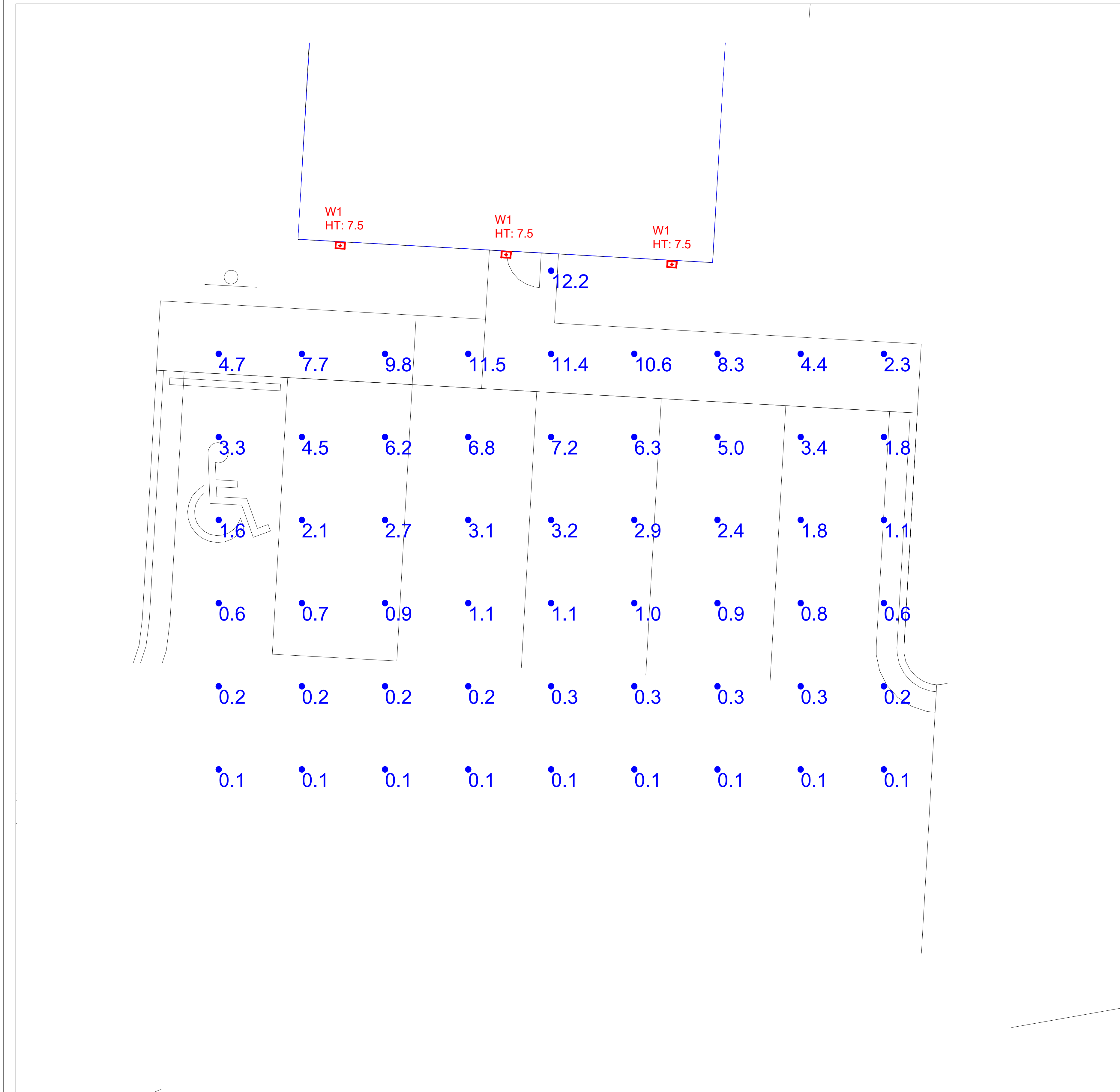
Planting List

Key	Qty	Genus	Common Name	Size	
				Caliper	Height Root
AR	2	Acer rubrum	Red Maple	2.5"	B & B
CO	2	Celtis occidentalis	Common Hackberry	2.5"	B & B
FG	2	Fagus grandifolia	American Beech	2.5"	B & B
QA	4	Quercus Alba	White Oak	2.5"	B & B

Key	Qty	Genus	Common Name	Size	
				Caliper	Height Root
PG	10	Tsuga Canadensis	Eastern Hemlock	6"	B & B
TC	6	Viburnum Prunifolium	Blackhaw Viburnum	1.5"	B & B

Key	Qty	Genus	Common Name	Size	
				Caliper	Height Root
VP	1	Viburnum Prunifolium	Blackhaw Viburnum	1.5"	B & B

Key	Qty	Genus	Common Name	Size	
				Caliper	Height Root
JC	71	Juniperus chinensis 'Sea Green'	Sea Green Juniper	24"	B & B
TX	71	Taxus x media 'Densiformis'	Dense Yew	24"	B & B
TO	70	Thuja occidentalis 'Techny'	Techny Arborvitae	24"	B & B



PLAN VIEW: NOT TO SCALE



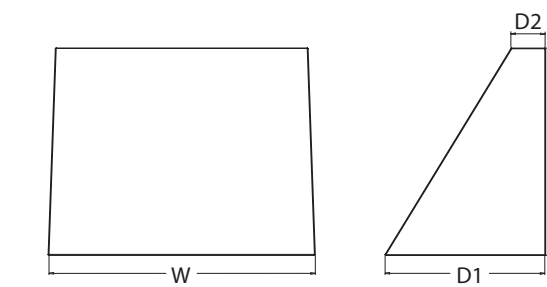
WDGE2 LED
Architectural Wall Sconce
Precision Refractive Optic

Catalog Number
Notes
Type



Specifications

Depth (D1): 7"
Depth (D2): 1.5"
Height: 9"
Width: 11.5"
Weight: 13.5 lbs
(without options)



Introduction

The WDG2 LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectilinear design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing a true site-wide solution. Embedded with nLight® AIR wireless controls, the WDG2 family provides additional energy savings and code compliance.

WDGE2 with industry leading precision refractive optics provides great uniform distribution and optical control. When combined with multiple integrated emergency battery backup options, including an 18W cold temperature option, the WDG2 becomes the ideal wall-mounted lighting solution for pedestrian scale applications in any environment.

WDGE LED Family Overview

Luminaire	Optics	Standard EM, 0°C	Cold EM, 20°C	Sensor	Approximate Lumens (4000K, 80CRI)								
					P0	P1	P2	P3	P4	P5	P6		
WDGE1 LED	Visual Comfort	4W	18W	Standalone / nLight	750	1,200	2,000	3,000	4,200	5,500	6,000	6,500	7,000
WDGE2 LED	Visual Comfort	10W	18W	Standalone / nLight	700	1,200	2,000	3,200	4,200	5,500	6,000	6,500	7,000
WDGE3 LED	Precision Refractive	15W	18W	Standalone / nLight	7,500	8,500	10,000	12,000	15,000	18,000	20,000	22,000	25,000
WDGE4 LED	Precision Refractive	15W	18W	Standalone / nLight	7,500	8,500	10,000	12,000	15,000	18,000	20,000	22,000	25,000

Ordering Information

EXAMPLE: WDG2 LED P3 40K 80CRI VF MVOLT SRM DBBXD

Series	Package	Color Temperature	CRI	Distribution	Voltage	Mounting	Shipped included	Shipped separately
WDGE2 LED	P0	27K	2700K	70CRI	T15	Type I Short	MVOLT	SRM
	P1	30K	3000K	80CRI	T2M	Type II Medium	347	SRM
	P2	40K	4000K	LW Limited Wavelength	T3M	Type III Medium	480	ICW
	P3	50K	5000K	Wavelength	T4M	Type IV Medium	480	ICW
	P4	AMB	Amber	TFTM	Forward Throw Medium			

Options	Finish
E10WH Emergency battery backup, Certified in CA Title 20 MAEDRS (10W, 15W, 18W)	D0810 Dark bronze
E20WC Emergency battery backup, Certified in CA Title 20 MAEDRS (18W, 20°C, min)	D0810 Black
PE Photocell, Bottom Type	D1410 Natural aluminum
DMG 0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately)	D1410 White
BCE Bottom conduit entry for back box (P8BW). Total of 4 entry points.	D5510 Sandstone
BAA Buy America(s) Act Compliant	D0810 Textured dark bronze
	D0810 Textured black
	D1410 Textured natural aluminum
	D1410 Textured white
	D5510 Textured sandstone

LITHONIA LIGHTING COMMERCIAL OUTDOOR One Lithonia Way • Cummins, Georgia 30012 • Phone: 1-800-705-SERV (7378) • www.lithonia.com WDG2 LED Rev. 11/21/22 © 2019-2022 Acuity Brands Lighting, Inc. All rights reserved.

Schedule								
Label	Symbol	Qty	Manufacturer	Catalog Number	Light Loss Factor	Lumens Per Lamp	Watts	Controls
W1	W1	3	LITHONIA W1	WDGE2 LED P3 40K 70CRI T4M	0.900	3552	32.1375	

Statistics					
Description	Avg fc	Max fc	Min fc	Avg/Min (-1)	Max/Min (-1)
PARKING & SIDEWALK	2.84	12.2	0.1	28.40	122.00


GENERAL NOTE
 1. SEE SCHEDULE FOR LUMINAIRE MOUNTING HEIGHT.
 2. CALCULATIONS ARE SHOWN IN FOOT CANDLES AT: 0' - 0". FOOD SERVICE AREA AT: 2' - 6". TREES SHOWN AT BOTTOM OF LEAVES.
 3. ALTERNATE LIGHTING FIXTURES WILL NOT MEET CITY ORDINANCE COMPLIANCE DUE TO THE PRECISE OPTICAL AND OUTPUT PERFORMANCE SELECTED FOR THESE FIXTURES. ALTERNATE LIGHTING PROPOSALS MUST BE RECALCULATED AND RESUBMITTED TO THE CITY FOR APPROVAL. CONTACT LAYOUTS@GASSERBUSH.COM FOR ASSISTANCE WITH ALTERNATE OPTIONS IF NEEDED.
 - THE ENGINEER AND/OR ARCHITECT MUST DETERMINE APPLICABILITY OF THE LAYOUT TO EXISTING / FUTURE FIELD CONDITIONS. THIS LIGHTING LAYOUT REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER'S LUMINAIRE MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, AND OTHER VARIABLE FIELD CONDITIONS. MOUNTING HEIGHTS INDICATED ARE FROM GRADE AND/OR FLOOR UP.
 - THESE LIGHTING CALCULATIONS ARE NOT A SUBSTITUTE FOR INDEPENDENT ENGINEERING ANALYSIS OF LIGHTING SYSTEM SUITABILITY AND SAFETY. THE ENGINEER AND/OR ARCHITECT IS RESPONSIBLE TO REVIEW FOR MICHIGAN ENERGY CODE AND LIGHTING QUALITY COMPLIANCE.
 - UNLESS EXEMPT, PROJECT MUST COMPLY WITH LIGHTING CONTROLS REQUIREMENTS DEFINED IN ASHRAE 90.1 2013. FOR SPECIFIC INFORMATION CONTACT GBA CONTROLS GROUP AT ASG@GASSERBUSH.COM OR 734-266-6705.
 - FOR ORDERING INQUIRIES CONTACT GASSER BUSH AT QUOTES@GASSERBUSH.COM OR 734-266-6705.
 - THIS DRAWING WAS GENERATED FROM AN ELECTRONIC IMAGE FOR ESTIMATION PURPOSE ONLY. LAYOUT TO BE VERIFIED IN FIELD BY OTHERS.
 - MOUNTING HEIGHT IS MEASURED FROM GRADE TO FACE OF FIXTURE. POLE HEIGHT SHOULD BE CALCULATED AS THE MOUNTING HEIGHT LESS BASE HEIGHT.

Michigan Storage Barns_Howell Twn_V1 #23-22423.AGI
 Gasser Bush Associates / Applications
 www.gasserbush.com

Designer: JC3
 Date: 11/14/2023
 Scale: NOT TO SCALE



SPECIFICATION SHEETS ATTACHED AS SEPARATE PDF'S

Schedule								
Label	Symbol	Qty	Manufacturer	Catalog Number	Light Loss Factor	Lumens Per Lamp	Watts	Controls
W1		3	LITHONIA W1	WDGE2 LED P3 40K 70CRI T4M	0.900	3552	32.1375	

EV Smart Commercial Pole Base Housing

Consider including one or more Intelligent Pole Bases (IPB) on your site to future proof for EV Charging stations.

Contact Gasser Bush Associates for more information on IPB and EV Charging Stations at:

www.intelligentpolebase.com

www.gasserbush.com



GENERAL NOTE
 1. SEE SCHEDULE FOR LUMINAIRE MOUNTING HEIGHT.
 2. CALCULATIONS ARE SHOWN IN FOOTCANDLES AT: 0' - 0", FOOD SERVICE AREA AT: 2' - 6". TREES SHOWN AT BOTTOM OF LEAVES
 3. ALTERNATE LIGHTING FIXTURES WILL NOT MEET CITY ORDINANCE COMPLIANCE DUE TO THE PRECISE OPTICAL AND OUTPUT PERFORMANCE SELECTED FOR THESE FIXTURES. ALTERNATE LIGHTING PROPOSALS MUST BE RECALCULATED AND RESUBMITTED TO THE CITY FOR APPROVAL. CONTACT LAYOUTS@GASSERBUSH.COM FOR ASSISTANCE WITH ALTERNATE OPTIONS IF NEEDED."

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 - FOR ORDERING INQUIRIES CONTACT GASSER BUSH AT QUOTES@GASSERBUSH.COM OR 734-266-6705.
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Michigan Storage Barns_Howell Twn_V1 #23-22423.AGI

Gasser Bush Associates / Applications

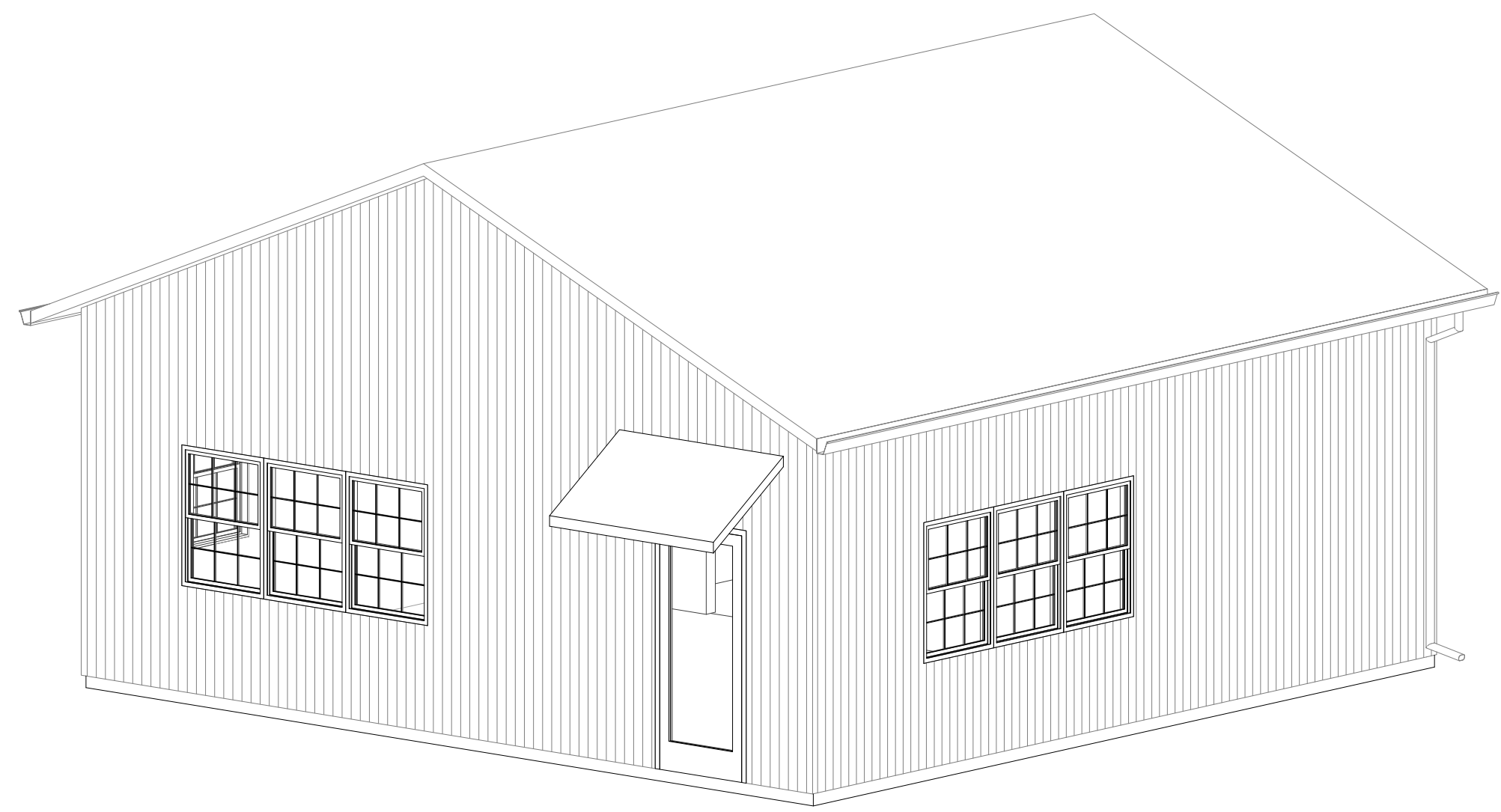
www.gasserbush.com

Designer: JC3

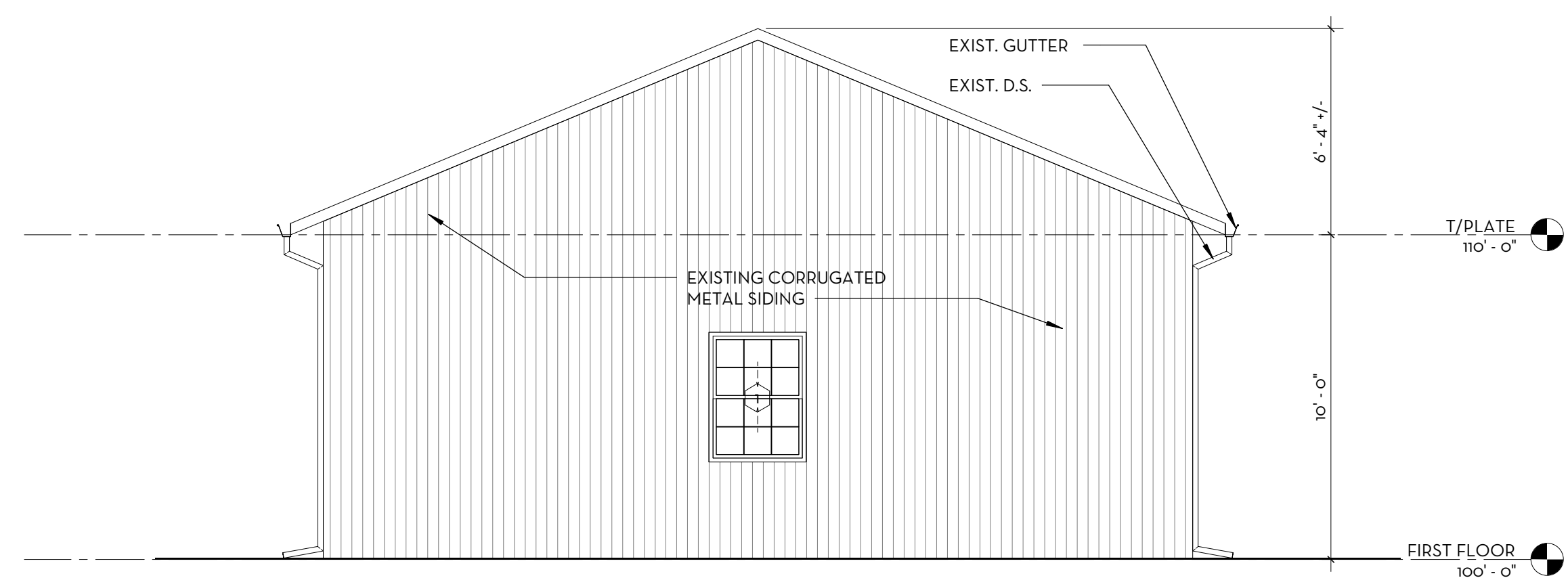
Date: 11/14/2023

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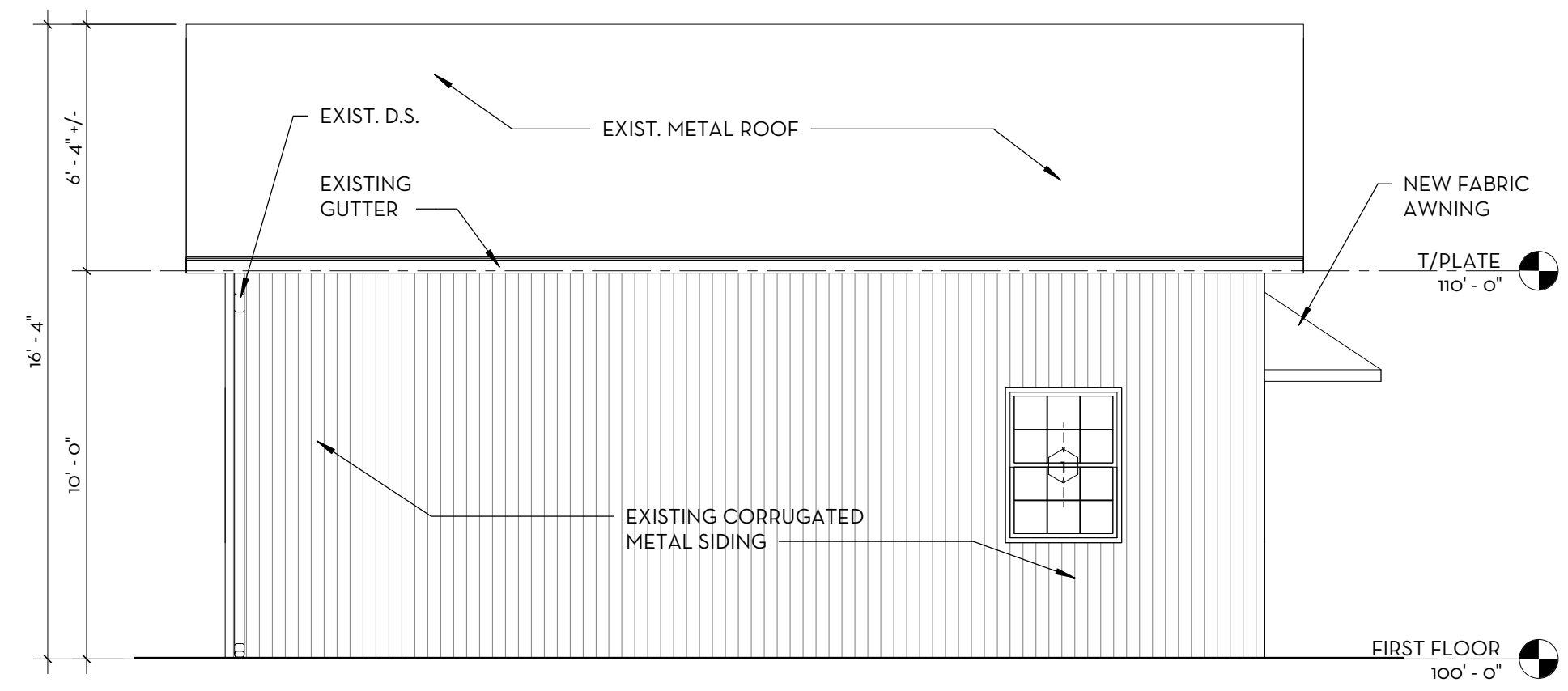




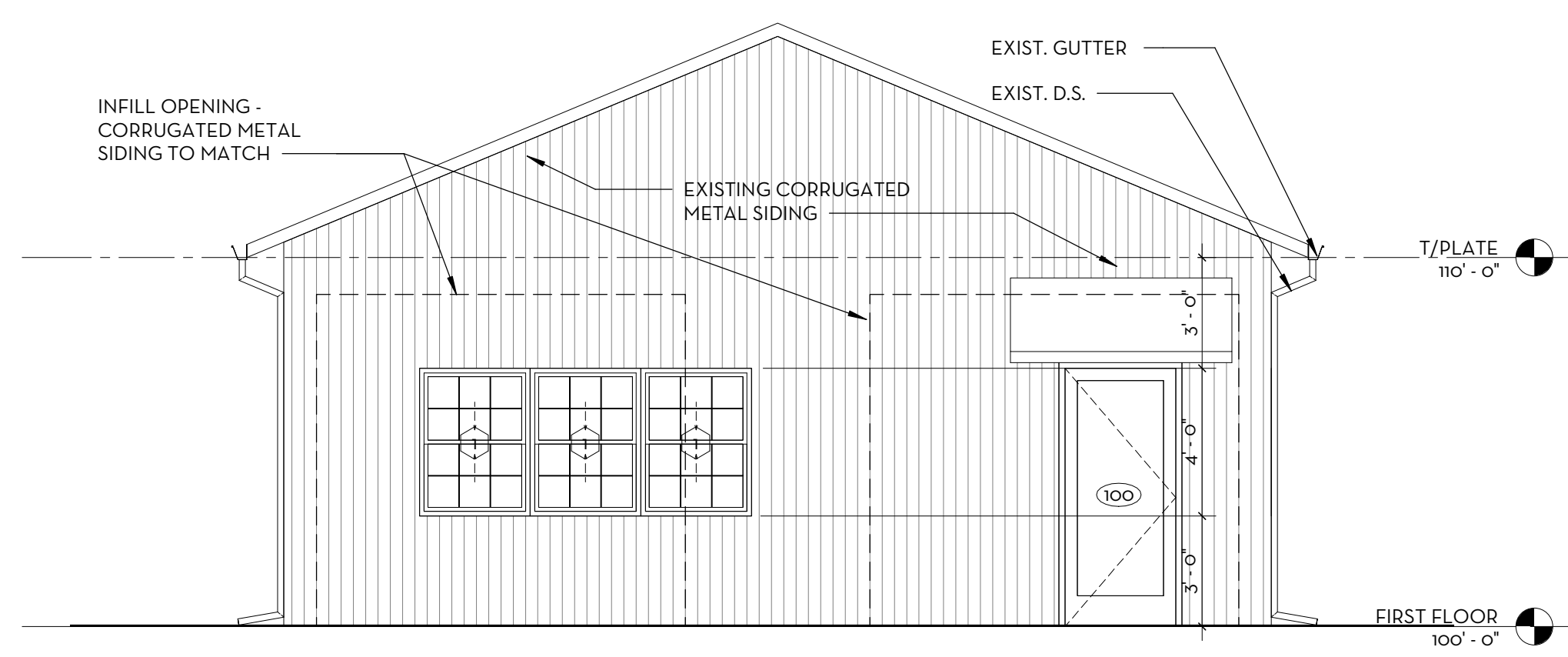
4 PERSPECTIVE
SCALE:



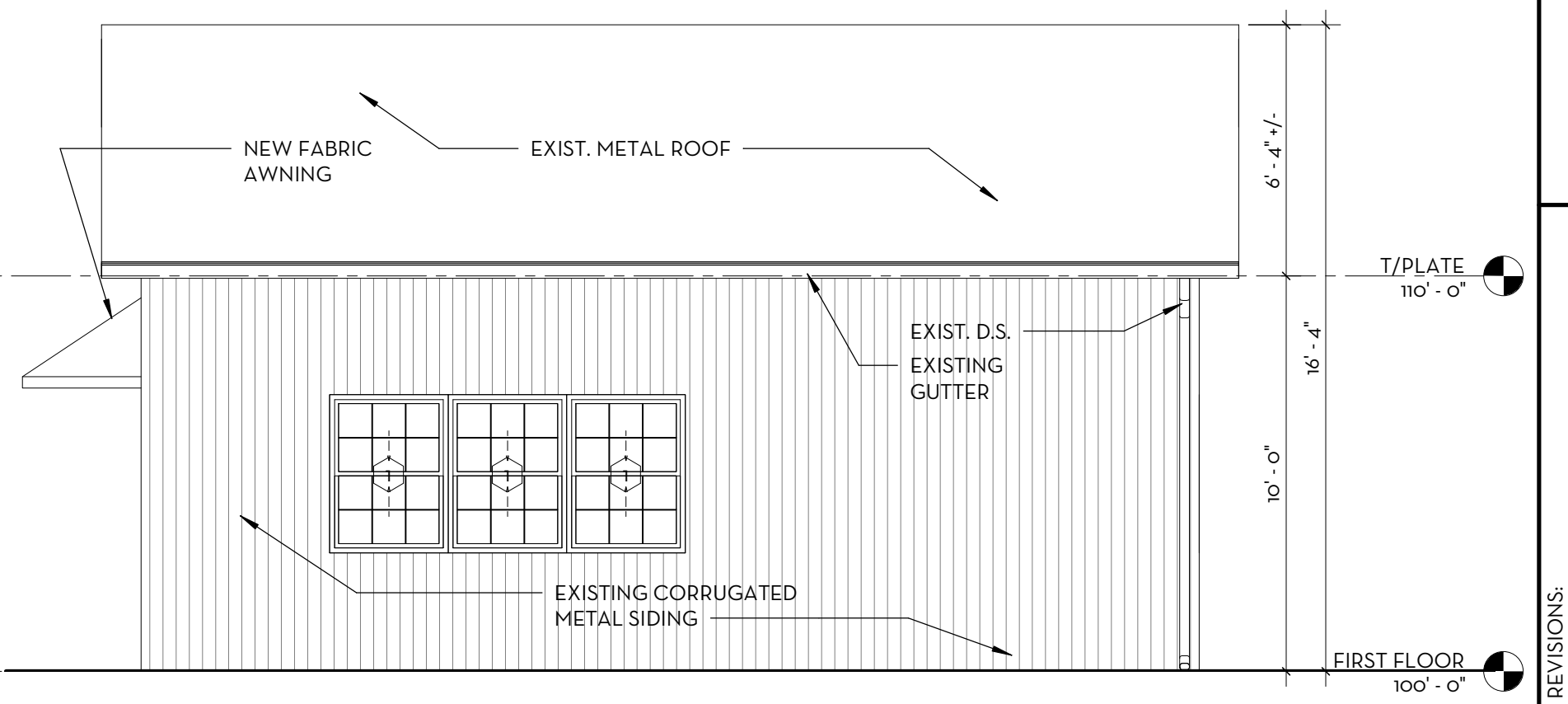
3 NORTH ELEVATION
SCALE: 1/4" = 1'-0"



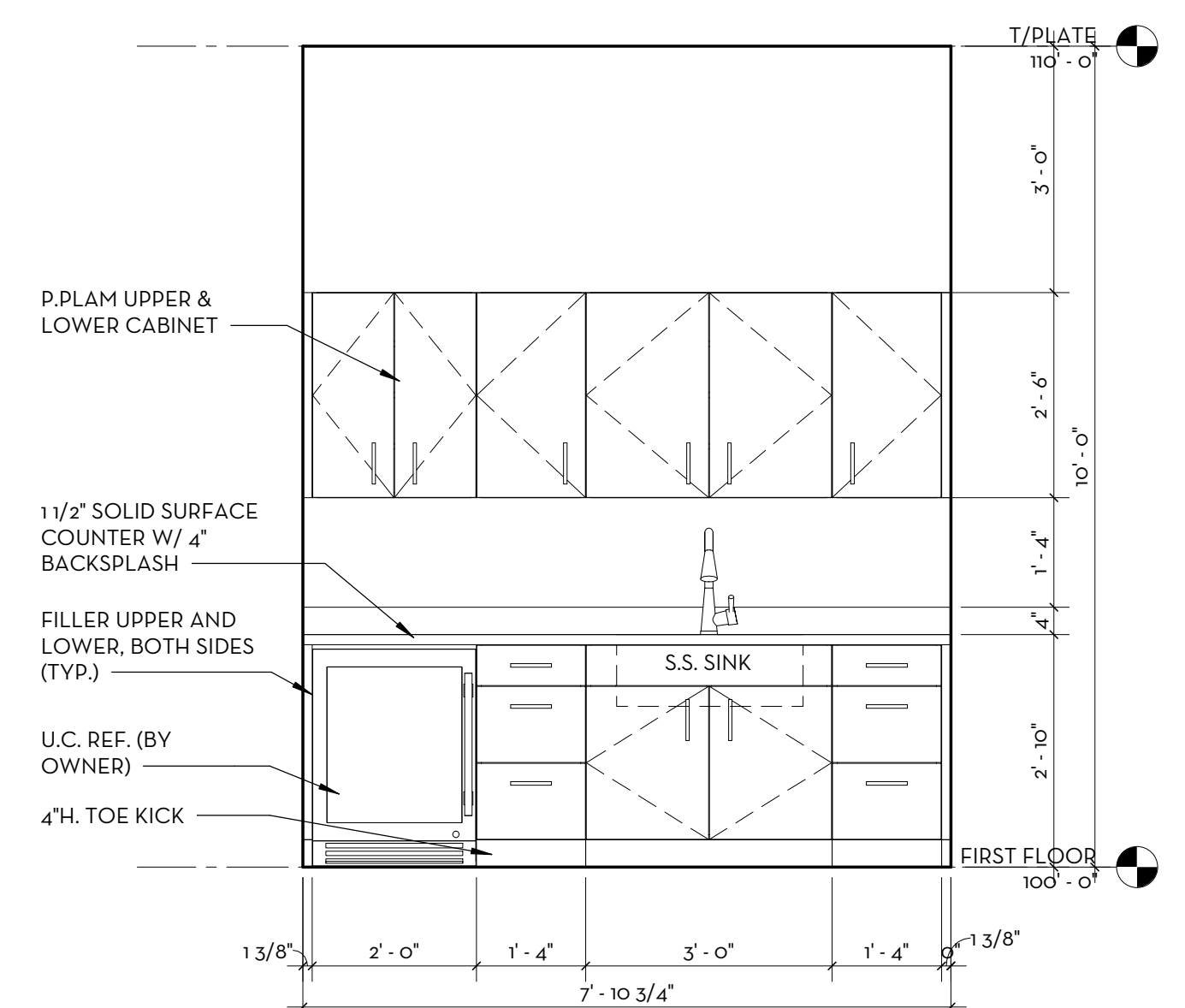
6 WEST ELEVATION
SCALE: 1/4" = 1'-0"



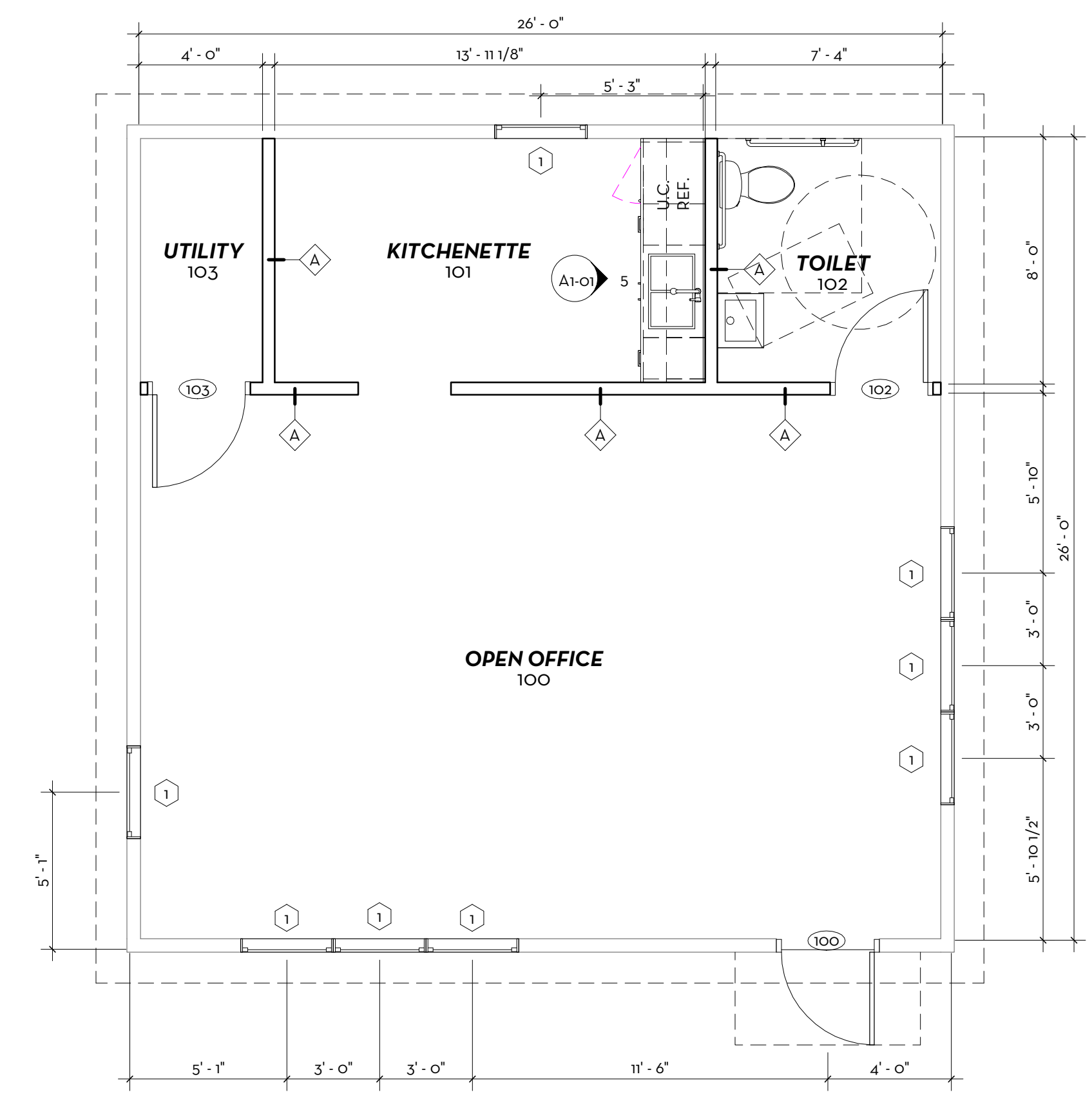
2 SOUTH ELEVATION
SCALE: 1/4" = 1'-0"



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



5 KITCHENETTE ELEV.
SCALE: 1/2" = 1'-0"



FIRST FLOOR PLAN
SCALE: 1/4" = 1'-0"
NORTH





Carlisle | Wortman
ASSOCIATES, INC.

117 NORTH FIRST STREET SUITE 70 ANN ARBOR, MI 48104 734.662.2200 734.662.1935 FAX

Date: April 17, 2024

**Site Plan Review
For
Howell Township, Michigan**

Applicant:	WD Realty
Project Name:	Wranglers Saloon
Plan Date:	April 15, 2024
Location:	4020 W Grand River Ave
Zoning:	Regional Service Commercial District (RSC)
Action Requested:	Preliminary Site Plan Approval

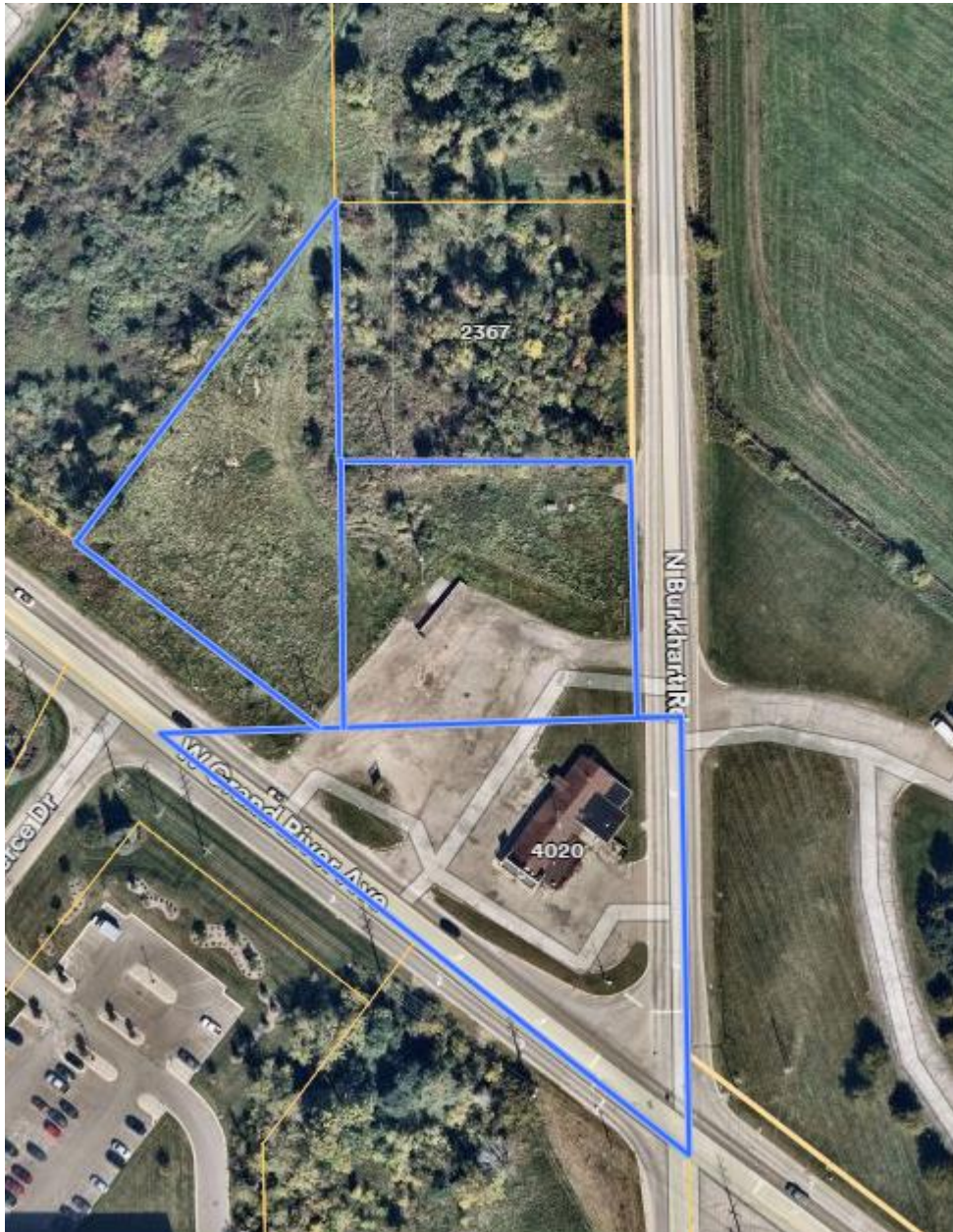
PROJECT AND SITE DESCRIPTION

The applicant has submitted a preliminary site plan dated March 26, 2024, that proposes removal of the existing building and erection of a proposed restaurant with 250-person seating capacity located at 4020 W Grand River Ave otherwise known as parcels #4706-20-201-017, 4706-20-201-018, and 4706-20-400-004. To accommodate the proposed building of Wranglers Saloon, a 7,036 square foot building with the associated parking is proposed. Removal of the existing building and asphalt parking lot are proposed for prior demolition.

The site is currently zoned Regional Service Commercial District (RSC) and is vacant. The proposed restaurant use is a permitted use in the RSC zoning district . Figure 1 provides an arial image of the current site outlined in blue.

Benjamin R. Carlisle, *President* John L. Enos, *Vice President* Douglas J. Lewan, *Principal*
David Scurto, *Principal* Sally M. Elmiger, *Principal* R. Donald Wortman, *Principal* Craig Strong, *Principal*
Paul Montagno, *Principal* Megan Masson-Minock, *Principal* Laura Kreps, *Senior Associate*
Richard K. Carlisle, *Past President/Senior Principal*

Figure 1. Aerial Image of Subject Site and Vicinity



Source: Nearmap

Items to be Addressed: None.

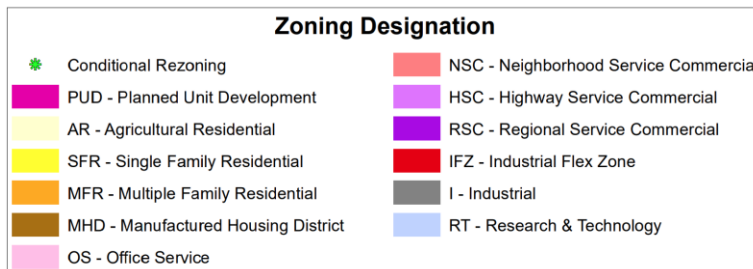
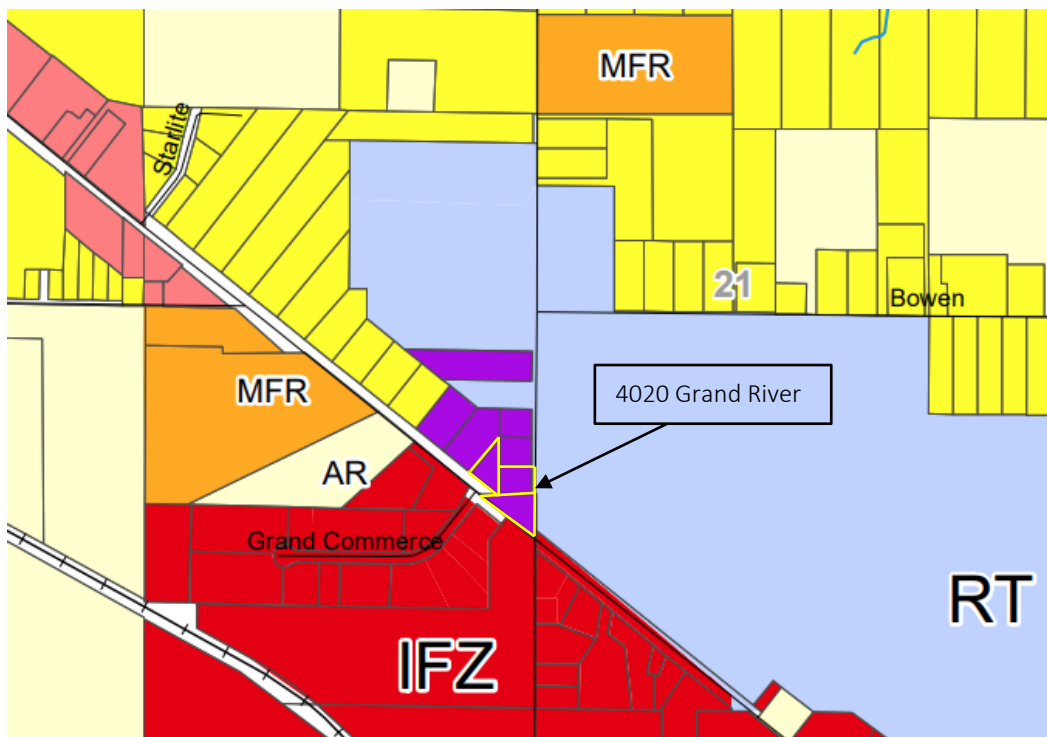
NEIGHBORING ZONING, LAND USE AND MASTER PLAN

Neighboring zoning designations are summarized in Table 1.

Table 1. Zoning District

	Zoning
Subject Site	RSC – Regional Service Commercial
North	RSC- Regional Service Commercial
South	IFZ- Industrial Flex Zone
East	RT-Research and Technology
West	RSC – Regional Service Commercial

Zoning Map



Items to be Addressed: None.

AREA, WIDTH, HEIGHT, SETBACKS

The following table summarizes the Density, Placement, and Height Regulations for the site plan associated with the use.

Table 2. Density, Placement, and Height Regulations

	Required	Provided	Compliance
Lot Area	2 Acres	3.20 Acres	Complies
Lot Width	200 Feet	240 Feet	Complies
Front Setback	35 Feet	59 Feet South 71.5 Feet East	Complies
Side Setback	10 – 25 Feet (10 ft. min with a combine total of 25 ft.)	264.5 Feet West 140.75 Feet North	Complies
Rear Setback	50 Feet	Not Provided	Does not Comply
Lot Coverage	75 % Max	39.7 %	Complies
Building Height	70 Feet Max	Not Given (TBD)	Cannot be determined

The rear setback standards are not listed on the site plan and should be clarified. The definition of a rear lot line is: that lot line opposite the front lot line. In the case of a lot pointed at the rear, the rear lot line shall be an imaginary line parallel to the front lot line not less than ten (10) feet long farthest from the front lot line and wholly within the lot. The property has two front yards, and therefore the west and north property lines are both rear yards.

Section 18.02.E.1 states that all off-street parking spaces shall not be closer than the required front, side and rear yard setbacks in the zoning district in which they are located to any property line

The building height is not included on Sheet C3A in the table Site Statistical Data. Building height shall be provided on the site plan.

Items to be Addressed: 1) The height of the proposed building should be clarified on Sheet C3A.
 2) The rear setback should be reflected on the site plans.

BUILDING LOCATION AND SITE ARRANGEMENT

The proposed building is located at the corner of North Burkhart and W Grand River Avenue. The building placement utilizes the corner to highlight the building and make it a prominent feature of the site with the parking in the back. We feel that the location is appropriate as it appears to honor the historic location of the previous building that was on site.

Items to be Addressed: None.

PARKING, LOADING

The applicant is proposing to demolish the current asphalt parking area to be replaced with 83 vehicular spaces including four (4) barrier-free spaces and thirteen (13) motorcycle spaces. Per section 18.02.G.22, which sets requirements for Restaurants, Beer Parlors, Taverns, Cocktail Lounges, Night Clubs, and Privat Clubs, one (1) space for each four (4) customer seats, plus one (1) parking space for each employee working during maximum employment hours.

Barrier-Free Spaces

There are four (4) proposed barrier-free spaces.

Motorcycle Spaces

There are thirteen (13) proposed motorcycle spaces.

Vehicular Spaces

There are sixty-six (66) proposed vehicular spaces.

Loading Space

There is one (1) loading space proposed.

With the maximum number of employees working during maximum employment hours being twenty (20), one (1) space per four (4) customers being equal to fifty-three (53), the currently proposed eighty-three (83) parking spaces meet the Ordinance requirements.

Items to be Addressed: None.

SITE ACCESS AND CIRCULATION

The applicant provided an emergency vehicle circulation plan which demonstrate proper vehicle traffic flow.

We defer to Engineering and the Fire Chief for further consideration.

Items to be Addressed: None.

NATURAL FEATURES

The location and arrangement of the site post development will see an increase in impervious surfaces which will be mitigated through a series of catch basins in addition to an underground detention basin.

The site plan calls out that the National Wetland Inventory notes no wetlands on the subject parcel and that wetland flagging was not observed during the field survey.

Stamped approval from EGLE will not be required for construction as it is evident that there are no wetlands shown for the property through the EGLE wetland database.

Items to be Addressed: None.

LANDSCAPING

The applicant has provided a landscape plan, as shown in the following table.

Table 3. Landscaping Requirements RSC District

Landscaped Area	Requirement	Factor	Required	Provided
Road Frontages Grand River	1 deciduous or evergreen tree per 40 linear feet	478	12	12
	1 ornamental tree per 100 linear feet		4	5
	Min. of 8 shrubs per every 40 linear feet		96	96
Road Frontages Burkhart	1 deciduous or evergreen tree per 40 linear feet	286	7	7
	1 ornamental tree per 100 linear feet		2	3
	Min. of 8 shrubs per every 40 linear feet		57	57
Foundations	1 ornamental tree per 35 feet of building frontage	359	10	10
	5 shrubs per 35 feet of building frontage		51	51
Stormwater Detention/ Retention Areas	1 deciduous or evergreen tree per 50 feet of perimeter	N/A	N/A	N/A
	10 shrubs per 50 feet of perimeter		N/A	N/A

Berm Landscaping Adjacent to Roads	1 deciduous or evergreen tree per 40 feet of road frontage	Grand River 232	8	8
	1 ornamental tree per 100 feet of road frontage		5	5
	8 shrubs per 40 feet of road frontage		8	8
Berm Landscaping Adjacent to Roads	1 deciduous or evergreen tree per 40 feet of road frontage	Burkhart 56	2	2
	1 ornamental tree per 100 feet of road frontage		1	1
	8 shrubs per 40 feet of road frontage		2	2

The preliminary site plan does not propose the removal of any trees on site. Sheet C8 shows the proposed plant list with botanical and common names listed. The above table reflects the count of proposed landscaping.

Items to be Addressed: None.

LIGHTING

The lighting plan provided on sheet C6, indicates the average lighting level at 0.3 footcandles, with a maximum light level on site being 8.5 footcandles. The lighting level at the boarder around the proposed site is 0.0 footcandles meeting Ordinance standards. Fixture detail indicate downward directed light fixtures mounted at a height of 20 feet.

Items to be Addressed: None.

SIGNS

Site plan references proposed signage but is not reflected in the preliminary plans.

If added, signs will require a separate permit from the Zoning Administrator. A sign application must be filed with the Zoning Administrator, at which time the zoning administrator will determine if the signs meet the requirements of the ordinance.

Items to be Addressed: Provide proposed sign details.

FLOOR PLAN AND ELEVATIONS

Floor plan and elevation sheets have been included in the site plan on sheets A1.0, A2.0, A2.1, A3.0, and A3.1.

Items to be Addressed: None.

TRASH ENCLOSURE


The applicant has indicated that garbage receptacle will be placed and stored outside the building on the East side near the Burkhard entrance. The current plans outline the screening of the receptacle on sheet C12 with appropriate screening provided.

Items to be Addressed: None.

RECOMMENDATIONS

We recommend the following items be addressed before the Planning Commission takes action on the preliminary site plan:

1. The height of the proposed building should be clarified on Sheet C3A.
2. The rear setback should be reflected on the site plans.
3. No parking is permitted in the setback.
4. The applicant shall provide the details of the proposed signage.



CARLISLE/WORTMAN ASSOC., INC.
Paul Montagno, AICP
Principal



CARLISLE/WORTMAN ASSOC., INC.
Grayson Moore
Community Planner

HOWELL TOWNSHIP
Application for Site Plan Review
3525 Byron Road Howell, MI 48855
Phone: 517-546-2817 ext. 108
Email: inspector@howelltownshipmi.org

File # _____

Parcel ID #: 4706- <u>20_201_201-018 & 017 & 400-004</u>	Date _____
Applicant Name <u>Winfreid Dahm</u> Applicant Address <u>118A Grand River, Howell, MI 48843</u>	
Phone <u>810-626-8561</u> Fax _____	Email <u>holly2fogs@gmail.com</u>
Property Owner Name <u>WD Realty / Winfreid Dahm</u>	
Phone <u>810-626-8561</u> Fax _____	Email <u>holly2fogs@gmail.com</u>
Please list all recipients to receive information and/or reports:	
Name: <u>Patrick Cleary</u>	Email: <u>patrickc@bosseng.com</u>
Name: <u>Kathleen Graham</u>	Email: <u>kathleen@grvent.com</u>
Name: _____	Email: _____

Location of Property <u>4020 W Grand River Ave</u>	Current Zoning Classification <u>RSC</u>
Existing Use <u>Restaurant</u>	Proposed Use <u>Restauraunt</u>

Check One:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Preliminary Site Plan Review (20.06) | <input type="checkbox"/> Final Site Plan Review (20.07) |
| <input type="checkbox"/> Temporary Use (14.34) | <input type="checkbox"/> Commercial/Industrial Development |
| <input type="checkbox"/> Subdivision/Site Plan Condo | <input type="checkbox"/> Multi-Family/Condo |
| <input type="checkbox"/> Planned Unit Development (PUD) Type: | 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> |

Applicant needs to provide the following site plan drawings: four (4) full size copies, eight (8) - 11" x 17" copies, and an electronic set (either on an USB drive or provide an online link) for the preliminary site plan drawings. Drawings shall be submitted with an application for site plan review (20.06 a) thirty (30) days prior to the meeting.

The site plan is to contain the following information or the drawing submitted under the Land Use Permit can be utilized if it also contains the following information and is accurately drawn to scale:

- a. The date, north arrow and scale. The scale shall be not less than 1" = 20' for property under three (3) acres and at least 1" = 100' for those (3) acres or more.
- b. Statistical data including number of dwelling units, size of dwelling units, if any, and total gross acreage involved. In the case of a mobile home park, the size and location of each mobile home site shall be shown.
- c. The location and height of all existing and proposed structures on and within 100' of the subject property's boundary.
- d. All lot and/or property lines are to be shown and dimensioned, including building setback lines on corner lots.
- e. The location and dimensions of all existing and proposed drives, sidewalks, curb openings, signs, exterior lighting, curbing, parking areas (show dimensions of a typical parking space), unloading areas and recreation areas.
- f. Vehicular traffic and pedestrian circulation features within and without the site.
- g. The location of all proposed landscaping, fences, or walls.
- h. Size and location of existing and proposed utilities, including proposed connection to public sewer or water supply system.
- i. A location map indicating the relationship of the site to the surrounding land uses.
- j. The location and pavement width and right-of-way width of all abutting roads, streets, alleys, or easements.
- k. Show properties and respective zoning abutting the subject property.
- l. The location and size of all surface water drainage facilities.
- m. Contour intervals shall be shown at a maximum of 2' intervals, with 1' intervals preferred for topographic features of the site.

By signing below the applicant understands and acknowledges the following statements:

- a. The Planning Commission has sixty (60) days from filing date to approve or deny site plan.
- b. Approval of preliminary site plan is valid for a period of one (1) year from date of approval.
- c. A one (1) year extension may be granted upon written request of the applicant and approval by the Planning Commission.
- d. Approval of preliminary site plan shall expire one year after approval of final site plan unless zoning permit has been obtained.
- e. Approval of the final site plan expires six (6) months after approval unless a land use permit application is applied for and granted.

- f. The final site plan approval shall expire one (1) year following the date of approval unless construction has begun on the property in accordance with the plan.
- g. Applicant may appeal the Planning Commission's ruling of the final site plan to the Board of Appeals within ten (10) days of the Planning Commission's decision on all matters except use of the land, use of buildings, or structures.
- h. The Planning Commission has sixty (60) days from the date of the Planning Commission meeting at which the final site plan was received to approve or deny the final site plan.
- i. Improvements not in conformance with the final site plan shall be deemed a violation of the ordinance and be subject to the penalties of the ordinance.
- j. Sewer system and water system tap in fees, if applicable, must be paid prior to issuance of a land use permit.

Applicant hereby deposes and says that all the above statements and information contained in this application and any statements submitted herewith or on the site plan are true and accurate.

[Signature]
 Owner Signature

Winfried Dahm
 Print Name

3.18.24
 Date

Subscribed and sworn to before me this 18th day of March, 2024.

[Signature] Oakland County, Michigan
 Notary Public

My Commission Expires: April 27, 2029.

AMY MCKECHNIE
 NOTARY PUBLIC STATE OF MICHIGAN
 COUNTY OF GENESEE
 My Commission Expires April 27 2029
 Acting in the County of Oakland

**Howell Township
Reimbursement Agreement**

The applicant accepts responsibility for all expenses at actual cost for professional services related to the application required by the Township for the issuance of any permits, approvals, reviews and attendance at meetings; by the Township's Planner, Landscape Architects, Legal Counsel, Engineering and Administrative Staff, over and above the fees listed in the Howell Township fee schedule.

Information for Additional Billing:

Name Julie Haapala Address 118 A West Grand River Howell 48843
Phone (248) 891-9024 Email twopl1c@gmail.com

I have read and agree to the reimbursement agreement as presented between myself/my company and Howell Township.

Applicant Signature [Signature] Date 3-18-24

Notary Public
Oakland County, Michigan
My Commission Expires: 4-27-2029

Owner Signature [Signature] Date 3-18-24

Notary Public
Oakland County, Michigan
My Commission Expires: 4-27-2029

AMY MCKECHNIE
NOTARY PUBLIC STATE OF MICHIGAN
COUNTY OF GENESEE
My Commission Expires April 27 2029
Acting in the County of Oakland

Howell Township Development Fee Schedule

	Application Fee	Escrow Amount	
Residential Land Use Permits			
Waiver	\$10.00		
Deck/Fence/Pool	\$50.00		
New Construction (single dwelling)	\$75.00		
New Construction (multiple units)	\$75.00	per unit	
Additions	\$75.00		
Accessory Structures	\$75.00		
Temporary Use Permit	\$50.00		
Temporary Structure (mobile home)	\$50.00	\$2,000.00	
Demolition Permit	\$50.00	\$3,000.00	
Sewer Connection	\$5,000.00		
Water Conn. (assessed property)	\$5,000.00		
Water Conn. (unassessed property)	\$5,000.00	Plus \$3,500.00 to MHOG	
Delivery to Building Department	\$60.00		
Commercial Land Use Permits			
Waiver	\$50.00		
Accessory Structures	\$150.00		
Grading	\$250.00		
New Construction / Additions	\$250.00		
Temporary Use Permit	\$150.00	\$3,000.00	
Demolition Permit	\$150.00	\$3,000.00	minimum
Sewer Connection per REU	\$5,000.00		
Water Conn. per REU (assessed property)	\$5,000.00		
Water Conn. per REU (unassessed property)	\$5,000.00	Plus \$3,500.00 to MHOG	
Sign Permit			
Temporary Sign	\$75.00		
Signs under 32 sq. ft.	\$150.00		
Signs over 32 sq. ft.	\$225.00		
Outdoor Advertising (Billboards)	\$1,000.00		
Address Assignment			
Addressing	\$25.00	per address	
Zoning Board of Appeals			
Single Family Residential / Agricultural	\$400.00		
Commercial	\$900.00		

Planning - Site Plan Review				
Temporary Use	\$250.00		\$500.00	
Special Land Use	\$500.00		\$1,000.00	
Private Road	\$500.00		\$4,000.00	
Preliminary Site Plan Review Residential Development Commercial/Office/Industrial	\$1,400.00		\$6,000.00	
Final Site Plan Review Residential Development Commercial/Office/Industrial	\$1,400.00		\$6,000.00	
Pre-application Meeting Zoning Administrator, Planner, Engineer	\$350.00	per unit or as billed		
Planned Unit Development	\$2,000.00		\$20,000.00	
PUD Plan Amendment	\$500.00			
Rezoning/Text Amendment	\$1,000.00			

HOWELL TOWNSHIP
Industrial/Commercial Sewer Audit User Survey

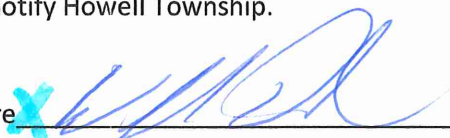
3525 Byron Road Howell, MI 48855

Phone: 517-546-2817 ext. 108

Email: inspector@howelltownshipmi.org

Parcel ID #: 4706- <u>20 201 018</u>	Date <u>3-18-24</u>
Corporate Name <u>WD Realty</u>	Corporate Address _____
Facility Name <u>Wrangler</u>	Facility Address <u>4020 West Grand River</u>
Name and Title of Applicant <u>Winfreid Dahm</u>	
Phone <u>(810) 626-8561</u>	Fax _____ Email <u>Holly2Fogs@gmail.com</u>
Date this Company First Opened for Business <u>TBD</u>	

I certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. If operational changes result in modifications to this questionnaire, please notify Howell Township.

Signature  _____ Date 3/18/24

Print Name and Title Winfreid Dahm

1. What type of work is performed at this location?

Restaurant / Bar

2. Are operations subject to seasonal variation? Yes No
If yes, indicate seasonal dates, number of personnel, shifts and flow:

3. Number of bathrooms, toilets, urinals, sinks:

8 toilets, 3 urinals 7 lavatories 1 shower

4. What types of wastes do you discharge to the sanitary system?

- Sanitary Only Wash Water Rinse Water
 Process Water Scrubber Water Cooling Water

Other, explain: _____

5. Does a third-party haul waste from your facility to be treated off-site?

- No Yes

If yes:

Name of Industrial Waste Hauler _____

License Number _____ Last Pick-up Date _____ Amount _____

Types of Waste _____

6. Hazardous Material Information:

Do you, or will you, use or store any acids, bases, or hazardous materials that are listed on the attached Priority Pollutants/Critical Materials list and are of a quantity larger than 5 gallons?

- No Yes

7. Do you, or will you, discharge any of the above mentioned materials to the sanitary sewer?

- No Yes

If yes, list pollutants and amounts on the following table (attach additional pages if necessary)

Material	Volume	Type of Storage	Location

8. Are there any floor drains located near chemical?

- No Yes

9. Do you have any grease traps?

No

Yes

If yes, how many? /

10. Does your industry pre-treat the wastewater produced before discharging it into the sewer?

No

Yes

If yes, explain _____

11. Has your industry ever had your wastewater tested by a lab?

No

Yes

If yes, what were the results (attach lab reports):

EASEMENT AGREEMENT

This **EASEMENT AGREEMENT** ("Agreement") is made effective as of July 20, 2023 (the "Effective Date") between **LIVINGSTON COMMERCE CENTER CO-OWNERS ASSOCIATION**, a Michigan non-profit corporation ("Grantor"), whose address is 3575 W. Grand River, Howell, Michigan 48855 and **WD REALTY, LLC**, a Michigan limited liability company ("Grantee"), whose address is 118 W. Grand River Avenue, Howell, Michigan 48843. Grantor and Grantee are sometimes each referred to herein as a "Party", or collectively, the "Parties".

RECITALS

- A. Grantor is the "Association" set forth in the Master Deed (together with any and all amendments, the "Master Deed") of LIVINGSTON COMMERCE CENTER, a condominium according to the Master Deed thereof recorded in Liber 3691, Page 18, Livingston County (Michigan) Records, and designated as Livingston County Condominium Subdivision Plan No. 267 (the "Condominium Project"), which Condominium Project is more fully described on Exhibit "A" attached hereto.
- B. Pursuant to the Master Deed and the Michigan Condominium Act, being Act 59 of the Public Acts of Michigan of 1978, as amended (the "Condominium Act"), the Association is responsible for the operation, management, maintenance, repair, replacement and administration of the "General Common Elements" (as defined in the Master Deed) of the Condominium Project.
- C. Grantee is the owner of certain real property located in the Township of Howell, Livingston County, Michigan more particularly described on Exhibit "B" attached hereto (the "Grantee Parcel").
- D. Certain existing General Common Element storm water drainage improvements and infrastructure located within the Condominium Project, including without limitation drainage lines, pipes, culverts and ditches located within a thirty foot (30.0') wide area, the centerline of which is described on Exhibit "C" attached hereto, along with the storm water retention area/basin at the western part of the Condominium Project (collectively, the "Drainage Improvements"), serve and benefit the Grantee Parcel and have served and benefitted the Grantee Parcel for many years prior to the date of this Agreement. A sketch of the part of the Condominium Project where the Drainage Improvements are located is attached hereto as Exhibit "D".
- E. The Parties wish to consent, acknowledge and agree to the continued use of such Drainage Improvements in accordance with past practices and the terms and conditions of this Agreement

NOW, THEREFORE, for and in consideration of the promises, easements, rights, restrictions and encumbrances set forth below, and other good and valuable consideration, including without limitation the

payment of the sum of Ten and 00/100 Dollars (\$10.00), the receipt and sufficiency of which are acknowledged, and intending to be legally bound, the Parties agree as follows:

1. **Incorporation of Recitals.** The Recitals set forth above are hereby incorporated by reference.
2. **Acknowledgement of Improvements.** The Grantor hereby acknowledges the existence of the Drainage Improvements as General Common Elements of the Condominium Project.
3. **Grant of Easement.** Grantor hereby grants to Grantee and Grantee's successors and assigns, and any future owner of the Grantee Parcel or any part thereof, a perpetual, non-exclusive easement to drain stormwater from the Grantee Parcel into the Drainage Improvements and through the Drainage Improvements on the Condominium Project and into the storm water retention/basin at the western part of the Condominium Project. Grantor waives any and all claims against the Grantee and any prior owners and operators of the Grantee Parcel arising out of the prior drainage of stormwater from the Grantee Parcel onto the Condominium Project, including without limitation into the Drainage Improvements or any similar improvements or infrastructure on the Condominium Project.
4. **Maintenance of Drainage Improvements.** The Grantee agrees to contribute to the cost of the maintenance and repair of the Drainage Improvements on a percentage basis, with the percentage of costs for which the Grantee is responsible for being equal to the contributing fraction of the Grantee Parcel's (as developed) contribution to the overall volume entering into the existing Livingston Commerce Center detention basin. The numerator of this fraction will be the stormwater discharge from the Grantee Parcel as calculated using the final civil engineering construction plans as approved by the Livingston County Michigan Drain Commissioner and the denominator of which is the total volume of stormwater flowing into the existing Livingston Commerce Center detention basin as detailed in the "Summary of Hydrologic and Hydraulic Analysis and Detention Basin Design for Livingston Commerce Center" dated "Revised May, 2004" by Livingston Engineering, L.C. Brighton, MI.
5. **Reservation of Rights.** Grantor reserves all right, title and interest in and to the Condominium Project which may be used, enjoyed, modified, developed and improved without interfering with the easements and rights created by this Agreement.
6. **Duration.** Unless otherwise canceled or terminated as expressly provided by the terms of this Agreement, all of the easements and rights granted in this Agreement, and the obligations created by it, shall continue in perpetuity; provided, however, that if any term or provision would otherwise be unlawful, void or voidable for violation of the Rule Against Perpetuities or any other provision of statutory or common law pertaining to the duration of easements and rights, then the term or provision shall be effective only until the date which is twenty-one (21) years after the death of the last surviving descendant, currently living, of the former Presidents of the United States alive on the date of this Agreement.
7. **No Consents Required.** Each Party represents and warrant to the other Party that no consent or approval of any third party is required to for such Party to enter into and deliver this Agreement, to perform its obligations hereunder and for this Agreement to otherwise be fully binding and enforceable in accordance with its terms.
8. **Miscellaneous.**
 - a. This Agreement shall be perpetual in nature, shall run with the land and shall benefit and burden, as the case may be, the Condominium Project and the Grantee Parcel and be binding upon the Parties and

their respective heirs, administrators, personal representatives, successors and assigns. This Agreement shall be recorded with the Livingston County Register of Deeds.

b. Each of the individuals executing this Agreement on behalf of a Party represents and warrants that he or she has been authorized to do so and has full power and authority to bind the Party for whom he/she is signing. Without limitation on the foregoing, the Grantor represents and warrants to the Grantee that this Agreement, and the performance of the Association's obligations hereunder, have been approved by the Association's board of directors in accordance with the Association's Bylaws and otherwise in accordance with Michigan law.

c. In any legal or equitable proceeding to determine the rights of the parties to enforce or restrain the breach of this Agreement, the prevailing party in the proceeding shall be entitled to recover from the losing party all reasonable attorneys' fees and legal costs (including paralegal and legal research fees) and expenses incurred by the prevailing party.

d. This Agreement may only be modified by a written instrument signed by the Grantor and the owner of the Grantee Parcel and recorded with the Livingston County Register of Deeds.

e. If any provision of this Agreement or the application of it to any person or circumstances shall, to any extent, be held invalid, inoperative or unenforceable, the remainder of this Agreement, or the application of such provision, to any other person or circumstance shall not be affected; and, the remainder of this Agreement shall be given effect as if such invalid or inoperative portion had not been included.

f. This Agreement shall be construed in accordance with the internal laws of the State of Michigan, without regard to conflict of laws principles.

g. This Agreement and the Exhibits attached to it set forth the entire agreement between the parties governing the Properties. There are no other statements, promises, representations or understandings, oral or written, by and between the Parties.

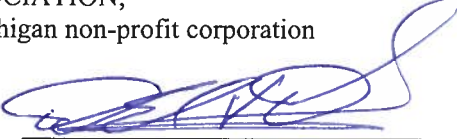
h. This Agreement may be executed in two (2) or more counterparts, each of which shall be an original but such counterparts together shall constitute one and the same instrument notwithstanding that all Parties are not signatories to the same counterpart. Signature and acknowledgment pages may be detached from the counterparts and attached to a single copy of this Agreement to physically form one (1) instrument.

[SIGNATURES ON FOLLOWING PAGES]

IN WITNESS WHEREOF, the Parties have executed this Agreement the day and year first written above.


GRANTOR:

LIVINGSTON COMMERCE CENTER CO-OWNERS
ASSOCIATION,
a Michigan non-profit corporation

By: 
Name: Donald V Doty
Title: President

STATE OF MICHIGAN)
)SS.
COUNTY OF Livingston)

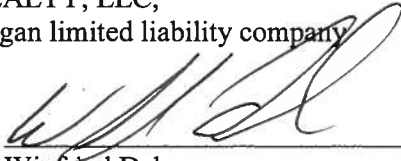
The undersigned certifies that on JULY 20, 2023, the foregoing instrument was acknowledged before me by Donald V Doty, the President of the Livingston Commerce Center Co-Owners Association, a Michigan non-profit corporation, as his/her free and deed on behalf of said corporation.


Notary Public
State of Michigan, County of Livingston
Acting in Livingston County, LIVINGSTON
My commission expires: 6/29/2029

CARRIE CONINE
Notary Public – State of Michigan
County of Livingston
My Commission Expires June 29, 2029
Acting in the County of Livingston

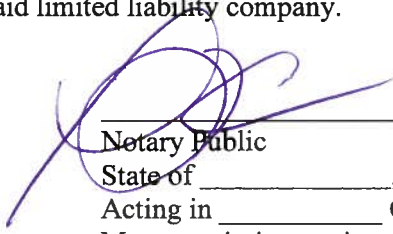
GRANTEE:

WD REALTY, LLC,
a Michigan limited liability company

By: 
Winfried Dahm
Title: Manager

STATE OF MICHIGAN)
)SS.
COUNTY OF Oakland)

The undersigned certifies that on May 17, 2023, the foregoing instrument was acknowledged before me by Winfried Dahm, the Manager of WD Realty, LLC, a Michigan limited liability company, as his free act and deed on behalf of said limited liability company.



Notary Public
State of _____, County of _____
Acting in _____ County, _____
My commission expires: _____

Drafted by and when recorded return to:

Thomas R. August, Esq.
Dawda, Mann, Mulcahy & Sadler, PLC
Dawda Mann Building
35933 Woodward Avenue, Suite 200
Bloomfield Hills, MI 48304
(248) 642-3700

Patricia L. Chapman
Notary Public, State of Michigan
County of Oakland
My Commission Expires 9/18/2025
Acting in the County of Oakland

Exhibit A

Legal Description – Condominium Project

LAND LOCATED IN THE TOWNSHIP OF HOWELL, LIVINGSTON COUNTY, MICHIGAN, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

UNITS 1-17, LIVINGSTON COMMERCE CENTER, A CONDOMINIUM ACCORDING TO THE MASTER DEED THEREOF RECORDED IN LIBER 3691, PAGE 18, LIVINGSTON COUNTY (MICHIGAN) RECORDS, AND DESIGNATED AS LIVINGSTON COUNTY CONDOMINIUM SUBDIVISION PLAN NO. 267, AS AMENDED BY A FIRST AMENDMENT TO MASTER DEED RECORDED IN LIBER 4013, PAGE 399, A SECOND AMENDMENT TO MASTER DEED RECORDED IN LIBER 4502, PAGE 182, A THIRD AMENDMENT TO MASTER DEED RECORDED AS INSTRUMENT NO. 2016R-024180 AND A FOURTH AMENDMENT TO MASTER DEED RECORDED AS INSTRUMENT NO. 2016R-027493, TOGETHER WITH ALL GENERAL COMMON ELEMENTS AND LIMITED COMMON ELEMENTS ESTABLISHED UNDER SAID MASTER DEED (AS AMENDED).

Formerly known as:

PART OF THE SE ¼ OF SECTION 20, T3N-R4E, HOWELL TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN BEING DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTH ¼ CORNER OF SAID SECTION 20, THENCE ALONG THE NORTH-SOUTH ¼ LINE OF SAID SECTION 20, N 00°36'18" W, 662.48 FEET TO THE POINT OF BEGINNING OF THE PARCEL TO BE DESCRIBED; THENCE CONTINUING ALONG SAID NORTH-SOUTH ¼ LINE OF SECTION 20, N 00°36'18" W, 662.59 FEET; THENCE N 89°44'45" E, 2100.61 FEET; THENCE N 27°19'35" E, 183.30 FEET; THENCE ALONG THE CENTERLINE OF GRAND RIVER AVENUE (120 FOOT WIDE) S 52°12'45" E, 327.00 FEET; THENCE S 36°56'10" W, 189.42 FEET; THENCE S 01°31'10" E, 471.90 FEET; THENCE S 89°43'29" W, 2334.88 FEET TO THE POINT OF BEGINNING AND CONTAINING 36.25 ACRES, MORE OR LESS.

Exhibit B

Legal Description – Grantee Parcel

LAND LOCATED IN THE TOWNSHIP OF HOWELL, LIVINGSTON COUNTY, MICHIGAN, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

PARCEL 1:

A PART OF THE EAST ½ OF THE SOUTHEAST ¼ OF SECTION 20, TOWN 3 NORTH, RANGE 4 EAST, HOWELL TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN, DESCRIBED AS FOLLOWS: BEGINNING 1229.4 FEET SOUTH OF THE EAST ¼ POST OF SAID SECTION 20; THENCE SOUTH 308.8 FEET TO THE CENTERLINE OF HIGHWAY US-16; THENCE NORTH 52 DEGREES WEST 490 FEET ALONG CENTER OF SAID HIGHWAY; THENCE EAST 383.3 FEET TO THE PLACE OF BEGINNING.

PARCEL 2:

LOTS 1 AND 26, NEWMAN'S GRAND VIEW ESTATES, AS RECORDED IN LIBER 8, PAGE 24 OF PLATS, LIVINGSTON COUNTY RECORDS.

TAX PARCEL NUMBERS: 0620400004, 0620201018 AND 0620201017.

COMMONLY KNOWN AS: 4020 W. GRAND RIVER AVENUE.

Exhibit C

Legal Description – Centerline of Thirty Foot (30.0') Wide Easement

LAND LOCATED IN THE TOWNSHIP OF HOWELL, LIVINGSTON COUNTY, MICHIGAN, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

PART OF THE SOUTHEAST $\frac{1}{4}$ OF SECTION 20, T3N-R4E, HOWELL TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN, MORE PARTICULARLY DESCRIBED AS FOLLOWS: BEGINNING AT THE NORTHWEST CORNER OF UNIT 5 OF "LIVINGSTON COMMERCE CENTER" LIVINGSTON COUNTY CONDOMINIUM SUBDIVISION PLAN NO. 267; THENCE ALONG THE COMMON LINE OF UNITS 4 AND 5 OF SAID CONDOMINIUM, N 89°44'45" E, 562.83 FEET; THENCE S 89°51'55" E, 149.64 FEET; THENCE N 89°43'29" E, 720.07 FEET; THENCE N 86°43'34" E, 147.69 FEET; THENCE N 44°19'32" E, 238.23 FEET; THENCE N 52°12'45" W, 69.50 FEET; THENCE N 37°47'15" E, 121.71 FEET TO THE POINT OF ENDING ON THE NORTH LINE OF UNIT 1 OF SAID CONDOMINIUM, BEING S 89°44'45" W, 19.05 FEET FROM THE NORTHEAST CORNER OF SAID UNIT 1.

Exhibit D

Area Where Drainage Improvements Located

(see attached)

DRAWING No. 8

MATCHLINE

SEE

S89°44'45"W

15
MNL FF=035.0

4
MNL FF=034.0

16
MNL FF=035.0

3
MNL FF=035.0

17
MNL FF=035.0

2
MNL FF=037.0

18
MNL FF=043.0

1
MNL FF=040.0

2334.88'

19
MNL FF=043.0

20
MNL FF=040.0

21
MNL FF=045.0

2100.61'

PARCEL #1 OF LIVINGSTON
COMMERCE CENTER - REFER
TO PAGE 3 FOR MORE DETAIL

Grand Commerce Drive

S27°19'36"W
183.30'

S57°12'45"W
157.00'

BURKHART AVE.
66 FT. WIDE R.O.W.

GRAND RIVER AVE.
120 FT. WIDE R.O.W.

WRANGLER'S SITE

GRAND RIVER R.O.W.

EXISTING CULVERT (UNDER
GRAND RIVER)

LEGEND

- WATER MAIN
- SEWER
- SANITARY SEWER
- HIGHWAY
- CATCH BASIN

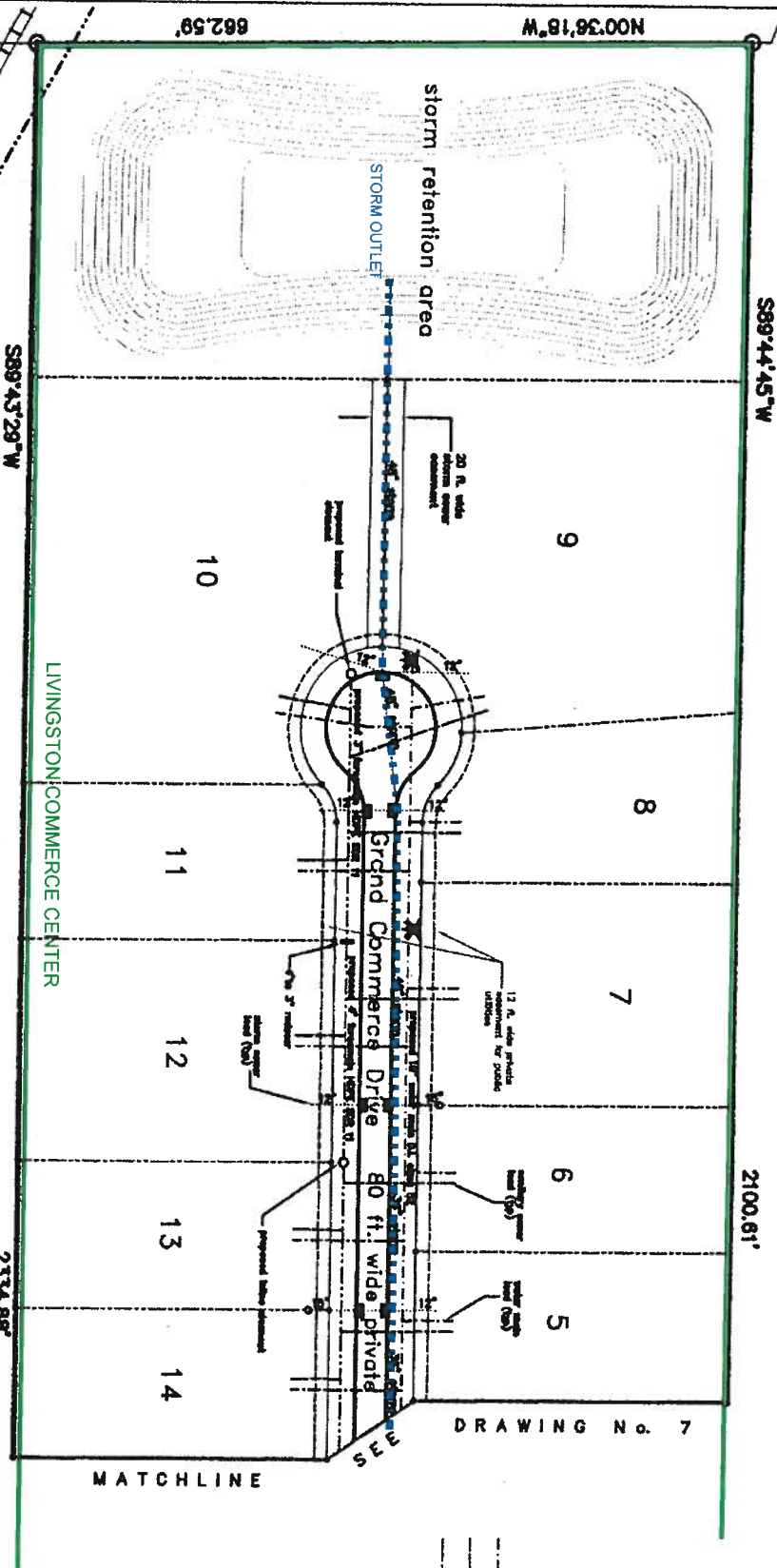


PROPOSED DATED 12-19-2008

	ADVANTAGE CIVIL ENGINEERING	LIVINGSTON COMMERCE CENTER SECTION 20 HOWELL TWP. UTILITY PLAN	LIVINGSTON COMMERCE CENTER, L.L.C. 7208 KENNEDY RD. BRIGHTON MI 48025 248-640-9000
	7		

ORDER SECTION 20 TOWN OF HOWELL

S 1/4 COR SECTION 20 TOWN OF HOWELL



DRAWING No. 7

- LEGEND**
- WATER MAIN
 - STORM SEWER
 - SANITARY SEWER
 - INTERCUT
 - CATCH BASIN

MATCHLINE

LIVINGSTON COMMERCE CENTER

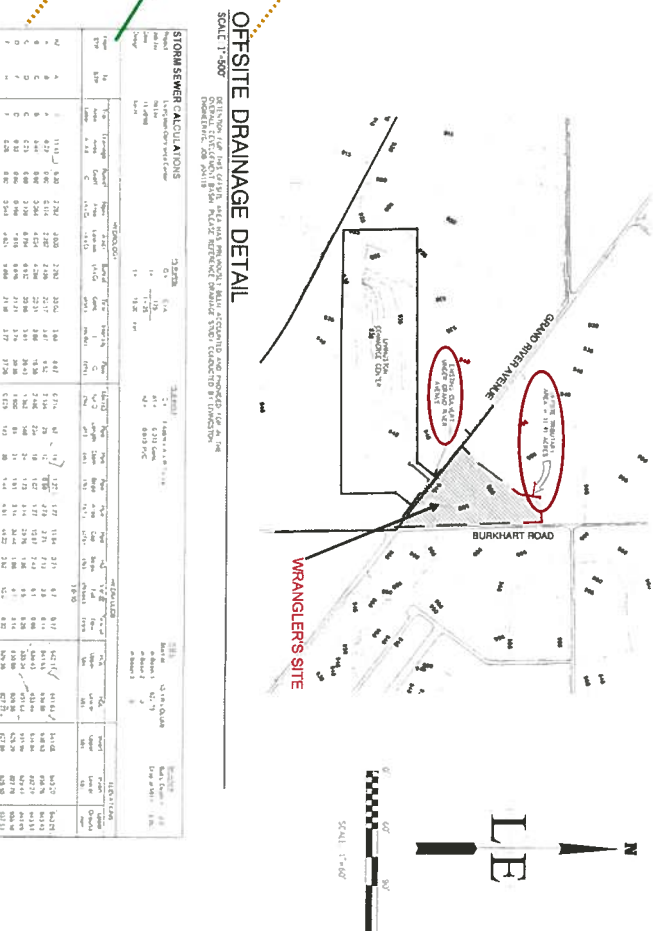
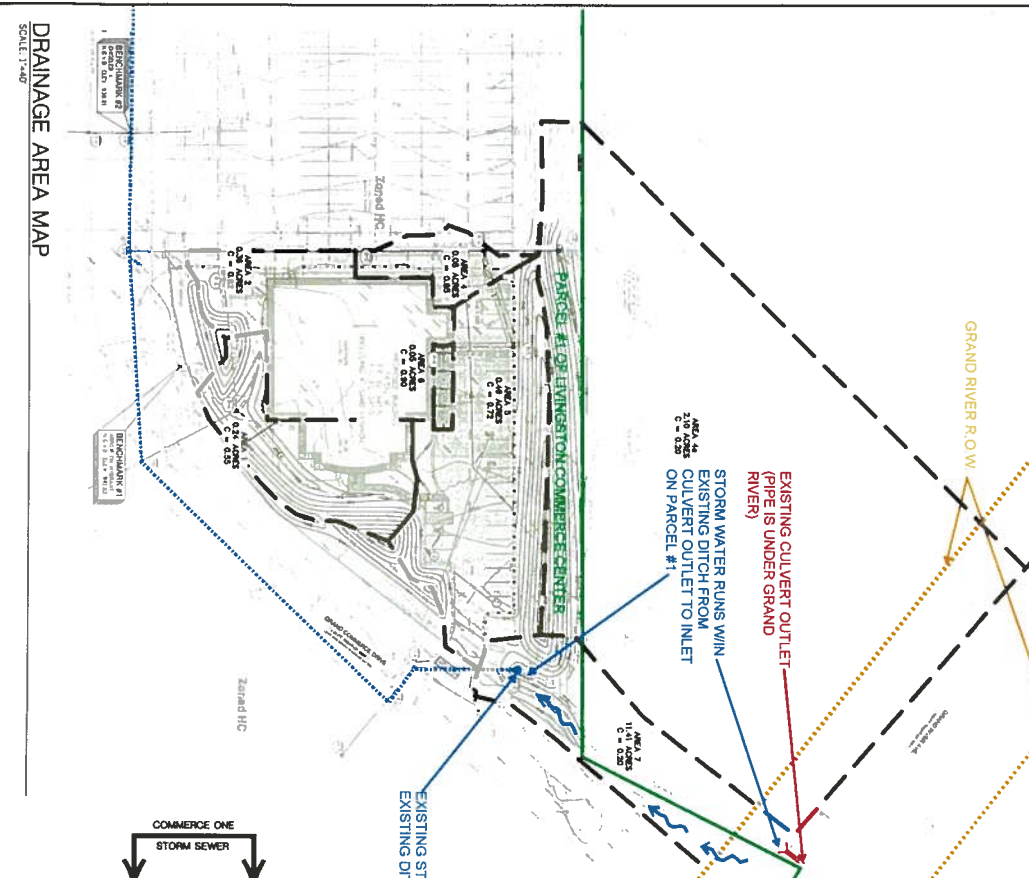
PROPOSED DATED 12-16-2002



8		ADVANTAGE CIVIL ENGINEERING	LIVINGSTON COMMERCE CENTER SECTION 20 HOWELL TWP.	LIVINGSTON COMMERCE CENTER, L.L.C. 7250 LIVINGSTON RD. SPRINGTOWN NJ 07081 908-440-8000
		UTILITY PLAN		

LEGEND

EXISTING	PROPOSED
12" DIAM. CONCRETE	18" DIAM. CONCRETE
12" DIAM. POLYETHYLENE GLASS REINFORCED SAND LIME CEMENT	18" DIAM. POLYETHYLENE GLASS REINFORCED SAND LIME CEMENT
6" DIAM. POLYETHYLENE GLASS REINFORCED SAND LIME CEMENT	6" DIAM. POLYETHYLENE GLASS REINFORCED SAND LIME CEMENT
4" DIAM. POLYETHYLENE GLASS REINFORCED SAND LIME CEMENT	4" DIAM. POLYETHYLENE GLASS REINFORCED SAND LIME CEMENT
18" DIAM. CONCRETE	18" DIAM. CONCRETE
PROPOSED LIMIT OF DRAINAGE AREA	



PROPOSED SEWER CALCULATIONS

Scale: 1"=40' (Elevation in feet)

Station	Station	Station	Station	Station	Station	Station	Station	Station	Station	Station	Station	Station	Station	Station
1+00	1+20	1+40	1+60	1+80	2+00	2+20	2+40	2+60	2+80	3+00	3+20	3+40	3+60	3+80
1+00	1+20	1+40	1+60	1+80	2+00	2+20	2+40	2+60	2+80	3+00	3+20	3+40	3+60	3+80
1+00	1+20	1+40	1+60	1+80	2+00	2+20	2+40	2+60	2+80	3+00	3+20	3+40	3+60	3+80
1+00	1+20	1+40	1+60	1+80	2+00	2+20	2+40	2+60	2+80	3+00	3+20	3+40	3+60	3+80
1+00	1+20	1+40	1+60	1+80	2+00	2+20	2+40	2+60	2+80	3+00	3+20	3+40	3+60	3+80
1+00	1+20	1+40	1+60	1+80	2+00	2+20	2+40	2+60	2+80	3+00	3+20	3+40	3+60	3+80

EXISTING STORM INLET WINN

Station	Station	Station	Station	Station	Station	Station	Station	Station	Station
1+00	1+20	1+40	1+60	1+80	2+00	2+20	2+40	2+60	2+80
1+00	1+20	1+40	1+60	1+80	2+00	2+20	2+40	2+60	2+80
1+00	1+20	1+40	1+60	1+80	2+00	2+20	2+40	2+60	2+80
1+00	1+20	1+40	1+60	1+80	2+00	2+20	2+40	2+60	2+80
1+00	1+20	1+40	1+60	1+80	2+00	2+20	2+40	2+60	2+80
1+00	1+20	1+40	1+60	1+80	2+00	2+20	2+40	2+60	2+80

EXISTING STORM DITCH

Station	Station	Station	Station	Station	Station	Station	Station	Station	Station
1+00	1+20	1+40	1+60	1+80	2+00	2+20	2+40	2+60	2+80
1+00	1+20	1+40	1+60	1+80	2+00	2+20	2+40	2+60	2+80
1+00	1+20	1+40	1+60	1+80	2+00	2+20	2+40	2+60	2+80
1+00	1+20	1+40	1+60	1+80	2+00	2+20	2+40	2+60	2+80
1+00	1+20	1+40	1+60	1+80	2+00	2+20	2+40	2+60	2+80
1+00	1+20	1+40	1+60	1+80	2+00	2+20	2+40	2+60	2+80

EASEMENT AGREEMENT

This **EASEMENT AGREEMENT** (“**Agreement**”) is made effective as of June 30, 2023 (the “**Effective Date**”) between Adrian Tonon, Trustee of the Chiarina S. Tonon Living Trust dated July 27, 2004 (“**Grantor**”), whose address is 30715 West Ten Mile Road, Farmington Hills, Michigan 48336 and **WD REALTY, LLC**, a Michigan limited liability company (“**Grantee**”), whose address is 118 W. Grand River Avenue, Howell, Michigan 48843. Grantor and Grantee are sometimes each referred to herein as a “**Party**”, or collectively, the “**Parties**”.

RECITALS

- A. Grantor is the owner of certain real property located in the Township of Howell, Livingston County, Michigan more particularly described on Exhibit "A" attached hereto (the "**Grantor Parcel**").
- B. Grantee is the owner of certain real property located in the Township of Howell, Livingston County, Michigan more particularly described on Exhibit "B" attached hereto (the "**Grantee Parcel**").
- C. Certain existing storm water drainage improvements and infrastructure located on the Grantor Parcel serves and benefits the Grantee Parcel and has served and benefitted the Grantee Parcel for many years prior to the date of this Agreement.
- D. The Parties wish to consent, acknowledge and agree to the continued use of such improvements and infrastructure in accordance with the terms and conditions of this Agreement

NOW, THEREFORE, for and in consideration of the promises, easements, rights, restrictions and encumbrances set forth below, and other good and valuable consideration, including without limitation the payment of the sum of Ten and 00/100 Dollars (\$10.00), the receipt and sufficiency of which are acknowledged, and intending to be legally bound, the Parties agree as follows:

- 1. **Incorporation of Recitals.** The Recitals set forth above are hereby incorporated by reference.
- 2. **Acknowledgement of Improvements.** The Grantor hereby acknowledges the existence of certain stormwater drainage improvements and infrastructure within the part of the Grantor Parcel described on Exhibit "C" attached hereto (the "**Easement Parcel**"), including without limitation culverts, pipes, lines and related appurtenances and improvements (collectively, as now existing or as modified, replaced and improved in the future, the "**Drainage Improvements**").
- 3. **Grant of Easement.** Grantor hereby grants to Grantee and Grantee's successors and assigns, and any future owner of the Grantee Parcel or any part thereof, a perpetual, non-exclusive easement to drain

stormwater from the Grantee Parcel into the Drainage Improvements and through the Drainage Improvements on the Easement Parcel.

4. **Maintenance of Drainage Improvements.** Grantee shall be responsible for one hundred percent (100%) of the cost to maintain and repair the Drainage Improvements, other than such costs that arise out of the reckless or unlawful acts of the Grantor. Grantee's payment of its cost of the maintenance or repair of the Drainage Improvements shall be due within seven (7) days of Grantor's demand, which shall be accompanied by reasonable evidence of the costs.

5. **Reservation of Rights.** Grantor reserves all right, title and interest in and to the Grantor Parcel which may be used, enjoyed, modified, developed and improved without interfering with the easements and rights created by this Agreement.

6. **Duration.** Unless otherwise canceled or terminated as expressly provided by the terms of this Agreement, all of the easements and rights granted in this Agreement, and the obligations created by it, shall continue in perpetuity; provided, however, that if any term or provision would otherwise be unlawful, void or voidable for violation of the Rule Against Perpetuities or any other provision of statutory or common law pertaining to the duration of easements and rights, then the term or provision shall be effective only until the date which is twenty-one (21) years after the death of the last surviving descendant, currently living, of the former Presidents of the United States alive on the date of this Agreement.

7. **No Consents Required.** Each Party represents and warrant to the other Party that no consent or approval of any third party is required to for such Party to enter into and deliver this Agreement, to perform its obligations hereunder and for this Agreement to otherwise be fully binding and enforceable in accordance with its terms.

8. **Indemnity.** To the fullest extent permitted by law, and in connection with the Easement Parcel and Drainage Improvements, Grantee agrees to defend, indemnify, and hold harmless Grantor and its trustee and beneficiaries from and against any and all loss, costs, damages, expenses, attorney fees, claims and suits of whatever kind or nature, including but not limited to personal injury, death, injury to or damage or destruction of the Grantor Parcel, arising out of or in any way connected with the Grantee's use of the Easement Parcel or the Drainage Improvements.

9. **Miscellaneous.**

a. This Agreement shall be perpetual in nature, shall run with the land and shall benefit and burden, as the case may be, the Grantor Parcel (including without limitation the Easement Parcel) and the Grantee Parcel and be binding upon the Parties and their respective heirs, administrators, personal representatives, successors and assigns. This Agreement shall be recorded with the Livingston County Register of Deeds.

b. Each of the individuals executing this Agreement on behalf of a Party represents and warrants that he or she has been authorized to do so and has full power and authority to bind the Party for whom he/she is signing.

c. In any legal or equitable proceeding to determine the rights of the Parties to enforce or restrain the breach of this Agreement, the prevailing party in the proceeding shall be entitled to recover from the losing party all reasonable attorneys' fees and legal costs (including paralegal and legal research fees) and expenses incurred by the prevailing party.

d. This Agreement may only be modified by a written instrument signed by the owners of each of the Grantor Parcel and Grantee Parcel and recorded with the Livingston County Register of Deeds.

e. If any provision of this Agreement or the application of it to any person or circumstances shall, to any extent, be held invalid, inoperative or unenforceable, the remainder of this Agreement, or the application of such provision, to any other person or circumstance shall not be affected; and the remainder of this Agreement shall be given effect as if such invalid or inoperative portion had not been included.

f. This Agreement shall be construed in accordance with the internal laws of the State of Michigan, without regard to conflict of laws principles.

g. This Agreement and the Exhibits attached to it set forth the entire agreement between the parties governing the Properties. There are no other statements, promises, representations or understandings, oral or written, by and between the Parties.

h. This Agreement may be executed in two (2) or more counterparts, each of which shall be an original but such counterparts together shall constitute one and the same instrument notwithstanding that all Parties are not signatories to the same counterpart. Signature and acknowledgment pages may be detached from the counterparts and attached to a single copy of this Agreement to physically form one (1) instrument.

i. Any notice or correspondence shall be in writing and be deemed given upon personal delivery or sending an email and be deemed properly addressed if given at the following:

If to Grantor: Chiarina S. Tonon Living Trust
Attn: Adrian Tonon
30715 West Ten Mile Road
Farmington Hills, MI 48336

With a copy to: Adrian Tonon
5677 Trumbull
Suite #215
Detroit, MI 48208

If to Grantee: WD Realty, LLC
118 W. Grand River, Avenue
Howell, MI 48843

With a copy to: Dawda, Mann, Mulcahy & Sadler, PLC
Attn: Thomas R. August
39533 Woodward Avenue
Suite #200
Bloomfield Hills, MI 48304
Email: taugust@dmms.com

[SIGNATURES ON FOLLOWING PAGES]

IN WITNESS WHEREOF, the Parties have executed this Agreement the day and year first written above.

GRANTOR:

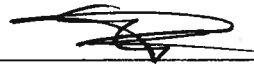
CHIARINA S. TONON LIVING TRUST DATED
JULY 27, 2004



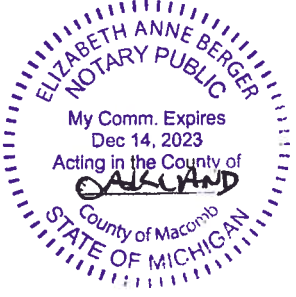
By: _____
Name: Adrian Tonon
Title: Trustee

STATE OF MICHIGAN)
)SS.
COUNTY OF OAKLAND)

The undersigned certifies that on JUNE 30, 2023, the foregoing instrument was acknowledged before me by Adrian Tonon, the Trustee of the Chiarina S. Tonon Living Trust dated July 27, 2004, as his/her free act and deed on behalf of said trust.

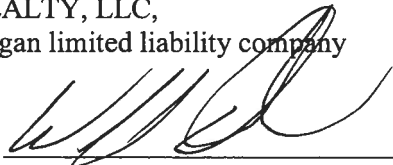


Notary Public
State of MI, County of OAKLAND
Acting in OAKLAND, County OAKLAND
My commission expires: 12-14-2023



GRANTEE:

WD REALTY, LLC,
a Michigan limited liability company

By: 
Winfried Dahm
Title: Manager

STATE OF MICHIGAN)
COUNTY OF Oakland)SS.

The undersigned certifies that on May 17, 2023, the foregoing instrument was acknowledged before me by Winfried Dahm, the Manager of WD Realty, LLC, a Michigan limited liability company, as his free act and deed on behalf of said limited liability company.


Notary Public
State of _____, County of _____
Acting in _____, County _____
My commission expires: _____

Drafted by and when recorded return to:

Thomas R. August, Esq.
Dawda, Mann, Mulcahy & Sadler, PLC
Dawda Mann Building
35933 Woodward Avenue, Suite 200
Bloomfield Hills, MI 48304
(248) 642-3700

Patricia L. Chapman
Notary Public, State of Michigan
County of Oakland
My Commission Expires 9/18/2025
Acting in the County of Oakland

Exhibit A

Legal Description – Grantor Parcel

LAND LOCATED IN THE TOWNSHIP OF HOWELL, LIVINGSTON COUNTY, MICHIGAN, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

PART OF THE NORTH ½ OF THE SOUTHEAST ¼ OF SECTION 20, TOWN 3 NORTH, RANGE 4 EAST, DESCRIBED AS: COMMENCING AT THE CENTER OF SAID SECTION 20; THENCE SOUTH 01 DEGREES 06 MINUTES 00 SECONDS WEST 1322.00 FEET; THENCE SOUTH 88 DEGREES 05 MINUTES 00 SECONDS EAST 1799.50 FEET TO THE POINT OF BEGINNING OF THE PARCEL TO BE DESCRIBED; THENCE NORTH 28 DEGREES 23 MINUTES 09 SECONDS EAST 312.09 FEET TO THE SOUTHERLY RIGHT OF WAY OF GRAND RIVER AVENUE; THENCE NORTH 50 DEGREES 02 MINUTES 21 SECONDS WEST ALONG SAID SOUTHERLY RIGHT OF WAY 217.11 FEET; THENCE NORTH 48 DEGREES 35 MINUTES 43 SECONDS EAST 60.70 FEET TO THE CENTERLINE OF GRAND RIVER AVENUE; THENCE SOUTH 50 DEGREES 02 MINUTES 21 SECONDS EAST ALONG SAID CENTERLINE 474.38 FEET; THENCE SOUTH 29 DEGREES 30 MINUTES 00 SECONDS WEST 183.30 FEET; THENCE NORTH 88 DEGREES 05 MINUTES 00 SECONDS WEST 301.00 FEET TO THE POINT OF BEGINNING, SUBJECT TO THE RIGHTS OF THE PUBLIC OVER THE EXISTING GRAND RIVER AVENUE.

TAX PARCEL NUMBER: 06-20-400-011.

COMMONLY KNOWN AS: VACANT PARCEL, GRAND RIVER AVENUE, HOWELL, MI.

Exhibit B

Legal Description – Grantee Parcel

LAND LOCATED IN THE TOWNSHIP OF HOWELL, LIVINGSTON COUNTY, MICHIGAN, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

PARCEL 1:

A PART OF THE EAST ½ OF THE SOUTHEAST ¼ OF SECTION 20, TOWN 3 NORTH, RANGE 4 EAST, HOWELL TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN, DESCRIBED AS FOLLOWS: BEGINNING 1229.4 FEET SOUTH OF THE EAST ¼ POST OF SAID SECTION 20; THENCE SOUTH 308.8 FEET TO THE CENTERLINE OF HIGHWAY US-16; THENCE NORTH 52 DEGREES WEST 490 FEET ALONG CENTER OF SAID HIGHWAY; THENCE EAST 383.3 FEET TO THE PLACE OF BEGINNING.

PARCEL 2:

LOTS 1 AND 26, NEWMAN'S GRAND VIEW ESTATES, AS RECORDED IN LIBER 8, PAGE 24 OF PLATS, LIVINGSTON COUNTY RECORDS.

TAX PARCEL NUMBERS: 0620400004, 0620201018 AND 0620201017.

COMMONLY KNOWN AS: 4020 W. GRAND RIVER AVENUE.

Exhibit C

Legal Description – Easement Parcel

LAND LOCATED IN THE TOWNSHIP OF HOWELL, LIVINGSTON COUNTY, MICHIGAN, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

PART OF THE SOUTHEAST 1/4 OF SECTION 20, T3N-R4E, HOWELL TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN, MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE CENTER OF SECTION 20; THENCE SOUTH 01 DEGREE 06 MINUTES 00 SECONDS WEST, 1,322.00 FEET; THENCE SOUTH 88 DEGREES 05 MINUTES 00 SECONDS EAST, 2,066.65 FEET, TO THE POINT OF BEGINNING OF THE EASEMENT TO BE DESCRIBED; THENCE NORTH 29 DEGREES 30 MINUTES 00 SECONDS EAST, 204.51 FEET; THENCE SOUTH 50 DEGREES 02 MINUTES 21 SECONDS EAST, 30.51 FEET; THENCE SOUTH 29 DEGREES 30 MINUTES 00 SECONDS WEST, 183.30 FEET; THENCE NORTH 88 DEGREES 05 MINUTES 00 SECONDS WEST, 33.85 FEET, TO THE POINT OF BEGINNING.

PART OF TAX PARCEL NUMBER: 06-20-400-011.

INFILTRATION STUDY
WRANGLER'S RESTAURANT
4020 GRAND RIVER AVENUE
HOWELL TOWNSHIP, MICHIGAN

LINDHOUT ASSOCIATES
10465 CITATION DRIVE
BRIGHTON, MICHIGAN 48116

JUNE 27, 2022
BY
McDOWELL & ASSOCIATES

McDowell & Associates

Geotechnical, Environmental & Hydrogeological Services • Materials Testing & Inspection

21355 Hatcher Avenue • Ferndale, MI 48220
Phone: (248) 399-2066 • Fax: (248) 399-2157
www.mcdowasc.com

June 27, 2022

Lindhout Associates
10465 Citation Drive
Brighton, Michigan 48116

Attention: Mr. Jason McIntyre

Job No. 22-229

Subject: Infiltration Study
Wrangler's Restaurant
4020 Grand River Avenue
Howell Township, Michigan

Dear Mr. McIntyre:

In accordance with your request, we have performed an Infiltration Study at the subject site. The purpose of this study is to evaluate infiltration capabilities of the subsoils relative to the proposed stormwater management system. Our findings are presented below.

Field Work & Laboratory Testing

Two Test Pits, designated as TP-8 and TP-9, were excavated to respective depths of about thirteen feet (13') and eight feet three inches (8'3") below the existing ground surface. The test pits were excavated at locations selected and staked by others at the approximate locations shown on the accompanying Soil Boring & Test Pit Location Plan. The soil borings have not been completed at the time of this report and are not discussed further. Descriptions of the soil and groundwater conditions encountered at the test pit locations may be found on the Test Pit Log sheets which accompany this report.

Following completion of the excavations, the test pits were prepared for infiltration testing using double ring infiltrometers. Infiltration test preparation consisted of excavating a soil bench adjacent to the primary test pit excavation. On the benched soil, two double ring infiltrometers with open bottoms were installed at a depth of about two inches (2") into the soil bench. Extra care was exercised to maintain a good seal between the steel tubing and in-situ soils to prevent loss of test water. Following installation of the two infiltrometers, a thin needle-punch geotextile filter was placed above the soil in the inner ring of each infiltrometer, and the pipes were filled with about five inches (5") of potable water to initiate the "soak period". A representative soil sample was obtained at the test location.

Once the appropriate soak period duration was maintained in each infiltrometer, the casings were refilled with potable water and the infiltration test was initiated. Throughout the course of testing, water level readings within the inner ring of the infiltrometers were obtained and recorded at specific

time intervals. It should be noted that water level readings were taken to the nearest sixteenth of an inch (1/16"). Water level readings from each infiltration test may be found on the Test Pit Log sheets.

Soil descriptions and depths shown on the test pit logs are approximate indications of change from one soil type to another and are not intended to represent an area of exact geologic change or stratification. Also, the site shows some signs of modification which could indicate fill and soil conditions different from those encountered at the test pit locations.

Groundwater Conditions

Groundwater was encountered in seams of sand within primarily clay soils at initial depths of about eight feet in both test pits. After a period of about two hours, the water level in Test Pit TP-8 was recorded at twelve feet (12') below the existing ground surface. It should be recognized that the water level observations made in the test pits may not be reliable indications of the depth of the seasonal high water table at the site. Water levels in granular soils fluctuate with seasonal and climatic changes as well as the amount of rainfall in the area immediately prior to the measurements. It should be expected that groundwater fluctuations could occur on a seasonal basis.

Infiltration Test Results & Recommendations

It is understood that the proposed stormwater management system will have a bottom invert at about eight feet (8') below the existing ground surface at the test pit locations. Infiltration tests were performed at a depth of about six feet (6') due to the presence of wet sand seams at or near a depth of eight feet (8') in both test pits. The soil tested at about six feet (6') appeared very similar to the soil encountered at eight feet (8') in both test pits. Infiltration tests performed in Test Pits TP-8 and TP-9 resulted in no noticeable infiltration in the 30-minute readings performed after the soak period. It should be noted that measurements were taken to the nearest sixteenth of an inch (1/16"). Based on the indications from TP-8 and TP-9, the site soils are not suitable for infiltration at the proposed location and depth of the stormwater management system.

Conclusions

An infiltration investigation was done at the site via test pits and infiltration tests. Experience indicates that the actual subsoil conditions at the site could vary from those generalized on the basis of the test pits made at specific locations. McDowell & Associates should be notified if any soil variations from those described in this letter are encountered to determine their effects on the recommendations presented herein. The evaluations and recommendations presented in this report have been formulated on the basis of reported or assumed data relating to the proposed project. Any significant change in this data in the final design plans should be brought to our attention for review and evaluation with respect to the prevailing subsoil conditions.

If you have any questions or need additional information, please do not hesitate to call.

Very truly yours,

McDOWELL & ASSOCIATES

A handwritten signature in black ink, appearing to read "David Quintal". The signature is written in a cursive, flowing style.

David Quintal, M.S., P.E.
Geotechnical Engineer

DQ/

Attachments: Test Pit Log sheets (2 pp)
 Soil Boring and Test Pit Location Plan (1 p)



Test Pit Log

Test Pit #: 8

Job Number: 22-229

Date: 6/22/2022

Project: Wrangler's Restaurant

Weather: Sunny

Location: Howell, Livingston County, Michigan

Ground Elv.: N/A

Soil Stratigraphy:	Pipe Installation #1
0 - 5" Moist dark brown sandy Topsoil (Fill) 5" - 3'4" Moist dark brown clayey Sand with debris and organic (Fill) 3'4" - 5'2" Moist dark brown Peat 5'2" - 8'7" Moist to very moist variegated silty Clay with traces of sand and pebbles and wet sand seams 8'7" - 13' and wet sand seams and moist to wet brown sandy silt lenses <p style="text-align: center;">Medium seepage at 8'</p> Groundwater Depth: <u>12' after 2 hours</u>	Soil Depth: <u>6'</u> Inner Pipe Dia.: <u>6"</u> Outer Pipe Dia. <u>10"</u> Embedment: <u>2"</u> Stick-up: <u>5"</u>
	Pipe Installation #2
	Soil Depth: <u>6'</u> Inner Pipe Dia.: <u>6"</u> Outer Pipe Dia. <u>10"</u> Embedment: <u>2"</u> Stick-up: <u>5"</u>
	Pipe Distance: <u>3'</u>

Soak Period (Pipe #1)	Soak Period (Pipe #2)
Start Date: <u>6/14/2022</u> Start Time: _____ Notes: _____ Time: <u>30 min</u> Water Drop: <u>0.06</u> inches Notes: _____ Time: <u>30 min</u> Water Drop: <u>0.06</u> inches Notes: _____	Start Date: <u>6/14/2022</u> Start Time: _____ Notes: _____ Time: <u>30 min</u> Water Drop: <u>0.06</u> inches Notes: _____ Time: <u>30 min</u> Water Drop: <u>0.00</u> inches Notes: _____

Test Period (Pipe #1)	Test Period (Pipe #2)
Time: <u>30 min</u> Water Drop: <u>0.00</u> inches Notes: _____ Time: <u>30 min</u> Water Drop: <u>0.00</u> inches Notes: _____ Time: _____ Water Drop: _____ inches Notes: _____ Time: _____ Water Drop: _____ inches Notes: _____ Time: _____ Water Drop: _____ inches Notes: _____	Time: <u>30 min</u> Water Drop: <u>0.00</u> inches Notes: _____ Time: <u>30 min</u> Water Drop: <u>0.00</u> inches Notes: _____ Time: _____ Water Drop: _____ inches Notes: _____ Time: _____ Water Drop: _____ inches Notes: _____ Time: _____ Water Drop: _____ inches Notes: _____
Notes: <u>No noticeable infiltration in 30-minute test period readings</u>	Notes: <u>No noticeable infiltration in 30-minute test period readings</u>



Test Pit Log

Test Pit #: 9

Job Number: 22-229

Date: 6/22/2022

Project: Wrangler's Restaurant

Weather: Sunny

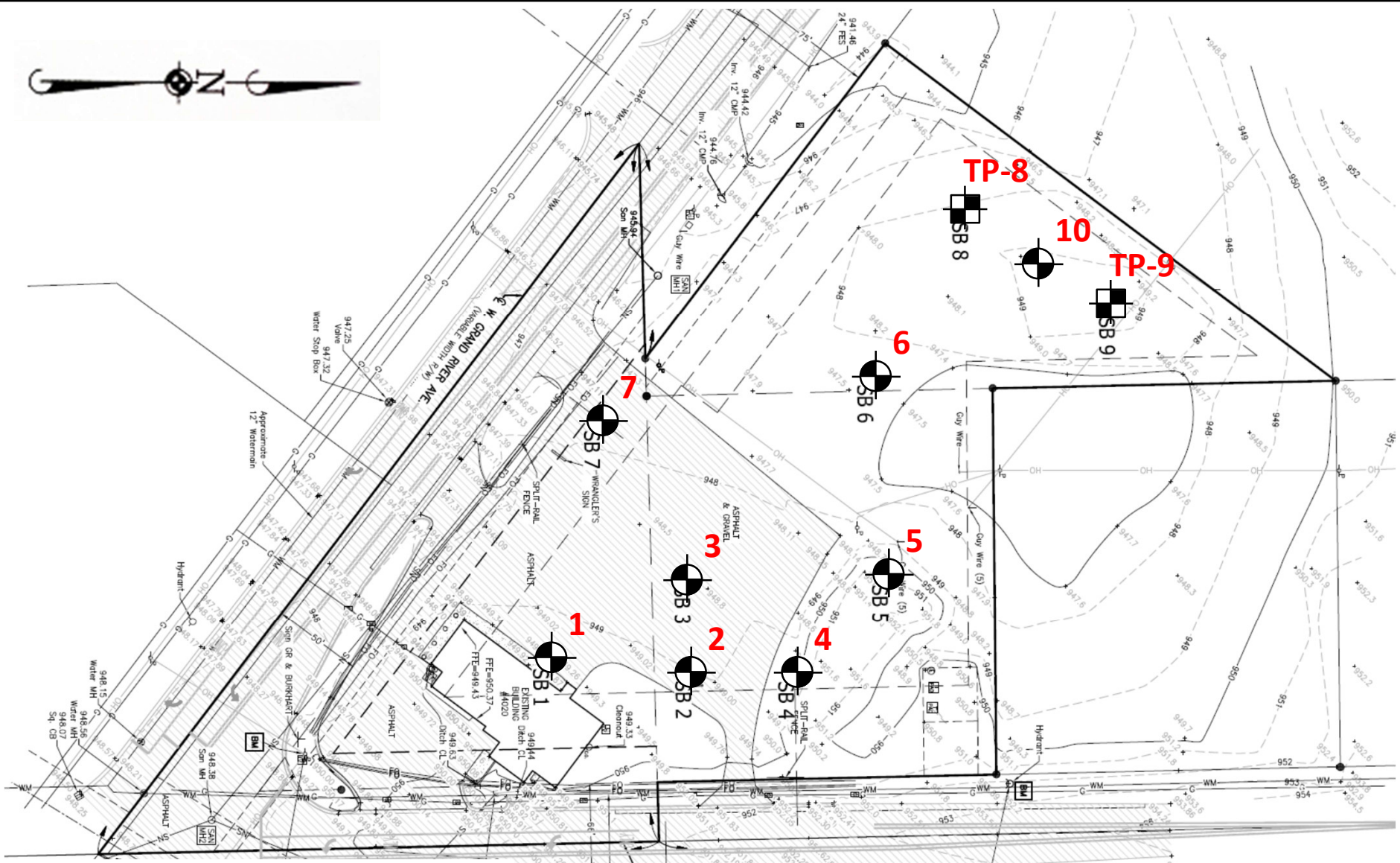
Location: Howell, Livingston County, Michigan

Ground Elv.: N/A

Soil Stratigraphy:	Pipe Installation #1
0 - 4" Moist dark brown sandy Topsoil (Fill)	Soil Depth: <u>5'8"</u>
4" - 1'7" Moist brown silty Sand with debris, topsoil and moist brown silty clay lenses (Fill)	Inner Pipe Dia.: <u>6"</u>
1'7" - 4' Moist discolored clayey Sand with topsoil and trace of gravel (Fill)	Outer Pipe Dia.: <u>10"</u>
4' - 8'3" Moist brown silty Clay with traces of sand and pebbles and wet sand seams	Embedment: <u>2"</u>
	Stick-up: <u>5"</u>
	Pipe Installation #2
	Soil Depth: <u>5'8"</u>
	Inner Pipe Dia.: <u>6"</u>
	Outer Pipe Dia.: <u>10"</u>
	Embedment: <u>2"</u>
	Stick-up: <u>5"</u>
Groundwater Depth: <u>Light seepage at 8'</u>	Pipe Distance: <u>3'6"</u>



Soak Period (Pipe #1)	Soak Period (Pipe #2)
Start Date: <u>6/14/2022</u> Start Time: _____	Start Date: <u>6/14/2022</u> Start Time: _____
Notes: _____	Notes: _____
Time: <u>30 min</u> Water Drop: <u>0.06</u> inches	Time: <u>30 min</u> Water Drop: <u>0.00</u> inches
Notes: _____	Notes: _____
Time: <u>30 min</u> Water Drop: <u>0.00</u> inches	Time: <u>30 min</u> Water Drop: <u>0.00</u> inches
Notes: _____	Notes: _____

Test Period (Pipe #1)	Test Period (Pipe #2)
Time: <u>30 min</u> Water Drop: <u>0.00</u> inches	Time: <u>30 min</u> Water Drop: <u>0.00</u> inches
Notes: _____	Notes: _____
Time: <u>30 min</u> Water Drop: <u>0.00</u> inches	Time: <u>30 min</u> Water Drop: <u>0.00</u> inches
Notes: _____	Notes: _____
Time: _____ Water Drop: _____ inches	Time: _____ Water Drop: _____ inches
Notes: _____	Notes: _____
Time: _____ Water Drop: _____ inches	Time: _____ Water Drop: _____ inches
Notes: _____	Notes: _____
Time: _____ Water Drop: _____ inches	Time: _____ Water Drop: _____ inches
Notes: _____	Notes: _____
Notes: <u>No noticeable infiltration in 30-minute test period readings</u>	Notes: <u>No noticeable infiltration in 30-minute test period readings</u>



Note: Base drawing prepared by others.

LEGEND

-  Soil Boring Locations, 1 through 7 and 10:
Drilled by McDowell & Associates
-  Test Pit Locations, TP-8 and TP-9:
Witnessed by McDowell & Associates



McDowell & Associates
21355 Hatcher Avenue
Ferndale, Michigan 48220
Phone: (248) 399-2066
Fax: (248) 399-2157

**Soil Boring & Test Pit
Location Plan**

Job No. 22-229

PROPERTY DESCRIPTION:

GENERAL INFORMATION:

PARCEL NOS.: 4706-20-201-018, 4706-20-201-017, 4706-20-400-004
 ZONING: RSC (REGIONAL SERVICE COMMERCIAL)
 AREA: +-3.20 ACRES (139,350 SQFT) (NET 2.52 ACRES EXCLUSIVE OF R.O.W.)

LEGAL DESCRIPTION:

LEGAL DESCRIPTION PER ATA NATIONAL TITLE GROUP, LLC, ISSUED BY OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY, COMMITMENT NO: 47-20712773-SCM, WITH A COMMITMENT DATE OF MAY 27, 2020 AT 8:00 A.M.:

The land referred to in this commitment is described as follows: Township of Howell, County of Livingston, State of Michigan
 Parcel 1:
 A part of the East 1/2 of the Southeast 1/4 of Section 20, Town 3 North, Range 4 East, Howell Township, Livingston County, Michigan, described as follows: Beginning 1229.4 feet South of the East 1/4 post of said Section 20; thence South 308.8 feet to the centerline of Highway US-16; thence North 52 degrees West 490 feet along center of said highway; thence East 383.3 feet to the place of beginning.

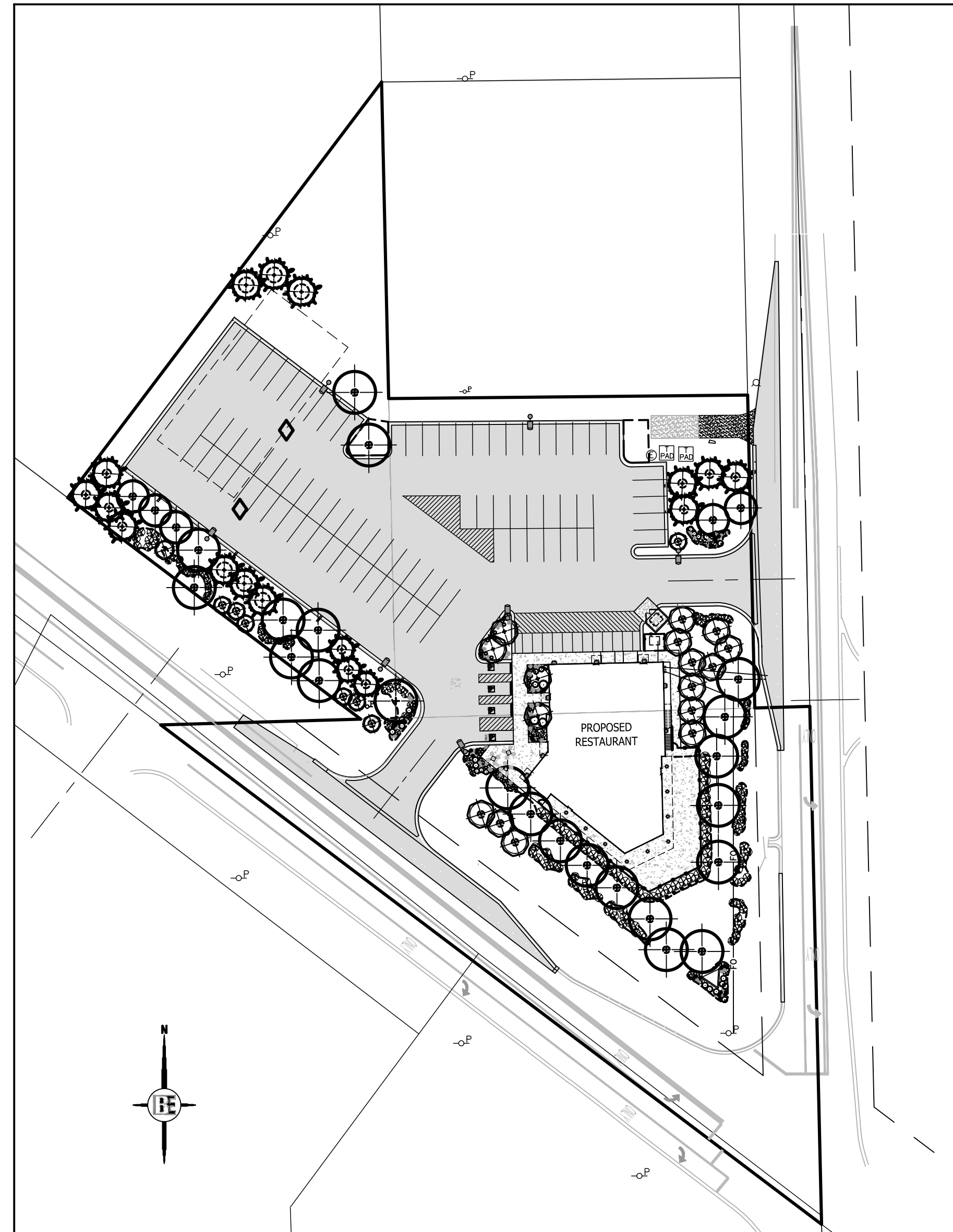
Parcel 2:
 Lots 1 and 26, Newman's Grand View Estates, as recorded in Liber 8, Page 24 of Plats, Livingston County Records.

CONSTRUCTION NOTES

THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING NOTES AND ANY WORK INVOLVED SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.

- THE CONTRACTOR SHALL HOLD HARMLESS THE DESIGN PROFESSIONAL, MUNICIPALITY, COUNTY, STATE AND ALL OF ITS SUB CONSULTANTS, PUBLIC AND PRIVATE UTILITY COMPANIES, AND LANDOWNERS FOR DAMAGES TO INDIVIDUALS AND PROPERTY, REAL OR OTHERWISE, DUE TO THE OPERATIONS OF THE CONTRACTOR AND/OR THEIR SUBCONTRACTORS.
- DO NOT SCALE THESE DRAWINGS AS IT IS A REPRODUCTION AND SUBJECT TO DISTORTION.
- A GRADING PERMIT FOR SOIL EROSION-SEDIMENTATION CONTROL SHALL BE OBTAINED FROM THE GOVERNING AGENCY PRIOR TO THE START OF CONSTRUCTION.
- IF DUST PROBLEM OCCURS DURING CONSTRUCTION, CONTROL WILL BE PROVIDED BY AN APPLICATION OF WATER, EITHER BY SPRINKLER OR TANK TRUCK.
- ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH LOCAL MUNICIPAL STANDARDS AND SPECIFICATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED TOWNSHIP, COUNTY, AND STATE OF MICHIGAN PERMITS.
- PAVED SURFACES, WALKWAYS, SIGNS, LIGHTING AND OTHER STRUCTURES SHALL BE MAINTAINED IN A SAFE, ATTRACTIVE CONDITION AS ORIGINALLY DESIGNED AND CONSTRUCTED.
- ALL BARRIER-FREE FEATURES SHALL BE CONSTRUCTED TO MEET ALL LOCAL, STATE AND A.D.A. REQUIREMENTS.
- ANY DISCREPANCY IN THIS PLAN AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE DESIGN ENGINEER PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL SETBACKS, EASEMENTS AND DIMENSIONS SHOWN HEREON BEFORE BEGINNING CONSTRUCTION.
- THE CONTRACTOR SHALL CONTACT ALL OWNERS OF EASEMENTS, UTILITIES AND RIGHTS-OF-WAY, PUBLIC OR PRIVATE, PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR SHALL COORDINATE WITH ALL OWNERS TO DETERMINE THE LOCATION OF EXISTING LANDSCAPING, IRRIGATION LINES & PRIVATE UTILITY LINES. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING LANDSCAPING, IRRIGATION LINES, AND PRIVATE UTILITY LINES.
- THE CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE UPON COMPLETION OF THE PROJECT.
- THE CONTRACTOR SHALL MAINTAIN THE SITE IN A MANNER SO THAT WORKMEN AND PUBLIC SHALL BE PROTECTED FROM INJURY, AND ADJOINING PROPERTY PROTECTED FROM DAMAGE.
- THE CONTRACTOR SHALL KEEP THE AREA OUTSIDE THE "CONSTRUCTION LIMITS" BROOM CLEAN AT ALL TIMES.
- THE CONTRACTOR SHALL CALL MISS DIG A MINIMUM OF 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
- ALL EXCAVATION UNDER OR WITHIN 3 FEET OF PUBLIC PAVEMENT, EXISTING OR PROPOSED SHALL BE BACKFILLED AND COMPACTED WITH SAND (MDOT CLASS II).
- ALL PAVEMENT REPLACEMENT AND OTHER WORKS COVERED BY THESE PLANS SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE TOWNSHIP, INCLUDING THE LATEST MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE TO EXISTING UTILITIES.
- NO ADDITIONAL COMPENSATION WILL BE PAID TO THE CONTRACTOR FOR ANY DELAY OR INCONVENIENCE DUE TO THE MATERIAL SHORTAGES OR RESPONSIBLE DELAYS DUE TO THE OPERATIONS OF SUCH OTHER PARTIES DOING WORK INDICATED OR SHOWN IN THE PLANS OR IN THE SPECIFICATION OR FOR ANY REASONABLE DELAYS IN CONSTRUCTION DUE TO THE ENCOUNTERING OR EXISTING UTILITIES THAT MAY OR MAY NOT BE SHOWN ON THE PLANS.
- DURING THE CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL NOT PERFORM WORK BY PRIVATE AGREEMENT WITH PROPERTY OWNERS ADJACENT TO THE PROJECT.
- IF WORK EXTENDS BEYOND NOVEMBER 15, NO COMPENSATION WILL BE DUE TO THE CONTRACTOR FOR ANY WINTER PROTECTION MEASURES THAT MAY BE REQUIRED BY THE ENGINEER.
- NO TREES ARE TO BE REMOVED UNTIL MARKED IN THE FIELD BY THE ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE PROPERTY BEYOND THE CONSTRUCTION LIMITS INCLUDING BUT NOT LIMITED TO EXISTING FENCE, LAWN, TREES AND SHRUBBERY.
- ALL AREAS DISTURBED BY THE CONTRACTOR BEYOND THE NORMAL CONSTRUCTION LIMITS OF THE PROJECT SHALL BE SOODED OR SEEDED AS SPECIFIED OR DIRECTED BY THE ENGINEER.
- ALL ROOTS, STUMPS AND OTHER OBJECTIONABLE MATERIALS SHALL BE REMOVED AND THE HOLE BACKFILLED WITH SUITABLE MATERIAL. WHERE GRADE CORRECTION IS REQUIRED, THE SUBGRADE SHALL BE CUT TO CONFORM TO THE CROSS-SECTION AS SHOWN IN THE PLANS.
- TRAFFIC SHALL BE MAINTAINED DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL SIGNS AND TRAFFIC CONTROL DEVICES. FLAG PERSONS SHALL BE PROVIDED BY THE CONTRACTOR IF DETERMINED NECESSARY BY THE ENGINEER. ALL SIGNS SHALL CONFORM TO THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AT NO COST TO THE TOWNSHIP. NO WORK SHALL BE DONE UNLESS THE APPROPRIATE TRAFFIC CONTROL DEVICES ARE IN PLACE.
- ALL DEMOLISHED MATERIALS AND SOIL SPOILS SHALL BE REMOVED FROM THE SITE AT NO ADDITIONAL COST, AND DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
- AFTER REMOVAL OF TOPSOIL, THE SUBGRADE SHALL BE COMPACTED TO 95% OF ITS UNIT WEIGHT.
- ALL GRADING IN THE PLANS SHALL BE DONE AS PART OF THIS CONTRACT. ALL DELETERIOUS MATERIAL SHALL BE REMOVED FROM THE SUBGRADE PRIOR TO COMPACTING.
- NO SEEDING SHALL BE DONE AFTER OCTOBER 15 WITHOUT APPROVAL OF THE ENGINEER.
- ANY EXISTING APPURTENANCES SUCH AS MANHOLES, GATE VALVES, ETC. SHALL BE ADJUSTED TO THE PROPOSED GRADE AND SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
- SOIL EROSION MEASURES SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL VEGETATION HAS BEEN RE-ESTABLISHED.
- ALL PERMANENT SIGNS AND PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST REVISION OF THE MICHIGAN MUTCD MANUAL AND SHALL BE INCIDENTAL TO THE CONTRACT.

PRELIMINARY SITE PLAN FOR WRANGLER'S SALOON 4020 WEST GRAND RIVER AVENUE PART OF THE SE QUARTER, SECTION 20 HOWELL TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN



OVERALL SITE MAP

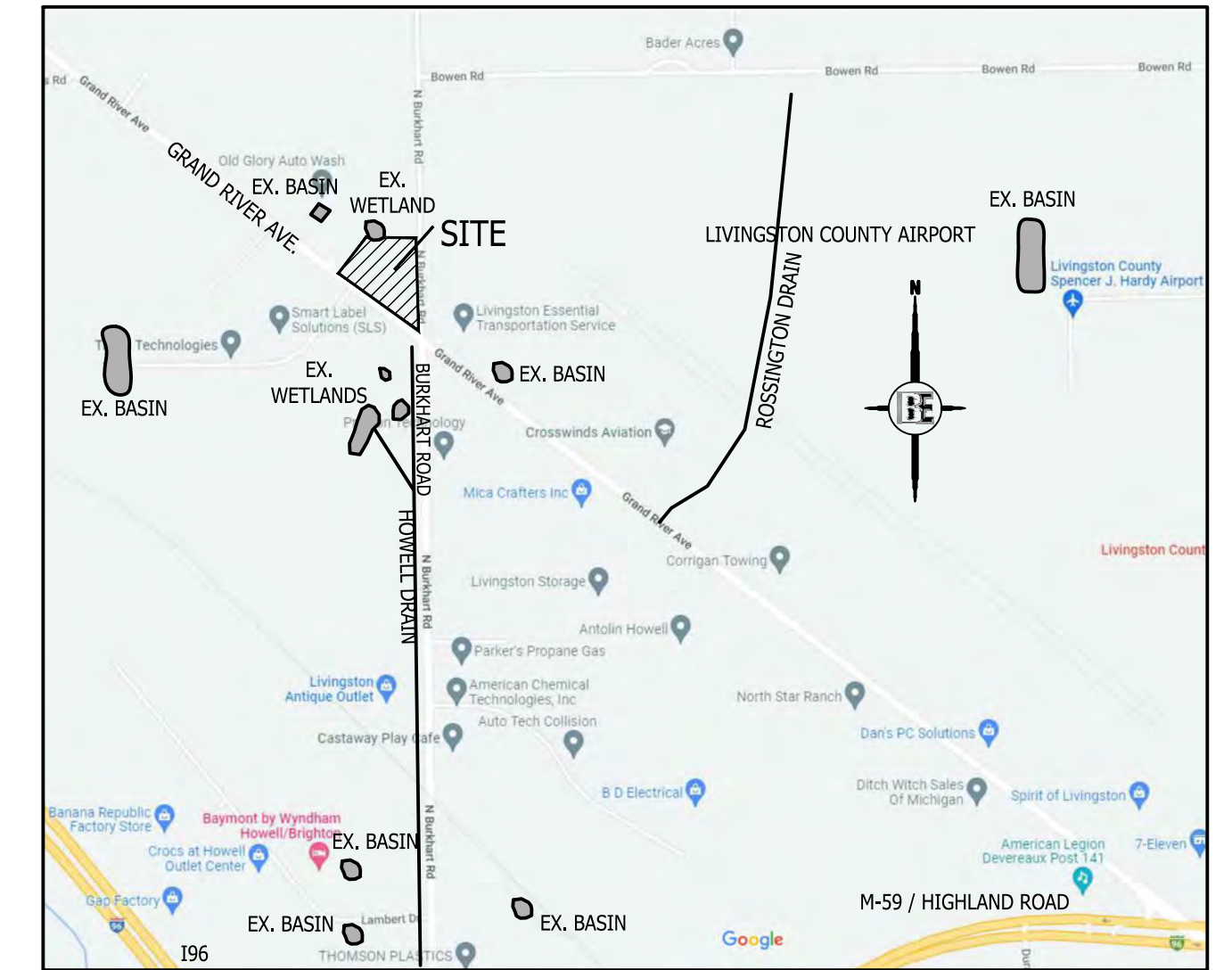
1"=60'

PERMITS & APPROVALS

AGENCY	DATE SUBMITTED	DATE APPROVED
TOWNSHIP PRELIM. SITE PLAN APPROVAL	3-26-24	-
TOWNSHIP FINAL SITE PLAN APPROVAL	-	-
LODC	-	-
LCRC	-	-
SESC	-	-
PRIVATE STORM EASEMENT - TONON	6-30-23	-
PRIVATE STORM EASEMENT - LIV COMM CNTR	7-20-23	-

INDEMNIFICATION STATEMENT

THE CONTRACTOR SHALL HOLD HARMLESS THE DESIGN PROFESSIONAL, MUNICIPALITY, COUNTY, STATE AND ALL OF ITS SUB CONSULTANTS, PUBLIC AND PRIVATE UTILITY COMPANIES, AND LANDOWNERS FOR DAMAGES TO INDIVIDUALS AND PROPERTY, REAL OR OTHERWISE, DUE TO THE OPERATIONS OF THE CONTRACTOR AND/OR THEIR SUBCONTRACTORS.



LOCATION MAP

SCALE: +1"=1,000'

SURFACE WATER & COUNTY DRAINS

- WETLAND - AT NORTH PROPERTY LINE
- WETLANDS - 3+ CLUSTER, APPROX. 425'-FT SOUTH, WEST OF BURKHART RD.
- LAKE - APPROX. 3.74 MI SOUTHEAST TO THOMPSON LAKE
- STREAM - APPROX. 5,700'-FT EAST TO SHAWASSEE RIVER TRIBUTARY
- BASIN - APPROX. 1,950'-FT WEST AT THE LIVINGSTON COMMERCE CENTER
- BASIN - APPROX. 3,300'-FT EAST AT LIVINGSTON COUNTY AIRPORT
- BASIN - APPROX. 270'-FT NORTHWEST AT OLD GLORY CARWASH
- BASIN - APPROX. 650'-FT SOUTHEAST AT I.E.T.S. FACILITY
- DRAIN - APPROX. 200 FT SOUTH TO HOWELL COUNTY DRAIN, BURKHART RD.
- DRAIN - APPROX. 1,750'-FT SOUTHEAST TO ROSSINGTON COUNTY DRAIN

SHEET INDEX

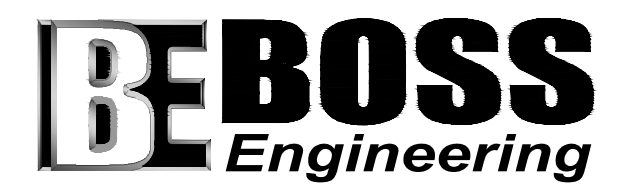
SHEET NO.	DESCRIPTION
	CIVIL DRAWINGS
C1	COVER SHEET
C2A	EXISTING CONDITIONS PLAN
C2B	SITE DEMOLITION PLAN
C3A	SITE PLAN
C3B	EMERGENCY VEHICLE CIRCULATION PLAN
C4	GRADING AND DRAINAGE PLAN
C5	UTILITY PLAN
C6	LIGHTING PHOTOMETRIC PLAN
C7	SOIL EROSION & SEDIMENTATION CONTROL PLAN
C8	LANDSCAPE PLAN
C9	LANDSCAPE AND EROSION CONTROL DETAILS
C10	STORM SYSTEM DETAILS
C11	MISC. CONSTRUCTION DETAILS
C12	MISC. CONSTRUCTION DETAILS
C13	M.H.O.G. STANDARD DETAILS - WATER (1)
C14	M.H.O.G. STANDARD DETAILS - WATER (2)
	ARCHITECTURAL DRAWINGS
A1.0	FLOOR PLANS
A2.0	EXTERIOR ELEVATIONS
A2.1	EXTERIOR ELEVATIONS
A3.0	RENDERED VIEWS
A3.1	RENDERED VIEWS

PREPARED FOR:

ARCHITECT:
 LINDHOUT ASSOCIATES
 ARCHITECTS, AIA, PC
 10465 CITATION DRIVE
 BRIGHTON, MI 48116
 CONTACTS:
 JOSH HENDERSHOT
 JLH@LINDHOUT.COM
 (810) 227-5668

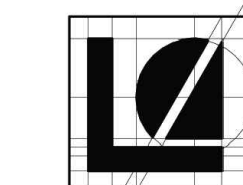
PROPERTY OWNER:
 WD REALTY / WINFREID DAHM
 118A GRAND RIVER AVE.
 HOWELL, MI 48843
 CONTACT: KATHLEEN GRAHM
 (810) 626-8561
 KATHLEEN@GRVENT.COM

PREPARED BY:



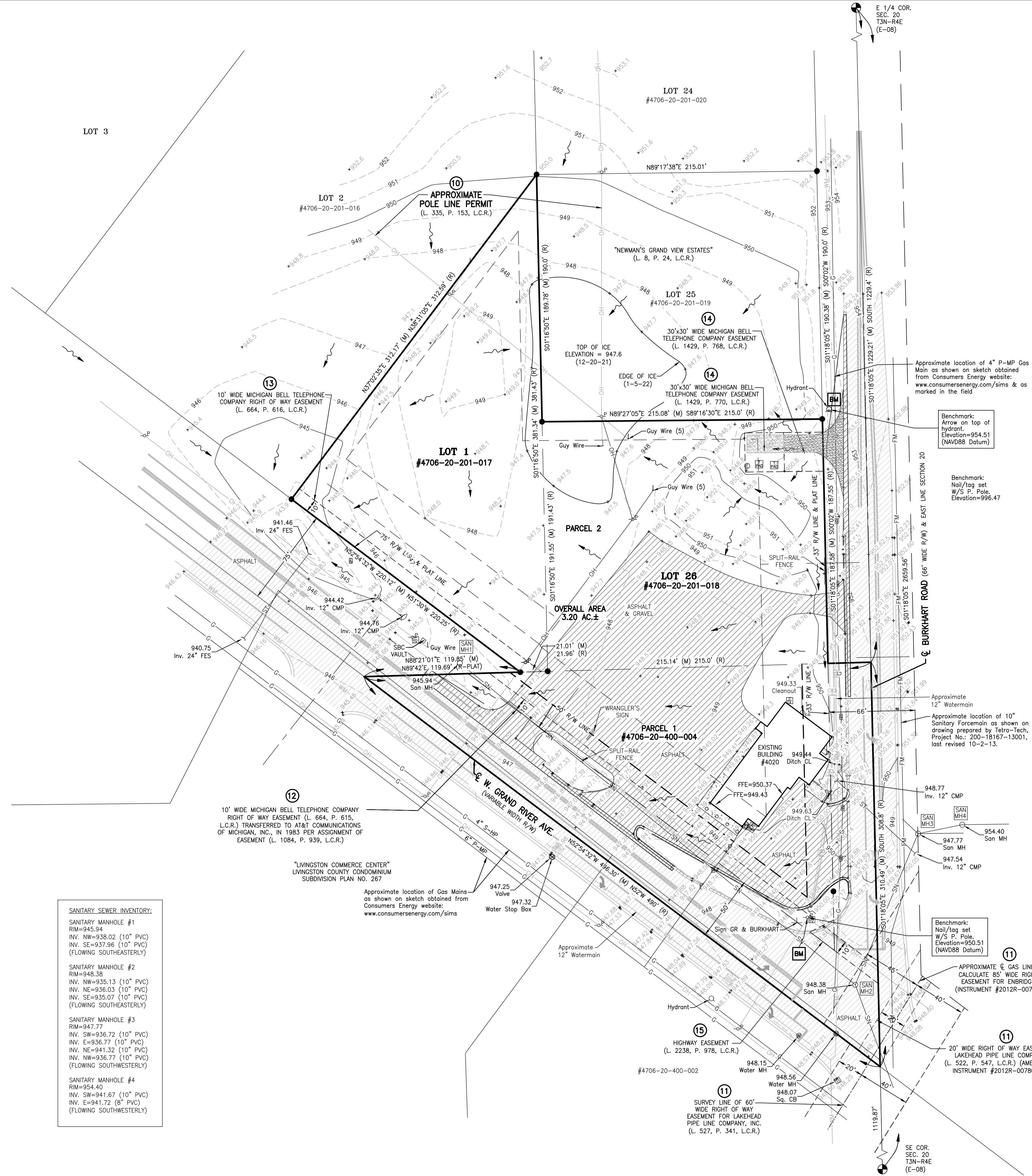
3121 E. GRAND RIVER AVE.
 HOWELL, MI. 48843
 517.546.4836 FAX 517.548.1670

CONTACT: PATRICK CLEARY
 EMAIL: PATRICKC@BOSSENG.COM



FOR SITE PLAN APPROVAL ONLY!
NOT FOR CONSTRUCTION

						C1
NO	BY	CK	REVISION	DATE	JOB NO:	ISSUE DATE: 3/26/24
					21-550	



SANITARY SEWER INVENTORY:

SANITARY MANHOLE #1 RIM=945.84 INV. NW=938.02 (10" PVC) INV. SE=937.96 (10" PVC) (FLOWING SOUTHEASTERLY)
SANITARY MANHOLE #2 RIM=948.38 INV. NW=935.13 (10" PVC) INV. NE=936.03 (10" PVC) INV. SE=935.07 (10" PVC) (FLOWING SOUTHEASTERLY)
SANITARY MANHOLE #3 RIM=947.77 INV. SW=936.72 (10" PVC) INV. E=936.77 (10" PVC) INV. NE=941.32 (10" PVC) INV. NW=936.77 (10" PVC) (FLOWING SOUTHWESTERLY)
SANITARY MANHOLE #4 RIM=954.40 INV. SW=941.67 (10" PVC) INV. E=941.72 (8" PVC) (FLOWING SOUTHWESTERLY)

LEGAL DESCRIPTION PER ATA NATIONAL TITLE GROUP, LLC, ISSUED BY OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY, COMMITMENT NO. 47-20712773-SCM, WITH A COMMITMENT DATE OF MAY 27, 2020 AT 8:00 A.M.:

The land referred to in this commitment is described as follows:
Township of Howell, County of Livingston, State of Michigan
Parcel 1:
A part of the East 1/2 of the Southeast 1/4 of Section 20, Town 3 North, Range 4 East, Howell Township, Livingston County, Michigan, described as follows: Beginning 1229.4 feet South of the East 1/4 post of said Section 20; thence South 308.8 feet to the centerline of Highway US-16; thence North 52 degrees West 490 feet along center of said highway; thence East 383.3 feet to the place of beginning.
Parcel 2:
Lots 1 and 26, Newman's Grand View Estates, as recorded in Liber 8, Page 24 of Plats, Livingston County Records.

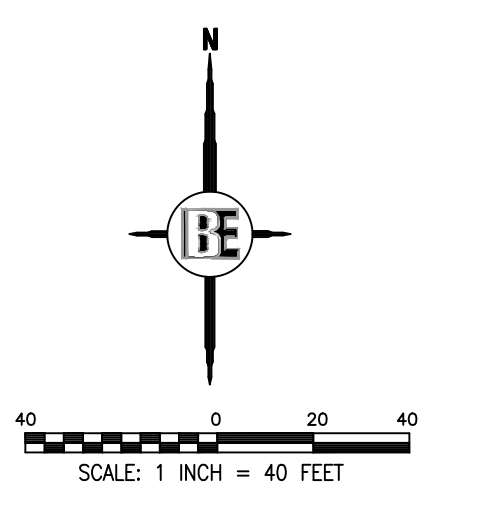
SCHEDULE B - SECTION II EXCEPTIONS PER ATA NATIONAL TITLE GROUP, LLC, ISSUED BY OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY, COMMITMENT NO. 47-20712773-SCM, WITH A COMMITMENT DATE OF MAY 27, 2020 AT 8:00 A.M.:

- 8 Release of Right of Way to the State Highway Commissioner recorded in Liber 153, Page 233 and Liber 153, Page 226, Livingston County Records.
- 9 Mineral Deeds recorded in Liber 168, Page 77 and Liber 168, Page 284, Livingston County Records. (BLANKET IN NATURE. COVERS ENTIRE SUBJECT PROPERTY AND OTHER PROPERTIES.)
- 10 Pole Line Permit in favor of Detroit Edison Company and a right of way permit in favor of Michigan Bell Telephone Company recorded in Liber 335, Page 153, Livingston County Records, as to Parcel 2.
- 11 Right of Way and Easement Grant to Lakehead Pipe Line Company, Inc. recorded in Liber 527, Page 341 and Liber 522, Page 547, and Amendment to Right of Way and Easement Grant recorded in Instrument No. 2012R-007802, Livingston County Records.
- 12 Easement granted to Michigan Bell Telephone Company recorded in Liber 664, Page 615 and Assignment recorded in Liber 1084, Page 939, Livingston County Records to AT&T Communications of Michigan, Inc., as to Parcel 1.
- 13 Easement granted to Michigan Bell Telephone Company recorded in Liber 664, Page 616, Livingston County Records, as to Parcel 2.
- 14 Easement granted to Michigan Bell Telephone Company recorded in Liber 1429, Page 768 and Liber 1429, Page 770, Livingston County Records, as to Parcel 2.
- 15 Highway Easement to the Board of County Road Commissioners recorded in Liber 2238, Page 978, Livingston County Records.

NRCS EXISTING SOILS DATA:

MoB	MIAMI LOAM, 2-6% SLOPES
CvraB	CONOVER LOAM, 0-4% SLOPES

1. REFER TO SHEET C2B FOR BORING LOCATIONS.
2. REFER TO SOILS INVESTIGATION REPORT (DATED 7-12-22) & INFILTRATION STUDY (6-27-22) BY McDOWELL & ASSOCIATES (JOB NO. 22-229)



LEGEND

900	EXISTING CONTOUR
922.00	EXISTING SPOT ELEVATION
-P	POWER POLE
-G	GUY WIRE
TM	TRANSFORMER PAD
EM	ELECTRICAL METER
AC	AIR CONDITIONING UNIT
H	HYDRANT
WGV	WATER GATE VALVE
WMH	WATER MANHOLE
M	MANHOLE
C	CLEANOUT
SMH	STORM MANHOLE
SCB	STORM CATCH BASIN (ROUND OR BEEHIVE)
SSB	STORM CATCH BASIN (SQUARE)
S	STORM INCH
G	GAS METER
TR	U.G. GAS MARKER
CVR	CABLE TV RISER
S	SIGN
SRS	STEEL ROD SET
SRP	STEEL ROD OR PIPE FOUND
SC	SECTION CORNER
SN	SANITARY SEWER
WM	WATER MAIN
ST	STORM SEWER
G	GAS MAIN
E	ELECTRIC
FO	FIBER OPTIC
OH	OVERHEAD WIRES
X	FENCE
SMH	SANITARY MANHOLE
STMH	STORM MANHOLE
C	CENTERLINE
L	LIBER
P	PAGE
L.C.R.	LIVINGSTON COUNTY RECORDS
(M&R)	MEASURED AND RECORD
P.O.B.	POINT OF BEGINNING
FFE	FINISHED FIRST FLOOR ELEVATION
CMP	CORRUGATED METAL PIPE
ASPH	ASPHALT
CONC	CONCRETE
DF	EXISTING DRAINAGE FLOW

- GENERAL SURVEY NOTES:**
1. BEARINGS ARE BASED ON MICHIGAN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE.
 2. SUBSURFACE UTILITIES NOT LOCATED FOR THIS SURVEY MAY EXIST. IT IS THE RESPONSIBILITY OF THE OWNER OF THE RESPECTIVE UTILITY TO ACCURATELY LOCATE SUCH UTILITIES.
 3. ELEVATIONS WERE ESTABLISHED WITH GPS USING OPUS GPS POST-PROCESSING. (NAVD88 DATUM)
 4. CONTOURS ARE SHOWN AT 1 FOOT INTERVALS.
 5. THE LOCATIONS OF STORM SEWER, SANITARY SEWER & WATERMAIN, AS SHOWN ON THIS DRAWING ARE APPROXIMATE. THE LOCATIONS ARE BASED ON PHYSICAL FIELD LOCATIONS OF STRUCTURES, MISS DIG MARKINGS AND REFERENCE DRAWINGS.
 6. ALL WORK SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE MUNICIPALITY, THE COUNTY, AND THE STATE OF MICHIGAN.
 7. ALLOW THREE WORKING DAYS BEFORE YOU DIG, CALL MISS DIG TOLL FREE 1-800-482-7171.

BEBOSS Engineering
Engineers Surveyors Planners Landscape Architects
3121 E. GRAND RIVER AVE.
HOWELL, MI. 48843
517.546.4836 FAX 517.548.1670

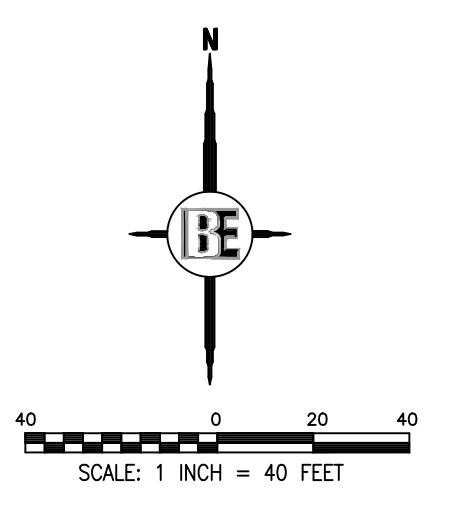
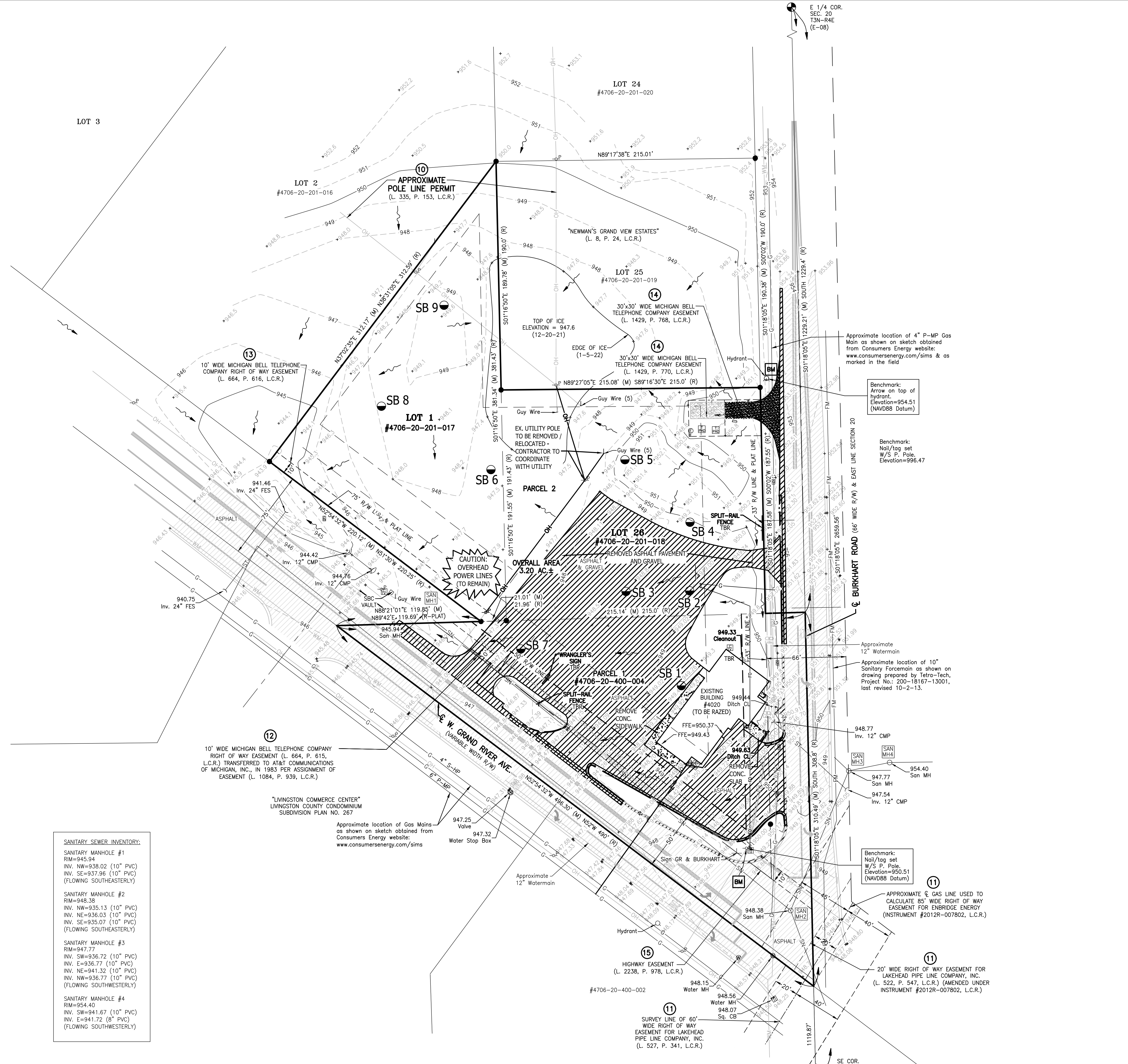
WRANGLER'S SALOON
LINDHOUT ASSOCIATES ARCHITECTS, AIA, PC
10469 CITATION DRIVE
BRIGHTON, MI 48116
810-227-5668

EXISTING CONDITIONS PLAN

PROJECT:		
PREPARED FOR:		
TITLE:		
NO.	BY	DATE

DRAWN BY: AEB
FIELD CREW: TAG/PB
CHECKED BY:
SCALE 1" = 40'
JOB NO. 21-550
DATE 3-26-24
SHEET NO. C2A

**FOR SITE PLAN APPROVAL ONLY!
NOT FOR CONSTRUCTION**



LEGEND

- 900- EXISTING CONTOUR
- 922.00 EXISTING SPOT ELEVATION
- P- POWER POLE
- I- GUY WIRE
- [Symbol] TRANSFORMER PAD
- [Symbol] ELECTRICAL METER
- [Symbol] AIR CONDITIONING UNIT
- [Symbol] HYDRANT
- [Symbol] WATER GATE VALVE
- [Symbol] WATER MANHOLE
- [Symbol] MANHOLE
- [Symbol] CLEANOUT
- [Symbol] STORM MANHOLE
- [Symbol] STORM CATCH BASIN (ROUND OR BEEHIVE)
- [Symbol] STORM CATCH BASIN (SQUARE)
- [Symbol] STORM INVERT
- [Symbol] GAS METER
- [Symbol] U.G. GAS MARKER
- [Symbol] CABLE TV RISER
- [Symbol] SIGN
- [Symbol] STEEL ROD SET
- [Symbol] STEEL ROD OR PIPE FOUND
- [Symbol] SECTION CORNER
- [Symbol] SANITARY SEWER
- [Symbol] WATER MAIN
- [Symbol] STORM SEWER
- [Symbol] GAS MAIN
- [Symbol] ELECTRIC
- [Symbol] FIBER OPTIC
- [Symbol] OVERHEAD WIRES
- [Symbol] FENCE
- SAN MH SANITARY MANHOLE
- ST MH STORM MANHOLE
- CL CENTERLINE
- L LIBER
- P PAGE
- L.C.R. LIVINGSTON COUNTY RECORDS
- (M&R) MEASURED AND RECORD
- P.O.B. POINT OF BEGINNING
- FFE FINISHED FIRST FLOOR ELEVATION
- CMP CORRUGATED METAL PIPE
- [Symbol] ASPHALT
- [Symbol] CONCRETE
- [Symbol] EXISTING DRAINAGE FLOW

NRCS EXISTING SOILS DATA:
 MoB MIAMI LOAM, 2-6% SLOPES
 Cvrab CONOVER LOAM, 0-4% SLOPES

- REFER TO BORING LOCATIONS THIS SHEET
- REFER TO SOILS INVESTIGATION REPORT (DATED 7-12-22) & INFILTRATION STUDY (6-27-22) BY McDOWELL & ASSOCIATES (JOB NO. 22-229)

DEMOLITION LEGEND

- NOTES:
 1) TYPICAL - DEMOLITION ITEMS NOTED & SHOWN IN **BOLD**
 2) CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF IDENTIFIED ITEMS FROM THE SITE IN ACCORDANCE WITH APPLICABLE LOCAL, COUNTY, STATE, & FEDERAL STATUTES
- TBR TO BE REMOVED
 - [Symbol] ASPHALT TO BE REMOVED
 - [Symbol] CONCRETE TO BE REMOVED
 - [Symbol] GRAVEL TO BE REMOVED
 - [Symbol] TREE TO BE REMOVED

SANITARY SEWER INVENTORY:

SANITARY MANHOLE #	RIM	INV.	FLOWING			
SANITARY MANHOLE #1	RIM=945.94	INV. NW=938.02 (10" PVC)	INV. SE=937.96 (10" PVC)	(FLOWING SOUTHEASTERLY)		
SANITARY MANHOLE #2	RIM=948.38	INV. NW=935.13 (10" PVC)	INV. NE=936.03 (10" PVC)	INV. SE=935.07 (10" PVC)	(FLOWING SOUTHEASTERLY)	
SANITARY MANHOLE #3	RIM=947.77	INV. SW=936.72 (10" PVC)	INV. E=936.77 (10" PVC)	INV. NE=941.32 (10" PVC)	INV. NW=936.77 (10" PVC)	(FLOWING SOUTHWESTERLY)
SANITARY MANHOLE #4	RIM=954.40	INV. SW=941.67 (10" PVC)	INV. E=941.72 (8" PVC)		(FLOWING SOUTHWESTERLY)	

10' WIDE MICHIGAN BELL TELEPHONE COMPANY RIGHT OF WAY EASEMENT (L. 664, P. 615, L.C.R.) TRANSFERRED TO A1&T COMMUNICATIONS OF MICHIGAN, INC., IN 1985 PER ASSIGNMENT OF EASEMENT (L. 1084, P. 939, L.C.R.)

"LIVINGSTON COMMERCE CENTER"
 LIVINGSTON COUNTY CONDOMINIUM SUBDIVISION PLAN NO. 267

Approximate location of Gas Mains as shown on sketch obtained from Consumers Energy website: www.consumersenergy.com/sims

Approximate location of 4" P-MP Gas Main as shown on sketch obtained from Consumers Energy website: www.consumersenergy.com/sims & as marked in the field

Benchmark: Nail/tag set W/S P. Pole. Elevation=954.51 (NAVD88 Datum)

Benchmark: Nail/tag set W/S P. Pole. Elevation=956.47

Approximate location of 10" Sanitary Foremain as shown on drawing prepared by Tetra-Tech, Project No: 200-18167-13001, last revised 10-2-13.

Benchmark: Nail/tag set W/S P. Pole. Elevation=950.51 (NAVD88 Datum)

APPROXIMATE GAS LINE USED TO CALCULATE 85' WIDE RIGHT OF WAY EASEMENT FOR ENBRIDGE ENERGY (INSTRUMENT #2012R-007802, L.C.R.)

20' WIDE RIGHT OF WAY EASEMENT FOR LAKEHEAD PIPE LINE COMPANY, INC. (L. 522, P. 547, L.C.R.) (AMENDED UNDER INSTRUMENT #2012R-007802, L.C.R.)

SURVEY LINE OF 60' WIDE RIGHT OF WAY EASEMENT FOR LAKEHEAD PIPE LINE COMPANY, INC. (L. 527, P. 341, L.C.R.)

**FOR SITE PLAN APPROVAL ONLY!
 NOT FOR CONSTRUCTION**

BEBOSS Engineering
 Engineers Surveyors Planners Landscape Architects
 3121 E. GRAND RIVER AVE.
 HOWELL, MI. 48843
 517.546.4836 FAX 517.548.1670

WRANGLER'S SALOON
 LINDHOUT ASSOCIATES ARCHITECTS, AIA, PC
 10469 CITATION DRIVE
 BRIGHTON, MI 48116
 810-227-5668

SITE DEMOLITION PLAN

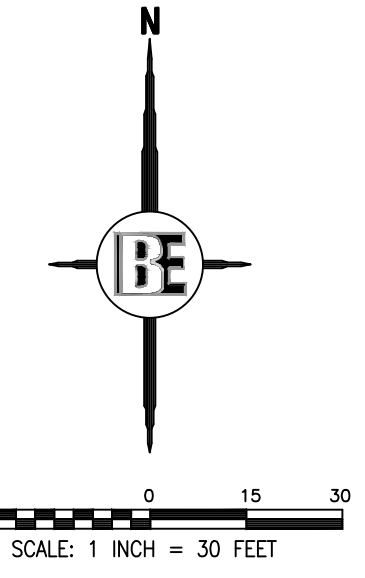
PROJECT:	DATE:
WRANGLER'S SALOON	

PREPARED FOR:	REVISION:	BY:	DATE:
LINDHOUT ASSOCIATES ARCHITECTS, AIA, PC			

CHECKED BY:	SCALE:
AEB	1" = 40'

JOB NO.	DATE:
21-550	3-26-24

SHEET NO.	TOTAL SHEETS:
C2B	2



THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE DRAWINGS ARE ONLY APPROXIMATE. NO GUARANTEE IS MADE AS TO THE ACCURACY OF THESE UTILITIES. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT LOCATION AND ELEVATION OF EXISTING UTILITIES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY CONFLICTS BEFORE THE LOCATION OR DEPTH OFFSETS CONFORMITY FROM THE PLANS.

BEFORE ANY DIG CALL M.S.S. DIG 1-800-487-4271 1-800-947-7171

PROPOSED (PR)	EXISTING (EX)	CONTOUR
-900'	-900'	-922.08
FF	FF	FINISHED FLOOR ELEVATION
FS	FS	FINISHED GRADE ELEVATION
T/A	T/A	TOP OF ASPHALT
T/C	T/C	TOP OF CURB / CONCRETE
T/W	T/W	TOP OF WALK
F/L	F/L	FLOW LINE
T/P	T/P	TOP OF PIPE
B/P	B/P	BOTTOM OF PIPE
RM	RM	RIM ELEVATION
INV	INV	INVERT ELEVATION
MH	MH	MANHOLE STRUCTURE
IN	IN	INLET STRUCTURE
CB	CB	CATCHBASIN STRUCTURE
RY	RY	REAR YARD STRUCTURE
ES	ES	END-SECTION
GV	GV	GATEVALVE STRUCTURE
HY	HY	HYDRANT
UP	UP	UTILITY POLE
SN	SN	SANITARY SEWER
SL	SL	SANITARY LEAD
FM	FM	FORCE MAIN
PS	PS	PRESSURE SEWER
ST	ST	STORM SEWER
WM	WM	WATER MAIN
WL	WL	WATER LEAD
FO	FO	FIBER OPTIC
OW	OW	OVERHEAD WIRE
C	C	CABLE
E	E	ELECTRIC
G	G	GAS
T	T	TELEPHONE
F	F	FENCE
SILT	SILT	SILT FENCE
WB	WB	WETLAND BOUNDARY
LIMITS	LIMITS	LIMITS OF GRADING/CLEARING
MH	MH	MANHOLE
INLET	INLET	INLET / CATCHBASIN
FLARED	FLARED	FLARED END-SECTION
GV	GV	GATE VALVE
HY	HY	HYDRANT
UP	UP	UTILITY POLE
SN	SN	NOT FIELD VERIFIED TO BE REMOVED
NFV	NFV	NOT FIELD VERIFIED TO BE REMOVED
TBR	TBR	TERRAIN
BY 12	BY 12	BY 12
CONCRETE	CONCRETE	CONCRETE
ASPHALT	ASPHALT	ASPHALT
MODIFIED CURB	MODIFIED CURB	MODIFIED CURB

SITE STATISTICAL DATA:
 ZONING: "RSC" - REGIONAL SERVICE COMMERCIAL
 DEVELOPMENT TYPE/USE: RESTAURANT 2-STORY STRUCTURE (MAX HGT TBD)
 GROSS SITE AREA: ±3.20 AC (139,350 SQFT.) (NET 2.52 AC EXCL. OF R.O.W.)
 BUILDING SQUARE FOOTAGE (FOOTPRINT): 7,036 (5.0%)
 IMPERVIOUS SURFACE (EXCLUSIVE OF BUILDING): 1.11 ACRES (34.7%)
 PVIOUS SURFACE: 1.23 ACRES (27.2%)

MIN. SETBACKS REQUIRED:
 FRONT: 50-FT (SOUTH - GRAND RIVER)
 FRONT: 50-FT (NORTHEAST CORNER - SUBJECT TO VERIFICATION)
 REAR: 50-FT (NO ADJACENT RESIDENTIAL)
 SIDES: 15-FT (WEST) & 15-FT (NORTH)
 MIN LOT SIZE: 40,000 SQFT; MIN LOT WIDTH 120 LFT (MUNICIPAL SERVICES)
 MAX BLDG. HGT: 70-FT

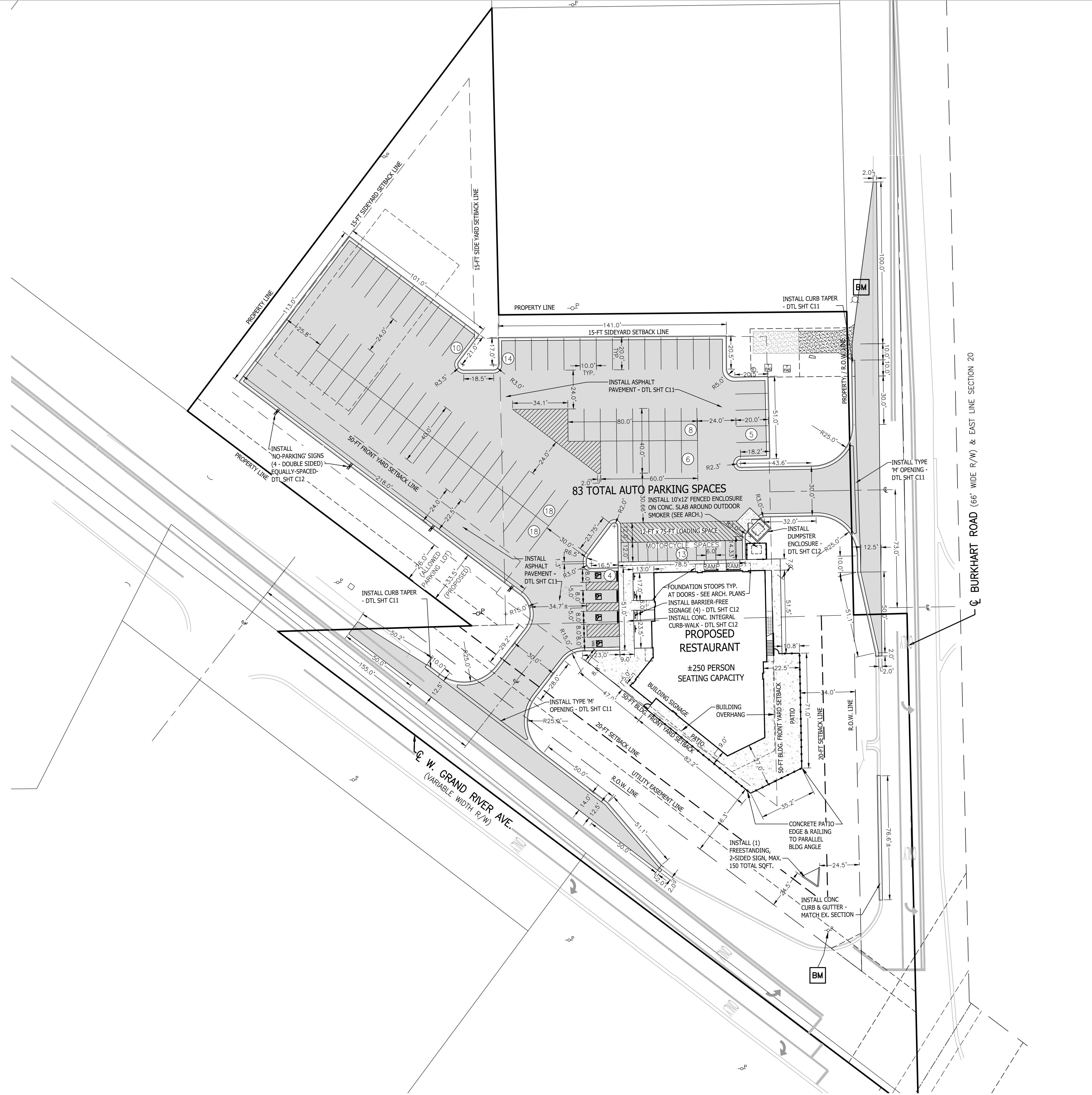
PROPOSED BUILDING:
 FRONT (SOUTH): 59.33-FT (MIN.)
 FRONT (EAST): 71.50-FT (MIN.)
 REAR: N.A.
 SIDE (WEST): 264.50-FT
 SIDE (NORTH): 140.75-FT
 LOT COVERAGE: 5.0% (BUILDING)
 MAX BLDG. HGT: TBD

PARKING CALCULATION:
 RESTAURANT = 1 SPACE / 4 CUSTOMERS + 1 SPACE / EMPLOYEE MAX SHIFT
 250 / 4 = 63 + 20 EMPLOYEES
 TOTAL SPACES REQUIRED: 83

LOADING SPACE: MIN 1, 10-FT X 55-FT SPACE REQUIRED

PROVIDED PARKING: 83 VEHICULAR SPACES INCL 4 BARRIER-FREE SPACES + 13 MOTORCYCLE SPACES

PROVIDED LOADING: 1, 12-FT X 78-FT SPACE PROVIDED



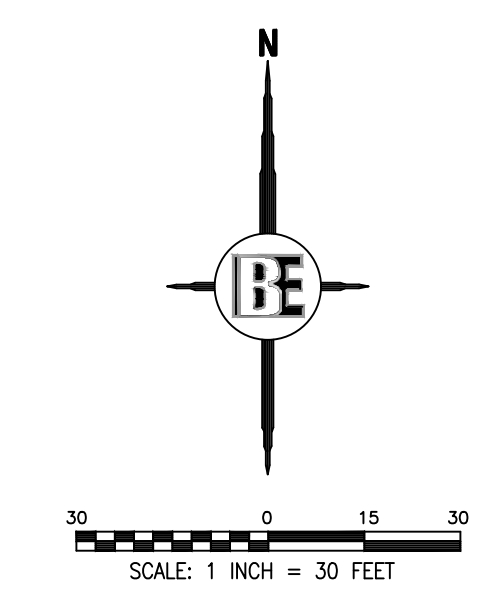
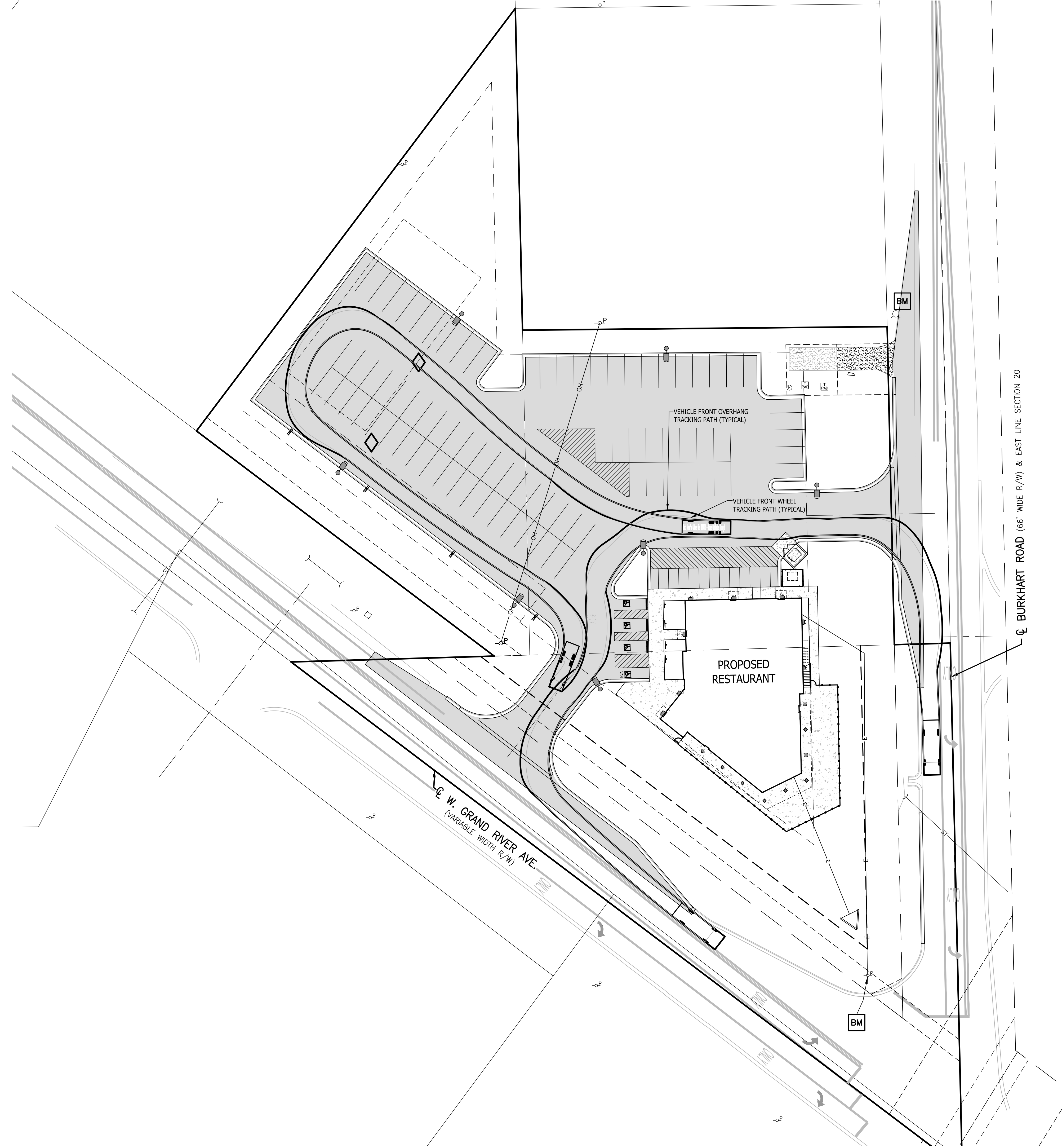
WRANGLER'S RESTAURANT
 LINDHOUT ASSOCIATES ARCHITECTS AIA PC
 10469 CITATION DRIVE
 BRIGHTON, MI 48116
 810.227.5668

BEBOSS Engineering
 Engineers Surveyors Planners Landscape Architects
 3121 E. GRAND RIVER AVE.
 HOWELL, MI. 48843
 517.546.4836 FAX 517.548.1670

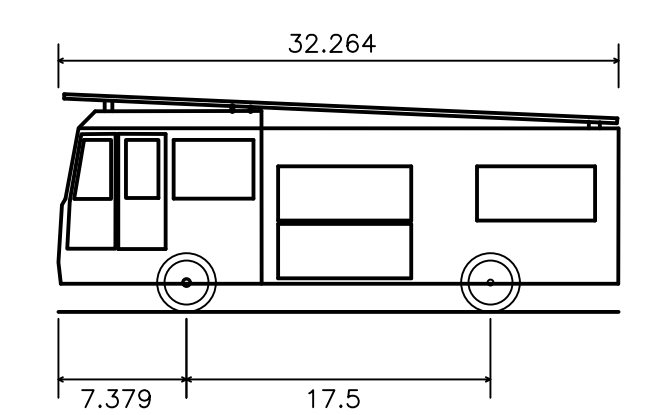
PROJECT	DATE			
WRANGLER'S RESTAURANT				
PREPARED FOR				
LINDHOUT ASSOCIATES ARCHITECTS AIA PC				
TITLE				
SITE PLAN				
NO	BY	REVISION	PER	DATE
DESIGNED BY:	PC			
DRAWN BY:	PC			
CHECKED BY:				
SCALE:	1" = 30'			
JOB NO:	21-550			
DATE:	3-26-24			
SHEET NO.	C3A			

FOR SITE PLAN APPROVAL ONLY!
 NOT FOR CONSTRUCTION





PROPOSED (PR)	EXISTING (EX)	CONTOUR
-900	-900	CONTOUR
-922.08	-922.08	SPOT ELEVATION
FF	FF	FINISHED FLOOR ELEVATION
FG	FG	FINISHED GRADE ELEVATION
T/A	T/A	TOP OF ASPHALT
T/C	T/C	TOP OF CURB / CONCRETE
T/W	T/W	TOP OF WALK
F/L	F/L	FLOW LINE
T/P	T/P	TOP OF PIPE
B/P	B/P	BOTTOM OF PIPE
RM	RM	RIM ELEVATION
INV	INV	INVERT ELEVATION
MH	MH	MANHOLE STRUCTURE
IN	IN	INLET STRUCTURE
CB	CB	CATCHBASIN STRUCTURE
RY	RY	REARYARD STRUCTURE
ES	ES	END-SECTION
GV	GV	GATEVALVE STRUCTURE
HY	HY	HYDRANT
UP	UP	UTILITY POLE
SN	SN	SANITARY SEWER
SL	SL	SANITARY LEAD
FM	FM	FORCE MAIN
PS	PS	PRESSURE SEWER
ST	ST	STORM SEWER
WM	WM	WATER MAIN
WL	WL	WATER LEAD
FO	FO	FIBER OPTIC
OH	OH	OVERHEAD WIRE
C	C	CABLE
E	E	ELECTRIC
G	G	GAS
T	T	TELEPHONE
F	F	FENCE
S	S	SILT FENCE
W	W	WETLAND BOUNDARY
L	L	LIMITS OF GRADING/CLEARING
M	M	MANHOLE
I	I	INLET / CATCHBASIN
F	F	FLARED END-SECTION
G	G	GATE VALVE
H	H	HYDRANT
U	U	UTILITY POLE
N	N	NOT FIELD VERIFIED TO BE REMOVED
NV	NV	NOT FIELD VERIFIED TO BE REMOVED
TBR	TBR	TERRAIN BOUNDARY
BY 12	BY 12	BY 12
CONCRETE	CONCRETE	CONCRETE
ASPHALT	ASPHALT	ASPHALT
MODIFIED CURB	MODIFIED CURB	MODIFIED CURB



Howell Township Fire Truck	32.264ft
Overall Length	32.264ft
Overall Width	7.379ft
Overall Body Height	12.539ft
Min. Body Ground Clearance	1.626ft
Track Width	9.665ft
Lock-to-lock time	6:00s
Max Wheel Angle	45.00°

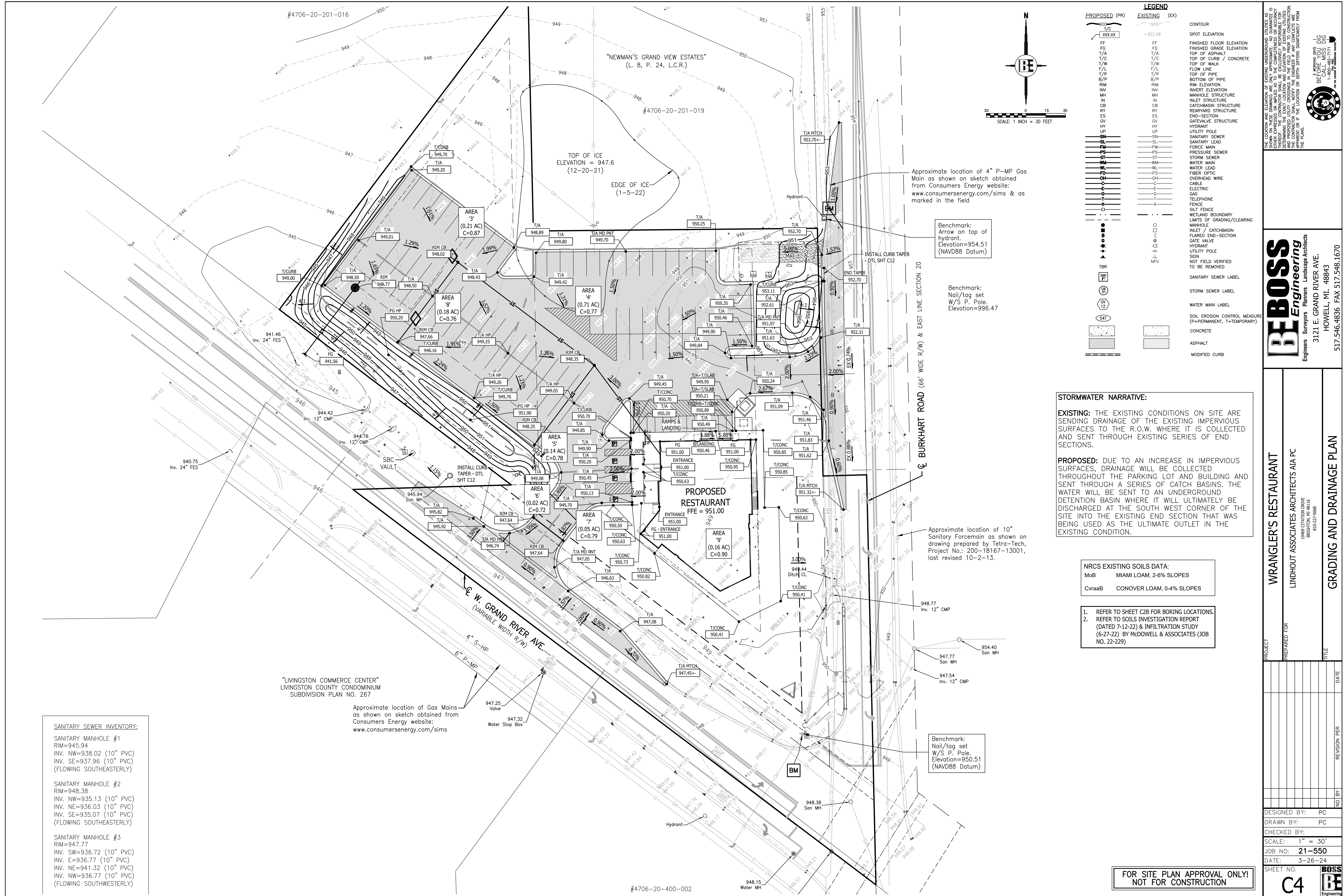
THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE DRAWINGS ARE ONLY APPROXIMATE. NO GUARANTEE IS MADE FOR THE EXACT LOCATION AND ELEVATION OF EXISTING UTILITIES. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT LOCATION AND ELEVATION OF EXISTING UTILITIES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY CONFLICTS ARE FOUND. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY CONFLICTS ARE FOUND. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY CONFLICTS ARE FOUND. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY CONFLICTS ARE FOUND.

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 Engineers Surveyors Planners Landscape Architects
 3121 E. GRAND RIVER AVE.
 HOWELL, MI. 48843
 517.546.4836 FAX 517.548.1670

PROJECT: WRANGLER'S RESTAURANT
 PREPARED FOR: LINDHOUT ASSOCIATES ARCHITECTS AIA PC
 10468 CITATION DRIVE
 BRIGHTON, MI 48116
 810.227.5668
 TITLE: EMERGENCY VEHICLE CIRCULATION PLAN

DESIGNED BY:	PC
DRAWN BY:	PC
CHECKED BY:	
SCALE:	1" = 30'
JOB NO:	21-550
DATE:	3-26-24
SHEET NO.	C3B

FOR SITE PLAN APPROVAL ONLY!
 NOT FOR CONSTRUCTION



LEGEND

PROPOSED (PR)	EXISTING (EX)	CONTOUR
FF	FF	SPOT ELEVATION
T/A	T/A	FINISHED FLOOR ELEVATION
T/C	T/C	FINISHED GRADE ELEVATION
T/W	T/W	TOP OF ASPHALT
F/L	F/L	TOP OF CURB / CONCRETE
T/P	T/P	TOP OF WALK
B/P	B/P	FLOW LINE
RM	RM	TOP OF PIPE
INV	INV	BOTTOM OF PIPE
MH	MH	RIM ELEVATION
IN	IN	INVERT ELEVATION
CB	CB	MANHOLE STRUCTURE
RY	RY	INLET STRUCTURE
ES	ES	CATCHBASIN STRUCTURE
OV	OV	REARYARD STRUCTURE
HY	HY	END-SECTION
UP	UP	GATEVALVE STRUCTURE
SN	SN	HYDRANT
SL	SL	UTILITY POLE
FM	FM	SANITARY SEWER
PS	PS	SANITARY LEAD
ST	ST	FORCE MAIN
WM	WM	PRESSURE SEWER
WL	WL	STORM SEWER
FO	FO	WATER MAIN
OH	OH	WATER LEAD
C	C	FIBER OPTIC
E	E	OVERHEAD WIRE
G	G	CABLE
T	T	ELECTRIC
X	X	GAS
L	L	TELEPHONE
F	F	FENCE
S	S	SILT FENCE
W	W	WETLAND BOUNDARY
U	U	LIMITS OF GRADING/CLEARING
IN	IN	MANHOLE
IN	IN	INLET / CATCHBASIN
FL	FL	FLARED END-SECTION
HY	HY	GATE VALVE
UP	UP	HYDRANT
SN	SN	UTILITY POLE
SL	SL	SN
FM	FM	NOT FIELD VERIFIED
PS	PS	TO BE REMOVED
ST	ST	SANITARY SEWER LABEL
WM	WM	STORM SEWER LABEL
WL	WL	WATER MAIN LABEL
FO	FO	SOIL EROSION CONTROL MEASURE
OH	OH	(P=PERMANENT, T=TEMPORARY)
C	C	CONCRETE
E	E	ASPHALT
G	G	MODIFIED CURB

STORMWATER NARRATIVE:

EXISTING: THE EXISTING CONDITIONS ON SITE ARE SENDING DRAINAGE OF THE EXISTING IMPERVIOUS SURFACES TO THE R.O.W. WHERE IT IS COLLECTED AND SENT THROUGH EXISTING SERIES OF END SECTIONS.

PROPOSED: DUE TO AN INCREASE IN IMPERVIOUS SURFACES, DRAINAGE WILL BE COLLECTED THROUGHOUT THE PARKING LOT AND BUILDING AND SENT THROUGH A SERIES OF CATCH BASINS. THE WATER WILL BE SENT TO AN UNDERGROUND DETENTION BASIN WHERE IT WILL ULTIMATELY BE DISCHARGED AT THE SOUTH WEST CORNER OF THE SITE INTO THE EXISTING END SECTION THAT WAS BEING USED AS THE ULTIMATE OUTLET IN THE EXISTING CONDITION.

NRCS EXISTING SOILS DATA:
 MoB MIAMI LOAM, 2-6% SLOPES
 CvraaB CONOVER LOAM, 0-4% SLOPES

- REFER TO SHEET C2B FOR BORING LOCATIONS.
- REFER TO SOILS INVESTIGATION REPORT (DATED 7-12-22) & INFILTRATION STUDY (6-27-22) BY McDOWELL & ASSOCIATES (JOB NO. 22-229)

SANITARY SEWER INVENTORY:

SANITARY MANHOLE #1
 RIM=945.94
 INV. NW=938.02 (10" PVC)
 INV. SE=937.96 (10" PVC)
 (FLOWING SOUTHEASTERLY)

SANITARY MANHOLE #2
 RIM=948.38
 INV. NW=935.13 (10" PVC)
 INV. NE=936.03 (10" PVC)
 INV. SE=935.07 (10" PVC)
 (FLOWING SOUTHEASTERLY)

SANITARY MANHOLE #3
 RIM=947.77
 INV. SW=936.72 (10" PVC)
 INV. E=936.77 (10" PVC)
 INV. NE=941.32 (10" PVC)
 INV. NW=936.77 (10" PVC)
 (FLOWING SOUTHWESTERLY)

"LIVINGSTON COMMERCE CENTER"
 LIVINGSTON COUNTY CONDOMINIUM
 SUBDIVISION PLAN NO. 267

Approximate location of Gas Mains
 as shown on sketch obtained from
 Consumers Energy website:
www.consumersenergy.com/sims

Approximate location of 4" P-MP Gas
 Main as shown on sketch obtained
 from Consumers Energy website:
www.consumersenergy.com/sims &
 as marked in the field

Benchmark:
 Arrow on top of
 hydrant.
 Elevation=954.51
 (NAVD88 Datum)

Benchmark:
 Nail/tag set
 W/S P. Pole.
 Elevation=996.47

Approximate location of 10"
 Sanitary Forcemain as shown on
 drawing prepared by Tetra-Tech,
 Project No.: 200-18167-13001,
 last revised 10-2-13.

Benchmark:
 Nail/tag set
 W/S P. Pole.
 Elevation=950.51
 (NAVD88 Datum)

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WRANGLER'S RESTAURANT
 LINDHOUT ASSOCIATES ARCHITECTS AIA PC
 10469 CITATION DRIVE
 BRIGHTON, MI 48116
 810.227.5668

PROJECT	DATE
WRANGLER'S RESTAURANT	
DESIGNED BY: PC	
DRAWN BY: PC	
CHECKED BY:	
SCALE: 1" = 30'	
JOB NO: 21-550	
DATE: 3-26-24	
SHEET NO. C4	



- UTILITY NOTES:**
- ALL WORK SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF HOWELL TOWNSHIP, LIVINGSTON COUNTY, AND THE STATE OF MICHIGAN.
 - ALL STORM SEWER PIPE SHALL BE C-76 CLASS IV RCP.
 - CONTRACTOR TO VERIFY DEPTH AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING ANY WORK.
 - TYPICAL INSTALLATION OF ALL UNDERGROUND UTILITIES SHALL BE BY THE OPEN-CUT METHOD - SUBJECT TO REVIEW AND VERIFICATION AT THE TIME OF CONSTRUCTION.
 - THE PROPOSED DRAINAGE SYSTEM IS TO BE OWNED AND PROPERLY MAINTAINED BY THE PROPERTY OWNER.

REFER TO THE SITE SELECTIVE DEMOLITION PLAN, SHEET C2C FOR DEMOLITION OF SPECIFIC STORM UTILITIES

REFER TO THE GRADING AND DRAINAGE PLAN, SHEET C4, FOR STORM WATER NARRATIVE

LIVINGSTON COUNTY DETENTION BASIN CALCULATIONS

AREA (ACRES)	IMPERVIOUS FACTOR	ACRE IMPERVIOUS
1.24	0.9	1.12
0.02	0.7	0.01
0.21	0.2	0.04

WATER QUALITY VOLUME V_{WQ}
 $V_{WQ} = \frac{I(A)S}{12}$
 Ave. upstream infiltration on BMP's provided? NO
 $V_{WQ} = \frac{I(A)S}{12} = 4295 \text{ FT}^3$
 $V_{WQ} = \frac{I(A)S}{12} = 642 \text{ FT}^3$

WATER QUALITY RATE FOR MECHANICAL STRUCTURE
 $T_c = \text{MAX TIME OF CONCENTRATION} = 16.0 \text{ MIN}$
 $Q_{10} = \frac{(CA)^{0.78} (S)^{1.49}}{1480} = 2.54 \text{ CFS}$

CHANNEL PROTECTION VOLUME CONTROL - REQUIRED
 $V_{10} = \frac{V_{WQ}}{2} = 5950 \text{ FT}^3$

CHANNEL PROTECTION VOLUME CONTROL - PROVIDED
 $V_{10} = \text{San Infiltration rate} = 0 \text{ FT}^3$
 Ave. upstream infiltration on BMP's provided? NO
 Basin Footprint Infiltration Area Required - NO INFILTRATION FT²
 $V_{10} = 0 \text{ FT}^3$

CHANNEL PROTECTION RATE CONTROL (EXTENDED DETENTION VOLUME)
 $V_{10} = 8,970 \text{ FT}^3$

EXTENDED DETENTION OUTLET RATE
 $Q_{10} = \frac{V_{10}}{T_c} = 0.047 \text{ CFS}$
 $H_{10} = \frac{V_{10} (1.483 Q_{10}^{0.78})^{1.49}}{1480} = 0.0 \text{ FT HOLES}$
 $H = 5.00 \text{ FT}$
 $ELEV_{10} = 943.92 \text{ FT}$

100-YEAR ALLOWABLE OUTLET RATE
 $Q_{100} = \text{Restricted Drain Rate} = 0.1 \text{ CFS/ACRE}$
 $Q_{100} = 1.1055 - 0.206LN(A) = 1.000 \text{ CFS/ACRE}$
 $Q_{100} = \text{LESSEST OF } Q_{100A} \text{ \& } Q_{100B} = 0.147 \text{ CFS}$

100-YEAR DETENTION VOLUME
 $V_{100} = \frac{16685 (CA)^{0.78}}{12} = 22326 \text{ FT}^3$
 $Q_{100} = \frac{(CA)^{0.78} (S)^{1.49}}{1480} = 7.00 \text{ CFS}$
 $R = \frac{Q_{100} - Q_{10}}{Q_{100} + Q_{10}} = 0.7854$
 $V_{100} = \frac{V_{10} R}{1 - R} = 17356 \text{ FT}^3$
 $V_{100} = V_{10} + V_{100} = 17356 \text{ FT}^3$

BASIN STORAGE PROVIDED

ELEVATION (FT)	VOLUME (FT ³)	DHWL
940.67	185	18.094
940	732	16.890
940	12,814	12.814
944	764	5.280
943	665	3.873
942	333	518
941.67	0	0

PROVIDED FOOTPRINT OF BASIN BOTTOM AREA
 6416 FT^2

OUTLET CONTROL STRUCTURE
 $Q_{10} \text{ ACTUAL} = 0 \text{ (FT HOLES)}$
 $A_{10} = 0.0000 \text{ FT}^2$
 $Q_{10} \text{ ACTUAL} = (A_{10})^{0.62} (2 \times 32.2 \times h^{1.49}) = 0.000 \text{ CFS}$

OUTLET ORIFICE
 $Q_{10} \text{ ACTUAL} = Q_{10} - Q_{10} \text{ ACTUAL} = 0.147 \text{ CFS}$
 $A_{10} = \frac{Q_{10} \text{ ACTUAL}}{C \sqrt{2g \cdot h}} = \frac{0.147}{0.028 \sqrt{2 \cdot 32.2 \cdot (943.92 - 941.67)}} = 0.028 \text{ FT}^2$
 $\text{AREA OF ORIFICES} = 2 \text{ INCH DIAMETER ORIFICE} = 0.022 \text{ FT}^2$
 $\# \text{ ORIFICES} = A_{10} / 0.022 = 1 \text{ ORIFICES}$

OVERFLOW SPILLWAY DESIGN
 Design Flow Rate: $Q_{100} = 7.00 \text{ CFS}$
 Depth of Spillway: $D_{100} = 5 \text{ INCHES}$
 Width of Spillway: $W_{100} = \frac{Q_{100}}{2.33 C D_{100}^{1.49}} = 5.9 \text{ FT}$

BASIN SIZE REQUIRED = 17356 FT³
BASIN SIZE PROVIDED = 18,094 FT³

ORIFICE DESIGN SUMMARY

ELEVATION	# OF HOLES	DIAMETER OF HOLES
943.92	1.0	11 INCH
943.92	1.0	2 INCH

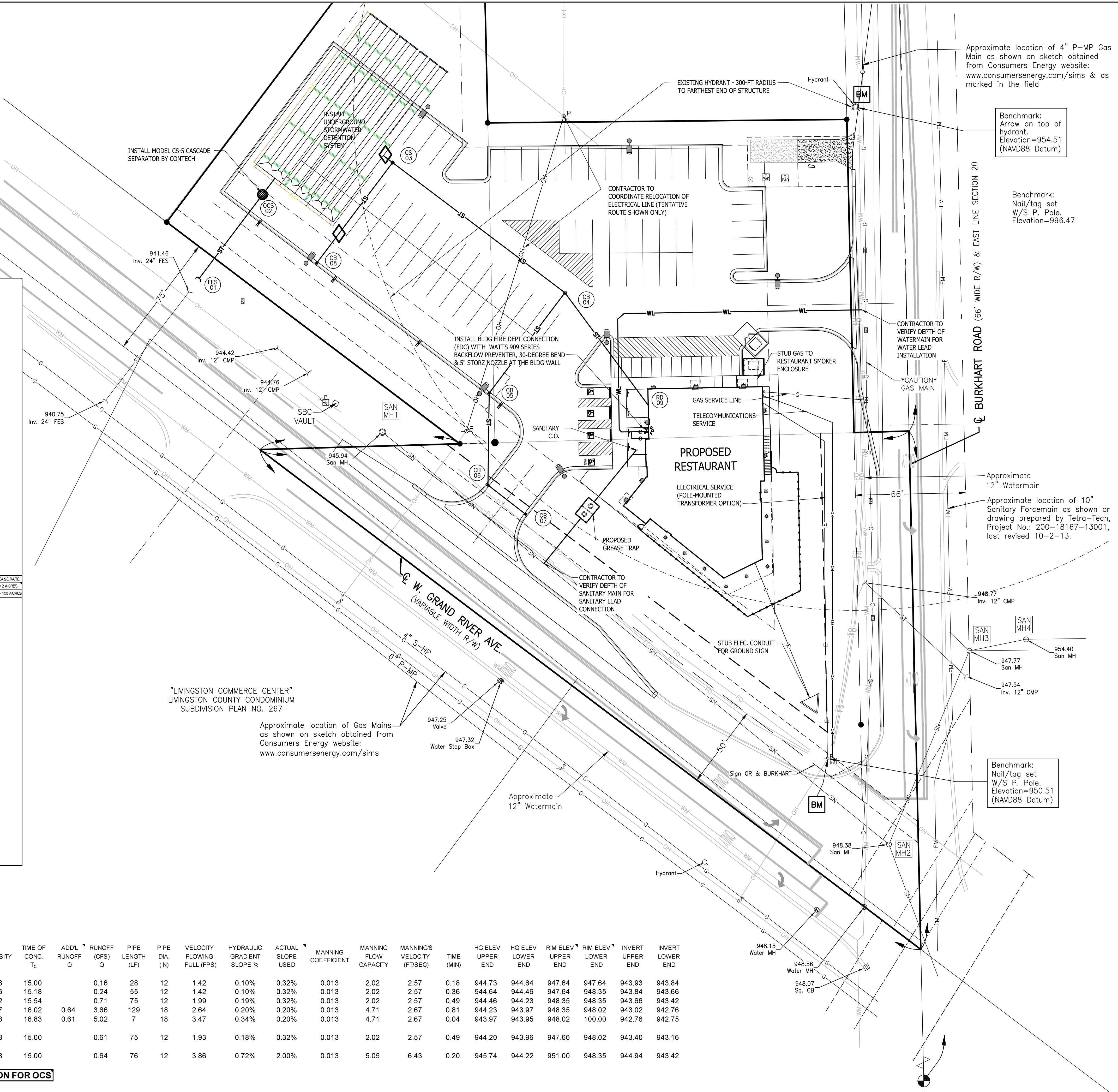
OVERFLOW SPILLWAY SUMMARY

WIDTH OF OVERFLOW SPILLWAY	PERF
6 FT	

FROM	TO	DRAIN AREA	ACRES	RUNOFF COEFF	EQUIV. AREA A * C	INTEN-SITY I	TIME OF CONC. T _c	ADDL. RUNOFF Q	RUNOFF (CFS) Q	PIPE LENGTH (LF)	PIPE DIA. (IN)	VELOCITY FLOWING FULL (FPS)	HYDRAULIC GRADIENT SLOPE %	ACTUAL SLOPE USED	MANNING COEFFICIENT	MANNING FLOW CAPACITY	MANNING'S VELOCITY (FT/SEC)	TIME (MIN)	HG ELEV UPPER END	HG ELEV LOWER END	RIM ELEV UPPER END	RIM ELEV LOWER END	INVERT UPPER END	INVERT LOWER END
7	6	7	0.05	0.79	0.04	4.38	15.00	0.16	28	12	1.42	0.10%	0.32%	0.013	2.02	2.57	0.18	944.73	944.64	947.64	947.64	943.93	943.84	
6	5	6	0.02	0.72	0.02	4.36	15.18	0.24	55	12	1.42	0.10%	0.32%	0.013	2.02	2.57	0.36	944.64	944.46	947.64	948.35	943.84	943.66	
5	4	5	0.14	0.78	0.11	4.32	15.54	0.71	75	12	1.99	0.19%	0.32%	0.013	2.02	2.57	0.49	944.46	944.23	948.35	948.35	943.66	943.42	
4	3	4	0.71	0.77	0.54	4.27	16.02	0.64	3.66	129	18	2.84	0.20%	0.20%	0.013	4.71	2.67	0.81	944.23	943.97	948.02	948.02	943.02	942.76
3	BASIN	3	0.21	0.87	0.18	4.18	16.83	0.61	5.02	7	18	3.47	0.34%	0.20%	0.013	4.71	2.67	0.04	943.97	943.95	948.02	100.00	942.76	942.75
8	3	8	0.18	0.76	0.14	4.38	15.00	0.61	75	12	1.93	0.18%	0.32%	0.013	2.02	2.57	0.49	944.20	943.96	947.66	948.02	943.40	943.16	
9	4	9	0.16	0.90	0.15	4.38	15.00	0.64	76	12	3.86	0.72%	2.00%	0.013	5.05	6.43	0.20	945.74	944.22	951.00	948.35	944.94	943.42	

100-YEAR PIPE FLOW CALCULATION FOR OCS

BASIN	TO	ALL	1.47	0.80	6.31	15.00	7.40	12	24	2.97	0.17%	0.14%	0.013	8.49	2.70	0.07	943.29	943.27	100.00	100.00	941.67	941.65
OCS 02	FES 01	OCS 02	-	-	-	15.07	7.40	63	24	2.97	0.17%	0.14%	0.013	8.49	2.70 <td>0.39</td> <td>943.27</td> <td>943.16</td> <td>100.00</td> <td>-</td> <td>941.65</td> <td>941.56</td>	0.39	943.27	943.16	100.00	-	941.65	941.56



LEGEND

PROPOSED (PR)	EXISTING (EX)
FF	FF
FG	FG
T/A	T/A
T/C	T/C
T/W	T/W
F/L	F/L
B/P	B/P
RM	RM
INV	INV
MH	MH
IN	IN
CB	CB
RY	RY
ES	ES
OV	OV
HY	HY
UP	UP
SN	SN
SL	SL
FM	FM
PS	PS
ST	ST
WM	WM
WL	WL
FO	FO
OH	OH
C	C
E	E
G	G
T	T
X	X
J	J
NV	NV
TBR	TBR
SN #1	SN #1
SN #2	SN #2
SN #3	SN #3
SN #4	SN #4
SAT	SAT

CONTOUR	SPOT ELEVATION
FINISHED FLOOR ELEVATION	
FINISHED GRADE ELEVATION	
TOP OF ASPHALT	
TOP OF CURB / CONCRETE	
FLOW LINE	
BOTTOM OF PIPE	
RIM ELEVATION	
INVERT ELEVATION	
MANHOLE STRUCTURE	
INLET STRUCTURE	
CATCHBASIN STRUCTURE	
REARWARD STRUCTURE	
END-SECTION	
GATE VALVE	
HYDRANT	
UTILITY POLE	
SANITARY SEWER	
SANITARY LEAD	
FORCE MAIN	
PRESSURE SEWER	
STORM SEWER	
WATER MAIN	
WATER LEAD	
FIBER OPTIC	
OVERHEAD WIRE	
CABLE	
ELECTRIC	
GAS	
TELEPHONE	
FENCE	
SLT FENCE	
WETLAND BOUNDARY	
LIMITS OF GRADING/CLEARING	
MANHOLE	
INLET / CATCHBASIN	
FLARED END-SECTION	
GATE VALVE	
HYDRANT	
UTILITY POLE	
SIGN	
NOT VALIDATED	
TO BE REMOVED	
SANITARY SEWER LABEL	
STORM SEWER LABEL	
WATER MAIN LABEL	
SOIL EROSION CONTROL MEASURE (P=PERMANENT, T=TEMPORARY)	
CONCRETE	
ASPHALT	
MODIFIED CURB	

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 Engineers Surveyors Planners Landscape Architects
 3121 E. GRAND RIVER AVE.
 HOWELL, MI. 48843
 517.546.4836 FAX 517.548.1670

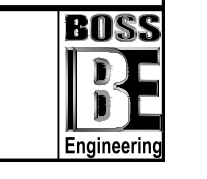
WRANGLER'S RESTAURANT
 LINDHOUT ASSOCIATES ARCHITECTS AIA PC
 10466 CITATION DRIVE
 BRIGHTON, MI 48116
 810.227.5668

UTILITY PLAN

PROJECT	DATE

DESIGNED BY: PC
 DRAWN BY: PC
 CHECKED BY:
 SCALE: 1" = 30'
 JOB NO: 21-550
 DATE: 3-26-24
 SHEET NO. C5

FOR SITE PLAN APPROVAL ONLY!
 NOT FOR CONSTRUCTION



LUMINAIRE SCHEDULE							
FILES PROVIDED BY MANUFACTURER FOR CALCULATION OF LIGHTING LEVEL							
SYMBOL	LABEL	QTY.	DESCRIPTION	CATALOG NUMBER	LAMP	LUMENS	LLF
LA	6	LITHONIA AREA LIGHT WITH BACKLIGHT SHIELD	DSX0 LED P4 40K 70CRI T4M HS	LED	ABSOLUTE	.9	18'
LB	8	LITHONIA LED WALL PACK	WDGE2 LED P2 40K 70CRI TFM	LED	ABSOLUTE	.9	(WALL MOUNT)
LC	9	LITHONIA CANOPY DOWNLIGHT LUMINAIRE (AT FRONT PERIMETER CANOPY)	LDN6 40/10 L04AR LSS	LED	ABSOLUTE	.9	(CANOPY MNT)
LD	1	LITHONIA AREA LIGHT	DSX0 LED P4 40K 70CRI T5M	LED	ABSOLUTE	.9	18' 2' 20'

HOWELL TOWNSHIP LIGHTING STANDARDS:

- 0.0 MAX. FOOTCANDLE (FC) AT THE PROPERTY LINE
- LIGHTING SHALL UTILIZE FULL-CUTOFF TYPE, DIRECTED AWAY FROM ADJACENT PROPERTIES & RIGHTS-OF-WAY.

GENERAL LIGHTING NOTES

- THE LIGHTING PATTERN REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER'S LUMINAIRE MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, AND OTHER VARIABLE FIELD CONDITIONS.
- ALL POLES ARE TO BE MOUNTED ON CONCRETE PEDESTALS 2' ABOVE GRADE IN PARKING LOTS AS SHOWN IN DETAIL.
- ALL POLES LOCATED OUTSIDE OF THE PARKING AREA SHALL BE LOCATED 3' FROM BACK OF CURB OR EDGE OF SIDEWALKS UNLESS OTHERWISE SHOWN.

SITE LIGHTING SUMMARY

LIGHTING LEVELS ARE SHOWN IN FOOTCANDLES AT GRADE
 AVERAGE SITE LIGHTING LEVEL: 0.3 FC.
 MAX. LIGHT LEVEL ON SITE: 8.5 FC

WDGE2 LED

Architectural Wall Sconce
Precision Refractive Optic

Specifications
 Depth (D1): 7"
 Depth (D2): 1.5"
 Height: 9"
 Width: 11.5"
 Weight (without optional): 13.5 lbs

Introduction
 The WDGE2 LED family is designed to meet specific's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectangular design comes in four sizes with lumens packages ranging from 1,200 to 25,000 lumens, providing a true site-wide solution. Embedded with a Light+AR wireless controls, the WDGE2 family provides additional energy savings and code compliance.

WDGE2 with industry leading precision refractive optics provides great uniform distribution and optical control. When combined with multiple integrated emergency battery backup options, including an 18W cold temperature option, the WDGE2 becomes the ideal wall-mounted lighting solution for pedestrian scale applications in any environment.

Lumens	Depth (D1)	Depth (D2)	Height	Width	Weight
1,200	7"	1.5"	9"	11.5"	13.5 lbs
2,400	7"	1.5"	9"	11.5"	13.5 lbs
4,800	7"	1.5"	9"	11.5"	13.5 lbs
9,600	7"	1.5"	9"	11.5"	13.5 lbs
19,200	7"	1.5"	9"	11.5"	13.5 lbs
25,000	7"	1.5"	9"	11.5"	13.5 lbs

Ordering Information EXAMPLE: WDGE2 LED P3 40K 80CRI V6 MVOLT SRM DDEBXD

Label	Label	Label	Label	Label	Label	Label	Label	Label	Label	Label
W	W	W	W	W	W	W	W	W	W	W

LEGEND

PROPOSED (PR)	EXISTING (EX)	DESCRIPTION
900	900	CONTOUR
T/C	T/C	FINISHED GRADE ELEVATION
T/A	T/A	TOP OF ASPHALT
T/C	T/C	TOP OF CURB / CONCRETE
T/W	T/W	TOP OF WALK
F/L	F/L	FLOW LINE
T/P	T/P	TOP OF PIPE
B/P	B/P	BOTTOM OF PIPE
R/M	R/M	RIM ELEVATION
INV	INV	INVERT ELEVATION
MH	MH	MANHOLE STRUCTURE
IN	IN	INLET STRUCTURE
CB	CB	CATCHBASIN STRUCTURE
RY	RY	REARWAY STRUCTURE
END-SECTION	END-SECTION	END-SECTION
GV	GV	GATEVALE STRUCTURE
HY	HY	HYDRANT
UP	UP	UTILITY POLE
SN	SN	SANITARY SEWER
SL	SL	SANITARY LEAD
FM	FM	FORCE MAIN
PS	PS	PRESSURE SEWER
ST	ST	STORM SEWER
WM	WM	WATER MAIN
WL	WL	WATER LEAD
FO	FO	FIBER OPTIC
OH	OH	OVERHEAD WIRE
C	C	CABLE
E	E	ELECTRIC
G	G	GAS
T	T	TELEPHONE
X	X	FENCE
SILT	SILT	SILT FENCE
W	W	WETLAND BOUNDARY
L	L	LIMITS OF GRADING/CLEARING
M	M	MANHOLE
I	I	INLET / CATCHBASIN
F	F	FLARED END-SECTION
G	G	GATE VALVE
H	H	HYDRANT
U	U	UTILITY POLE
S </td <td>S</td> <td>SIGN</td>	S	SIGN
N	N	NOT FIELD VERIFIED TO BE REMOVED
S	S	SANITARY SEWER LABEL
S	S	STORM SEWER LABEL
S	S	WATER MAIN LABEL
S	S	SOIL EROSION CONTROL MEASURE (P=PERMANENT, T=TEMPORARY)
S	S	CONCRETE
S	S	ASPHALT
S	S	MODIFIED CURB

Contractor Select Lithonia LDN LED Commercial Downlight

LDN's downlights are the most cost-effective general illumination solutions for commercial-grade downlight applications. The LDN and LDNA designs allow for a quiet, glare-free ceiling without compromising on efficacy.

FEATURES:

- 35° cutoff
- 80-90 Lumens/Watt
- 1.0 Spacing/Mounting Height ratio
- MVOLT (120-277V) 0-10V dimming
- Available in 1000lm, 1500lm, or 2000lm

Label	Label	Label	Label	Label	Label	Label	Label	Label	Label
LDN	LDN	LDN	LDN	LDN	LDN	LDN	LDN	LDN	LDN

D-Series Size 0 Amber Series LED Area Luminaire

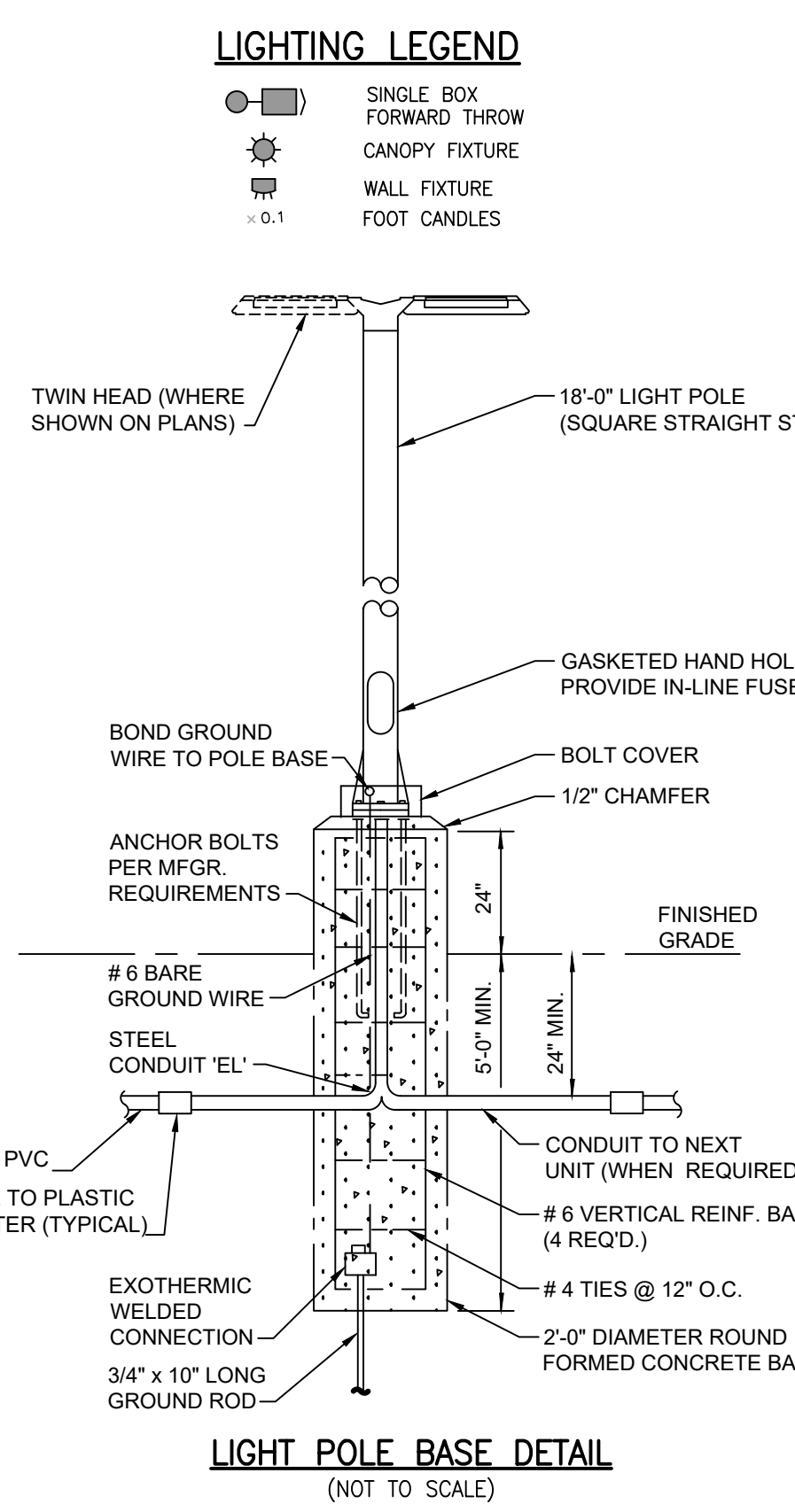
The modern styling of the D-Series features a highly refined aesthetic that blends seamlessly with the environment. The D-Series offers the benefits of the latest in Amber LED technology into a high performance, high efficacy, long-life luminaire.

The photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. D-Series outstanding photometry aids in reducing the number of poles required in area lighting.

Specifications
 EPA: 0.44 ft-cd
 Length: 26.18"
 Width: 14.50"
 Height H1: 7.46"
 Height H2: 23.30"
 Weight: 23 lbs

Ordering Information EXAMPLE: DSX0 LED P6 AMBPC AMCRI T3M MVOLT SPA NTAIR2 PIRHN DDEBXD

Label	Label	Label	Label	Label	Label	Label	Label	Label	Label
DSX0	DSX0	DSX0	DSX0	DSX0	DSX0	DSX0	DSX0	DSX0	DSX0



FOR SITE PLAN APPROVAL ONLY!
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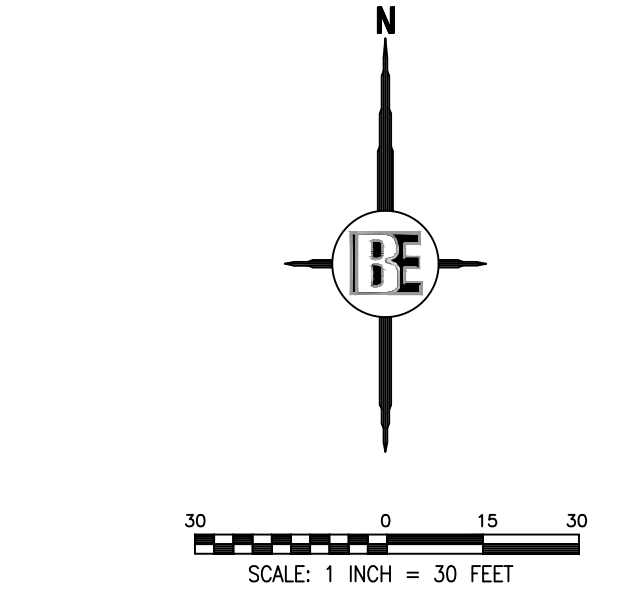
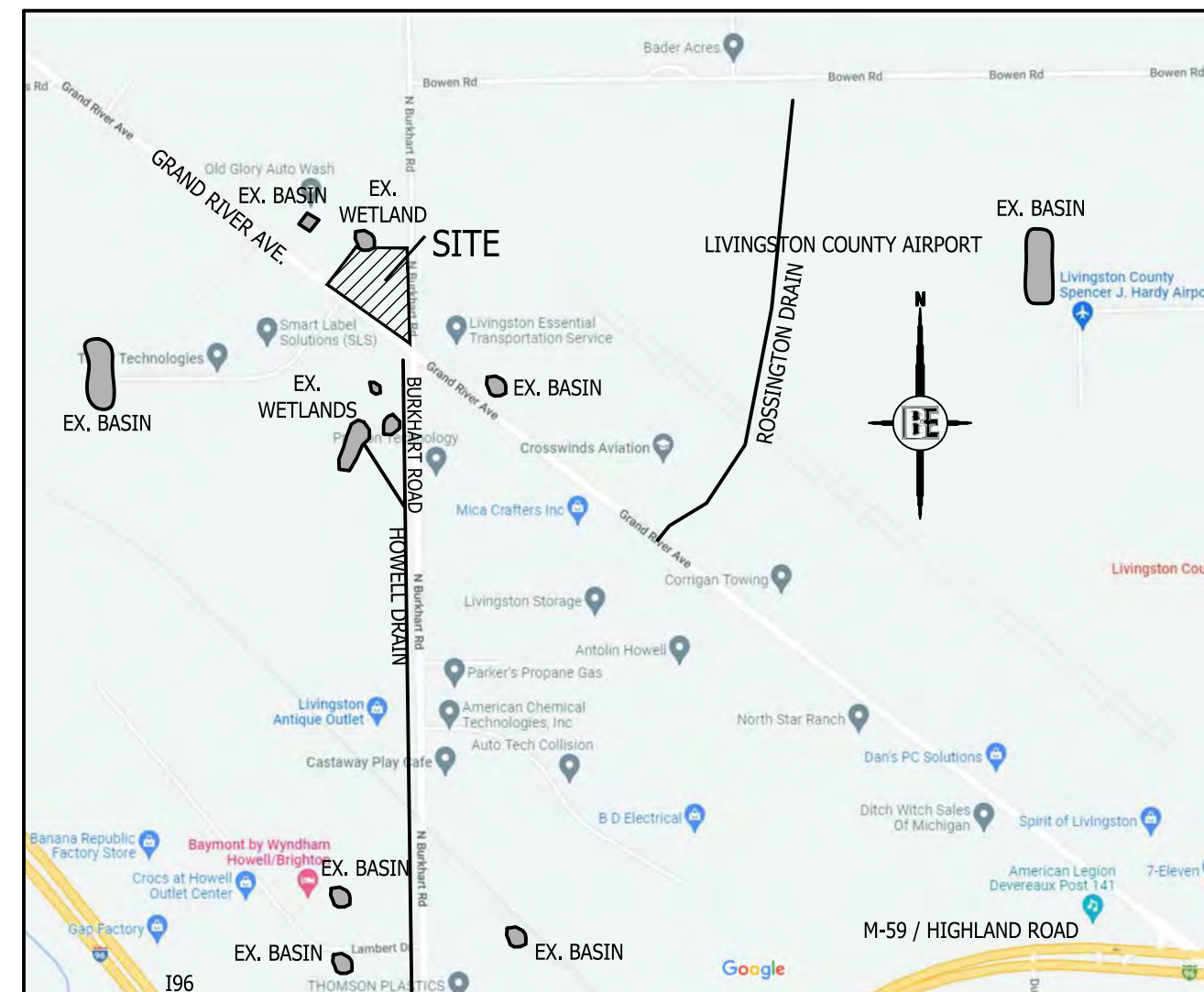
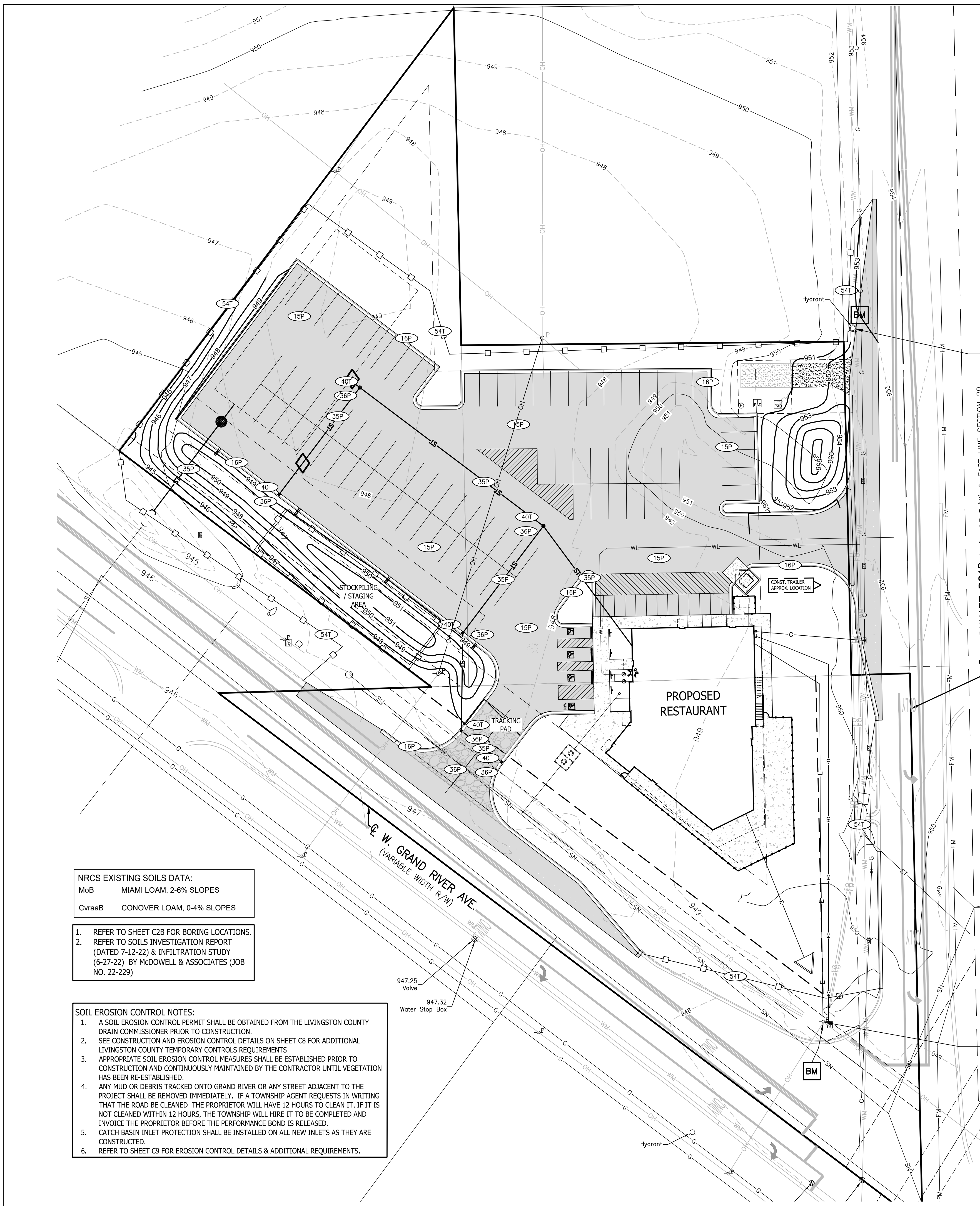
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 BRIGHTON, MI 48116
 810-227-5668

LIGHTING PHOTOMETRIC PLAN

PROJECT	DATE
WRANGLER'S RESTAURANT	

NO.	BY	REVISION
1	JH	DESIGNED
2	JH	CHECKED
3	JH	SCALE: 1" = 30'
4	JH	JOB NO: 21-550
5	JH	DATE: 3-26-24
6	JH	SHEET NO.



LEGEND

PROPOSED (PR)	EXISTING (EX)	
900	922.08	CONTOUR
T/C		SPOT ELEVATION
FF	FF	FINISHED FLOOR ELEVATION
FG	FG	FINISHED GRADE ELEVATION
T/A	T/A	TOP OF ASPHALT
T/W	T/W	TOP OF CURB / CONCRETE
F/L	F/L	TOP OF WALK
T/P	T/P	FLOW LINE
B/P	B/P	TOP OF PIPE
RIM	RIM	BOTTOM OF PIPE
INV	INV	RIM ELEVATION
MH	MH	INVERT ELEVATION
IN	IN	MANHOLE STRUCTURE
RY	RY	INLET STRUCTURE
ES	ES	CATCHBASIN STRUCTURE
GV	GV	REARWARD STRUCTURE
HY	HY	END-SECTION
LUP	LUP	GATEVALVE STRUCTURE
SN	SN	UTILITY POLE
SL	SL	SANITARY SEWER
FM	FM	SANITARY LEAD
PS	PS	FORCE MAIN
ST	ST	PRESSURE SEWER
WM	WM	STORM SEWER
WL	WL	WATER MAIN
FO	FO	WATER LEAD
OH	OH	FIBER OPTIC
W	W	OVERHEAD WIRE
C	C	CABLE
E	E	ELECTRIC
T	T	GAS
X	X	TELEPHONE
F	F	FENCE
S	S	SILT FENCE
WLB	WLB	WETLAND BOUNDARY
L	L	LIMITS OF GRADINGS/CLEARING
M	M	MANHOLE
F	F	FLARED END-SECTION
G	G	GATE VALVE
H	H	HYDRANT
U	U	UTILITY POLE
N	N	NOT FIELD VERIFIED
NFV	NFV	TO BE REMOVED
SL	SL	SANITARY SEWER LABEL
SS	SS	STORM SEWER LABEL
WM	WM	WATER MAIN LABEL
SE	SE	SOIL EROSION CONTROL MEASURE (P=PERMANENT, T=TEMPORARY)
C	C	CONCRETE
A	A	ASPHALT
M	M	MODIFIED CURB

SURFACE WATER & COUNTY DRAINS
WETLAND - AT NORTH PROPERTY LINE
WETLANDS - 3+ CLUSTER, APPROX. 425'-FT SOUTH, WEST OF BURKHART RD.
LAKE - APPROX. 3.74 MI SOUTHEAST TO THOMPSON LAKE.
STREAM - APPROX. 5,700'-FT EAST TO SHAWASSEE RIVER TRIBUTARY
BASIN - APPROX. 1,950'-FT WEST AT THE LIVINGSTON COMMERCE CENTER
BASIN - APPROX. 3,300'-FT EAST AT LIVINGSTON COUNTY AIRPORT
BASIN - APPROX. 270'-FT NORTHWEST AT OLD GLORY CARWASH
BASIN - APPROX. 650'-FT SOUTHEAST AT L.E.T.S. FACILITY
DRAIN - APPROX. 200 FT SOUTH TO HOWELL COUNTY DRAIN, BURKHART RD.
DRAIN - APPROX. 1,750'-FT SOUTHEAST TO ROSSINGTON COUNTY DRAIN

Benchmark:
Arrow on top of hydrant.
Elevation=954.51
(NAVD88 Datum)

Benchmark:
Nail/tag set
W/S P. Pole.
Elevation=996.47

BURKHART ROAD (66' WIDE R/W) & EAST LINE SECTION 20

CONTROLS & MEASURES POST CONSTRUCTION SEQUENCE

ACTIVITY	WEEKLY	MONTHLY	AS REQUIRED
MAINTAIN LANDSCAPING, REPLACE MULCH	X	X	X
CLEAN INLETS		X	X
COLLECT LITTER	X		X
SWEEP PARKING LOT		X	X

CONTROLS & MEASURES NARRATIVE

ACTIVITY	DESCRIPTION
MAINTAIN LANDSCAPING, REPLACE MULCH	COLLECT GRASS, TREE, AND SHRUB CLIPPINGS. DISPOSE IN APPROVED CONTAINER. REPLACE DEAD SOD, TREES AND SHRUBS.
CLEAN INLETS	REMOVE LITTER, SEDIMENT, AND DEBRIS. DISPOSE OF IN APPROVED LANDFILL.
COLLECT LITTER	DISPOSE OF WITH INLET DEBRIS.
SWEEP PARKING LOT	REMOVE MUD, DIRT, GREASE AND OIL WITH PERIODIC SWEEPING
DUST CONTROL	SPRINKLE WATER AS NEEDED

PROPOSED CONST. SCHEDULE FOR THE YEAR 2024-2025

ACTIVITY	AUG	SEPT	OCT	NOV	DEC	APR	MAY
CLEARING & GRUBBING		-					
UNDERGROUND RETENTION SYSTEM			-				
UNDERGROUND UTILITY			-				
BUILDING CONSTRUCTION				-			
PAVING						-	
LANDSCAPING							-
SEED & MULCH							-
SECC CLOSOUT							-

SOIL EROSION CONTROL MEASURES
P=PERMANENT T=TEMPORARY
TOTAL DISTURBED AREA = 2.50 AC (108,900 SQFT)

NO.	MEASURE	DESCRIPTION
1	STRIPPING & STOCKPILING TOPSOIL	TOPSOIL MAY BE STOCKPILED ABOVE BORROW AREAS TO ACT AS A DIVERSION STOCKPILE SHOULD BE TEMPORARILY SEEDED.
6	SEEDING WITH MULCH AND/OR MATING	FACILITATES ESTABLISHMENT OF VEGETATIVE COVER EFFECTIVE FOR DRAINAGEWAYS WITH LOW VELOCITY EASILY PLACED IN SMALL QUANTITIES BY INEXPERIENCED PERSONNEL SHOULD INCLUDE PREPARED TOPSOIL SET.
14	AGGREGATE COVER	STABILIZES SOIL SURFACE, THIS MINIMIZING EROSION PERMITS CONSTRUCTION TRAFFIC IN ADVERSE WEATHER MAY BE USED AS PART OF PERMANENT BASE CONSTRUCTION OF PAVED AREAS
15	PAVING	PROTECTS AREAS WHICH CANNOT OTHERWISE BE PROTECTED, BUT INCREASES RUNOFF VELOCITY IRREGULAR SURFACE WILL HELP SLOW VELOCITY
16	CURB & GUTTER	KEEPS HIGH VELOCITY RUNOFF ON PAVED AREAS FROM LEAVING PAVED SURFACE COLLECTS AND CONDUITS RUNOFF TO ENCLOSED DRAINAGE SYSTEM OR PREPARED DRAINAGEWAY
35	STORM SEWER	SYSTEM REMOVES COLLECTED RUNOFF FROM SITE, PARTICULARLY FROM PAVED AREAS CAN ACCEPT LARGE CONCENTRATIONS OF RUNOFF CONDUITS RUNOFF TO MUNICIPAL SEWER SYSTEM OR STABILIZED OUTFALL LOCATION USE CATCH BASINS TO COLLECT SEDIMENT
36	CATCH BASIN, DRAIN INLET	COLLECTS HIGH VELOCITY CONCENTRATED RUNOFF MAY USE FILTER CLOTH OVER INLET
40	INLET SEDIMENT FILTER	EASY TO SHAPE COLLECTS SEDIMENT MAY BE CLEANED AND EXPANDED AS NEEDED
54	SILT FENCE	USES GEOTEXTILE FABRIC AND POST OR POLES. EASY TO CONSTRUCT AND LOCATE AS NECESSARY. (SEE DETAIL SHEET 08)

NRCS EXISTING SOILS DATA:

MoB	MIAMI LOAM, 2-6% SLOPES
CvraaB	CONOVER LOAM, 0-4% SLOPES

- REFER TO SHEET C2B FOR BORING LOCATIONS.
- REFER TO SOILS INVESTIGATION REPORT (DATED 7-12-22) & INFILTRATION STUDY (6-27-22) BY McDOWELL & ASSOCIATES (JOB NO. 22-229)

- SOIL EROSION CONTROL NOTES:**
- A SOIL EROSION CONTROL PERMIT SHALL BE OBTAINED FROM THE LIVINGSTON COUNTY DRAIN COMMISSIONER PRIOR TO CONSTRUCTION.
 - SEE CONSTRUCTION AND EROSION CONTROL DETAILS ON SHEET C8 FOR ADDITIONAL LIVINGSTON COUNTY TEMPORARY CONTROLS REQUIREMENTS
 - APPROPRIATE SOIL EROSION CONTROL MEASURES SHALL BE ESTABLISHED PRIOR TO CONSTRUCTION AND CONTINUOUSLY MAINTAINED BY THE CONTRACTOR UNTIL VEGETATION HAS BEEN RE-ESTABLISHED.
 - ANY MUD OR DEBRIS TRACKED ONTO GRAND RIVER OR ANY STREET ADJACENT TO THE PROJECT SHALL BE REMOVED IMMEDIATELY. IF A TOWNSHIP AGENT REQUESTS IN WRITING THAT THE ROAD BE CLEANED THE PROPRIETOR WILL HAVE 12 HOURS TO CLEAN IT. IF IT IS NOT CLEANED WITHIN 12 HOURS, THE TOWNSHIP WILL HIRE IT TO BE COMPLETED AND INVOICE THE PROPRIETOR BEFORE THE PERFORMANCE BOND IS RELEASED.
 - CATCH BASIN INLET PROTECTION SHALL BE INSTALLED ON ALL NEW INLETS AS THEY ARE CONSTRUCTED.
 - REFER TO SHEET C9 FOR EROSION CONTROL DETAILS & ADDITIONAL REQUIREMENTS.

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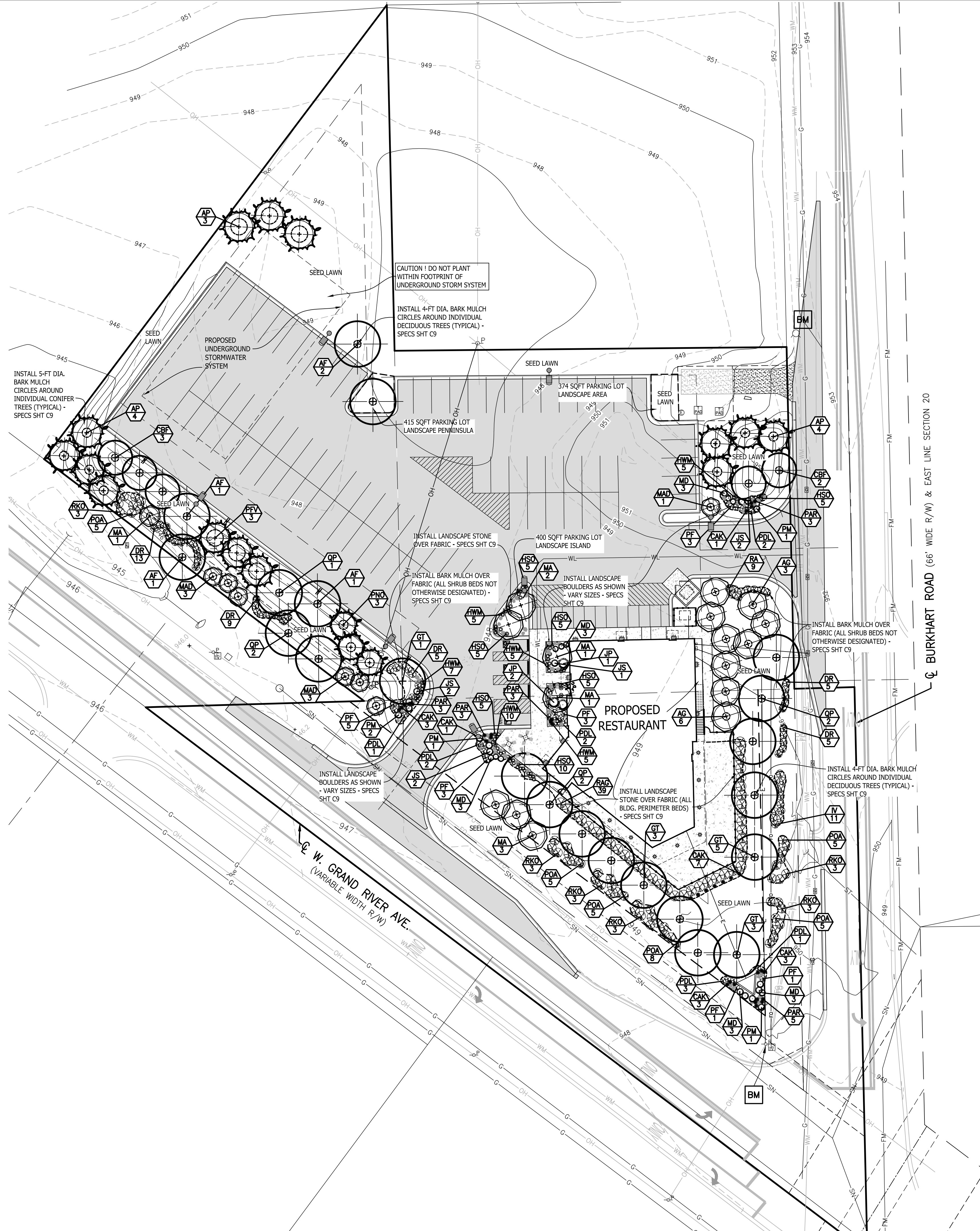
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LINDHOUT ASSOCIATES ARCHITECTS AIA PC
10469 CITATION DRIVE
BRIGHTON, MI 48116
810.227.5668

SOIL EROSION AND SEDIMENTATION CONTROL PLAN

PROJECT	WRANGLER'S RESTAURANT
PREPARED FOR	LINDHOUT ASSOCIATES ARCHITECTS AIA PC
TITLE	SOIL EROSION AND SEDIMENTATION CONTROL PLAN
DATE	
REVISION PER	
NO BY	
DESIGNED BY: PC	
DRAWN BY: PC	
CHECKED BY:	
SCALE: 1" = 30'	
JOB NO: 21-550	
DATE: 3-26-24	
SHEET NO.	C7

FOR SITE PLAN APPROVAL ONLY!
NOT FOR CONSTRUCTION





LEGEND

PROPOSED (PR)	EXISTING (EX)	PROPOSED (PR)	EXISTING (EX)
-900-	-900-	○	○
T/C	+922.08	○	○
FFE	FFE	○	○
FG	FG	○	○
T/A	T/A	○	○
T/C	T/C	○	○
T/W	T/W	○	○
F/L	F/L	○	○
T/P	T/P	○	○
B/P	B/P	○	○
RM	RM	○	○
INV	INV	○	○
MH	MH	○	○
IN	IN	○	○
CB	CB	○	○
GV	GV	○	○
HYD	HYD	○	○
UP	UP	○	○
INSTALL	INSTALL	○	○
SN	SN	○	○
SL	SL	○	○
ST	ST	○	○
WM	WM	○	○
WL	WL	○	○
FO	FO	○	○
OH	OH	○	○
C	C	○	○
E	E	○	○
G	G	○	○
T	T	○	○

LANDSCAPE LEGEND

(Symbol)	EXISTING DECIDUOUS TREE
(Symbol)	PROPOSED DECIDUOUS TREE
(Symbol)	PROPOSED CONIFER TREE
(Symbol)	PROPOSED ORNAMENTAL TREE
(Symbol)	PROPOSED CONIFER SHRUB
(Symbol)	PROPOSED DECIDUOUS SHRUB
(Symbol)	PROPOSED PERENNIAL FORB
(Symbol)	PROPOSED ORNAMENTAL GRASS
(Symbol)	PROPOSED LANDSCAPE BOULDER

LANDSCAPE CALCULATIONS

ZONING: RSC (REGIONAL SERVICE COMMERCIAL)
 SITE AREA: 2.52 AC+ (109,770 SQFT) (EXCLUSIVE OF R.O.W.) 83 PARKING SPACES REQUIRED
 GENERAL: MIX OF CONIFEROUS & DECIDUOUS TREES AT 1 / 3,000 SQFT OF UN-PAVED OPEN AREAS WHERE NO OTHER LANDSCAPE REQUIREMENTS
 BERMS - PARKING: ADJ. TO ALL R.O.W.'S, 20-FT WIDE, 1:3 MAX SLOPE, 2-3 FT HGT UNDULATING MIN 1 TREE (DECID. SHADE) / 30 LFT + 1 ORNAMENTAL TREE / 50 LFT + CONIFERS (6-FT HGT, 15-FT O.C. STAGGERED, BARRIER FOR 50% OF BERM LENGTH) MIN 1 TREE (DECID. SHADE OR CONIFER) / 40 LFT (NOT INCL OPENINGS) + 1 ORNAMENTAL TREE / 100 LFT + 8 SHRUBS / 40 LFT
 R.O.W. LANDSCAPING: N.A. (ALL ADJACENT PROPERTIES SAME RSC ZONING)
 PROTECTIVE SCREENING: MIN CONIFERS ON 3 SIDES, EXCEEDING HGT. OF EQUIPMENT
 MECH. EQUIP. SCREENS: LANDSCAPE ISLANDS 10 SQFT / SPACE - EA MIN 20-FT WIDE & 400 SQFT
 FOUNDATION PLANTINGS: ALL SIDES FACING ROAD, PARKING OR AREA PROVIDING PUBLIC ACCESS, MIN 150 SQFT BEDS EA & 10-FT WIDE ADJ. TO BLDG / 6-FT IF OFFSET MIN 1 TREE & 5 SHRUBS / 35 LFT BLDG FRONTAGE N.A. - UNDERGROUND SYSTEM
 STORMWATER BASINS:
 PROVIDED:
 GENERAL: 14,490 SQFT UN-ALLOCATED OPEN SPACE / 3,000 = 5 TREES (2 DECID. & 3 CONIFERS)
 BERMS-PARKING-GRD RVR: 232 LFT / 30 = 8 TREES + 232 LFT / 50 = 5 ORN. TREES + 50% CONIFERS = 8 @ 15 FT O.C.
 BERMS-PARKING-BRKHRT: 56 LFT / 30 = 2 TREES + 56 LFT / 50 = 1 ORN. TREE + 50% CONIFERS = 2 @ 15 FT O.C.
 R.O.W. - GRAND RIVER: (NET) 478 / 40 = 12 TREES + (478 / 40 * 8) = 96 SHRUBS + 478 / 100 = 5 ORN. TREES (NET) 286 / 40 = 7 TREES + (286 / 40 * 8) = 57 SHRUBS + 286 / 100 = 3 ORN. TREES
 R.O.W. - BURKHART: MECH. EQUIP. SCREENS: MECH. EQUIP. SCREENING ON ROOF (BLDG. SCREENING) 83 * 10 = 830 SQFT / 400 = 1, 415 SQ FT AREA + 1, 400 SQ FT ISLAND + 1, 374 SQFT AREA
 PARKING LOT: FOUNDATION PLANTINGS: 359-LFT BLDG. FRONTAGE (TOTAL) / 35 = 10 TREES + 51 SHRUBS
 *NOTE - PERENNIALS & GRASSES PROVIDED SUPPLEMENTAL TO REQUIREMENTS

SUPPLEMENTAL LANDSCAPE NOTES
 1. REFER TO CONSTRUCTION DETAIL SHEET C9 FOR PLANTING DETAILS AND LANDSCAPE NOTES AND SPECIFICATIONS.
 2. ANY SUBSTITUTIONS OF PLANT MATERIAL FROM THE APPROVED SITE PLAN WILL BE APPROVED BY THE TOWNSHIP PRIOR TO INSTALLATION.

PLANT LIST

KEY	QUAN.	BOTANICAL NAME	COMMON NAME	SIZE	REMARK
DECIDUOUS SHADE TREES					
AF	5	Acer x fremanii 'Autumn Blaze'	Autumn Blaze hybrid Maple	2-1/2" cal.	B-B
CBF	5	Carpinus betulus 'Frans Fontaine'	Frans Fontaine European Hornbeam	2-1/2" cal.	B-B
GT	10	Gleditsia triacanthos var inermis 'Skycole'	Skyline Honeylocust	2-1/2" cal.	B-B
QP	7	Quercus palustris	Pin Oak	2-1/2" cal.	B-B
ORNAMENTAL TREES					
AG	9	Amelanchier x grandiflora 'Autumn Brilliance'	Autumn Brilliance Serviceberry	1-1/2" cal.	B-B
MA	8	Malus 'Adirondack'	Adirondack Crabapple	1-1/2" cal.	B-B
MAD	7	Malus X adstringens 'Durioe'	Gladiator Crabapple (columnar)	1-1/2" cal.	B-B
CONIFER TREES					
AP	11	Abies phanerolepis	Canaan Fir	6-ft hgt.	B-B
PFV	3	Pinus flexilis 'Vanderwolf'	Vanderwolf Limber Pine	6-ft hgt.	B-B
PNO	3	Pinus nigra 'Oregon Green'	Oregon Green Black Pine	6-ft hgt.	B-B
CONIFER SHRUBS					
JP	3	Juniperus chinensis Pfitzeriana compacta	Compact Pfitzer Juniper	36" ht./#5	Cont.
MS	7	Juniperus squamata 'Blue Star'	Blue Star Juniper	36" ht./#5	Cont.
MD	15	Microbiota decussata 'Condaris'	Fuzzball Siberian Cypress	36" ht./#5	Cont.
PM	5	Pinus mugo 'Mops'	Mops dwarf Mugo Pine	36" ht./#5	Cont.
DECIDUOUS SHRUBS					
DR	37	Diervilla rivularis 'Dwibrudi'	Honeybee Bush Honeysuckle	36" ht./#5	Cont.
IV	11	Itea virginica Sprich	Little Henry Virginia Sweetspire	24" ht./#3	Cont.
PDL	11	Perovskia 'Denim N' Lace'	Denim N' Lace Russian Sage	24" ht./#3	Cont.
PF	16	Potentilla fruticosa 'Lundy'	Happy Face Yellow Potentilla	24" ht./#3	Cont.
POA	33	Physocarpus opulifolius 'Amber Jubilee'	Amber Jubilee Ninebark	24" ht./#3	Cont.
RA	9	Ribes alpinum 'Greenmound'	Greenmound Currant	36" ht./#5	Cont.
RAC	39	Rhus aromatica 'Gro-Low'	Gro-Low Fragrant Sumac	24" ht./#3	Cont.
RKO	18	Rosa 'Knockout White'	Knockout White Shrub Rose	24" ht./#3	Cont.
PERENNIALS AND GRASSES					
CAK	18	Calamagrostis X acutiflora Karl Foerster	Karl Foerster Feather Reed Grass	2 gal./#2	Cont.
HSO	40	Hemerocallis 'Stella De Oro'	Stella De Oro Daylily	2 gal./#2	Cont.
HWM	37	Hemerocallis 'When My Sweetheart Returns'	When My Sweetheart Returns Daylily	2 gal./#2	Cont.
PAR	17	Pennisetum alopecuroides 'Red Head'	Red Head Fountain Grass	2 gal./#2	Cont.

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 LINDHOUT ASSOCIATES ARCHITECTS AIA PC
 10468 CITATION DRIVE
 BRIGHTON, MI 48116
 810.227.5668

NO.	BY	REVISION PER	DATE

DESIGNED BY: PC
 DRAWN BY: PC
 CHECKED BY:
 SCALE: 1" = 30'
 JOB NO: 21-550
 DATE: 3-26-24
 SHEET NO. **C8**

FOR SITE PLAN APPROVAL ONLY!
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**LIVINGSTON COUNTY SOIL EROSION CONTROL
TEMPORARY CONTROLS AND SEQUENCE**

1. NOTIFY LIVINGSTON COUNTY DRAIN COMMISSIONER'S OFFICE 24 HOURS PRIOR TO START OF GRADE WORK.
2. IN ACCORDANCE WITH PUBLIC ACT NO. 53, OF 1974 THE PERMIT HOLDER SHALL CALL MISS DIG FOR STAKING AND LOCATING OF UTILITIES, AT LEAST 72 HOURS IN ADVANCE OF THE START OF ANY WORK.

PERMITTING STANDARDS

3. RETENTION/DETENTION/SEDIMENTATION BASINS SHALL BE EXCAVATED, TOPSOILED, SEEDED, MULCHED AND TACKED PRIOR TO THE START OF MASS EARTH DISRUPTION. INGRESS/EGRESS MUST HAVE LARGE CRUSHED ROCK TO REDUCE THE TRACKING OF SOIL ONTO THE PUBLIC TRAFFIC AREAS. SEE DETAIL ITEMS BELOW.
4. 36" M.D.O.T SPECIFICATION TYPE SILT FABRIC FENCE AS SHOWN ON PLANS SHALL BE PLACED AND MAINTAINED ALONG PERIMETER ON ALL LOW LYING AREAS OF CONSTRUCTION SITE TO FILTER RUNOFF BEFORE LEAVING PROJECT SITE.
5. ALL TEMPORARY EROSION CONTROL DEVICES AS NOTED ON PLANS SHALL BE INSTALLED PRIOR TO THE START OF MASSIVE EARTH DISTRIBUTION.
6. PLAN DOES DENOTE A DETAILED EROSION CONTROL DEVICE TO RESTRICT TRACKING OF MATERIAL ONTO THE HIGHWAY. STONE DIAPERS SHALL BE INSTALLED AT ALL INGRESS/EGRESS AREAS OF THE SITE PRIOR TO THE START OF MASSIVE EARTH DISRUPTION. DIAPERS SHALL BE OF CRUSHED STONE AND SHALL HAVE A MINIMUM LENGTH OF 100' LINEAL FEET.

BASINS

7. DETENTION BASIN OUTLETS SHALL BE OF THE STANDPIPE AND STONE FILTER SYSTEM, WITH TRASH SCREEN. OUTLET FLOW SHALL NOT EXCEED 0.20 CUBIC FEET OF WATER PER SECOND/PER ACRE. POND DIKES SHALL HAVE A MINIMUM OF ONE (1) FOOT OF FREEBOARD. AN EMERGENCY SPILLWAY SHALL BE CONSTRUCTED WITHIN THE FREEBOARD LEVEL.
8. DIKES AND BERMS SHALL BE FREE OF ALL ORGANIC MATTER.
9. ALL UNIMPROVED DISTURBED AREAS SHALL BE STRIPPED OF TOPSOIL WHICH WILL BE STORED ONSITE DURING THE EXCAVATING STAGE. TOPSOIL PILES SHALL BE SEEDED AND MULCHED, OR MATTED WITH STRAW IN THE NON-GROWING SEASON, IMMEDIATELY AFTER THE STRIPPING PROCESS IS COMPLETED, TO PREVENT WIND AND WATER EROSION.
10. SOIL EROSION CONTROLS SHALL BE MONITORED DAILY BY THE ON-SITE ENGINEER, OR CONTRACTOR, WHICHEVER CASE APPLIES.

SLOPES AND DITCHES

11. ON SITE DITCHES SHALL BE OF THE FLAT BOTTOM TYPE MINIMUM WIDTH OF 2' WITH A MINIMUM OF 3 HORIZONTAL TO 1 VERTICAL SIDE SLOPES, 3:1.
12. DITCHES WITH STEEP SLOPES WILL NEED FLOW CHECKS TO PREVENT SCOURING OF THE DITCH BOTTOM. THESE SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER OR INSPECTOR.
13. SLOPES IN EXCESS OF 3 HORIZONTAL TO 1 VERTICAL SHALL NOT BE USED EXCEPT WITH A MECHANICAL DEVICE SUCH AS A RETAINING WALL, TERRACING, OR OTHER PRIOR APPROVED DEVICE.

STORM DRAINS

14. ALL STORM WATER STRUCTURES, CATCH BASINS AND/OR MANHOLES, IF BLOCK, SHALL BE PLASTERED ON BOTH THE INSIDE AND OUTSIDE OF THE STRUCTURES. GROUTING AND POINTING WILL BE NECESSARY AT THE CASTING AND STRUCTURE JOINT TO PREVENT LEAKAGE AND THE RESULTING SOIL MOVEMENT, AROUND THE STRUCTURE.
15. COUNTY CODE REQUIRES A MINIMUM PIPE SIZE OF 12" IN DIAMETER. IF SMALLER PIPE IS NEEDED FOR OUTLET PURPOSES THE 12" CAN BE BAFFLED TO THE CORRECT SIZE. ALL PIPE SHALL MEET THE 12" DIAMETER CODE SIZE.
16. ALL STORM DRAIN OUTLETS 15" IN DIAMETER OR LARGER SHALL HAVE ANIMAL GUARDS INSTALLED TO PREVENT ENTRANCE TO THE SYSTEM.
17. ALL STORM DRAINAGE PIPE 30" IN DIAMETER OR LARGER SHALL BE POINTED, AT THE JOINTS ON THE INSIDE WITH MORTAR, AFTER BACKFILLING.

18. ALL STORM DRAIN OUTLETS THAT DO NOT EMPTY INTO THE RETENTION/DETENTION BASIN SHALL HAVE A TEMPORARY 5'X10'X3' SUMP INSTALLED AT THE TERMINATION OF THE STORM SEWER. UPON COMPLETION OF THE STABILIZATION WORK THE SUMP AREA SHALL BE FILLED AND RIP RAPPED WITH COBBLE STONE. SILT TRAPS SHALL BE INSPECTED AFTER EACH STORM.
19. STORM WATER OUTLETS DO DENOTE RIP RAP. ALL OUTLETS SHALL BE RIP RAPPED OVER KEYED FILTER FABRIC WITH A MINIMUM OF 15 SQ. YARDS OF 6" OR LARGER COBBLE STONE.
20. RIP RAP AS NOTED ON THE PLAN SHALL BE OF A FUNNEL SHAPE CONSTRUCTION. WIDTH SHALL INCREASE AS DISTANCE FROM THE OUTLET POINT INCREASES AT A 3:1 RATIO.
21. RIP RAP SHALL BE OF COBBLE STONE, 6" IN DIAMETER OR LARGER, GROUT AS NECESSARY. GROUT SHALL BE A MINIMUM OF 6" IN DEPTH WITH THE COBBLE SET IN THE CEMENT SLURRY.
22. STORM WATER SPLASH BLOCK MAY OR MAY NOT BE NOTED ON PLANS. INSTALL SPLASH BLOCK AT STORM WATER OUTLET IF SLOPE OF THE PIPE IS 4% OR GREATER.
23. STORM DRAINAGE LINES SHALL BE CLEANED PRIOR TO FINAL INSPECTION. INSPECTION SHALL BE COMPLETED BY THE COUNTY DRAIN COMMISSIONER'S OFFICE. WORK SHALL BE COMPLETED BY A PROFESSIONAL SEWER CLEANING FIRM AND CERTIFIED IN WRITING BY THE PROJECT ENGINEER. ALL SUMPS AND TEMPORARY SILT TRAPS SHALL ALSO BE CLEANED AT THIS TIME.

STABILIZATION

24. ALL UNIMPROVED DISTURBED AREAS SHALL BE RE-TOP SOILED, WITH A MINIMUM OF 4" OF MATERIAL, SEEDED, MULCHED AND TACKED WITHIN 15 DAYS OF THE COMPLETION OF THE MASS EARTH DISRUPTION. IN THE NON-GROWING SEASON STRAW MATTING WILL SUFFICE. HYDROSEEDING WILL BE AN ACCEPTABLE ALTERNATE FOR MULCHING. EXTREME CARE SHOULD BE EXERCISED IN SPRING AND FALL PERIODS AS A FROST WILL BREAK THE BIND OF THE HYDROSEEDING, WHICH WILL AFFECT THE EFFECTIVENESS OF THIS PROCEDURE.
25. IN THE NON-GROWING SEASON, TEMPORARY STABILIZATION OF MASS EXPOSED AREAS FOR WINTER STABILIZATION SHALL BE COMPLETED WITH STRAW MATTING.
26. PERIODIC INSPECTIONS WILL BE MADE THROUGHOUT THE COURSE OF THE PROJECT. IT WILL BE THE RESPONSIBILITY OF THE MANAGERS OF THE PROJECT TO CONTACT THE COUNTY OFFICE FOR FINAL INSPECTION AT THE END OF THE PROJECT.
27. THE ISSUING BUILDING DEPARTMENT SHALL NOT ISSUE THE CERTIFICATE OF OCCUPANCY UNTIL THE FINAL INSPECTION LETTER FROM THE LIVINGSTON COUNTY DRAIN COMMISSIONER'S OFFICE HAS BEEN OBTAINED.
28. PER THE LIVINGSTON COUNTY DRAIN COMMISSIONER THE SEEDING, FERTILIZER AND MULCH MINIMUM QUANTITIES SHALL BE AS FOLLOWS:

TOP-SOIL	3" IN DEPTH
GRASS SEED	218 LBS. PER ACRE
FERTILIZER	150 LBS. PER ACRE
STRAW MULCH	3" IN DEPTH 1.5 TO 2 TONS PER ACRE (ALL MULCHING MUST HAVE A TIE DOWN, SUCH AS TACKIFIER, NET BINDING, ETC.)

MAINTENANCE SCHEDULE FOR SOIL EROSION CONTROLS

1. SILT FENCE SHALL BE INSPECTED WEEKLY AND AFTER EACH MAJOR STORM EVENT. MAINTENANCE SHALL INCLUDE REMOVAL OF ACCUMULATED SILT AND REPLACEMENT OF TORN SECTIONS. SILT FENCE SHALL BE REMOVED WHEN ALL CONTRIBUTING AREAS HAVE BEEN STABILIZED.
2. TRACKING PAD SHALL BE INSPECTED MONTHLY FOR ACCUMULATED DIRT. TRACKING PAD SHALL BE REPLACED WHEN THE STONES ARE CHOKED WITH DIRT. TRACKING PAD SHALL BE REMOVED IMMEDIATELY PRIOR TO THE FIRST COURSE OF ASPHALT BEING LAID.
3. DETENTION/RETENTION BASIN SHALL BE INSPECTED QUARTERLY ON A PERMANENT BASIS. MAINTENANCE SHALL INCLUDE SEDIMENT REMOVAL, EMBANKMENT STABILIZATION AND MAINTAINING THE OUTLET STRUCTURE IN GOOD CONDITION. NO TREES SHALL BE ALLOWED TO GROW ON THE EMBANKMENT.
4. CATCH BASINS SHALL BE INSPECTED ANNUALLY FOR ACCUMULATION OF SEDIMENT. ALL SEDIMENT MUST BE REMOVED AND DISPOSED OF PROPERLY WHEN THE SUMP IS FULL.
5. COMMON AREAS SHALL BE STABILIZED NO LATER THAN 15 DAYS AFTER GRADE WORK, PURSUANT TO RULE 1709 (5).

BEFORE BACK FILLING AROUND PLANT, REMOVE ALL PLASTIC BALLING MATERIAL & METAL CONTAINERS. PUNCH HOLES IN FIBER POTS TO PROVIDE DRAINAGE.

NEVER PRUNE EVERGREENS

TREE SHALL BEAR SAME RELATION TO FINISH GRADE AS IT BORE TO PREVIOUS EXISTING GRADE

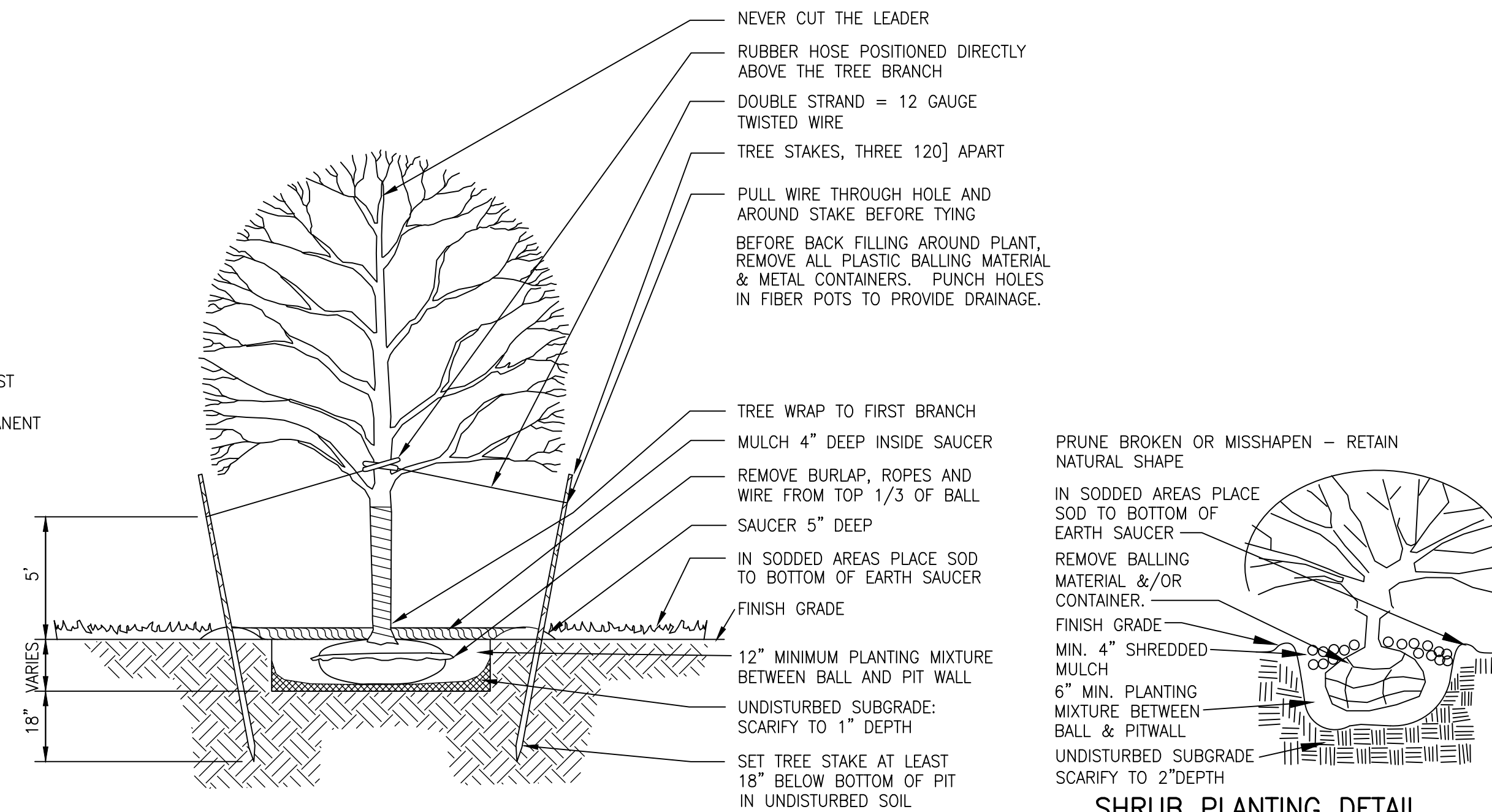
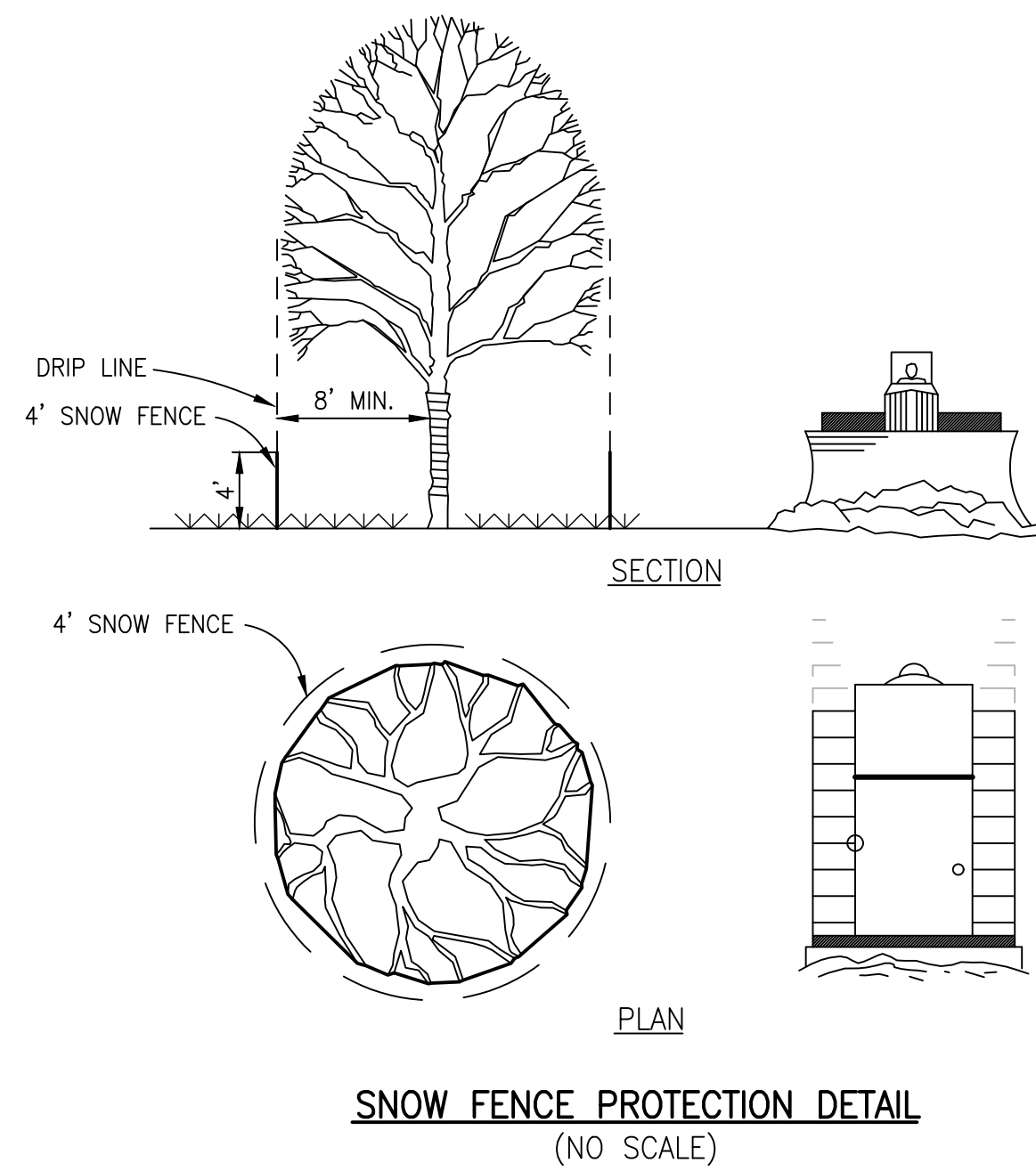
RUBBER HOSE 1/2 UP TREE POSITIONED DIRECTLY ABOVE TREE BRANCH

GUYING CABLE @ 3 GUYS PER TREE (120" APART) DOUBLE STRAND = 12 GAUGE TWISTED WIRE

4" MULCH INSIDE SAUCER EARTH SAUCER 5" DEEP

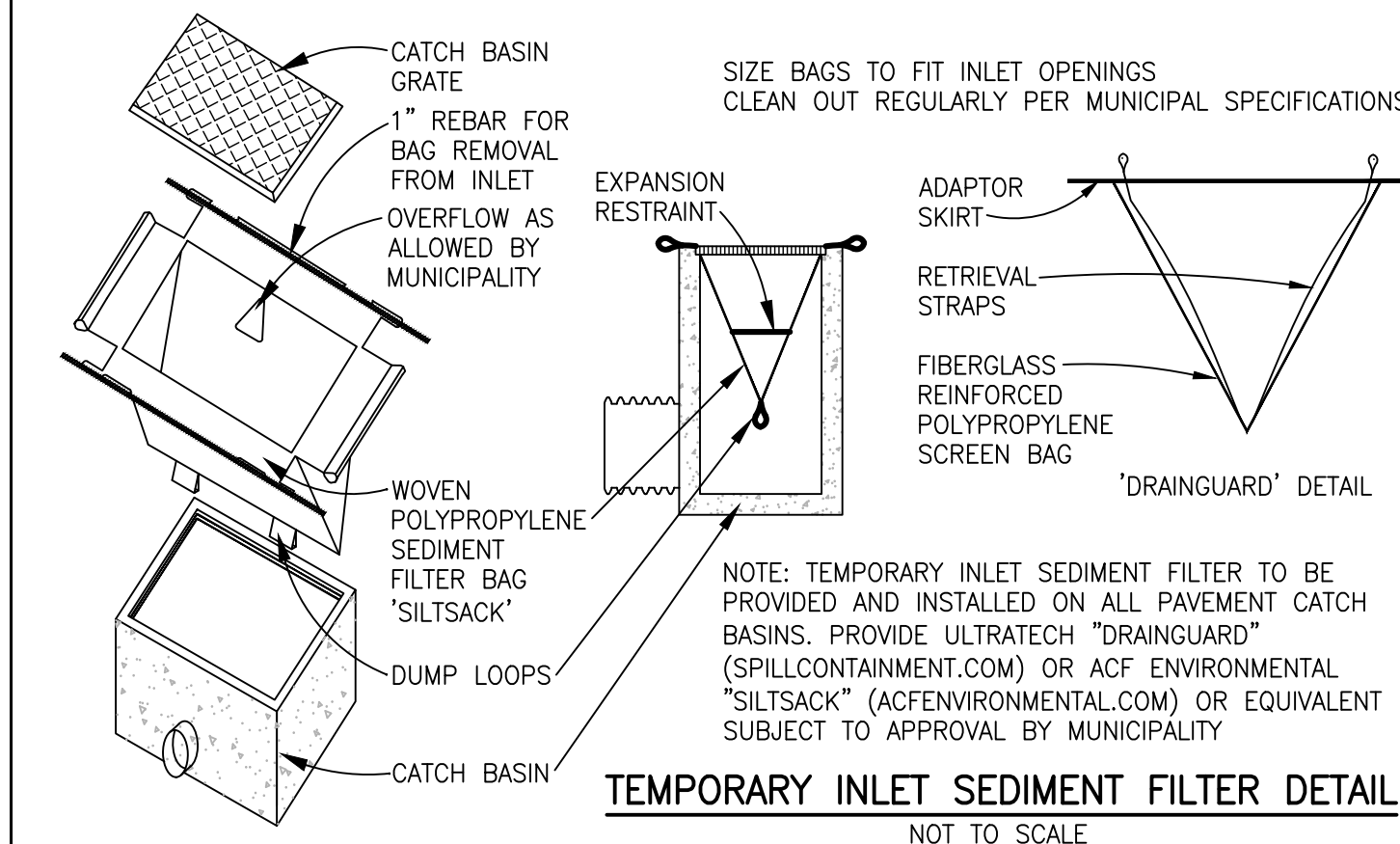
IN SODDED AREAS PLACE SOD TO BOTTOM OF EARTH SAUCER 2"X4"X30" STAKE SET BELOW FIN. GRADE REMOVE TOP 1/3 OF BURLAP, ROPES & WIRE PLANTING MIX SUBGRADE SCARIFY TO 4" DEPTH 6" COMPACTED PLANTING MIX UNDER BALL

**EVERGREEN TREE PLANTING DETAIL
(NO SCALE)**

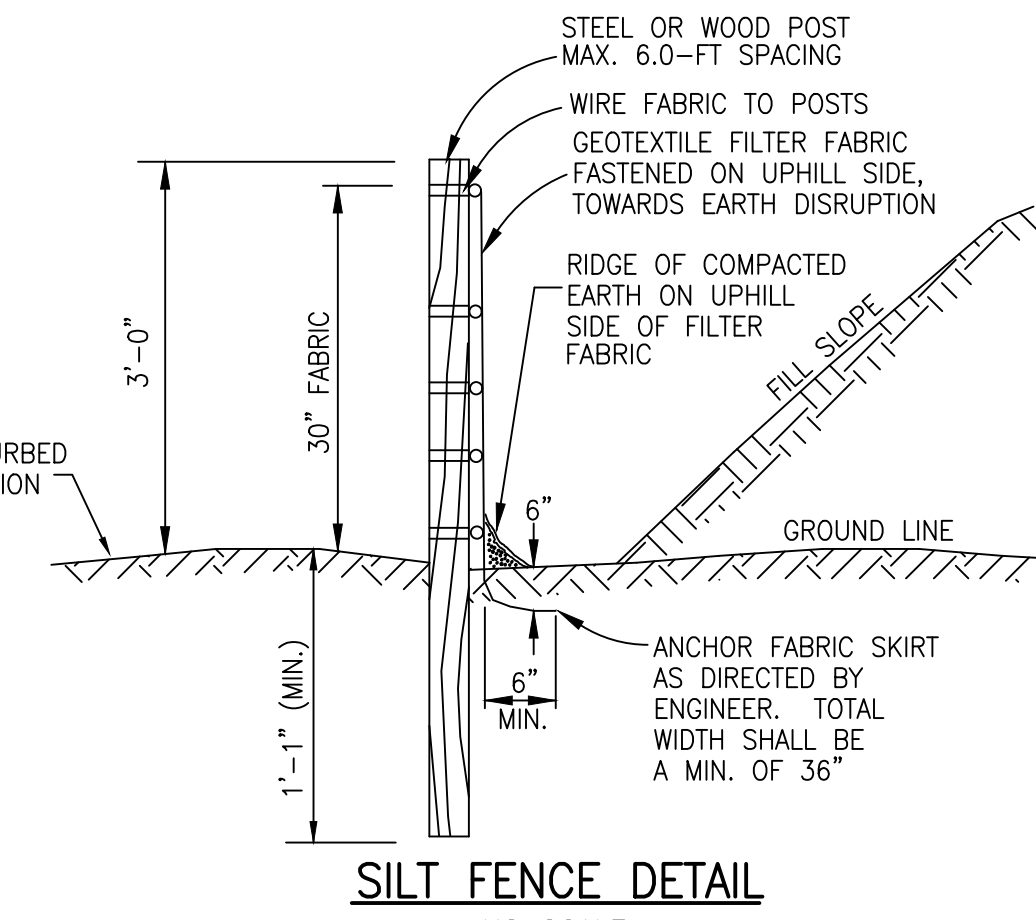


**DECIDUOUS TREE PLANTING DETAIL
(NO SCALE)**

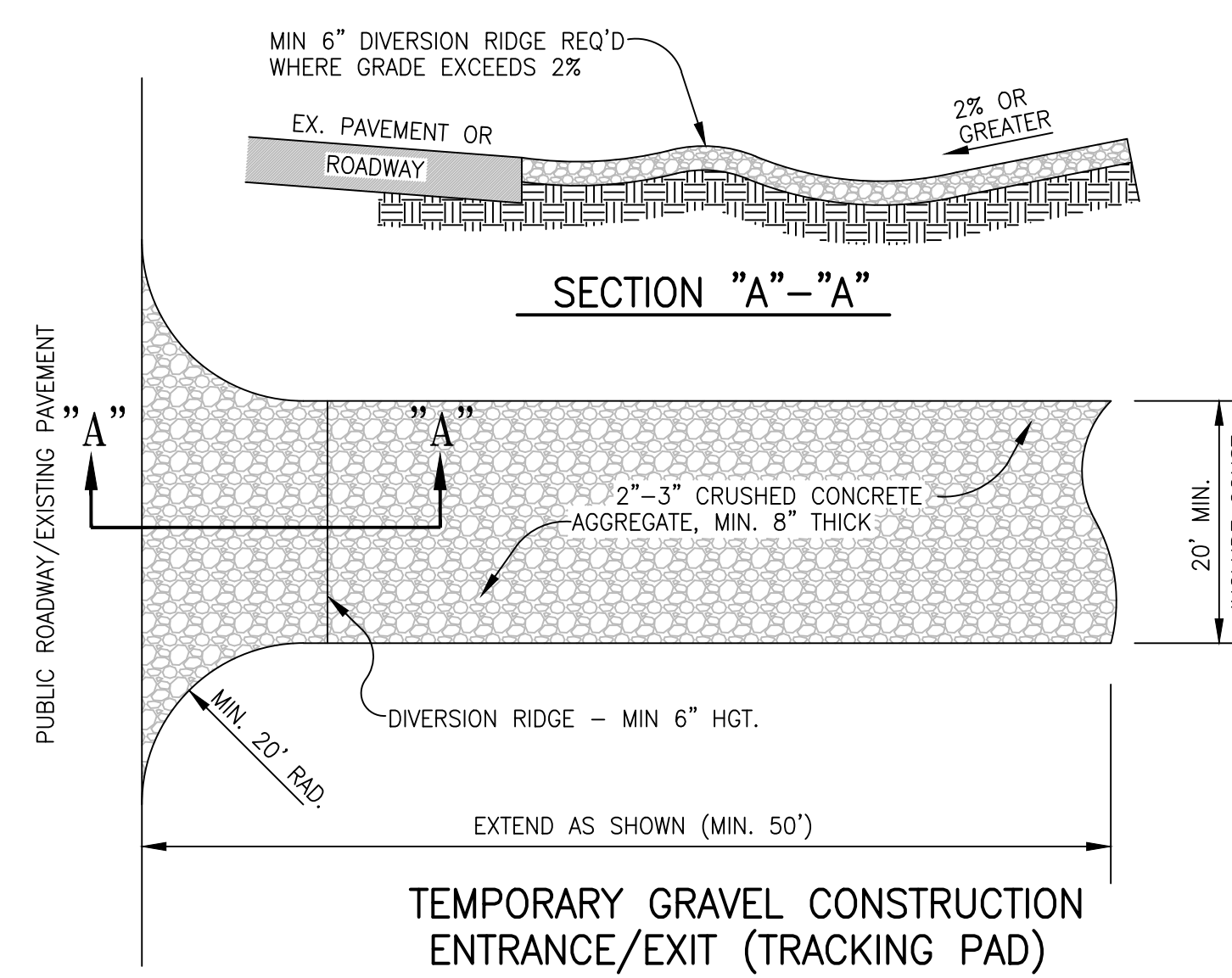
**SHRUB PLANTING DETAIL
(NO SCALE)**



**TEMPORARY INLET SEDIMENT FILTER DETAIL
NOT TO SCALE**



**SILT FENCE DETAIL
NO SCALE**



**TEMPORARY GRAVEL CONSTRUCTION
ENTRANCE/EXIT (TRACKING PAD)
NOT TO SCALE**

GENERAL LANDSCAPE SPECIFICATIONS:

1. ALL PLANT MATERIAL SHALL CONFORM TO THE REQUIREMENTS AND SPECIFICATIONS OF THE GOVERNING MUNICIPALITY. ALL STOCK SHALL BE NURSERY GROWN, CONFORMING TO ANSO Z60.1 "AMERICAN STANDARD FOR NURSERY STOCK", AND IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICE. STOCK SHALL EXHIBIT NORMAL GROWTH HABIT AND BE FREE OF DISEASE, INSECTS, EGGS, LARVAE, AND DEFECTS SUCH AS KNOTS, SUN-SCALD, INJURIES, ABRASIONS, OR DISFIGUREMENT. ALL PLANT MATERIAL SHALL BE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT.
2. ALL PLANT MATERIALS SHALL BE BALLED AND BURLAPPED OR CONTAINER STOCK. NO BARE ROOT STOCK IS PERMITTED. ALL PLANT BALLS SHALL BE FIRM, INTACT, AND SECURELY WRAPPED AND BOUND.
3. ALL PLANT BED MATERIALS SHALL BE EXCAVATED OF ALL BUILDING MATERIALS, OTHER EXTRANEUS OBJECTS, AND POOR SOILS TO A MINIMUM DEPTH OF 12-INCHES AND BACKFILLED TO GRADE WITH SPECIFIED PLANTING MIX (SEE BELOW).
4. PLANTING MIXTURE SHALL CONSIST OF 5 PARTS TOPSOIL FROM ON-SITE (AS APPROVED), 4 PARTS COARSE SAND, 1 PART SPHAGNUM PEAT MOSS (OR APPROVED COMPOST), AND 5 LBS OF SUPERPHOSPHATE FERTILIZER PER CU. YD. OF MIX. INGREDIENTS SHALL BE THOROUGHLY BLENDED FOR UNIFORM CONSISTENCY.
5. ALL PLANT BEDS AND INDIVIDUAL PLANTS, NOT OTHERWISE NOTED SHALL BE MULCHED WITH A 4-INCH LAYER OF SHREDDED BARK MULCH. EDGE OF MULCH BEDS AS SHOWN. DECIDUOUS TREES IN LAWN AREAS SHALL RECEIVE A 5-FT DIAMETER CIRCLE OF MULCH AND CONIFER TREES 8-FT (PLANTED CROWN OF TREE) UNLESS OTHERWISE NOTED.
6. LANDSCAPE STONE SHALL BE INSTALLED WHERE NOTED OR INDICATED (HATCHED). STONE SHALL BE 3/4"-1-1/4" WASHED RIVER GRAVEL OR AS SELECTED AND SHALL BE INSTALLED TO A MINIMUM DEPTH OF 3-INCHES.
7. ALL LANDSCAPE BEDS, UNLESS OTHERWISE NOTED SHALL BE INSTALLED OVER WEED BARRIER FABRIC - WATER PERMEABLE FILTRATION FABRIC OF NON-WOVEN POLYPROPYLENE OR POLYESTER FABRIC. FABRIC SHALL BE OF SUITABLE THICKNESS FOR APPLICATION.
8. ALL PLANTS AND PLANT BEDS SHALL BE THOROUGHLY WATERED UPON COMPLETION OF PLANTING AND STAKING OPERATIONS.
9. THE CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIALS FOR A PERIOD OF 1 YEAR FROM THE DATE THE WORK IS ACCEPTED, IN WRITING, BY THE LANDSCAPE ARCHITECT. THE CONTRACTOR SHALL REPLACE, WITHOUT COST TO THE OWNER, WITHIN A SPECIFIED PERIOD OF TIME, ALL DEAD PLANTS, AND ALL PLANTS NOT IN A VIGOROUS, THRIVING CONDITION, AS DETERMINED BY THE LANDSCAPE ARCHITECT, DURING AND AT THE END OF THE GUARANTEE PERIOD. REPLACEMENT STOCK SHALL CONFORM TO THE ORIGINAL SPECIFICATIONS.
10. EDGING SHALL BE PROVIDED FOR ALL LANDSCAPE BEDS NOT ADJACENT TO CONCRETE PAVEMENT. EDGING SHALL BE BLACK ALUMINUM EDGING, 3/16-INCH X 4-INCH. INSTALL PER MANUFACTURER'S INSTRUCTIONS, ALL EDGING SHALL BE INSTALLED IN STRAIGHT LINES OR SMOOTH CURVES WITHOUT IRREGULARITIES.
11. SOD SHALL BE DENSE, WELL ROOTED TURF, FREE OF WEEDS. IT SHALL BE COMPRISED OF A BLEND OF AT LEAST TWO KENTUCKY BLUE GRASSES AND ONE FESCUE. IT SHALL HAVE A UNIFORM THICKNESS OF 3/4-INCH AT TIME OF PLANTING, AND CUT IN UNIFORM STRIPS NOT LESS THAN 10-INCHES BY 18-INCHES. SOD SHALL BE KEPT MOIST AND LAID WITHIN 36-HOURS AFTER CUTTING.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH A DENSE LAWN OF PERMANENT GRASSES, FREE OF LUMPS AND DEPRESSIONS. ALL SODDED AREAS THAT BROWN-OUT OR HAVE NOT FIRMLY KNITTED TO THE SOIL BASE WITHIN A PERIOD OF 1 MONTH SHALL BE REPLACED BY THE CONTRACTOR, AT NO COST TO THE OWNER.

12. ALL AREAS OF THE SITE THAT BECAME DISTURBED DURING CONSTRUCTION AND ARE NOT TO BE PAVED, STONED, LANDSCAPED, OR SODDED SHALL BE SEEDED AND MULCHED.

SEE BELOW FOR GENERAL LAWN SEED MIXTURE. SEE LANDSCAPE PLAN FOR SPECIAL STORMWATER BASIN MIX(ES) AS INDICATED.

SEED MIXTURE SHALL BE AS FOLLOWS:
 KENTUCKY BLUEGRASS (CHOOSE 3 VARIETIES - ADELPHI, RUGBY, GLADE, OR PARADE) 30%
 RUBY RED OR DAWSON RED FINE FESCUE 30%
 ATLANTA RED FESCUE 20%
 PENNIFINE PERENNIAL RYE 20%

THE ABOVE SEED MIXTURE SHALL BE SOWN AT A RATE OF 250 LBS PER ACRE. PRIOR TO SEEDING, THE TOPSOIL SHALL BE FERTILIZED WITH A COMMERCIAL FERTILIZER WITH A 10-0-10 ANALYSIS:

10% NITROGEN - MIN 25% FROM A UREA FORMALDEHYDE SOURCE
 0% PHOSPHATE
 10% POTASH - SOURCE POTASSIUM SULFATE OR POTASSIUM NITRATE

THE FIRST FERTILIZER APPLICATION SHALL BE AT A RATE OF 10 LBS PER 1000 SQ FT OF BULK FERTILIZER.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH A DENSE LAWN OF PERMANENT GRASSES, FREE OF LUMPS AND DEPRESSIONS. ANY PART OF THE AREA THAT FAILS TO SHOW A UNIFORM GERMINATION SHALL BE RE-SEEDED AND SUCH RE-SEEDED SHALL CONTINUE UNTIL A DENSE LAWN IS ESTABLISHED. DAMAGE TO SEEDED AREAS RESULTING FROM EROSION SHALL BE REPAIRED BY THE CONTRACTOR.

13. ALL AREAS OF THE SITE SCHEDULED FOR SEEDING OR SODDING SHALL FIRST RECEIVE A 6-INCH LAYER OF CLEAN, FRAGILE TOPSOIL. THE SOIL SHALL BE DISCED AND SHALL BE GRADED IN CONFORMANCE WITH THE GRADING PLAN.
14. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES AND TO INFORM THE LANDSCAPE ARCHITECT OF ANY CONFLICTS PRIOR TO COMMENCING LANDSCAPING.
15. DECORATIVE LANDSCAPE BOULDERS SHALL BE OF 'FIELD STONE' TYPE GENERALLY CONSISTING OF METAMORPHIC QUARTZITE OR GLACIAL TILL STONE SUITABLE FOR LANDSCAPE APPLICATION. PROVIDE A VARIETY OF SIZES RANGING FROM A MINIMUM OF 16-INCHES THROUGH 42-INCHES.
16. ALL LANDSCAPED AREAS WITHIN PROJECT AREA SHALL BE PROVIDED WITH AN UNDERGROUND AUTOMATIC SPRINKLER SYSTEM - DESIGN-BUILD THROUGH GENERAL CONTRACTOR. RECORD DRAWINGS SHALL BE SUBMITTED FOR ALL PIPING WITHIN THE R.O.W., UTILITY, AND SIDEWALK EASEMENTS.
17. MAINTENANCE: THE PROPERTY OWNER SHALL MAINTAIN ALL LANDSCAPING IN A HEALTHY CONDITION, FREE FROM REFUSE, AND DEBRIS.
18. INSTALL SOIL EROSION CONTROL FABRIC ON ALL SLOPES STEEPER THAN 6:1 UNLESS OTHERWISE NOTED.

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 BRIGHTON, MI 48116
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LANDSCAPE & EROSION CONTROL DETAILS

PROJECT	PREPARED FOR	TITLE	DATE

NO	BY	REVISION PER

DESIGNED BY: PC
 DRAWN BY: PC
 CHECKED BY:
 SCALE: AS NOTED
 JOB NO: 21-550
 DATE: 3-26-24
 SHEET NO. **C9**

PROJECT SUMMARY

CALCULATION DETAILS
LOADING = HS20HS25
APPROX. LINEAR FOOTAGE = 922 LF

STORAGE SUMMARY

STORAGE VOLUME REQUIRED = N/A
PIPE STORAGE VOLUME = 18.094 CF
BACKFILL STORAGE VOLUME = 0 CF
TOTAL STORAGE PROVIDED = 18.094 CF

PIPE DETAILS

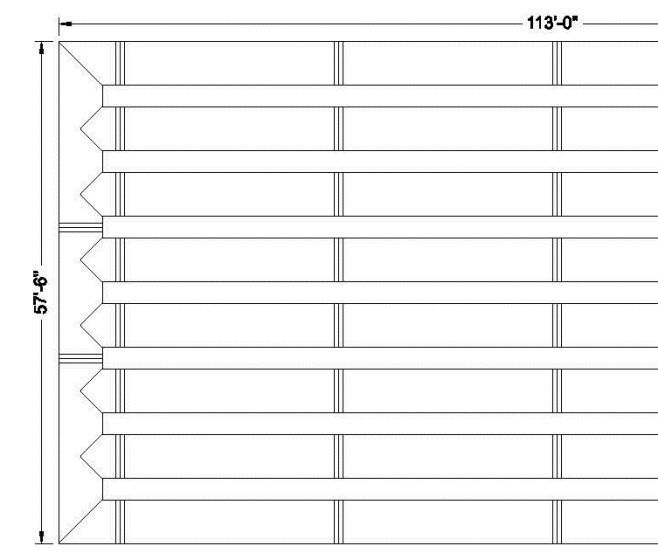
DIAMETER = 60"
CORRUIGATION = 8x1
GAGE = 18
COATING = ALZ
WALL TYPE = SOLID
BARREL SPACING = 30"

BACKFILL DETAILS

WIDTH AT ENDS = 12"
ABOVE PIPE = 0"
WIDTH AT SIDES = 12"
BELOW PIPE = 0"

NOTES

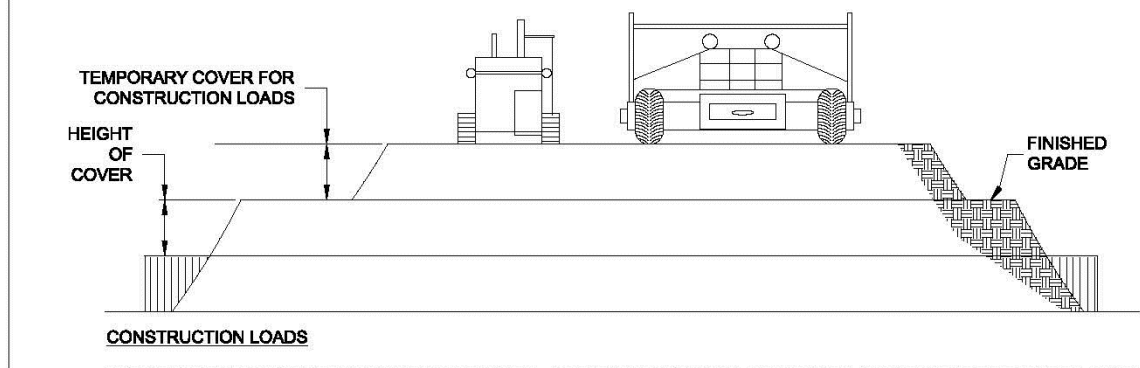
- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE...
ALL RISERS TO BE FIELD TRIMMED TO GRADE...
QUANTITY OF PIPE SHOWN DOES NOT PROVIDE EXTRA PIPE FOR CONNECTING TO EXISTING PIPE OR DRAINAGE STRUCTURES...



ASSEMBLY SCALE: 1" = 20'

CONTECH ENGINEERED SOLUTIONS LLC logo and contact information for DYODS drawing.

PROJECT LOG table with columns for PROJECT NO., SHEET NO., DATE, DESIGNED, DRAWN, CHECKED, APPROVED, and SHEET NO.

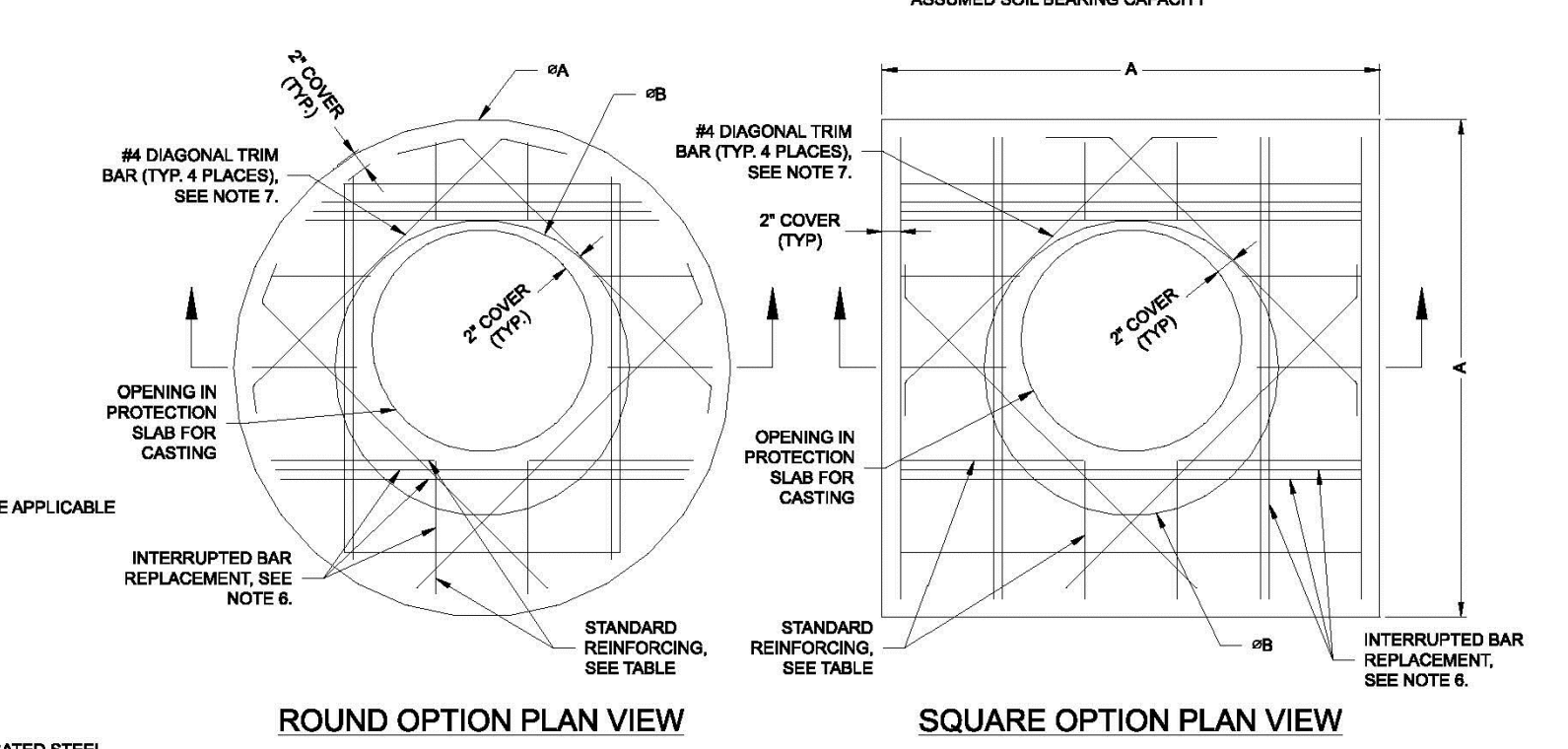
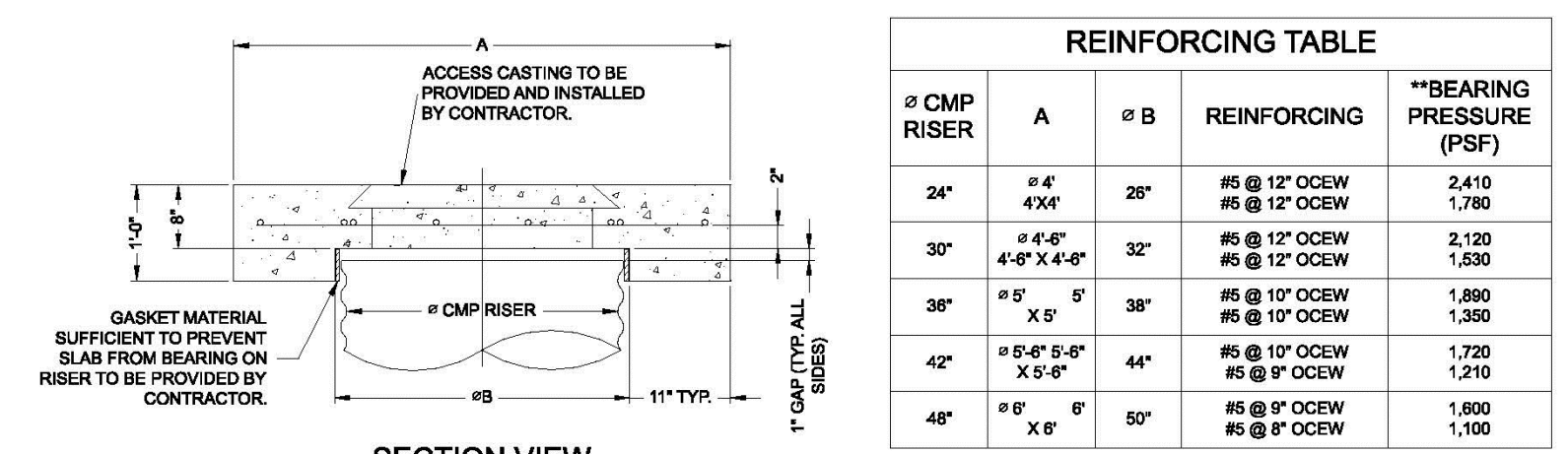


PIPE SPAN, INCHES vs AXLE LOADS (kips) table with columns for 18-50, 50-75, 75-110, 110-150 and MINIMUM COVER (FT).

CONSTRUCTION LOADING DIAGRAM SCALE: N.T.S.

SPECIFICATION FOR DESIGNED DETENTION SYSTEM:

SCOPE: THIS SPECIFICATION COVERS THE MANUFACTURE AND INSTALLATION OF THE DESIGNED DETENTION SYSTEM...
MATERIAL: GALVANIZED TYPE 2: AASHTO M-36 OR ASTM A-760...
CONSTRUCTION LOADS: CONSTRUCTION LOADS MAY BE HIGHER THAN FINAL LOADS...



REINFORCING TABLE

SECTION VIEW

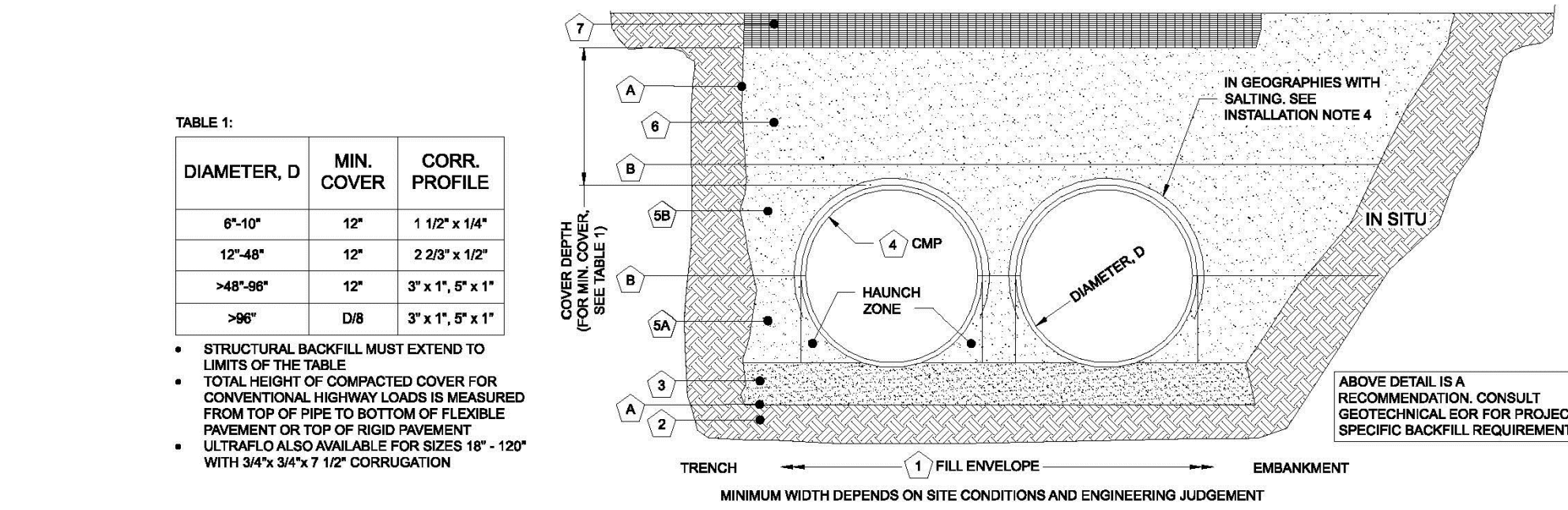
ROUND OPTION PLAN VIEW

SQUARE OPTION PLAN VIEW

NOTES: 1. DESIGN IN ACCORDANCE WITH AASHTO, 17th EDITION...
2. DESIGN LOAD HS25...
3. EARTH COVER = 1' MAX...
4. CONCRETE STRENGTH = 3,500 psi...

MANHOLE CAP DETAIL SCALE: N.T.S.

BOSS Engineering logo and contact information for DYODS drawing.

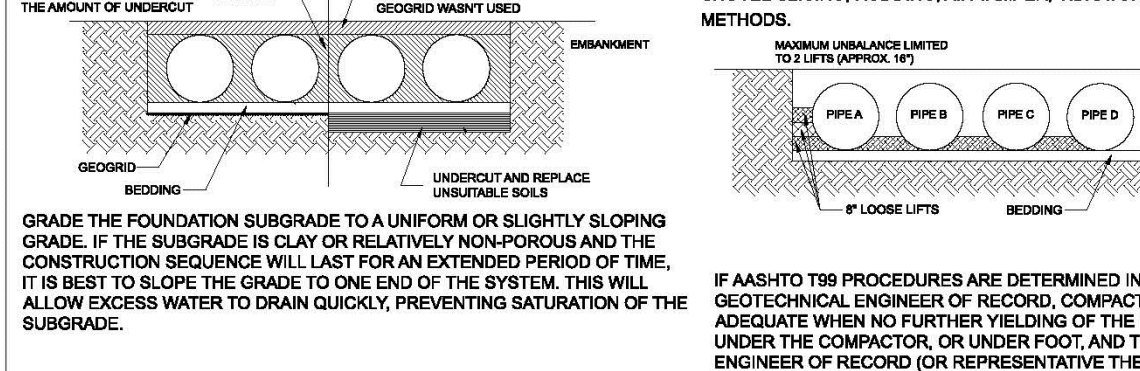
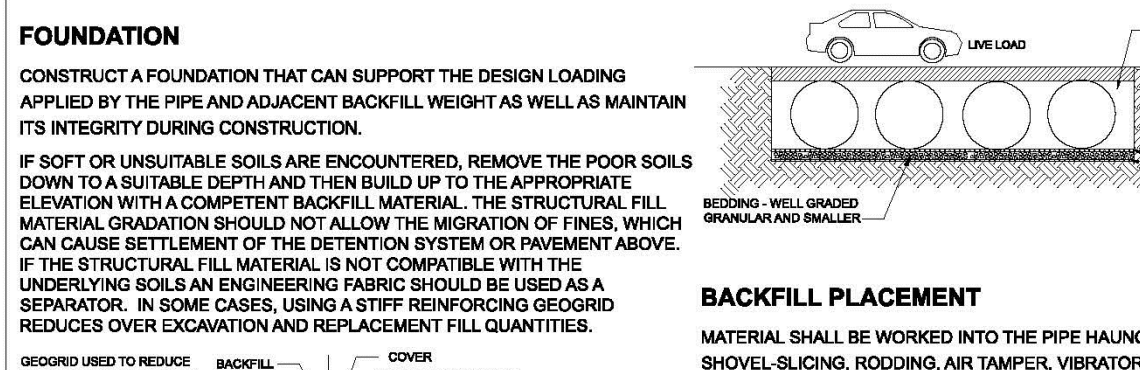


INSTALLATION NOTES: 1. WHEN PLACING THE FIRST LIFTS OF BACKFILL IT IS IMPORTANT TO MAKE SURE THAT THE BACKFILL IS PROPERLY COMPACTED UNDER AND AROUND THE PIPE HAUNCHES...

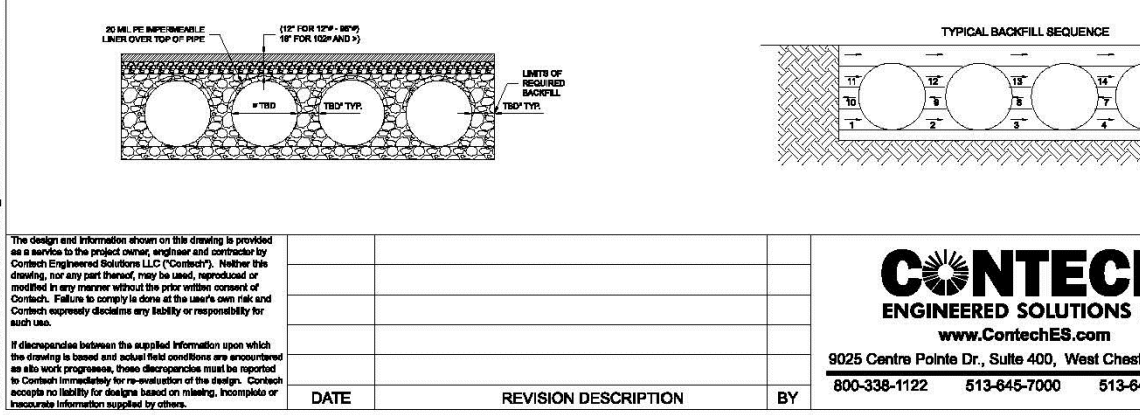
TABLE 2: SOLID STANDARD CMP DETENTION AND CMP DRAINAGE STANDARD BACKFILL SPECIFICATIONS table with columns for MATERIAL LOCATION, MATERIAL SPECIFICATION, and DESCRIPTION.

MANUFACTURER RECOMMENDED BACKFILL NOT TO SCALE logo and contact information for DYODS drawing.

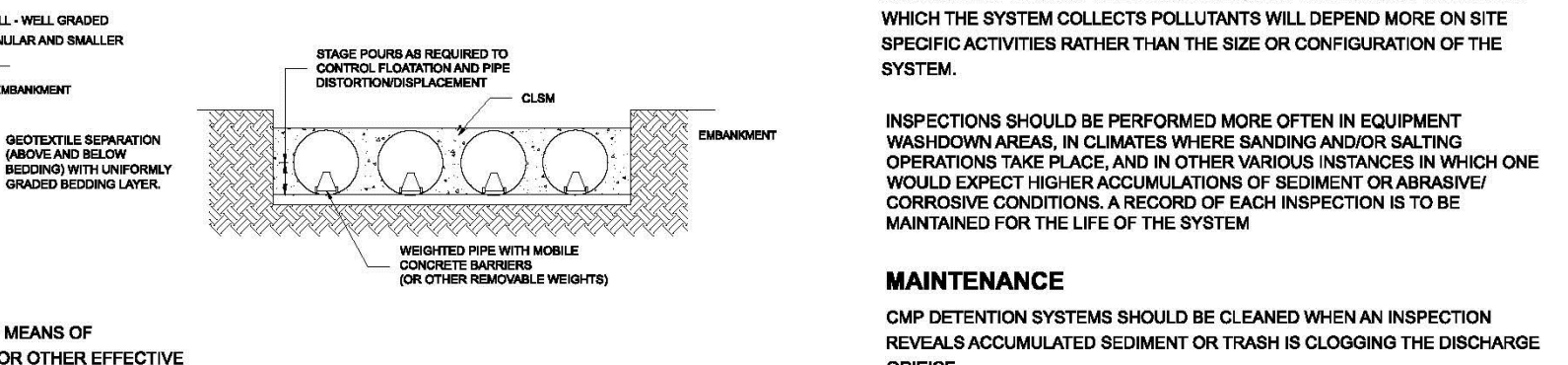
CMP DETENTION INSTALLATION GUIDE: PREPARE INSTALLATION OF A FLEXIBLE UNDERGROUND DETENTION SYSTEM WILL ENSURE LONG-TERM PERFORMANCE...



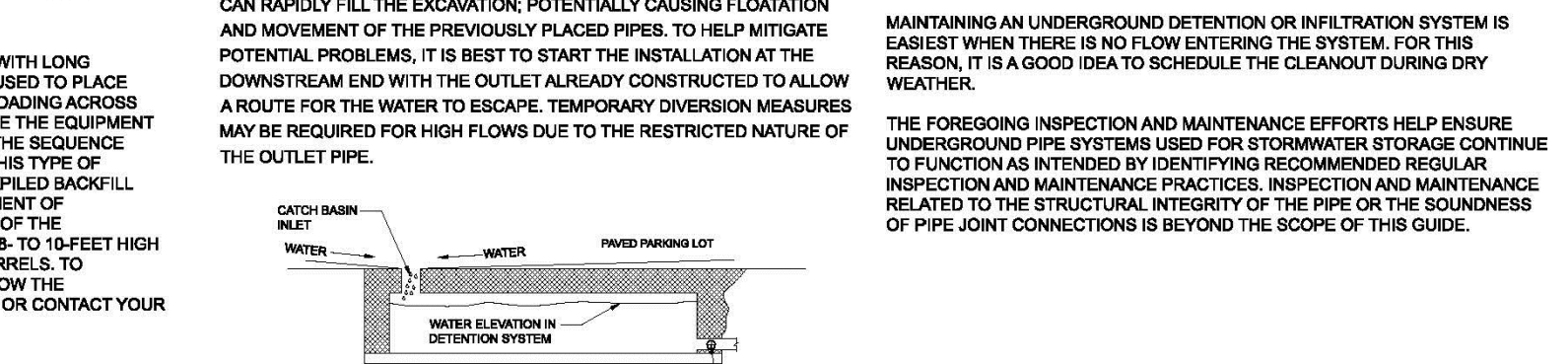
FOUNDATION: CONSTRUCT A FOUNDATION THAT CAN SUPPORT THE DESIGN LOADING APPLIED BY THE PIPE AND ADJACENT BACKFILL WEIGHT...



IN-SITU TRENCH WALL: IF EXCAVATION IS REQUIRED, THE TRENCH WALL NEEDS TO BE CAPABLE OF SUPPORTING THE LOAD THAT THE PIPE SHEDS AS THE SYSTEM IS LOADED...



CONSTRUCTION LOADING: TYPICALLY THE MINIMUM COVER SPECIFIED FOR A PROJECT ASSUMES H-20 LIVE LOAD...
ADDITIONAL CONSIDERATIONS: BECAUSE MOST SYSTEMS ARE CONSTRUCTED BELOW-GRADE, RAINFALL CAN RAPIDLY FILL THE EXCAVATION...



CMP DETENTION SYSTEM INSPECTION AND MAINTENANCE: UNDERGROUND STORMWATER DETENTION AND INFILTRATION SYSTEMS MUST BE INSPECTED AND MAINTAINED AT REGULAR INTERVALS...

WRANGLER'S RESTAURANT logo and contact information for DYODS drawing.

PROJECT INFORMATION table with columns for PROJECT, PREPARED FOR, TITLE, DATE, REVISION PER, NO BY, and SHEET NO.

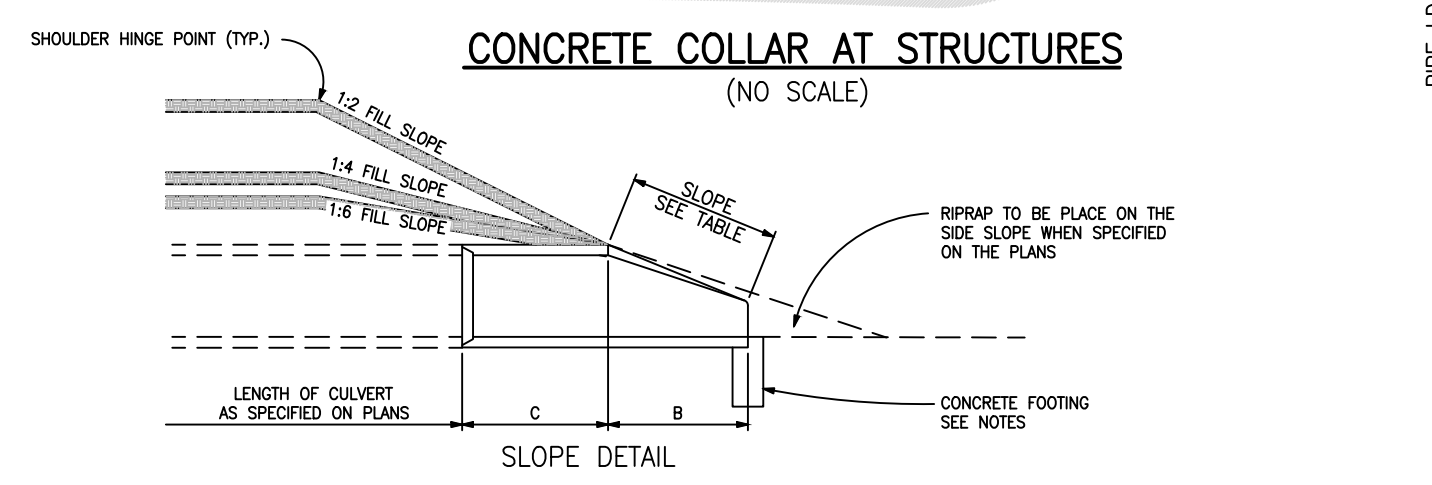
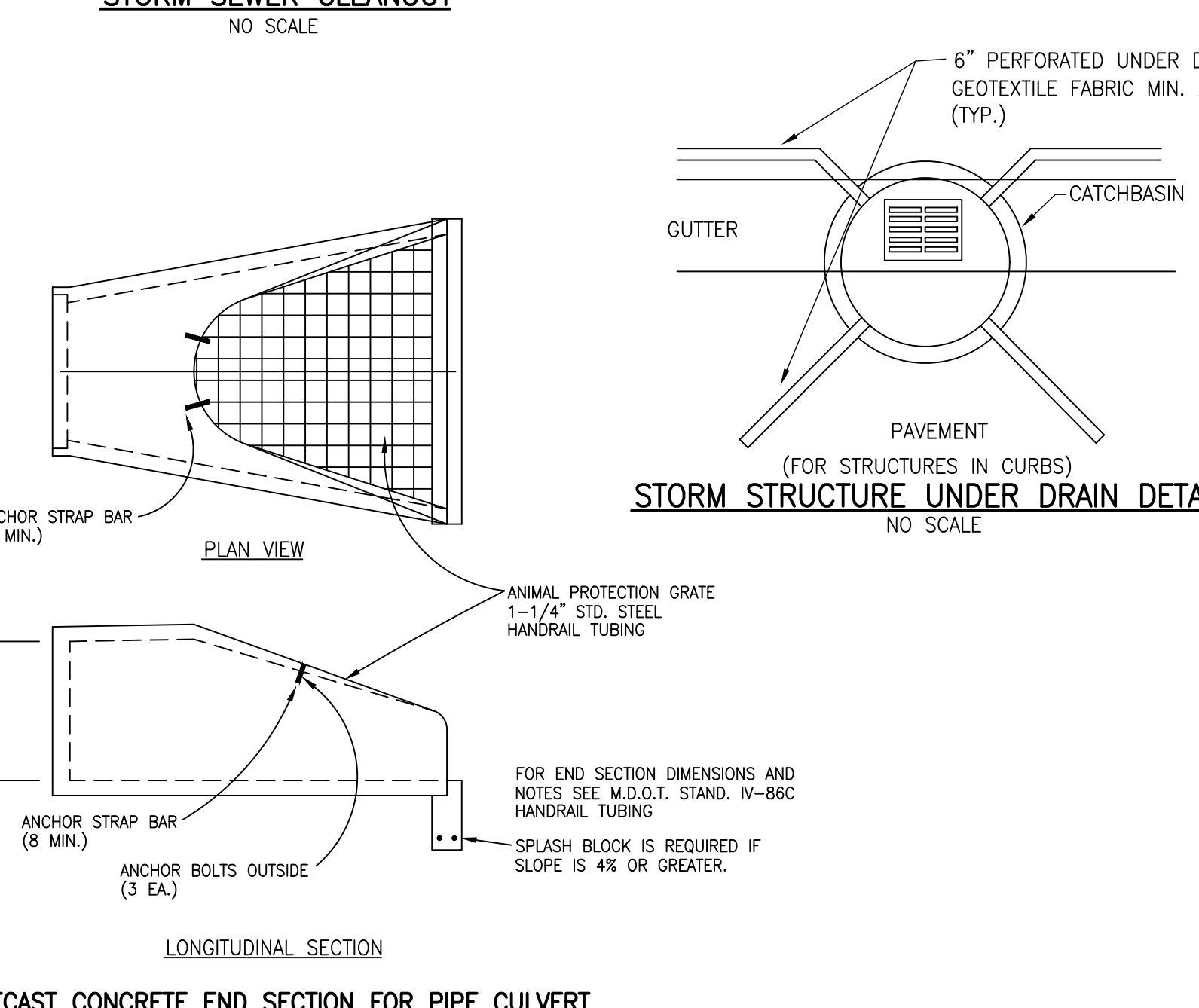
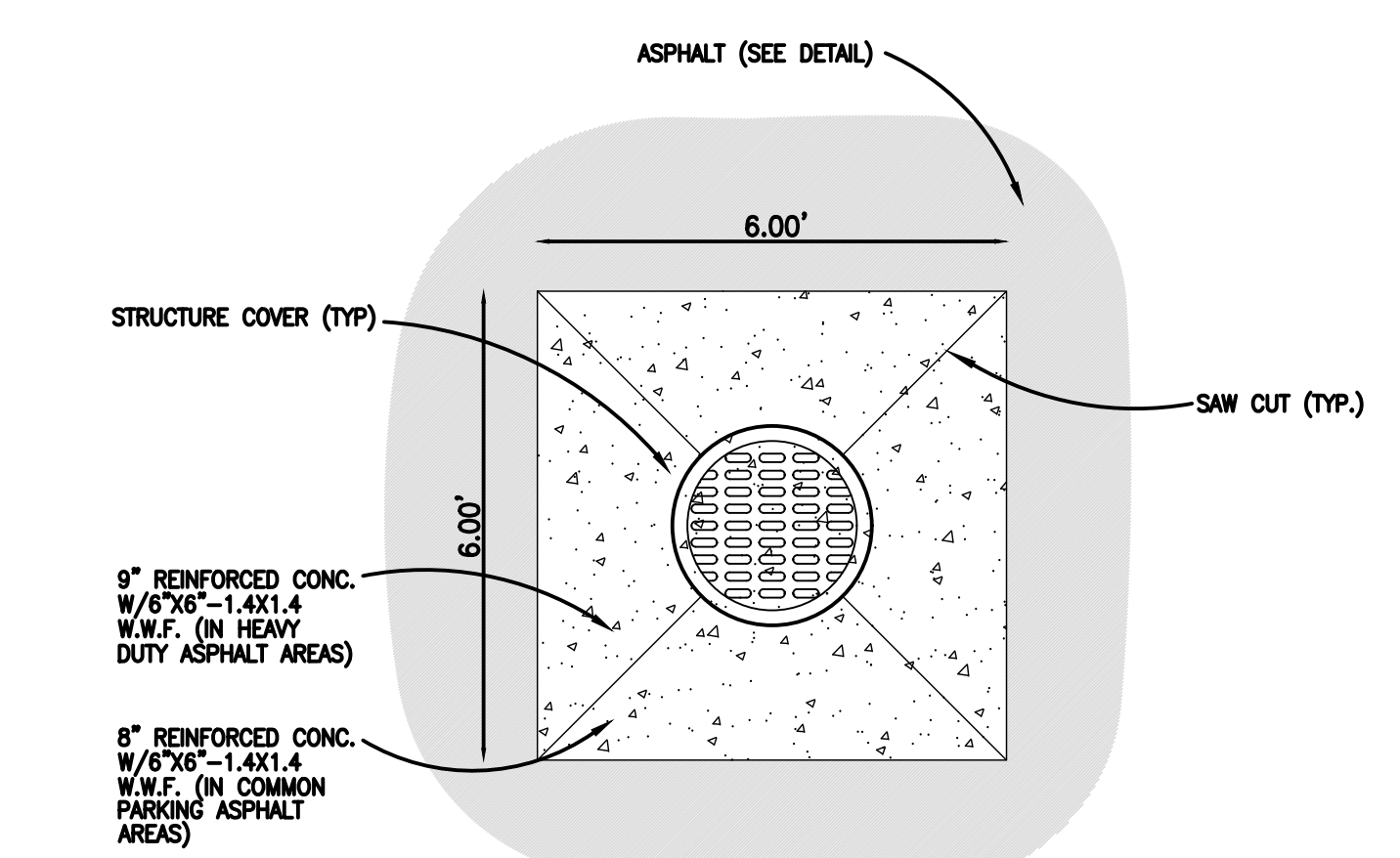
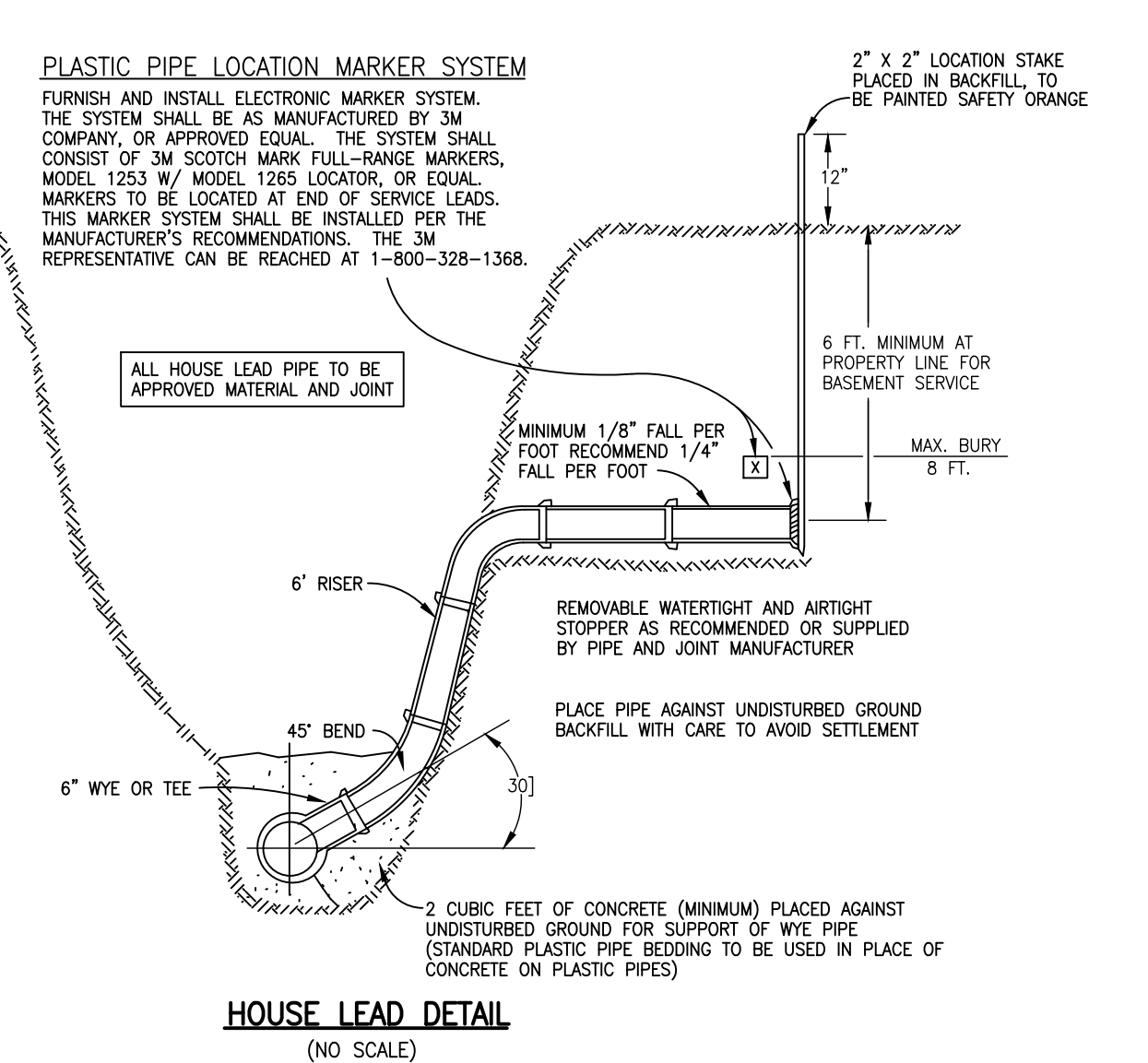
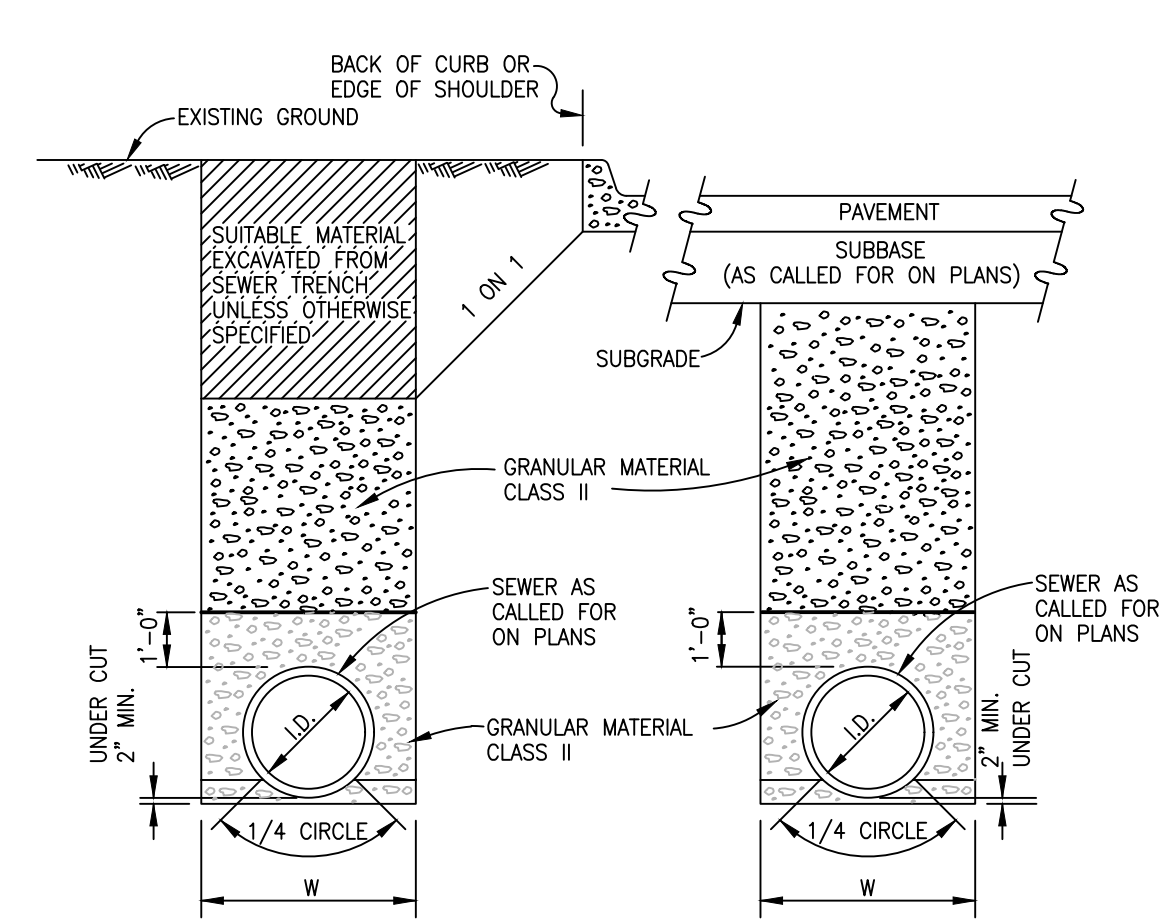
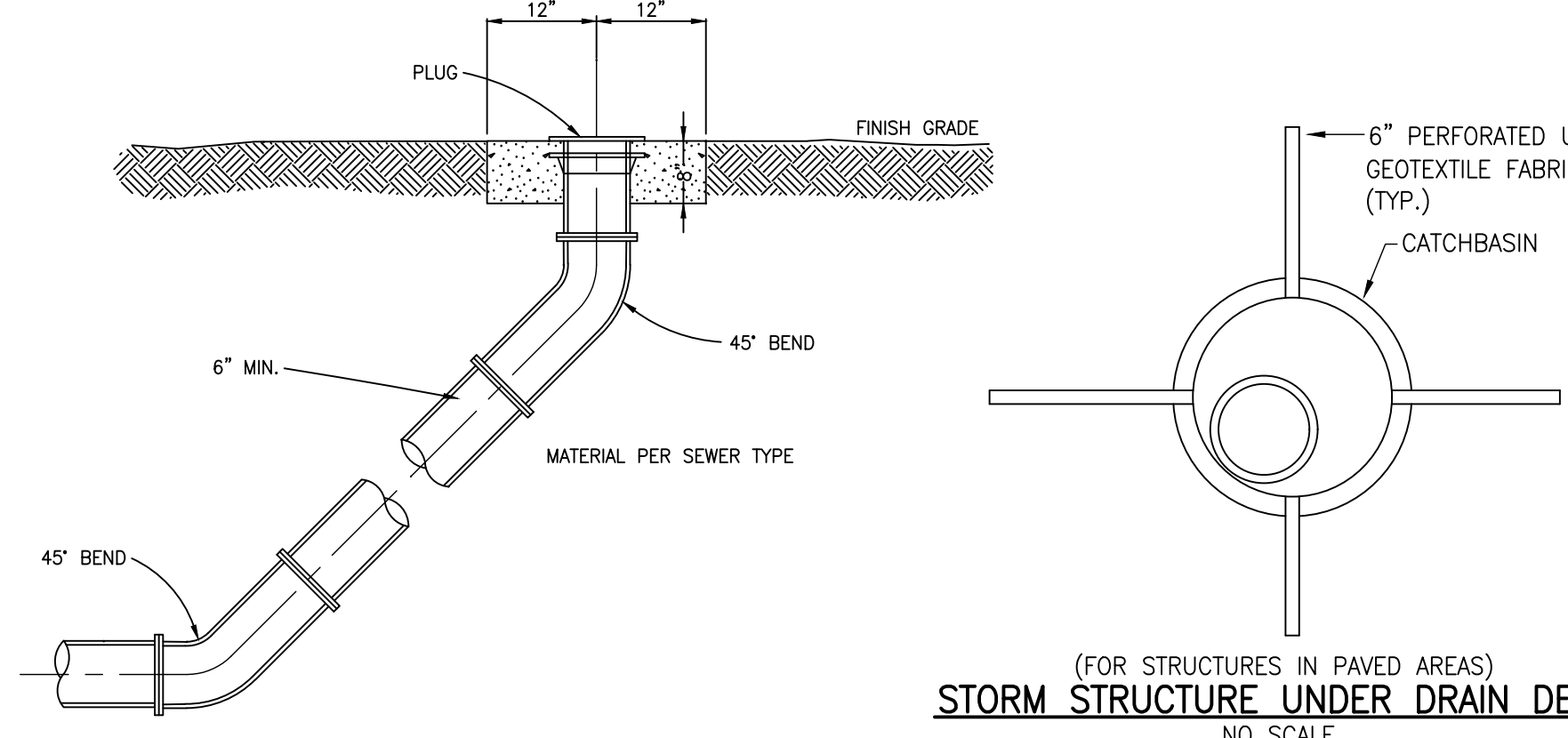
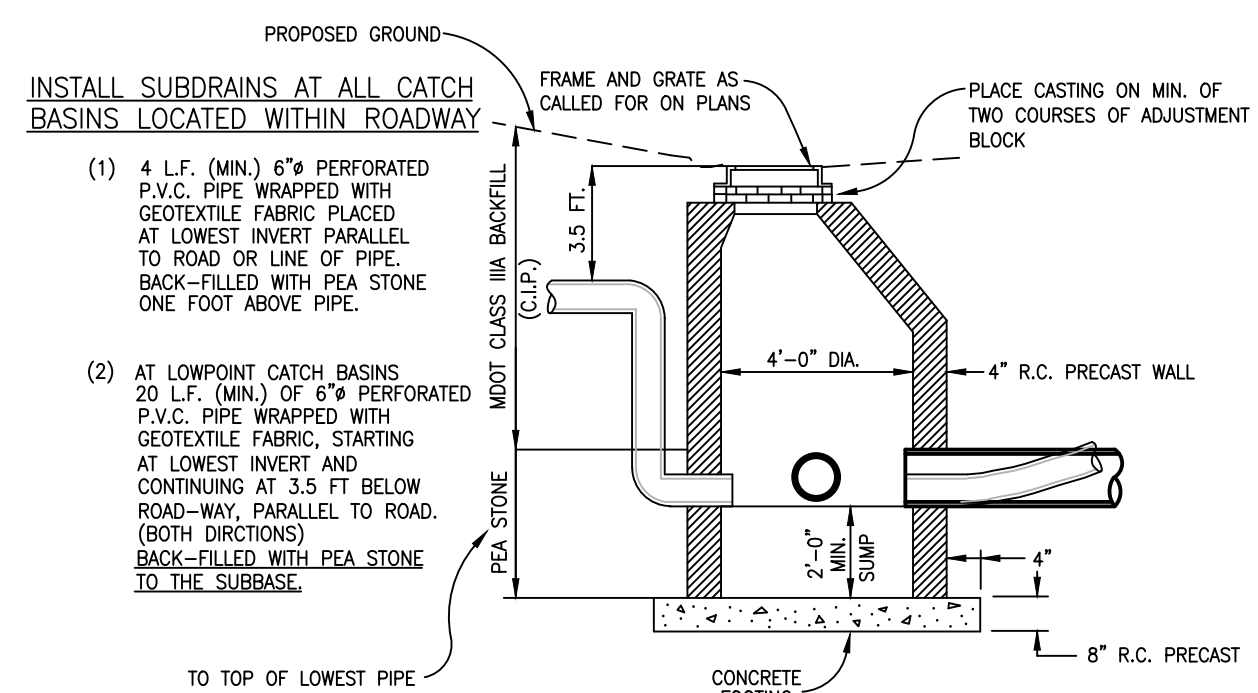
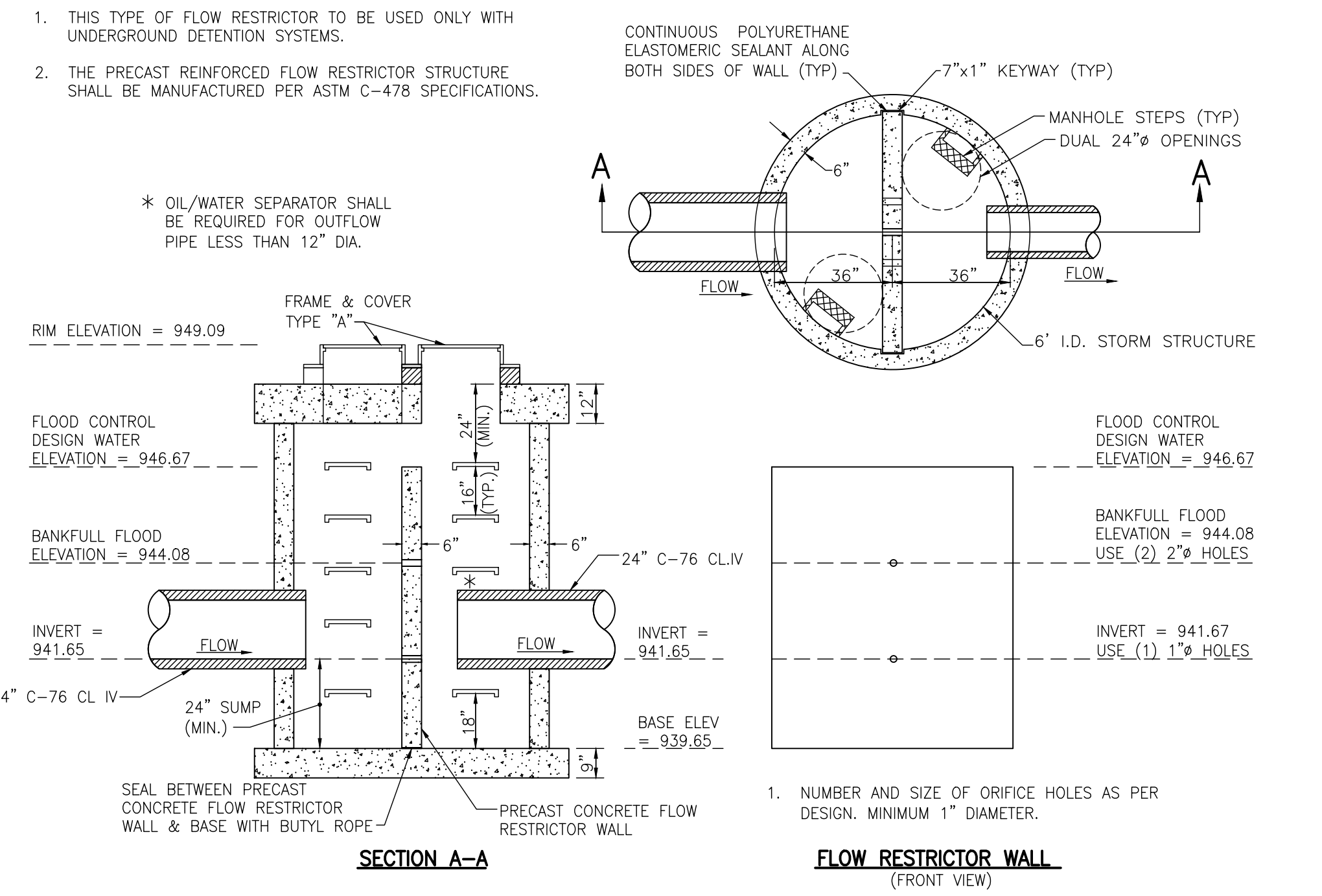
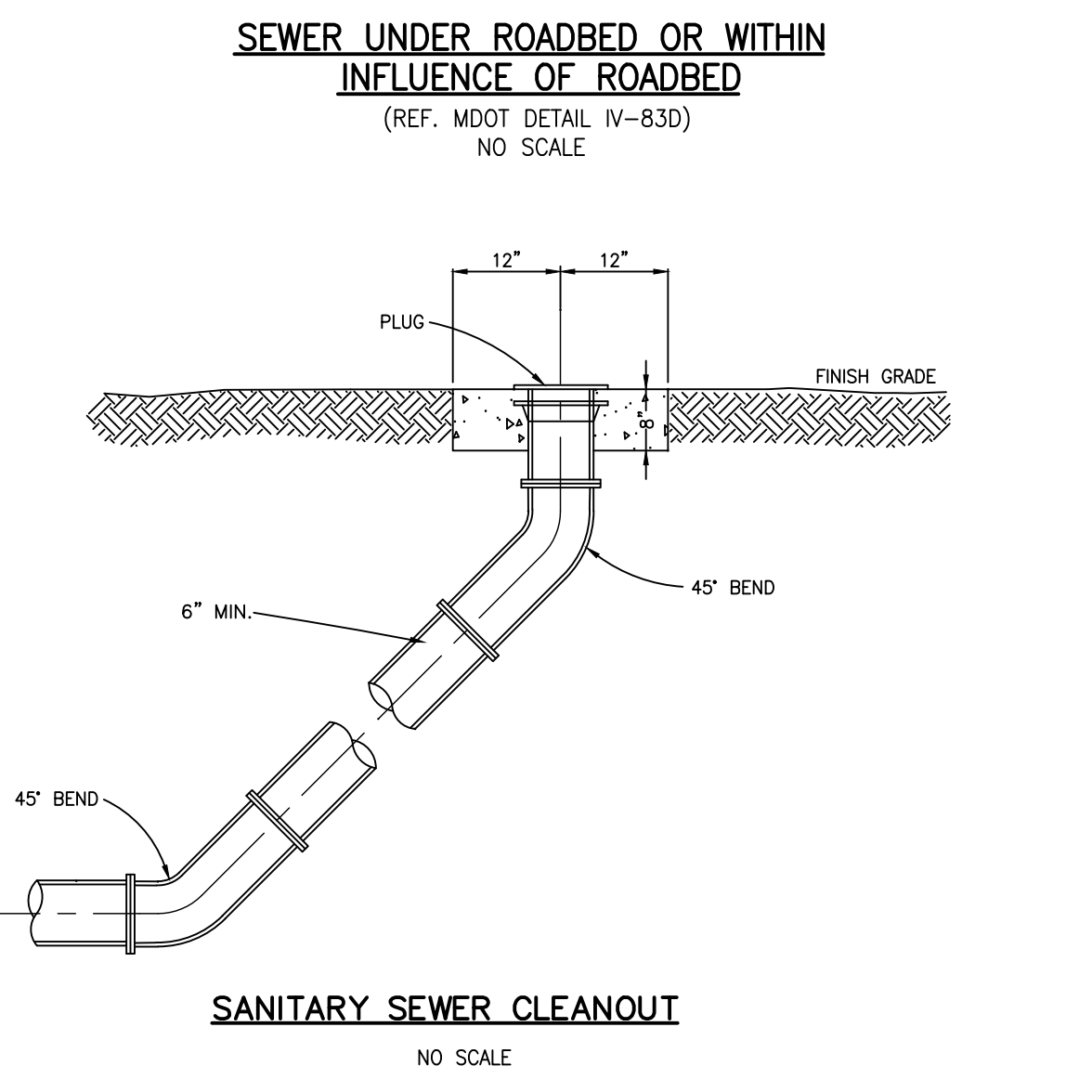
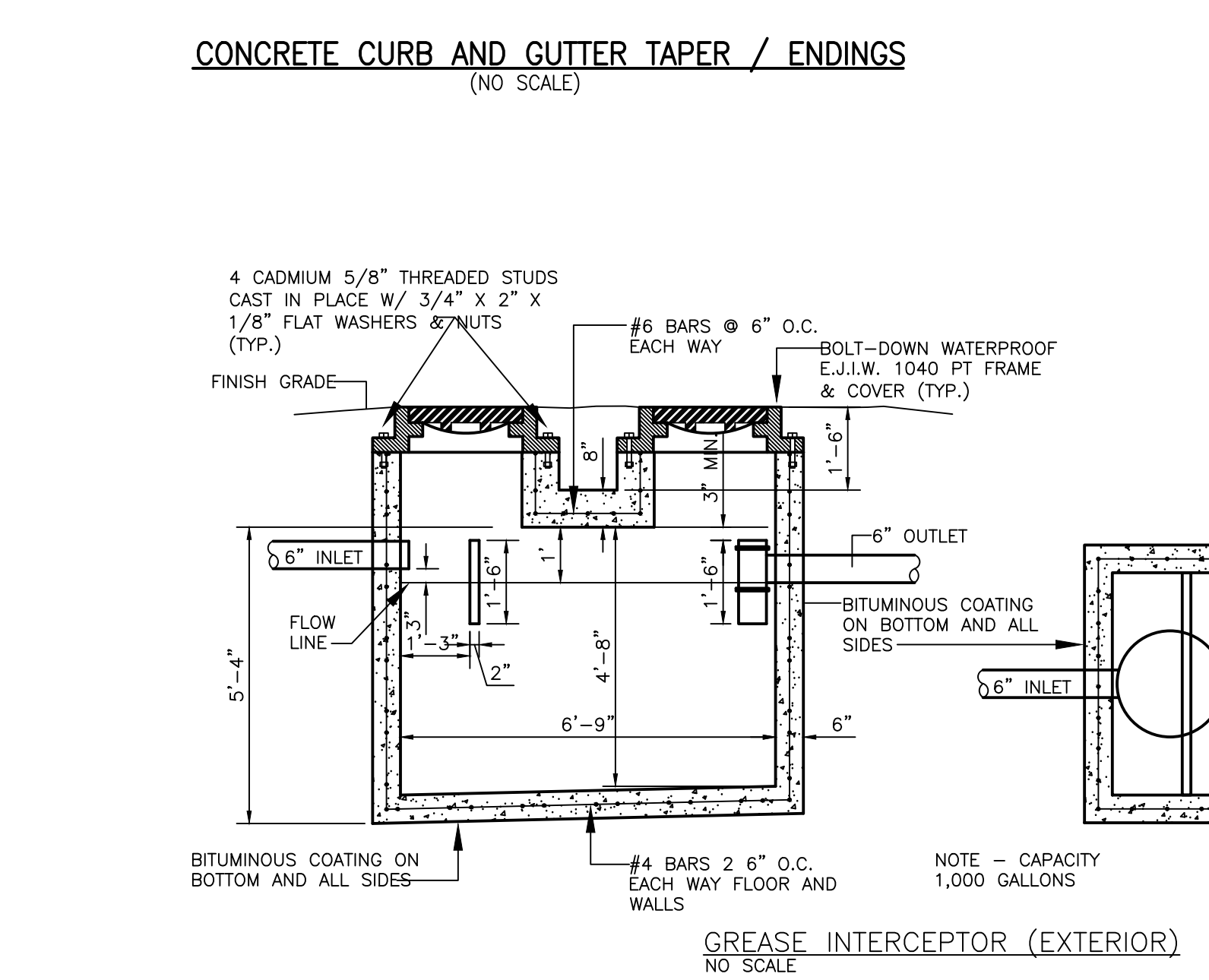
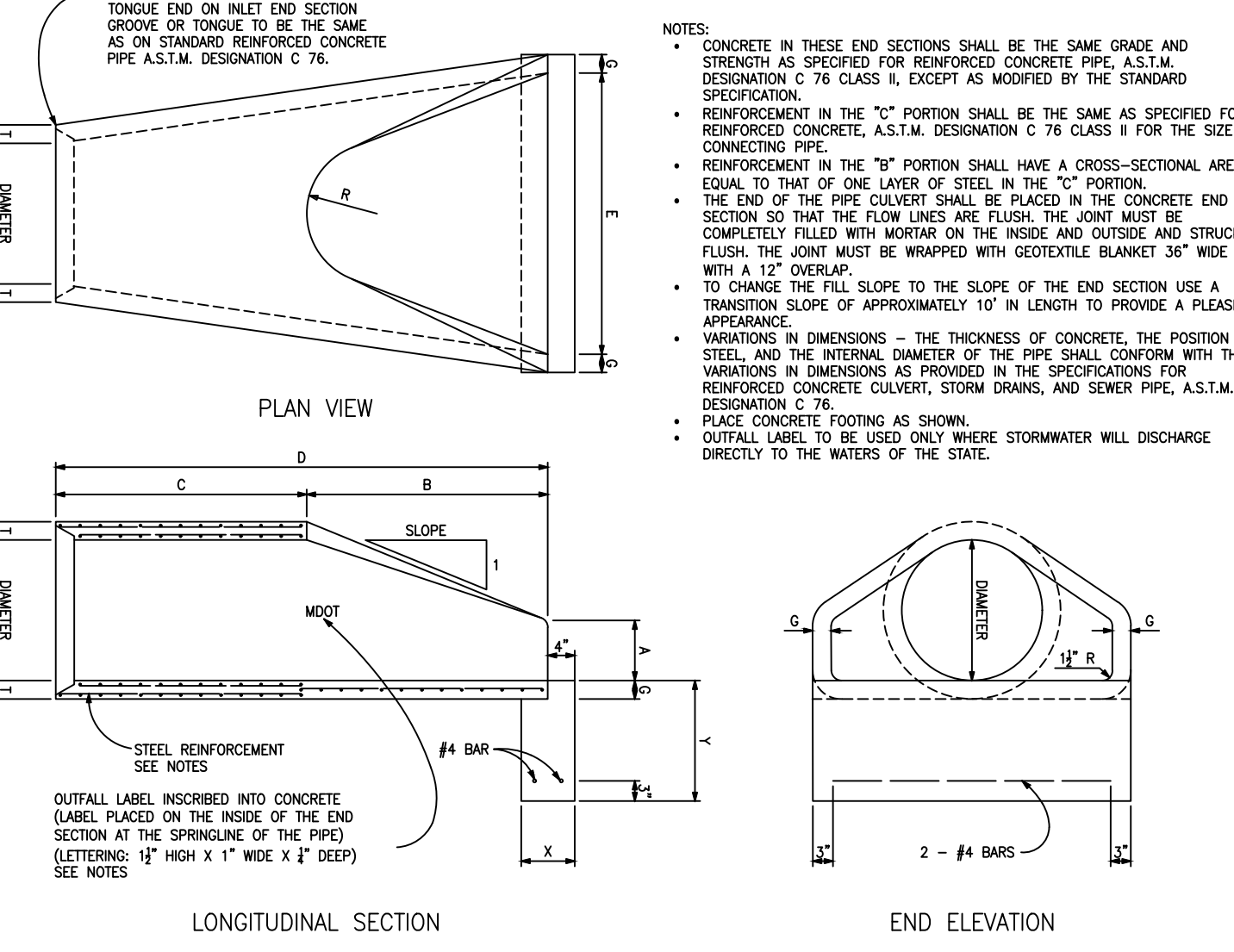
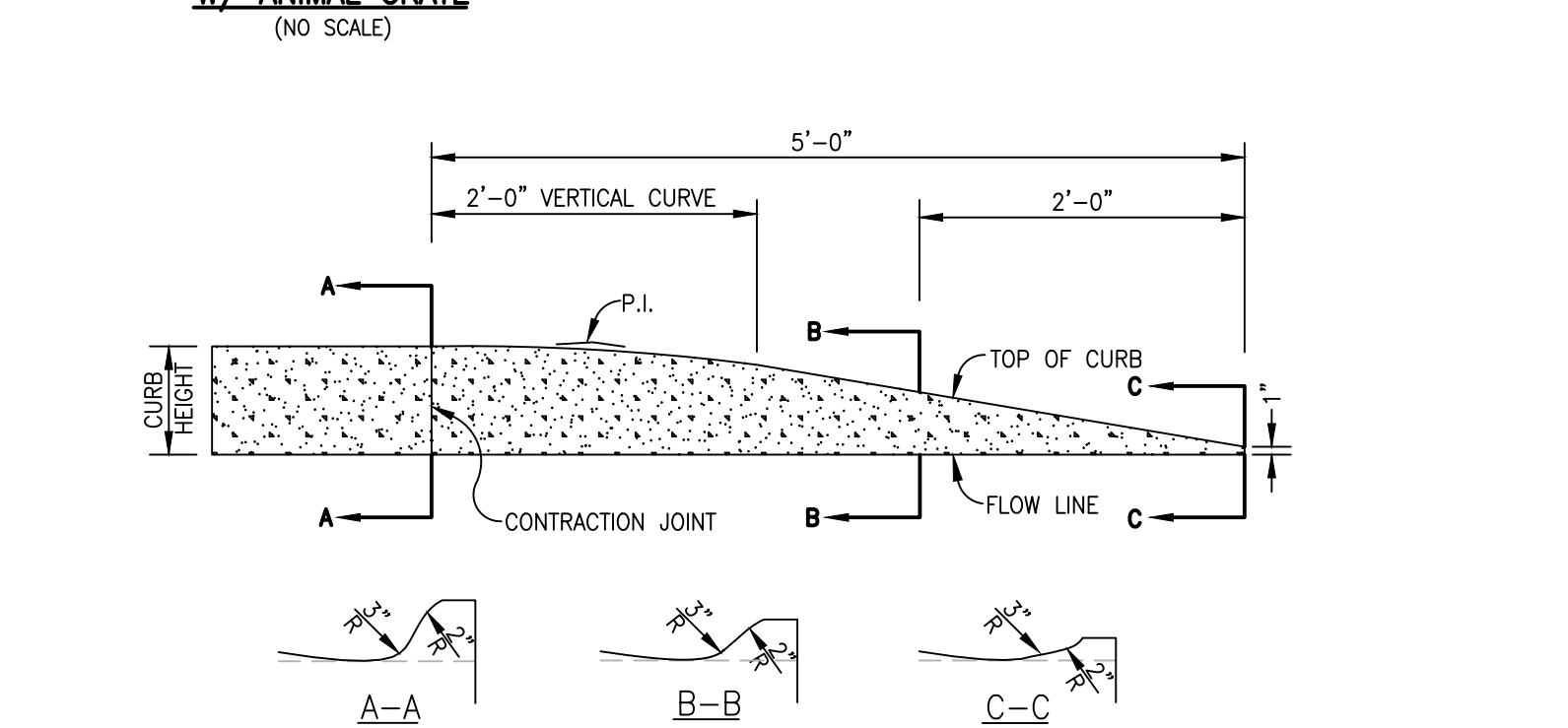


TABLE OF DIMENSIONS

PIPE DIAMETER (INCHES)	APPROX. SLOPE	T (INCHES)	B (INCHES)	C (INCHES)	D (INCHES)	E (INCHES)	G (INCHES)	R (INCHES)	X (INCHES)	Y (INCHES)	
12	2.4 TO 1	2	4	24	49	73	24	2	9	8	18
15	2.4 TO 1	2-1/4	6	27	46	73	30	2-1/4	11	8	18
18	2.5 TO 1	2-1/2	9	27	48	73	36	2-1/2	12	8	18
21	2.4 TO 1	2-3/4	9	36	37-1/2	73-1/2	42	2-3/4	13	8	18
24	2.5 TO 1	3	9-1/2	43-1/4	30-1/2	73-3/4	48	3	14	8	18
27	2.5 TO 1	3-1/4	10-1/2	49-1/4	24-1/2	73-3/4	54	3-1/4	14-1/2	8	18
30	2.5 TO 1	3-1/2	12	54	19-3/4	73-3/4	60	3-1/2	15	8	18
36	2.5 TO 1	4	15	63	34-3/4	97-3/4	72	4	20	8	18
42	2.5 TO 1	4-1/2	21	63	35	98	78	4-1/2	22	10	24
48	2.5 TO 1	5	24	72	28	98	84	5	22	10	24
54	2.0 TO 1	5-1/2	27	85	33-1/4	98-1/4	90	5-1/2	24	10	24
60	1.8 TO 1	6	35	60	39	99	96	6	24	12	24
66	1.7 TO 1	6-1/2	30	72	27	99	102	6-1/2	24	12	24
72	1.8 TO 1	7	36	78	21	99	108	7	24	12	24
78	1.8 TO 1	7-1/2	36	90	21	111	114	7-1/2	24	12	24
84	1.6 TO 1	8	36	90-1/2	21	111-1/2	120	8	24	12	24

* AS FURNISHED BY THE MANUFACTURER



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HOWELL, MI. 48843
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WRANGLER'S RESTAURANT
LINDHOUT ASSOCIATES ARCHITECTS AIA PC
10465 CITATION DRIVE
BRIGHTON, MI 48116
810.227.5668

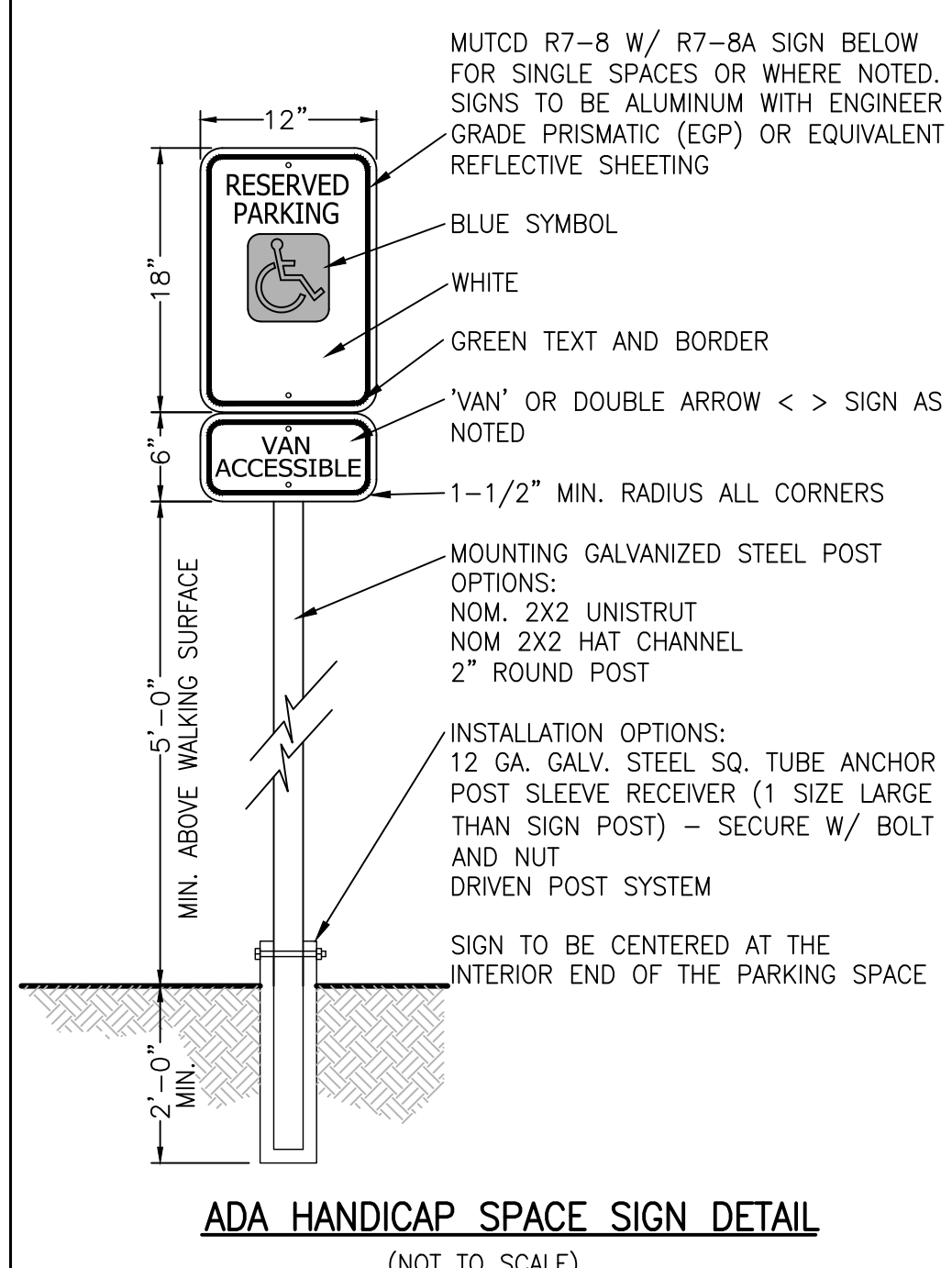
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PREPARED FOR: LINDHOUT ASSOCIATES ARCHITECTS AIA PC
TITLE: MISCELLANEOUS CONSTRUCTION DETAILS

NO	BY	REVISION PER	DATE

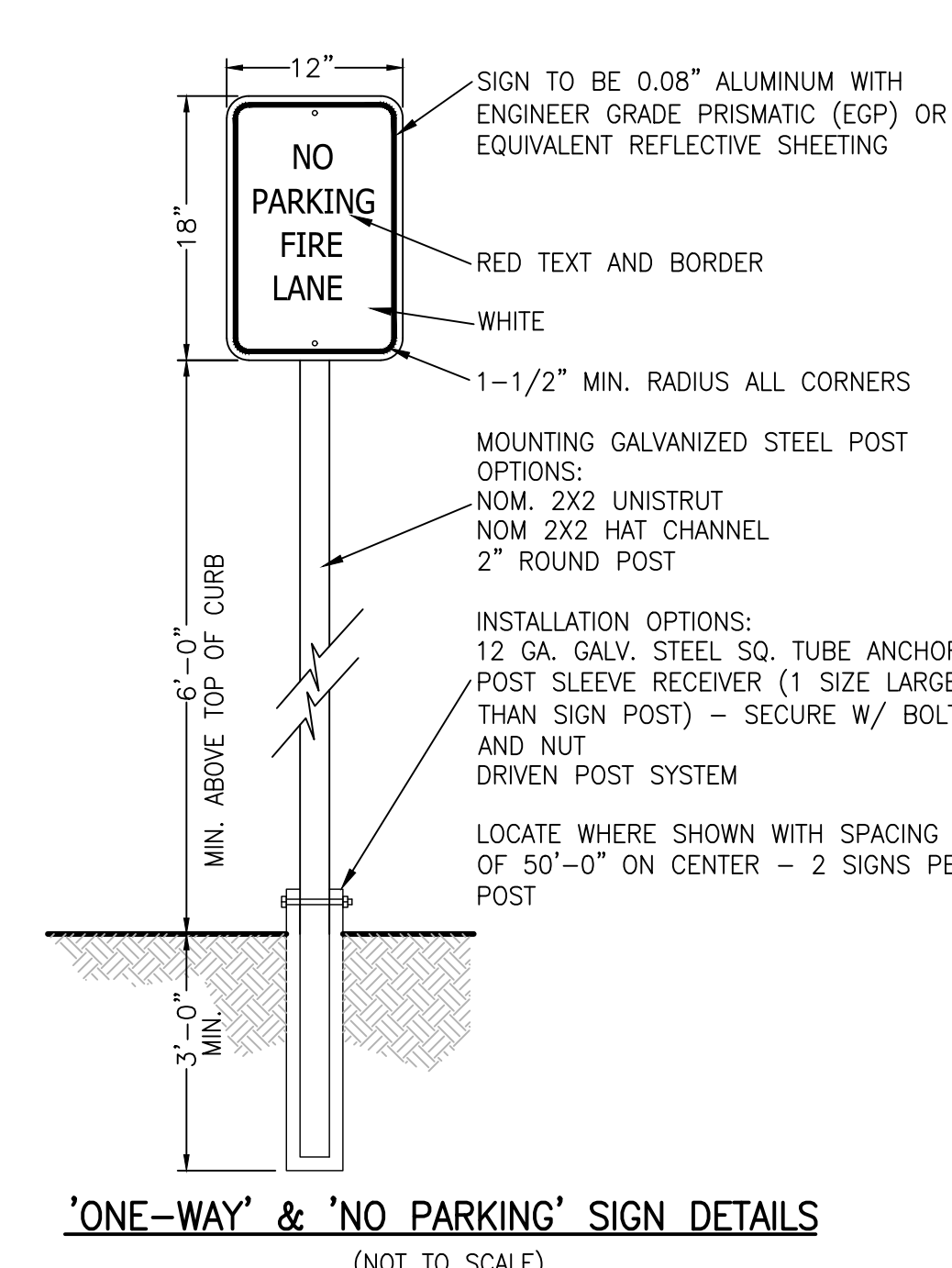
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CHECKED BY:
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JOB NO: 21-550
DATE: 3-26-24
SHEET NO. C11

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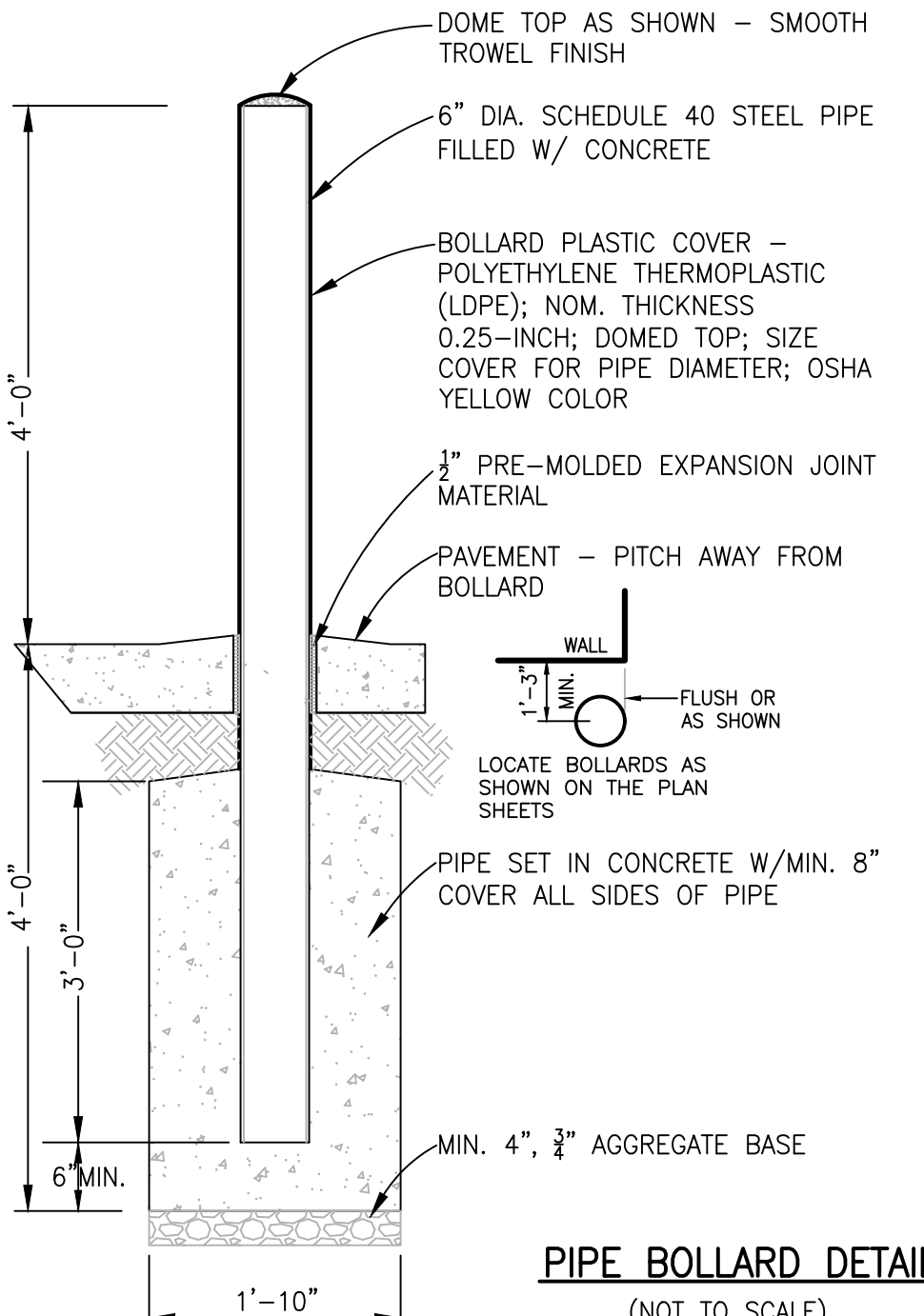
BOSS Engineering



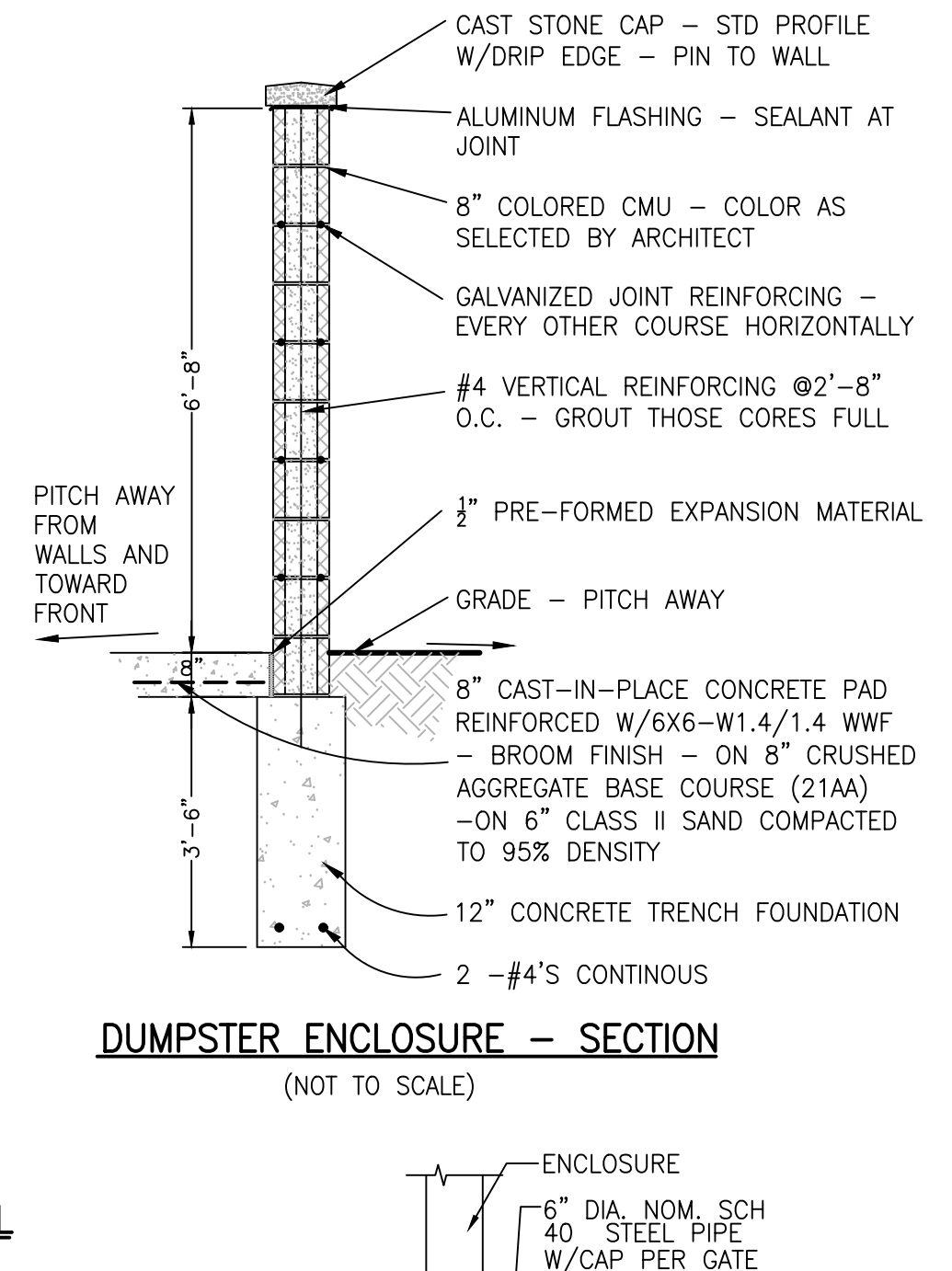
ADA HANDICAP SPACE SIGN DETAIL
(NOT TO SCALE)



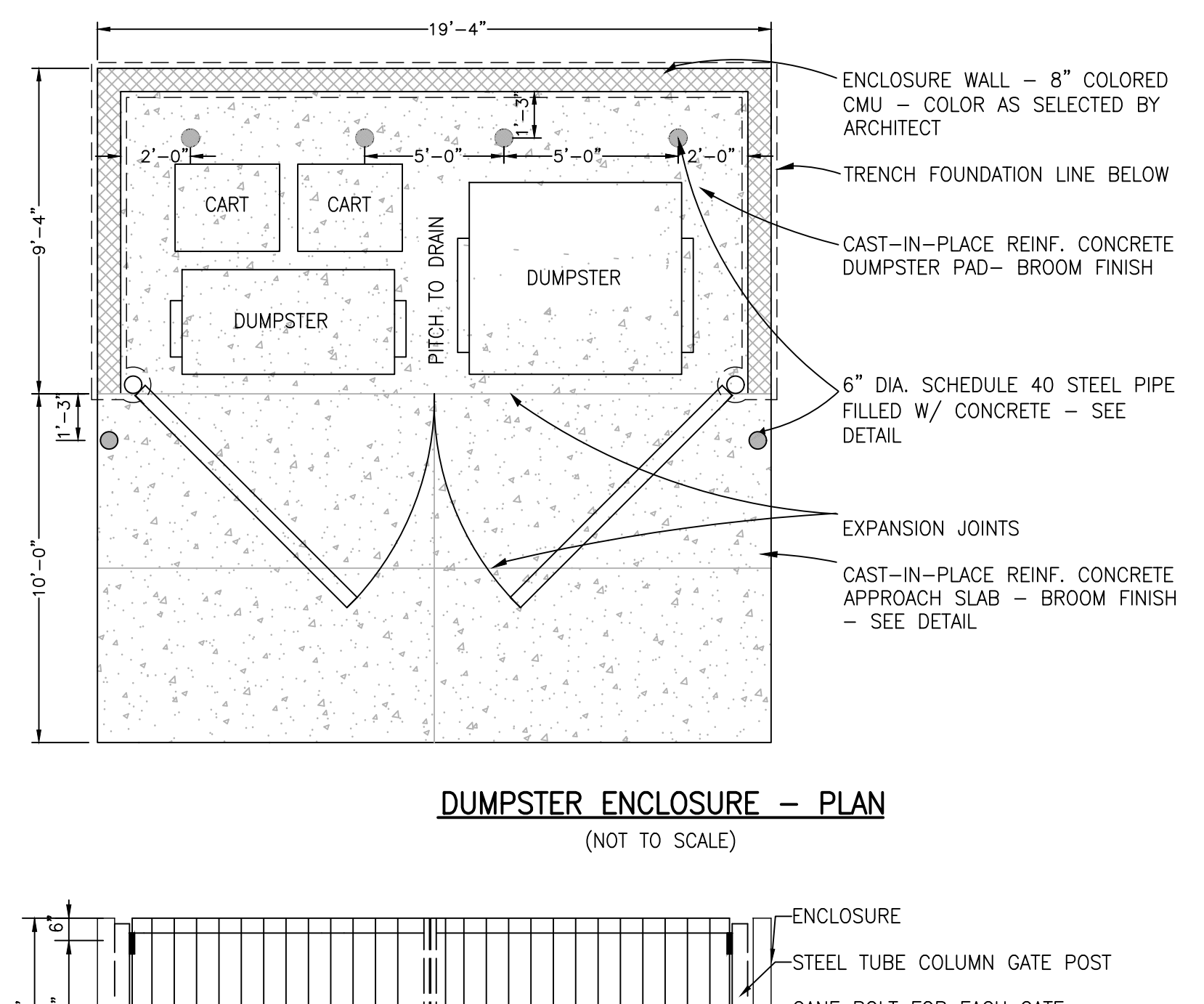
'ONE-WAY' & 'NO PARKING' SIGN DETAILS
(NOT TO SCALE)



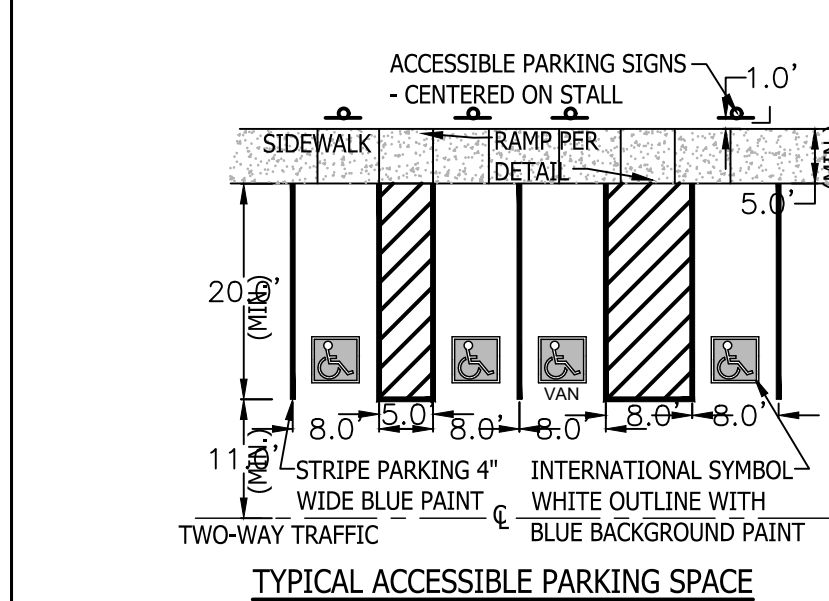
PIPE BOLLARD DETAIL
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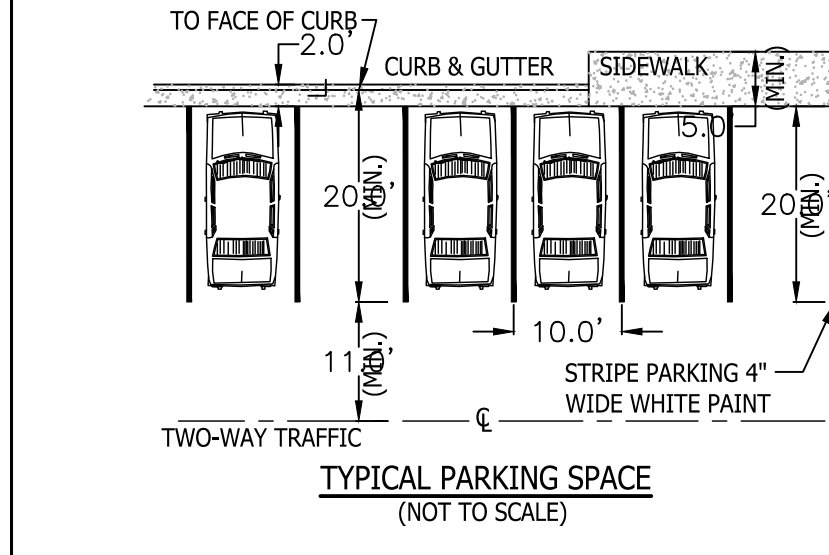
DUMPSTER ENCLOSURE - SECTION
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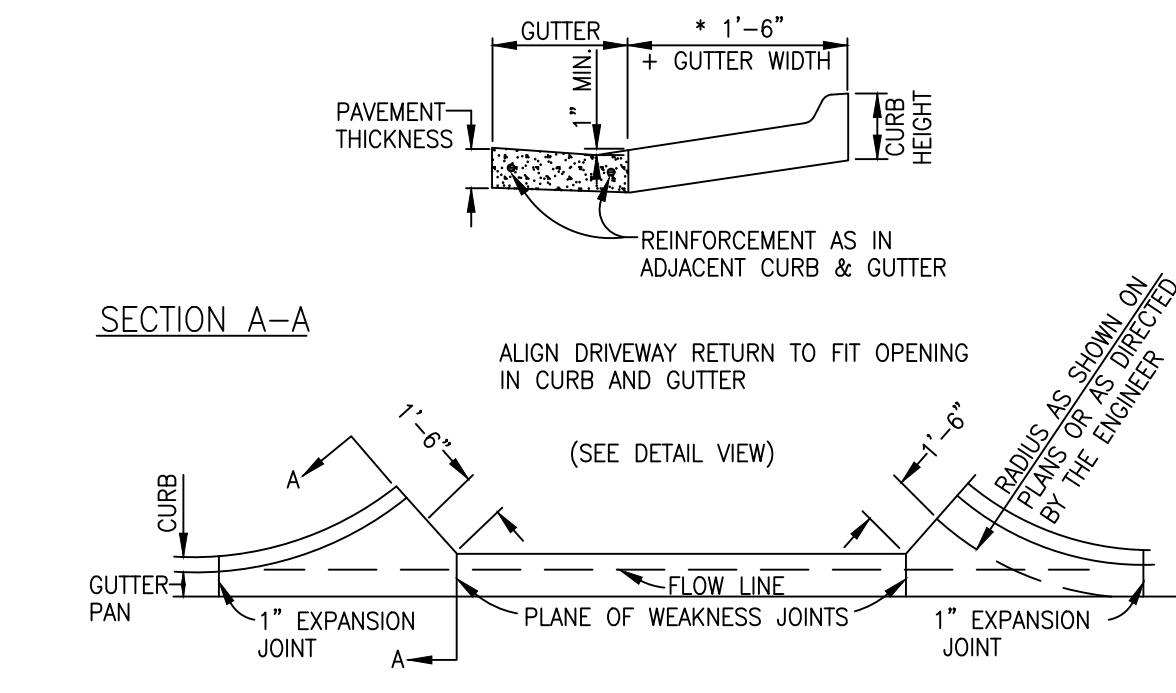
DUMPSTER ENCLOSURE - PLAN
(NOT TO SCALE)



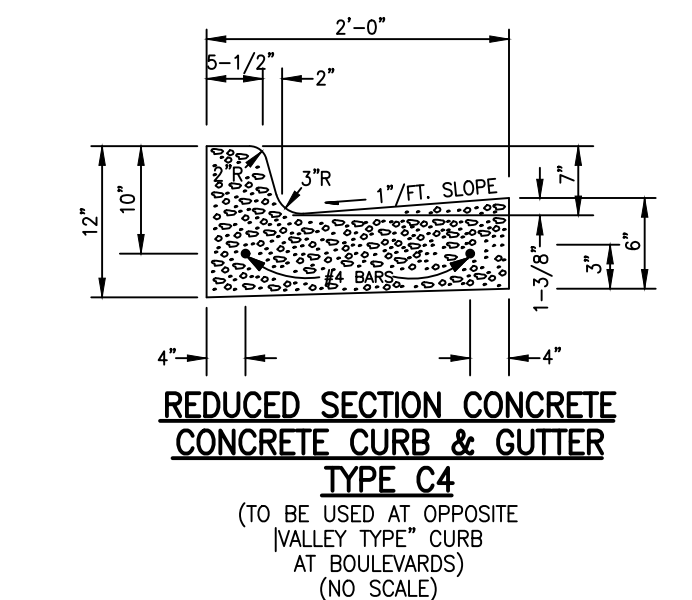
TYPICAL ACCESSIBLE PARKING SPACE
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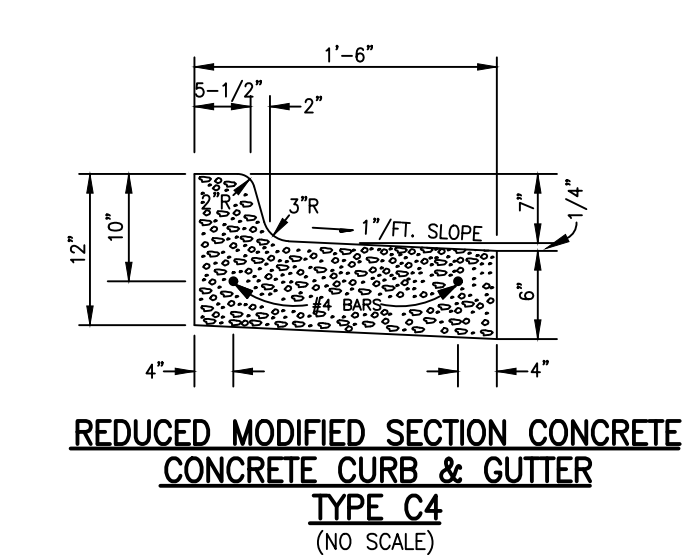
HOWELL TOWNSHIP
TYPICAL PARKING SPACE
(NOT TO SCALE)



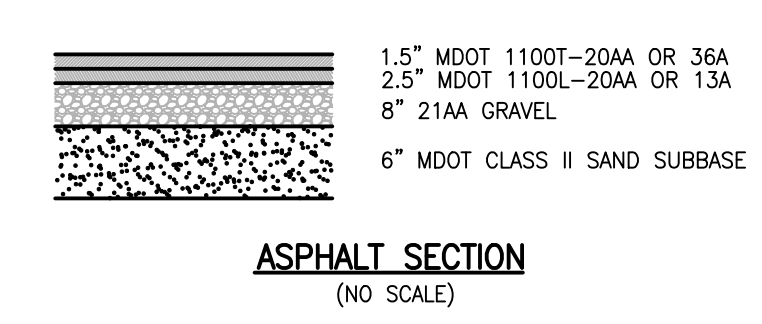
CONCRETE DRIVEWAY OPENING - MDOT STANDARD II-42, DETAIL 'M'
(NO SCALE)



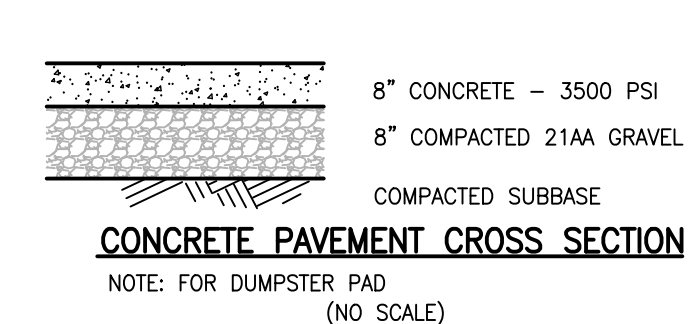
REDUCED SECTION CONCRETE CURB & GUTTER TYPE C4
(NO SCALE)



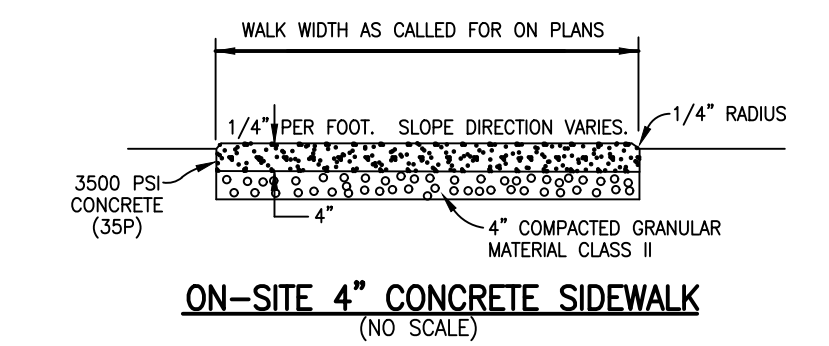
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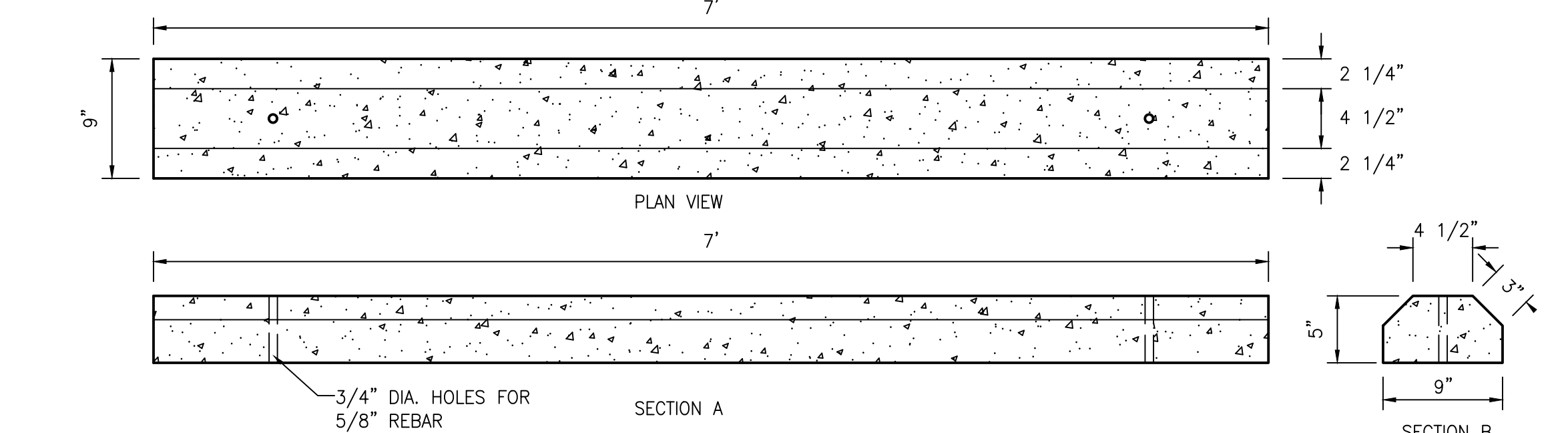
ASPHALT SECTION
(NO SCALE)



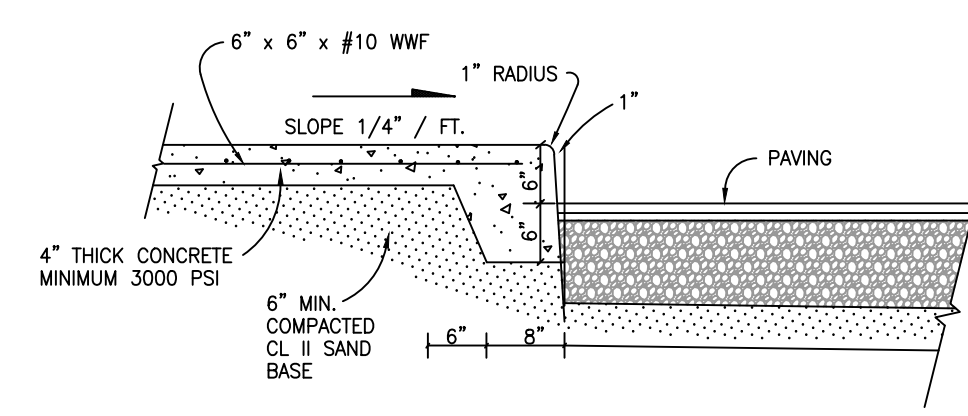
CONCRETE PAVEMENT CROSS SECTION
(NO SCALE)



ON-SITE 4\"/>



CONCRETE WHEEL STOP DETAIL
(NO SCALE)



INTEGRAL CONCRETE WALK / CURB DETAIL
(NO SCALE)

THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE DRAWINGS ARE ONLY APPROXIMATE. NO GUARANTEE IS MADE AS TO THE ACCURACY OF THESE UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION AND ELEVATION OF EXISTING UTILITIES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING OF ANY CONFLICTS BEFORE THE LOCATION OR DEPTH DIFFERS SIGNIFICANTLY FROM THE PLANS.

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WRANGLER'S RESTAURANT
LINDHOUT ASSOCIATES ARCHITECTS AIA PC
10469 CITATION DRIVE
BRIGHTON, MI 48116
810.227.5668

PROJECT	PREPARED FOR	TITLE	DATE
WRANGLER'S RESTAURANT	LINDHOUT ASSOCIATES ARCHITECTS AIA PC	MISCELLANEOUS CONSTRUCTION DETAILS	
DESIGNED BY:	PC	CHECKED BY:	PC
SCALE:	AS NOTED	JOB NO:	21-550
DATE:	3-26-24	SHEET NO.	C12

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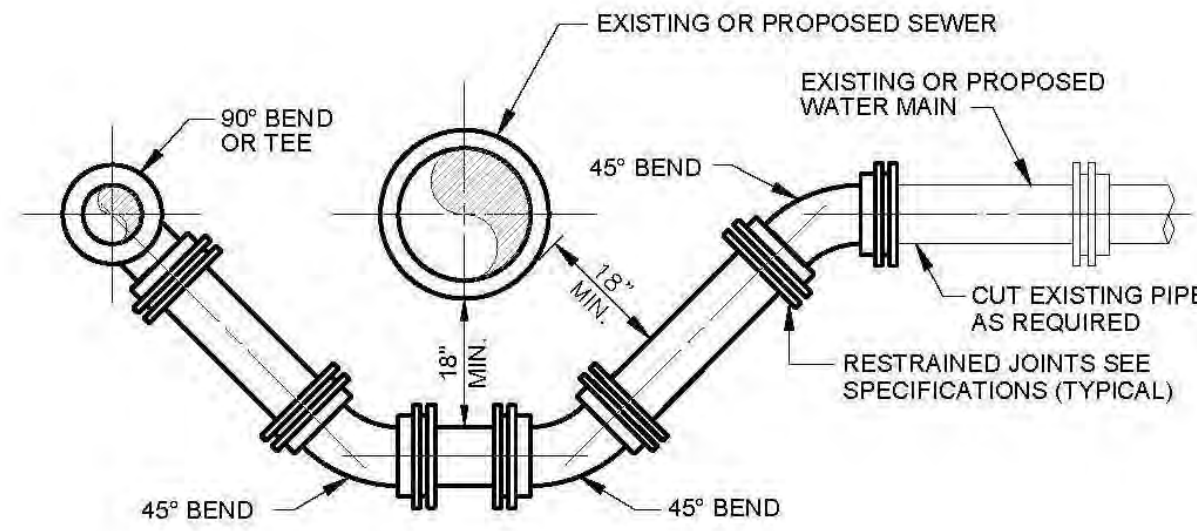


PIPE RESTRAINT SCHEDULE

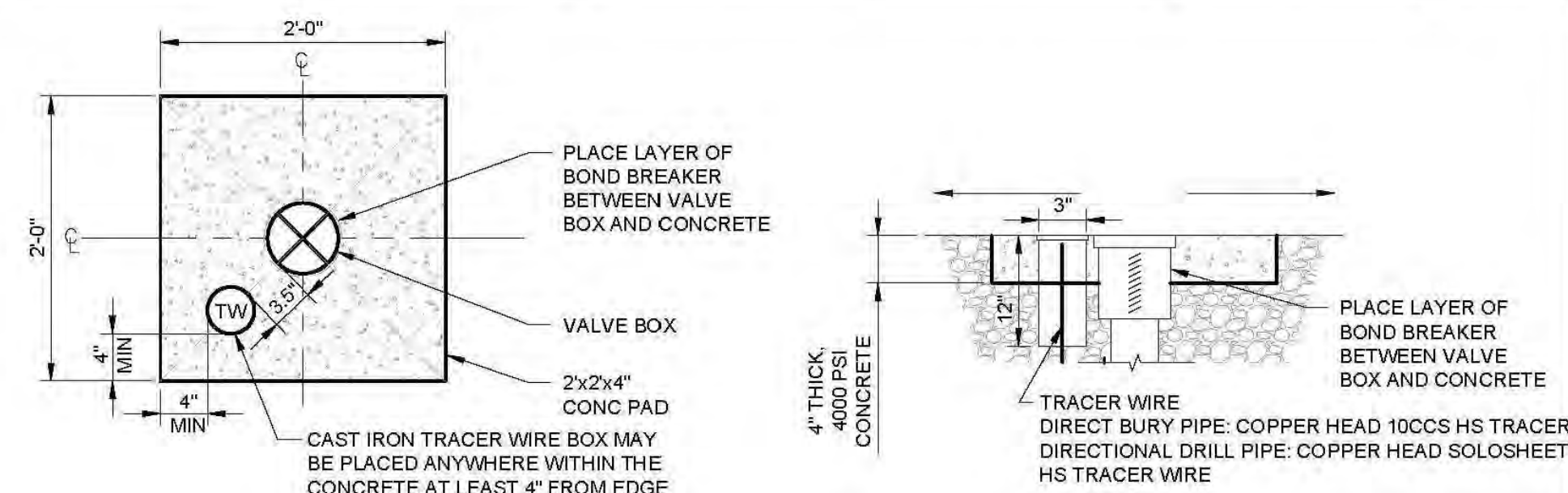
GROUND BURIED PRESSURE PIPE - POLYETHYLENE ENCASED DUCTILE IRON PIPE

PIPE DIAMETER	TEES, 90° BENDS	45° BENDS	22-1/2° BENDS	11-1/4° BENDS	DEAD ENDS	REDUCERS (ONE SIZE REDUCTION)*	REDUCERS (TWO SIZE REDUCTION)*
4	13	5	3	1	40	--	--
6	19	8	4	2	58	31	--
8	24	10	5	2	75	30	70
12	34	14	7	3	107	57	116
16	43	18	9	4	139	59	137
20	52	22	10	5	169	59	134
24	61	25	12	6	199	60	132
30	73	30	15	7	242	65	168
36	84	35	17	8	281	64	168

- LENGTHS OF PIPE RESTRAINT ARE GIVEN IN FEET.
 - IF REQUIRED PIPE DIAMETER IS NOT LISTED IN THIS TABLE, THE NEXT LARGEST PIPE DIAMETER SHALL BE USED.
 - THIS TABLE IS BASED ON A TEST PRESSURE OF 180 PSI (OPERATING PRESSURE PLUS WATER HAMMER. FOR OTHER TEST PRESSURES, ALL VALUES TO BE INCREASED OR DECREASED PROPORTIONALLY.
 - THE VALUES PROVIDED OF RESTRAINT LENGTH ARE IN EACH DIRECTION FROM THE POINT OF DEFLECTION OR TERMINATION EXCEPT FOR TEES, AT WHICH ONLY THE BRANCH IN THE DIRECTION OF THE STEM.
 - IF TEES OR BENDS ARE USED, USE FOUR RODS MINIMUM AND ADD 1/8-INCH TO BAR DIAMETER AS CORROSION ALLOWANCE.
- * SIZE REDUCTION IS BASED UPON THE PIPE DIAMETER SHOWN IN THIS TABLE.
- BASED UPON: INTERNAL PRESSURE: 180
PIPE DEPTH: 5
BEDDING CLASS: TYPE 4
SOIL TYPE: GOOD SAND
SAFETY FACTOR: 2

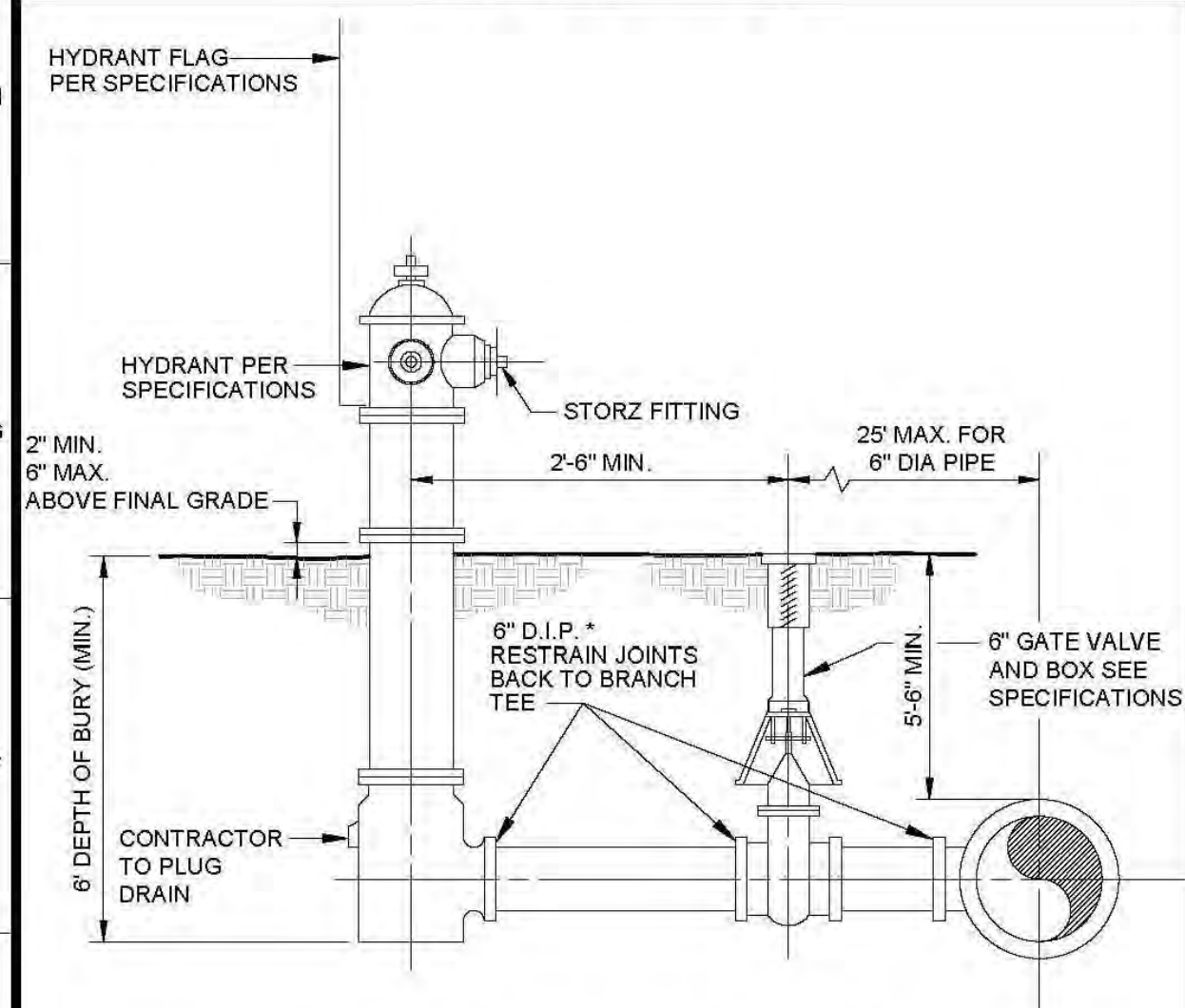


WATER MAIN UTILITY OFFSET

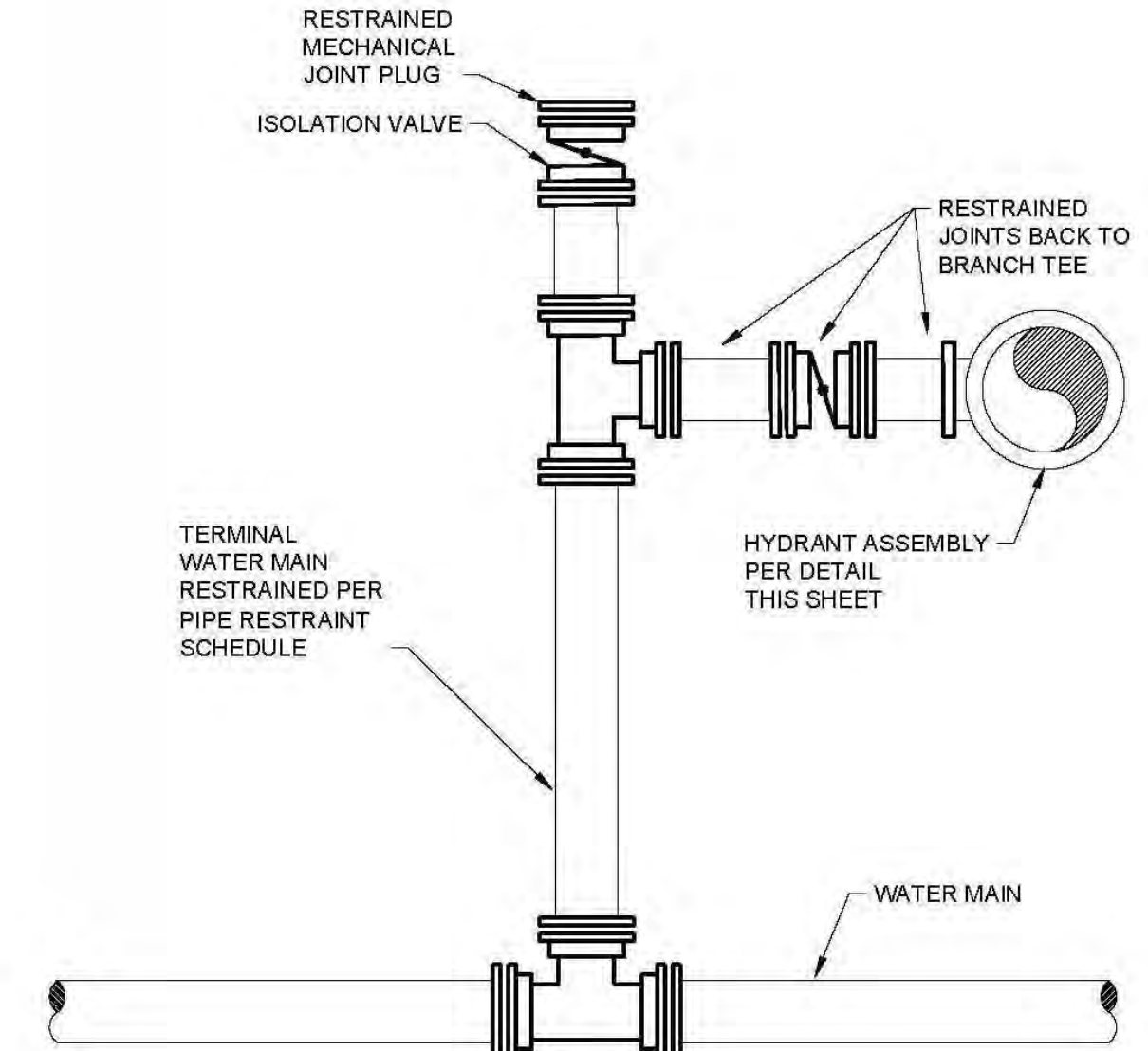


- NOTE: ALL BOXES & ADJOINING TW BOXES SHALL BE ENCASED IN A CONC. PAD UNLESS OTHERWISE DETERMINED BY M.H.O.G.
- NOTE:
- TRACER WIRE BOXES LOCATED WITHOUT A VALVE BOX ONLY REQUIRE AN 18" X 18" CONCRETE PAD.
 - TRACER WIRE BOX SHALL HAVE A LOCKING LID W/STANDARD AWWA PENTAGON KEY.
 - TRACER WIRE BOX SHALL BE COPPERHEAD RB14*TP IN ASPHALT INSTALLATIONS AND CD14*TP FOR ALL OTHER INSTALLATIONS.

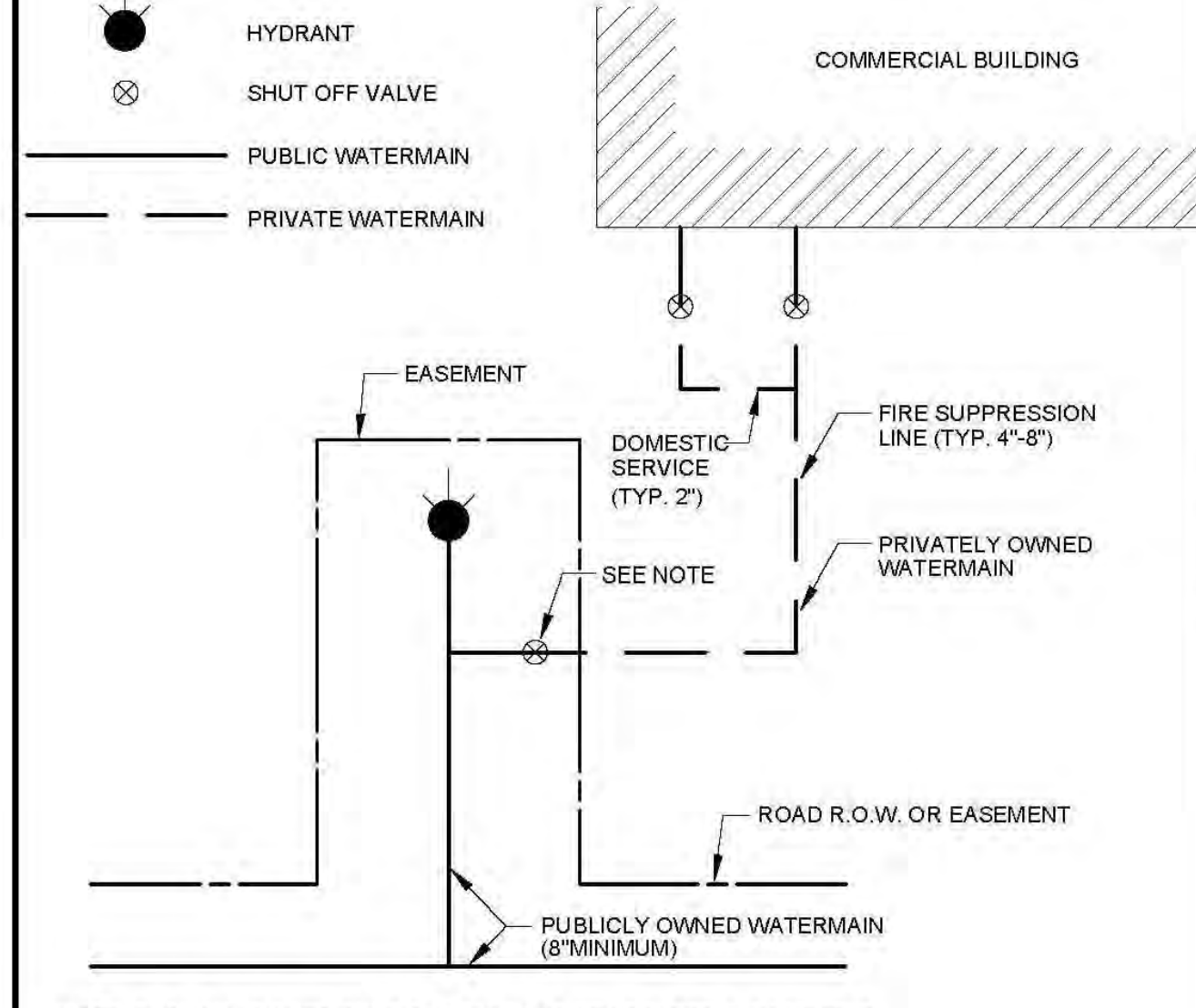
VALVE/TRACER WIRE BOX IN CONCRETE DETAIL



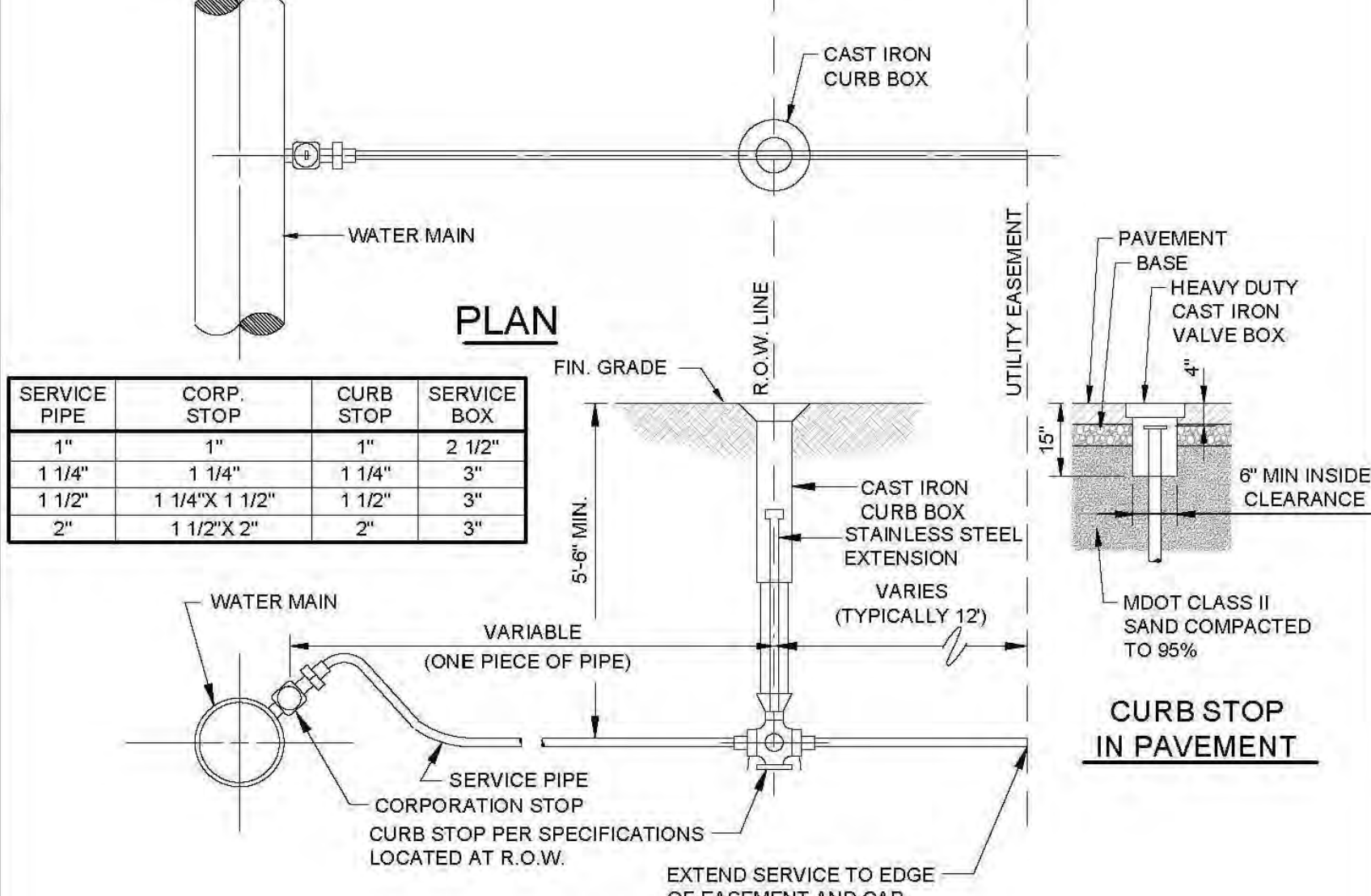
FIRE HYDRANT ASSEMBLY



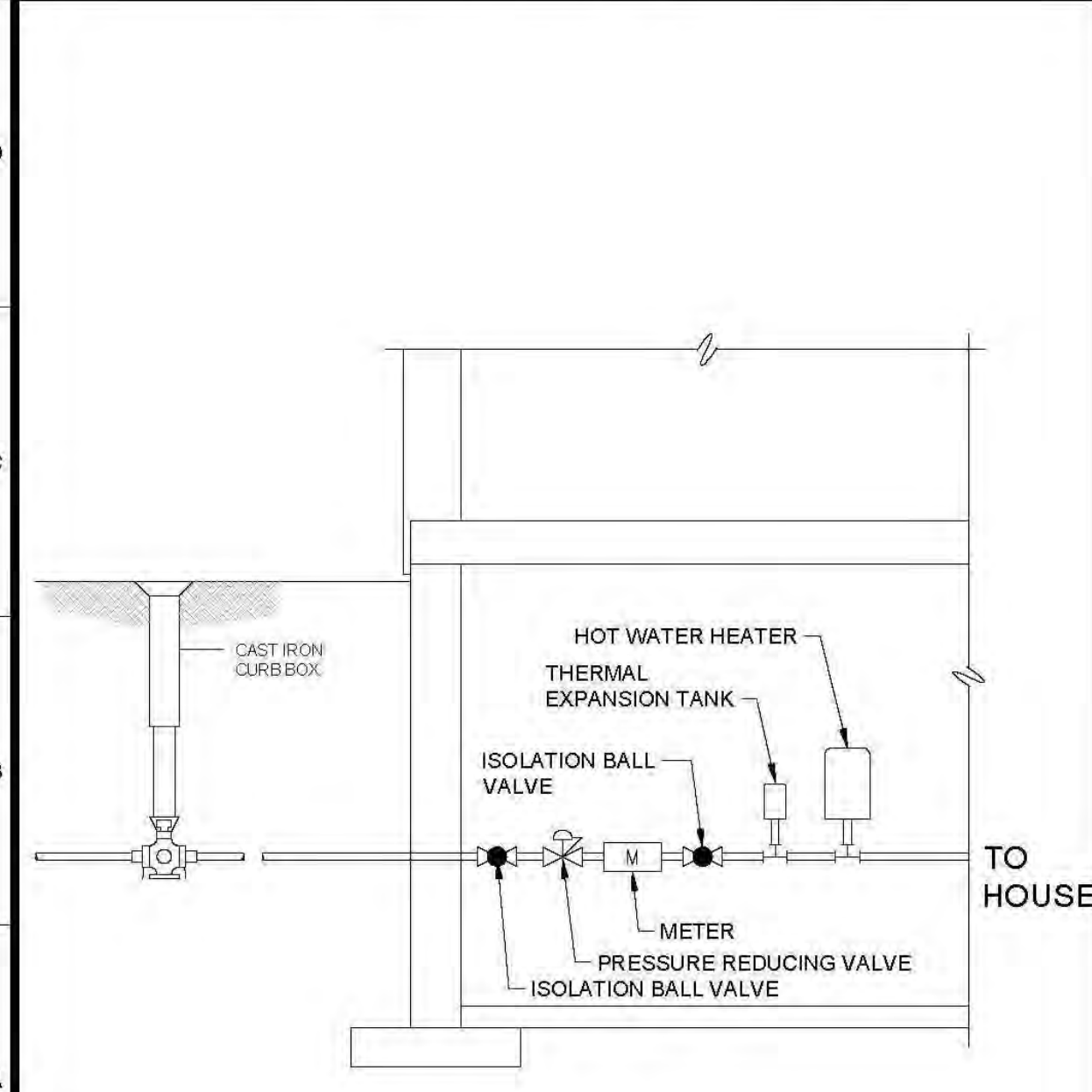
TERMINAL HYDRANT DETAIL



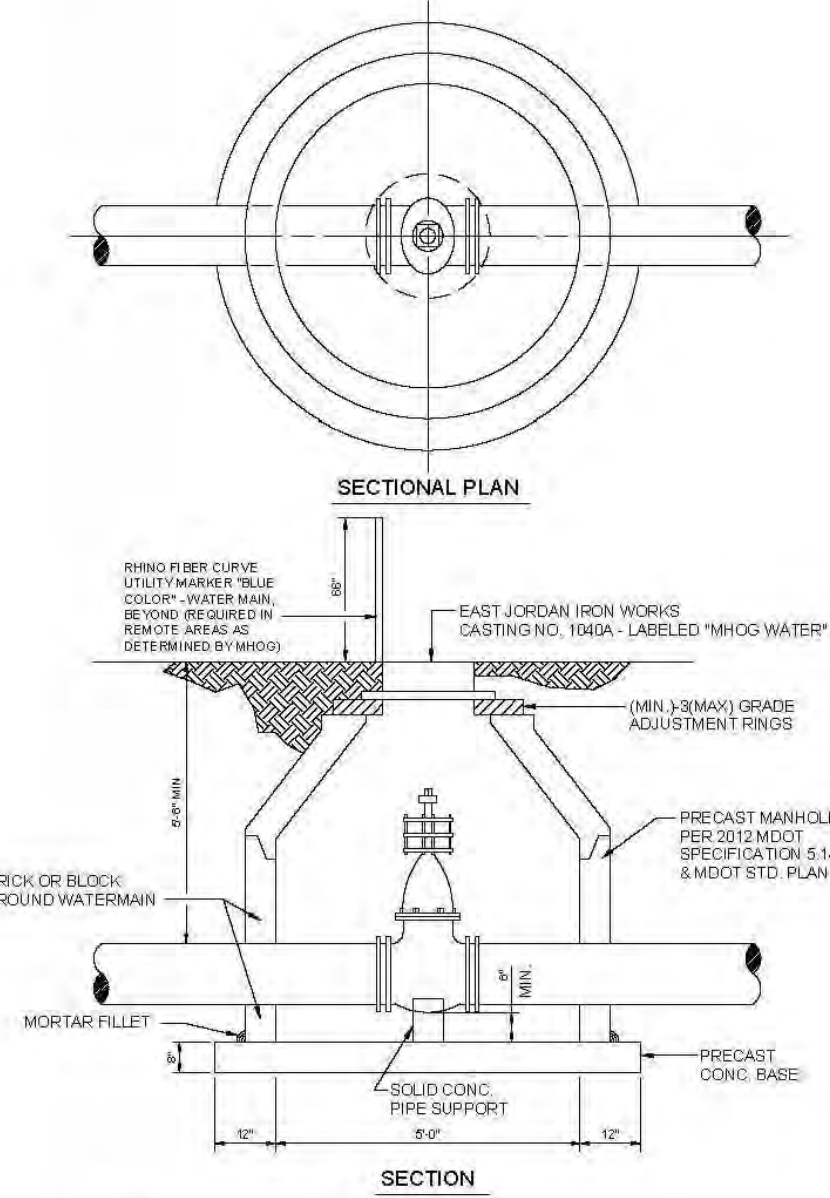
COMMERCIAL BUILDING WATER SERVICE LAYOUT



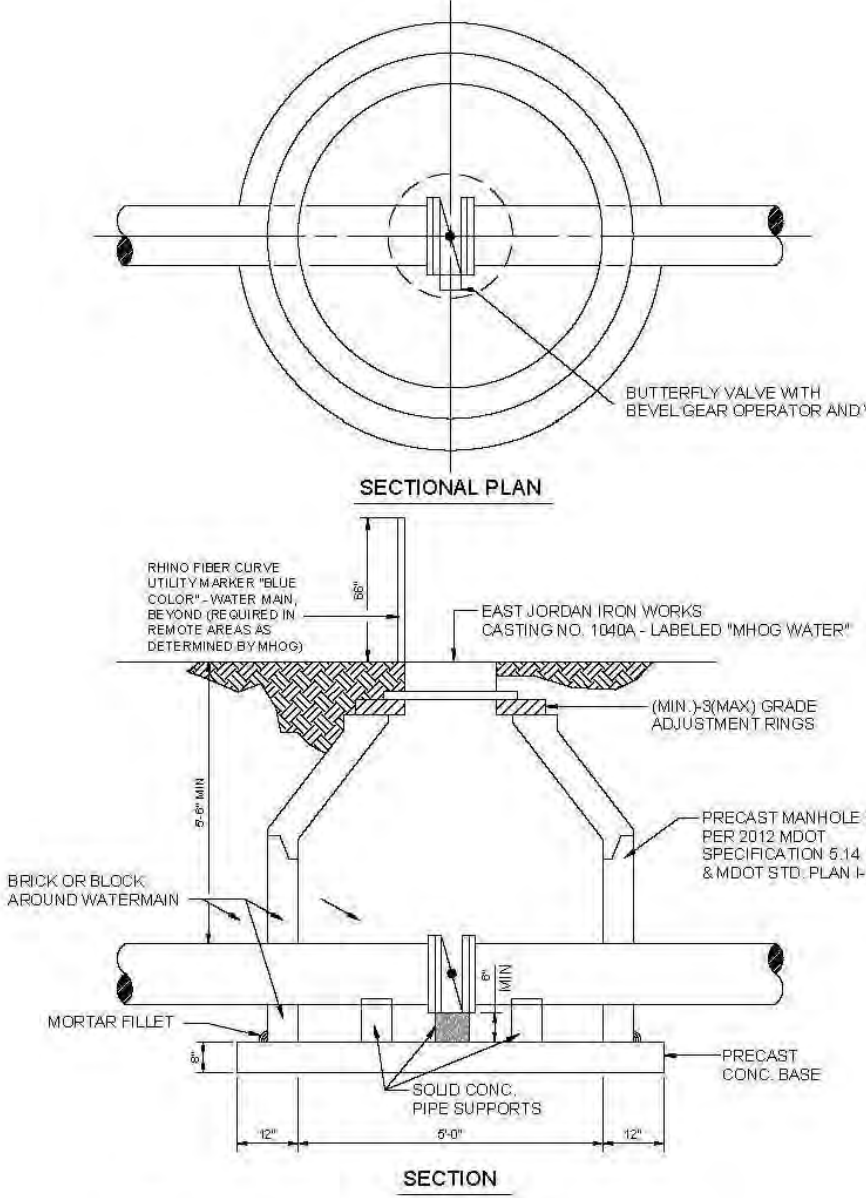
WATER SERVICE LATERAL



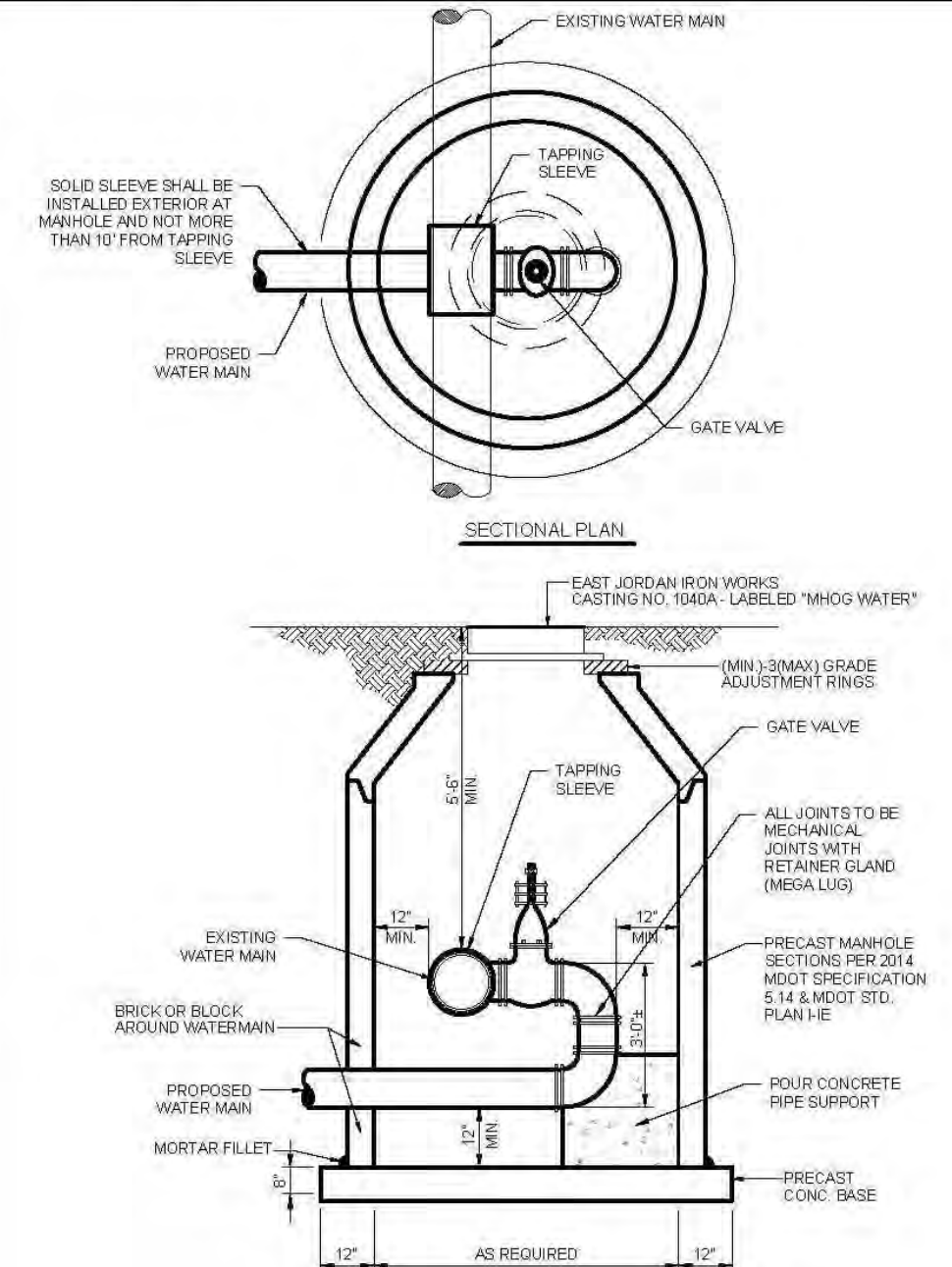
PRIVATE RESIDENCE PRESSURE REDUCING VALVE (PRV)



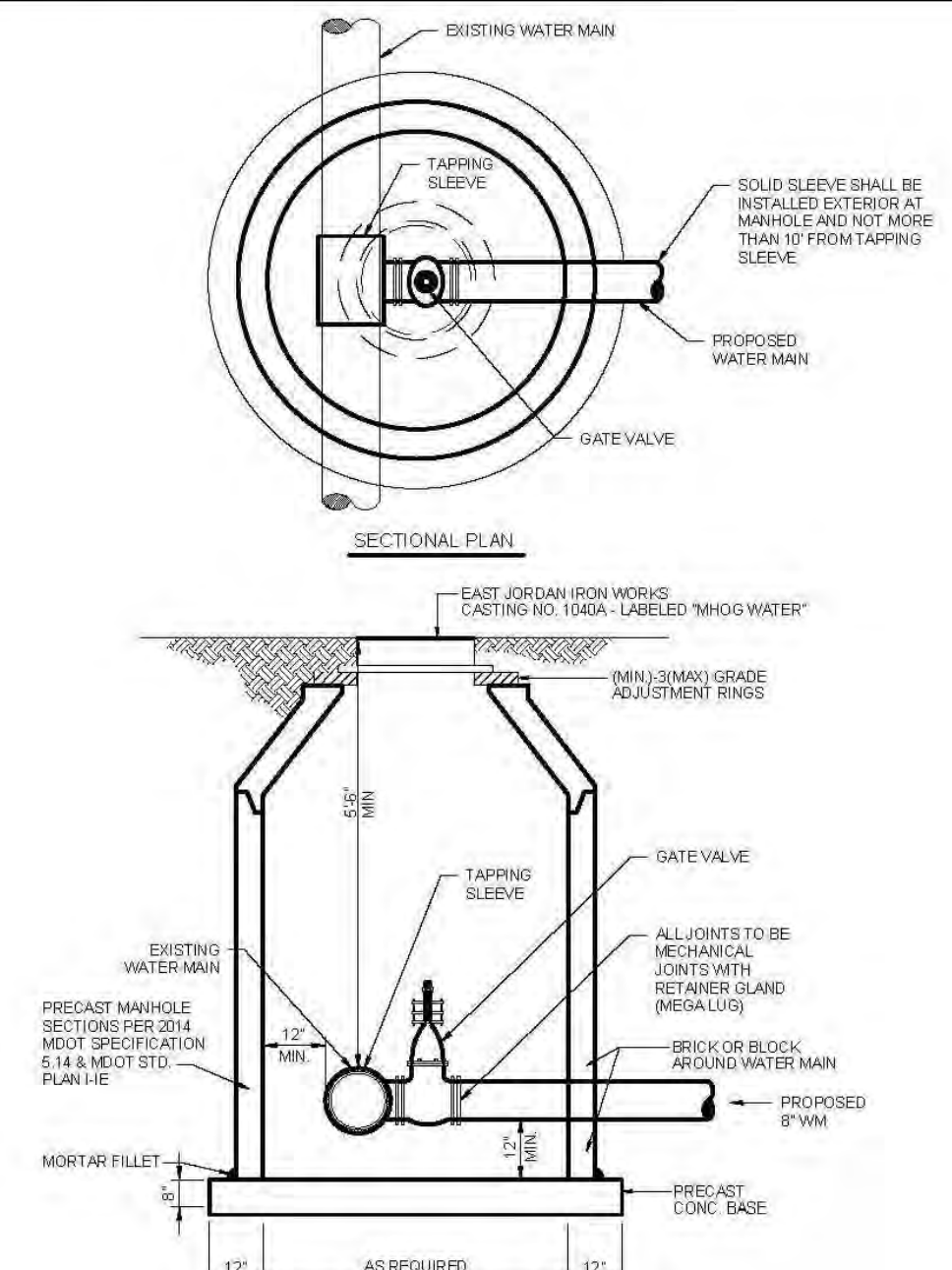
VALVE AND GATE WELL



BUTTERFLY VALVE AND WELL



REVERSE TAP GATE WELL



REGULAR TAP GATE WELL



MARION HOWELL OCEOLA GENOA
Sewer and Water Authority

STANDARD DETAILS

Scale: NONE
Issued Date: JANUARY - 2014
UPDATED: MAY 2015
UPDATED: FEBRUARY 2016
UPDATED: APRIL 2016
UPDATED: OCTOBER 2017
UPDATED: FEBRUARY 2019

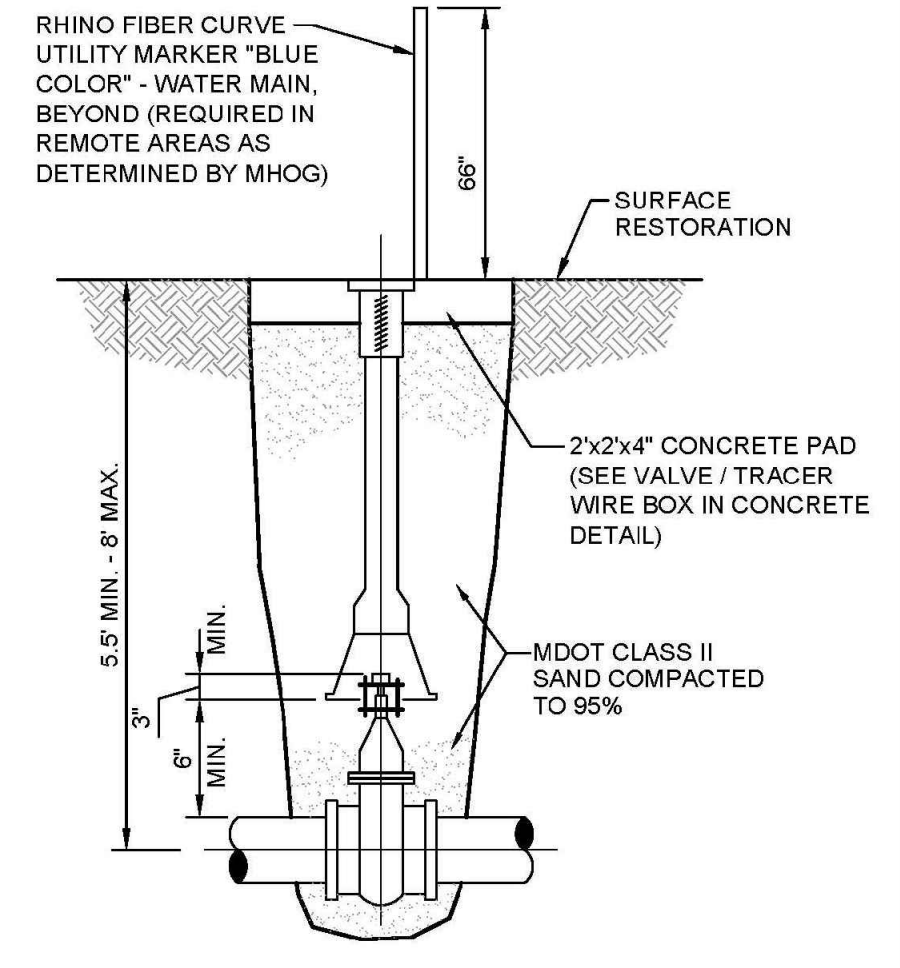
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WRANGLER'S RESTAURANT
LINDHOUT ASSOCIATES ARCHITECTS AIA PC
10469 CITATION DRIVE
BRIGHTON, MI 48116
810.227.5668

PROJECT	PREPARED FOR	TITLE	DATE
WRANGLER'S RESTAURANT	LINDHOUT ASSOCIATES ARCHITECTS AIA PC	M.H.O.G. STANDARD DETAILS - WATER (1)	
NO.	BY	REVISION PER	DATE

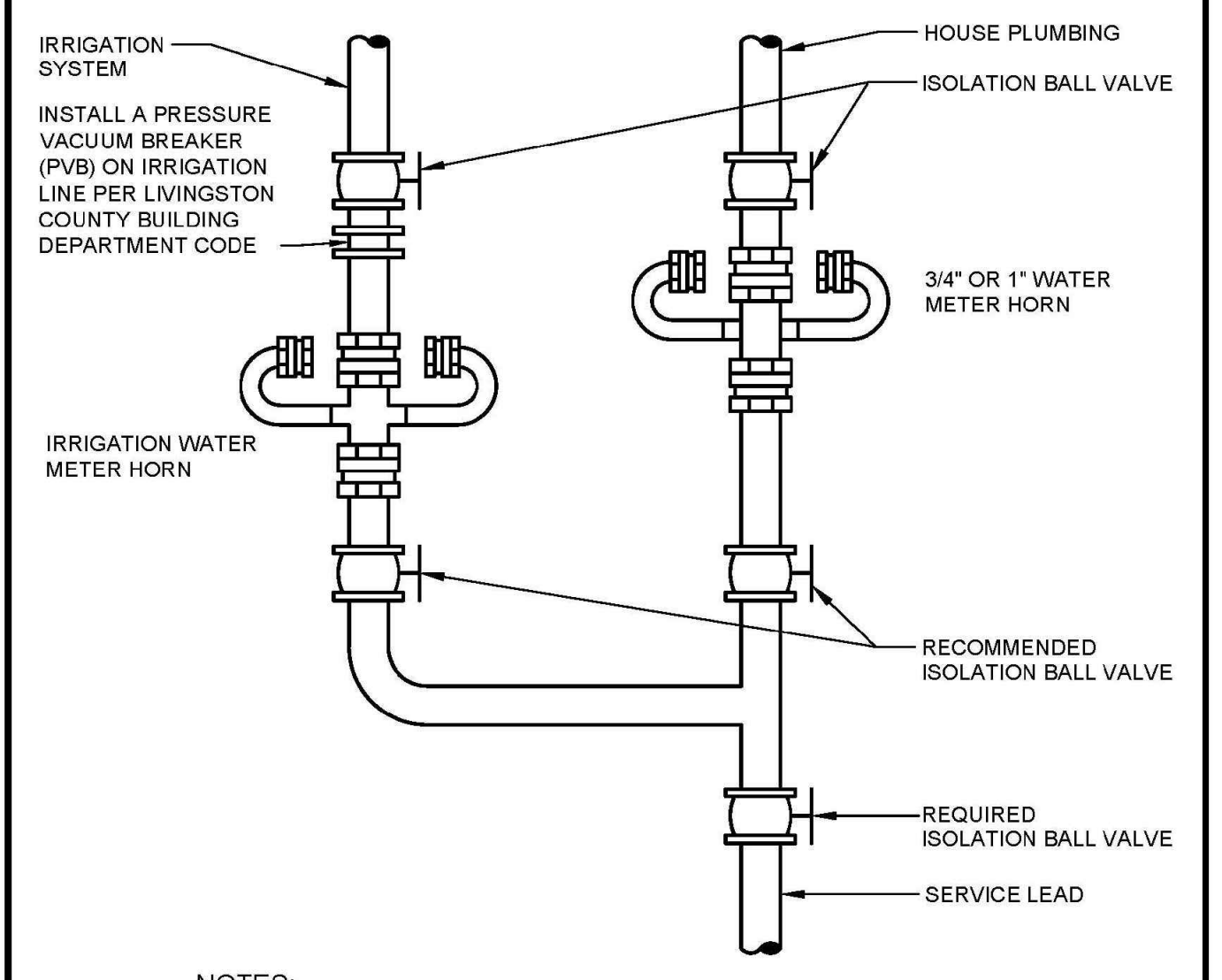
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SCALE: AS NOTED
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DATE: 3-26-24
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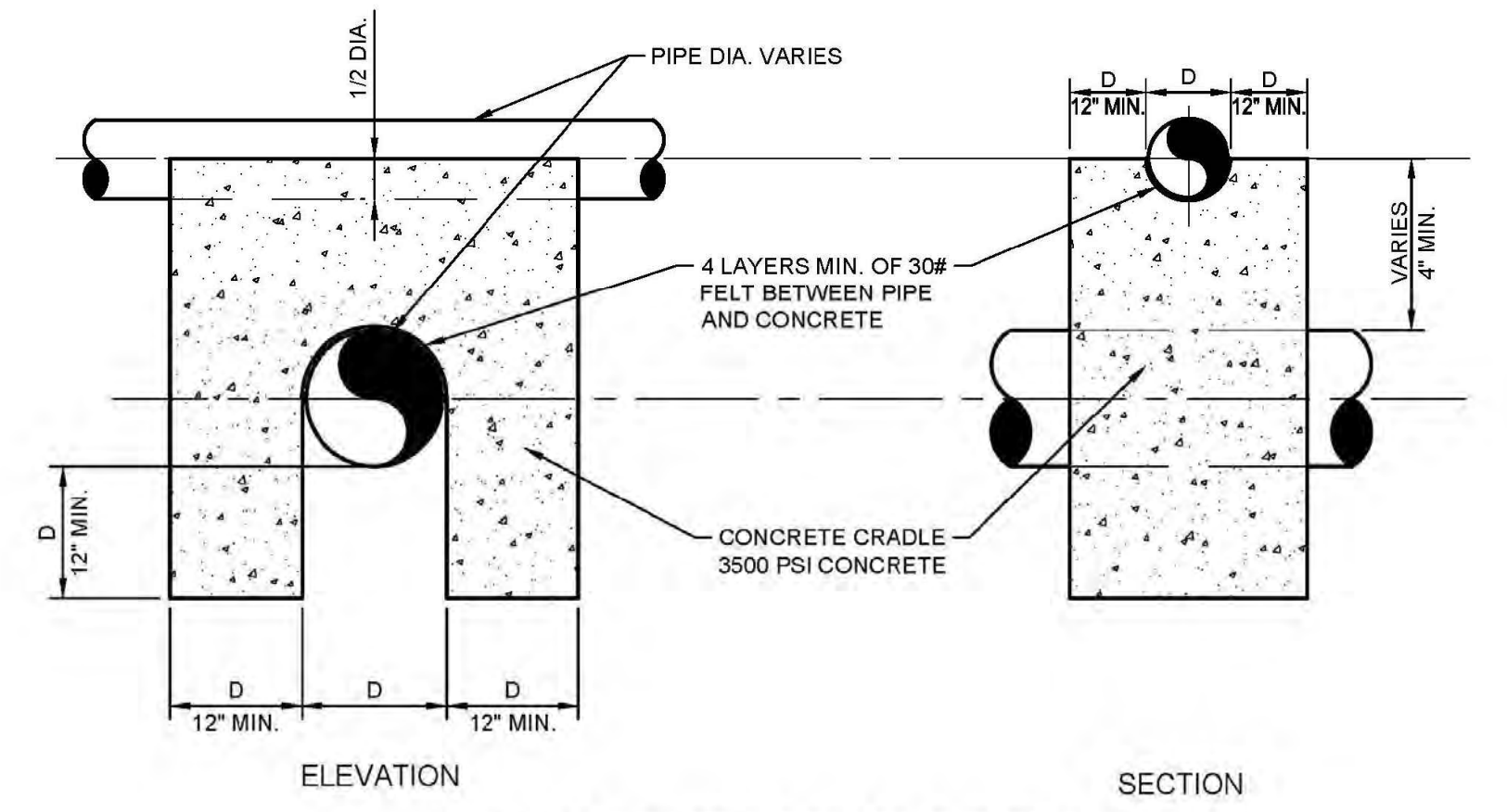
- NOTES:
1. VALVE BOX SHALL NOT REST ON VALVE OR MAIN LINE PIPE.
 2. A VALVE STEM EXTENSION WITH CENTERING RING IS REQUIRED FOR VALVES BURIED DEEPER THAN 6\"/>

GATE VALVE AND BOX



- NOTES:
1. ALL METERS ARE TO BE INSTALLED HORIZONTALLY IN A DRY, CLEAN, SANITARY LOCATION THAT IS READILY ACCESSIBLE. THIS DRAWING IS NOT TO SCALE & IS ONLY A REPRESENTATION OF HOW THE METERS SHOULD BE INSTALLED. THE SECOND METER IS OPTIONAL FOR IRRIGATION USAGE. METERS SHOULD NOT BE INSTALLED IN LINE (ONE RIGHT AFTER THE OTHER).
 2. PROPERTIES DESIGNATED "HIGH HAZARD" PER THE MHOG CROSS CONNECTION RULES MANUAL WILL REQUIRE THE INSTALLATION OF A REDUCED PRESSURE ZONE (RPZ) BACK FLOW PREVENTION DEVICE.

TYPICAL METER HORN INSTALLATION



CONCRETE CRADLE DETAIL
SCALE: NONE



MHOG CASTING DETAIL
NO SCALE



MARION HOWELL OCEOLA GENOA
Sewer and Water Authority

STANDARD DETAILS

Scale: NONE
 Issued Date: JANUARY - 2014
 UPDATED: MAY 2015
 UPDATED: FEBRUARY 2016
 UPDATED: APRIL 2016
 UPDATED: OCTOBER 2017
 UPDATED: FEBRUARY 2019

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BEFORE ANY DIG
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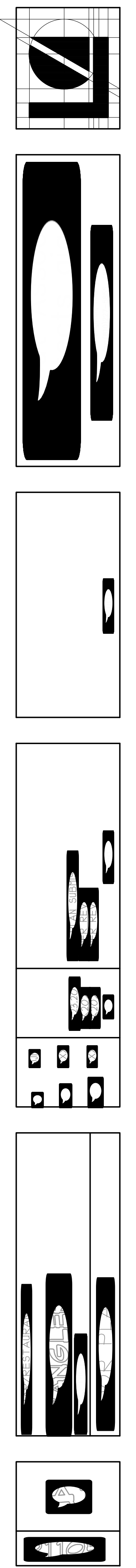
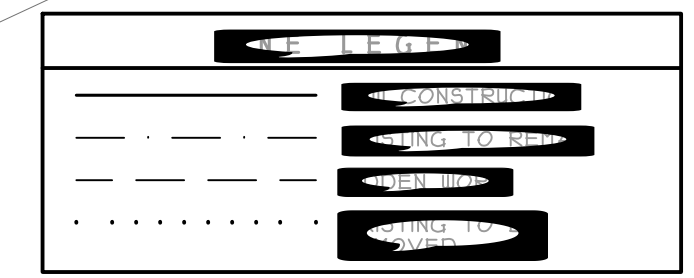
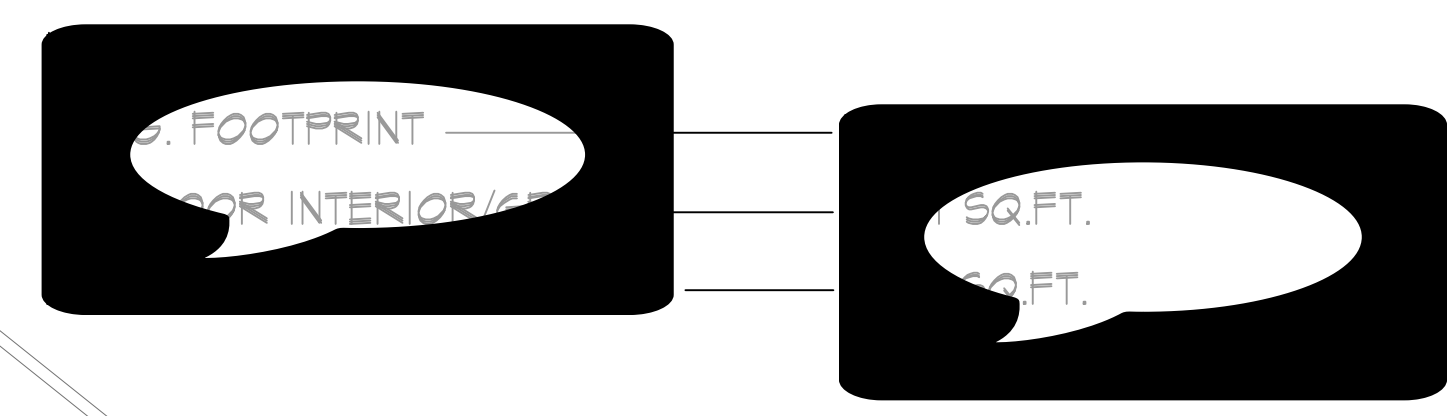
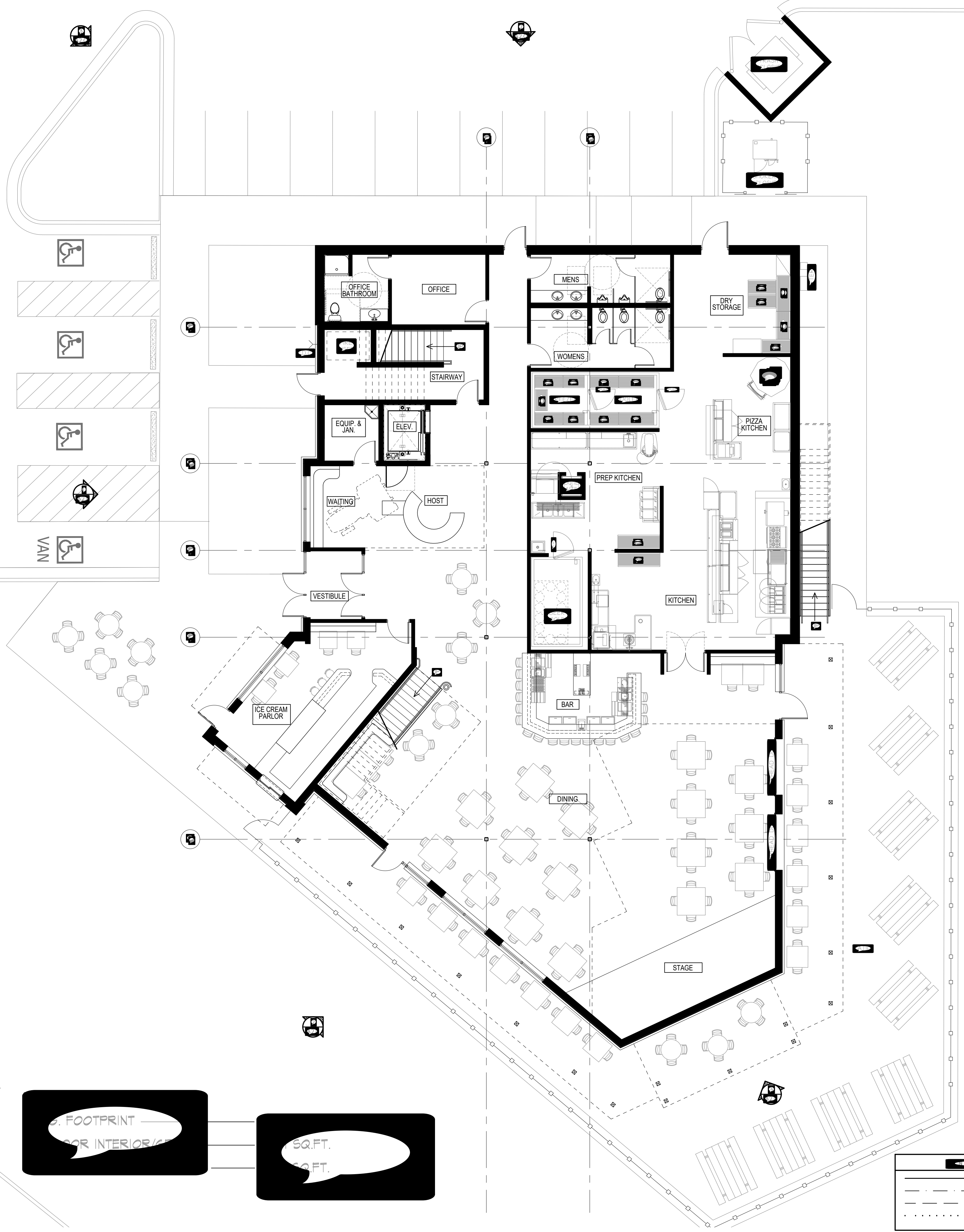
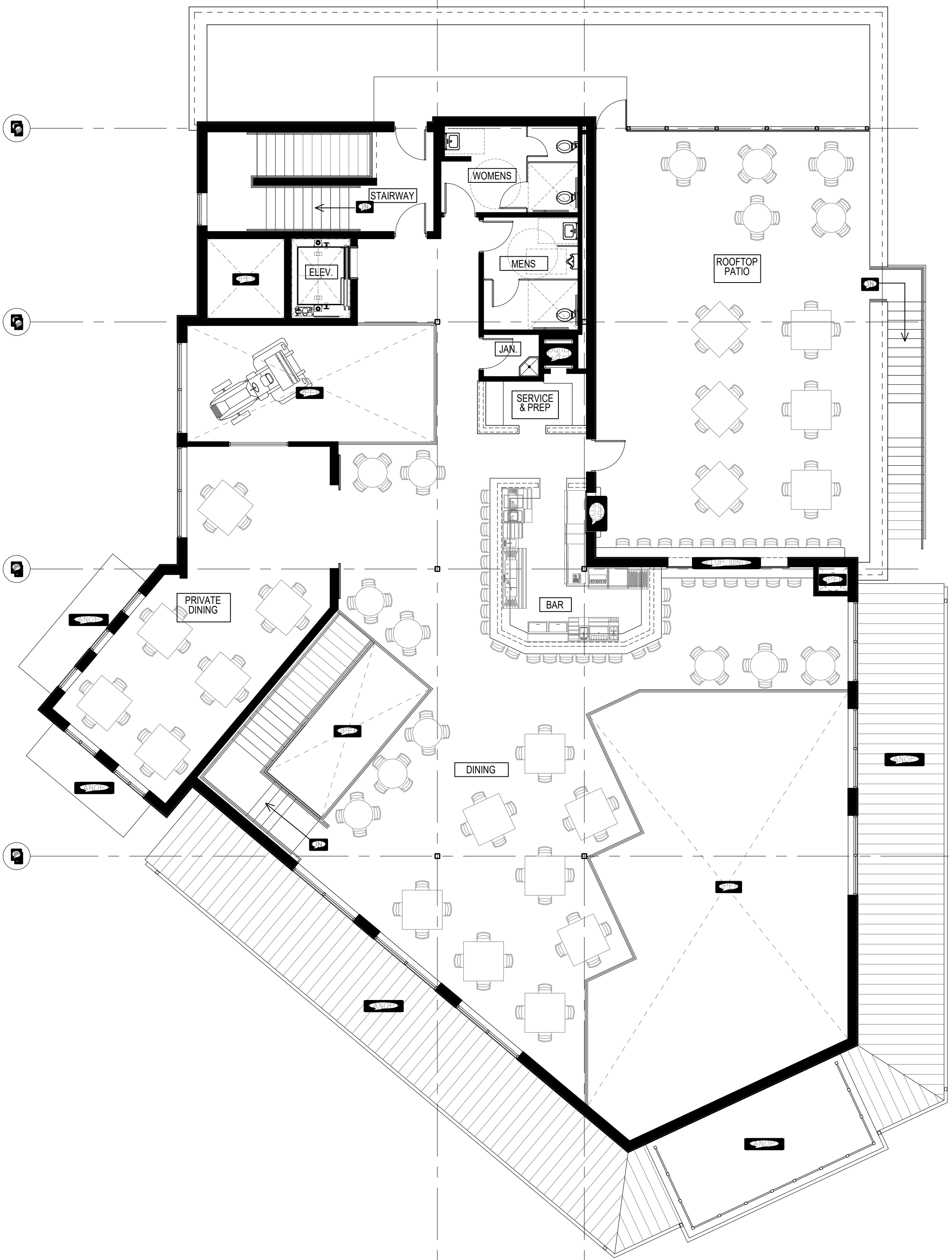
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 PREPARED FOR: LINDHOUT ASSOCIATES ARCHITECTS AIA PC
 10469 CITATION DRIVE
 BRIGHTON, MI 48116
 810.227.5668
 TITLE: M.H.O.G. STANDARD DETAILS - WATER (2)

NO	BY	REVISION PER	DATE

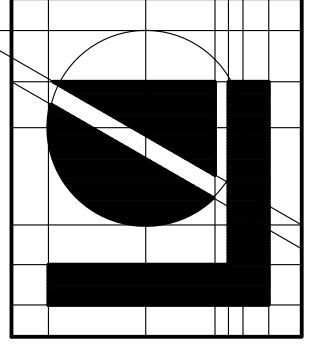
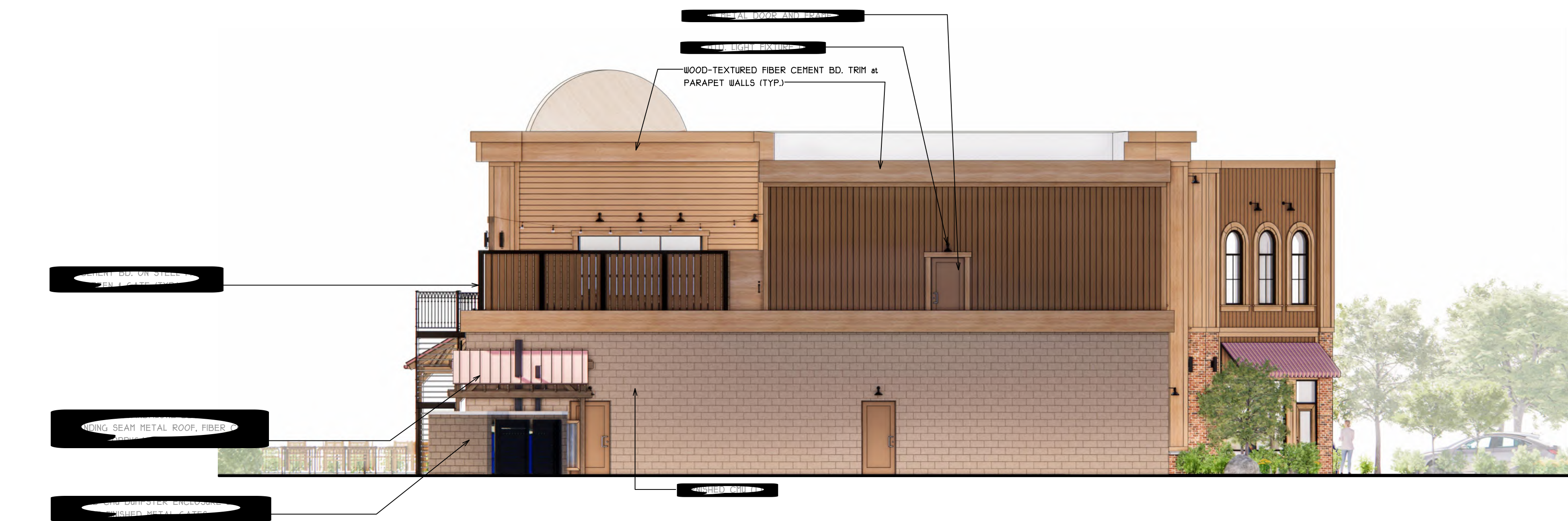
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 SCALE: AS NOTED
 JOB NO: 21-550
 DATE: 3-26-24

SHEET NO. **C14**
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LINDHOUT ASSOCIATES architects aia pc
10456 Clinton Ave., Brighton, Michigan 48116-9510
www.lindhout.com Fax: (810) 227-5655 (810) 227-5688



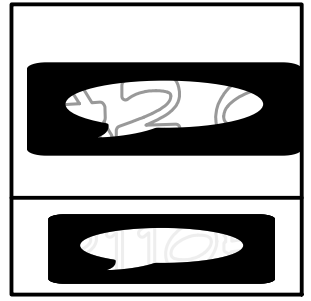
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consultant

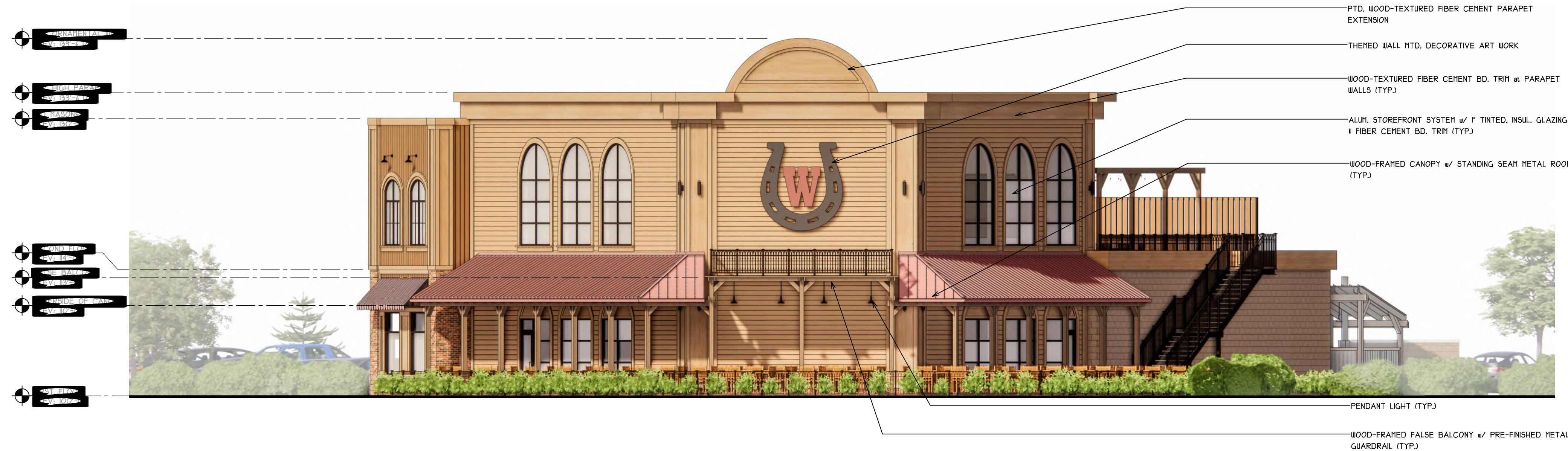
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HOWELL, HOWELL
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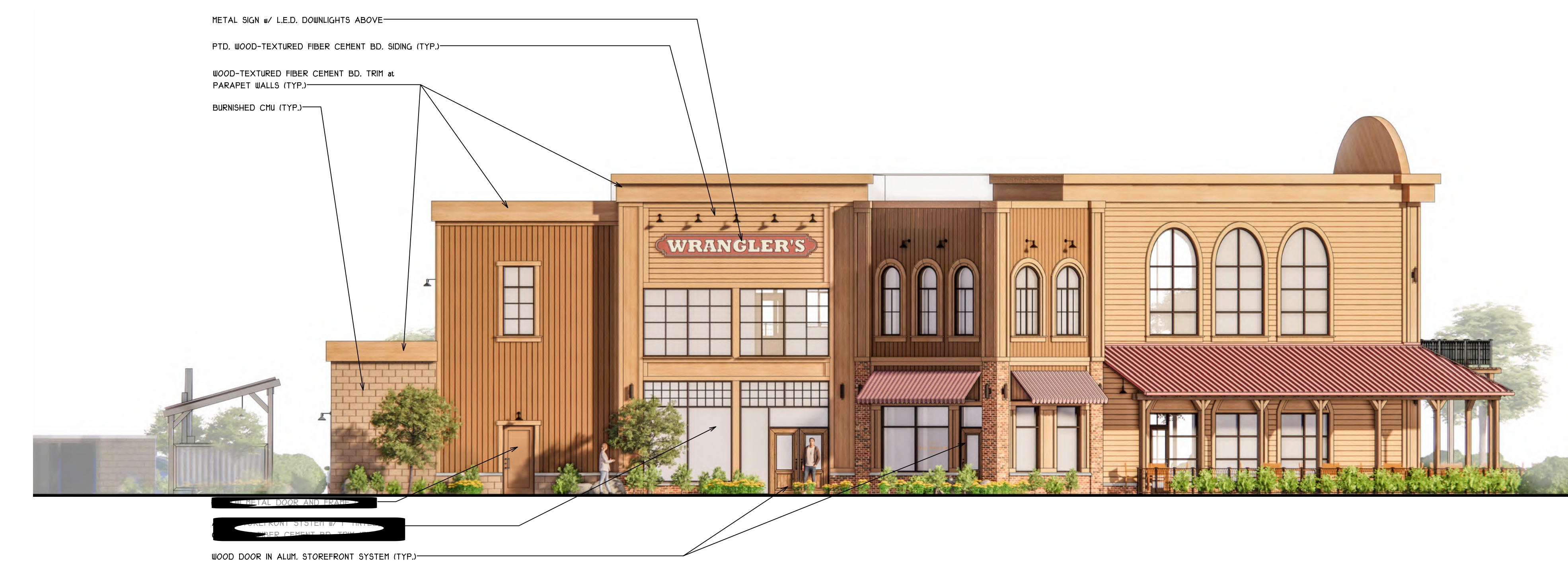
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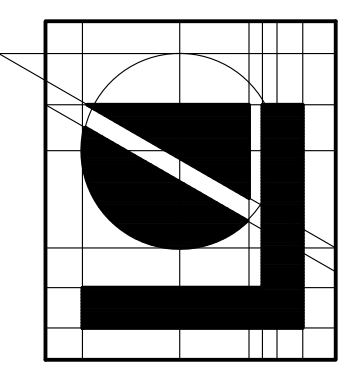


SCALE: 1/8" = 1'-0"



SCALE: 1/8" = 1'-0"

LINE LEGEND	
	NEW CONSTRUCTION
	EXISTING TO REMAIN
	HIDDEN WORK
	EXISTING TO BE REMOVED



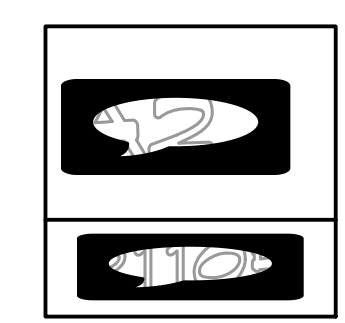
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 architects aia pc
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RED VIEW - LOOKING SOUTH



RED VIEW - LOOKING SOUTH



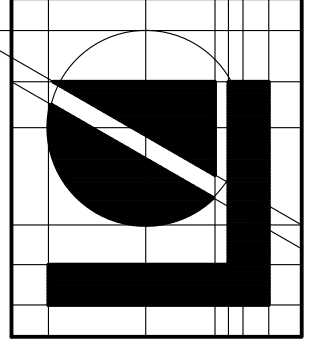
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RED VIEW - LOOKING SOUTH



RED VIEW - LOOKING SOUTH



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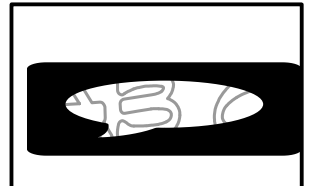
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SITE PLAN SUBMISSION
issued for

08.23.2023
date

app'd: nrc djm
chk'd: djm
date

NEW BAR & RESTAURANT for:
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HOWELL, MICHIGAN



21103

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VIEW - BIRDS-EYE LOOKING NORTH

NOT TO SCALE

VIEW - BIRDS-EYE LOOKING NORTH

NOT TO SCALE

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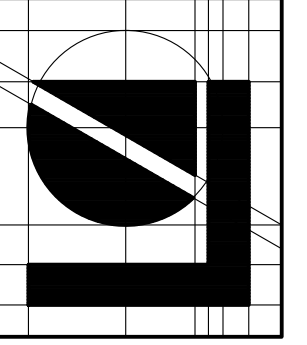
VIEW - OUTDOOR SEATING/PAVILION

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VIEW - LOOKING NORTH

NOT TO SCALE



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08.23.2023
date

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WRANGLER'S
HOWELL, MICHIGAN
RENDERED VIEWS



21105



Carlisle | Wortman
ASSOCIATES, INC.

117 NORTH FIRST STREET SUITE 70 ANN ARBOR, MI 48104 734.662.2200 734.662.1935 FAX

TO: Howell Township Planning Commission

FROM: Paul Montagno, AICP, Principal and Grayson Moore, Community Planner

DATE: April 15, 2024

RE: Proposed Zoning Ordinance Amendments for Portable Storage Containers

Attached is potential ordinance language regarding portable storage container regulations in Howell Township. We used guidance from the previous Planning Commission discussion and best practices from other communities to draft a zoning ordinance amendment for your consideration. The draft language would allow portable storage containers as a permitted accessory use within single family residential districts, the Research and Technology District, and the industrial zoning districts, subject to supplemental regulations in Article 14. Additional questions for the Commission to consider regarding the regulations of portable storage containers are below.

- a. *Are there other districts where it would be appropriate to allow portable storage containers within the Township?*
- b. *In non-residential Zoning Districts do you feel that there should be regulations that differ from residential Zoning Districts? An example could be to allow stacking of portable storage containers to the height of the parcels primary building or allowing more than one storage container on site at a given time.*
- c. *Should there be regulations for portable storage containers to be allowed as temporary structures?*

We look forward to discussing the draft Zoning Ordinance language at your next Planning Commission meeting. The next step in the process would be to direct us to draft Zoning Ordinance text amendments based on your feedback.

Sincerely,

CARLISLE/WORTMAN ASSOC., INC.
Paul Montagno, AICP
Principal

CARLISLE/WORTMAN ASSOC., INC.
Grayson Moore
Community Planner

Benjamin R. Carlisle, *President* John L. Enos, *Vice President* Douglas J. Lewan, *Principal*
David Scurto, *Principal* Sally M. Elmiger, *Principal* R. Donald Wortman, *Principal* Craig Strong, *Principal*
Paul Montagno, *Principal*, Megan Masson-Minock, *Principal*, Laura Kreps, *Principal*
Richard K. Carlisle, *Past President/Senior Principal*

MODIFY SECTION 2.02 TO INCLUDE PORTABLE STORAGE CONTAINERS IN DEFINITIONS

Portable Storage Containers. Portable, weather-resistant receptacle designed and used for the temporary storage and/or shipment of household goods or building materials that is capable of being mounted or moved by rail, truck, or ship by means of being mounted on a chassis or similar transport.

MODIFY SECTION 4.04 TO INCLUDE PORTABLE STORAGE CONTAINERS AS PERMITTED ACCESSORY USES

E. Portable Storage Containers in conformance with the provisions of Section 14.07.I.

MODIFY SECTION 5.04 TO INCLUDE PORTABLE STORAGE CONTAINERS AS PERMITTED ACCESSORY USES

A. Portable Storage Containers in conformance with the provisions of Section 14.07.I.

MODIFY SECTION 6.04 TO INCLUDE PORTABLE STORAGE CONTAINERS AS PERMITTED ACCESSORY USES

D. Portable Storage Containers in conformance with the provisions of Section 14.07.I.

MODIFY SECTION 12.04 TO INCLUDE PORTABLE STORAGE CONTAINERS AS PERMITTED ACCESSORY USES

14. Portable Storage Containers in conformance with the provisions of Section 14.07.I.

MODIFY SECTION 13.04 TO INCLUDE PORTABLE STORAGE CONTAINERS AS PERMITTED ACCESSORY USES

D. Portable Storage Containers in conformance with the provisions of Section 14.07.I.

CREATE SECTION 14.07.I. TO REGULATE PORTABLE STORAGE CONTAINERS AS AN ACCESSORY STRUCTURE

I. Portable Storage Containers may be permitted as Accessory Buildings subject to the following:

Portable Storage Containers
Zoning Ordinance Amendment draft language

- 1) Containers shall not be stacked above the height of a single container.
- 2) The exterior appearance of all permanent portable storage containers shall be maintained and absent of all rust, holes, and any other evidence of aging or wear.
- 3) No writing or graphics are permitted on the exterior of the container.
- 4) A parcel is limited to no more than one (1) portable storage container on the lot at a single time.
- 5) Portable storage containers used as detached accessory structures shall be located on a lot not less than one (1) acre in size.
- 6) Portable storage containers used as detached accessory structures shall not be allowed in the front yard or on a parcel's lake frontage yard.
- 7) Portable storage containers shall be completely screened from view of abutting properties and/or rights-of-ways by a fence or vegetative screening that meets the requirements of Section 14.26 Fences and 28.03 Specific Landscaping Requirements for Zoning Districts.
- 8) Portable storage containers shall be located upon an approved foundation that will support the weight of the structure and prevents rodent infestation.