

PLANNING COMMISSION AGENDA

Regular Meeting

November 12, 2025 at 7:00 PM



- 1) **CALL TO ORDER**
- 2) **ROLL CALL**
- 3) **APPROVAL OF MINUTES** - Items can be added or deleted from the Agenda by board action.
 - A. Approve October 8, 2025, Planning Commission Meeting Minutes
- 4) **APPROVAL OF AGENDA** - Items can be added or deleted from the Agenda by board action.
- 5) **PUBLIC COMMENT ON AGENDA ITEMS** Persons addressing the board are required to give their name and address for the record when called upon by the Chair. Members of the public shall be limited to speaking for a maximum of three (3) minutes. Comments should address AGENDA ITEM topics. Public Hearing items should be addressed during the PUBLIC HEARING portion of the meeting agenda. Non-Agenda items should be addressed during the PUBLIC COMMENT-NON-AGENDA ITEMS portion of the meeting agenda.
- 6) **ELECTION OF OFFICERS** Article IV. Nomination and Election of Officers Section 1. Date of Election The elected officers of the Planning Commission shall be nominated and elected each year at the regular November meeting or first regular meeting after the November meeting if a November meeting is not held. Section 2. Term of Elected Office A candidate receiving a majority vote of the Planning Commission membership shall be declared elected and shall hold office for one year.
 - A. Election of Chair to One Year Term
 - B. Election of Vice-Chair to One Year Term
- 7) **PUBLIC HEARINGS & SUBSEQUENT BOARD ACTION**
 - A. Public Hearing - 775 Industrial, Tiger Towing and Self-Storage
- 8) **OLD BUSINESS**
- 9) **REPORTS AND RECOMMENDATIONS/NEW BUSINESS**
 - A. 775 Industrial - Tiger Towing and Self Storage Site Plan Review
- 10) **PUBLIC COMMENT ON NON-AGENDA ITEMS** Persons addressing the board are required to give their name and address for the record when called upon by the Chair. Members of the public shall be limited to speaking for a maximum of three (3) minutes. Comments should address NON-AGENDA ITEM topics. Public Hearing items should be addressed during the PUBLIC HEARING portion of the meeting agenda. Agenda items should be addressed during the PUBLIC COMMENT-AGENDA ITEMS portion of the meeting agenda.
- 11) **BOARD REPORTS**
- 12) **ADJOURNMENT**

PLANNING COMMISSION MINUTES

October 8, 2025

Regular Meeting - 7:00 PM

1) CALL TO ORDER

IN A REGULAR SESSION held on Wednesday, October 8, 2025 at 7:00 PM in the Council Chambers of City Hall, 323 West Michigan Ave, Marshall, MI 49068, the Marshall Planning Commission was called to order by Chair McNiff.

2) ROLL CALL

Roll was called:

Present: Chair Lisa McNiff, Tim Banfield, Carter Bright, Tim Fitzgerald, ,Karl Sievertsen,

Also Present: Director Strange and Deputy Clerk Cary

Absent: Aron Hodo, Ian Stewart, Ryan Underhill, and Jim Zuck

3) APPROVAL OF MINUTES - Items can be added or deleted from the Agenda by board action.

A. Approve September 10, 2025 Planning Commission Meeting Minutes

Moved by Tim Banfield, supported by Carter Bright to approve the September 10, 2025, Planning Commission Meeting Minutes On a voice vote: **Motion Carried.**

4) APPROVAL OF AGENDA - Items can be added or deleted from the Agenda by board action.

Moved by Tim Fitzgerald, supported by Carter Bright to approve the October 8, 2025 Planning Commission agenda On a voice vote: **Motion Carried.**

5) PUBLIC COMMENT ON AGENDA ITEMS Persons addressing the board are required to give their name and address for the record when called upon by the Chair. Members of the public shall be limited to speaking for a maximum of three (3) minutes. Comments should address AGENDA ITEM topics. Public Hearing items should be addressed during the PUBLIC HEARING portion of the meeting agenda. Non-Agenda items should be addressed during the PUBLIC COMMENT-NON-AGENDA ITEMS portion of the meeting agenda.

Barry Wayne Adams of 622 W Green St gave public comment.

6) PUBLIC HEARINGS & SUBSEQUENT BOARD ACTION

None

7) OLD BUSINESS

None.

8) REPORTS AND RECOMMENDATIONS/NEW BUSINESS

A. 775 Industrial Rd. Special Land Use - Set Public Hearing

Director Strange introduced the project. She stated that we are here tonight to set up a public hearing regarding a special land use for 775 Industrial Rd. The applicant is Tiger Towing. There are two uses, almost three uses for the site that they are proposing. The proposed uses are impound lot, self-storage units and outdoor storage.

Zoning for this parcel is I-2 (General Industrial District)

A Special Land Use is required for Self-storage located centrally on the site, and for outdoor storage

yards.

Banfield questioned how the city monitors the short-term parking in a facility like that, especially the towing portion of that.

Director Strange stated that she is more concerned that the vehicles that are coming there are not being dismantled and not sitting there long term. Because if that happens, it will become a junkyard. Tiger Towing has their main towing lot in Battle Creek. Their goal is to be able to bid for more of the sections of I94 that the state would allow them to tow from.

Banfield asked who monitors that short-term parking? Director Strange's department or the police.

Director Strange stated that the applicant told her that it would be short-term parking.

McNiff stated that if someone abandoned their vehicle on I94, then never come to pick it up. That becomes a long-term parking.

Bright stated until the TR52 is done, then a public auction has to be posted. They typically happen every 6 months to a year. So it does end up being long-term.

Banfield stated that" we allowed the police storage of those kinds of vehicles. He wants to make sure that it is clear in our ordinance about how it is monitored and for how long.

Fitzgerald stated that it is a great point because vehicles are towed by instance of arrest, abandonment, accidents and those are the ones that become long-term junk vehicles. And if you go by other tow yards you will get a sense of what this could turn into.

McNiff stated if you have cars that have been in an accident, then you might have fluids that will become an environmental concern.

Director Strange stated another thing that has been brought up was electric vehicles. We have provided a lot of information from the fire department to the applicant about electric vehicle storage.

Bright stated that it needs to be black and white.

Director Strange stated that it is not clear what the short-term parking is.

Sievertsen stated that the comment on the environmental containment is concrete, not gravel, and we should think about run off, especially if it is a damaged vehicle, etc.

Director Strange stated that this property is a brownfield site. The applicant has a plan for mitigation. Basically, they can not remove any soil from the site. On the north side of the property, there is a retention pond to keep the water onsite.

Director Strange stated her short list:

- A clear definition of the length of time for short-term parking and what that process looks like.
- What are the containment plans for fluids from the vehicles? More than normal run off.

Director Strange stated that the screening is 10ft fence while plastic around the ends. The north side of the retention is an open fence.

Banfield asked what the zone was.

Director Strange stated that it is I-2.

Sievertsen questioned if some of the screening could be greenery instead of plastic.

Moved by Tim Banfield, supported by Tim Fitzgerald to set a Public Hearing for 775 Industrial Road for Special Land Use hearing for November 12, 2025. On a voice vote: **Motion Carried.**

- 9) PUBLIC COMMENT ON NON-AGENDA ITEMS** Persons addressing the board are required to give their name and address for the record when called upon by the Chair. Members of the public shall be limited to speaking for a maximum of three (3) minutes. Comments should address NON-AGENDA ITEM topics. Public Hearing items should be addressed during the PUBLIC HEARING portion of the meeting agenda. Agenda items should be addressed during the PUBLIC COMMENT-AGENDA ITEMS portion of the meeting agenda.

Barry Wayne Adams of 622 W Green St gave public comment.

10) BOARD REPORTS

Banfield stated that there is a Joint Planning Commission on the 14th.

11) ADJOURNMENT

The meeting was adjourned at 7:27pm.

Respectfully submitted by,

Brandie Cary
Deputy Clerk



ITEM 7.A

TO: [AGENDA_OFFICIAL_BODY]
FROM: Marcia Strange, Director of Community Development
DATE: November 12, 2025
SUBJECT: Public Hearing - 775 Industrial, Tiger Towing and Self-Storage

Tiger Towing is requesting a special land use approval for the outdoor storage of Vehicles for a tow lot and Recreational or other large vehicles as part of a self storage use. They are also requesting a special land use approval for self-storage.

Outdoor display of items are a special land use in the I-1 zoning district. As required, a public hearing notice was published in the Advisor and notices were mailed to all property owners within 300' of the site. A site plan for the project is also on this agenda and is included in the packet.

The following standards are to be used in considering whether to approve the special land use requests:

A. The proposed use shall be in accordance with the City Master Plan and the intent and purpose of this subchapter

The proposed use meets the intent of the subchapter and the city master plan.

B. A documented and immediate need exists for the proposed use within the community.

The proposed RV storage will provide an option for homeowners without room to store their RV's appropriately on their own property. Although there is a new storage unit project across Industrial, storage units in the area have limited availability.

C. The use is compatible with adjacent uses and the existing or intended character of the surrounding neighborhood, and will not have an adverse impact upon or interfere with the development, use or enjoyment of adjacent properties, or the orderly development of the neighborhood.

The use is compatible with the character of the surrounding properties and ensures the long term viability of the adjacent dri, ensuring we don't have a vacant property with limited commercial prospects. No adverse impact on the enjoyment of neighboring parcels or development of the neighborhood is expected.

Sidewalk/trail is deferred for a later date.

D. The proposed use shall be designed, constructed, operated and maintained so as to be compatible with the use of adjacent lands.

The proposed use is consistent with the design and construction of the surrounding industrial uses. The proposed outdoor storage should not negatively impact the site as it will be shielded from view by new vinyl fencing. The use of the City property to the south has been accommodated.

E. The proposed use shall be compatible with the natural environment.

The construction will be required to follow the Due Care requirements to ensure environmental protection from existing contaminants. The new work has been engineered safeguarding against additional contaminants and the bioswales will provide a nice visual at the front of the property.

F. The proposed use shall be adequately served by essential public facilities and services, such as highways, streets, police and fire protection, drainage structures, refuse disposal, water and sewage facilities and schools.

The frequency of use is very low in comparison to the traffic to the City lot behind it. Traffic will be increased but distributed throughout a longer day on this site which is served by a major street and a state trunkline. The proposed use will not have any adverse impact on water, sewer, schools, or refuse. The impact on police and fire is expected to be minimal.

G. The proposed use shall not involve activities, processes, materials and equipment or conditions of operation that will be detrimental to public health, safety and welfare by reason of excessive production of traffic, noise, smoke, fumes, glare or unreasonable or offensive odors.

The City Development Review Team found that there would be no detriment to public health, safety, or welfare. The proposed towing lot is designed with oil separators to mitigate risk of contamination by a damaged vehicle. Tiger's Towing has training regarding damaged EV's and the risks associated with their storage. The Fire Department provided information that a 50' radius is required from occupied space. Property damage within that range is likely if there is an incident. There is no expectation that the site will cause unreasonable traffic.

RECOMMENDATION:

Based on the findings above, staff recommends approval of Special Land Use #25.01 for outdoor storage of vehicles and #25.02 for self-storage units.

LEGEND

I-2 GENERAL INDUSTRIAL

I-1 RESEARCH & MANUFACTURING

MFRD MULTIPLE FAMILY RESIDENTIAL

0100

1 inch = 100 ft.

N



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ZONING EXHIBIT

TIGER TOWING

775 INDUSTRIAL RD. MARSHALL, MI 49068

SECTION 28 TOWNSHIP 02S RANGE 06W

SHEET TITLE:

PROJECT:

SITE ADDRESS:

SITE SECTION:

JOB NUMBER:

DATE:

DRAWN BY:

25103008

09/19/2025

AW

SHEET NUMBER:

1 of 1

SPECIAL LAND USE APPLICATION

City of Marshall
Fee \$600.00

Section 6.2 of the Marshall City Zoning Ordinance gives citizens the opportunity to file for a Special Land Use Permit when it is required by zoning district.

Process

- ☐ Application, fee, and all required materials are submitted by due date. Once found to be complete, the application is placed on the Planning Commission agenda for acceptance.
- ☐ **Planning Commission meeting #1:** At this meeting, a public hearing is scheduled for the following month.
- ☐ Neighbors within 300 feet of the property seeking special land use are notified of the public hearing.
- ☐ **Planning Commission meeting #2:** Public hearing is held and discussion takes place. A recommendation on the application is given for City Council.
- ☐ **City Council meeting:** Item is placed on the agenda, a staff report and Planning Commission comments are offered for review and City Council grants final approval, disapproval, or approval with conditions.

Address of subject property 775 Industrial Road Marshall, Mi 49068

Applicant's name Thomas Carpenter - AR Engineering, LLC Phone (269)250-5991

Applicant's address 5725 Venture Park Dr. Suite A City Kalamazoo Zip 49009

Owner's Name Karrie Hammer Phone (269)601-2311

Owner's Address 19218 11 Mile Road City Battle Creek Zip 49014

Explain need for a Special Land Use permit at the subject property (attach more if necessary):

Owner is requesting approval for outdoor storage in conjunction with the towing company and mini storage facility proposed for the property.

Applicant's Signature  Date 9/18/2025

Owner's Signature _____ Date _____

The following items MUST be submitted for the application to be complete:

- ☒ A plot plan showing property boundaries and legal description
- ☒ Existing structures, uses and zoning on subject and adjacent properties
- ☒ Location of all abutting streets, easements, and similar public areas
- ☒ Proposed compliance plan (if applicable) including hours, signs, parking, etc.



ITEM 9.A

TO: [AGENDA_OFFICIAL_BODY]
FROM: Marcia Strange, Director of Community Development
DATE: November 12, 2025
SUBJECT: 775 Industrial - Tiger Towing and Self Storage Site Plan Review

775 Industrial Road - Tiger Towing has purchased the property at 775 Industrial Road. They have received a Variance from the Zoning Board of Appeals for a reduction in the setback requirements due to the City's continual use of access easement on the South property line. This project has proposed uses of impound lot, self-storage units, and outdoor storage. There is a small 'caretaker' office building for access control and site monitoring.

It is the opinion of staff that the impound lot be treated like another outdoor storage lot. Both will house vehicles and should be shielded from view. Planning Commission will be asked for direction of fence height (currently 10', opaque around both open storage areas, black coated chain link across the central section of the site would not typically be allowed in a front yard, and staff is looking for fence height and type confirmation by Planning Commission, per 4.43 Outdoor Storage, as part of the project consideration following the public hearing.

Zoning for this parcel is I-2 (General Industrial District)

A Special Land Use is required for Self-storage located centrally on the site, and for outdoor storage yards.

The East outdoor storage lot is for Recreation Vehicles or other larger items like trailers that we do not allow stored in driveways long term.

The West outdoor storage area is also proposed to house a small impound lot. There will be no disassembly of vehicles (this does not classify as a scrap yard) and the cars are stored short term in this outdoor lot. This is not long-term storage lot and is not intended to house junk vehicles. Tiger Towing also has a larger lot in Battle Creek that can be utilized for items that cannot be stored on this site.

Electric vehicles were discussed with the Engineer and the guidelines brought forth by the Fire Department related to damaged electric vehicles. Procedural concerns should be directed to the applicant or Owner.

Stormwater review recommended some contingencies that the applicant has responded to but has not been able to make adjustments to the plan in time:

1. Stormwater management system should be redesigned to provide one foot of freeboard between the pond high-water level and the top of the berm.

Applicant will comply.

2. Plans should be revised so that existing catchbasin CB-4 should either be replaced, or have the proposed outlet connect to a new proposed catchbasin located on the 24" concrete pipe that outlets from CB-4 to the southwest.

Will work with city Engineering to either get CB-4 to work or will run to CB-3 instead.

3. The portion of the proposed north-south fence that crosses the existing 24" pipe should be adjusted.

Will adjust fence to avoid conflict.

4. The developer needs to ensure all Due Care Plans requirements are followed during construction to prevent exposure to any contractors.

Will follow due care. This is outlined on the plans.

5. An emergency overflow structure should be provided which is capable of passing the 100-year flow without damages to structures or adjacent property.

Will work with engineering to satisfy this requirement.

There are no other sidewalks in the area, it is staff recommendation to allow the project to be approved without sidewalk, reserving the right to require it if adjacent properties add sidewalks. Grading allows future sidewalk installation.

The building is a single story building with a total height of 18'. There is an existing sign that the Owner desires to relocate. It is a new sign, post and panel that the current ordinance does not allow beyond a construction sign. It is recommended that if the sign is to be relocated, a base that is at least 50% the width of the sign is added to the sign to convert it to a ground sign.

Self-storage parking calculation and research:

Staff recommendation is that parking areas should not be overbuilt; self-storage generally has low daily traffic, so excess parking is often unnecessary. Our current ordinance seems to align more with a self-storage structure that houses multiple internal self storage units that make up the "Primary Building". The current capacity easily meets a 1/1000 requirement found in other ordinances (in lieu of the 1/275 in our ordinance). There is also additional room on the site that could be allocated for additional spaces of future parking if needed. The submitting engineer can also provide insight about quantity recommendations for parking.

Current ordinance:

Two for the caretaker's dwelling, plus one per 275 square feet of usable floor area in the principal building.

If "principal building" is the sum of the storage units, then:

$10' \times 20' \times 66 = 13,200\text{sf}$

$10' \times 10' \times 7 = 700\text{sf}$

$13,900\text{sf} / 275 = 51$ parking spots required. This is more than the site can handle.

If you only consider the Office building as the "principal building", the project more than meets:

ii. Business offices or professional offices:

$1296\text{sf} / 275 = 4.71$ parking spots required. This seems inadequate.

If we consider that the current requirement of one per 275 is more demanding than the 'typical' ordinance found at one per 1000, then:

$13,900 / 1000 = 13.9$ parking spots required/

The current plan would allow for more than that amount parallel parked between the two banks of storage units. These have not been striped and the applicant would prefer to not stripe these to provide flexibility to the users. Direction on the parking requirement should be given, but it is staff recommendation to allow 14 parking spaces, and reserve the area between the Office building and the south units, for future parking, if needed.

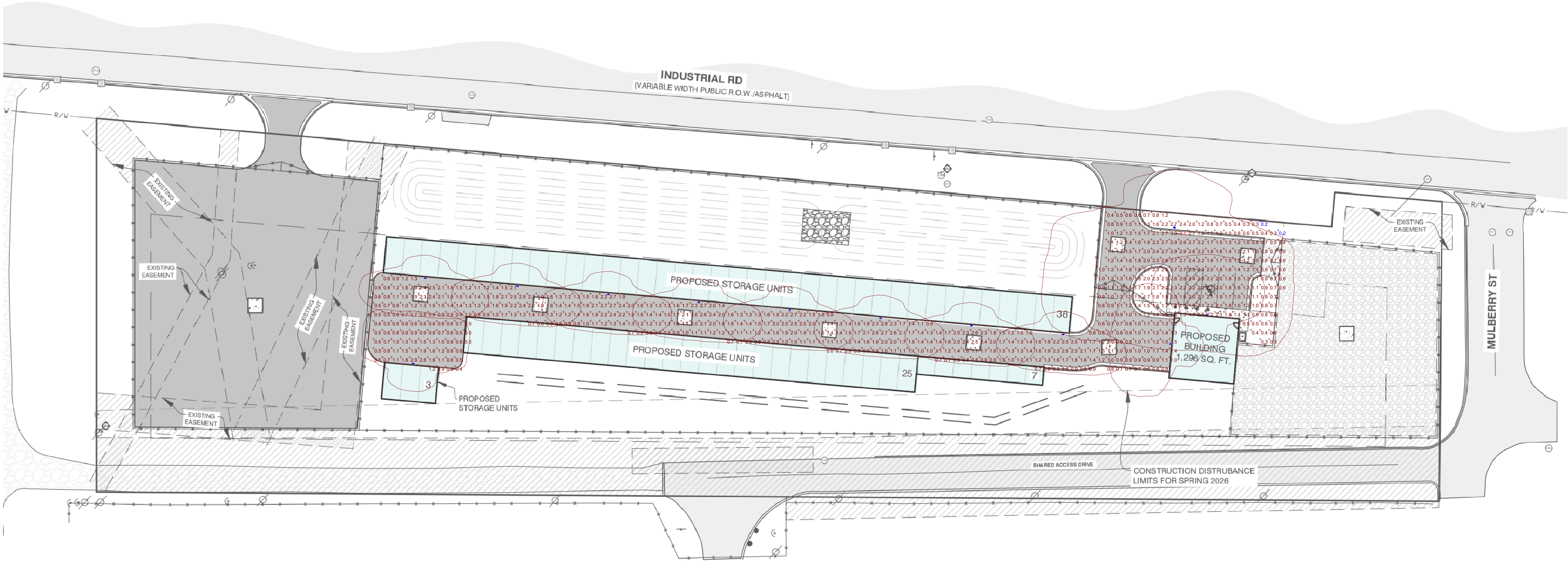
No electrical issues at this time. Details will be reviewed prior to construction permits are issued. A photometric has been provided which includes lighting on the storage units.

Water and Waste Water have no concerns.

The Owners have some experience with EV storage and are available for questions

RECOMMENDATION:

Staff recommendation is to approve the project with contingencies for stormwater to be confirmed by City staff, allocate an area for future parking and future sidewalk, and front yard fence to be revised from chain link to a decorative fence, allow relocation of the post and panel sign if a base is added.



Plan View
Scale - 1" = 30ft

Schedule							
Symbol	Label	QTY	Catalog Number	Description	Number Lamps	Lumens per Lamp	LLF Wattage
	A	8	DSXW1 P1 40K T2M	2000 4000K 70CRI Type 2 Medium	1	1964	1 12.37
	B	3	DSXW1 P1 40K T4M	2000 4000K 70CRI Type 4 Medium	1	1946	1 12.37
	C	1	DSXO LED P5 40K 80CRI T4M	D-Series Size 0 Area Luminaire P5 Performance Package 4000K CCT 80 CRI Type 4 Medium	1	11259	1 90.12

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Calc Zone #1		1.4 fc	3.1 fc	0.2 fc	15.5:1	7.0:1



DUE CARE PLAN

Vacant Land

775 Industrial Road
Marshall, Calhoun County, Michigan 49068
SES Project No.: 2025-0250

April 16, 2025

Prepared for:

Tiger's Towing, LLC
19218 11 Mile Road
Battle Creek, Michigan 49014
Attn: Ms. Karrie Hammer



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TABLES

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Table 2	Cleanup Criteria Comparison for Soils – Metals
Table 3	Cleanup Criteria Comparison for Groundwater – Metals

FIGURES

Figure 1	Topographic Map
Figure 2	Site Map with Sample Locations
Figure 3a	Site Map with Soil Analytical Results – VOCs, PNAs, and PCBs
Figure 3b	Site Map with Soil Analytical Results - Metals
Figure 4	Site Map with Groundwater Analytical Results
Figure 5	Site Map with Nonresidential Exceedances – Complete Pathways

ATTACHMENTS

Attachment A	EGLE-RRD Due Care Guide
Attachment B	Phase I Environmental Site Assessment, February 4, 2025
Attachment C	Baseline Environmental Assessment, March 24, 2025
Attachment D	Contractor and Utility Worker Notification



1.0 INTRODUCTION AND LIMITATIONS

SES Environmental (SES) has completed this Due Care Plan (DCP) on behalf of **Tiger's Towing, LLC** for the vacant land located at 775 Industrial Road in Marshall, Calhoun, Michigan (referred to as the "subject property"). This DCP was prepared in accordance with Section 21304(c) of Part 201 of the Natural Resources and Environmental Protection Act (NREPA), P.A. 451 of 1994 (Part 201), as amended. The Michigan Department of Environment, Great Lakes, and Energy (EGLE) Part 201 requires documentation be maintained demonstrating the site is in compliance with Section 7a of Part 201. The Part 201 Administrative Rules (Part 10 Rules) require an owner or operator of contaminated property to have/maintain documentation demonstrating they are in compliance with Section 7a of Part 201 and the Part 10 Rules.

Results of previous investigations conducted at the subject property between 2003 and 2024 by others indicate the presence of the volatile organic compound (VOC) 1,2,4-trimethylbenzene (TMB), the polynuclear aromatic hydrocarbon (PNA) phenanthrene, and the metals arsenic, cadmium, iron, manganese, mercury, and selenium in soil and iron and manganese in groundwater exceeding EGLE Part 201/213 Residential and Nonresidential Generic Cleanup Criteria (GCC)/Risk Based Screening Levels (RBSLs) on the subject property.

Owners who have knowledge that their property is contaminated are obligated to comply with the "Due Care" obligations listed as follows:

- limit unacceptable exposures to hazardous substances, prevent fire and explosion hazards due to hazardous substances, and allow the Property to be used in a way that protects the public health and safety;
- take reasonable precautions against the reasonably foreseeable acts or omissions of a third party;
- prevent worsening or spreading of the known impact (i.e., exacerbation);
- provide reasonable cooperation, assistance, and access to persons authorized to conduct response actions on the property;
- provide all required notifications to the EGLE and others; and
- comply with and not limit the effectiveness of land use or resource use restrictions established to prevent exposure to hazardous substances at the property.

The plans and procedures **Tiger's Towing, LLC** will use to comply with these due care responsibilities for the future use of the subject property are described in the following sections of this DCP.

The EGLE-Remediation and Redevelopment Division's 2024 "Due Care Guide" provides additional information and is attached in Attachment A.

This DCP was developed based on the known environmental impact on the subject property and the current and proposed Nonresidential use of the property. If the use of the property changes, or if new environmental information becomes available, this DCP will be reviewed and revised, as needed. This DCP does not address potential exposures to other hazardous substances that are not regulated under Part 201 of NREPA.



This DCP is not, and should not be, used as a Documentation of Due Care Compliance (DDCC). In addition, this DCP is not, and should not be, used as a Health and Safety Plan (HASP) for the subject property. Contractors and other parties working on the property should review the information in this DCP and prepare a site-specific HASP for their operations and the hazards to which their employees may be exposed.

1.1 Reliance

Tiger's Towing, LLC may use and rely on the results and conclusions of this DCP. No other parties may use or rely on this information without client approval and written authorization from SES.



2.0 PROPERTY DESCRIPTION AND USE

The subject property is located along the south side of Industrial Road, approximately ¼ mile west of South Kalamazoo Avenue and approximately ½ mile southwest of the City of Marshall central business district.

The subject property is generally rectangle-shaped and consists of 3.03 acres of land. Access to the property is from informal entrances off Industrial Road to the north and an access drive that extends along the south property boundary.

At the time of the site visit conducted on January 17, 2025, the property consisted of vacant land.

The subject property consists of grass landscaping and cleared land. At the time of inspection, survey markers were observed along the south-central property boundary, and construction equipment and sewer and utility equipment were stored on cleared areas across the east portion of the property. Buried telephone conduits and associated access boxes are located along the north property boundary. Utility marking flags were observed on the southwest portion of the property. No evidence of current or former manufacturing operations, building foundations, in-ground structures, stressed vegetation, or staining was observed; however, snow cover prevented a thorough inspection of ground surfaces across the west portion of the property and along the north and south property boundaries.

The historical research presented in this assessment has established the use of the subject property since 1899. Historical review indicates the subject property was part of a larger railroad maintenance yard from at least 1899 through 1931. A pattern warehouse is shown in a 1945 Sanborn fire insurance map on the northwest corner of the subject property and extending onto the west adjoining property; however, the majority of building structures associated with former railroad maintenance activities were documented on the west adjoining property. The property operated as a storage yard for an adjoining foundry to the east and southeast from 1938 through 1960. The property then began operations as Marshall Iron & Metal, an automobile salvage scrap yard, from at least 1961 through 1996. Railroad lines were abandoned after 1966. Scrap yard operations ceased in 1996, at which time all scrap material was removed. The property has generally consisted of vacant land since 1996.

A Phase I ESA was prepared in 2003 and identified three RECs: 1) former railroad maintenance operations, scrap yard operations, the presence of fill and debris, and bare soil; 2) former underground storage tank (UST) operations; and 3) Part 201 listings and documented impact to soil and groundwater at the property.

An interview conducted with a representative of the City of Marshall Industrial Pretreatment/Safety Wastewater Department revealed investigations have been conducted in 1993, 1995, 1997 and 2001. A 7,000-gallon steel UST was removed from the north-central portion of the property in September 2000. The UST was an oil/water separator process tank that had been used to collect oil and water from a sloped cement slab collection area. The sludge, soils, and liquids from the UST and overburden were reportedly transported to a landfill at the time of removal. Soil samples were collected from the former tank basin in 2001, and a summary of the analytical results indicated metals, xylenes, 1,2,4-trimethylbenzene, and naphthalene were detected above laboratory detection limits, with chromium being detected above the former Michigan Department of Environmental Quality ([MDEQ]; now identified as EGLE) Part 201 Residential Drinking Water Protection Criteria. Soil and groundwater investigation from 1993 through 2001 indicated impact existed at the property at levels exceeding Part 201 Residential cleanup criteria. In addition, the property was listed as a MDEQ Part 201 Contaminated Site due to metals, polychlorinated biphenyls (PCBs), and PNAs, among others, detected due to historical property operations.



Surface Water Characteristics

Surface water drainage flows toward catchment drains along roadways and is absorbed into the ground surface. No evidence of improper waste disposal was observed. Curbing and topography generally prevent surface water drainage from adjoining properties from flowing onto the subject property.

No surface water features were observed at the subject property. The nearest surface-water feature to the property is the North Branch of the Kalamazoo River located approximately 550 feet to the south.

Review of a FEMA Flood Insurance Rate Map indicates the subject property is located in an area of minimal flood hazard (Zone X). Surface water on the property or in its immediate vicinity is not a source of local drinking water. The property is currently connected to municipal water by the City of Marshall.

Soil and Geologic Characteristics

A United States Department of Agriculture, Natural Resources Conservation Service - Custom Soil Resource Report for Calhoun County, Michigan, shows soil beneath the subject property consists of Urban land-Kalamazoo complex, 0 to 6 percent slopes.

Review of previous investigation reports indicates soil beneath the subject property consists of sand/fill from the near surface to depths between 2 and 4 feet below ground surface (bgs) followed by alternating layers of clay, sand, and silt to a depth of 6 feet bgs. Sand is then present to a depth of 15 feet bgs.

Review of a water well log for a well on the west adjoining property indicates soil beneath the subject property area consists of sand from the near surface to a depth of 20 feet bgs, followed by sandstone and shale to a depth of 75 feet bgs.

Groundwater Characteristics

Review of previous investigation reports indicates the static water level beneath the subject property is between approximately 6 to 10 feet bgs in sand.

Review of a water well log for a well on the west adjoining property indicates the static water level beneath the subject property area is 12 feet bgs in sand.

The topographic surface at the subject property slopes gently to the south. Area topography can indicate the shallow groundwater gradient, although variations in subsurface structural and geological conditions and other factors can affect groundwater conditions. In cases where contamination is suspected, the groundwater gradient should be analyzed using actual subsurface data to accurately evaluate groundwater conditions.

Review of previous environmental reports indicates groundwater flow direction is to the south/southwest.

Review of the EDR Lightbox application website indicates groundwater in the subject property area flows to the south.



3.0 HISTORICAL USE AND SUBJECT PROPERTY INVESTIGATION SUMMARY

3.1 Executive Summary of All Appropriate Inquiry (AAI)

SES conducted a Phase I ESA for the subject property, which is documented in a report dated February 4, 2025 (Attachment B). The Phase I ESA report included the review and summary of several previous subsurface investigations, remedial action reports, and groundwater sampling events.

Historical review indicates the subject property was part of a larger railroad maintenance yard from at least 1899 through 1931. A pattern warehouse is shown in a 1945 Sanborn fire insurance map on the northwest corner of the subject property and extending onto the west adjoining property; however, the majority of building structures associated with former railroad maintenance activities were documented on the west adjoining property. The property operated as a storage yard for an adjoining foundry to the east and southeast from 1938 through 1960. The property then began operations as Marshall Iron & Metal, an automobile salvage scrap yard, from at least 1961 through 1996. Railroad lines were abandoned after 1966. Scrap yard operations ceased in 1996, at which time all scrap material was removed. The property has generally consisted of vacant land since 1996.

A Phase I ESA was prepared in 2003 and identified three RECs: 1) former railroad maintenance operations, scrap yard operations, the presence of fill and debris, and bare soil; 2) former UST operations; and 3) Part 201 listings and documented impact to soil and groundwater at the property.

An interview conducted with a representative of the City of Marshall Industrial Pretreatment/Safety Wastewater Department revealed investigations have been conducted in 1993, 1995, 1997 and 2001. A 7,000-gallon steel UST was removed from the north-central portion of the property in September 2000. The UST was an oil/water separator process tank that had been used to collect oil and water from a sloped cement slab collection area. The sludge, soils, and liquids from the UST and overburden were reportedly transported to a landfill at the time of removal. Soil samples were collected from the former tank basin in 2001, and a summary of the analytical results indicated metals, xylenes, 1,2,4-trimethylbenzene, and naphthalene were detected above laboratory detection limits, with chromium being detected above the former MDEQ Part 201 Residential Drinking Water Protection Criteria. Soil and groundwater investigation from 1993 through 2001 indicated impact existed at the property at levels exceeding Part 201 Residential cleanup criteria. In addition, the property was listed as a MDEQ Part 201 Contaminated Site due to metals, PCBs, and PNAs, among others, detected due to historical property operations.

A Phase II ESA was conducted in September 2003 and included advancement of six soil borings and collection of three groundwater samples from existing monitoring wells. The results of the Phase II ESA indicated arsenic, chromium, iron, manganese, mercury, selenium, benzo(a)pyrene, carbazole, fluoranthene, naphthalene, phenanthrene and xylenes were present in soil at concentrations exceeding applicable Part 201 Residential cleanup criteria. In addition, iron, manganese, fluorene and phenanthrene were present in groundwater at concentrations exceeding applicable Part 201 Residential cleanup criteria. Eight inches of free product were observed in one monitoring well. The property was identified as a "facility" as defined by Section 20101(1)(1) of Part 201 of NREPA, PA451 of 1994, as amended. A Baseline Environmental Assessment (BEA) was prepared in 2003/2004.

Corrective action to address soil impact and free product commenced in 2015. Six inches of a 13,000-square foot area were excavated, and the top 10 feet of soil over an 18,000-square foot area east of the 13,000-square foot area were removed. Soil confirmation samples were collected from the 10-foot



excavation area and analyzed for VOCs, semi-volatile organic compounds (SVOCs), metals, mercury, and PCBs. VOCs and arsenic were detected at elevated concentrations in soil samples.

A report from 2021 indicates soil and groundwater data was limited. A Remedial Design Characterization (RDC) was proposed to be completed to supplement the existing soil and groundwater historical data and to quantitatively determine the contaminant mass and extent of impact in the saturated soil and groundwater. Up to 23 borings were proposed to 15 feet bgs, collection of soil and groundwater samples, evaluation of free product, a Bench Test, a pilot test injection of BOS 200 (a carbon adsorption remediation method), and groundwater monitoring for at least 4 quarters were recommended. Six temporary monitoring wells are shown along the south property boundary; however, the majority of investigation would be conducted on the south adjoining property.

SES did not identify any *historical recognized environmental conditions* (HRECs) associated with the subject property during the completion of this Phase I ESA.

SES did not identify any *controlled recognized environmental conditions* (CRECs) associated with the subject property during the completion of this Phase I ESA.

SES identified the following *recognized environmental condition* (REC) associated with the subject property during the completion of this Phase I ESA:

REC #1 Historical review indicates the subject property was part of a larger railroad maintenance yard from at least 1899 through 1931. The property operated as a storage yard for an adjoining foundry to the east and southeast from 1938 through 1960. The property then began operations Marshall Iron & Metal, an automobile salvage scrap yard, from at least 1961 through 1996. Railroad lines were abandoned after 1966. Scrap yard operations ceased in 1996, at which time all scrap material was removed. The property has generally consisted of vacant land since 1996. A 7,000-gallon steel UST was removed from the north-central portion of the property in September 2000. Investigation and corrective action were conducted at the property in 1993, 1995, 1997, 2001, 2003, and 2015. Elevated metals, VOCs, and SVOCs were detected in soil samples. Elevated VOCs and metals concentrations were documented in submitted soil confirmation samples following completion of corrective action to address free product on the central portion of the property. The property is identified as a “facility,” as defined by Part 201 P.A. 451 of the Michigan Natural Resources Environmental Protection Act (NEPRA), as amended.

3.2 Subsurface Sampling Activities

The subject property is classified as a “facility” based on soil and groundwater contamination exceeding EGLE Part 201 Residential GCC/RBSLs identified on the property during previous subsurface investigations and sampling events conducted at the property between 2003 and 2024 by others.

The subsurface investigations, remedial actions, and sampling events conducted at the subject property between 2003 and 2024 are summarized (refer to Attachments B and C) as follows:

2003 Subsurface Investigation

Soil and Materials Engineers, Inc (SME) conducted a Phase II ESA to address RECs identified in a 2003 Phase I ESA, also conducted by SME. The 2003 RECs included the following:

- The historical property uses as a railroad shop, foundry and scrap yard, gaps in historical property uses, and visual observations of debris and soil containing slag and cinders.



- A former UST located on the north portion of the property.
- Previous soil and groundwater impact documented at the property and the MDEQ Part 201 Contaminated Site listing of the property.

To evaluate the identified RECs, SME conducted a subsurface investigation of the subject property on September 18, 2003, that included advancing six soil borings (i.e., SP1 through SP6) to depths between 10 and 11 feet bgs. The soil borings were completed throughout the subject property to investigate the impact in the subsurface as a result of the historical operations conducted on the subject property. SP4 was located in the area of the former UST to investigate subsurface impact. One soil sample was collected from each boring and analyzed for VOCs, SVOCs, PCBs, Michigan 10 metals, iron, manganese, and nickel.

Soil lithology consisted of sand fill from the near surface to approximately 2.5 feet bgs in SP1, SP2, SP3, SP5, and SP6. The sand fill contained trace silt, clay, gravel, brick, metal, glass, and cinders. SP4 consisted of sand fill from the near surface to approximately 9 feet bgs. SP4 was located near the area of the former UST. Following the sand fill, sandy clay was encountered in SP1, SP2, and SP3 ranging from depths 4 to 6 feet bgs. Clayey sand with trace amounts of gravel and silt was encountered at SP5 to 3 feet bgs. Below the sandy clay or clayey sand, sand with trace gravel, silt, or clay, was encountered at SP1, SP2, SP3, and SP5, and encountered in SP4 and SP6 below the sand fill. Native sand ranged to depths of 10 to 11 feet bgs. The maximum explored depth was 10 feet bgs. Odors were noted in soil samples collected from SP2, SP4, and SP5, as well as greenish staining at 10.5 to 11 feet bgs in SP4. PID readings were not collected during completion of the borings.

Groundwater was encountered between 6 to 11 feet bgs in all soil borings. Approximately eight inches of free product was observed in monitoring well MW6. The free product was black in color.

The VOC and SVOC data are not considered relative to the current subject property conditions, due to 22 years of degradation. However, the metals data can be used because metals generally do not degrade over time. SES utilized the 2003 metals data for this report.

2007/2008 Subsurface Investigation

MACTEC Engineering and Consulting of Michigan, Inc. (MACTEC) completed a technical memorandum report on behalf of the former MDEQ. The scope of work was to delineate the free product and monitor the subject property.

To conduct the scope of work, a total of 30 soil borings (GP-1 through GP-30) were completed on September 17, 2007, through September 19, 2007, and on December 13, 2007. The borings were advanced to 10 to 15 feet bgs. Soil samples were collected from GP-2 and GP-11 for VOCs, PNAs, PCBs, and metals cadmium, chromium, and lead. Soil samples were also collected from GP-7 for VOCs and the metals cadmium, chromium, and lead, and from GP-9 and GP-10 for VOCs only. Additional soil samples were collected from GP-18 and GP-20 for glycol analysis. Following the completion of the borings, 21 out of the 30 soil borings were converted into temporary monitoring wells and screened from 7 to 12 feet bgs. Groundwater samples were not collected from the temporary monitoring wells.

On December 5, 2007 and December 6, 2007, six monitoring wells were installed on the subject property and south adjoining property. MW-DEQ-3 through MW-DEQ-6 replaced GP-12, GP-18, GP-18, and GP-4, respectively. The monitoring wells were screened approximately from 9 to 14 feet bgs or 10 to 15 feet



bgs. Following the installation of the monitoring wells, MW-DEQ-1, MW-DEQ-2, MW-DEQ-4, and MW-DEQ-6 were sampled on June 5, 2008, and analyzed for VOCs, SVOCs, PCBS, and phenols.

Groundwater and free product monitoring was performed on September 25, 2007, October 2, 2007, December 5, 2007, and December 19, 2007.

Free product sampling was collected from GP-13, GP-16, GP-21, GP-30, MW-WEST (formerly MW6 from 2003 BEA), and MW-DEQ-5 on December 19, 2007. Analysis consisted of VOCs, SVOCs, PCBs, and metals. The analytical results of the free product samples indicate the results were inconclusive to source material.

SES did not utilize the 2007 and 2008 data due to the majority of the samples collected were from an area that was later excavated in 2015. Also, the VOC and SVOC data are not considered relative to the current subject property conditions due to 16 to 17 years of degradation.

2015 Remedial Excavation and Disposal

AMEC Engineering and Consulting of Michigan, Inc. (AMEC) conducted a construction summary report on behalf of the former MDEQ. The scope of work was to remove PCB contaminated soil and restore the area to previous conditions. The report documented response measures conducted by AMEC.

To conduct response measures, the following activities were implemented: abandonment of existing monitoring wells, excavation, loading and disposal of contaminated soils. Nine monitoring wells previously existed at the property, eight of which were abandoned. The remaining monitoring well (MW-DEQ-1) was left in place due to the presence of free product in the well. Excavation activities began by removing six inches of soil from the surface in the scrape zone and the excavation zone. The excavation was dug to approximately 10.5 feet bgs, where groundwater was encountered. Approximately 10,231.44 tons of contaminated soil were removed from the subject property, transported and disposed to a licensed landfill facility. The excavation zone was backfilled with 600 yards of Class II sand, and 440 yards of native overburden, and was restored to its pre-existing condition.

During the excavation activities, 12 sidewall samples and 9 floor samples were collected from the excavation zone. Sidewall samples were collected at a depth of approximately 5 feet bgs, and the floor samples were collected at approximately 10.5 feet bgs. The soil samples were analyzed for VOCs, PNAs/SVOCs, Michigan 10 Metals, and PCBs. SES utilized the data collected from the 2015 excavation for this report.

2021 Investigation

AST Environmental, Inc. (AST) conducted a quantitative high resolution site characterization (qHRSC), Bench Test Study, Pilot Test, and Final Remedial Approach/Design report for the south portion of the subject property and the south adjoining property. AST began field work on March 29, 2021, to locate utilities on the south portion of the subject property and on the south adjoining property. By April 6, 2021, a total of 23 soil borings were completed (6 on the subject property). Each soil boring was converted to a temporary monitoring well, purged, sampled, and abandoned. One monitoring well, MW-201, was installed on the south portion of the subject property, along with two temporary monitoring wells (PZ-201 & PZ-202) installed to monitor pilot injections and post injection performance monitoring. Pre-injection, 0.1 feet of light non-aqueous phase liquid (LNAPL) was identified in MW-201, 0.18 feet of LNAPL was identified in PZ-201, and 3.40 feet of LNAPL was identified in PZ-202.



Groundwater samples were analyzed for total petroleum hydrocarbons (TPH), dissolved gases & carbon dioxide, and anions.

After completion of the soil and groundwater sampling, AST performed a BOS 200®+ Pilot Test. The area around MW-201, was the designated area for the Pilot Test. Surrounding MW-201, 14 injection points were completed to depths ranging from 9 to 15 feet bgs. Injections were initiated on April 13, 2021, and completed on April 14, 2021. AST injected a total of 2,000 pounds of BOS 200®, 1,250 pounds of gypsum, 750 pounds of magnesium sulfate, 500 pounds of corn starch, 25 pounds of yeast extract, and 5 gallons of Trap & Treat® Bacteria Concentrate into the injection points. Following the injections, MW-201 was reinstalled at approximately the original location. Post-injection, no LNAPL was identified in MW-201, 0.02 feet of LNAPL was identified in PZ-201, and 0.75 feet of LNAPL was identified in PZ-202. PZ-201 and PZ-202 were abandoned.

The soil lithology identified during the investigation did not classify soil from 0 to 4 feet bgs due to soft digging methods for identifying utilities. Soil lithology from 4 to 10 feet bgs consisted of silty sand or sandy silt, followed by gravelly sand or sandy gravel from 10 feet bgs to 16 feet bgs, and clayey silt from 16 to 18 feet bgs. (i.e., maximum depth explored). Groundwater was observed between 8 to 13 feet bgs.

Data provided in the 2021 report are not relied upon in this report. The data pertained to an injection study; therefore, the data does not provide the current subject property conditions. However, quarterly groundwater sampling was conducted in May 2023 through July 2024 for MW-201 (also identified as MW-201R). Groundwater samples were analyzed for iron, manganese, and hydrogen sulfide. SES utilized the iron and manganese groundwater data for this report.

Refer to Figures 2, 3a, 3b, and 4 for a subject property map with soil boring locations, soil analytical results, and groundwater analytical results. The boring logs can be found in the 2003 BEA, 2008 technical memorandum report, and 2021 quantitative high resolution site characterization (qHRSC), Bench Test Study, Pilot Test, and Final Remedial Approach/Design report maintained at the EGLE – Kalamazoo District office.

3.3 Soil Analytical Results Summary

A summary of soil sample analytical results collected in November 2015 at the subject property is presented in Table 1, Table 2, Figure 3a, and Figure 3b, along with comparisons to the current EGLE Part 201 GCC and Part 213 RBSLs. Also included in Table 2 and Figure 3b are the metals analytical results from the September 2003 subsurface investigation. The laboratory analytical reports can be found in the 2003 BEA, and the 2015 construction summary report, maintained at the EGLE – Kalamazoo District office.

Six soil samples were collected from the subject property in a 2003 subsurface investigation. The soil samples were submitted for VOCs, PNAs/SVOCs, PCBs, Michigan 10 metals, iron, manganese, and nickel. The samples were collected as a general representation of the subject property. The VOC and SVOC data are not considered relative to the current subject property conditions, due to 22 years of degradation. However, the metals data can be used because metals generally do not degrade over time. An additional 21 soil verification samples were collected from the subject property in 2015 during an excavation in the central portion of the property. The soil samples were submitted for analysis of VOCs, PNAs/SVOCs, PCBs and Michigan 10 Metals.



Review of the soil analytical results (Tables 1 and 2) indicates the following:

- Several VOCs were detected in the soil samples at concentrations exceeding the laboratory method detection limits (MDLs) in 12 out of the 21 soil samples analyzed; however, none of the identified VOCs exceed EGLE Part 201 GCC, with the exception of 1,2,4-trimethylbenzene in soil samples collected from SW-4 (5 feet bgs), F-2 (10.5 feet bgs), F-4 (10.5 feet bgs), F-6 (10.5 feet bgs), and F-7 (10.5 feet bgs) exceeding EGLE Part 201 Residential and Nonresidential Groundwater Surface Water Interface Protection (GSIP) GCC.
- Several PNAs/SVOCs were detected at concentrations exceeding laboratory MDLs in 15 of the 21 soil samples analyzed; however, the concentrations did not exceed EGLE Part 201 GCC, with the exception of phenanthrene in soil samples collected from F-1 (10.5 feet bgs) and F-3 (10.5 feet bgs), exceeding EGLE Part 201 Residential and Nonresidential GSIP GCC.
- Several PCBs were detected at concentrations exceeding laboratory MDLs in 10 of the 21 soil samples analyzed; however, the concentrations did not exceed EGLE Part 201 GCC.
- Concentrations of metals were detected in each of the analyzed soil samples at concentrations exceeding the laboratory MDLs; however, arsenic in soil samples collected from SP1 (0 to 1-foot sample interval), SP2 (1 to 2-foot sample interval), SP3 (1 to 2-foot sample interval), SP4 (10 to 11-foot sample interval), SP6 (1 to 2-foot sample interval), SW-1 (5 feet bgs), SW-2 (5 feet bgs), SW-6 (5 feet bgs), SW-7 (5 feet bgs), F-1 (10.5 feet bgs), F-2 (10.5 feet bgs), F-5 (10.5 feet bgs), and F-7 (10.5 feet bgs) exceeded EGLE Part 201 Residential and Nonresidential Drinking Water Protection (DWP), and GSIP; Residential Direct Contact (DC) GCC with the exception of soil sample F-7 (10.5 feet bgs), and Nonresidential Direct Contact (DC) GCC in only soil sample SW-6 (5 feet bgs); cadmium in soil sample collected from SP1 (0 to 1-foot sample interval) exceeded EGLE Part 201 Residential and Nonresidential GSIP GCC; iron in soil samples collected from SP1 (0 to 1-foot sample interval), SP2 (1 to 2-foot sample interval), SP3 (1 to 2-foot sample interval), SP4 (10 to 11-foot sample interval), and SP6 (1 to 2-foot sample interval), exceeded EGLE Part 201 Residential and Nonresidential DWP GCC; manganese in soil samples collected from SP1 (0 to 1-foot sample interval), SP2 (1 to 2-foot sample interval), and SP4 (10 to 11-foot sample interval), exceeded EGLE Part 201 Residential and Nonresidential DWP GCC; mercury in soil samples collected from SP1 (0 to 1-foot sample interval) and SP3 (1-2-foot sample interval) exceeded Residential and Nonresidential GSIP GCC; and selenium in soil samples collected from SP1 (0 to 1-foot sample interval), SP2 (1 to 2-foot sample interval), SP3 (1 to 2-foot sample interval), SP6 (1 to 2-foot sample interval), and SW-6 (5 feet bgs) exceeded EGLE Part 201 Residential and Nonresidential GSIP GCC.

A summary of the soil samples that exceeded one or more EGLE Part 201 GCC is provided in the attachments as Tables 1 and 2.

3.4 Groundwater Analytical Results Summary

A summary of groundwater samples collected from May 2023 through July 2024 at the subject property is presented in Table 3 and Figure 4, along with comparisons to the current EGLE Part 201 GCC and Part 213 RBSLs. The laboratory analytical reports can be found at the EGLE –Kalamazoo District office.

Five groundwater samples were collected from the subject property from MW-201 which was installed in 2021. The samples were collected quarterly for monitoring purposes. The samples were submitted for analysis of iron, manganese, and hydrogen sulfide. SES utilized the iron and manganese groundwater data for this report.



Review of the groundwater analytical results (Table 3) indicates the following:

- Iron and manganese were detected in all five groundwater samples at concentrations exceeding laboratory MDLs, with the exception of manganese in the July 11, 2024, groundwater sample. However, iron in groundwater samples collected from MW-201/MW-201R in May 11, 2023, August 11, 2023, November 2023, April 17, 2024, and July 11, 2024, exceeded EGLE Part 201 Residential and Nonresidential Drinking Water (DW) GCC; and manganese in groundwater samples collected from MW-201/MW-201R in May 11, 2023, August 11, 2023, November 14, 2023, and April 17, 2024 exceeded EGLE Part 201 Residential and Nonresidential DW GCC.



4.0 KNOWN CONTAMINATION AND HUMAN EXPOSURE PATHWAY EVALUATION

An overview of the known contamination at the subject property and an evaluation of exposure pathways are presented in the following subsections.

4.1 Known Contamination

Based on the previous subsurface investigations, concentrations of 1,2,4-trimethylbenzene were detected in five soil samples exceeding EGLE Part 201 Residential and Nonresidential GSIP GCC; concentrations of phenanthrene were detected in two soil samples exceeding EGLE Part 201 Residential and Nonresidential GSIP GCC; concentrations of arsenic were detected in fifteen soil samples exceeding EGLE Part 201 Residential and Nonresidential DW and GSIP GCC, as well as exceeding Residential DC GCC in fourteen soil samples, and exceeding Nonresidential DC GCC in one soil sample; cadmium was detected in one soil sample exceeding EGLE Part 201 Residential and Nonresidential DW GCC; iron was detected in five soil samples exceeding EGLE Part 201 Residential and Nonresidential DW GCC; manganese was detected in three soil samples exceeding EGLE Part 201 Residential and Nonresidential DW GCC; mercury was detected in two soil samples exceeding EGLE Part 201 Residential and Nonresidential GSIP GCC; and concentrations of selenium were detected in five soil samples exceeding Part 201 Residential and Nonresidential GSIP GCC. Concentrations of iron and manganese were detected in quarterly groundwater samples collected from MW-201/201R exceeding Residential and Nonresidential DW GCC.

Based on the previous investigation, VOC and PNA concentrations in soil were detected at concentrations exceeding the Residential and Nonresidential GCC in six floor samples and one sidewall sample collected from the within the former soil excavation on the subject property. Metals contamination exceeding Residential and Nonresidential GCC was identified in six floor samples and three sidewall confirmation samples collected from within the former soil excavation, as well as in three shallow soil samples collected from the east portion of the subject property and one shallow soil sample collected from the west portion of the subject property. Metals in groundwater were detected at concentrations exceeding Residential and Nonresidential GCC along the south property boundary.

Please refer to Tables 1 through 3 in the Tables Tab for analytical comparison tables and Figures 2 through 4 in the Figures Tab for the sampling locations with analytical results on site maps.

Please refer to Attachment C for the 2025 BEA summarizing the above investigations.

The groundwater has been sampled at numerous locations about the subject site and no contaminants, representative of current site conditions, were detected that would pose an exposure risk. Therefore, no exposure pathways currently exist if groundwater is encountered during site development. However, should dewatering or groundwater need to be extracted and disposed of during site development, the groundwater surface water interface criteria (GSI) may need to be reviewed in consideration of handling the extracted groundwater.

4.2 Human Exposure Pathway Evaluation

According to the City of Marshall, the subject property is zoned “I-2” for General Industrial land use. The east, west, and south adjoining properties are also zoned “I-2”. The north adjoining property, beyond Industrial Road is zoned “I-1” for Research and Manufacturing land use. The property is vacant, but will be developed with an office building and storage lot for trailers. Therefore, Nonresidential criteria are the appropriate category of applicable cleanup criteria.



For the purposes of this DCP, pathways for human exposure are those where contaminants are present at concentrations that may pose a threat to human health during day-to-day or non-routine activities. Day to-day activities include typical use of the property for typical commercial uses by subject property occupants. Non-routine activities involve disturbing the subsurface of the property. The “subsurface” is considered soil and groundwater beneath surficial materials like landscaping, pavement, and concrete slab floors. Individuals most often performing non-routine activities would include contractors conducting activities such as building demolition, building construction, renovations, and expansions; pavement demolition and expansion; or installation/repair of underground utilities.

Complete pathways do exist for human exposure to site contaminants based on the Nonresidential use of the subject property. Rationale for this conclusion is provided below based on a comparison of results to EGLE Part 201/213 Nonresidential GCC/RBSLs.

Human Health-Based Criteria/Screening Levels Exceeded by Site Contaminants in Soil

Drinking Water Protection (Part 201/213 Nonresidential GCC/RBSLs, Revised October 12, 2023)

- Arsenic (SP-1 [0-1’], SP2 [1-2’], SP3 [1-2’], SP4 [10-11’], SP6 [1-2’], SW-1 [5’], SW-2 [5’], SW-6 [5’], SW-7 [5’], F-1 [10.5’], F-2 [10.5’], F-5 [10.5’], F-7 [10.5’], F-8 [10.5’], and F-9 [10.5’])
- Cadmium (SP1 [0-1’])
- Iron (SP-1 [0-1’], SP2 [1-2’], SP3 [1-2’], SP4 [10-11’], and SP6 [1-2’])
- Manganese (SP-1 [0-1’], SP2 [1-2’], and SP4 [10-11’])

This is not considered a complete pathway at the subject property due to:

- 1) No water wells are, or will be, located at the subject property that could be used for potable drinking water
- 2) the subject property is served by municipal water service

Groundwater Surface Water Interface Protection (Part 201/213 Nonresidential GCC/RBSLs, Revised October 12, 2023)

Although the VOC 1,2,4-TMB, the PNA phenanthrene, and the metals arsenic, mercury, and selenium were detected in soil at concentrations exceeding the Nonresidential GSIP GCC, the groundwater surface water interface pathway is not considered a human health-based exposure pathway. No onsite or nearby surface water bodies are hydraulically connected with groundwater beneath the subject property.

Direct Contact (Part 201/213 Nonresidential GCC/RBSLs, Revised October 12, 2023)

- Arsenic (SW-6 [5’])

This is considered a complete pathway at the subject property due to:

- 1) Potential exposure to soil during construction activities

No contaminants exceeded the remaining EGLE Part 201/213 Nonresidential health-based criteria in soil.



Human Health-Based Criteria/Screening Levels Exceeded by Site Contaminants in Groundwater

Drinking Water (Part 201/213 Nonresidential GCC/RBSLs, Revised October 12, 2023)

- Iron (MW-201, MW-201R)
- Manganese (MW-201, MW-201R)

This is not considered a complete pathway at the subject property due to:

- 1) No water wells are, or will be, located at the subject property that could be used for potable drinking water
- 2) the subject property is served by municipal water service

No contaminants exceeded the remaining EGLE Part 201/213 Nonresidential health-based criteria in groundwater.

Land Use Category

The subject property is located within the City of Marshall. The subject site is comprised of approximately 3.03 acres of vacant land, awaiting development.

At the time of generating this Due Care Plan, no buildings were present on the subject property. The land is intended to be redeveloped with a commercial office structure and storage facility.

Soil Exposure Pathways

Subject site contaminants include metals, PNAs/SVOCs, and VOCs. The site contaminants do not include constituents at concentrations that present an exposure risk, based on the current and intended use of the property, with the exception that arsenic in one sample located in the south-central portion of the property exceeds Nonresidential Direct Contact criteria (see Figure 5).

The exposure pathways evaluated are in relation to the proposed site development activities where construction workers are exposed to potential and known contaminated areas.

The complete pathways that exist are based on the proposed site development activities and future Nonresidential use of the subject property. Comparison for this conclusion is provided below based on a comparison of results to EGLE Part 201/213 Nonresidential GCC/RBSLs.

Drinking Water Protection

Regarding soil criteria for the identified contamination, this is an incomplete exposure pathway since there are no drinking water wells on site and no wells will be installed as part of the proposed development.

Direct Contact

Arsenic in the soil at SW-6 (see Figure 5) is located along the south property boundary in the central portion of the subject property. The soil sample was a sidewall sample collected at 5 feet bgs. This exposure risk is eliminated by workers onsite conducting excavating activities wearing gloves. Any residual soil on the work gloves is to be brushed off before exiting the area.



Ambient Air Particulate Soil Inhalation

There is no exposure risks to ambient air particulate soil inhalation. The contaminant levels do not exceed Part 201 particulate soil inhalation screening levels.

Contaminated Soil Runoff to Surface Water

Surface water is not present on or adjacent to the subject property. However, care should be taken not to allow soil runoff to occur during development of the site.



5.0 DUE CARE OBLIGATIONS FOR PREVENTING HUMAN HEALTH EXPOSURE AND EXACERBATION

5.1 Prevention of Unacceptable Human Exposure to Contaminants

Twenty-one soil samples were collected at depths of 5 feet bgs in the sidewall samples and 10.5 feet bgs in the floor samples collected from the 2015 soil excavation area. In addition, 3 soil samples were collected at varying depths from the west portion of the property and 3 soil samples were collected at varying depths from the east portion of the subject property during the 2003 investigation. Of the analyzed samples, one contaminant concentration was identified exceeding the Nonresidential GCC for the complete exposure pathways. The contaminant included one arsenic concentration exceeding Nonresidential Direct Contact GCC/RBSLs. The concentration was identified at a depth of 5 feet bgs in an area along the south-central portion of the subject property. Based on the provided information with regard to the proposed development, the exceedance is located in an area with proposed and existing utility installations.

The potential for human exposure to contaminants via dermal contact with the soil exists. Contaminated soil from the area with the arsenic exceedance in the south-central portion of the site shall not be relocated to other areas of the subject property. In addition, contractors and utility workers shall be notified in writing of the presence of contamination. To prevent potential unacceptable human health exposure, the procedures listed under Section 5.3 ("Prevention of Exacerbation") should be followed.

5.2 Protection of Third Parties

All contractors and utility workers should be notified of the existing contamination prior to breaching the ground surface. No human health exposures for third parties are anticipated based on the current and proposed Nonresidential use of the subject property. If contaminated soil and/or groundwater are relocated from the property to an offsite property, or if utility/construction workers conduct activities in the areas with known contamination, then unacceptable human health exposures could occur. To prevent this unacceptable human health exposure, the procedures listed under Section 5.3 ("Prevention of Exacerbation") should be followed.

The subject site planned for development includes approximately 3.03 acres. The known elevated levels of arsenic are located along the south-central property boundary. Therefore, contaminated soil is not to be relocated from the south-central portion of the subject property to other areas of the subject property. To prevent unacceptable human health exposure, the procedures listed under Section 5.3 ("Prevention of Exacerbation") should be followed.

5.3 Prevention of Exacerbation

Plans/procedures to prevent exacerbation of existing contamination fall into various categories, which are listed and discussed below.



Maintenance of Surfaces

Surficial materials at the subject property are covering subsurface contamination and these surfacing materials must be maintained in good condition to prevent disturbing subsurface contaminants. If any surface is disturbed (e.g., repairs or utility work) then the surfaces must be restored to their original condition.

The surface area at the site during development will likely be disturbed with excavating equipment. Earth moving equipment, excavators, will be disturbing the near surface area soils. Precautions to keeping contaminated soil in those areas of known contamination will be necessary so as not to exacerbate the impact.

Handling of Contaminated Media

Soil at the subject property is contaminated at levels requiring the use of special management techniques to prevent the spread of contamination (exacerbation) if these materials are removed from the ground or otherwise exposed during development, grading, construction or maintenance activities. Prevention of exacerbation includes preventing the spread of contamination on and off the property and between environmental media. For purposes of this DCP, all soil on the property will be considered contaminated at levels requiring special handling and management procedures to prevent the spread of contamination, unless additional soil characterization data demonstrates otherwise.

Failure to properly manage soil could result in spreading the existing contamination and exposing construction/utility workers or future onsite occupants. The following precautions will be followed when soil is excavated during construction or maintenance activities:

- Soil removed from excavations or grading will be stockpiled on the subject property then returned to the same excavation when possible. Reasonable effort will be made not to mix known contaminated soil with clean materials during construction and future maintenance activities. Excavated soils from areas with potential contamination shall be placed on an impervious barrier and covered in order to prevent mixing and spreading with clean surface materials.
- Excess soil from excavations may be acceptable for relocation on the subject property, **with the exception of the area with the arsenic direct contact exceedance along the south-central portion of the subject property**, but will NOT be moved to another property. Excess soil that cannot be relocated on the property will be characterized according to waste disposal site requirements and transported for disposal at a licensed disposal facility in accordance with applicable laws and regulations. If excess soil is likely to be generated from excavation activities, the contractor will be required to have a plan for onsite management and/or offsite disposal prior to commencing activities. The plan shall be provided to the Owner for review and approval.
- Soil erosion and sedimentation controls will be installed as required by local, state, and federal requirements.
- Dust suppression and track-out control measures will be used to minimize the release of contaminated dust/soil into the air or off the subject property.
- An appropriate exposure barrier (i.e., pavement, stone, impermeable surfaces, etc.), preventing dermal contact with contaminated soil, will be constructed to prevent onsite occupants/workers from exposure.



- If groundwater is encountered during subsurface activities and removal (i.e., dewatering to facilitate construction) is required, it will be properly characterized and managed according to applicable regulations. Under no circumstances will groundwater be discharged to 1) a storm sewer or sanitary sewer without obtaining a proper permit, 2) the ground surface, or 3) in a manner that results in flow off the subject property. Groundwater generated from dewatering activities will be:
 - Containerized on the subject property, utilizing a frac tank or similar vessel, characterized in accordance with disposal site requirements, and transported for proper disposal at an offsite, licensed facility; or
 - Characterized and permitted pursuant to municipal sanitary sewer ordinances for discharge to the sanitary sewer (pretreatment may be required for this discharge).
- A copy of the Due Care Plan will be provided to all parties engaged in future construction or maintenance activities which include disturbance of subsurface soils.

If during future construction activities, evidence of environmental impact that is not consistent with known impact is observed, the Owner will be notified, and this DCP will be evaluated and modified as appropriate. Such impact or conditions will be characterized and managed in accordance with applicable requirements, guidelines, and rules of state and federal law.



6.0 RECORD KEEPING AND NOTIFICATIONS

Owners and operators are required to maintain Due Care documentation. In addition, the EGLE may request the owner of a contaminated property provide Due Care documentation. Due Care records that should be maintained in a file are discussed below.

6.1 Documentation and Record Keeping

This DCP will be kept in the due care file at the **Tiger's Towing, LLC** office at the subject property, and will be available to the EGLE or other appropriate parties as needed and/or upon request. Revisions to this DCP may be required if property conditions and features described in this DCP change or are found to be different in the future.

6.2 On-Going Documentation

If maintenance activities or future construction plans require soil and/or groundwater to be removed, these media and activities will be managed in accordance with applicable regulations and as described in Section 5. The Owner will maintain records, including manifests and landfill load tickets, for the removal and disposal of soil and/or groundwater from the subject property. The Owner will also maintain field notes and diagrams of areas of soil relocation if it is relocated on the property.

6.3 Property Notices

In accordance with Part 201, the subject property owner is required to make certain notifications to parties that could reasonably be affected by the contamination present on, or emanating from, the property. A review of the applicability of these notices is summarized below.

Rule 1013 Notice – Utility Easement Holders

In the event utility workers or other persons need to conduct activities on the subject property in an easement, the property owner will provide a notice regarding contamination and potential unacceptable exposures. **See Attachment D.**

Rule 1015 Notice – Abandoned Containers

A Rule 1015 notice is not needed and completion of the Abandoned Container Notice is not required because no abandoned containers are known to exist on the subject property.

Rule 1017 Notice – Migrating Contamination

A Rule 1017 notice (Notice of Migration of Contamination) is not required because no contaminants are known to migrate offsite.

Rule 1019 Notice – Fire/Explosion Hazards

There are no known fire or explosion hazards related to existing contamination; therefore, a Rule 1019 notice is not required.



7.0 OWNER CONTACT

Questions regarding past, ongoing, or planned future work on the subject property should be directed to the Owner contact listed below:

Ms. Karrie Hammer
Tiger's Towing, LLC
19218 11 Mile Road
Battle Creek, Michigan 49014
Phone: 269-601-2311
Email: karriehammer@att.net

8.0 REFERENCES

- Part 201 of 1994 PA 451, as amended, the Natural Resources and Environmental Protection Act, and applicable portions of the associated Part 10 Rules.
- The Michigan Department of Environment, Great Lakes, and Energy, Promulgated Cleanup Criteria, R299.44, R299.46, R299.48, and R299.49, Part 201 Generic Residential and Nonresidential Cleanup Criteria and Screening Levels, December 20, 2013 (Revised October 12, 2023)
- *Phase I Environmental Site Assessment, 3.03-Acre Vacant Land Property, 775 Industrial Road, Marshall, Calhoun County, Michigan*, dated February 4, 2025, prepared by SES Environmental.
- *Baseline Environmental Assessment, Vacant Land, 775 Industrial Road, Marshall, Calhoun County, Michigan*, dated March 24, 2025, prepared by SES Environmental.



TABLES



TABLE 1
CLEANUP CRITERIA COMPARISON FOR SOILS
VOCs, PNAs, and Metals
VACANT LAND
775 INDUSTRIAL ROAD IN MARSHALL, CALHOUN COUNTY, MICHIGAN 49068
SES PROJECT No.: 2025-0250

Volatile Organic Compounds (VOCs), Polynuclear Aromatic Hydrocarbons (PNAs), Polychlorinated Biphenyls (PCBs) (µg/Kg)			n-Butylbenzene	sec-Butylbenzene	Ethylbenzene	Isopropylbenzene	p-Isopropyl toluene	2-Methylnaphthalene	n-Propylbenzene	1,2,3-Trimethylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Xylenes	Other VOCs	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Chrysene	Fluoranthene	Fluorene	Phenanthrene	Pyrene	Other PNAs	PCBs		
Chemical Abstract Service Number (CAS#)			104518	135988	100414	98828	99876	91576	103651	526738	95636	108678	1330207	Various	120127	56553	50328	205992	218019	206440	86737	85018	129000	Various	1336363		
Sample ID	Sample Date	Sample Depth (bgs)	VOCs												PNAs												PCBs
SW-1	11/2/2015	5'	<70	<70	<70	<70	<70	<350	<70	<70	<70	<70	<70	ND	<230	<230	<460	<460	<230	760	<230	<230	630	ND	250		
SW-2	11/2/2015	5'	<76	<76	<76	<76	<76	<380	<76	<76	<76	<76	<76	ND	<240	<240	<470	<470	520	270	<240	<240	420	ND	580		
SW-3	11/2/2015	5'	210	83	<74	<74	98	1,000	83	330	<74	<74	<74	ND	<230	300	<460	<460	<230	<230	350	2,000	230	ND	<120		
SW-4	11/2/2015	5'	530	250	130	<71	290	<350	290	510	860	230	180	ND	320	<230	<460	<460	880	<230	230	1,800	280	ND	96		
SW-5	11/2/2015	5'	<72	<72	<72	<72	<72	<360	<72	<72	<72	<72	<72	ND	<230	<230	<460	<460	<230	<230	<230	<230	<230	ND	<110		
SW-6	11/4/2015	5'	<80	<80	<80	<80	<80	<400	<80	<80	<80	<80	<80	ND	<240	<240	<490	<490	<240	240	<240	<240	250	ND	<120		
SW-7	11/4/2015	5'	<71	<71	<71	<71	<71	<360	<71	<71	<71	<71	<71	ND	<230	520	490	870	680	1,000	320	750	1,200	ND	440		
SW-8	11/4/2015	5'	<71	<71	<71	<71	<71	<360	<71	<71	<71	<71	<71	ND	<230	<230	<450	<450	220	280	<230	<230	230	ND	<110		
SW-9	11/4/2015	5'	<68	180	<68	<68	180	<340	<68	280	190	230	<68	ND	<220	<220	<450	<450	<220	<220	<220	<220	<220	ND	<110		
SW-10	11/4/2015	5'	<67	<67	<67	<67	<67	<330	<67	<67	80	<67	<67	ND	<220	<220	<440	<440	<220	<220	<220	240	<220	ND	<110		
SW-11	11/5/2015	5'	<70	<70	<70	<70	200	<350	<70	230	340	91	<70	ND	<220	<220	<450	<450	<220	<220	<220	650	<220	ND	<110		
SW-12	11/5/2015	5'	<66	<66	<66	<66	<66	<330	<66	<66	<66	<66	<66	ND	<220	<220	<440	<440	<220	<220	<220	<220	<220	ND	<110		
F-1	11/3/2015	10.5'	580	230	<68	<68	83	<340	150	310	280	230	<68	ND	<220	<220	<450	<450	610	<220	1,100	5,200	<220	ND	270		
F-2	11/3/2015	10.5'	<82	260	88	90	270	<410	240	430	740	460	<82	ND	<250	<250	<500	<500	270	<250	<250	870	<250	ND	150		
F-3	11/3/2015	10.5'	260	170	<67	<67	190	<330	<67	310	290	110	<67	ND	<220	220	<440	420	810	700	<220	6,100	680	ND	720		
F-4	11/3/2015	10.5'	<75	450	120	140	580	480	430	1,700	890	740	150	ND	<230	<230	<470	<470	530	270	460	2,200	290	ND	780		
F-5	11/3/2015	10.5'	<77	<77	<77	<77	<77	<380	<77	<77	<77	<77	<77	ND	<240	<240	<470	<470	<240	<240	<240	<240	<240	ND	<120		
F-6	11/4/2015	10.5'	<69	230	<69	<69	250	<350	170	690	1,100	440	<69	ND	<220	<220	<440	<440	360	280	380	1,300	270	ND	470		
F-7	11/4/2015	10.5'	<70	270	<70	73	440	710	200	1,100	2,100	650	95	ND	<220	<220	<450	<450	680	<220	510	1,800	<220	ND	780		
F-8	11/5/2015	10.5'	<81	<81	<81	<81	<81	<410	<81	<81	<81	<81	<81	ND	<590	<590	<1200	<1200	<590	<590	<590	<590	<590	ND	<120		
F-9	11/5/2015	10.5'	150	78	<78	<78	79	<390	<78	<78	93	<78	<78	ND	<590	<590	<1200	<1200	<590	<590	<590	<590	<590	ND	<120		
EGLE-RRD Operational Memorandum No. 1: Part 201 Cleanup Criteria and Part 213 Risk-Based Screening Levels (RBSLs), Revised October 12, 2023 Attachment 1: Soil Tables 2 and 3 Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels and Part 213 Tier 1 RBSLs																											
Statewide Default Background Levels			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Non-Residential (µg/Kg)																											
Drinking Water Protection (DWP)			4,600	4,600	1,500	2.60E+5	NA	1.70E+5	4,600	NA	2,100	1,800	5,600	Various	41,000	NLL	NLL	NLL	NLL	7.30E+5	8.90E+5	1.60E+5	4.80E+5	Various	NLL		
Groundwater Surface Water Interface Protection (GSIP)			ID	ID	360	3,200	NA	4,200	ID	NA	570	1,100	980	Various	ID	NLL	NLL	NLL	NLL	5,500	5,300	2,100	ID	Various	NLL		
Soil Volatilization to Indoor Air Inhalation (SVII)			ID	ID	4.6E+5	7.3E+5	NA	4.90E+6	ID	NA	8.0E+6	4.8E+6	1.2E+7	Various	1.0E+9	NLV	NLV	ID	ID	1.0E+9	1.0E+9	5.10E+6	1.0E+9	Various	1.60E+7		
Ambient Air Infinite Source Volatile Soil Inhalation (VSI)			ID	ID	2.40E+6	2.00E+6	NA	1.80E+6	ID	NA	2.50E+7	1.90E+7	5.40E+7	Various	1.60E+9	NLV	NLV	ID	ID	8.90E+8	1.50E+8	1.90E+5	7.80E+8	Various	8.10E+5		
Ambient Air Finite VSI Criteria for 5 Meter Source Thickness			ID	ID	3.10E+6	2.00E+6	NA	1.80E+6	ID	NA	6.00E+8	4.60E+8	6.50E+7	Various	1.60E+9	NLV	NLV	ID	ID	8.80E+8	1.50E+8	1.90E+5	7.80E+8	Various	2.80E+7		
Ambient Air Finite VSI Criteria for 2 Meter Source Thickness			ID	ID	6.50E+6	3.00E+6	NA	1.80E+6	ID	NA	6.00E+8	4.60E+8	1.30E+8	Various	1.60E+9	NLV	NLV	ID	ID	8.80E+8	1.50E+8	1.90E+5	7.80E+8	Various	2.80E+7		
Ambient Air Particulate Soil Inhalation (PSI)			8.80E+8	1.80E+8	1.30E+10	2.60E+9	NA	2.90E+8	5.90E+08	NA	3.60E+10	3.60E+10	1.30E+11	Various	2.90E+10	ID	1.90E+6	ID	ID	4.10E+9	4.10E+9	2.90E+6	2.90E+9	Various	6.50E+6		
Direct Contact (DC)			8.00E+6	8.00E+6	7.1E+7	8.0E+7	NA	2.60E+7	8.00E+06	NA	1.0E+8	1.0E+8	1.0E+9	Various	7.30E+8	80,000	8,000	80,000	8.00E+6	1.30E+8	8.70E+7	5.20E+6	8.40E+7	Various	16,000		
Soil Saturation Concentration Screening Levels (Csat)			1.00E+7	1.00E+7	1.40E+5	3.90E+5	NA	NA	1.00E+07	NA	1.1E+05	94,000	150,000	Various	NA	NA	NA	NA	NA	NA	NA	NA	NA	Various	NA		

ND Not Detected above laboratory Method Detection Limit (MDL) or Minimum Quantitative Level (MQL)
NA Not analyzed or Not Available
µg/Kg micrograms per Kilogram or parts per billion
bgs Below Grade Surface (feet)
Bold Exceeds Cleanup Criteria

Cleanup Criteria exceeded

TABLE 2
CLEANUP CRITERIA COMPARISON FOR SOILS
METALS
VACANT LAND
775 INDUSTRIAL ROAD IN MARSHALL, CALHOUN COUNTY, MICHIGAN 49068
SES PROJECT No.: 2025-0250

Metals (µg/Kg)			Arsenic	Barium	Cadmium	Chromium	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Zinc
Chemical Abstract Service Number (CAS#)			7440382	7440393	7440439	16065831	7440508	7439896	7439921	7439965	Varies	7440020	7782492	7440224	7440666
Sample ID	Sample Date	Sample Depth (bgs)	Metals												
SP1	9/18/2003	0-1'	<u>20,000</u>	90,000	<u>16,000</u>	84,000	130,000	<u>47,000,000</u>	250,000	<u>660,000</u>	<u>170</u>	54,000	<u>690</u>	ND	290,000
SP2	9/18/2003	1-2'	<u>16,000</u>	39,000	450	9,800	55,000	<u>35,000,000</u>	260,000	<u>590,000</u>	ND	17,000	<u>1,200</u>	ND	110,000
SP3	9/18/2003	1-2'	<u>22,000</u>	57,000	420	10,000	130,000	<u>33,000,000</u>	330,000	370,000	<u>270</u>	24,000	<u>1,700</u>	ND	110,000
SP4	9/18/2003	10-11'	<u>9,500</u>	25,000	160	140,000	63,000	<u>47,000,000</u>	7,600	<u>590,000</u>	ND	58,000	220	ND	240,000
SP5	9/18/2003	3-4'	<u>3,600</u>	47,000	ND	16,000	14,000	<u>11,000,000</u>	8,100	190,000	ND	11,000	ND	ND	25,000
SP6	9/18/2003	1-2'	<u>20,000</u>	61,000	610	17,000	52,000	<u>24,000,000</u>	200,000	320,000	ND	21,000	<u>820</u>	ND	150,000
SW-1	11/2/2015	5'	<u>17,000</u>	39,000	<200	15,000	12,000	NA	13,000	NA	<60	NA	300	<100	82,000
SW-2	11/2/2015	5'	<u>15,000</u>	59,000	<200	14,000	12,000	NA	13,000	NA	<60	NA	400	<100	53,000
SW-3	11/2/2015	5'	4,200	50,000	300	6,600	8,100	NA	7,000	NA	<60	NA	<200	<100	27,000
SW-4	11/2/2015	5'	2,800	14,000	<200	7,200	8,100	NA	5,800	NA	<60	NA	<200	<100	20,000
SW-5	11/2/2015	5'	2,800	14,000	<200	6,100	5,900	NA	4,100	NA	<60	NA	<200	<100	21,000
SW-6	11/4/2015	5'	<u>41,000</u>	170,000	400	18,000	36,000	NA	33,000	NA	100	NA	<u>600</u>	100	92,000
SW-7	11/4/2015	5'	<u>12,000</u>	100,000	<200	5,600	5,400	NA	4,700	NA	<60	NA	<200	<100	35,000
SW-8	11/4/2015	5'	2,900	21,000	<200	7,200	6,300	NA	4,000	NA	<60	NA	<200	<100	23,000
SW-9	11/4/2015	5'	2,000	13,000	<200	6,800	6,400	NA	3,500	NA	<60	NA	<200	<100	29,000
SW-10	11/4/2015	5'	3,300	11,000	<200	5,200	4,900	NA	4,300	NA	<50	NA	<200	<100	20,000
SW-11	11/5/2015	5'	1,500	20,000	<200	8,000	8,400	NA	5,000	NA	<60	NA	<200	<100	25,000
SW-12	11/5/2015	5'	1,900	7,100	<200	3,600	3,800	NA	2,300	NA	<50	NA	<200	<100	16,000
F-1	11/3/2015	10.5'	<u>10,000</u>	21,000	<200	6,000	4,700	NA	3,800	NA	<60	NA	<200	<100	55,000
F-2	11/3/2015	10.5'	<u>11,000</u>	12,000	<200	5,200	6,200	NA	6,200	NA	<60	NA	<200	<100	30,000
F-3	11/3/2015	10.5'	4,000	9,200	<200	4,200	5,000	NA	2,800	NA	<60	NA	<200	<100	24,000
F-4	11/3/2015	10.5'	5,300	52,000	<200	18,000	5,600	NA	2,400	NA	<60	NA	<200	<100	56,000
F-5	11/3/2015	10.5'	<u>12,000</u>	26,000	<200	15,000	8,700	NA	3,500	NA	<60	NA	<200	<100	160,000
F-6	11/4/2015	10.5'	3,000	14,000	<200	6,900	5,300	NA	3,400	NA	<60	NA	<200	<100	25,000
F-7	11/4/2015	10.5'	<u>7,300</u>	9,600	<200	4,800	8,300	NA	4,600	NA	<60	NA	<200	<100	25,000
F-8	11/5/2015	10.5'	<u>13,000</u>	12,000	<200	7,500	5,200	NA	4,600	NA	<60	NA	<200	<100	23,000
F-9	11/5/2015	10.5'	<u>30,000</u>	36,000	<200	15,000	7,900	NA	6,300	NA	<60	NA	300	<100	81,000
EGLE-RRD Operational Memorandum No. 1: Part 201 Cleanup Criteria and Part 213 Risk-Based Screening Levels (RBSLs), Revised October 12, 2023 Attachment 1: Soil Tables 2 and 3 Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels and Part 213 Tier 1 RBSLs															
Statewide Default Background Levels			5,800	75,000	1,200	18,000	32,000	1.20E+07	21,000	4.40E+05	130	20,000	410	1,000	47,000
Non-Residential (µg/Kg)															
Drinking Water Protection (DWP)			4,600	1.30E+6	6,000	1.0E+9	5.80E+6	6,000	7.0E+5	1,000	1,700	1.00E+05	4,000	13,000	5.00E+6
Groundwater Surface Water Interface Protection (GSIP)			4,600	G	G,X	G, X	G	NA	G, X	(G,X)	50	(G)	400	100	G
Soil Volatilization to Indoor Air Inhalation (SVII)			NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	89,000	NLV	NLV	NLV	NLV
Ambient Air Infinite Source Volatile Soil Inhalation (VSI)			NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	62,000	NLV	NLV	NLV	NLV
Ambient Air Finite VSI Criteria for 5 Meter Source Thickness			NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	62,000	NLV	NLV	NLV	NLV
Ambient Air Finite VSI Criteria for 2 Meter Source Thickness			NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	62,000	NLV	NLV	NLV	NLV
Ambient Air Particulate Soil Inhalation (PSI)			9.10E+5	1.50E+8	2.2E+6	1.50E+8	5.90E+7	ID	4.4E+7	1.50E+06	8.80E+6	1.60E+07	5.90E+7	2.90E+6	ID
Direct Contact (DC)			37,000	1.30E+8	2.1E+6	1.0E+9	9.00E+6	5.80E+08	9.0E+5	9.00E+07	5.80E+5	1.50E+08	9.60E+6	9.00E+6	6.30E+8
Soil Saturation Concentration Screening Levels (Csat)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

ND Not Detected above laboratory Method Detection Limit (MDL) or Minimum Quantitative Level (MQL)
NA Not analyzed or Not Available
µg/Kg micrograms per Kilogram or parts per billion
bgs Below Grade Surface (feet)
Bold Exceeds Cleanup Criteria

Cleanup Criteria exceeded

TABLE 3 (Page 1)
CLEANUP CRITERIA COMPARISON FOR GROUNDWATER
METALS
775 INDUSTRIAL ROAD IN MARSHALL, CALHOUN COUNTY, MICHIGAN 49068
SES PROJECT No.: 2025-0250

Metals (µg/L)			Iron	Manganese
Chemical Abstract Service Number (CAS#)			7439896	7439965
Sample ID	Sample Date	Screen Depth (bgs)	Metals	
MW-201	5/11/2023	5 - 15'	<u>7200</u>	<u>890</u>
MW-201R	8/11/2023	5 - 15'	<u>15000</u>	<u>460</u>
MW-201	11/14/2023	5 - 15'	<u>4700</u>	<u>260</u>
MW-201R	4/17/2024	5 - 15'	<u>5900</u>	<u>150</u>
MW-201	7/11/2024	5 - 15'	<u>640</u>	<50
EGL-RRD Operational Memorandum No. 1 Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels (RBSLs), Revised October 12, 2023 Attachment 1: Groundwater Table 1 Residential and Non-residential Part 201 Generic Cleanup Criteria and Screening Levels and Part 213 Tier 1 RBSLs				
Non-Residential (µg/L)				
Non-Residential Drinking Water (DW)			300	50
Groundwater Surface Water Interface (GSI)			NA	(G,X)
Non-Residential Groundwater Volatilization to Indoor Air Inhalation (GVII)			NLV	NLV
Screening Levels (µg/L)				
Water Solubility			NA	NA
Flammability and Explosivity Screening Level			ID	ID

ND Not Detected above the laboratory Method Detection Limit (MDL) or Minimum C

NA Not Available or Not Analyzed

NVL No value listed

µg/L micrograms per Liter or parts per billion

bgs Below Grade Surface (feet)

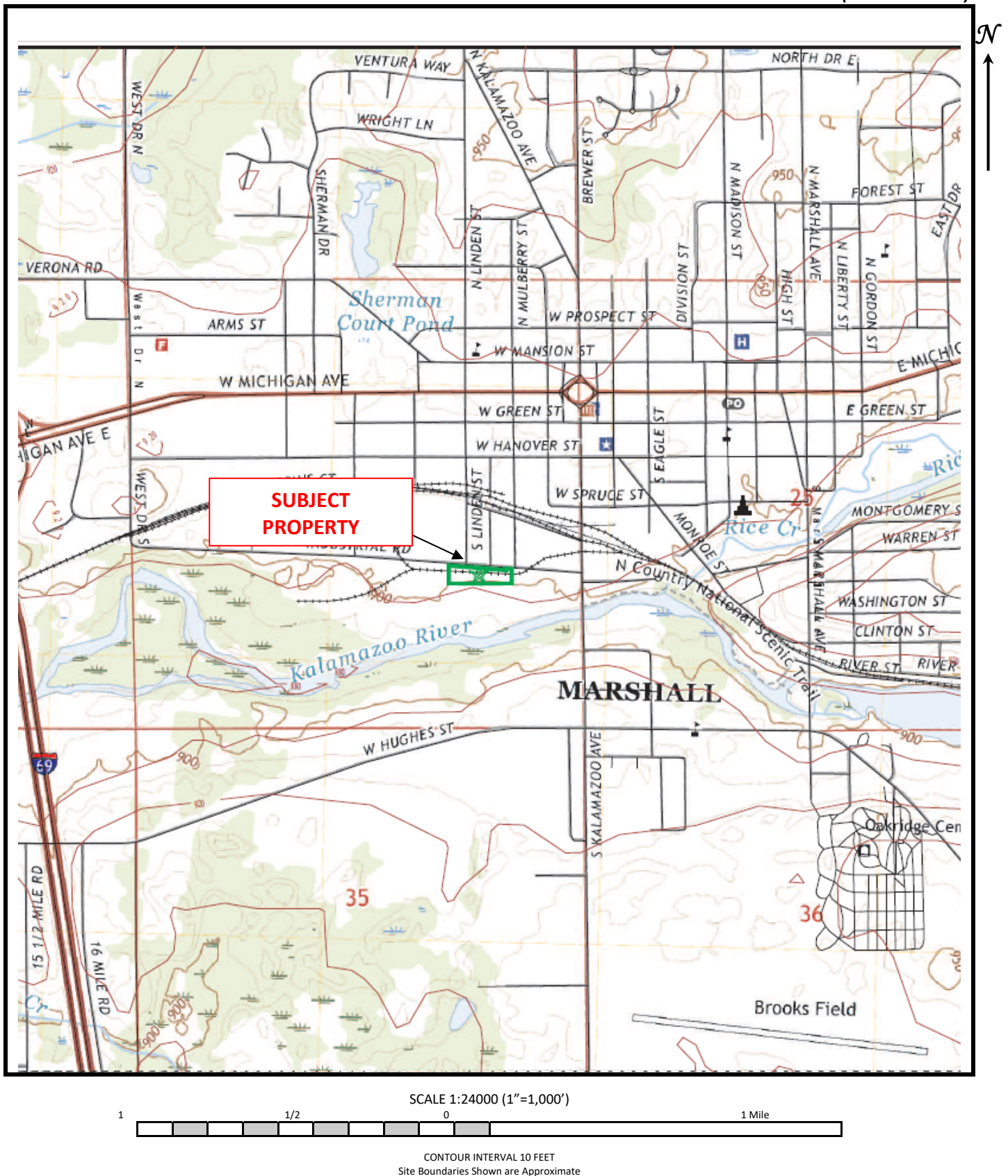
Bold Exceeds Cleanup Criteria

Cleanup Criteria exceeded

FIGURES



Marshall, Michigan 7.5 Minute Quadrangle Map
(Published 2019)

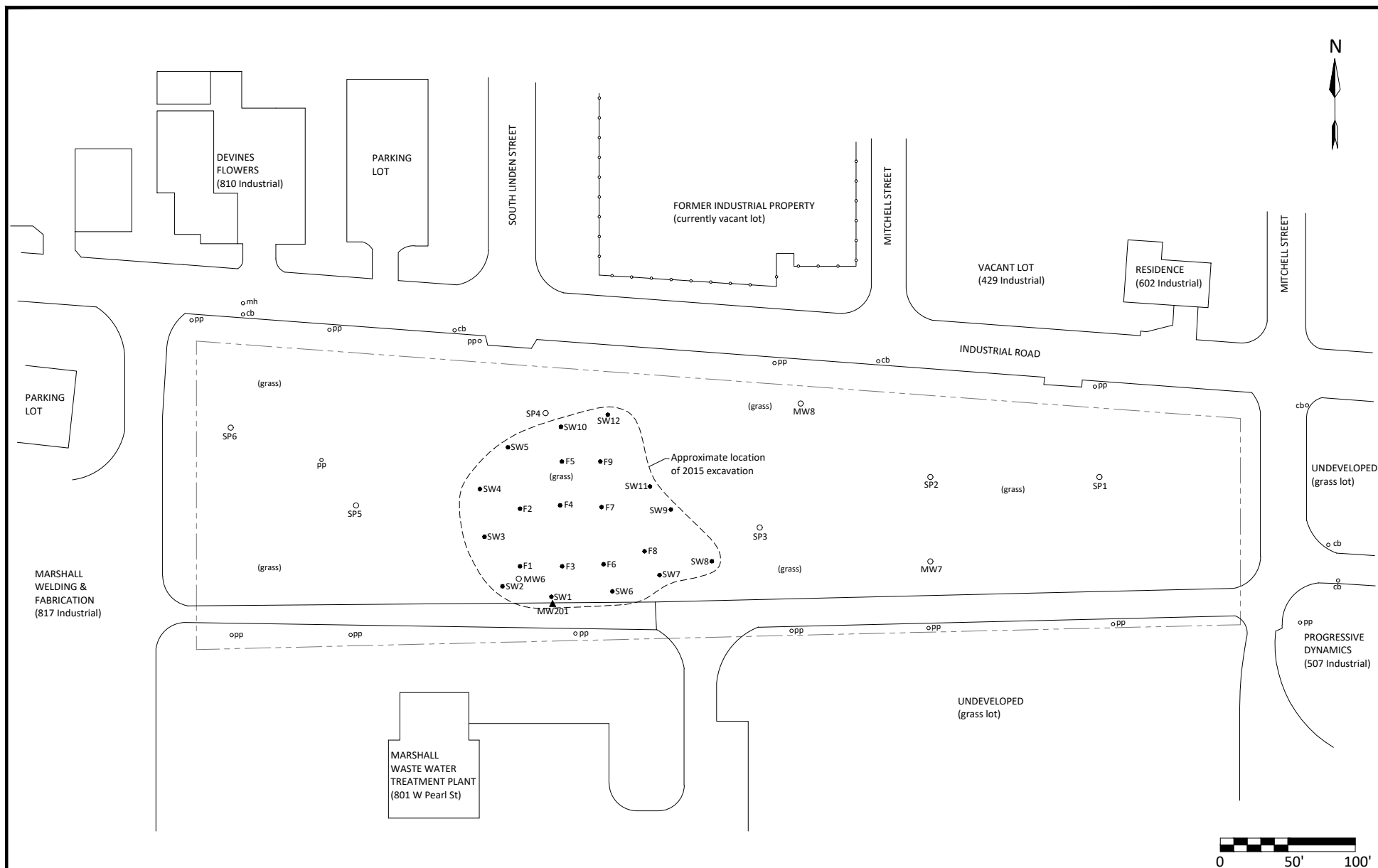


Topographic Map

3.03-Acre Vacant Land Property
775 Industrial Road
Marshall, Calhoun County, Indiana 49068
SES Project No.: 2025-0091

Figure 1





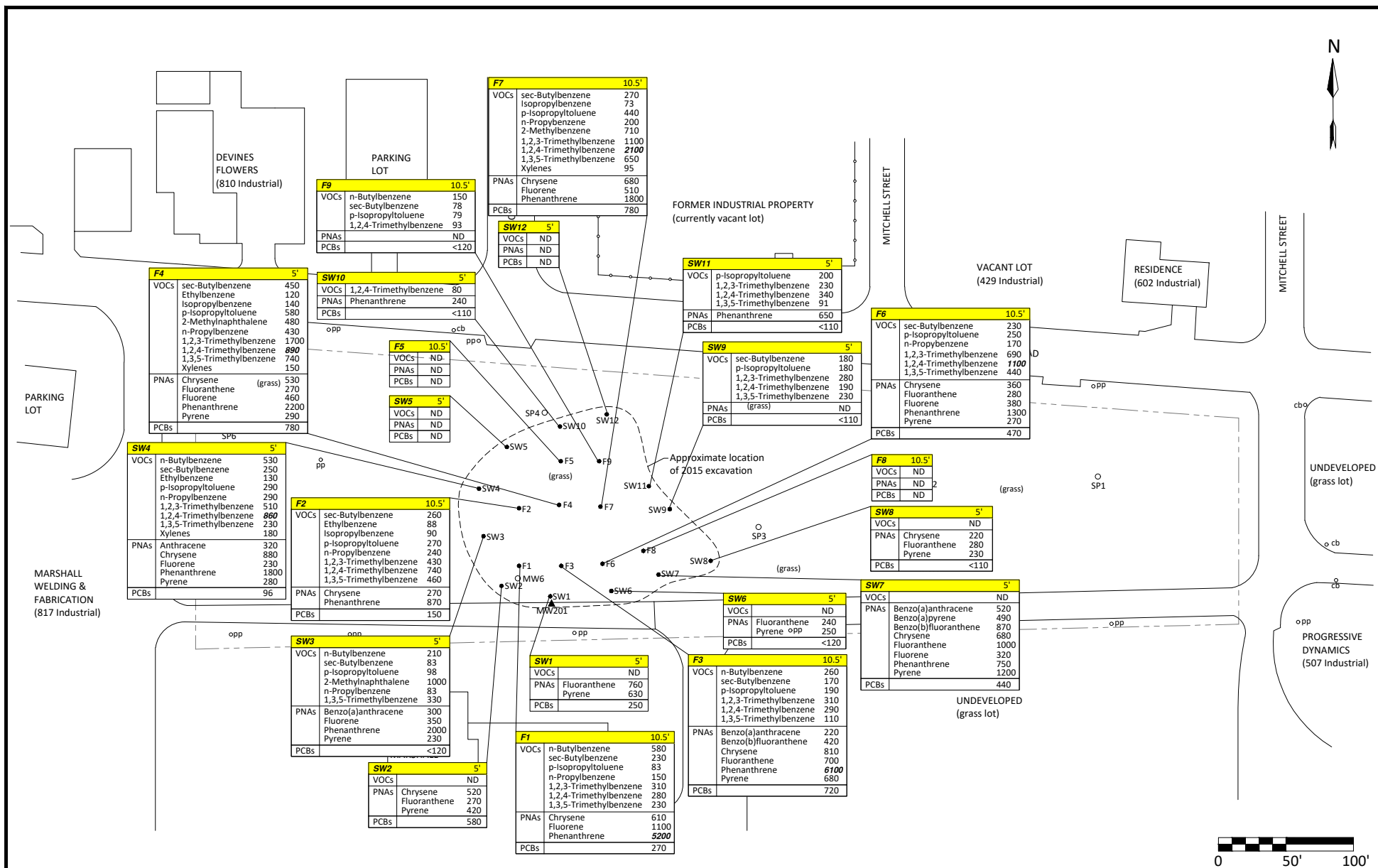
- NOTES: 1. 2015 excavation area and associated sample locations digitized from Amec, Fig.2 Excavation Zone, dated 12/2/15
2. SP/MW locations digitized from SME, Soil Probe Location Diagram, dated 9/17/03
3. MW203 location digitized from AST, Site Map dated 4/22/21

TITLE	SUBJECT PROPERTY WITH SAMPLE LOCATIONS
LOCATION	3.03-Acre Vacant Land Property 775 Industrial Road Marshall, Calhoun County, Michigan

LEGEND	APPROX PARCEL BOUNDARY
pp	POWER POLE
cb	CATCH BASIN
mh	MANHOLE
●▲	PREVIOUS SAMPLE LOCATIONS

PROJECT	2025-0250
SCALE	1" = 100'
DATE	3/7/25
DRAWN	dn
CHECKED	df
FILE	20250250
FIGURE	2





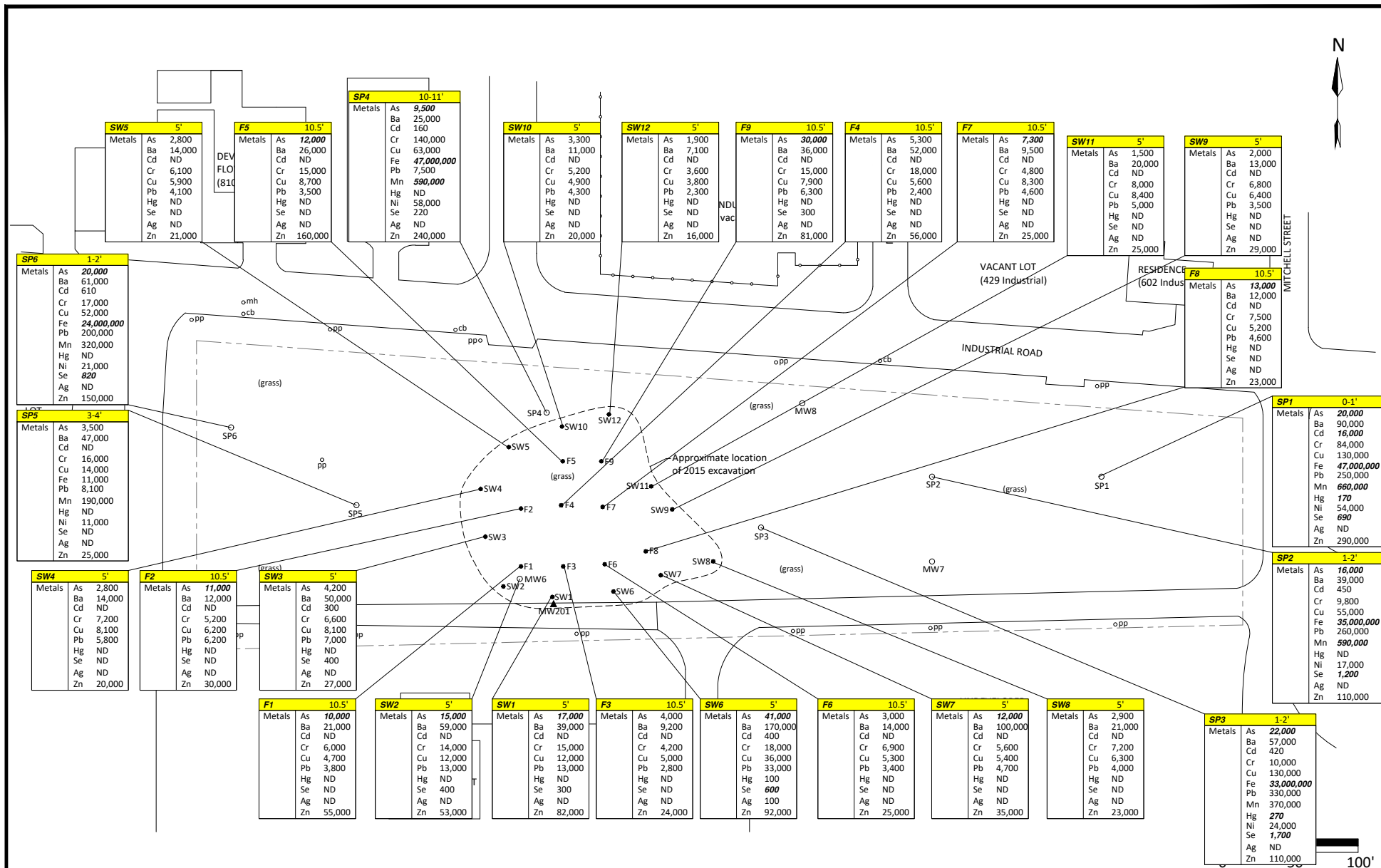
- NOTES: 1. 2015 excavation area and associated sample locations digitized from Amec, Fig. 2 Excavation Zone, dated 12/2/15
2. SP/MW locations digitized from SME, Soil Probe Location Diagram, dated 9/17/03
3. MW203 location digitized from AST, Site Map dated 4/22/21

TITLE	SOIL ANALYTICAL RESULTS - VOCs & PNAs
LOCATION	3.03-Acre Vacant Land Property 775 Industrial Road Marshall, Calhoun County, Michigan

LEGEND	APPROX PARCEL BOUNDARY
•pp	POWER POLE
•cb	CATCH BASIN
•mh	MANHOLE
○●▲	PREVIOUS SAMPLE LOCATIONS
NOTE: Concentrations reported in ug/kg (ppb)	

PROJECT	2025-0250
SCALE	1" = 100'
DRAWN	dn
FILE	20250250
DATE	4/16/25
CHECKED	df
FIGURE	3a





NOTES: 1. 2015 excavation area and associated sample locations digitized from Amec, Fig.2 Excavation Zone, dated 12/2/15
 2. SP/MW locations digitized from SME, Soil Probe Location Diagram, dated 9/17/03
 3. MW203 location digitized from AST, Site Map dated 4/22/21

TITLE SOIL ANALYTICAL RESULTS - Metals

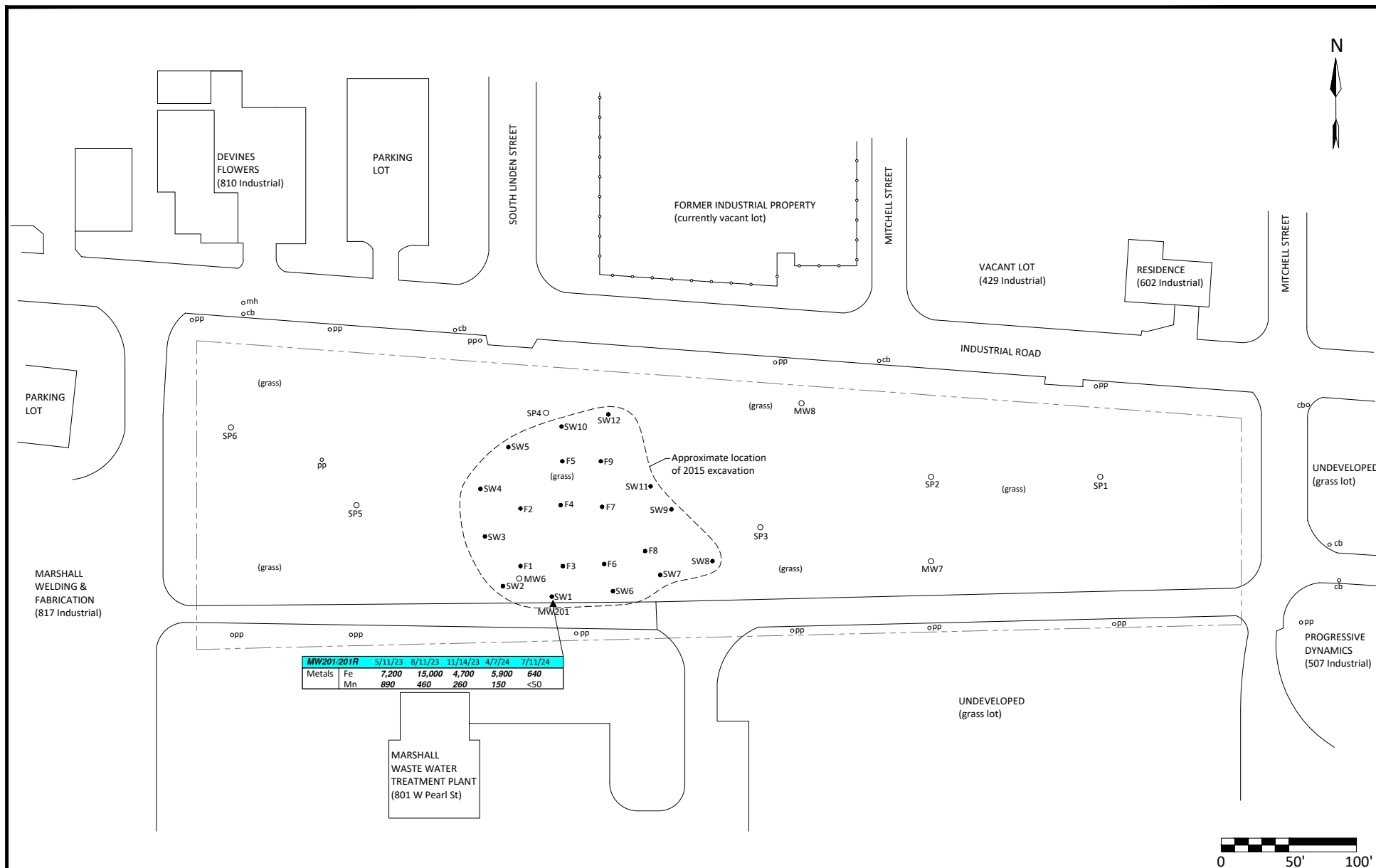
LOCATION
3.03-Acre Vacant Land Property
775 Industrial Road
Marshall, Calhoun County, Michigan

- LEGEND
- APPROX PARCEL BOUNDARY
 - pp POWER POLE
 - cb CATCH BASIN
 - mh MANHOLE
 - PREVIOUS SAMPLE LOCATIONS

NOTE: Concentrations reported in ug/kg (ppb)

PROJECT	
2025-0250	
SCALE	DATE
1"= 100'	4/16/25
DRAWN	CHECKED
dn	df
FILE	FIGURE
20250250	3b





- NOTES: 1. 2015 excavation area and associated sample locations digitized from Amec, Fig.2 Excavation Zone, dated 12/2/15
2. SP/MW locations digitized from SME, Soil Probe Location Diagram, dated 9/17/03
3. MW203 location digitized from AST, Site Map dated 4/22/21

TITLE GROUNDWATER ANALYTICAL RESULTS

LOCATION

3.03-Acre Vacant Land Property
775 Industrial Road
Marshall, Calhoun County, Michigan

LEGEND

- APPROX PARCEL BOUNDARY
- pp POWER POLE
- cb CATCH BASIN
- mh MANHOLE
- PREVIOUS SAMPLE LOCATIONS

NOTE: Concentrations reported in ug/L (ppb)

PROJECT

2025-0250

SCALE

1"= 100'

DRAWN

dn

FILE

20250250

DATE

4/16/25

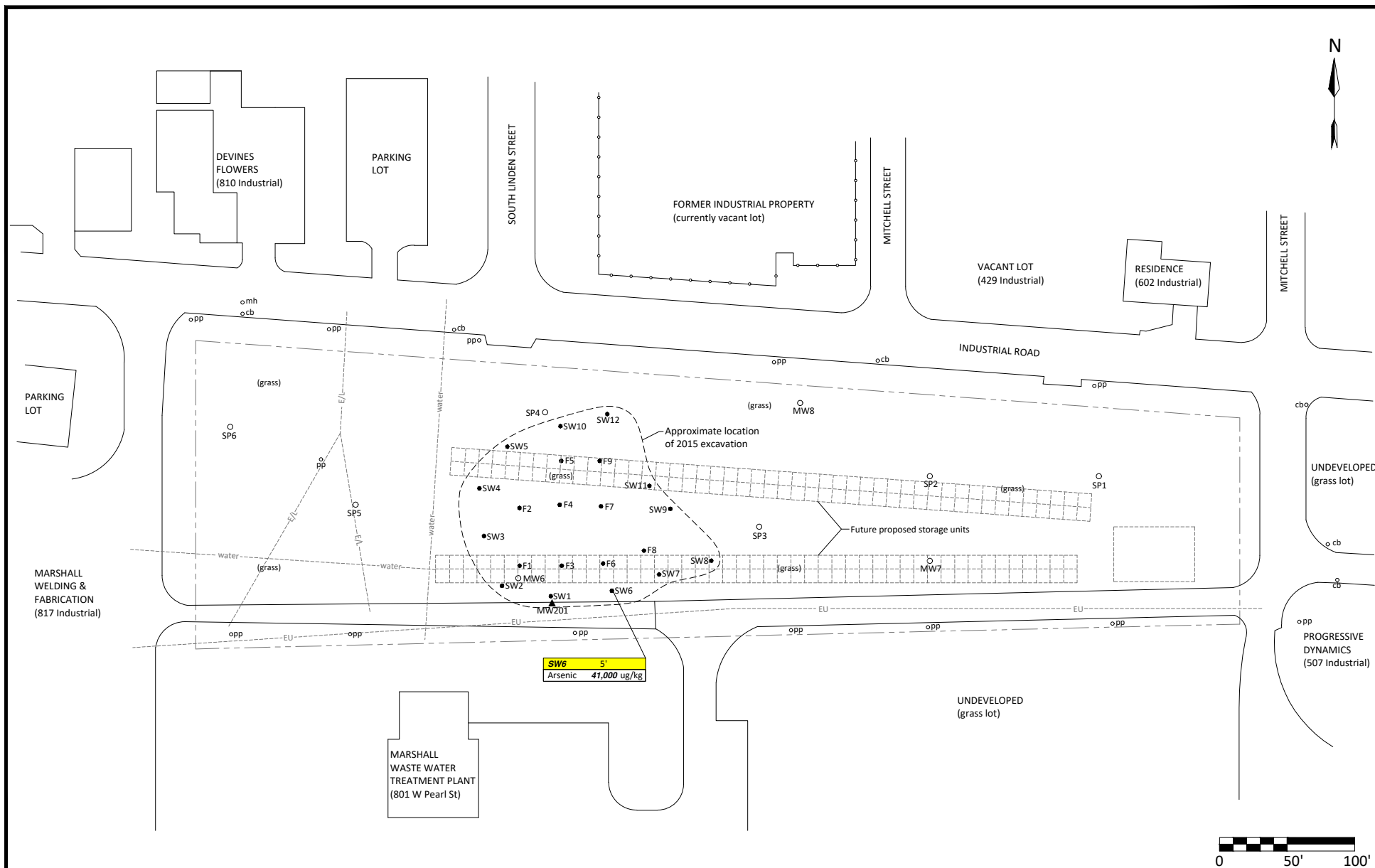
CHECKED

df

FIGURE

4





- NOTES: 1. 2015 excavation area and associated sample locations digitized from Amec, Fig.2 Excavation Zone, dated 12/2/15
2. SP/MW locations digitized from SME, Soil Probe Location Diagram, dated 9/17/03
3. MW203 location digitized from AST, Site Map dated 4/22/21

TITLE
NON-RESIDENTIAL EXCEEDANCES - COMPLETE PATHWAYS
LOCATION
3.03-Acre Vacant Land Property 775 Industrial Road Marshall, Calhoun County, Michigan

LEGEND
--- APPROX PARCEL BOUNDARY
•pp POWER POLE
•cb CATCH BASIN
•mh MANHOLE
○ ● PREVIOUS SAMPLE LOCATIONS

PROJECT
2025-0250
SCALE
1" = 100'
DATE
4/16/25
DRAWN
dn
CHECKED
df
FILE
20250250
FIGURE
5



ATTACHMENT A

EGLE-RRD Due Care Guide



Due Care Obligations

For Owners or Operators of Contaminated Property

Introduction

This guide to Due Care describes the obligations of an owner or operator of contaminated property, which are designed so that contaminated property can be safely used.

Section 20107a of Part 201, Environmental Remediation, and Section 21304c, Leaking Underground Storage Tanks, of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA), requires that owners and operators take measures to ensure that existing contamination on a property does not cause unacceptable risks and is not exacerbated. Such measures include evaluating the contamination and undertaking the necessary actions to address the unacceptable risks. Due care obligations are not related to the owner or operator's liability for the contaminants; they apply to both non-labile parties and liable parties.

NOTE

This document is provided by the Michigan Department of Environment, Great Lakes, and Energy (EGLE) for informational purposes. A thorough review of Part 201 and Part 213 Statutes, Part 10 Administrative Rules, and guidelines should be completed before making site-specific decisions. These documents are available at Michigan.gov/EGLEDueCare.

Due Care Requirements – Sections 20107a & 21304c

An owner or operator of contaminated property shall do all of the following with respect to contamination at the property.

- ▶ Prevent exacerbation of existing contamination.
- ▶ Prevent unacceptable human exposure and mitigate fire and explosion hazards to allow for the intended use of the facility in a manner that is protective of the public health and safety.
- ▶ Take reasonable precautions against reasonably foreseeable acts or omissions of a third party.

- ▶ Provide notification to EGLE and others.
- ▶ Provide reasonable cooperation, assistance, and access to the persons that are authorized to conduct response activities at the property.
- ▶ Comply with any land use or resource use restrictions established or relied on in connection with the response activities.
- ▶ Not impede the effectiveness or integrity of any land use or resource use restriction.

Sections 20101 and 21303 of the NREPA define a facility or a site as property with contamination in soil or groundwater at concentrations above Michigan's cleanup criteria for residential property.

An owner's or operator's "due care" obligations summarized in this document are specified in Part 201, Section 20107a and its Administrative Rules 1001-1021 and in Part 213, Section 21304c. Find more information at Michigan.gov/EGLEDueCare, including:

- ▶ Part 201 of NREPA
- ▶ Part 201 Administrative Rules (Part 10)
- ▶ Part 201 Residential Cleanup Criteria
- ▶ Part 213 of NREPA
- ▶ EGLE RRD Guidance Documents
- ▶ Due Care Brochure, Matrix, and Forms

Prevent Exacerbation

Exacerbation occurs when an activity undertaken by the person who owns or operates the property causes the existing contamination to migrate beyond the property boundaries. Examples of exacerbation can include:

- ▶ Mishandling excavated contaminated soil such that contamination now migrates off-site
- ▶ Pumping contaminated water from footing drains into a nearby ditch
- ▶ Creating a new migration pathway by putting a utility line through a zone of highly contaminated groundwater or soil.

An owner or operator can also exacerbate contamination by changing the facility conditions in a manner that would increase the response activity or corrective action costs for the liable party. An example might be to place a building over the source of the existing contamination. A person that causes exacerbation would be liable for remediation of the contamination they caused or paying the increase in the response activity or corrective action costs.

Prevent Unacceptable Human Risk

Owners and operators must evaluate the existing contamination to determine if the people using or working at the property would be exposed to contamination at levels above the appropriate generic or site-specific criteria. Upon the identification of unacceptable risks, the owner and operators must then undertake the actions that are necessary to prevent unacceptable exposures to contamination in order to demonstrate compliance with their due care obligations. Criteria for differing land uses can be found in the Part 201 Administrative Rules (Rules 1-50).

For example, if groundwater used for drinking is contaminated above the drinking water criteria then the owner and operator must prevent the use of the contaminated drinking water. If soils are contaminated above the direct contact criteria for the appropriate land use at the surface of the property, then people must be prevented from coming into contact with those soils by restricting access, installing a barrier to prevent exposure, or removing contaminated soil. Exposure barriers can be clean soil, concrete, paving, etc. In some instances, remediation of the contamination may be the most cost effective response.

In addition, if there is a potential unacceptable risk for utility workers or people conducting activities in an easement on the property, then utility and/or easement holders must be notified in writing of the conditions by the owner and operator. If there is a fire and explosion hazard, the local fire department must be notified, and the situation must be mitigated.

Take Reasonable Precautions

Taking reasonable precautions against the reasonably foreseeable actions and omissions of a third party means trying to prevent things that could cause a

third party to be exposed to an unacceptable risk. This might include:

- ▶ notifying contractors of contamination so they can take proper precautions
- ▶ preventing trespass that would result in an unacceptable exposure (neighborhood kids playing in a vacant industrial yard that has direct contact hazards)
- ▶ taking actions to secure abandoned containers so they don't get damaged by traffic, etc.

Provide Reasonable Cooperation, Assistance, and Access

Owners and operators must allow a person authorized to take response activities or corrective actions on the property (such as the liable person, or the state) to take such actions as: installing monitor wells, operating a remediation system, and maintaining the integrity of an exposure barrier, etc. However, the statute specifically states that this shall not be interpreted as providing any right of access not expressly authorized by law. The authorized person must still go through the normal process of acquiring voluntary or court ordered access, including the potential for compensation as the parties and/or court deem reasonable.

Comply With and Not Impede the Effectiveness of Land Use and Resource Use Restrictions

If there are land use or resource use restrictions on the property, owners and operators must comply with those restrictions and not take actions that would impede their effectiveness. Examples of compliance might include:

- ▶ not installing a well when a restriction on using the groundwater for drinking water purposes
- ▶ not allowing a residential use on a property if there is a restriction limiting the property use to nonresidential
- ▶ not removing a barrier installed to prevent contact with contaminated soil
- ▶ not turning off an operating remediation system.

Evaluating the Need for Due Care

The necessity for conducting response actions are determined by evaluating the current/intended property use and the existing contamination. Based on that evaluation, the actions needed to prevent unacceptable exposures and comply with all due care obligations must be implemented. Environmental professionals often assist with this process (see the Environmental Professionals section).

Due Care Documentation

Owners and operators must maintain documentation that an evaluation to identify unacceptable risks was conducted, necessary actions have been taken, and the actions are adequate. Certain response actions (e.g., exposure barriers, mitigation system, etc.) will require continued maintenance, inspections, and repair that must also be documented.

Documentation requirements are described in the Part 201 Administrative Rule 1003. The documentation does not need to be submitted to EGLE but must be available for EGLE to review upon request within eight (8) months of becoming the owner or operator or of having knowledge that the property is contaminated. You may request an EGLE review and determination and submit Documentation of Due Care Compliance pursuant to Sections 20114g or 21323n.

Notification

The Part 10 (“due care”) Rules require notification to EGLE and others in the following circumstances:

- ▶ Notify EGLE if there are discarded or abandoned containers that contain hazardous substances on the property; see Form EQP 4476.
- ▶ Notify EGLE and adjacent property owners if contaminants are migrating off the property; see Form EQP 4482.
- ▶ Notify the local fire department if there is a fire or explosion hazard.
- ▶ Notify utility and easement holders if contaminants could cause unacceptable exposures and/or fire and explosion hazards.

Notices must be made within 45 days of becoming the owner or operator, or of having knowledge of the conditions. Forms are available at EGLE District Offices and online at Michigan.gov/EGLEDueCare.

Exemptions/Limitations

Parts 201 and 213 provide exemptions to the “due care” obligations to prevent exacerbation, prevent or mitigate unacceptable exposures, and take reasonable precautions for the following entities:

- ▶ An owner or operator of property where the contamination is migrating onto the property.
- ▶ An owner or operator of a utility franchise on the property.
- ▶ An owner or operator of the severed mineral rights to the property.
- ▶ A local unit of government (LUG) that: involuntarily acquires title or control of property by virtue of its governmental functions, or the property is transferred to the LUG from the state or a LUG that is not liable under Part 201 or 213, or by seizure, receivership or forfeiture or court order, or voluntarily acquired the property and conducted a baseline environmental assessment (BEA).
- ▶ A LUG that has an easement interest or holds a utility franchise for a transportation or utility corridor or public right of way, or for conveying or providing goods and services.
- ▶ A LUG that is not liable and is leasing the property to a non-labile party.

However, if the state or LUG exempted above offers access to the property and makes it available for public use, such as for parks, schools, municipal office buildings, public works operations, etc., then the person, state, or LUG must comply with all due care obligations for that portion of the property that is accessible to the public.

Additionally, the person, state, or LUG that is exempted above still has due care obligations to provide cooperation, assistance, and access, comply with land use or resource use restrictions, and not impede the integrity or effectiveness of the land or

resource use restriction. Further, Sections 20107a(6) and 21304c(6) specify utilities and severed mineral right owners must comply with due care in regard to their own activities.

While Parts 201 and 213 provide these exemptions, it may be in the owner's and operator's best interest to ensure the property is safe for the intended use and that they do not cause a new release by their actions or exacerbate pre-existing conditions.

Environmental Professionals

Resources for finding an environmental professional, consultant or engineer include online searches for Environmental, Ecological, or Engineering consulting firms; referrals from financial institutions, real estate agencies, or trade associations, etc. It is wise to ask the professional or consultant for references and inquire as to past due care compliance documentation reports they have successfully completed. EGLE does not provide recommendations for environmental professionals, consultants or engineers.

EGLE Resources

Environmental Assistance Center:

800-662-9278 | EGLE-Assist@Michigan.gov

Remediation and Redevelopment Division:

Michigan.gov/EGLEERRD

Due Care

Jeanne Schlaufman

586-753-3823 | SchlaufmanJ1@Michigan.gov

Office of Oil, Gas and Minerals Division

Michigan.gov/EGLEOilGasMinerals

Part 615 (Supervisor of Wells – oil/gas wells)

Part 625 (Mineral Wells)

Kaitlyn Bertram

231-878-6138 | BertramK@Michigan.gov

EGLE will not discriminate against any individual or group on the basis of race, sex, religion, age, national origin, color, marital status, disability, political beliefs, height, weight, genetic information, or sexual orientation. Questions or concerns should be directed to the Office of Human Resources, P.O. Box 30473, Lansing, MI 489093.

To request this material in an alternate format, contact EGLE-Accessibility@Michigan.gov or 800-662-9278.

ATTACHMENT B

Phase I Environmental Site Assessment, February 4, 2025



ATTACHMENT C

Baseline Environmental Assessment, March 24, 2025





BASELINE ENVIRONMENTAL ASSESSMENT

Vacant Land
775 Industrial Road
Marshall, Calhoun County, Michigan 49068
SES Project No.: 2025-0250

March 24, 2025

Prepared for:

Tiger's Towing, LLC
19218 11 Mile Road
Battle Creek, Michigan 49014
Attn: Ms. Karrie Hammer



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APPENDICES

Appendix A	Phase I ESA Report, February 4, 2025
Appendix B	Soil Boring Logs
Appendix C	Land Survey Map
Appendix D	Environmental Professional Qualification Summary



1.0 INTRODUCTION

SES Environmental (SES) prepared this Baseline Environmental Assessment (BEA) on behalf of Tiger's Towing, LLC for the vacant land property located at 775 Industrial Road in Marshall, Calhoun County, Michigan (referred to herein as the "subject property"). Refer to Figure 1 for a map showing the subject property location.

The BEA was conducted pursuant to Section 20126(1)(c) of Part 201 of the Natural Resources and Environmental Protection Act (NREPA), 1994 PA 451, as amended, and the Rules promulgated thereunder. The purpose of this BEA is to establish a liability exemption for a new owner or operator of a property that is designated as a "facility" as defined by Section 20101(1)(r). The conditions of this exemption require the submitter to conduct the BEA prior to or within 45 days after purchase, occupancy, or foreclosure. Also, the BEA must be submitted to the Michigan Department of Environment, Great Lakes, and Energy (EGLE) and subsequent purchaser or transferee within 6 months of the date of property purchase, occupancy, or foreclosure. The "Baseline Environmental Assessment Submittal Form," EGLE Remediation and Redevelopment Division, Form EQP 4025 (12/24), is attached to this document.

The subject property is classified as a "facility" (as defined by Part 201 of the NREPA, as amended) because soil and groundwater contamination has been detected at concentrations exceeding generic residential land-use cleanup criteria published by EGLE.

This BEA was prepared to meet the requirements for BEAs published by EGLE in its document, *Contents of BEA Report*, and the amended Administrative Rules for BEAs (R299.51001 to R299.51021 M.A.C.).

1.1 Owner/Operator Information

Tiger's Towing, LLC purchased the subject property on February 11, 2025, from Morris Stulberg Trust.

At the time of the Phase I Environmental Site Assessment (ESA) subject property inspection on January 17, 2024, the subject property consisted of vacant land.

1.2 Intended Use of Property

Tiger's Towing, LLC intends to develop the property with a commercial building in the east portion and utilize the property for storing trailers.

1.3 Executive Summary of All Appropriate Inquiry (AAI)

SES conducted a Phase I ESA for the subject property, which is documented in a report dated February 4, 2025 (Appendix A). The Phase I ESA was conducted under the guidance and protocols of the American Society of Testing and Materials (ASTM) *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (Standard E1527-21)* and the United States Environmental Protection Agency (USEPA) *Standards and Practices for All Appropriate Inquiries; Final Rule (40 CFR Part 312)*. Completion of the Phase I ESA under these standards was intended to satisfy one of the requirements to qualify for the *innocent landowner*, *contiguous property owner*, or *bona fide prospective purchaser* limitations on CERCLA liability.



The scope of the Phase I ESA included a physical subject property inspection, historical data review, regulatory agency records review, and interviews with persons potentially familiar with subject property activities.

The subject property is generally rectangle-shaped and consists of 3.03 acres of land. Access to the property is from informal entrances off Industrial Road to the north and an access drive that extends along the south property boundary.

At the time of the site visit conducted on January 17, 2025, the property consisted of vacant land.

The subject property consists of grass landscaping and cleared land. At the time of inspection, survey markers were observed along the south-central property boundary, and construction equipment and sewer and utility equipment were stored on cleared areas across the east portion of the property. Buried telephone conduits and associated access boxes are located along the north property boundary. Utility marking flags were observed on the southwest portion of the property. No evidence of current or former manufacturing operations, building foundations, in-ground structures, stressed vegetation, or staining was observed; however, snow cover prevented a thorough inspection of ground surfaces across the west portion of the property and along the north and south property boundaries.

The historical research presented in this assessment has established the use of the subject property since 1899. Historical review indicates the subject property was part of a larger railroad maintenance yard from at least 1899 through 1931. A pattern warehouse is shown in a 1945 Sanborn fire insurance map on the northwest corner of the subject property and extending onto the west adjoining property; however, the majority of building structures associated with former railroad maintenance activities were documented on the west adjoining property. The property operated as a storage yard for an adjoining foundry to the east and southeast from 1938 through 1960. The property then began operations as Marshall Iron & Metal, an automobile salvage scrap yard, from at least 1961 through 1996. Railroad lines were abandoned after 1966. Scrap yard operations ceased in 1996, at which time all scrap material was removed. The property has generally consisted of vacant land since 1996.

A Phase I ESA was prepared in 2003 and identified three RECs: 1) former railroad maintenance operations, scrap yard operations, the presence of fill and debris, and bare soil; 2) former UST operations; and 3) Part 201 listings and documented impact to soil and groundwater at the property.

An interview conducted with a representative of the City of Marshall Industrial Pretreatment/Safety Wastewater Department revealed investigations have been conducted in 1993, 1995, 1997 and 2001. A 7,000-gallon steel UST was removed from the north-central portion of the property in September 2000. The UST was an oil/water separator process tank that had been used to collect oil and water from a sloped cement slab collection area. The sludge, soils, and liquids from the UST and overburden were reportedly transported to a landfill at the time of removal. Soil samples were collected from the former tank basin in 2001, and a summary of the analytical results indicated metals, xylenes, 1,2,4-trimethylbenzene, and naphthalene were detected above laboratory detection limits, with chromium being detected above the former Michigan Department of Environmental Quality ([MDEQ]; now identified as EGLE) Part 201 Residential Drinking Water Protection Criteria. Soil and groundwater investigation from 1993 through 2001 indicated impact existed at the property at levels exceeding Part 201 Residential cleanup criteria. In addition, the property was listed as a MDEQ Part 201 Contaminated Site due to metals, polychlorinated biphenyls (PCBs), and polynuclear aromatic hydrocarbons (PNAs), among others, detected due to historical Property operations.



As part of the Phase I ESA, SES reviewed available reports for the subject property. Review of the reports indicated the following:

- A *Baseline Environmental Assessment* dated 2003 indicates a Phase I ESA had been completed for the subject property and additional acreage to the west. At the time of inspection, the property consisted of a gravel drive and grass with areas of exposed soil and debris (metal pieces, glass, plastic, concrete, wood poles, metal beams, metal piping, bricks, tires, slag, cinders, and metal siding). Stressed vegetation and three monitoring wells were also observed. Historical information indicated railroad tracks extended across the Property from at least 1899 until approximately 1966. The subject property and now-existing west adjoining property were utilized as a portion of a railroad shop from at least 1899 until approximately 1931. According to historical Sanborn maps, the railroad shop roundhouse, machine shop, turntable, and paint shop, used to repair rail cars, adjoined the subject property to the west. A coal house and a lumber warehouse, associated with the railroad shop, were located on the now-existing west adjoining property. From approximately 1938 until 1960, the property appeared to have been used as a portion of an adjoining foundry, with a pattern warehouse building occupying the now existing west adjoining property. The subject property appeared to have been utilized as a scrap yard from approximately 1961 until at least 1996. The subject property has remained undeveloped since 1996. The Phase I ESA identified a REC associated with former railroad maintenance operations, scrap yard operations, the presence of slag and debris, and bare soil as a REC.

An interview was conducted with a representative of the City of Marshall Industrial Pretreatment/Safety Wastewater Department regarding the history of the property. The information included an updated summary of site information and analytical data from 1993, 1995, 1997, and 2001 and indicated a 7,000-gallon steel UST was removed from the north-central portion of the property in September 2000. The UST was an oil/water separator process tank that had been used to collect oil and water from a sloped cement slab collection area. The sludge, soils, and liquids from the UST and overburden were reportedly transported to a landfill at the time of removal. Soil samples were collected from the former tank basin in 2001, and a summary of the analytical results indicated metals, xylenes, 1,2,4-trimethylbenzene, and naphthalene were detected above laboratory detection limits, with chromium being detected above the former MDEQ Part 201 Residential Drinking Water Protection Criteria. The UST was also identified as a REC.

Soil and/or groundwater sampling was previously performed at the property in 1993, 1995, 1997, and 2001. Soil and groundwater impact existed at the property at levels exceeding Part 201 Residential cleanup criteria. In addition, the property is listed as an MDEQ Part 201 Contaminated Site due to metals, PCBs, and PNAs, among others, detected due to historical property operations. The Part 201 listing and previous soil and groundwater impact documented at the property were identified as a REC in the Phase I ESA.

A Phase II ESA was conducted in September 2003 and included advancement of six soil borings and three groundwater samples from existing monitoring wells MW6, MW7 and MW8. A map provided as an attachment indicates investigation on the east, southeast, north-central, central, south-central, northwest, and west portions of the property. The results of the Phase II ESA indicated arsenic, chromium, iron, manganese, mercury, selenium, benzo(a)pyrene, carbazole, fluoranthene, naphthalene, phenanthrene, and xylenes were present in soil at concentrations exceeding applicable Part 201 Residential cleanup criteria. In addition, iron, manganese, fluorene and phenanthrene were present in groundwater at concentrations exceeding applicable Part 201 Residential cleanup criteria. Eight inches of free product was observed in monitoring well MW6. The free product was black in color and appeared to be some type of oil, based on visual and olfactory observations. The property was identified as a "facility" as defined by Section 20101(1)(1) of Part 201 of NREPA, PA451 of 1994, as amended.

- Correspondence dated 2015 indicates two excavation areas are associated with the central portion of the property, north of the existing wastewater treatment plant on the south adjoining property.



- A report dated 2017 indicates a pilot study was conducted on the south-central portion of the property, six borings were located along the south property boundary, and impacted soils had been excavated on the central portion of the property.
- A report from 2021 indicates soil and groundwater data was limited. A Remedial Design Characterization (RDC) was proposed to be completed to supplement the existing soil and groundwater historical data and to quantitatively determine the contaminant mass and extent of impact in the saturated soil and groundwater. Up to 23 borings were proposed to 15 feet bgs, collection of soil and groundwater samples, evaluation of free product, a Bench Test, a pilot test injection of BOS 200 (a carbon adsorption remediation method), and groundwater monitoring for at least 4 quarters were recommended. Six temporary monitoring wells are shown along the south property boundary. The majority of investigation would be conducted on the south adjoining property.
- Laboratory testing results dated August 2023 indicate dichlorodifluoromethane, chloromethane, trichloroethene, and trichlorofluoromethane were detected in vapor point samples.
- Laboratory testing results dated April 2024 indicate groundwater samples were analyzed for iron, manganese, and hydrogen sulfide.
- A 2021 workplan indicates five soil borings are located along the south subject property boundary, and three groundwater monitor wells are located on the south-central portion of the property.

Based on analytical results of the subsurface investigation activities, the subject property met the criteria of a “facility.” A BEA was prepared (by others) and submitted on August 13, 2003.

SES did not identify any *historical recognized environmental conditions* (HRECs) associated with the subject property during the completion of this Phase I ESA.

SES did not identify any *controlled recognized environmental conditions* (CRECs) associated with the subject property during the completion of this Phase I ESA.

SES identified one *vapor encroachment condition* (VEC) associated with subject property that cannot be ruled out.

SES identified the following *recognized environmental condition* (REC) associated with the subject property during the completion of this Phase I ESA:

- REC #1** Historical review indicates the subject property was part of a larger railroad maintenance yard from at least 1899 through 1931. The property operated as a storage yard for an adjoining foundry to the east and southeast from 1938 through 1960. The property then began operations Marshall Iron & Metal, an automobile salvage scrap yard, from at least 1961 through 1996. Railroad lines were abandoned after 1966. Scrap yard operations ceased in 1996, at which time all scrap material was removed. The property has generally consisted of vacant land since 1996. A 7,000-gallon steel UST was removed from the north-central portion of the property in September 2000. Investigation and corrective action were conducted at the property in 1993, 1995, 1997, 2001, 2003, and 2015. Elevated metals, VOCs, and semi-volatile organic compounds (SVOCs) were detected in soil samples. Elevated VOCs and metals concentrations were documented in submitted soil confirmation samples following completion of corrective action to address free product on the central portion of the property. The property is identified as a “facility,” as defined by Part 201 P.A. 451 of the Michigan Natural Resources Environmental Protection Act (NEPRA), as amended.



1.4 AAI Exceptions or Deletions

SES performed the referenced Phase I ESA in conformance with the scope and limitations of ASTM E1527-21 Standard. The assessment resulted in no significant exceptions, deviations, or deletions from the Standard. Researched and reviewed information was limited to documentation that was reasonably ascertainable and/or practically available from local, State, and Federal government records.

1.5 Data Gaps

A “data gap” is defined in Section 3 of ASTM E1527-21 as, “a lack of or inability to obtain information required by this practice (ASTM E1527-21) despite good faith efforts by the environmental professional to gather such information”.

SES identified the following data gaps during the completion of the Phase I ESA:

- A review of land title records for environmental liens and activity or use limitations was not conducted during this assessment pursuant to ASTM Standard Practice E1527-21. This review is necessary in order to determine if environmental liens and/or activity and use limitations have been recorded at the subject property; however, based on no listings within the EDR Database Report for any Institutional or Engineering Controls and no records of environmental cleanups or investigations at the subject property, this data gap is not considered significant. SES understands title work will be provided to the User at the time of closing.
- Subject property history was not determined back to first developed use pursuant to ASTM Standard Practice E1527-21. A Sanborn fire insurance map from 1911, the earliest attainable historical record, shows the property developed with railroad tracks. Potential environmental concerns associated with the first development of the property have been evaluated in previous subsurface investigations. As such, this data gap is not considered significant.

1.6 Discussion of Sampling

The subject property is classified as a “facility” based on soil and groundwater contamination exceeding EGLE Part 201 Residential Generic Cleanup Criteria (GCC)/Risk-Based Screening Levels (RBSLs) identified during subsurface investigations conducted at the subject property in 2003, 2015, and 2023 through 2024.

2003 Subsurface Investigation

Soil and Materials Engineers, Inc (SME) conducted a Phase II ESA to address RECs identified in a 2003 Phase I ESA, also conducted by SME. The 2003 RECs included the following:

- The historical Property uses as a railroad shop, foundry and scrap yard, gaps in historical property uses, and visual observations of debris and soil containing slag and cinders.
- A former UST located on the north portion of the property.
- Previous soil and groundwater impact documented at the Property and the MDEQ Part 201 Contaminated Site listing of the property.

To evaluate the identified RECs, SME conducted a subsurface investigation of the subject property on September 18, 2003, that included advancing six soil borings (i.e., SP1 through SP6) to depths between 10 and 11 feet below ground surface (bgs). The soil borings were completed throughout the subject property to investigate the impact in the subsurface as a result of the historical operations conducted on the subject



property. SP4 was located in the area of the former UST to investigate subsurface impact. One soil sample was collected from each boring and analyzed for VOCs, SVOCs, PCBs, Michigan 10 metals, iron, manganese, and nickel.

Soil lithology consisted of sand fill from the near surface to approximately 2.5 feet bgs in SP1, SP2, SP3, SP5, and SP6. The sand fill contained trace silt, clay, gravel, brick, metal, glass, and cinders. SP4 consisted of sand fill from the near surface to approximately 9 feet bgs. SP4 was located near the area of the former UST. Following the sand fill, sandy clay was encountered in SP1, SP2, and SP3 ranging from depths 4 to 6 feet bgs. Clayey sand with trace amounts of gravel and silt was encountered at SP5 to 3 feet bgs. Below the sandy clay or clayey sand, sand with trace gravel, silt, or clay, was encountered at SP1, SP2, SP3, and SP5, and encountered in SP4 and SP6 below the sand fill. Native sand ranged to depths of 10 to 11 feet bgs. The maximum explored depth was 10 feet bgs. Odors were noted in soil samples collected from SP2, SP4, and SP5, as well as greenish staining at 10.5 to 11 feet bgs in SP4. PID readings were not collected during completion of the borings.

Groundwater was encountered between 6 to 11 feet bgs in all soil borings. Approximately eight inches of free product was observed in monitoring well MW6. The free product was black in color.

The VOC and SVOC data are not considered relative to the current subject property conditions, due to 22 years of degradation. However, the metals data can be used because metals generally do not degrade over time. SES utilized the 2003 metals data for this BEA report.

2007/2008 Subsurface Investigation

MACTEC Engineering and Consulting of Michigan, Inc. (MACTEC) completed a technical memorandum report on behalf of the former MDEQ. The scope of work was to delineate the free product and monitor the subject property.

To conduct the scope of work, a total of 30 soil borings (GP-1 through GP-30) were completed on September 17, 2007, through September 19, 2007, and on December 13, 2007. The borings were advanced to 10 to 15 feet bgs. Soil samples were collected from GP-2 and GP-11 for VOCs, PNAs, PCBs, and metals cadmium, chromium, and lead. Soil samples were also collected from GP-7 for VOCs and the metals cadmium, chromium, and lead, and from GP-9 and GP-10 for VOCs only. Additional soil samples were collected from GP-18 and GP-20 for glycol analysis. Following the completion of the borings, 21 out of the 30 soil borings were converted into temporary monitoring wells and screened from 7 to 12 feet bgs. Groundwater samples were not collected from the temporary monitoring wells.

On December 5, 2007 and December 6, 2007, six monitoring wells were installed on the subject property and south adjoining property. MW-DEQ-3 through MW-DEQ-6 replaced GP-12, GP-18, GP-18, and GP-4, respectively. The monitoring wells were screened approximately from 9 to 14 feet bgs or 10 to 15 feet bgs. Following the installation of the monitoring wells, MW-DEQ-1, MW-DEQ-2, MW-DEQ-4, and MW-DEQ-6 were sampled on June 5, 2008, and analyzed for VOCs, SVOCs, PCBs, and phenols.

Groundwater and free product monitoring was performed on September 25, 2007, October 2, 2007, December 5, 2007, and December 19, 2007.

Free product sampling was collected from GP-13, GP-16, GP-21, GP-30, MW-WEST (formerly MW6 from 2003 BEA), and MW-DEQ-5 on December 19, 2007. Analysis consisted of VOCs, SVOCs, PCBs, and metals.



The analytical results of the free product samples indicate the results were inconclusive to source material.

SES did not utilize the 2007 and 2008 data due to the majority of the samples collected were from an area that was later excavated in 2015. Also, the VOC and SVOC data are not considered relative to the current subject property conditions due to 16 to 17 years of degradation.

2015 Remedial Excavation and Disposal

AMEC Engineering and Consulting of Michigan, Inc. (AMEC) conducted a construction summary report on behalf of the former MDEQ. The scope of work was to remove PCB contaminated soil and restore the area to previous conditions. The report documented response measures conducted by AMEC.

To conduct response measures, the following activities were implemented: abandonment of existing monitoring wells, excavation, loading and disposal of contaminated soils. Nine monitoring wells previously existed at the property, eight of which were abandoned. The remaining monitoring well (MW-DEQ-1) was left in place due to the presence of free product in the well. Excavation activities began by removing six inches of soil from the surface in the scrape zone and the excavation zone. The excavation was dug to approximately 10.5 feet bgs, where groundwater was encountered. Approximately 10,231.44 tons of contaminated soil were removed from the subject property, transported and disposed to a licensed landfill facility. The excavation zone was backfilled with 600 yards of Class II Sand, and 440 yards of native overburden, and was restored to its pre-existing condition.

During the excavation activities, 12 sidewall samples and 9 floor samples were collected from the excavation zone. Sidewall samples were collected at a depth of approximately 5 feet bgs, and the floor samples were collected at approximately 10.5 feet bgs. The soil samples were analyzed for VOCs, PNAs/SVOCs, Michigan 10 Metals, and PCBs. SES utilized the data collected from the 2015 excavation for this BEA.

2021 Investigation

AST Environmental, Inc. (AST) conducted a quantitative high resolution site characterization (qHRSC), Bench Test Study, Pilot Test, and Final Remedial Approach/Design report for the south portion of the subject property and the south adjoining property. AST began field work on March 29, 2021, to locate utilities on the south portion of the subject property and on the south adjoining property. By April 6, 2021, a total of 23 soil borings were completed (6 on the subject property). Each soil boring was converted to a temporary monitoring well, purged, sampled, and abandoned. One monitoring well, MW-201, was installed on the south portion of the subject property, along with two temporary monitoring wells (PZ-201 & PZ-202) installed to monitor pilot injections and post injection performance monitoring. Pre-injection, 0.1 feet of light non-aqueous phase liquid (LNAPL) was identified in MW-201, 0.18 feet of LNAPL was identified in PZ-201, and 3.40 feet of LNAPL was identified in PZ-202.

Groundwater samples were analyzed for total petroleum hydrocarbons (TPH), dissolved gases & carbon dioxide, and anions.

After completion of the soil and groundwater sampling, AST performed a BOS 200®+ Pilot Test. The area around MW-201, was the designated area for the Pilot Test. Surrounding MW-201, 14 injection points were completed to depths of 9 to 15 feet bgs. Injections were initiated on April 13, 2021, and completed on April 14, 2021. AST injected a total of 2,000 pounds of BOS 200®, 1,250 pounds of gypsum, 750 pounds



of magnesium sulfate, 500 pounds of corn starch, 25 pounds of yeast extract, and 5 gallons of Trap & Treat® Bacteria Concentrate into the injection points. Following the injections, MW-201 was reinstalled at approximately the original location. Post-injection, no LNAPL was identified in MW-201, 0.02 feet of LNAPL was identified in PZ-201, and 0.75 feet of LNAPL was identified in PZ-202. PZ-201 and PZ-202 were abandoned.

The soil lithology identified during the investigation did not classify soil from 0 to 4 feet bgs due to soft digging methods for identifying utilities. Soil lithology from 4 to 10 feet bgs consisted of silty sand or sandy silt, followed by gravelly sand or sandy gravel from 10 feet bgs to 16 feet bgs, and clayey silt from 16 to 18 feet bgs. (i.e., maximum depth explored). Groundwater was observed between 8 to 13 feet bgs.

Data provided in the 2021 report are not relied upon in this BEA report. The data pertained to an injection study; therefore, the data does not provide the current subject property conditions. However, quarterly groundwater sampling was conducted in May 2023 through July 2024 for MW-201. Groundwater samples were analyzed for iron, manganese, and hydrogen sulfide. SES utilized the iron and manganese groundwater data for this BEA report.

Refer to Figures 2, 3a, 3b, and 4 for a subject property map with soil boring locations, soil analytical results, and groundwater analytical results. The boring logs can be found in the 2003 BEA, 2008 technical memorandum report, and 2021 quantitative high resolution site characterization (qHRSC), Bench Test Study, Pilot Test, and Final Remedial Approach/Design report maintained at the EGLE – Kalamazoo District office.

Field Observations

During the subsurface investigation conducted in 2003, field evidence of contamination (i.e., visual, odorous, and/or PID readings) was not noted with the exception of fill material to depths ranging from the near surface to at least 9 feet bgs in the soil boring locations. PID readings were not collected from the soil borings.

During the subsurface investigation conducted in 2021, on the south portion of the subject property, field evidence of contamination (i.e., visual, odorous, and/or PID readings) was not noted with the exception of the following:

- RDC-01: PID readings ranging from 0.6 to 6.3 ppm were recorded from 8 to 16.5 feet bgs. Odors were present from 6 to 12 feet bgs, and 14 to 16.5 feet bgs.
- RDC-02: PID readings ranging from 1.2 to 7.6 ppm were recorded from 8 to 20 feet bgs. Odors were present from 7 to 16 feet bgs.
- RDC-03: PID readings ranging from 1.3 to 12.3 ppm were recorded from 6 to 20 feet bgs. Odors were present from 6 to 18 feet bgs.
- RDC-04: PID readings ranging from 0.1 to 14.4 ppm were recorded from 6 to 16 feet bgs. Odors were present from 6 to 12 feet bgs.
- RDC-05: PID readings ranging from 0 to 47.3 ppm were recorded from 6 to 20 feet bgs. Odors were present from 6 to 8 feet bgs, and 12 to 14 feet bgs.
- RDC-23: No PID readings were collected. Odors were present from 11 to 14 feet bgs.

Subsurface Geology and Hydrogeology

The description of the subsurface conditions provided below was derived from onsite observations of soil samples and cuttings collected from the 2003 and 2021 soil borings.



Soil stratigraphy generally consisted of the following, as described by others:

- During the 2003 investigation, the soil lithology consisted of sand fill from the near surface to approximately 2.5 feet bgs in SP1, SP2, SP3, SP5, and SP6. The sand fill contained trace silt, clay, gravel, brick, metal, glass, and cinders. SP4 consisted of sand fill from the near surface to approximately 9 feet bgs. SP4 was located near the area of the former UST. Following the sand fill, sandy clay was encountered in SP1, SP2, and SP3 ranging from depths 4 to 6 feet bgs. Clayey sand with trace amounts of gravel and silt was encountered at SP5 to 3 feet bgs. Below the sandy clay or clayey sand, is sand with trace gravel, silt, or clay, was encountered at SP1, SP2, SP3, and SP5, and also encountered in SP4 and SP6 below the sand fill. Native sand ranged to depths ranging from 10 to 11 feet bgs. The maximum explored depth was 10 feet bgs.
- During the 2021 subsurface investigation, the soil lithology identified during the investigation did not classify soil from 0 to 4 feet bgs due to soft digging methods for identifying utilities. Soil lithology from 4 feet bgs, consisted of silty sand or sandy silt from 4 feet bgs, to 10 feet bgs, followed by gravelly sand or sandy gravel from 10 feet bgs to 16 feet bgs, and clayey silt from 16 to 18 feet bgs. (i.e., maximum depth explored).

According to previous subsurface investigation activities completed by others, groundwater was encountered between 6 to 13 feet bgs.

Soil Analytical Results

A summary of soil sample analytical results collected in November 2015 at the subject property is presented in Table 1, Table 2, Figure 3a, and Figure 3b, along with comparisons to the current EGLE Part 201 GCC and Part 213 RBSLs. Also included in Table 2 and Figure 3b are the metals analytical results from the September 2003 subsurface investigation. The laboratory analytical reports can be found in the 2003 BEA, and the 2015 construction summary report, maintained at the EGLE – Kalamazoo District office.

Six soil samples were collected from the subject property in a 2003 subsurface investigation. The soil samples were submitted for VOCs, PNAs/SVOCs, PCBs, Michigan 10 metals, iron, manganese, and nickel. The samples were collected as a general representation of the subject property. The VOC and SVOC data are not considered relative to the current subject property conditions, due to 22 years of degradation. However, the metals data can be used because metals generally do not degrade over time. An additional 21 soil verification samples were collected from the subject property in 2015 during an excavation in the central portion of the property. The soil samples were submitted for analysis of VOCs, PNAs/SVOCs, PCBs and Michigan 10 Metals.

Review of the soil analytical results (Tables 1 and 2) indicates the following:

- Several VOCs were detected in the soil samples at concentrations exceeding the laboratory method detection limits (MDLs) in 12 out of the 21 soil samples analyzed; however, none of the identified VOCs exceed EGLE Part 201 GCC, with the exception of 1,2,4-trimethylbenzene in soil samples collected from SW-4 (5 feet bgs), F-2 (approximately 10.5 feet bgs), F-4 (approximately 10.5 feet bgs), F-6 (approximately 10.5 feet bgs), and F-7 (approximately 10.5 feet bgs) exceeding EGLE Part 201 Residential and Nonresidential Groundwater Surface Water Interface Protection (GSIP) GCC.
- Several PNAs/SVOCs were detected at concentrations exceeding laboratory MDLs in 15 of the 21 soil samples analyzed; however, the concentrations did not exceed EGLE Part 201 GCC, with the exception of phenanthrene in soil samples collected from F-1 (approximately 10.5 feet bgs) and F-3 (approximately 10.5 feet bgs), exceeding EGLE Part 201 Residential and Nonresidential GSIP GCC.



- Several PCBs were detected at concentrations exceeding laboratory MDLs in 10 of the 21 soil samples analyzed; however, the concentrations did not exceed EGLE Part 201 GCC.
- Concentrations of metals were detected in each of the analyzed soil samples at concentrations exceeding the laboratory MDLs; however, arsenic in soil samples collected from SP1 (0 to 1-foot sample interval), SP2 (1 to 2-foot sample interval), SP3 (1 to 2-foot sample interval), SP4 (10 to 11-foot sample interval), SP6 (1 to 2-foot sample interval), SW-1 (approximately 5 feet bgs), SW-2 (approximately 5 feet bgs), SW-6 (approximately 5 feet bgs), SW-7 (approximately 5 feet bgs), F-1 (approximately 10.5 feet bgs), F-2 (approximately 10.5 feet bgs), F-5 (approximately 10.5 feet bgs), and F-7 (approximately 10.5 feet bgs) exceeding EGLE Part 201 Residential and Nonresidential Drinking Water Protection (DWP), and GSIP; Residential Direct Contact (DC) GCC with the exception of soil sample F-7 (approximately 10.5 feet bgs), and Nonresidential Direct Contact (DC) GCC in only soil sample SW-6 (approximately 5 feet bgs); cadmium in soil sample collected from SP1 (0 to 1-foot sample interval) exceeds EGLE Part 201 Residential and Nonresidential GSIP GCC; iron in soil samples collected from SP1 (0 to 1-foot sample interval), SP2 (1 to 2-foot sample interval), SP3 (1 to 2-foot sample interval), SP4 (10 to 11-foot sample interval), and SP6 (1 to 2-foot sample interval), exceeds EGLE Part 201 Residential and Nonresidential DWP GCC; manganese in soil samples collected from SP1 (0 to 1-foot sample interval), SP2 (1 to 2-foot sample interval), and SP4 (10 to 11-foot sample interval), exceeds EGLE Part 201 Residential and Nonresidential DWP GCC; mercury in soil samples collected from SP1 (0 to 1-foot sample interval), and SP3 (1-2-foot sample interval) exceeds Residential and Nonresidential GSIP GCC; and selenium in soil samples collected from SP1 (0 to 1-foot sample interval), SP2 (1 to 2-foot sample interval), SP3 (1 to 2-foot sample interval), SP6 (1 to 2-foot sample interval), and SW-6 (approximately 5 feet bgs) exceeds EGLE Part 201 Residential and Nonresidential GSIP GCC.

Groundwater Analytical Results

A summary of groundwater samples collected from May 2023 through July 2024 at the subject property is presented in Table 3 and Figure 4, along with comparisons to the current EGLE Part 201 GCC and Part 213 RBSLs. The laboratory analytical reports can be found at the EGLE –Kalamazoo District office.

Five groundwater samples were collected from the subject property from MW-201 which was installed in 2021. The samples were collected quarterly for monitoring purposes. The samples were submitted for analysis of iron, manganese, and hydrogen sulfide. SES utilized the iron and manganese groundwater data for this BEA report.

Review of the groundwater analytical results (Table 3) indicates the following:

- Iron and manganese were detected in all five groundwater samples at concentrations exceeding laboratory MDLs, with the exception of manganese in the July 11, 2024, groundwater sample. However, iron in groundwater samples collected from MW-201 in May 11, 2023, August 11, 2023, November 2023, April 17, 2024, and July 11, 2024, exceed EGLE Part 201 Residential and Nonresidential Drinking Water (DW) GCC; and manganese in groundwater samples collected from MW-201/201R in May 11, 2023, August 11, 2023, November 14, 2023, and April 17, 2024 exceed EGLE Part 201 Residential and Nonresidential DW GCC.

1.7 Location of Known On-Site Contamination

Based on the previous subsurface investigations, concentrations of 1,2,4-trimethylbenzene were detected in five soil samples exceeding EGLE Part 201 Residential and Nonresidential GSIP GCC; concentrations of phenanthrene were detected in two soil samples exceeding EGLE Part 201 Residential and Nonresidential



GSIP GCC; concentrations of arsenic were detected in fifteen soil samples exceeding EGLE Part 201 Residential and Nonresidential DW and GSIP GCC, as well as exceeding Residential DC GCC in fourteen soil samples, and exceeding Nonresidential DC GCC in one soil sample; cadmium was detected in one soil sample exceeding EGLE Part 201 Residential and Nonresidential DW GCC; iron was detected in five soil samples exceeding EGLE Part 201 Residential and Nonresidential DW GCC; manganese was detected in three soil samples exceeding EGLE Part 201 Residential and Nonresidential DW GCC; mercury was detected in two soil samples exceeding EGLE Part 201 Residential and Nonresidential GSIP GCC; and concentrations of selenium were detected in five soil samples exceeding Part 201 Residential and Nonresidential GSIP GCC. Concentrations of iron and manganese were detected in quarterly groundwater samples collected from MW-201/201R exceeding Residential and Nonresidential DW GCC.

Please refer to Tables 1 and 2 in the Tables Tab for the soil analytical comparison tables, Table 3 in the Tables Tab for groundwater analytical comparison tables, Figures 2, 3a, 3b, and 4 in the Figures Tab for the subject property map with sampling locations, and analytical results on subject property maps.

1.8 Facility Classification

Based on SES's evaluation, the subject property is classified as a "facility" (as defined by Part 201 of Michigan Public Act 451) and the submitter is eligible for exemption from liability for existing contamination pursuant to Section 20126(1)(c) of 1994 PA 451, Part 201, as amended.

The subject property is classified as a "facility" because concentrations of 1,2,4-trimethylbenzene were detected in five soil samples exceeding EGLE Part 201 Residential and Nonresidential GSIP GCC; concentrations of phenanthrene were detected in two soil samples exceeding EGLE Part 201 Residential and Nonresidential GSIP GCC; concentrations of arsenic were detected in fifteen soil samples exceeding EGLE Part 201 Residential and Nonresidential DW and GSIP GCC, as well as exceeding Residential DC GCC in fourteen soil samples, and exceeding Nonresidential DC GCC in one soil sample; cadmium was detected in one soil sample exceeding EGLE Part 201 Residential and Nonresidential DW GCC; iron was detected in five soil samples exceeding EGLE Part 201 Residential and Nonresidential DW GCC; manganese was detected in three soil samples exceeding EGLE Part 201 Residential and Nonresidential DW GCC; mercury were detected in two soil samples exceeding EGLE Part 201 Residential and Nonresidential GSIP GCC; and concentrations of selenium were detected in five soil samples exceeding Part 201 Residential and Nonresidential GSIP GCC. Concentrations of iron and manganese were detected in quarterly groundwater samples collected from MW-201/201R exceeding Residential and Nonresidential DW GCC.

The analytical results from the 2003, 2015, and 2023/2024 subsurface investigations/remedial actions/sampling events are reliable and relevant to define the current environmental condition of the subject property.

2.0 PROPERTY INFORMATION

2.1 Legal Description of Property

This BEA was prepared for the following parcels:

City of Marshall Parcel Identification Number: 53-002-535-01 (775 Industrial Road).



The legal description for the subject property is described as:

Parcel No. 53-002-535-01: MARSHALL CITY SE 1/4 OF SEC 26 T2S-R6W COM AT E 1/4 COR OF SEC 26 T2SR6W - S00 DEG 07'00"W, 827.91 FT ALNG E LINE OF SEC 26 TO THE EXTENSION OF S RIGHT-OF-WAY LINE OF INDUSTRIAL RD - N84 DEG 59'30"W, 831.72 FT ALNG S LINE OF INDUSTRIAL RD AND ITS EXTENSION EASTERLY TO THE POB: S00 DEG 31'00"W, 165.17 FT - N89 DEG 36'00"W, 740.77 FT - S00 DEG 00'36"W, 176.14 FT - S89 DEG 59'40"W, 70.63 FT - N00 DEG 03'49"E, 388.90 FT TO THE S LINE OF INDUSTRIAL RD - S84 DEG 59'30"E, 754.54 FT ALONG SAID SOUTH LINE - N05 DEG 00'30"E, 18.97 FT ALONG SAID SOUTH LINE - S84 DEG 59'30"W, 59.38 FT ALONG SAID SOUTH LINE TO THE POB; CONTAINING 3.65 AC M/LEXCEPTING THEREFROM (LAND DIVISION 2007LD-007) SPLIT ON 02/02/2007; A PARCEL OF LAND IN THE SE 1/4 OF SEC 26, T2S, R6W, CITY OF MARSHALL, CALHOUN COUNTY, BEING DESCRIBED AS: COM AT THE E 1/4 CORNER OF SEC 26, T2S, R6W; TH S00D07'00"W, 827.91 FEET ALONG THE E LINE OF SAID SEC 26 TO THE EXTENSION OF THE S ROW LINE OF INDUSTRIAL ROAD; TH N 84D59'30"W, 831.72 ALONG S LINE OF INDUSTRIAL ROAD; TH S 00D31'00"W, 165.17 FT; TH N 89D46'00"W, 740.77 FT TO THE POB OF THE FOLLOWING DESCRIBED PARCEL; TH S 00D 00'36"W, 176.74 FT; TH S 89D59'40"W, 70.63 FT; TH N 00D03'49"E, 388.90 FT TO S LINE INDUSTRIAL RD; TH S 84D59'30"E, 70.53 FT ALONG SAID SOUTH LINE OF INDUSTRIAL RD; TH S00D00'36"W, 206 FT, TO POB, SAID PARCEL CONTAINING 0.62 ACRES +/- SPLIT ON 02/02/2007 FROM 002-535-00.

A Land Survey map of the subject property is included in Appendix C.

2.2 Subject Property Figures

A topographic map, depicting the subject property in relation to the surrounding area, is provided as Figure 1.

Refer to attached subject property figures (Figures 2, 3a, 3b, and 4) in the Figures Tab for sampling locations with analytical results.

2.3 Property Location and Spatial Data

The subject property is located at 775 Industrial Road in Marshall, Calhoun County, Michigan 49068. Geographically, the subject property is located at approximately 42.2660920° north latitude and 84.9685880° west longitude. Coordinates were obtained from an Environmental Data Resources (EDR) Report, dated January 21, 2025.

3.0 FACILITY STATUS

Concentrations of 1,2,4-trimethylbenzene were detected in five soil samples exceeding EGLE Part 201 Residential and Nonresidential GSIP GCC; concentrations of phenanthrene were detected in two soil samples exceeding EGLE Part 201 Residential and Nonresidential GSIP GCC; concentrations of arsenic were detected in fifteen soil samples exceeding EGLE Part 201 Residential and Nonresidential DW and GSIP GCC, as well as exceeding Residential DC GCC in fourteen soil samples, and exceeding Nonresidential DC GCC in one soil sample; cadmium was detected in one soil sample exceeding EGLE Part 201 Residential and Nonresidential DW GCC; iron was detected in five soil samples exceeding EGLE Part 201 Residential and Nonresidential DW GCC; manganese was detected in three soil samples exceeding EGLE Part 201 Residential and Nonresidential DW GCC; mercury was detected in two soil samples exceeding EGLE Part 201 Residential and Nonresidential GSIP GCC; and concentrations of selenium were detected in five soil samples exceeding Part 201 Residential and Nonresidential GSIP GCC. Concentrations of iron and



manganese were detected in quarterly groundwater samples collected from MW-201/201R exceeding Residential and Nonresidential DW GCC.

3.1 Summary Tables

The following tables list the hazardous substances that have been detected in soil and groundwater at the subject property at concentrations exceeding generic residential cleanup criteria.

Table 4
CAS Numbers for Contaminants Detected in Soil at Concentrations Exceeding Generic Residential Cleanup Criteria

Contaminant	CAS Number	Maximum Concentration (µg/kg)	Location of Exceedance
1,2,4-Trimethylbenzene	95636	860	SW-4
		740	F-2
		890	F-4
		1,100	F-6
		2,100	F-7
Phenanthrene	85018	5,200	F-1
		6,100	F-3
Arsenic	7440382	20,000	SP1
		16,000	SP2
		22,000	SP3
		9,500	SP4
		20,000	SP6
		17,000	SW-1
		15,000	SW-2
		41,000	SW-6
		12,000	SW-7
		10,000	F-1
		11,000	F-2
		12,000	F-5
		7,300	F-7
Cadmium	7440439	16,000	SP1
Iron	7439896	47,000,000	SP1
		35,000,000	SP2
		33,000,000	SP3
		47,000,000	SP4
		24,000,000	SP6
Manganese	7439965	660,000	SP1
		590,000	SP2
		590,000	SP4
Mercury	Varies	170	SP1
		270	SP3



Selenium	7782492	690	SP1
		1,200	SP2
		1,700	SP3
		820	SP6
		600	SW-6

µg/kg = micrograms per kilogram or parts per billion

Table 5
CAS Numbers for Contaminants Detected in Groundwater at Concentrations Exceeding
Generic Residential Cleanup Criteria

Contaminant	CAS Number	Maximum Concentration (µg/L)	Location of Exceedance
Iron	7439896	7,200	MW-201 (May 11, 2023)
		15,000	MW-201R (August 11, 2023)
		4,700	MW-201 (November 14, 2023)
		5,900	MW-201R (April 17, 2024)
		640	MW-201 (July 11, 2024)
Manganese	7439965	890	MW-201 (May 11, 2023)
		460	MW-201R (August 11, 2023)
		260	MW-201 (November 14, 2023)
		150	MW-201R (April 17, 2024)

µg/L = micrograms per Liter or parts per billion

3.2 Laboratory Reports

The laboratory analytical reports from the 2003 subsurface investigation are attached to the 2003 BEA, and the 2015 excavation are attached to the 2015 construction summary report. The 2023 and 2024 sampling data were obtained from EGLE files. The 2003 BEA, 2015 Construction Summary Report, and 2023/2024 laboratory reports are not included in this report but can be found at the EGLE – Remediation and Redevelopment Division – Kalamazoo District office.

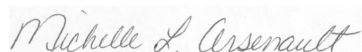


4.0 IDENTIFICATION OF BEA AUTHOR

This BEA was written on March 24, 2025, by Michelle L. Arsenault, P.E., Senior Project Manager with SES Environmental. An Environmental Professional qualification summary is provided as Appendix D.

Environmental Professional Statement

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in §312.10 of 40 CFR 312. I have specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR part 312.



Michelle L. Arsenault, P.E.
Senior Project Manager
Ph: (248) 459-7263

5.0 AAI OR ASTM PHASE I REPORT

SES conducted a Phase I ESA dated February 4, 2025 (included in Appendix A). The Phase I ESA was conducted under the guidance and protocols of the American Society of Testing and Materials (ASTM) *Standard Practice for Environmental Site Assessments: Phase I Site Assessment Process (Standard E1527-21)* and the United States Environmental Protection Agency (USEPA) *Standards and Practices for All Appropriate Inquiries; Final Rule (40CFR Part 312)*. Completion of the Phase I ESA under these standards was intended to satisfy one of the requirements to quality for the *innocent landowner, contiguous property owner, or bona fide prospective purchaser* limitations on CERCLA liability. The scope of the investigation included a physical subject property inspection, historical data review, regulatory agency records review, and interview with persons potentially familiar with subject property activities.



6.0 REFERENCES

- *Phase I Environmental Site Assessment*, prepared by SES Environmental, dated February 4, 2025.
- *Baseline Environmental Assessment*, prepared by Soil and Materials Engineers, Inc, dated December 16, 2003.
- *Technical Memorandum No. 1 – Free Product Delineation*, prepared by MACTEC Engineering and Consulting of Michigan, Inc., dated November 26, 2008.
- *Final Construction Summary Report*, prepared by AMEC Engineering and Consulting of Michigan Inc., dated February 24, 2017
- *Quantitative High Resolution Site Characterization (qHRSC), Bench Test Study, Pilot Test, and Final Remedial Approach/Design*, prepared by AST Environmental, Inc., dated June 4, 2021
- *Contents of BEA Report*, EGLE, October 2022.
- Administrative Rules for BEAs.
- EGLE – Remediation Division Operational Memorandum No. 1: Part 201 Cleanup Criteria and Part 213 Risk-Based Screening Levels (RBSLs), dated October 12, 2023.



TABLES



TABLE 1
CLEANUP CRITERIA COMPARISON FOR SOILS
VOCs, PNAs, and Metals
VACANT LAND
775 INDUSTRIAL ROAD IN MARSHALL, CALHOUN COUNTY, MICHIGAN 49068
SES PROJECT No.: 2025-0250

Volatile Organic Compounds (VOCs), Polynuclear Aromatic Hydrocarbons (PNAs), Polychlorinated Biphenyls (PCBs) (µg/Kg)			n-Butylbenzene	sec-Butylbenzene	Ethylbenzene	Isopropylbenzene	p-Isopropyl Toluene	2-Methylnaphthalene	n-Propylbenzene	1,2,3-Trimethylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Xylenes	Other VOCs	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Chrysene	Fluoranthene	Fluorene	Phenanthrene	Pyrene	Other PNAs	PCBs	
Chemical Abstract Service Number (CAS#)			104518	135988	100414	98828	99876	91576	103651	526738	95636	108678	1330207	Various	120127	56553	50328	205992	218019	206440	86737	85018	129000	Various	1336363	
Sample ID	Sample Date	Sample Depth (bgs)	VOCs												PNAs										PCBs	
SW-1	11/2/2015	5'	<70	<70	<70	<70	<70	<350	<70	<70	<70	<70	<70	ND	<230	<230	<460	<460	<230	760	<230	<230	630	ND	250	
SW-2	11/2/2015	5'	<76	<76	<76	<76	<76	<380	<76	<76	<76	<76	<76	ND	<240	<240	<470	<470	520	270	<240	<240	420	ND	580	
SW-3	11/2/2015	5'	210	83	<74	<74	98	1,000	83	330	<74	<74	<74	ND	<230	300	<460	<460	<230	<230	350	2,000	230	ND	<120	
SW-4	11/2/2015	5'	530	250	130	<71	290	<350	290	510	860	230	180	ND	320	<230	<460	<460	880	<230	230	1,800	280	ND	96	
SW-5	11/2/2015	5'	<72	<72	<72	<72	<72	<360	<72	<72	<72	<72	<72	ND	<230	<230	<460	<460	<230	<230	<230	<230	<230	ND	<110	
SW-6	11/4/2015	5'	<80	<80	<80	<80	<80	<400	<80	<80	<80	<80	<80	ND	<240	<240	<490	<490	<240	240	<240	<240	250	ND	<120	
SW-7	11/4/2015	5'	<71	<71	<71	<71	<71	<360	<71	<71	<71	<71	<71	ND	<230	520	490	870	680	1,000	320	750	1,200	ND	440	
SW-8	11/4/2015	5'	<71	<71	<71	<71	<71	<360	<71	<71	<71	<71	<71	ND	<230	<230	<450	<450	220	280	<230	<230	230	ND	<110	
SW-9	11/4/2015	5'	<68	180	<68	<68	180	<340	<68	280	190	230	<68	ND	<220	<220	<450	<450	<220	<220	<220	<220	<220	ND	<110	
SW-10	11/4/2015	5'	<67	<67	<67	<67	<67	<330	<67	<67	80	<67	<67	ND	<220	<220	<440	<440	<220	<220	<220	240	<220	ND	<110	
SW-11	11/5/2015	5'	<70	<70	<70	<70	200	<350	<70	230	340	91	<70	ND	<220	<220	<450	<450	<220	<220	<220	650	<220	ND	<110	
SW-12	11/5/2015	5'	<66	<66	<66	<66	<66	<330	<66	<66	<66	<66	<66	ND	<220	<220	<440	<440	<220	<220	<220	<220	<220	ND	<110	
F-1	11/3/2015	10.5'	580	230	<68	<68	83	<340	150	310	280	230	<68	ND	<220	<220	<450	<450	610	<220	1,100	5,200	<220	ND	270	
F-2	11/3/2015	10.5'	<82	260	88	90	270	<410	240	430	740	460	<82	ND	<250	<250	<500	<500	270	<250	<250	870	<250	ND	150	
F-3	11/3/2015	10.5'	260	170	<67	<67	190	<330	<67	310	290	110	<67	ND	<220	220	<440	420	810	700	<220	6,100	680	ND	720	
F-4	11/3/2015	10.5'	<75	450	120	140	580	480	430	1,700	890	740	150	ND	<230	<230	<470	<470	530	270	460	2,200	290	ND	780	
F-5	11/3/2015	10.5'	<77	<77	<77	<77	<77	<380	<77	<77	<77	<77	<77	ND	<240	<240	<470	<470	<240	<240	<240	<240	<240	ND	<120	
F-6	11/4/2015	10.5'	<69	230	<69	<69	250	<350	170	690	1,100	440	<69	ND	<220	<220	<440	<440	360	280	380	1,300	270	ND	470	
F-7	11/4/2015	10.5'	<70	270	<70	73	440	710	200	1,100	2,100	650	95	ND	<220	<220	<450	<450	680	<220	510	1,800	<220	ND	780	
F-8	11/5/2015	10.5'	<81	<81	<81	<81	<81	<410	<81	<81	<81	<81	<81	ND	<590	<590	<1200	<1200	<590	<590	<590	<590	<590	ND	<120	
F-9	11/5/2015	10.5'	150	78	<78	<78	79	<390	<78	<78	93	<78	<78	ND	<590	<590	<1200	<1200	<590	<590	<590	<590	<590	ND	<120	
EGLE-RRD Operational Memorandum No. 1: Part 201 Cleanup Criteria and Part 213 Risk-Based Screening Levels (RBSLs), Revised October 12, 2023 Attachment 1: Soil Tables 2 and 3 Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels and Part 213 Tier 1 RBSLs																										
Residential (µg/Kg)																										
Statewide Default Background Levels	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Drinking Water Protection (DWP)	1,600	1,600	1,500	91,000	NA	57,000	1,600	NA	2,100	1,800	5,600	Various	41,000	NLL	NLL	NLL	NLL	NLL	7.30E+5	3.90E+5	56,000	4.80E+5	Various	NLL	NLL	
Groundwater Surface Water Interface Protection (GSIP)	ID	ID	360	3,200	NA	4,200	ID	NA	570	1,100	980	Various	ID	NLL	NLL	NLL	NLL	NLL	5,500	5,300	2,100	ID	Various	NLL	NLL	
Soil Volatilization to Indoor Air Inhalation (SVII)	ID	ID	87,000	400,000	NA	2.70E+6	ID	NA	4,300,000	2.6E+6	6,300,000	Various	1.0E+9	NLV	NLV	ID	ID	ID	1.0E+9	5.80E+8	2.80E+6	1.0E+9	Various	3.00E+6	3.00E+6	
Ambient Air Infinite Source Volatile Soil Inhalation (VSI)	ID	ID	7.20E+5	1.70E+6	NA	1.50E+6	ID	NA	2.10E+7	1.60E+7	4.60E+7	Various	1.40E+9	NLV	NLV	ID	ID	ID	7.40E+8	1.30E+8	1.60E+5	6.50E+8	Various	2.40E+5	2.40E+5	
Ambient Air Finite VSI Criteria for 5 Meter Source Thickness	ID	ID	1.00E+6	1.70E+6	NA	1.50E+6	ID	NA	5.00E+8	3.80E+8	6.10E+7	Various	1.40E+9	NLV	NLV	ID	ID	ID	7.40E+8	1.30E+8	1.60E+5	6.50E+8	Various	7.90E+6	7.90E+6	
Ambient Air Finite VSI Criteria for 2 Meter Source Thickness	ID	ID	2.20E+6	2.80E+6	NA	1.50E+6	ID	NA	5.00E+8	3.80E+8	1.30E+8	Various	1.40E+9	NLV	NLV	ID	ID	ID	7.40E+8	1.30E+8	1.60E+5	6.50E+8	Various	7.90E+6	7.90E+6	
Ambient Air Particulate Soil Inhalation (PSI)	2.00E+9	4.00E+8	1.00E+10	5.80E+9	NA	6.70E+8	1.30E+09	NA	8.20E+10	8.20E+10	2.90E+11	Various	6.70E+10	ID	1.50E+6	ID	ID	ID	9.30E+9	9.30E+9	6.70E+6	6.70E+9	Various	5.20E+6	5.20E+6	
Direct Contact (DC)	2.50E+6	2.50E+6	2.2E+7	2.5E+7	NA	8.10E+6	2.50E+06	NA	3.2E+7	3.2E+7	4.1E+8	Various	2.30E+8	20,000	2,000	20,000	2.00E+6	4.60E+7	2.70E+7	1.60E+6	2.90E+7	Various	4,000	4,000		
Soil Saturation Concentration Screening Levels (Csat)	1.00.E+07	1.00.E+07	1.40.E+05	3.90.E+05	NA	NA	1.00E+07	NA	1.1E+05	9.4E+04	150,000	Various	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Various	NA	NA	
Non-Residential (µg/Kg)																										
Drinking Water Protection (DWP)	4,600	4,600	1,500	2.60E+5	NA	1.70E+5	4,600	NA	2,100	1,800	5,600	Various	41,000	NLL	NLL	NLL	NLL	NLL	7.30E+5	8.90E+5	1.60E+5	4.80E+5	Various	NLL	NLL	
Groundwater Surface Water Interface Protection (GSIP)	ID	ID	360	3,200	NA	4,200	ID	NA	570	1,100	980	Various	ID	NLL	NLL	NLL	NLL	NLL	5,500	5,300	2,100	ID	Various	NLL	NLL	
Soil Volatilization to Indoor Air Inhalation (SVII)	ID	ID	4.6E+5	7.3E+5	NA	4.90E+6	ID	NA	8.0E+6	4.8E+6	1.2E+7	Various	1.0E+9	NLV	NLV	ID	ID	ID	1.0E+9	1.0E+9	5.10E+6	1.0E+9	Various	1.60E+7	1.60E+7	
Ambient Air Infinite Source Volatile Soil Inhalation (VSI)	ID	ID	2.40E+6	2.00E+6	NA	1.80E+6	ID	NA	2.50E+7	1.90E+7	5.40E+7	Various	1.60E+9	NLV	NLV	ID	ID	ID	8.90E+8	1.50E+8	1.90E+5	7.80E+8	Various	8.10E+5	8.10E+5	
Ambient Air Finite VSI Criteria for 5 Meter Source Thickness	ID	ID	3.10E+6	2.00E+6	NA	1.80E+6	ID	NA	6.00E+8	4.60E+8	6.50E+7	Various	1.60E+9	NLV	NLV	ID	ID	ID	8.80E+8	1.50E+8	1.90E+5	7.80E+8	Various	2.80E+7	2.80E+7	
Ambient Air Finite VSI Criteria for 2 Meter Source Thickness	ID	ID	6.50E+6	3.00E+6	NA	1.80E+6	ID	NA	6.00E+8	4.60E+8	1.30E+8	Various	1.60E+9	NLV	NLV	ID	ID	ID	8.80E+8	1.50E+8	1.90E+5	7.80E+8	Various	2.80E+7	2.80E+7	
Ambient Air Particulate Soil Inhalation (PSI)	8.80E+8	1.80E+8	1.30E+10	2.60E+9	NA	2.90E+8	5.90E+08	NA	3.60E+10	3.60E+10	1.30E+11	Various	2.90E+10	ID	1.90E+6	ID	ID	ID	4.10E+9	4.10E+9	2.90E+6	2.90E+9	Various	6.50E+6	6.50E+6	
Direct Contact (DC)	8.00E+6	8.00E+6	7.1E+7	8.0E+7	NA	2.60E+7	8.00E+06	NA	1.0E+8	1.0E+8	1.0E+9	Various	7.30E+8	80,000	8,000	80,000	8.00E+6	1.30E+8	8.70E+7	5.20E+6	8.40E+7	Various	16,000	16,000		
Soil Saturation Concentration Screening Levels (Csat)	1.00E+7	1.00E+7	1.40E+5	3.90E+5	NA	NA	1.00E+07	NA	1.1E+05	94,000	150,000	Various	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Various	NA	NA	

ND Not Detected above laboratory Method Detection Limit (MDL) or Minimum Quantitative Level (MQL)
NA Not analyzed or Not Available
µg/Kg micrograms per Kilogram or parts per billion
bgs Below Grade Surface (feet)
Bold Exceeds Cleanup Criteria

Cleanup Criteria exceeded

TABLE 2
CLEANUP CRITERIA COMPARISON FOR SOILS
METALS
VACANT LAND
775 INDUSTRIAL ROAD IN MARSHALL, CALHOUN COUNTY, MICHIGAN 49068
SES PROJECT No.: 2025-0250

Metals (µg/Kg)			Arsenic	Barium	Cadmium	Chromium	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Zinc
Chemical Abstract Service Number (CAS#)			7440382	7440393	7440439	16065831	7440508	7439896	7439921	7439965	Varies	7440020	7782492	7440224	7440666
Sample ID	Sample Date	Sample Depth (bgs)	Metals												
SP1	9/18/2003	0-1'	<u>20,000</u>	90,000	<u>16,000</u>	84,000	130,000	<u>47,000,000</u>	250,000	<u>660,000</u>	<u>170</u>	54,000	<u>690</u>	ND	290,000
SP2	9/18/2003	1-2'	<u>16,000</u>	39,000	450	9,800	55,000	<u>35,000,000</u>	260,000	<u>590,000</u>	ND	17,000	<u>1,200</u>	ND	110,000
SP3	9/18/2003	1-2'	<u>22,000</u>	57,000	420	10,000	130,000	<u>33,000,000</u>	330,000	370,000	<u>270</u>	24,000	<u>1,700</u>	ND	110,000
SP4	9/18/2003	10-11'	<u>9,500</u>	25,000	160	140,000	63,000	<u>47,000,000</u>	7,600	<u>590,000</u>	ND	58,000	220	ND	240,000
SP5	9/18/2003	3-4'	3,600	47,000	ND	16,000	14,000	11,000,000	8,100	190,000	ND	11,000	ND	ND	25,000
SP6	9/18/2003	1-2'	<u>20,000</u>	61,000	610	17,000	52,000	<u>24,000,000</u>	200,000	320,000	ND	21,000	<u>820</u>	ND	150,000
SW-1	11/2/2015	5'	<u>17,000</u>	39,000	<200	15,000	12,000	NA	13,000	NA	<60	NA	300	<100	82,000
SW-2	11/2/2015	5'	<u>15,000</u>	59,000	<200	14,000	12,000	NA	13,000	NA	<60	NA	400	<100	53,000
SW-3	11/2/2015	5'	4,200	50,000	300	6,600	8,100	NA	7,000	NA	<60	NA	<200	<100	27,000
SW-4	11/2/2015	5'	2,800	14,000	<200	7,200	8,100	NA	5,800	NA	<60	NA	<200	<100	20,000
SW-5	11/2/2015	5'	2,800	14,000	<200	6,100	5,900	NA	4,100	NA	<60	NA	<200	<100	21,000
SW-6	11/4/2015	5'	<u>41,000</u>	170,000	400	18,000	36,000	NA	33,000	NA	100	NA	<u>600</u>	100	92,000
SW-7	11/4/2015	5'	<u>12,000</u>	100,000	<200	5,600	5,400	NA	4,700	NA	<60	NA	<200	<100	35,000
SW-8	11/4/2015	5'	2,900	21,000	<200	7,200	6,300	NA	4,000	NA	<60	NA	<200	<100	23,000
SW-9	11/4/2015	5'	2,000	13,000	<200	6,800	6,400	NA	3,500	NA	<60	NA	<200	<100	29,000
SW-10	11/4/2015	5'	3,300	11,000	<200	5,200	4,900	NA	4,300	NA	<50	NA	<200	<100	20,000
SW-11	11/5/2015	5'	1,500	20,000	<200	8,000	8,400	NA	5,000	NA	<60	NA	<200	<100	25,000
SW-12	11/5/2015	5'	1,900	7,100	<200	3,600	3,800	NA	2,300	NA	<50	NA	<200	<100	16,000
F-1	11/3/2015	10.5'	<u>10,000</u>	21,000	<200	6,000	4,700	NA	3,800	NA	<60	NA	<200	<100	55,000
F-2	11/3/2015	10.5'	<u>11,000</u>	12,000	<200	5,200	6,200	NA	6,200	NA	<60	NA	<200	<100	30,000
F-3	11/3/2015	10.5'	4,000	9,200	<200	4,200	5,000	NA	2,800	NA	<60	NA	<200	<100	24,000
F-4	11/3/2015	10.5'	5,300	52,000	<200	18,000	5,600	NA	2,400	NA	<60	NA	<200	<100	56,000
F-5	11/3/2015	10.5'	<u>12,000</u>	26,000	<200	15,000	8,700	NA	3,500	NA	<60	NA	<200	<100	160,000
F-6	11/4/2015	10.5'	3,000	14,000	<200	6,900	5,300	NA	3,400	NA	<60	NA	<200	<100	25,000
F-7	11/4/2015	10.5'	<u>7,300</u>	9,600	<200	4,800	8,300	NA	4,600	NA	<60	NA	<200	<100	25,000
F-8	11/5/2015	10.5'	<u>13,000</u>	12,000	<200	7,500	5,200	NA	4,600	NA	<60	NA	<200	<100	23,000
F-9	11/5/2015	10.5'	<u>30,000</u>	36,000	<200	15,000	7,900	NA	6,300	NA	<60	NA	300	<100	81,000
EGLE-RRD Operational Memorandum No. 1: Part 201 Cleanup Criteria and Part 213 Risk-Based Screening Levels (RBSLs), Revised October 12, 2023 Attachment 1: Soil Tables 2 and 3 Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels and Part 213 Tier 1 RBSLs															
Residential (µg/Kg)															
Statewide Default Background Levels	5,800	75,000	1,200	18,000	32,000	1.20E+07	21,000	4.40E+05	130	20,000	410	1,000	47,000		
Drinking Water Protection (DWP)	<u>4,600</u>	1.30E+6	<u>6,000</u>	1.0E+9	5.80E+6	<u>6,000</u>	7.00E+5	<u>1,000</u>	1,700	1.00E+05	4,000	4,500	2.40E+6		
Groundwater Surface Water Interface Protection (GSIP)	<u>4,600</u>	G	G,X	G, X	G	NA	G, X	(G,X)	<u>50</u>	(G)	<u>400</u>	100	G		
Soil Volatilization to Indoor Air Inhalation (SVII)	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	48,000	NLV	NLV	NLV	NLV		
Ambient Air Infinite Source Volatile Soil Inhalation (VSI)	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NLV	NLV	NLV		
Ambient Air Finite VSI Criteria for 5 Meter Source Thickness	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NLV	NLV	NLV		
Ambient Air Finite VSI Criteria for 2 Meter Source Thickness	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NLV	NLV	NLV		
Ambient Air Particulate Soil Inhalation (PSI)	7.20E+5	3.30E+8	1.70E+6	3.30E+8	1.30E+8	ID	1.00E+8	3.30E+06	2.00E+7	1.30E+07	1.30E+8	6.70E+6	ID		
Direct Contact (DC)	<u>7,600</u>	3.70E+7	5.50E+5	7.90E+8	2.00E+7	1.60E+08	4.00E+5	2.50E+07	1.60E+6	4.00E+07	2.60E+6	2.50E+6	1.70E+8		
Soil Saturation Concentration Screening Levels (Csat)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Non-Residential (µg/Kg)															
Drinking Water Protection (DWP)	<u>4,600</u>	1.30E+6	<u>6,000</u>	1.0E+9	5.80E+6	<u>6,000</u>	7.0E+5	<u>1,000</u>	1,700	1.00E+05	4,000	13,000	5.00E+6		
Groundwater Surface Water Interface Protection (GSIP)	<u>4,600</u>	G	G,X	G, X	G	NA	G, X	(G,X)	<u>50</u>	(G)	<u>400</u>	100	G		
Soil Volatilization to Indoor Air Inhalation (SVII)	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	89,000	NLV	NLV	NLV	NLV		
Ambient Air Infinite Source Volatile Soil Inhalation (VSI)	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	62,000	NLV	NLV	NLV	NLV		
Ambient Air Finite VSI Criteria for 5 Meter Source Thickness	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	62,000	NLV	NLV	NLV	NLV		
Ambient Air Finite VSI Criteria for 2 Meter Source Thickness	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	62,000	NLV	NLV	NLV	NLV		
Ambient Air Particulate Soil Inhalation (PSI)	9.10E+5	1.50E+8	2.2E+6	1.50E+8	5.90E+7	ID	4.4E+7	1.50E+06	8.80E+6	1.60E+07	5.90E+7	2.90E+6	ID		
Direct Contact (DC)	<u>37,000</u>	1.30E+8	2.1E+6	1.0E+9	9.00E+6	5.80E+08	9.0E+5	9.00E+07	5.80E+5	1.50E+08	9.60E+6	9.00E+6	6.30E+8		
Soil Saturation Concentration Screening Levels (Csat)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		

ND Not Detected above laboratory Method Detection Limit (MDL) or Minimum Quantitative Level (MQL)
NA Not analyzed or Not Available
µg/Kg micrograms per Kilogram or parts per billion
bgs Below Grade Surface (feet)
Bold Exceeds Cleanup Criteria

Cleanup Criteria exceeded

TABLE 3 (Page 1)
CLEANUP CRITERIA COMPARISON FOR GROUNDWATER
METALS
775 INDUSTRIAL ROAD IN MARSHALL, CALHOUN COUNTY, MICHIGAN 49068
SES PROJECT No.: 2025-0250

Metals (µg/L)			Iron	Manganese
Chemical Abstract Service Number (CAS#)			7439896	7439965
Sample ID	Sample Date	Screen Depth (bgs)	Metals	
MW-201	5/11/2023	5 - 15'	<u>7200</u>	<u>890</u>
MW-201R	8/11/2023	5 - 15'	<u>15000</u>	<u>460</u>
MW-201	11/14/2023	5 - 15'	<u>4700</u>	<u>260</u>
MW-201R	4/17/2024	5 - 15'	<u>5900</u>	<u>150</u>
MW-201	7/11/2024	5 - 15'	<u>640</u>	<50
EGLE-RRD Operational Memorandum No. 1 Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels (RBSLs), Revised October 12, 2023 Attachment 1: Groundwater Table 1 Residential and Non-residential Part 201 Generic Cleanup Criteria and Screening Levels and Part 213 Tier 1 RBSLs				
Residential (µg/L)				
Residential Drinking Water (DW)			300	50
Groundwater Surface Water Interface (GSI)			NA	(G,X)
Residential Groundwater Volatilization to Indoor Air Inhalation (GVII)			NLV	NLV
Non-Residential (µg/L)				
Non-Residential Drinking Water (DW)			300	50
Groundwater Surface Water Interface (GSI)			NA	(G,X)
Non-Residential Groundwater Volatilization to Indoor Air Inhalation (GVII)			NLV	NLV
Screening Levels (µg/L)				
Water Solubility			NA	NA
Flammability and Explosivity Screening Level			ID	ID

ND Not Detected above the laboratory Method Detection Limit (MDL) or Minimum C

NA Not Available or Not Analyzed

NVL No value listed

µg/L micrograms per Liter or parts per billion

bgs Below Grade Surface (feet)

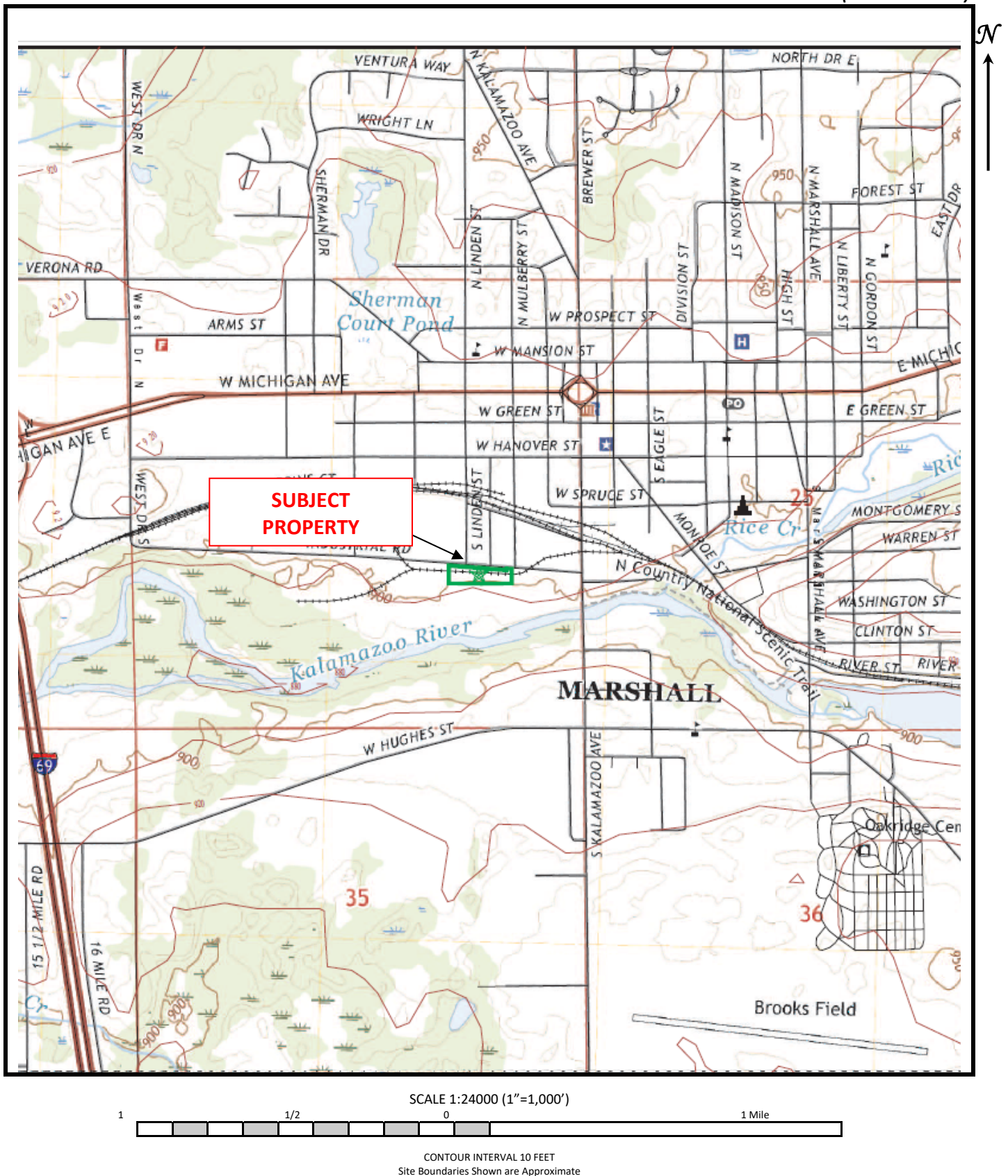
Bold Exceeds Cleanup Criteria

Cleanup Criteria exceeded

FIGURES



Marshall, Michigan 7.5 Minute Quadrangle Map
(Published 2019)

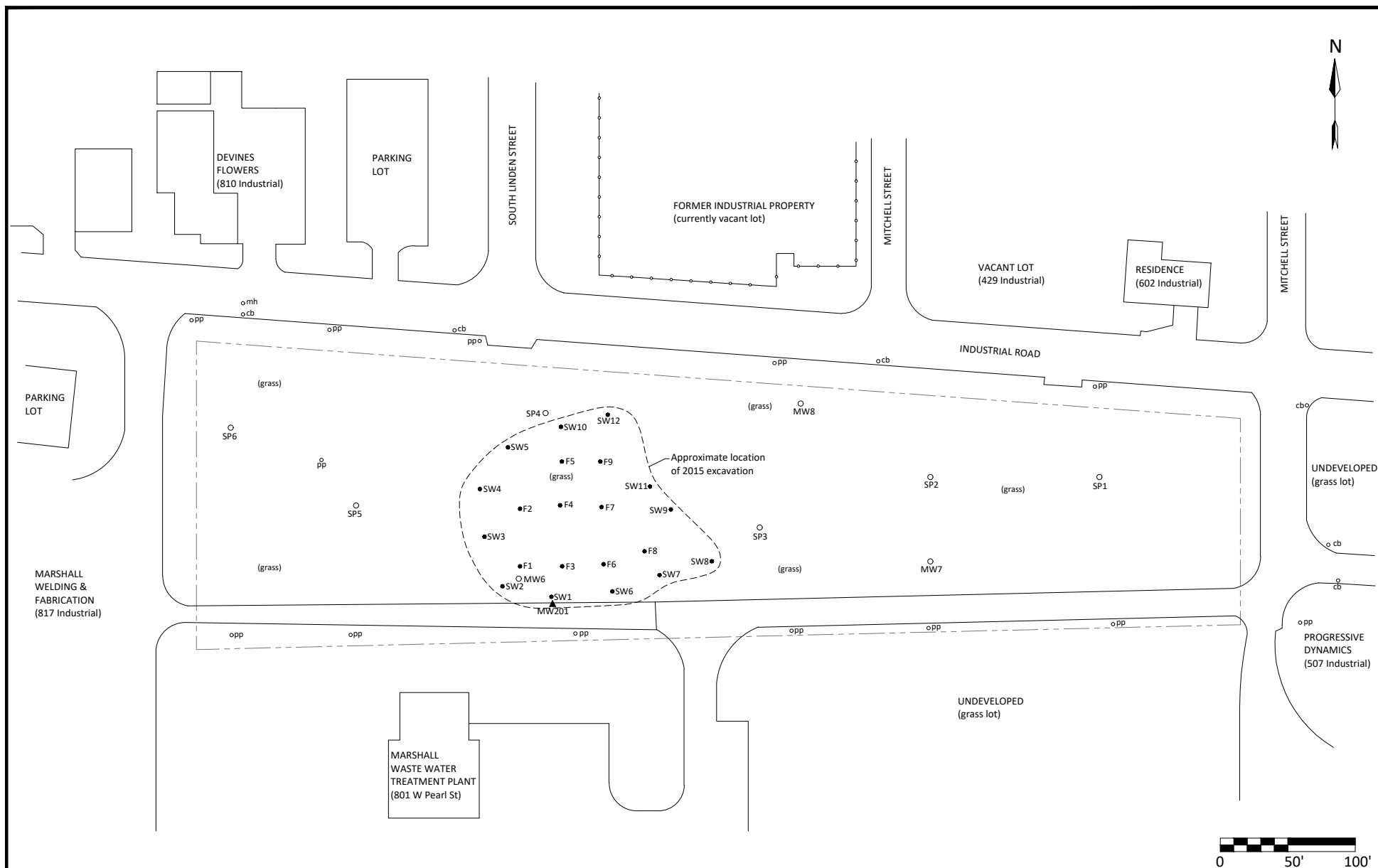


Topographic Map

3.03-Acre Vacant Land Property
775 Industrial Road
Marshall, Calhoun County, Indiana 49068
SES Project No.: 2025-0091

Figure 1





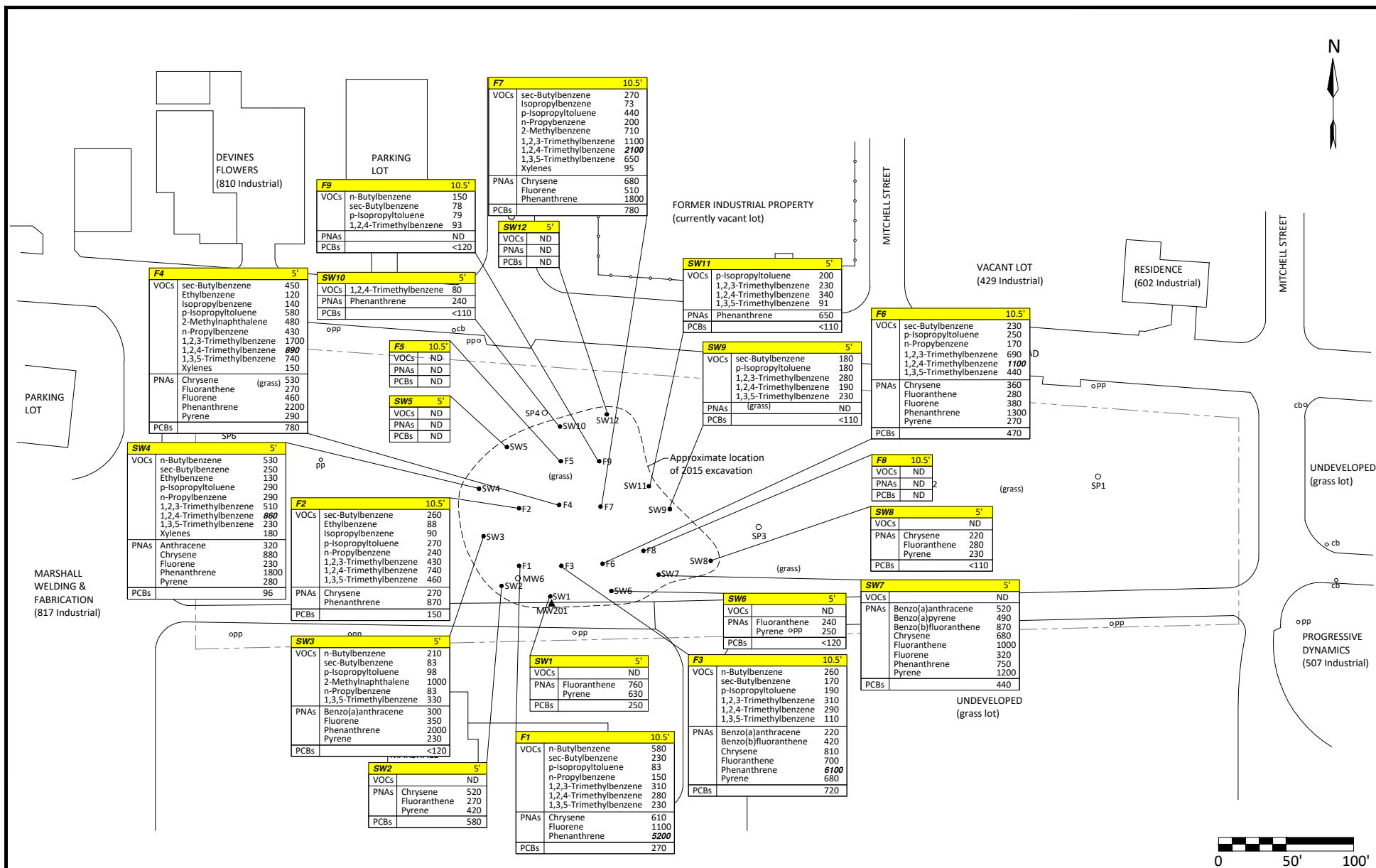
- NOTES: 1. 2015 excavation area and associated sample locations digitized from Amec, Fig.2 Excavation Zone, dated 12/2/15
2. SP/MW locations digitized from SME, Soil Probe Location Diagram, dated 9/17/03
3. MW203 location digitized from AST, Site Map dated 4/22/21

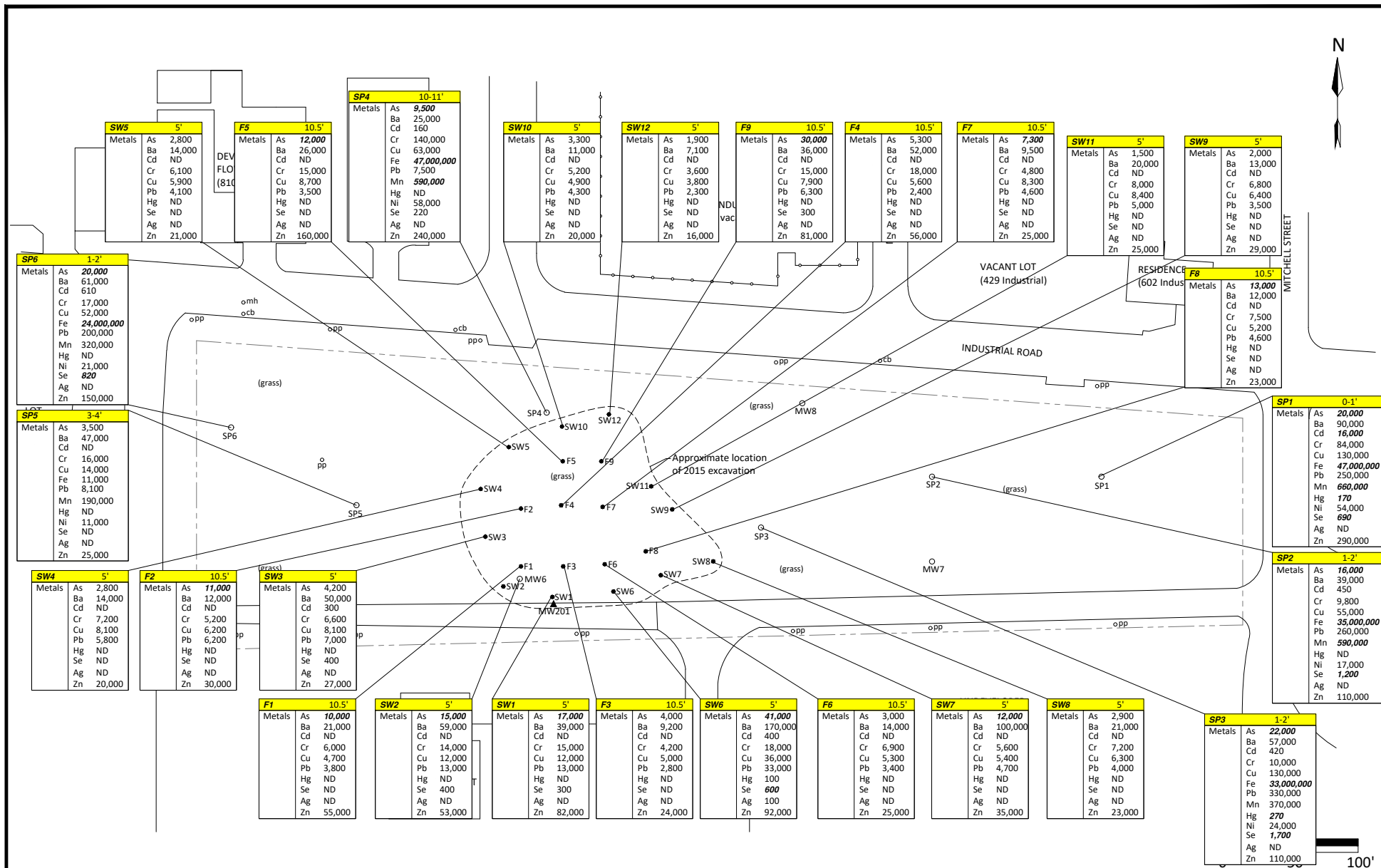
TITLE	SUBJECT PROPERTY WITH SAMPLE LOCATIONS
LOCATION	3.03-Acre Vacant Land Property 775 Industrial Road Marshall, Calhoun County, Michigan

LEGEND	APPROX PARCEL BOUNDARY
pp	POWER POLE
cb	CATCH BASIN
mh	MANHOLE
o ● ▲	PREVIOUS SAMPLE LOCATIONS

PROJECT	2025-0250
SCALE	1" = 100'
DATE	3/7/25
DRAWN	dn
CHECKED	df
FILE	20250250
FIGURE	2







- NOTES: 1. 2015 excavation area and associated sample locations digitized from Amec, Fig.2 Excavation Zone, dated 12/2/15
2. SP/MW locations digitized from SME, Soil Probe Location Diagram, dated 9/17/03
3. MW203 location digitized from AST, Site Map dated 4/22/21

TITLE SOIL ANALYTICAL RESULTS - Metals

LOCATION

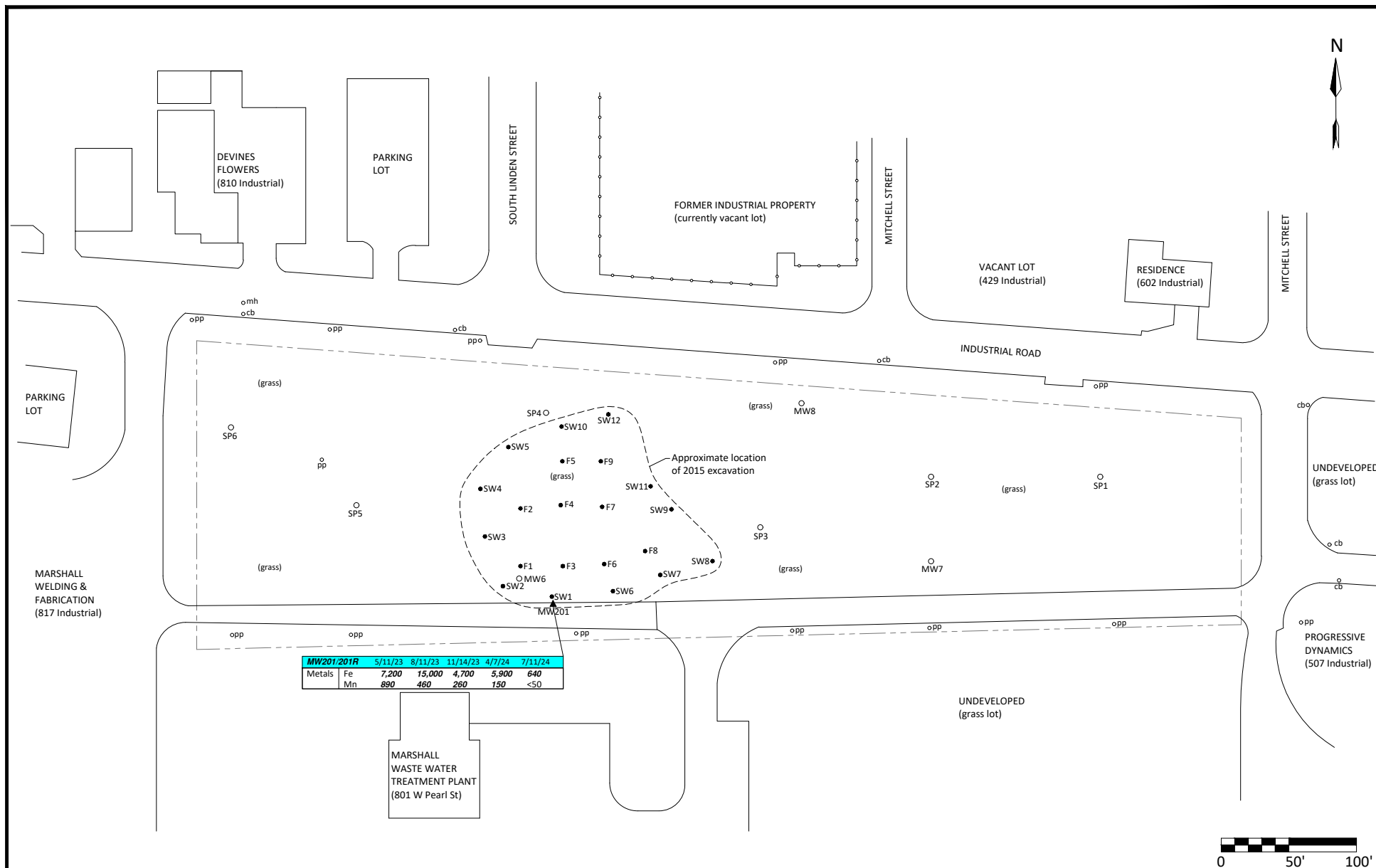
3.03-Acre Vacant Land Property
775 Industrial Road
Marshall, Calhoun County, Michigan

- LEGEND
- APPROX PARCEL BOUNDARY
 - pp POWER POLE
 - cb CATCH BASIN
 - mh MANHOLE
 - PREVIOUS SAMPLE LOCATIONS

NOTE: Concentrations reported in ug/kg (ppb)

PROJECT	
2025-0250	
SCALE	DATE
1"= 100'	3/20/25
DRAWN	CHECKED
dn	df
FILE	FIGURE
20250250	3b





- NOTES: 1. 2015 excavation area and associated sample locations digitized from Amec, Fig.2 Excavation Zone, dated 12/2/15
2. SP/MW locations digitized from SME, Soil Probe Location Diagram, dated 9/17/03
3. MW203 location digitized from AST, Site Map dated 4/22/21

TITLE GROUNDWATER ANALYTICAL RESULTS

LOCATION

3.03-Acre Vacant Land Property
775 Industrial Road
Marshall, Calhoun County, Michigan

LEGEND

- APPROX PARCEL BOUNDARY
- pp POWER POLE
- cb CATCH BASIN
- mh MANHOLE
- PREVIOUS SAMPLE LOCATIONS

NOTE: Concentrations reported in ug/L (ppb)

PROJECT

2025-0250

SCALE

1"= 100'

DRAWN

dn

FILE

20250250

DATE

3/20/25

CHECKED

df

FIGURE

4



APPENDIX A

Phase I ESA Report, February 4, 2025





Mary Place, CHMM
Senior Project Manager
3807 Transportation Drive
Fort Wayne, Indiana 46818
Phone: (260) 497-7645
m.place@sesadvantage.com

February 4, 2025

Ms. Karrie Hammer
Owner/Manager
Tiger's Towing
19218 11 Mile Road
Battle Creek, Michigan 49014

Re: Phase I Environmental Site Assessment Report
3.03-Acre Vacant Land Property
775 Industrial Road
Marshall, Calhoun County, Indiana 49068
SES Project No.: 2025-0091

Dear Ms. Hammer:

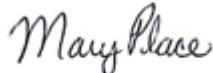
At your request, SES Environmental (SES) completed a Phase I Environmental Site Assessment (ESA) of the above referenced subject property in general accordance with the United States EPA Standards and Practices for All Appropriate Inquiries (AAI), 40 CFR Part 312} and guidelines established by the ASTM Standard Practice E 1527-21.

The results of this assessment indicate one *recognized environmental condition* (REC) is associated with the subject property. Please refer to the Executive Summary and report text for a complete listing of the Phase I ESA findings and corresponding opinions.

According to ASTM Standard E1527-21, Section 4.6.1, this Phase I ESA is considered valid if conducted within 180 days prior to the acquisition date or date of intended transaction. After that period, certain aspects of the Phase I ESA will need to be updated. Based on the earliest completion date of the relevant components, this Phase I ESA remains valid until **July 20, 2025**.

We appreciate the opportunity to assist you with this project. If you should have any questions or concerns regarding this report, or if we can be of any further service to you in the future, please do not hesitate to call us at (260) 497-7645.

Respectfully Submitted,
SES Environmental


Mary Place, CHMM
Senior Project Manager





PHASE I ENVIRONMENTAL SITE ASSESSMENT

3.03-Acre Vacant Land Property

775 Industrial Road
Marshall, Calhoun County, Indiana 49068
Inspection Date: January 17, 2025
Database Report Date: January 21, 2025
SES Project No.: 2025-0091

February 4, 2025

Tiger's Towing

19218 11 Mile Road
Battle Creek, Michigan 49014
Attn: Ms. Karrie Hammer

Kellogg Community Credit Union

41 2nd Street, P.O. Box 140
Battle Creek, MI 49016-0140
Attn: Ms. Tara Steele



APPENDIX B

Soil Boring Logs





soil and materials engineers, inc.

PROJECT NAME: MARSHALL IRON & METAL
PROJECT LOCATION: MARSHALL, MICHIGAN
CLIENT: CITY OF MARSHALL

A/E:
BY: JLS/NBL START: 9/18/03
PROJECT NUMBER: KE45321

Probe SP1
END: 9/18/03
SHEET: 1

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NUMBER INTERVAL	INCHES OF RECOVERY	BLOWS PER SIX INCHES	PID (ppm)	ANALYTICAL SAMPLE	STANDARD PENETRATION TEST RESISTANCES (N-values)
								0 10 20 30 40 50
0		GROUND SURFACE ELEVATION=						
		Fine to Medium Sand- Trace to Some Silt- Trace Gravel, Glass, Brick Fragments and Root Fibers- Brown- Moist (SP-SM/Fill)	S1					
		Fine to Medium Sand- Trace Gravel, Silt and Cinders- Black- Moist (SP/Fill)						
		Fine to Medium Sand- Trace to Some Clay- Trace Silt and Cinders- Brown- Moist (SP-SC/Fill)						
3		Sandy Clay- Some Silt- Brown (CL)	S2					
		Fine to Coarse Sand- Trace to Some Gravel and Silt- Brown- Moist (SP-SM)	S3					
6			S4					
		Fine to Medium Sand- Trace to Some Clay- Trace Silt- Brown- Moist to Wet (SP-SC)	S5					
9			S6					
		END OF PROBE AT 11 FEET.						
12								
15								
18								
21								

WATER LEVEL OBSERVATIONS	Notes: 1. THE INDICATED STRATIFICATION LINES ARE APPROXIMATE. IN SITU, THE TRANSITION BETWEEN MATERIALS MAY BE GRADUAL.
--------------------------	---

DRILLER: R.B.
RIG NO.: SP

DRILL METHOD: Soil Probe
BACKFILL METHOD: Soil Cuttings

WATER LEVEL DURING DRILLING: 9.0
WATER LEVEL UPON COMPLETION:

WATER LEVEL HOURS AFTER COMPLETION:
CAVE OF BOREHOLE AT



soil and materials engineers, inc.

PROJECT NAME: MARSHALL IRON & METAL
PROJECT LOCATION: MARSHALL, MICHIGAN
CLIENT: CITY OF MARSHALL

A/E:
BY: JLS/NBL
PROJECT NUMBER: KE45321

Probe SP2
START: 9/18/03
END: 9/18/03
SHEET: 1

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NUMBER INTERVAL	INCHES OF RECOVERY	BLOWS PER SIX INCHES	PID (ppm)	ANALYTICAL SAMPLE	STANDARD PENETRATION TEST RESISTANCES (N-values)
0		GROUND SURFACE ELEVATION=						0 10 20 30 40 50
		Fine to Medium Sand- Trace to Some Silt- Trace Gravel, Glass, Brick Fragments, Cinders and Root Fibers- Black- Moist (SP-SM/Fill)	S1					
		Fine to Coarse Sand- Trace Silt and Cinders- Gray- Moist (SP/Fill)						
3		Sandy Clay- Some Silt- Gray (CL)	S2					
			S3					
6			S4					
		Fine to Medium Sand- Trace to Some Gravel and Clay- Trace Silt- Brown- Moist to Wet (SP-SC)	S5					
9			S6					
		END OF PROBE AT 11 FEET.						
12								
15								
18								
21								

WATER LEVEL OBSERVATIONS

Notes: 1. THE INDICATED STRATIFICATION LINES ARE APPROXIMATE. IN SITU, THE TRANSITION BETWEEN MATERIALS MAY BE GRADUAL.
2. ODORS NOTED IN SOIL SAMPLES COLLECTED FROM APPROXIMATELY 2-8 FEET BELOW GROUND SURFACE.

DRILLER: R.B.
RIG NO.: SP

DRILL METHOD: Soil Probe
BACKFILL METHOD: Soil Cuttings

WATER LEVEL DURING DRILLING: 11.0
WATER LEVEL UPON COMPLETION: CAVE OF BOREHOLE AT

HOURS AFTER COMPLETION:



soil and materials engineers, inc.

PROJECT NAME: MARSHALL IRON & METAL
PROJECT LOCATION: MARSHALL, MICHIGAN
CLIENT: CITY OF MARSHALL

A/E:
BY: JLS/NBL
START: 9/18/03
PROJECT NUMBER: KE45321

Probe SP3
END: 9/18/03
SHEET: 1

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NUMBER INTERVAL	INCHES OF RECOVERY	BLOWS PER SIX INCHES	PID (ppm)	ANALYTICAL SAMPLE	STANDARD PENETRATION TEST RESISTANCES (N-values)
0		GROUND SURFACE ELEVATION=						0 10 20 30 40 50
0		Fine to Medium Sand- Trace to Some Silt- Trace Gravel, Glass, Metal Pieces, Slag, Cinders and Root Fibers- Black- Moist (SP-SM/Fill)	S1					
3		Sandy Clay- Some Silt- Gray (CL)	S2					
6		Fine to Coarse Sand- Trace to Some Gravel and Silt- Brown- Moist to Wet (SP-SM)	S3					
9			S4					
10		END OF PROBE AT 10 FEET.	S5					
12								
15								
18								
21								

WATER LEVEL OBSERVATIONS

Notes: 1. THE INDICATED STRATIFICATION LINES ARE APPROXIMATE. IN SITU, THE TRANSITION BETWEEN MATERIALS MAY BE GRADUAL.

DRILLER: R.B.
RIG NO.: SP

DRILL METHOD: Soil Probe
BACKFILL METHOD: Soil Cuttings

WATER LEVEL DURING DRILLING: 10.0
WATER LEVEL UPON COMPLETION: CAVE OF BOREHOLE AT

HOURS AFTER COMPLETION:



soil and materials engineers, inc.

PROJECT NAME: MARSHALL IRON & METAL
PROJECT LOCATION: MARSHALL, MICHIGAN
CLIENT: CITY OF MARSHALL

A/E:
BY: JLS/NBL START: 9/18/03
PROJECT NUMBER: KE45321

Probe SP4
END: 9/18/03
SHEET: 1

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NUMBER INTERVAL	INCHES OF RECOVERY	BLOWS PER SIX INCHES	PID (ppm)	ANALYTICAL SAMPLE	STANDARD PENETRATION TEST RESISTANCES (N-values)
0		GROUND SURFACE ELEVATION=						0 10 20 30 40 50
3		Fine to Coarse Sand- Trace Silt- Brown- Moist to Wet (SP/Fill)	S1					
6			S2					
9		Fine to Coarse Sand- Trace Silt- Gray- Wet (SP)	S3					
12		Fine Sand- Trace Silt- Gray- Wet (SP)	S4					
15		END OF PROBE AT 11 FEET.	S5					
18			S6					
21								

WATER LEVEL OBSERVATIONS

Notes: 1. THE INDICATED STRATIFICATION LINES ARE APPROXIMATE. IN SITU, THE TRANSITION BETWEEN MATERIALS MAY BE GRADUAL.
2. ODORS NOTED IN SOIL SAMPLES COLLECTED FROM APPROXIMATELY 9-11 FEET BELOW GROUND SURFACE.
3. GREENISH STAINING NOTED APPROXIMATELY 10.5-11 FEET BELOW GROUND SURFACE.

DRILLER: R.B.
RIG NO.: SP

DRILL METHOD: Soil Probe
BACKFILL METHOD: Soil Cuttings

WATER LEVEL DURING DRILLING: 6.0
WATER LEVEL UPON COMPLETION:

WATER LEVEL
CAVE OF BOREHOLE AT
HOURS AFTER COMPLETION:



soil and materials engineers, inc.

PROJECT NAME: MARSHALL IRON & METAL
PROJECT LOCATION: MARSHALL, MICHIGAN
CLIENT: CITY OF MARSHALL

A/E:
BY: JLS/NBL START: 9/18/03
PROJECT NUMBER: KE45321

Probe SP5
END: 9/18/03
SHEET: 1

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NUMBER INTERVAL	INCHES OF RECOVERY	BLOWS PER SIX INCHES	PID (ppm)	ANALYTICAL SAMPLE	STANDARD PENETRATION TEST RESISTANCES (N-values)
0		GROUND SURFACE ELEVATION=						0 10 20 30 40 50
		Fine to Medium Sand- Trace to Some Silt- Trace Gravel, Glass, Brick Fragments and Root Fibers- Brown- Moist (SP-SM/Fill)	S1					
		Fine to Medium Sand- Trace Gravel, Silt and Cinders- Black- Moist (SP/Fill)						
3		Clayey Fine to Medium Sand- Trace to Some Gravel- Trace Silt- Gray- Moist (SC)	S2					
6			S3					
9		Fine to Medium Sand- Trace to Some Clay- Trace Gravel and Silt- Gray- Moist (SP-SC)	S4					
12			S5					
15								
18								
21								
WATER LEVEL OBSERVATIONS		Notes: 1. THE INDICATED STRATIFICATION LINES ARE APPROXIMATE. IN SITU, THE TRANSITION BETWEEN MATERIALS MAY BE GRADUAL. 2. ODORS NOTED IN SOIL SAMPLES COLLECTED FROM APPROXIMATELY 0.5-10 FEET BELOW GROUND SURFACE.						

DRILLER: R.B.

DRILL METHOD: Soil Probe

WATER LEVEL DURING DRILLING: 10.0

WATER LEVEL

HOURS AFTER COMPLETION:

RIG NO.: SP

BACKFILL METHOD: Soil Cuttings

WATER LEVEL UPON COMPLETION:

CAVE OF BOREHOLE AT



soil and materials engineers, inc.

PROJECT NAME: MARSHALL IRON & METAL
PROJECT LOCATION: MARSHALL, MICHIGAN
CLIENT: CITY OF MARSHALL

A/E:
BY: JLS/NBL **START:** 9/18/03
PROJECT NUMBER: KE45321

Probe SP6
END: 9/18/03
SHEET: 1

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NUMBER INTERVAL	INCHES OF RECOVERY	BLOWS PER SIX INCHES	PID (ppm)	ANALYTICAL SAMPLE	STANDARD PENETRATION TEST RESISTANCES (N-values)
		GROUND SURFACE ELEVATION=						0 10 20 30 40 50
0		Fine to Medium Sand- Trace to Some Silt- Trace Gravel, Metal Pieces, Brick Fragments and Root Fibers- Brown- Moist (SP-SM/Fill)	S1					
		Fine to Coarse Sand- Trace Clay, Silt, Cinders, Glass and Metal Pieces- Black to Brown- Moist (SP/Fill)						
3			S2					
6			S3					
		Fine to Medium Sand- Trace to Some Gravel and Clay- Trace Silt- Brown- Moist to Wet (SP-SC)	S4					
9			S5					
		END OF PROBE AT 10 FEET.						
12								
15								
18								
21								

WATER LEVEL OBSERVATIONS

Notes: 1. THE INDICATED STRATIFICATION LINES ARE APPROXIMATE. IN SITU, THE TRANSITION BETWEEN MATERIALS MAY
BE GRADUAL.

DRILLER: R.B. **DRILL METHOD:** Soil Probe **WATER LEVEL DURING DRILLING:** 10.0 **WATER LEVEL** **HOURS AFTER COMPLETION:**
RIG NO.: SP **BACKFILL METHOD:** Soil Cuttings **WATER LEVEL UPON COMPLETION:** **CAVE OF BOREHOLE AT**

PROJECT:				AMEC-Former Marshall Iron & Metal DATE STARTED: 4/6/2021		
BORING IDENTIFICATION: RDC-01				DATE FINISHED: 4/6/2021		
DRILLING CONTRACTOR: AST Enterprises				TOTAL DEPTH: 16.5'		SCREEN INTERVAL: 10
DRILLING METHOD: Direct Push				DEPTH TO WATER:		CASING: 1"
DRILLING EQUIPMENT: 7822DT				LOGGED BY: CN		
SAMPLING METHOD: 2.25 Dual Tube				PROJECT MANAGER: GS		REG. NO. N/A

DEPTH (feet)	REC-OVERY (%)	LAB I.D.	PID READING (ppm)	DESCRIPTION NAME (USCS): color, sorting, plasticity, mositure, sorting, grain size, packing		WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
0						
1						
2					No Sample	
3						
4						
5					No Recovery	
6	50					
7				SM	Silty sand, dk gry, loose, damp, tr pebbles, sl odor	
8		RDC-01(8)	1.2			
9					Sand, md brn, md gry, loose, damp, tr pbbls, odor	
10	75	RDC-01(10)	4.1	SW		10.24
11					Sand, md brn gry, loose, w srtd, wet, sl odor	
12		RDC-01(12)	6.3			
13					No Recovery	
14	45					
15				SP	Sand, lt brn, loose, poorly sorted, wet, abnt grvl, sl odor	
16	100	RDC-01(16)	2.7			
17		RDC-01(16.5)	0.6		Sand, lt brn, loose, poorly sorted, wet, abnt grvl, sl odor	

AST Environmental Inc.

Project No. 5152295

Page 1 of 1
Page 92 of 144

PROJECT: AMEC-Former Marshall Iron & Metal				DATE STARTED: 4/6/2021		
BORING IDENTIFICATION: RDC-02				DATE FINISHED: 4/6/2021		
DRILLING CONTRACTOR: AST Enterprises				TOTAL DEPTH: 20'		
DRILLING METHOD: Direct Push				DEPTH TO WATER:		SCREEN INTERVAL: 10
DRILLING EQUIPMENT: 7822DT				LOGGED BY: CN		
SAMPLING METHOD: 2.25 Dual Tube				PROJECT MANAGER: GS		REG. NO. N/A

DEPTH (feet)	REC- OVERY (%)	LAB I.D.	PID READING (ppm)	DESCRIPTION NAME (USCS): color, sorting, plasticity, mositure, sorting, grain size, packing	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
0					
1					
2				No Sample	
3					
4					
5				No Recovery	
6	25				
7					
8		RDC-02(8)	1.2	SM Silty Sand, dk gry, firm, vw srted, damp, tr pbbls, sl odor	
9				SP Sandy Silt, md gry, soft, loose, vw srted, st odor	10.04 ▽
10	60	RDC-02(10)	4.6		
11				Grvly Sand, md gry, loose, damp, prly srted, abnt grvl, st odor	
12		RDC-02(12)	7.6		
13				SW Sand, dk brn, loose, vw srted, wet, tr grvl, st odor, sheen in water	
14	70	RDC-02(14)	3.4		
15				Sand, dk brn, v dk brn, vw srted, loose, wet, sl odor	
16		RDC-02(16)	1.3		
17				Clayey Silt, lt gry, hd, moist, tight, homogenous, no odor	
18	65	RDC-02(18)	2.5	MH	
19				Clayey Silt, lt gry, hd, moist, tight, homogenous, no odor	
20		RDC-02(20)	1.7		

AST Environmental Inc.	Project No. 5152295	Page 1 of 1 Page 93 of 144
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PROJECT:		AMEC-Former Marshall Iron & Metal		DATE STARTED: 4/6/21			
BORING IDENTIFICATION: RDC-03				DATE FINISHED: 4/6/21			
DRILLING CONTRACTOR: AST Enterprises				TOTAL DEPTH: 20'			SCREEN INTERVAL: 10
DRILLING METHOD: Direct Push				DEPTH TO WATER:			CASING: 1"
DRILLING EQUIPMENT: 7822DT				LOGGED BY: CN			
SAMPLING METHOD: 2.25 Dual Tube				PROJECT MANAGER: GS		REG. NO. N/A	

DEPTH (feet)	REC- OVERY (%)	LAB I.D.	PID READING (ppm)	DESCRIPTION NAME (USCS): color, sorting, plasticity, mositure, sorting, grain size, packing		WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
0					No Sample	
1						
2						
3						
4						
5				SP	Sandy Silt, dk gry, loose, moist, tr grvl, no odor	
6	70	RDC-03(6)	4.3			
7				SM	Silty Sand, md - dk gry, loose, vw srted, wet, odor	
8		RDC-03(8)	3.2			
9				SM	Silty Sand, md - dk gry, loose, vw srted, wet, odor	9.05
10	75	RDC-03(10)	2.4			
11				SW	Grvly Sand, md gry, lt brn, loose, prly srted, wet, odor	
12		RDC-03(12)	12.3			
13				SW	Grvly Sand, dk gry, dk brn, loost, wet, prly srted, odor	
14	65	RDC-03(14)	5.5			
15				SW	Grvly Sand, lt-md gry, lt brn, loose, wet, prly srted, sl odor	
16		RDC-03(16)	6			
17				SW	Grvly Sand, lt-md gry, md brn, loose, wet, prly srted, sl odor	
18	75	RDC-03(18)	2			
19				MH	Clayey Silt, lt gry, hd, moist, tight, homogenous, no odor	
20		RDC-03(20)	1.3			

PROJECT:				AMEC-Former Marshall Iron & Metal DATE STARTED: 4/6/2021 DATE FINISHED: 4/6/2021 TOTAL DEPTH: 16' DEPTH TO WATER:		
BORING IDENTIFICATION: RDC-04				SCREEN INTERVAL: 10		
DRILLING CONTRACTOR: AST Enterprises				CASING: 1"		
DRILLING METHOD: Direct Push				LOGGED BY: CN		
DRILLING EQUIPMENT: 7822DT				PROJECT MANAGER: GS		REG. NO. N/A
SAMPLING METHOD: 2.25 Dual Tube						

DEPTH (feet)	REC-OVERY (%)	LAB I.D.	PID READING (ppm)	DESCRIPTION NAME (USCS): color, sorting, plasticity, mositure, sorting, grain size, packing		WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
0					No Sample	
1						
2						
3						
4						
5				SP	Sandy Silt, dk gry, loose, moist, tr grvl, no odor	
6	70	RDC-04(6)	0.4	SM	Silty Sand, md brn gry, firm, damp, tr grvl, odor	
7						
8		RDC-04(8)	14.4			8.18
9					Sand, abnt SILT, lt - md gry, loose, damp, rare pbbl, st odor	
10	100	RDC-04(10)	13.9	SW	Sand, abnt SILT, lt - md gry, loose, damp, rare pbbl, st odor	
11						
12		RDC-04(12)	0.1			
13					Silty Sand, md gry brn, loose, wet, no odor	
14	80	RDC-04(14)	0.4	SM	Silty Sand, md gry brn, loose, wet, no odor	
15						
16		RDC-04(16)	0.8			

AST Environmental Inc.

Project No. 5152295

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PROJECT: AMEC-Former Marshall Iron & Metal				DATE STARTED: 4/6/2021		
BORING IDENTIFICATION: RDC-05				DATE FINISHED: 4/6/2021		
DRILLING CONTRACTOR: AST Enterprises				TOTAL DEPTH: 20'		SCREEN INTERVAL: 10
DRILLING METHOD: Direct Push				DEPTH TO WATER:		CASING: 1"
DRILLING EQUIPMENT: 7822DT				LOGGED BY: CN		
SAMPLING METHOD: 2.25 Dual Tube				PROJECT MANAGER: GS		REG. NO. N/A

DEPTH (feet)	REC-OVERY (%)	LAB I.D.	PID READING (ppm)	DESCRIPTION NAME (USCS): color, sorting, plasticity, mositure, sorting, grain size, packing		WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
0						
1						
2					No Sample	
3						
4						
5				SP	Sandy Silt, dk gry, loose, moist, tr grvl, no odor	
6	65	RDC-05(6)	0			
7		RDC-05(7)	-	SW	Sand, dk gry brn, loose, wet, staining, str odor	
8		RDC-05(8)	-		Sand, tr silt, md gry, loost, moist, vw srtd, tr grvl, odor	
9				SM	Silty Sand, md gry, firm, moist, vw srtd, no odor	8.94
10	75	RDC-05(10)	13.2			
11					Sand, tr silt, md gry, loose, damp, vw srtd, tr grvl, no odor	
12		RDC-05(12)	30.7	SW		
13					Sand, md gry brn, loose, wet, prly srtd, abdt grvl, st odor, product/sheen in water	
14	60	RDC-05(14)	47.3			
15					Silt, com sand, lt-md gry, homogenous, moist, m soft, no odor	
16		RDC-05(16)	17.4			
17				ML	Silt, md gry, homogenous, md hd, moist, no odor	
18	65	RDC-05(18)	23.4			
19					Silt, lt gry, homogenous, md hd, moist, no odor	
20		RDC-05(20)	0.1			

AST Environmental Inc.

Project No. 5152295

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Page 96 of 144

PROJECT:		AMEC-Former Marshall Iron & Metal		DATE STARTED: 4/8/2021		
BORING IDENTIFICATION: RDC-23				DATE FINISHED: 4/8/2021		
DRILLING CONTRACTOR: AST Enterprises				TOTAL DEPTH: 16		
DRILLING METHOD: Direct Push				DEPTH TO WATER:		
DRILLING EQUIPMENT: 7822DT				LOGGED BY: CN		SCREEN INTERVAL: 10
SAMPLING METHOD: 2.25 Dual Tube				PROJECT MANAGER: GS		REG. NO. -

DEPTH (feet)	REC- OVERY (%)	LAB I.D.	PID READING (ppm)	DESCRIPTION NAME (USCS): color, sorting, plasticity, mositure, sorting, grain size, packing		WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
0					No Sample	
1						
2						
3						
4						
5					No Recovery	
6	50					
7				MH	Clayey silt, dk brn, sft, m plast, moist, no odor	
8		RDC-23(8)				
9					No Recovery	
10	50			SM	Silty sand, lt-md brn, vf grn, md loose, w srted, moist, no odor	10.23
11		RDC-23(11)				
12		RDC-23(12)			Sand, md-dk gry, md grn, prly srted, loose, wet, str odor	
13					sand, md-dk brn, f grn, w srted, md loose, sat, str odor	
14	50	RDC-23(14)		SW		
15					sand, lt-md brn, prly srted, f grn, loose, wet, no odor	
16		RDC-23(16)				

APPENDIX C

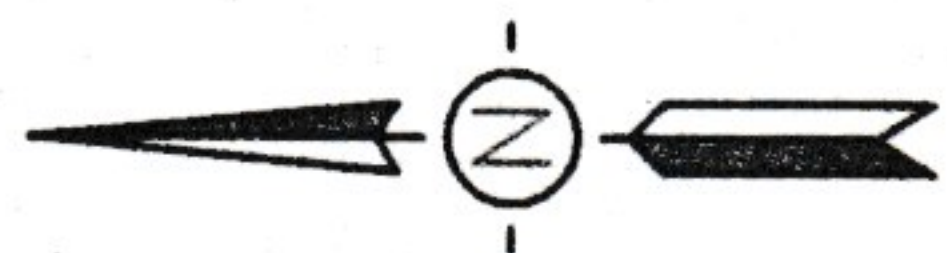
Land Survey Map



SKETCH

EAST LINE SECTION 26
S00°07'00"W 827.91'
EAST 1/4 CORNER
SECTION 26, T2S, R6W

FOR: CITY OF MARSHALL



SCALE 1" = 100'

LEGEND

- = DEED LINE
- = DISTANCE NOT TO SCALE
- - - = SANITARY SEWER
- - - = STORM SEWER
- - - = WATER LINE
- - - = UNDERGROUND TELEPHONE
- - - = UNDERGROUND ELECTRIC
- - - = OVERHEAD WIRES
- ⊙ = SANITARY MANHOLE
- ⊙ = DRAINAGE MANHOLE
- ⊙ = ELECTRIC MANHOLE
- ⊙ = FIRE HYDRANT
- ⊙ = WATER VALVE
- ⊙ = UTILITY POLE
- ⊙ = TELEPHONE RISER
- ⊙ = MONITOR WELL

REVISED: 03 JUNE 2003
REVISED: 29 MAY 2003
REVISED: 2 FEB 2005
REVISED: 15 APRIL 2005

LEGEND

- = Set 1/2" Bar with Cap
- = Found Iron as Noted
- = Survey Boundary Line
- = Distance Not to Scale
- x — = Fence
- ▨ = Deck, Porch, Sidewalk, & Patio Areas

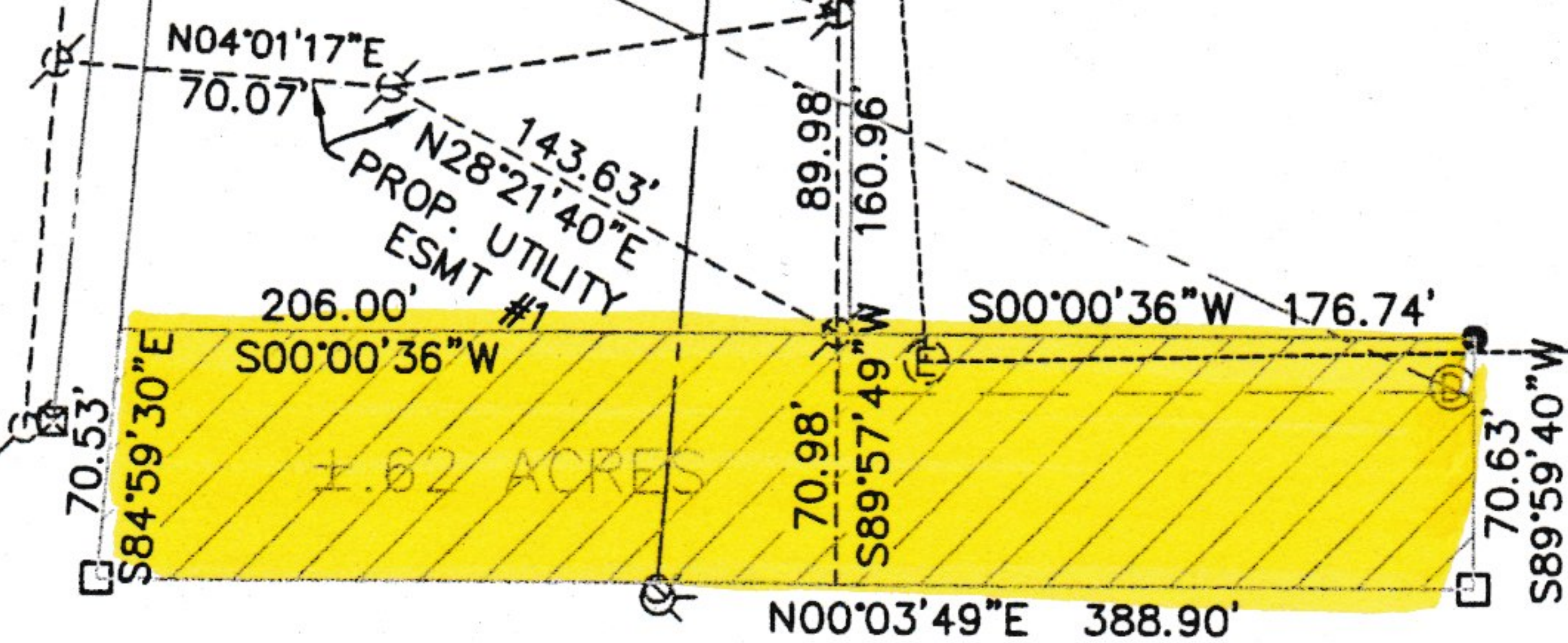
All Dimensions are in Feet and Decimals Thereof.

All Improvements Not Shown.

INDUSTRIAL ROAD

±3.65 ACRES

±.62 ACRES



EDITED BY: MJL
CITY OF MARSHALL

DRAWN BY	KEBS	SECTION	26, T2S, R6W
FIELD WORK BY	KEBS	JOB NUMBER:	
SHEET	1 OF 2		

APPENDIX D

Environmental Professional Qualification Summary



Michelle L. Arsenault, PE

Senior Project Manager

GENERAL SUMMARY

Michelle Arsenault, PE, has more than 27 years of environmental consulting experience.

Ms. Arsenault has expertise evaluating contaminated sites and conducting and preparing Phase I environmental site assessments (ESAs); Phase II subsurface investigations; baseline environmental assessments (BEAs); documentation of due care compliance (DDCC) reports, underground storage tank (UST) removal management and oversight; UST closures; preparation of construction bid specifications; PE for bid specifications and remediation system design; and preparation of spill prevention control and countermeasures (SPCC) plans.

Ms. Arsenault has developed proposals and cost estimates for a variety of projects with both known and unknown environmental contamination and evaluated and implemented remedial options.

For more than 12 years, Ms. Arsenault worked with more than 20 Michigan Department of Environment, Great Lakes, and Energy (EGLE) project managers, at brownfield sites in each MDEQ district. She has provided oversight of more than 16 trade contractors on State-funded sites. Her responsibilities on State of Michigan projects included preparing monthly professional service invoices; preparing change orders and contract modifications; serving as the primary Point-of-Contact; conducting soil and groundwater sampling; free product monitoring; preparation of bid specifications; oversight of contractors; and preparation of final reports.

Her other experience includes:

- Air quality emissions testing
- National Environmental Policy Act (NUSEPA) assessments
- Resource Conservation and Recovery Act (RCRA) site demolition oversight and documentation
- Development of environmental strategy for redevelopment efforts
- Geotechnical investigation for roadway and structural design
- Managed numerous leaking underground storage tank sites

Education:

BSE, Engineering/Geotechnical
University of Michigan

Registration/Certifications:

Registered Professional Engineer,
State of Michigan, No. 6201045594

OSHA 40 - Hour HAZWOPER
Certification

24-Hour AHERA Building Inspector

Years of Experience:

27 Years

Roles:

Staff Engineer, Project Engineer,
Senior Engineer, and Project
Manager

Special Training:

Aerial Work Platform Training
Certification/Operator Permit

RELEVANT EXPERIENCE

Project Manager

Engineering Support, Investigation and Remediation of State-Funded Contaminated Sites, State of Michigan

Provided project management services during investigation and remediation of 29 State of Michigan CMI-funded sites. Prepared requests for proposals, on behalf of the State, to obtain bids from professional service contractors. Reviewed and evaluated proposals, conducted onsite meetings, reviewed MDEQ district file information, conducted oversight of remedial investigations, reviewed initial assessments, final assessment reports, closure reports, technical memorandums, bid specifications, feasibility studies, corrective action plans, pilot study reports, quarterly monitoring reports, free product recovery status reports, invoicing, and change orders for all sites. Conducted public outreach activities at Zoning Board meetings, Planning Commission, and Village Council meetings. Attended meetings with MDEQ-Quality Review Teams to present site documentation and arguments for site closure.

Project Engineer

Building Demolition and Tank Removal Activities, State of Michigan

Served as the Project Engineer for building demolition and tank removal activities at the former site of a petroleum fuel blending facility that utilized numerous above-ground storage tanks (ASTs) in the fuel blending process. Prepared bid specifications for building demolition and UST removal and provided construction management and oversight for the project. Reviewed all trade contractor submittals, including health and safety plans, work plans, invoicing, change orders, and supporting documentation.

Engineering Field Support

Subsurface Investigation, Former Automotive Parts Manufacturer, Western Michigan

Provided field support services during site investigation activities at a former automotive parts manufacturer. Assisted in conducting subsurface investigations to evaluate soil and groundwater impacts by hazardous substances previously used in operations at the site. Contaminants of concern identified at the facility included volatile organic compounds (VOCs), chlorinated VOCs, semi-VOCs (SVOCs), arsenic, and manganese in the soil, and chlorinated VOCs, SVOCs, and manganese in the groundwater. Conducted oversight of sonic drilling activities during the installation of nested monitoring wells to depths as great as 100 feet, performed groundwater sampling, including sampling for cyanide, using low-flow sampling techniques, and collected soil samples using appropriate preservation methods.

Design Engineering

RCRA Demolition Oversight, Metal Foundry Baghouse, Lynchburg, Virginia

Assisted in design of primary and secondary containment features to prevent the release of hazardous dust during demolition of a RCRA Hazardous Waste Generator permitted baghouse in Lynchburg, Virginia. Responsibilities included preparation of a health and safety plan, implementation of primary and secondary containment features, and preparation of the RCRA Clean Closure Report. The project received a Clean Closure designation from the Virginia Department of Environmental Quality.

ATTACHMENT D

Contractor and Utility Worker Notification



Notification to Construction Contractors and Utility Workers

RE: Environmental Information for Construction and Utility Workers – April 17, 2025

Vacant Land Property

775 Industrial Road

Marshall, Calhoun County, Michigan

Previous environmental assessments conducted at the site have identified elevated concentrations of contaminants in the soil. The known contaminants include metals. Precautions are recommended to reduce or eliminate potential hazards to human health for site occupants and workers.

NOTE: This notification is for informational purposes only. Each contractor and/or utility worker working on site is responsible for ensuring the health and safety of their employees. Each contractor is responsible for developing their own health and safety plan. This notice does not constitute a health and safety plan.

Soil samples collected on the site demonstrate that contamination is present at concentrations that may present a risk to human health (refer to the attached figures). The potential exposure may occur by direct skin contact with soil.

The Michigan Department of Environment Great Lakes and Energy (EGLE) has published criteria for acceptable concentrations of contaminants in soil. Construction activities at this site are classified as non-residential use. One contaminant has been detected above the EGLE nonresidential criteria at the site. The contaminant is listed below:

Contaminants in Soil
Exceeding Nonresidential Generic Cleanup Criteria
Arsenic

Note: Contaminants in soil are present at concentrations that may leach to groundwater and result in unacceptable groundwater concentrations for consumption (drinking water), as well as surface water.

The location of the contamination is within all onsite soils, including all soil at any depth within the property parcel, and is the result of historical uses of the subject property. Contaminants at the site have been identified to exceed Nonresidential Direct Contact criteria in soil located in the south-central portion of the subject property (see attached Figures).

The nonresidential criteria assumes that a commercial worker is present at the site for daily work week exposure over a period of 21 years. Construction and utility workers are generally present on the work site for a period of weeks to months which is significantly less than the commercial exposure assumptions. The shorter duration of worker exposure to potentially contaminated media reduces the potential health risk.

Special Health and Safety Measures to Protect Construction Workers and the General Public

All contractors should prepare a Site-Specific Health and Safety Plan for their employees as required by MiOSHA. The contaminated soil or groundwater must be handled and disposed of in compliance with applicable environmental laws, and may not be relocated offsite or outside of the “facility” limits without further evaluation.

The following procedures shall be followed by all site work personnel to protect worker health, the public, and maintain site control over contaminated materials. The procedures apply to all subsurface site work and additionally to all surface soil sitework implemented.

Worker Health and Safety

- Personal Protection Equipment (PPE): Industry standard workwear including close-toed footwear (Level D) shall be required and work gloves shall be worn by personnel engaged in direct contact with soils.
- Hygiene Practices: It is recommended that personnel engaged in direct contact with soils wash hands before eating, drinking, or smoking to reduce the potential for ingestion of contaminated soil.
- Workers should take precautions to remove soil/dust from skin, clothing, and boots prior to leaving the site.

Public Safety & General Environmental Compliance

- Reasonable precautions shall be taken to prevent members of the public from coming into contact with exposed soil that may be contaminated.
- Erosion and sediment control measures must be followed.
- Soils must not be tracked off site. Tracked equipment, vehicles tires and undercarriage, and worker boots and clothing shall be free of visible quantities of soil prior to exiting the site work areas.
- All excavated or relocated soils from the site shall be directly loaded into trucking for offsite landfill disposal or temporarily staged onsite in stockpile location within the “facility” area, unless otherwise specified in site development plans. Relocation of cut soils as fill is acceptable within the designated “facility” or work site boundaries only, with the exception of arsenic-impacted soil from the south-central portion of the property, which may not be relocated onsite under any conditions.
- Soil for offsite disposal may require further characterization as required by the receiving landfill. Contaminated soil shall not be relocated to any offsite location, except for approved landfill disposal or other specific approval.

- All excavated soils from within the contaminated soil horizon must be placed on plastic sheeting, impervious pavement, and covered to prevent mixing with clean soil.
- Copies of all disposal documentation must be retained and provided to Tiger's Towing, LLC or it's consultants.
- Site workers shall notify Tiger's Towing, LLC immediately upon discovery of unusual subsurface site conditions including soil or groundwater with strong odors, staining or discoloration, oils or non-aqueous (non-water) liquid substances, or buried containers such as drums or underground storage tanks (USTs), or insulated piping.

TIGER TOWING

775 INDUSTRIAL RD
SECTION 26, T.02S, R.06W
CITY OF MARSHALL
CALHOUN COUNTY, MI

SITE DEVELOPMENT PLANS
NOVEMBER 03, 2025

ISSUED FOR: CITY REVISIONS

SHEET INDEX	
No.	SHEET TITLE
T1.0	TITLE SHEET
C1.0	EX CONDITIONS - DEMO PLAN
C2.0	SITE LAYOUT
C3.0	UTILITY PLAN
C4.0	GRADING - SESC PLAN
C5.0	DETAILS
L1.0	LANDSCAPE PLAN
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.	.
.	.
.	.
.	.

OWNERS:

TIGER TOWING
19218 11 MILE RD
MARSHALL, MI 49068

REVISIONS			
No.	ISSUED FOR:	DATE:	BY:
0	SITE PLAN REVIEW	10/10/2025	tc
1	CITY REVISIONS	11/03/2025	LM
2	.	.	.
3	.	.	.
4	.	.	.
5	.	.	.

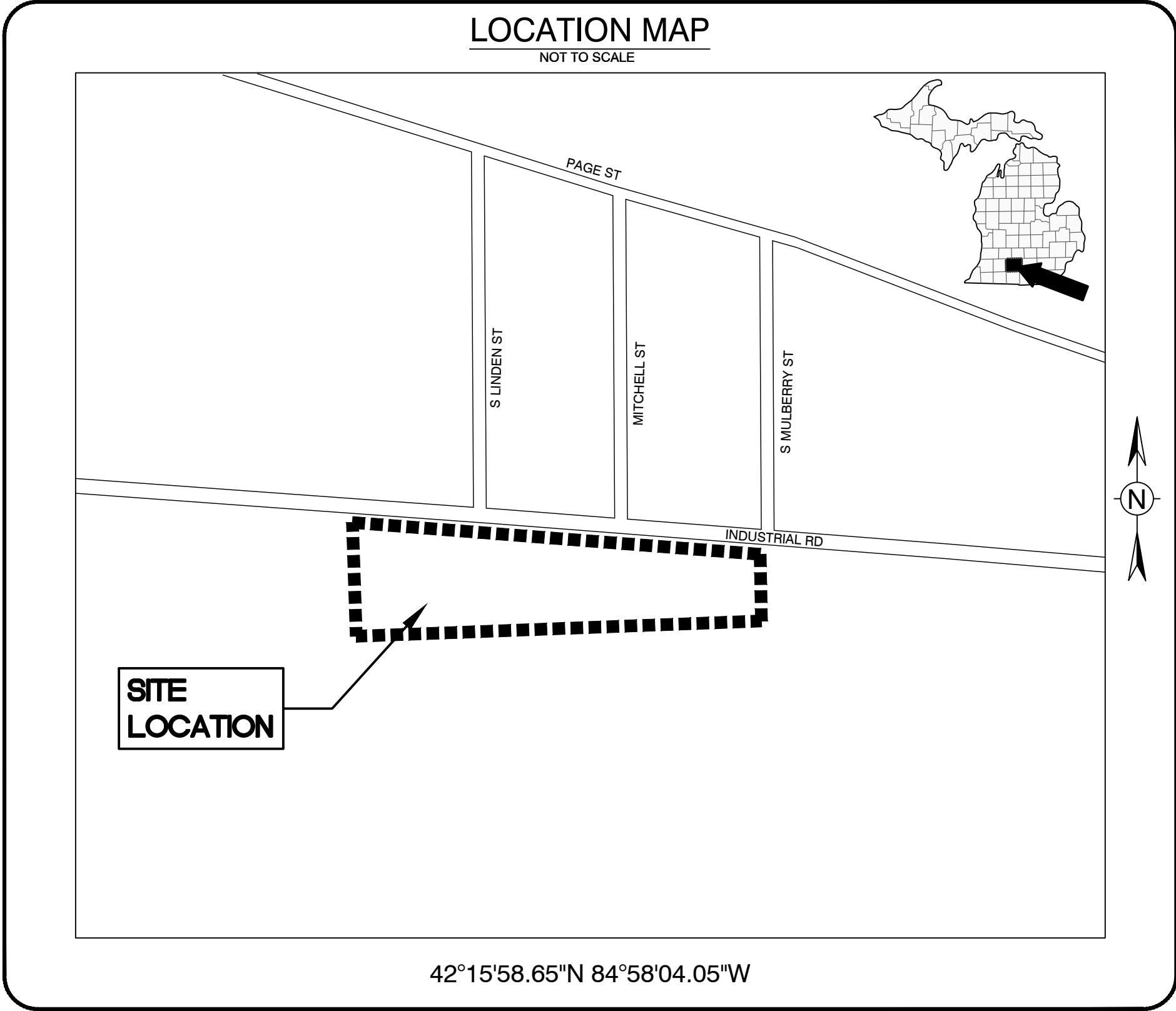
CIVIL ENGINEER:

AR ENGINEERING, LLC.
5725 VENTURE PARK DRIVE, SUITE A
KALAMAZOO, MI 49008
TEL. (269) 250-5991 FAX. (866) 569-0604



WHITNEY L. PIZZALA, P.E.

DATE



UTILITY CONTACTS

CABLE	AT&T 15869 W MICHIGAN AVE MARSHALL, MI 49068 (269) 269-8040	TELEPHONE	AT&T 15869 W MICHIGAN AVE MARSHALL, MI 49068 (269) 269-8040
WATER	CITY OF MARSHALL 832 EAST GREEN STREET MARSHALL, MI 49068 (269) 781-8631	SEWER	CITY OF MARSHALL 832 EAST GREEN STREET MARSHALL, MI 49068 (269) 781-8631
GAS	CONSUMERS ENERGY 2500 E CORK ST KALAMAZOO, MI 49001 (269) 337-2381	ELECTRIC	CITY OF MARSHALL 832 EAST GREEN STREET MARSHALL, MI 49068 (269) 781-8631
		MISS DIG	811

DEMOLITION NOTES

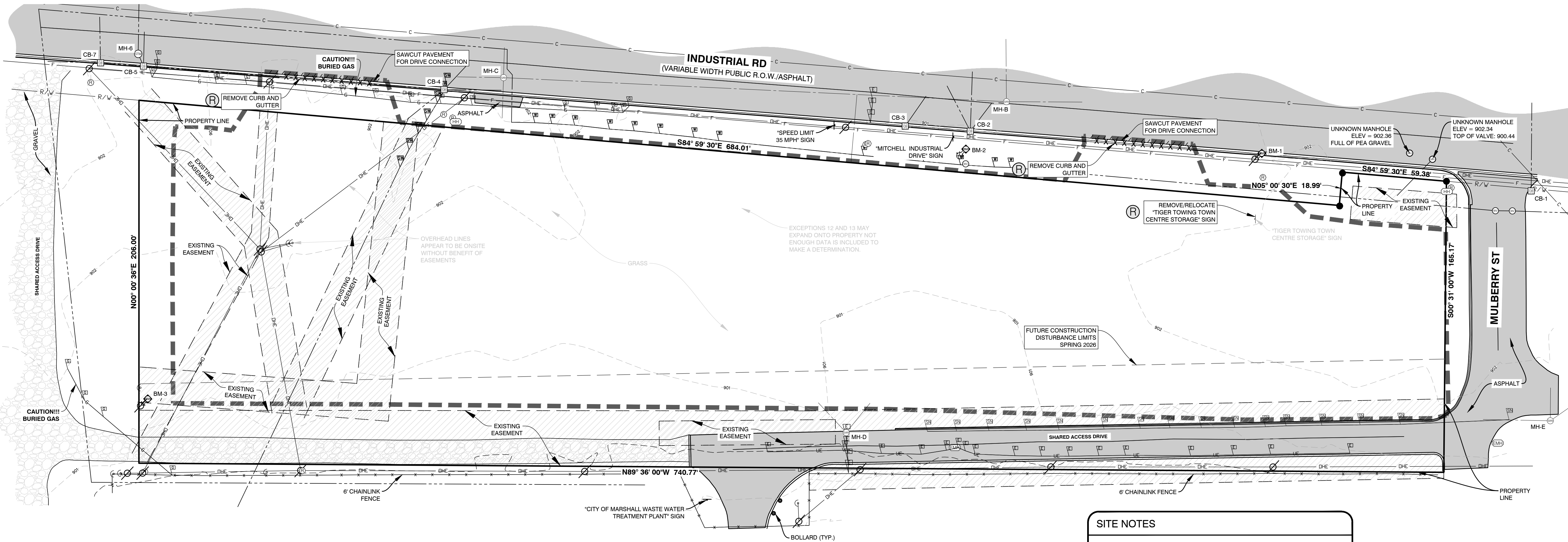
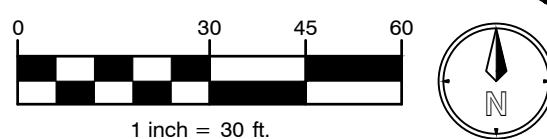
- ALL WORK SHALL CONFORM TO ALL LOCAL, STATE AND FEDERAL LAWS, RULES AND REGULATIONS IN FORCE AT TIME OF CONSTRUCTION.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS, PERMIT COSTS, TAP FEES, METER DEPOSITS, PERMANENT UTILITY APPLICATIONS, BONDS, AND OTHER FEES REQUIRED FOR PROPOSED WORK. THIS SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO THOSE REQUIRED BY THE CITY OF MARSHALL, CALHOUN COUNTY AND THE STATE OF MICHIGAN.
- CONTACT MISS DIG "811" FOR LOCATION OF UNDERGROUND UTILITIES A MINIMUM OF 48 HOURS BEFORE COMMENCING EXCAVATION WORK. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO ARE NOT PART OF THE "MISS DIG" ALERT SYSTEM. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS IN A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.
- DEMOLISH & REMOVE ALL EXISTING SITE FEATURES AS REQUIRED.
- ALL SOIL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO DEMOLITION.
- ALL EXCAVATION SHALL BE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS AND GEOTECHNICAL REPORT FOR THIS SITE.
- ALL EXISTING ELEVATIONS ARE TO BE VERIFIED AND ACCEPTED AS SHOWN PRIOR TO COMMENCEMENT OF WORK.
- CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID TRACKING SOIL ONTO ADJACENT ROADWAYS. CONTRACTOR SHALL SWEEP IMMEDIATELY IF OCCURS.
- ANY DISTURBED AREA WHICH WILL BE LEFT UNWORKED 15 DAYS OR LONGER MUST BE SEEDED TO ESTABLISH VEGETATION FOR TEMPORARY STABILIZATION. BASINS TO BE SEEDED AND MULCH BLANKETS APPLIED IMMEDIATELY TO PROVIDE A STABLE BASE AND AVOID EXCESSIVE EROSION.
- REVIEW ALL THE REMOVALS AND PROTECTION WITH OWNER PRIOR TO COMMENCING CONSTRUCTION. INSTALL TEMPORARY SNOW FENCE AROUND ALL TREES REQUIRING PROTECTION. SNOW FENCE SHALL BE PLACED AT EDGE OF DRIP LINE.
- SAWCUT ALL CURB, SIDEWALK, AND PAVEMENTS PRIOR TO REMOVAL. ADDITIONAL SAWCUT MAY BE NECESSARY PRIOR TO REPLACEMENT TO ENSURE CLEAN EDGE.
- ALL REMOVALS SHALL BE TAKEN OFF-SITE AND DISPOSED OF PROPERLY. NO STOCKPILE OR BURNING OF DEBRIS IS ALLOWED.
- ALL REMOVALS SHALL BE TO THE LIMITS INDICATED ABOVE UNLESS OTHERWISE DIRECTED BY THE ENGINEER. UNAUTHORIZED REMOVALS AND SUBSEQUENT REPLACEMENT SHALL BE AT THE CONTRACTORS EXPENSE.
- REMOVE, STORE, AND RESET ANY EXISTING SIGNS AS DIRECTED BY THE ENGINEER/OWNER.
- REMOVE ALL TREES TO THE CLEARING LIMITS AS SHOWN. REMOVE ALL EXISTING TREES, STUMPS AND BRUSH FROM THE SITE AS NECESSARY TO CONSTRUCT THE IMPROVEMENTS.
- THE CONTRACTOR SHALL DEMOLISH AND REMOVE ANY ITEMS REMAINING FROM THE EXISTING BUILDING, IN ITS ENTIRETY, INCLUDING WALLS, FOUNDATIONS AND FOOTINGS. ALL BUILDING DRAINS AND UTILITY LEADS SHALL BE LOCATED AND PROPERLY PLUGGED. UTILITY LEAD WORK SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY COMPANY.
- BACKFILL EXCAVATED AREAS WITH CLEAN GRANULAR FILL COMPACTED TO 95% OF THE MATERIAL UNIT WEIGHT BY MODIFIED PROCTOR.
- CONTROL SHALL BE MAINTAINED OVER THE SITE AND OPERATION TO ELIMINATE HAZARDS TO THE PUBLIC. NAILS OR OTHER TIRE PUNCTURING ITEMS SHALL NOT BE DROPPED ON STREETS, ALLEYS AND ADJACENT PROPERTY. PUBLIC STREETS, CURBS AND SIDEWALKS SHALL BE PROTECTED FROM DAMAGE. THE PERSON ENGAGED IN THE DEMOLITION WORK SHALL BE LIABLE FOR ANY AND ALL DAMAGE TO CURBS, STREETS, SIDEWALKS AND OTHER PUBLIC OR PRIVATE PROPERTY AND FOR ANY BODILY INJURY OCCURRING AS A RESULT OF THE DEMOLITION WORK.

LEGEND

- | | | | |
|-----|--------------------------|-----|-------------------------------|
| ● | FOUND CAPPED IRON | --- | EXISTING FENCE |
| ☆ | LIGHT POLE | --- | EXISTING NATURAL GAS |
| ⊗ | UTILITY POLE | --- | EXISTING WATER |
| △ | CONTROL POINT | --- | EXISTING STORM |
| ⊕ | ROAD SIGN | --- | EXISTING SANITARY |
| CB | CATCH BASIN | --- | EXISTING UNDERGROUND ELECTRIC |
| SAN | SANITARY MANHOLE | --- | EXISTING OVERHEAD ELECTRIC |
| STM | STORM MANHOLE | --- | ASPHALT PAVEMENT |
| WV | WATER VALVE | --- | CONCRETE PAVEMENT |
| HYT | HYDRANT | --- | AND SIDEWALK |
| HH | COMMUNICATIONS HAND HOLE | --- | GRAVEL PAVEMENT |
| HS | COMMUNICATIONS RISER | --- | SAWCUT |
| GLM | GAS LINE MARKER | --- | REMOVE |
| WMM | WATER MAIN MARKER | --- | PROTECT |
| ULM | UTILITY LINE MARKER | --- | LIMITS OF CONSTRUCTION |
| SLM | SANITARY LINE MARKER | --- | CURB & GUTTER REMOVAL |
| SLM | STORM LINE MARKER | --- | |
| BM | BENCHMARK | --- | |
| B | BOLLARD | --- | |
| EMH | ELECTRIC MANHOLE | --- | |
| GW | GUY WIRE | --- | |

BENCHMARKS

- BM-1:
ELEV: 903.42
SET MAG NAIL IN SOUTH SIDE OF POWER POLE
- BM-2:
ELEV: 903.46
SET "X" ON SOUTHWEST OF FLANGE BOLT ON HYDRANT
- BM-3:
ELEV: 902.54
SET MAG NAIL IN NORTHEAST SIDE OF POWER POLE



STORM STRUCTURE INFORMATION

- | | |
|---|--|
| CB-1, 4' CONC. STRUCTURE
RIM = 902.24
N 12' CONC. (INV. = 897.64)
SUMP = 896.99 | CB-5, 4' BLOCK STRUCTURE
RIM = 900.98
NW 10' CLAY (INV. = 896.33)
N 10' CLAY (INV. = 896.08)
W 15' CLAY (INV. = 896.03)
E 15' CLAY (INV. = 895.93)
SUMP = 895.88 |
| CB-2, 2' CONC. STRUCTURE
RIM = 900.92
NE 6' CPE (INV. = 898.72)
NW 6' CPE (INV. = 898.77)
SUMP = 897.82 | MH-6, 4' BLOCK STRUCTURE
RIM = 901.17
N 10' PVC (INV. = 897.32)
SE 10' CLAY (INV. = 896.47)
SUMP = 895.87 |
| CB-3, 4' CONC. STRUCTURE
RIM = 900.90
NE 12' CONC. (INV. = 897.10)
SUMP = 895.40 | CB-7, 4' BLOCK STRUCTURE
RIM = 901.89
E 15' CLAY (INV. = 896.04)
W 15' CLAY (INV. = 896.19)
N 12' CONC. (INV. = 896.09)
SUMP = 895.89 |
| CB-4, 4' BLOCK STRUCTURE
RIM = 901.49
W 15' CLAY (INV. = 895.34)
NE 24' CONC. (INV. = 894.99)
SW 24' CONC. (INV. = 894.84)
E 6' CPE (INV. = 898.28)
SUMP = 894.79 | |

SANITARY STRUCTURE INFORMATION

- | | |
|--|---|
| MH-B, 4' BLOCK STRUCTURE
RIM = 901.50
N 10' CLAY (INV. = 892.85)
W 10' CLAY (INV. = 891.95)
E 10' CLAY (INV. = 891.85) | MH-C, 4' BLOCK STRUCTURE
RIM = 901.88
S 4' PVC (INV. = 896.78) CAPPED LATERAL
N 10' CLAY (INV. = 893.38)
W 10' CLAY (INV. = 892.43)
E 10' CLAY (INV. = 892.38) |
| MH-D, 4' CONC. STRUCTURE
RIM = 900.29
NW 4' PVC (INV. = 894.24)
NE FM PVC (INV. = 894.04) | MH-E
RIM = 901.61
N (INV. +25' DEEP)
NE (INV. +25' DEEP)
W 12' CLAY (INV. +25' DEEP) |

SITE NOTES

- SUBJECT PROPERTY HAS PEDESTRIAN AND VEHICULAR ACCESS TO INDUSTRIAL RD. (PUBLIC) VIA SHARED ACCESS DRIVE.
- NO CEMETERIES, GRAVE SITES, OR BURIAL GROUNDS WERE DISCLOSED IN THE RECORD DOCUMENTS OR OBSERVED.
- UTILITIES SHOWN HEREON HAVE BEEN LOCATED PER AVAILABLE EVIDENCE ON SITE, OR HAVE BEEN SHOWN PER AVAILABLE MAPS PROVIDED BY UTILITY OWNER AND ARE AN APPROXIMATE LOCATION. ADDITIONAL UTILITIES MAY EXIST BUT ARE UNKNOWN.
- NO EVIDENCE OF RECENT STREET, SIDEWALK, EARTHWORK, OR CONSTRUCTION WAS OBSERVED.
- NO WETLAND FLAGS WERE OBSERVED.
- NO ZONING REPORT WAS PROVIDED.
- NO BUILDINGS ON SITE.
- NO PARKING SPACES AND NO ADA SPACES WERE OBSERVED.
- THE NEAREST INTERSECTING STREET IS INDUSTRIAL RD AND S MULBERRY ST. THE SITE IS LOCATED AT THE INTERSECTION.
- ELEVATION BASIS: NAVD 88, GEOID 18.
- PROPERTY LINE SHOWN FROM PROVIDED SURVEY BY KEBS, INC. JOB NUMBER 103676.BND, DATED 04/18/2025.



ALL UTILITIES AS SHOWN ARE APPROXIMATE LOCATIONS DERIVED FROM ACTUAL MEASUREMENTS AND AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATION NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THE AREA. FIELD WORK PERFORMED BY: AR ENGINEERING LLC

PLANS PREPARED BY:

DRAWN: aw
CHECKED: WLP

No.	ISSUED FOR:	DATE	BY
0	SITE PLAN REVIEW	10/10/2025	tc
1	CITY REVISIONS	11/03/2025	LM
2			
3			
4			

EXISTING CONDITIONS & DEMO PLAN

TIGER TOWING
DRIVEN DESIGN775 INDUSTRIAL RD, MARSHALL, MI 49068
SECTION 26, T02S, R06W.PROJECT:
CLIENT:
SITE ADDRESS:
SITE SECTION:JOB NUMBER
25103008DATE
11/03/2025

SHEET NUMBER

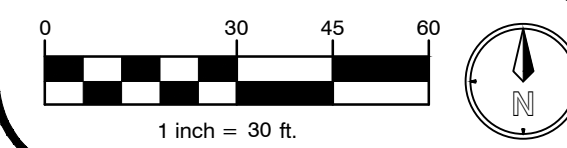
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SITE DATA

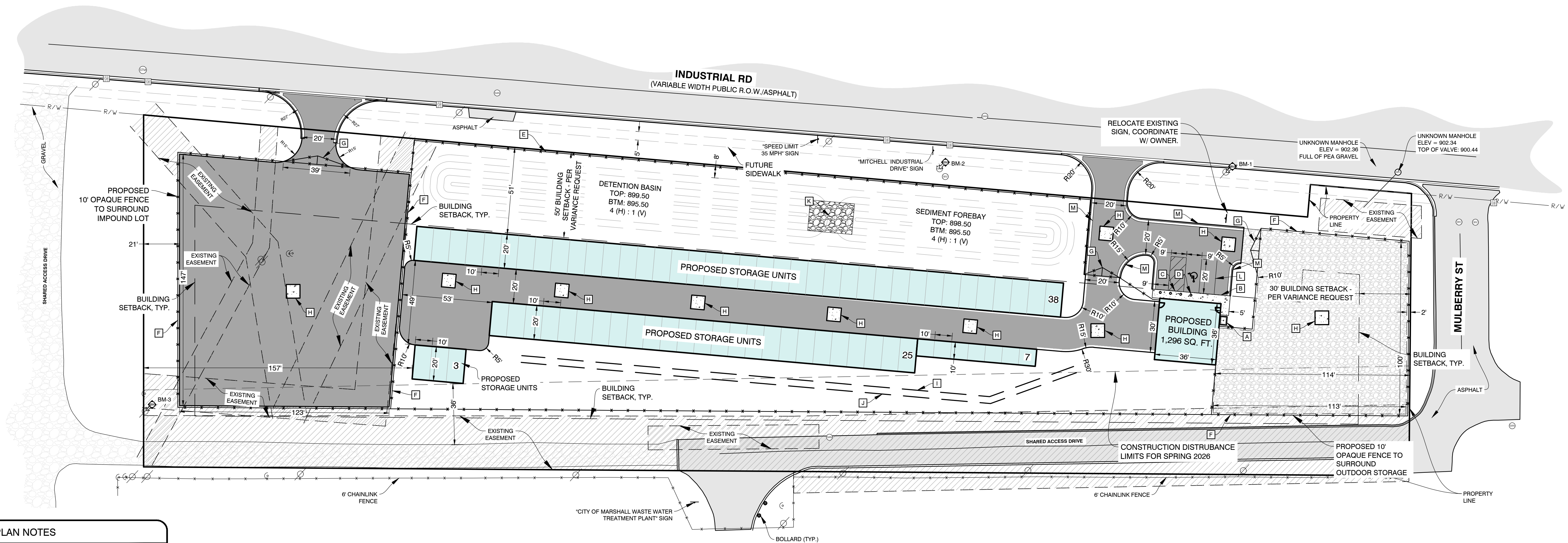
- PROPERTY INFORMATION:
PARCEL #: 53-002-535-01
SITE AREA: 131,695 SF (3.02 AC)
OWNER: TIGER TOWING LLC
19218 11 MILE RD
MARSHALL, MI 49068
- ZONING:
PROPERTY CURRENTLY ZONED:
I-2 GENERAL INDUSTRIAL
ABUTTING PROPERTY CURRENTLY ZONED:
NORTH: I-1 RESEARCH AND MANUFACTURING
SOUTH: I-2 GENERAL INDUSTRIAL
EAST: I-2 GENERAL INDUSTRIAL
WEST: I-2 GENERAL INDUSTRIAL
PROPOSED LAND USE = TOWING/SELF STORAGE
*SPECIAL USE IN GENERAL INDUSTRIAL DISTRICT
- SETBACKS
FRONT = 60'
SIDES = 30'
REAR = 30'
- PARKING:
REQUIRED = (1) PARKING SPACE PER (300) SF.
OF USABLE FLOOR AREA
907 SF/300 = 3.02 = 3
PROVIDED = STANDARD 9'X20' SPACES = 3
BARRIER FREE SPACES = 1
TOTAL PROVIDED = 4
- BUILDING:
SINGLE-STORY (18'-8")
MAXIMUM HEIGHT: 60'
TOTAL AREA OF 1,296 SFT. (SEE FLOOR PLAN AND
ELEVATIONS FOR MORE DETAIL)
TOTAL AREA OF STORAGE UNITS: 13,900 SFT.
TOTAL AREA OF BUILDING COVERAGE: 1,296 + 13,900 =
15,196 SFT.
STORAGE UNIT LOT COVERAGE: 11%
BUILDING LOT COVERAGE: 1%
PROPOSED TOTAL LOT COVERAGE: 12%
MAXIMUM LOT COVERAGE: 40%
- LOT:
MINIMUM LOT SIZE: N/A
MINIMUM LOT WIDTH: 200'
LOT SIZE: 131,695 SFT / 3.02 ACRES
LOT DIMENSIONS: IRREGULAR
- LANDSCAPING:
SHALL BE IN ACCORDANCE WITH LANDSCAPING PLAN.
- STORM WATER DETENTION REQUIRED:
STORM WATER MANAGEMENT SHALL BE IN
ACCORDANCE WITH COUNTY STORM WATER
GUIDELINES.

STRIPING LEGEND

YELLOW CURBING AND BOLLARDS - PARKING LOT	SURFACES SHOULD BE CLEAN, DRY AND METAL SURFACES FREE OF HEAVY RUST 2 COATS SHERWIN WILLIAMS - KEM 4000 ACRYLIC ALKYD ENAMEL SAFETY YELLOW B55Y300
STRIPING - PARKING LOT	SURFACES SHOULD BE CLEAN, DRY. TOP COAT SHERWIN WILLIAMS - PROMAR TRAFFIC MARKING PAINT YELLOW TM5495
HANDICAP STRIPING - PARKING LOT	SURFACES SHOULD BE CLEAN, DRY. TOP COAT SHERWIN WILLIAMS - PROMAR TRAFFIC MARKING PAINT "H.C." BLUE



PLANS PREPARED BY:

DRAWN: aw
CHECKED: WLP

SITE PLAN NOTES

- [A] 5' X 3' CONCRETE PAD. AREA FOR 2 HERBY CURBYS.
[B] INTEGRAL CURB/WALK (SEE DETAIL, SHEET C5.0).
[C] AT-GRADE RAMP (SEE GRADING PLAN, SHEET C4.0).
[D] BOLLARDS - (6) TOTAL (SEE DETAIL, SHEET C5.0)
[E] 6' TALL CHAIN LINK FENCE
[F] 10' OPAQUE FENCE TO SURROUND IMPOUND LOT.
[G] GATE WITH ACCESS BUTTON.
[H] 8' X 8' CONCRETE APRON SURROUNDING PROPOSED STORM STRUCTURES
[I] VEGETATIVE SWALE (SEE DETAIL, SHEET C5.0) (SEE GRADING, SHEET C4.0)
[J] PROPOSED 1' BERM ADJACENT TO PROPOSED SWALE
[K] FOREBAY SPILLWAY SECTION (SEE DETAIL, SHEET C5.0)
[L] 4" PAINTED PARKING LOT MARKING/STRIPING (TYP.) (SEE DETAIL, THIS SHEET)
[M] MDOOT F4 CURB & GUTTER (SEE DETAIL, SHEET C5.0)

LEGEND

	EXISTING ASPHALT PAVEMENT
	EXISTING GRAVEL PAVEMENT
	PROPOSED ASPHALT PAVEMENT
	PROPOSED CONCRETE PAVEMENT
	PROPOSED GRAVEL PAVEMENT

GENERAL NOTES

- DIMENSIONS TAKE PRECEDENCE OVER SCALE.
CONTRACTOR TO VERIFY ALL DIMENSIONS IN
FIELD.
- IF ANY ERRORS, DISCREPANCIES, OR OMISSIONS
BECOME APPARENT, THESE SHALL BE BROUGHT
TO THE ATTENTION OF THE ARCHITECT/ENGINEER
PRIOR TO CONSTRUCTION OF ANYTHING
AFFECTED SO THAT CLARIFICATION OR REDESIGN
MAY OCCUR.
- ALL CURB RADI AND DIMENSIONS ARE TO FACE OF
CURB. CURB TO BE PROVIDED WHERE SHOWN
AND INTEGRAL WITH SIDEWALK AT PAVING EDGE.
- SLOPE GRADES UNIFORMLY BETWEEN
ELEVATIONS SHOWN. NOMINAL GRADING, SLOPE
SIDEWALKS AWAY FROM BUILDING AT 1/4" PER
FOOT ON ENTRY WALK.

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SITE LAYOUT
TIGER TOWING
DRIVEN DESIGN
775 INDUSTRIAL RD, MARSHALL, MI 49068
SECTION 26, T02S, R06W.PROJECT:
CLIENT:
SITE ADDRESS:
SITE SECTION:

JOB NUMBER

25103008

DATE

11/03/2025

SHEET NUMBER

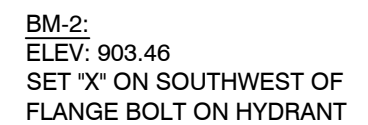
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1. ALL WORK SHALL CONFORM TO ALL LOCAL, STATE AND FEDERAL LAWS, RULES AND REGULATIONS IN FORCE AT TIME OF CONSTRUCTION.
2. ELECTRICAL WORK SHALL BE PERFORMED BY A STATE OF MICHIGAN LICENSED ELECTRICIAN ACCORDING TO THE N.E.P.A. NATIONAL ELECTRICAL CODE AS MODIFIED BY THE STATE OF MICHIGAN. FURNISH AND INSTALL ALL MATERIALS AND LABOR TO PROVIDE A COMPLETE WORKING SYSTEM.
3. ALL PLUMBING WORK SHALL BE PERFORMED BY A STATE OF MICHIGAN LICENSED PLUMBER ACCORDING TO THE INTERNATIONAL PLUMBING CODE AS MODIFIED BY THE STATE OF MICHIGAN AND LOCAL HEALTH DEPARTMENT. FURNISH AND INSTALL ALL MATERIALS AND LABOR TO PROVIDE A FULL WORKING SYSTEM.
4. ALL MECHANICAL WORK SHALL BE PERFORMED ACCORDING TO THE INTERNATIONAL MECHANICAL CODE AS MODIFIED BY THE STATE OF MICHIGAN AND THE MICHIGAN ENERGY CODE. FURNISH AND INSTALL ALL MATERIALS AND LABOR TO PROVIDE A FULL WORKING SYSTEM.
5. ALL WORK SHALL CONFORM TO THE MICHIGAN HANDICAPPED ACCESSIBILITY CODE AND THE AMERICANS WITH DISABILITIES ACT.
6. WATER SERVICE PRESSURE TESTING AND CHLORINATION SHALL BE PER EGLE AND THE CITY OF MARSHALL REQUIREMENTS.
7. SANITARY SEWER INSTALLATION AND TESTING MUST MEET THE REQUIREMENTS OF EGLE AND THE CITY OF MARSHALL.
8. ALL REGULATORY SIGNAGE (IF SPECIFIED) SHALL BE PER THE MICHIGAN DEPARTMENT OF TRANSPORTATION.
9. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS, PERMIT COSTS, TAP FEES, METER DEPOSITS, PERMANENT UTILITY APPLICATIONS, BONDS, AND OTHER FEES REQUIRED FOR PROPOSED WORK.
10. CONTACT MISS DIG "811" FOR LOCATION OF UNDERGROUND UTILITIES A MINIMUM OF 48 HOURS BEFORE COMMENCING EXCAVATION WORK. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO ARE NOT PART OF THE "MISS DIG" ALERT SYSTEM. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS IN A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.
11. ANY SANITARY SEWER, SANITARY SEWER SERVICE LEADS, WATER MAIN, WATER SERVICES, OR STORM SEWER WHICH IS DAMAGED BY THE CONTRACTOR DURING HIS OPERATIONS SHALL BE REPAIRED TO THE OWNER'S SATISFACTION, AND AT THE CONTRACTOR'S EXPENSE. IF ANY ELEMENTS OF THE SANITARY SEWER SYSTEM ARE DAMAGED AND NEED REPAIRED, IT MUST MEET THE CITY OF MARSHALL SPECIFICATIONS.

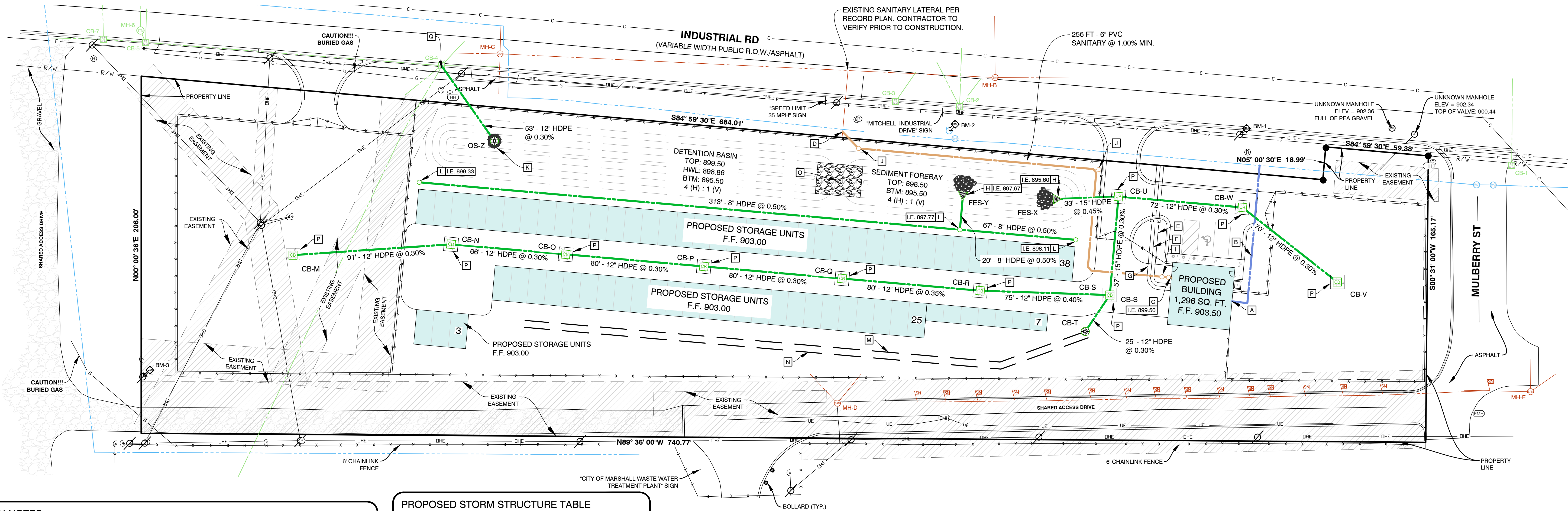
12. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR THE ELECTRICAL TRANSFORMER PAD PER THE UTILITY COMPANY SPECIFICATIONS.
13. THE TELEPHONE UTILITY COMPANY SHALL PROVIDE UNDERGROUND TELEPHONE TO THE BUILDING AT THE OWNERS EXPENSE.
14. REFER TO ELECTRICAL DRAWINGS FOR UNDERGROUND ELECTRICAL REQUIREMENTS FOR SITE LIGHTING & SITE DETAILS SHEETS FOR THE FIXTURE AND & POLE SPECIFICATIONS.
15. DESIGN, INSTALLATION AND SPECIFICATION FOR IMPROVEMENTS RELATED TO GAS, TELEPHONE, ELECTRIC AND CABLE TELEVISION SERVICES SHALL BE COORDINATED BY THE CONTRACTOR.
16. CONTRACTOR SHALL COORDINATE TELEPHONE, ELECTRIC, AND CABLE TELEVISION CONDUITS WITH THE APPROPRIATE UTILITY PRIOR TO PAVEMENT INSTALLATION.
17. CONTRACTOR IS TO UNCOVER AND CONFIRM ALL TAP LOCATIONS. LOCATION DISCREPANCIES ARE TO BE BROUGHT TO THE ENGINEERS ATTENTION FOR RESOLUTION.
18. THE CONTRACTOR IS TO PROVIDE THE WATER SERVICE PIPING FROM THE BUILDING TO THE EXISTING WATER MAIN. THE CONTRACTOR SHALL MAKE THE CONNECTION TO THE SHUT OFF VALVE. THE CONTRACTOR SHALL COORDINATE SERVICES WITH THE CITY OF MARSHALL.
19. CONTRACTOR/OWNER SHALL OBTAIN UTILITY CONNECTION PERMITS AND SETTLE APPLICABLE UTILITY ASSESSMENTS PRIOR TO EXTENSION OF PUBLIC UTILITIES ONSITE.
20. MANHOLE AND CATCH BASIN STRUCTURES SHALL BE PRECAST AND HAVE A MAXIMUM OF 2 ADJUSTING RINGS FOR FINISH GRADE ADJUSTMENT. STORM STRUCTURES MUST ALL HAVE A SUMP OF TWO FEET.
21. ALL WATER MAIN TO HAVE A BURIAL DEPTH AS REQUIRED BY EGLE FOR THE SPECIFIC REGION OF WORK IN CITY OF MARSHALL.
22. DEMOLISH & REMOVE ALL EXISTING SITE FEATURES AS REQUIRED.
23. THE CONTRACTOR SHALL REVIEW THE GEOTECHNICAL REPORT PREPARED FOR THIS SITE.
24. DRIVEWAY LAYOUT AND CONNECTION TO INDUSTRIAL RD SHALL COMPLY WITH ALL ASPECTS OF THE CITY OF MARSHALL / CALHOUN COUNTY ROAD COMMISSION DRIVE PERMIT.

1. SOILS DEPOSED IN THE BASE OF ALL SATISFACTORY FOUNDATION EXCAVATIONS SHOULD BE PROTECTED AGAINST ANY DETRIMENTAL CHANGES IN CONDITION SUCH AS FROM DISTURBANCE, RAIN AND FREEZING. SURFACE RUN-OFF WATER SHOULD BE DRAINED AWAY FROM THE EXCAVATION AND NOT ALLOWED TO POND. IF POSSIBLE, ALL FOOTING CONCRETE SHOULD BE POURED THE SAME DAY THE EXCAVATION IS MADE. IF THIS IS NOT PRACTICAL, THE FOOTING EXCAVATIONS SHOULD BE ADEQUATELY PROTECTED.
2. REMOVE ALL SUBGRADE GRADE MATERIAL THAT MAY BE SOFTENED BY RAINS, FREEZING, OR CONSTRUCTION TRAFFIC, ETC. AND REPLACE WITH COMPACTED GRANULAR FILL.
3. STORM SEWER SHALL BE CORRUGATED HDPE PIPE WITH SMOOTH INTERIOR WALL, BY ADS OR EQUAL. LEACHING BASINS AND MANHOLES ARE TO BE REINFORCED CONCRETE WITH RIM AND SLOTTED GRATING (AS SHOWN). STORM SEWER & LEACHING BASINS ARE TO BE WRAPPED WITH FILTER FABRIC.
4. ALL WATER SERVICE LINES SHALL BE 1" PE PIPE WITHIN 5' OF BUILDING, WITH COMPRESSION FITTINGS OR MECHANICAL FITTINGS OTHER THAN FLARED ENDS. PROVIDE 5' COVER FROM FINISHED GRADE.
5. PROVIDE MINIMUM 5' COVER FROM FINISHED GRADE FOR ALL WATER SERVICE LINES, IF COVER CANNOT BE MAINTAINED DUE TO SITE CONDITIONS OR INVERT ELEVATIONS THE ENTIRE LENGTH OF THE EXTERIOR PIPE MUST BE PROTECTED WITH 2" RIGID INSULATION BOARD ON THE TOP AND SIDES.
6. PROVIDE MINIMUM 5' COVER FROM FINISHED GRADE FOR ALL SANITARY SEWER LINES. IF COVER CANNOT BE MAINTAINED DUE TO SITE CONDITIONS OR INVERT ELEVATIONS THE ENTIRE LENGTH OF THE EXTERIOR PIPE MUST BE PROTECTED WITH 2" RIGID INSULATION BOARD ON THE TOP AND SIDES.
7. MAINTAIN 10 FOOT MINIMUM HORIZONTAL SEPARATION BETWEEN THE SEWER AND WATER MAIN UTILITIES. PROVIDE 18" MINIMUM VERTICAL SEPARATION WHERE UTILITIES CROSS.
8. THE CONTRACTOR SHALL INSTALL A PEDESTRIAN FENCE AROUND ALL EXCAVATIONS TO BE LEFT OPEN OVERNIGHT AS REQUIRED.
9. EXTERIOR CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 4000 PSI AND SHALL HAVE LIMESTONE AGGREGATE AND SHALL HAVE 4 - 6 % AIR ENTRAINMENT WITH A BROOM FINISH.
10. EXPANSION JOINTS IN CONCRETE PAVEMENT AND WALLS SHALL BE 1/2" ASPHALT IMPREGNATED FULL DEPTH 40° C. MAXIMUM & AT SIDEWALK INTERSECTIONS. CRACK CONTROL SCORING AT SIDEWALK WIDTH DIMENSION AND @ 10'-0" C. IN DRIVES.

MH-A, 4' CONC. STRUCTURE RIM = 902.34 SW 20' TOP OF VALVE (INV. = 900.44) SUMP = 896.49	MH-D, 4' CONC. STRUCTURE RIM = 900.29 NW 4' PVC (INV. = 894.24) NE FM PVC (INV. = 894.04)
MH-B, 4' BLOCK STRUCTURE RIM = 901.50 N 10' CLAY (INV. = 892.85) N 10' CLAY (INV. = 891.95) E 10' CLAY (INV. = 891.85)	MH-E RIM = 901.61 N (INV. +25' DEEP) NE (INV. +25' DEEP) W 12' CLAY (INV. +25' DEEP)
MH-C, 4' BLOCK STRUCTURE RIM = 901.88 S 4' PVC (INV. = 896.78) CAPPED LATERAL N 10' CLAY (INV. = 893.38) W 10' CLAY (INV. = 892.43) E 10' CLAY (INV. = 892.38)	



BM-3:
ELEV: 902.54
SET MAG NAIL IN NORTHEAST
SIDE OF POWER POLE



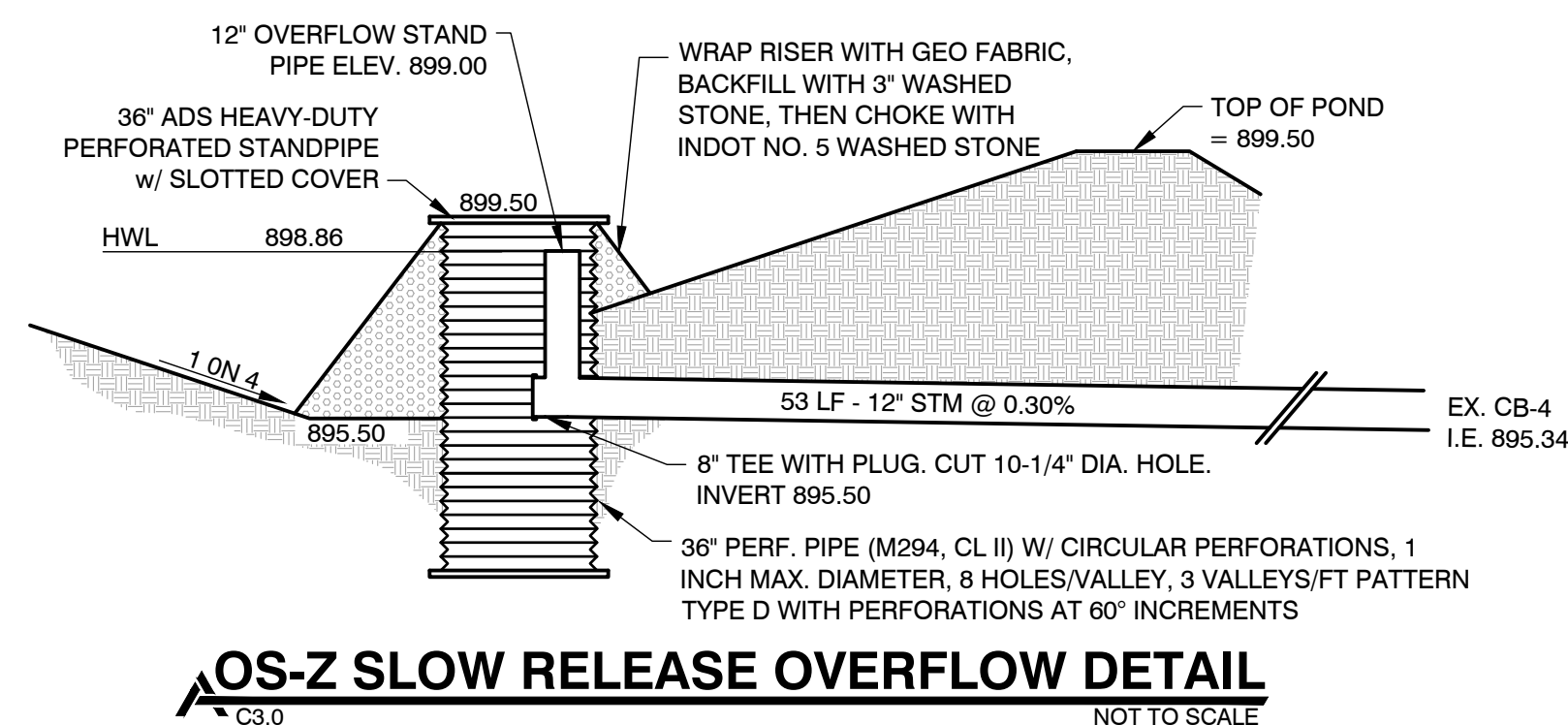
A.	WATER SERVICE. COORDINATE CONNECTION WITH PLUMBING PLANS PROVIDED BY THE ARCHITECT.
B.	89 LF TO EXISTING WATERMAIN. 1" PE WATER SERVICE. COORDINATE WITH EXISTING WATERMAIN. COORDINATE WITH CITY OF MARSHALL WATER DEPARTMENT. - (269) 558-0328
C.	SEWER LATERAL. COORDINATE CONNECTION WITH PLUMBING PLANS PROVIDED BY THE ARCHITECT.
D.	CONNECT TO EXISTING SANITARY LATERAL. COORDINATE WITH CITY OF MARSHALL DEPARTMENT OF PUBLIC WORKS - (269) 558-0324.
E.	U/G ELECTRIC SERVICE.
F.	U/G TELEPHONE SERVICE.
G.	U/G GAS SERVICE.
H.	12" FLARED END SECTION WITH RIP RAP AND REFUSE SCREEN (SEE DETAIL, SHEET C5.0)
I.	TWO-WAY YARD CLEANOUT. SCHEDULE 40 BACKFLOW DEVICE (SEE DETAIL, SHEET C5.0)
J.	SANITARY CLEAN OUT (SEE DETAIL, SHEET C5.0)

- | | |
|----------|--|
| K | SLOW-RELEASE / OVERFLOW STRUCTURE.
(SEE DETAIL, THIS SHEET) |
| L | STORM CLEAN OUT (SEE DETAIL, SHEET C5.0) |
| M | PROPOSED VEGETATIVE SWALE (SEE DETAIL, SHEET C5.0
(SEE GRADING, SHEET C4.0)) |
| N | PROPOSED 1' BERM ADJACENT TO PROPOSED SWALE. |
| O | PROPOSED FOREBAY SPILLWAY SECTION
(SEE DETAIL, SHEET C5.0) |
| P | 8' x 8" CONCRETE APRON (SEE DETAIL, SHEET C5.0) |
| Q | CORE EXISTING CATCH BASIN FOR NEW CONNECTION.
COORDINATE CONNECTION WITH CITY OF MARSHALL
DEPARTMENT OF PUBLIC WORKS - (269) 558-0324. |

<u>CB-M, 4" DIA., EJWJ 5105</u>	<u>CB-S, 4" DIA., EJWJ 5105</u>
RIM = 900.70	RIM = 902.42
12" HDPE W = 897.70	12" HDPE W = 896.17
*SMOUT ON OUTLET PIPE, SEE DETAIL SHEET	12" HDPE SW = 898.76
	15" HDPE N = 899.17
<u>CB-N, 4" DIA., EJWJ 5105</u>	<u>YD-T, **</u>
RIM = 902.55	RIM = 901.83
12" HDPE W = 897.43	12" HDPE NE = 898.83
12" HDPE E = 897.43	
<u>CB-O, 4" DIA., EJWJ 5105</u>	<u>CB-U, 4" DIA., EJWJ 5105</u>
RIM = 902.55	RIM = 902.17
12" HDPE W = 897.23	12" HDPE S = 895.75
12" HDPE E = 897.23	12" HDPE E = 898.41
	12" HDPE W = 895.75
	*SMOUT ON OUTLET PIPE DETAIL SHEET
<u>CB-P, 4" DIA., EJWJ 5105</u>	<u>CB-V, 4" DIA., EJWJ 5105</u>
RIM = 902.55	RIM = 901.84
12" HDPE W = 896.99	12" HDPE E = 898.84
12" HDPE E = 896.99	
<u>CB-Q, 4" DIA., EJWJ 5105</u>	<u>CB-W, 4" DIA., EJWJ 5105</u>
RIM = 902.55	RIM = 902.64
12" HDPE W = 896.75	12" HDPE W = 898.63
12" HDPE E = 896.75	12" HDPE E = 898.63
<u>CB-R, 4" DIA., EJWJ 5105</u>	* ALL STRUCTURES HAVE
RIM = 902.55	
12" HDPE W = 896.47	** ALL YARD DRAINS ARE
12" HDPE E = 896.47	

CB-1, 4' CONC. STRUCTURE RIM = 902.24 N 12" CONC. (INV. = 897.64) SUMP = 896.99	CB-5, 4' BLOCK STRUCTURE RIM = 900.98 NW 10" CLAY (INV. = 896.98) N 10" CLAY (INV. = 896.98) W 15" CLAY (INV. = 896.98) E 15" CLAY (INV. = 895.98) SUMP = 895.98
CB-2, 2' CONC. STRUCTURE RIM = 900.92 NE 6" CPE (INV. = 898.72) NW 6" CPE (INV. = 898.72) N 10" P/C (INV. = 898.47) SUMP = 897.82	MH-8, 4' BLOCK STRUCTURE RIM = 901.17 N 10" P/C (INV. = 897.97) SE 10" CLAY (INV. = 896.98) SUMP = 895.67
CB-3, 4' CONC. STRUCTURE RIM = 900.90 NE 12" CONC. (INV. = 897.64) SUMP = 895.40	CB-7, 4' BLOCK STRUCTURE RIM = 900.89 E 15" CLAY (INV. = 896.98) W 15" CLAY (INV. = 896.98) N 10" C/C (INV. = 896.98) SUMP = 895.89
CB-4, 4' BLOCK STRUCTURE RIM = 901.49 W 15" CLAY (INV. = 895.34) SE 24" CONC. (INV. = 894.99) NW 24" CONC. (INV. = 894.84) E 15" CLAY (INV. = 898.28) S 12" HDPE INV. 895.34 SUMP = 894.79	

DENOTES PROPOSED PIPE CONNECTION INFORMATION



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

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DRAWN:	aw
CHECKED:	WLP

No.	ISSUED FOR:	DATE	BY
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1	CITY REVISIONS	11/03/2025	LM
2	.	.	.
3	.	.	.
4	.	.	.

UTILITY PLAN
TIGER TOWING
DRIVEN DESIGN
7775 INDUSTRIAL RD, MARSHAL
SECTION 26, I02S, R06

PROJECT:
CLIENT:
SITE ADDRESS:
SITE SECTION:

JOB NUMBER
25103008

DATE
11/03/2025

SHEET NUMBER

C3.0

1. ALL CONSTRUCTION METHODS SHALL BE DONE IN COMPLIANCE WITH MOOT-EDGE. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING A "SOIL EROSION PERMIT" FROM THE GOVERNING AUTHORITY AND A "PERMIT BY RULE" NOTICE OF COVERAGE FROM THE GOVERNING AUTHORITY, IF APPLICABLE. PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL REQUIREMENTS OF THE "SOIL EROSION PERMIT" AND FOR ALL CERTIFIED STORM WATER INSPECTION SERVICE REQUIRED BY THE "PERMIT BY RULE." EROSION CONTROL MEASURES SHOWN ON THE PLANS ARE A MINIMUM REQUIREMENT AND SHALL NOT RELIEVE THE CONTRACTOR'S RESPONSIBILITY FOR PROVIDING ALL REQUIRED EROSION CONTROL MEASURES.
2. AVOID UNNECESSARY DISTURBING OR REMOVING OF EXISTING VEGETATED TOPSOIL OR EARTH COVER. THESE COVER AREAS ACT AS SEDIMENT FILTERS.
3. ALL TEMPORARY SOIL EROSION PROTECTION SHALL REMAIN IN PLACE UNTIL REMOVAL IS REQUIRED FOR FINAL CLEAN UP AND APPROVAL.
4. GEOTEXTILE SILT FENCE SHALL BE INSTALLED AS REQUIRED WHEN CROSSING CREEKS OR WHEN ADJACENT TO WETLANDS OR SURFACE WATER BODIES TO PREVENT SILTATION AND ELSEWHERE AS DIRECTED BY THE ENGINEER. SEEDING AND/OR SODDING SHALL BE INSTALLED ON CREEK BANKS IMMEDIATELY AFTER CONSTRUCTION TO PREVENT EROSION.
5. MAINTENANCE, CLEANING, AND REMOVAL OF THE VARIOUS SEDIMENT CONTROL MEASURES SHALL BE INCLUDED IN THE VARIOUS EROSION CONTROL ITEMS.

3P DENOTES PERMANENT SEEDING. ALL DISTURBED AREAS NOT PAVED OR GRAVELED SHALL BE RESTORED. PLACE TOPSOIL, SURFACE, SALV. 3 INCH, MDOT SEEDING, MIXTURE TUF APPLIED AT A RATE OF 220 LB/ACQ. FERTILIZER, CHEMICAL NUTRIENT CL.A APPLIED AT A RATE OF 298 LB/ACQ. MULCH AT A RATE OF 2 TON/AC AND MULCH ANCHORING. (APPLIES TO ENTIRE PROJECT)

4T DENOTES DUST CONTROL. DUST CONTROL MAY BE REQUIRED ON THE DISTURBED AREAS. CONSIDER INCLUDING DUST CONTROL FRESH WATER TO BE INCLUDED IN THE ITEM OF EMBANKMENT. DUST CONTROL APPROACH AGGREGATE BASE COURSE WILL BE ACCOMPLISHED BY APPLYING FRESH WATER (INCLUDED IN THE ITEM OF AGGREGATE BASE, 6 INCH) AND APPLYING DUST PALLIATIVE, APPLIED, CaCl₂ (TON) AS DIRECTED BY THE PROJECT ENGINEER.

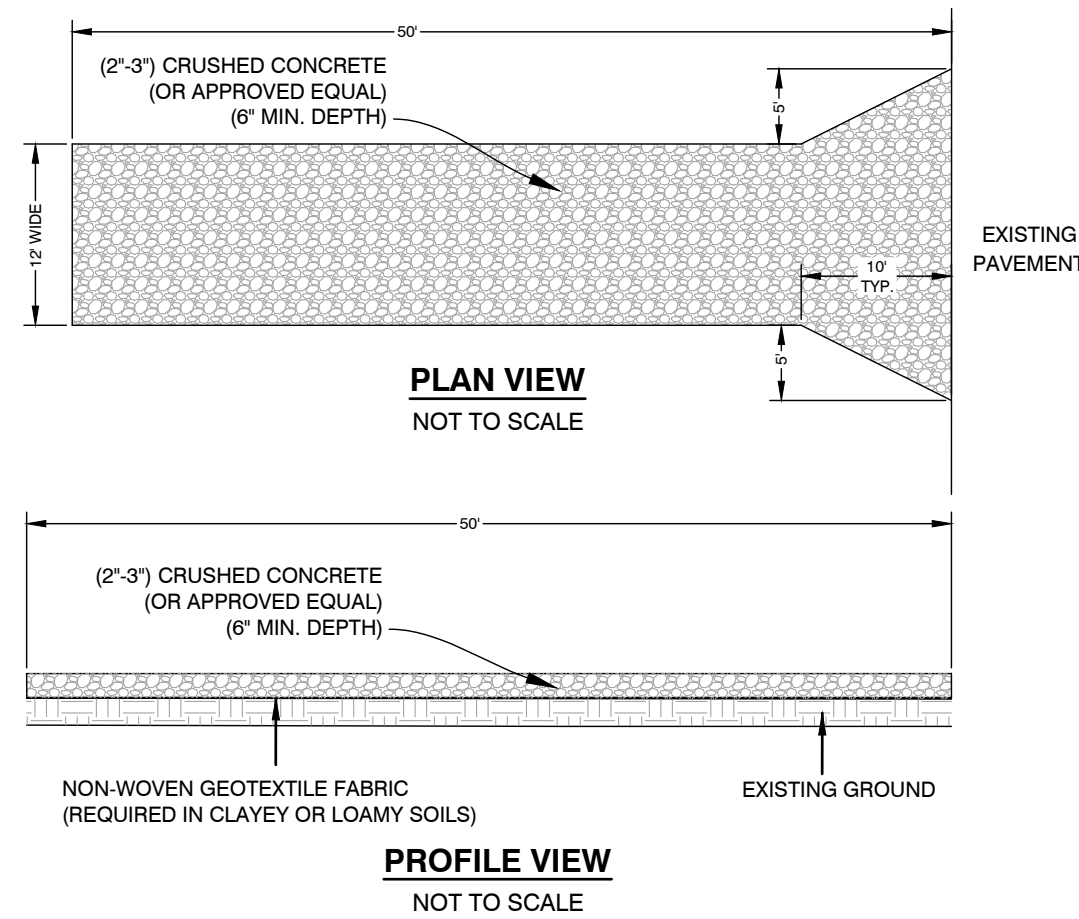
5P DENOTES AGGREGATE COVER/PERMANENT PAVEMENT RESTORATION

4AT DENOTES GRAVEL ACCESS APPROACH. APPROACH SHALL BE INSTALLED TO PROVIDE STABLE ACCESS TO ROADWAYS AND MINIMIZE SUDT AND TRACKING OF MATERIALS ONTO PUBLIC STREETS AND HIGHWAYS. THE APPROACH SHALL BE A MINIMUM OF 12' WIDE, 6" DEEP, AND CONSIST OF 2" & 4" AGGREGATE.

DENOTES TEMPORARY SILT FENCE. SILT FENCE SHALL BE INSTALLED AT CREEK CROSSINGS, ADJACENT TO ALL WETLANDS AND SURFACE WATER AND OTHER LOCATIONS AS DIRECTED BY THE ENGINEER. EACH SILT FENCE SHALL BE INSTALLED GENERALLY ALONG THE SAME CONTOUR ELEVATION.

29T DENOTES INLET PROTECTION FABRIC DPO. SHALL BE INSTALLED AT EXISTING AND PROPOSED STORM SEWER INLETS TO PROVIDE SETTLING AND FILTERING OF SILT LADEN WATER PRIOR TO ENTRY INTO THE DRAINAGE SYSTEM.

33T DENOTES MUD BAR OR MATTING. SHALL BE NORTH AMERICAN GREEN POLYPROPYLENE MATTING. SHALL BE 12' WIDE, 12' LONG, 1/2" THICK, 100 LB/SQ YD. SLOPES OR GREATER, IN AND AROUND DITCH BOTTOMS WHERE THERE IS NO BOWSLEAY BY CONTRACTOR RESPONSIBLE FOR RESTORING THAT AREA.



WHEN:
CONSTRUCTION TRAFFIC IS EXPECTED TO LEAVE A CONSTRUCTION SITE

WHY:
TO MINIMIZE TRACKING OF SEDIMENT ONTO PUBLIC ROADWAYS.

WHERE:
STABILIZED CONSTRUCTION ENTRANCES SHALL BE LOCATED AT EVERY POINT WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE. VEHICLES LEAVING THE SITE MUST BE ROUTED OVER THE INGRESS/EGRESS CORRIDOR.

HOW:
1. CONSTRUCTION TRACKING MAT ACCESS ROAD SHOULD BE ESTABLISHED AT THE ONSET OF THE CONSTRUCTION ACTIVITIES AND MAINTAINED IN PLACE FOR THE DURATION OF THE CONSTRUCTION PROJECT.

3. ACCESS LOCATION SHOULD BE CLEARED OF WOODY VEGETATION.

5. ACCESS LENGTH SHALL BE A MINIMUM OF 50'

7. CRUSHED CONCRETE (OR APPROVED EQUAL), SHALL BE PLACED AT LEAST 6" DEEP OVER THE LENGTH AND WIDTH OF THE INGRESS/EGRESS CORRIDOR.

MAINTENANCE:
PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN EVENT

STABILIZED ENTRANCES SHALL BE REPAIRED AND APPROPRIATE MATERIAL ADDED AS NECESSARY

SEDIMENT DEPOSITED ON PUBLIC RIGHTS-OF-WAY SHALL BE REMOVED IMMEDIATELY AND RETURNED TO THE CONSTRUCTION SITE.

IF SOILS ARE SUCH THAT WASHING OF TIRES IS REQUIRED, IT SHALL BE DONE IN A WASH RACK AREA, STABILIZED WITH STONE, IMMEDIATELY PRIOR TO THE CONSTRUCTION ACCESS STABILIZED CORRIDOR.

AT THE PROJECT COMPLETION, THE ACCESS ROAD SHOULD BE REMOVED AND DISPOSED OF UNLESS UTILIZED AS SUBGRADE FOR A FINAL ROAD.

STABILIZED CONSTRUCTION TRACKING MAT DETAIL AND SPECIFICATIONS

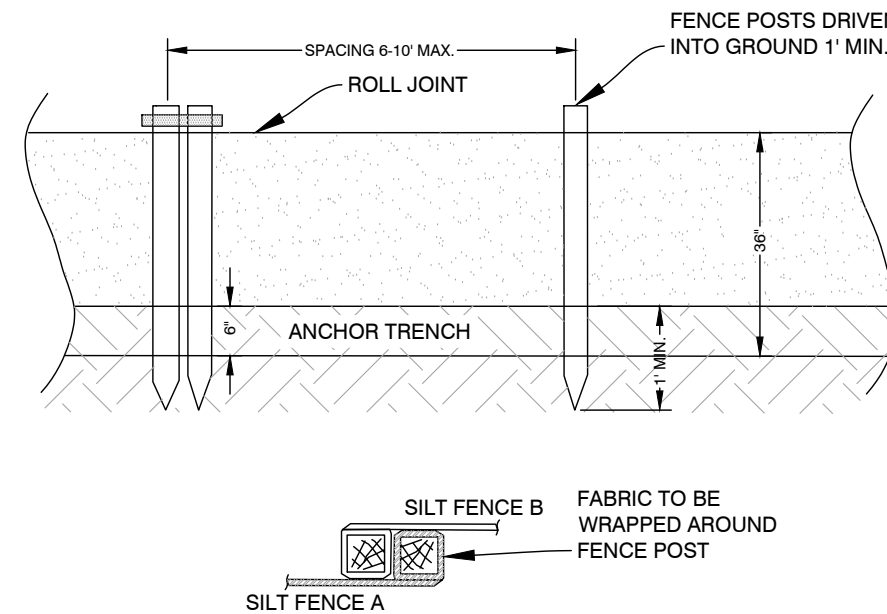
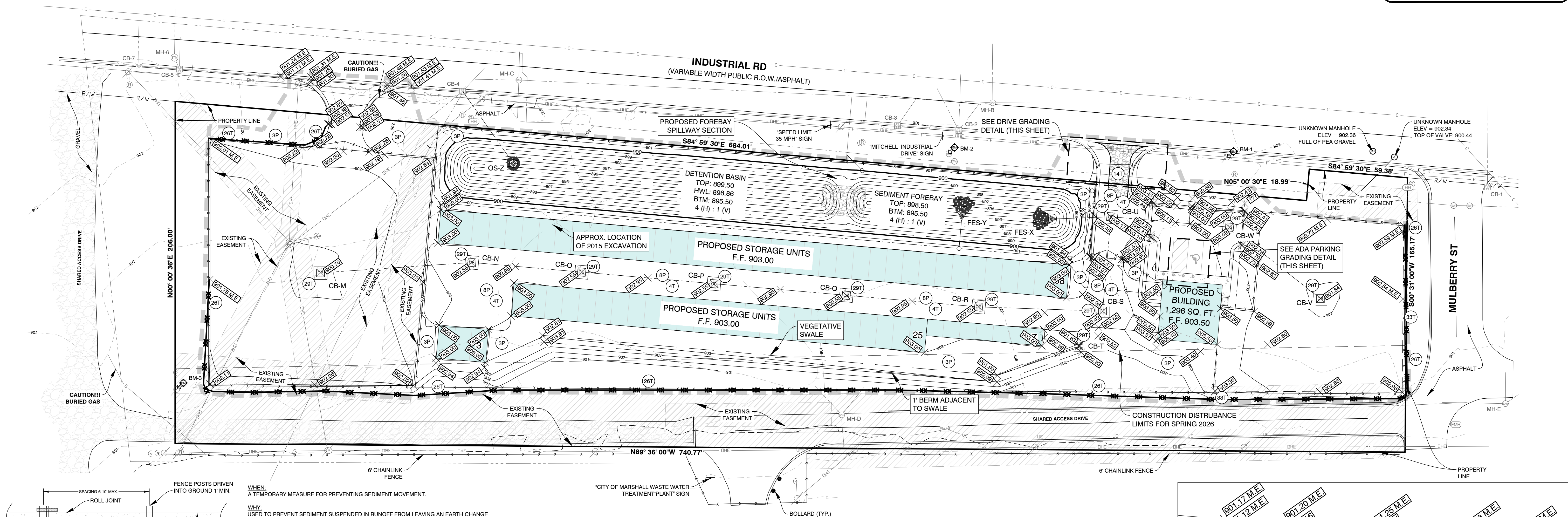


Diagram illustrating a slope stabilization method using a geotextile filter fabric. The diagram shows a cross-section of a slope with a vertical line representing the filter fabric. Labels include:

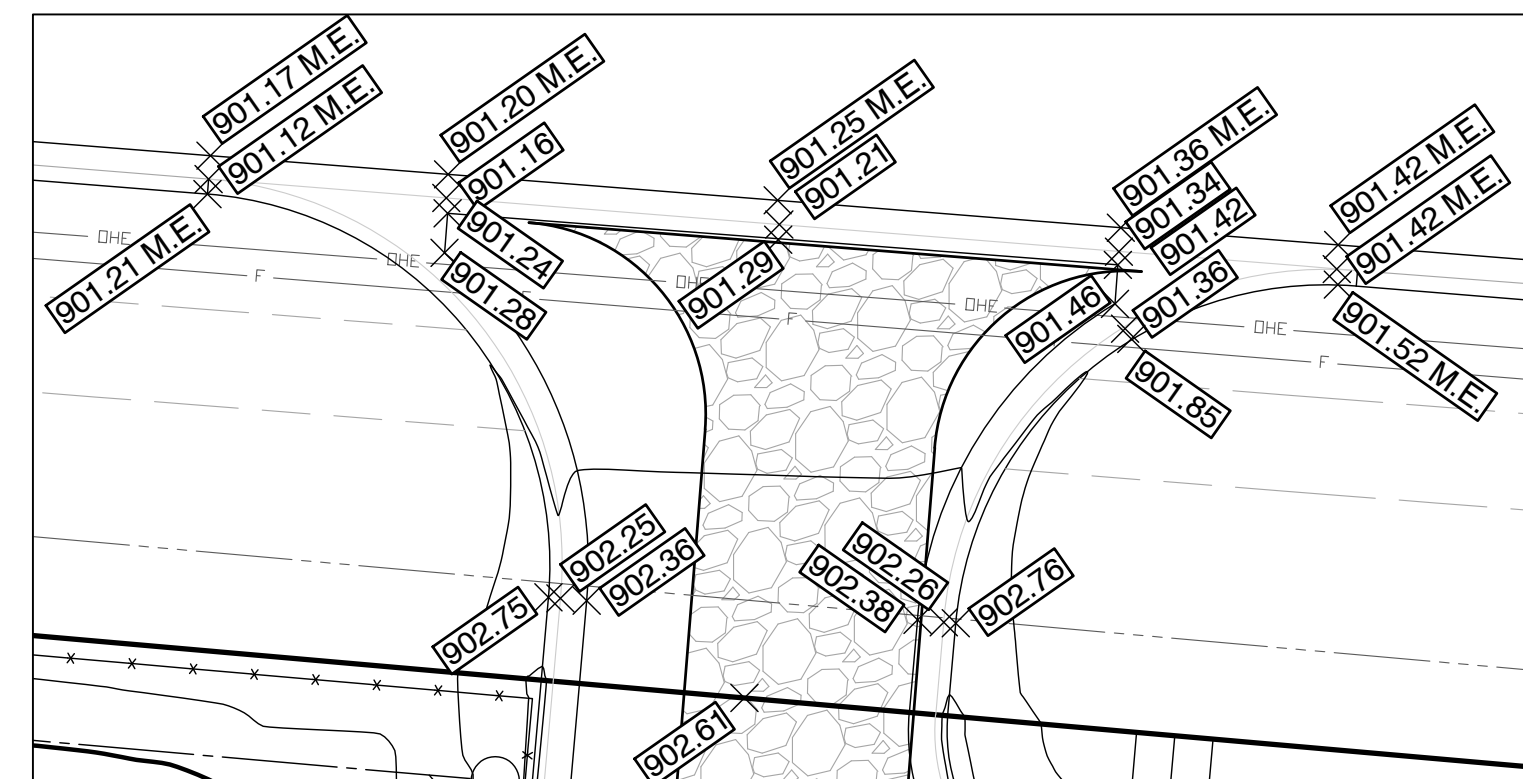
- GEOTEXTILE FILTER FABRIC FASTENED ON UPHILL SIDE, TOWARDS EARTH DISRUPTION
- RIDGE OF COMPACTED EARTH ON UPHILL SIDE OF FILTER FABRIC
- SHEET FLOW
- 6"x6" ANCHOR TRENCH
- UNDISTURBED VEGETATION
- 1' MIN.

36" SILT FENCE DETAIL & SPECIFICATIONS

1. ALL WORK SHALL CONFORM TO ALL LOCAL, STATE AND FEDERAL LAWS, RULES AND REGULATIONS IN FORCE AT TIME OF CONSTRUCTION.
2. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS, PERMIT COSTS, TAP FEES, METER DEPOSITS, PERMANENT UTILITY APPLICATIONS, BONDS, AND OTHER FEES REQUIRED FOR PROPOSED WORK. THIS SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO THOSE REQUIRED BY THE MICHIGAN DEPARTMENT OF TRANSPORTATION.
3. CONTACT MISS DIG "811" FOR LOCATION OF UNDERGROUND UTILITIES A MINIMUM OF 48 HOURS BEFORE COMMENCING EXCAVATION WORK. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO ARE NOT PART OF THE "MISS DIG" ALERT SYSTEM. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS IN A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.
4. DEMOLISH & REMOVE ALL EXISTING SITE FEATURES AS REQUIRED.
5. MATCH EXISTING GRADES AROUND PERIMETER WITH SLOPES AS SHOWN.
6. ALL SPOT ELEVATIONS ARE TOP OF PAVEMENT GRES AT EDGE OF METAL (EOM) UNLESS OTHERWISE NOTED.
7. ALL SOIL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO MASS GRADING.
8. ALL EARTHWORK SHALL BE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS AND GEOTECHNICAL REPORT PREPARED FOR THIS SITE.
9. ALL EXISTING ELEVATIONS ARE TO BE VERIFIED AND ACCEPTED AS SHOWN PRIOR TO COMMENCEMENT OF WORK.
10. CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID TRACKING SOIL ONTO ADJACENT ROADWAYS. CONTRACTOR SHALL SWEEP IMMEDIATELY IF OCCURS.
11. ANY DISTURBED AREA WHICH WILL BE LEFT UNWORKED 15 DAYS OR LONGER MUST BE SEEDDED TO ESTABLISH VEGETATION FOR TEMPORARY STABILIZATION. BASINS TO BE



ADA PARKING GRADING DETAIL



C4.0 1 INCH = 10 FEET



ALL UTILITIES AS SHOWN ARE APPROXIMATE LOCATIONS DERIVED FROM ACTUAL MEASUREMENTS AND AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATION NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THE AREA. FIELD WORK PERFORMED BY: AR ENGINEERING LLC

PLANS PREPARED BY:

DRAWN:	aw
CHECKED:	WLP

No.	ISSUED FOR:	DATE	BY
0	SITE PLAN REVIEW	10/10/2025	tc
1	CITY REVISIONS	11/03/2025	LM
2	.	.	.
3	.	.	.
4	.	.	.

GRADING & SESC PLAN
TIGER TOWING
DRIVEN DESIGN
7775 INDUSTRIAL RD, MARSHALL, MI 49657
SECTION 26. 102S. R06W.

JOB NUMBER
25103008

DATE
11/03/2025

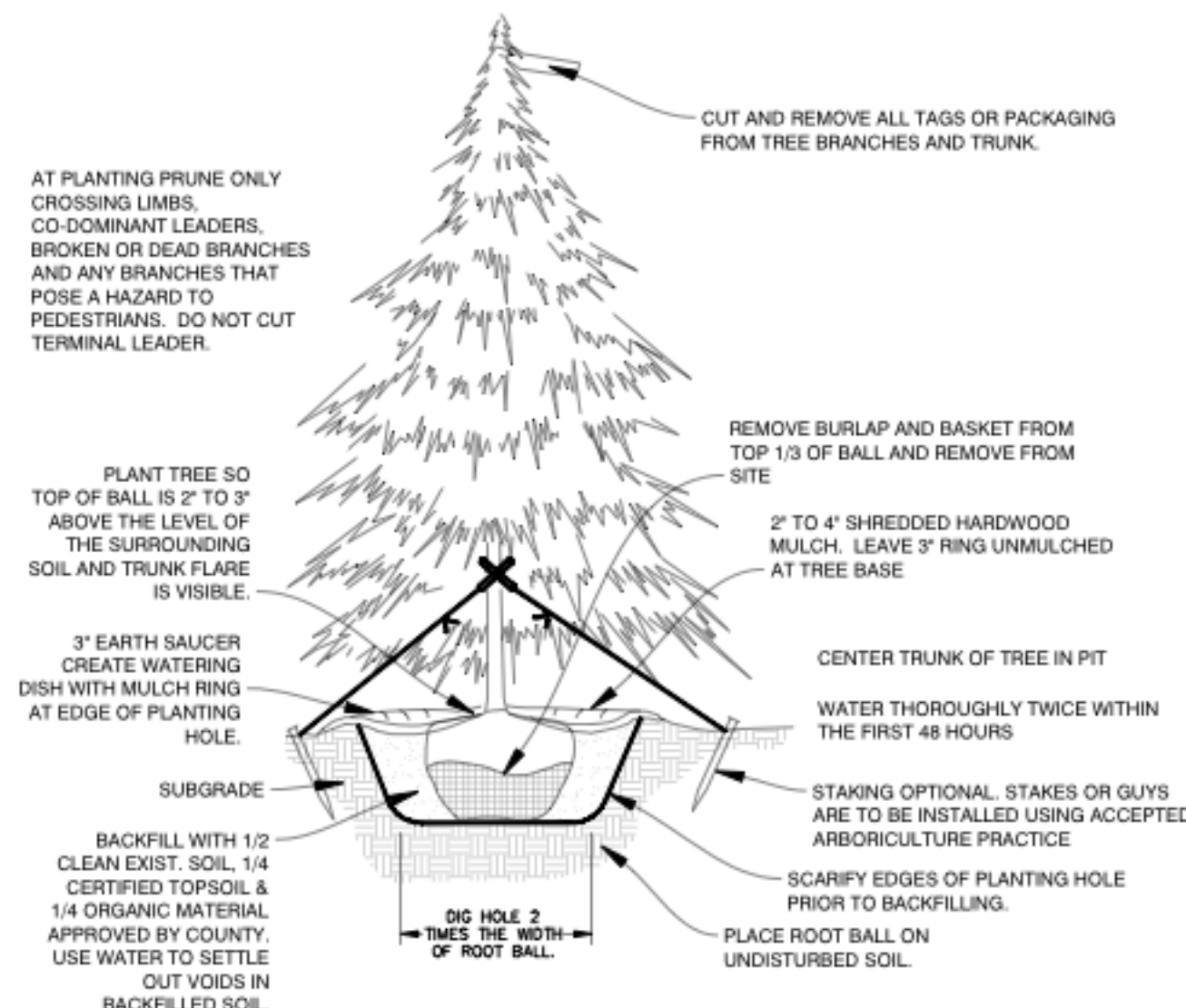
SHEET NUMBER

C4.0

LANDSCAPING NOTES

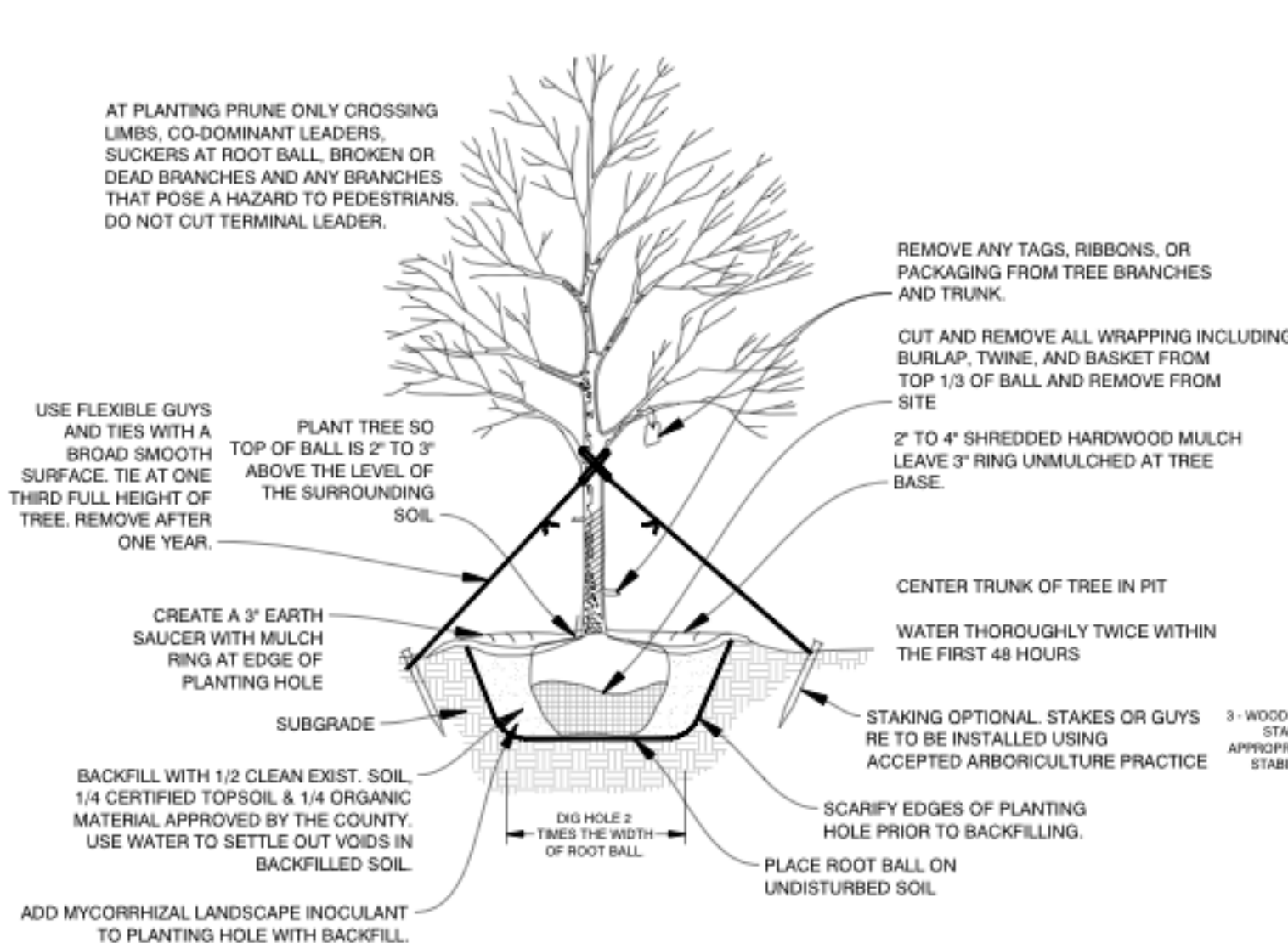
1. INSTALL CONSTRUCTION FENCE AROUND DRIP LINES OF EXISTING TREES TO REMAIN. NO COMPACTION OR INCREASED DEPTH OF SOIL OVER THE ROOT SYSTEM AREA PRIOR TO AND DURING CONSTRUCTION.
2. ALL LAWN AREAS SHALL BE SEEDED AND MULCHED WITH THE FOLLOWING MIXTURE: 30% IMPROVED PERENNIAL RYEGRASS, 40% FINE FESCUE, AND 40% KENTUCKY BLUEGRASS AT A RATE OF 3-4 LBS/ 1000 SFT.
3. ALL EDGING SHALL BE STANDARD COMMERCIAL-STEEL EDGING 1/2" X 4", ROLLED EDGE, FABRICATED IN SECTIONS OF STANDARD LENGTHS, WITH LOOPS STAMPED FROM OR WELDED TO FACE OF SECTIONS TO RECEIVE STAKES IN STANDARD FINISH OF GREEN PAINT.
4. PROVIDE QUALITY, SIZE, GENUS, SPECIES, AND VARIETY OF EXTERIOR PLANTS INDICATED, COMPLYING WITH APPLICABLE REQUIREMENTS IN ANSI Z60.1 "AMERICAN STANDARD FOR NURSERY STOCK." MEASURE ACCORDING TO ANSI Z60.1 STANDARDS.
5. MAINTAIN AND ESTABLISH LAWN BY WATERING, FERTILIZING, WEEDING, MOWING, TRIMMING, REPLANTING, AND OTHER OPERATIONS. ROLL, REGRADE, AND REPLANT BARE OR ERODED AREAS AND REMULCH TO PRODUCE A UNIFORMLY SMOOTH LAWN.
6. BEGIN LAWN MAINTENANCE IMMEDIATELY AFTER EACH AREA IS PLANTED AND CONTINUE UNTIL ACCEPTABLE LAWN IS ESTABLISHED: A MINIMUM OF 60 DAYS AFTER SUBSTANTIAL COMPLETION.
7. PROTECT ADJACENT AND ADJOINING STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND PLANTINGS FROM HYDROSEEDING OVER-SPRAY AND DAMAGE CAUSED BY PLANTING OPERATIONS.
8. REMOVE STONES LARGER THAN 1" IN ANY DIMENSION AND STICK, ROOTS, RUBBISH, AND OTHER EXTRANEOUS MATTER FROM SITE.
9. MAINTAIN LAWN UNTIL A HEALTHY, UNIFORM, CLOSE STAND OF GRASS HAS BEEN ESTABLISHED, FREE OF WEEDS AND SURFACE IRREGULARITIES, WITH COVERAGE EXCEEDING 90% OVER ANY 10 SFT AND BARE SPOTS DO NOT EXCEED 5 BY 5 INCHES.
10. MAINTAIN TREES AND SHRUBS FOR ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION BY PRUNING, CULTIVATING, WATERING, WEEDING, FERTILIZING, RESTORING PLANTING SAUCERS, TIGHTENING AND REPAIRING STAKES AND GUY SUPPORTS, AND RESETTling TO PROPER GRADES OR VERTICAL POSITION, AS REQUIRED TO ESTABLISH HEALTHY VIABLE PLANTINGS. SPRAY AS REQUIRED TO KEEP TREES AND SHRUBS FREE OF INSECTS AND DISEASE.
11. REMOVE AND REPLACE DEAD PLANTS IMMEDIATELY. REPLACE PLANTS THAT ARE MORE THAN 25% DEAD OR IN AN UNHEALTHY CONDITION AT END OF WARRANTY PERIOD. A LIMIT OF ONE REPLACEMENT OF EACH PLANT WILL BE REQUIRED, EXCEPT FOR LOSSES OR REPLACEMENTS DUE TO FAILURE TO COMPLY WITH REQUIREMENTS.
12. TREES, AND SHRUBS SHALL BE WARRANTED FOR ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION AGAINST DEFECTS INCLUDING DEATH AND UNSATISFACTORY GROWTH, EXCEPT FOR DEFECTS RESULTING FROM INCIDENTS THAT ARE BEYOND CONTRACTOR'S CONTROL.

NOTE: STAKING OF BALL AND BURLAP TREES REQUIRED AT THE DISCRETION OF THE CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL STAKING AT END OF ONE YEAR WARRANTY PERIOD.

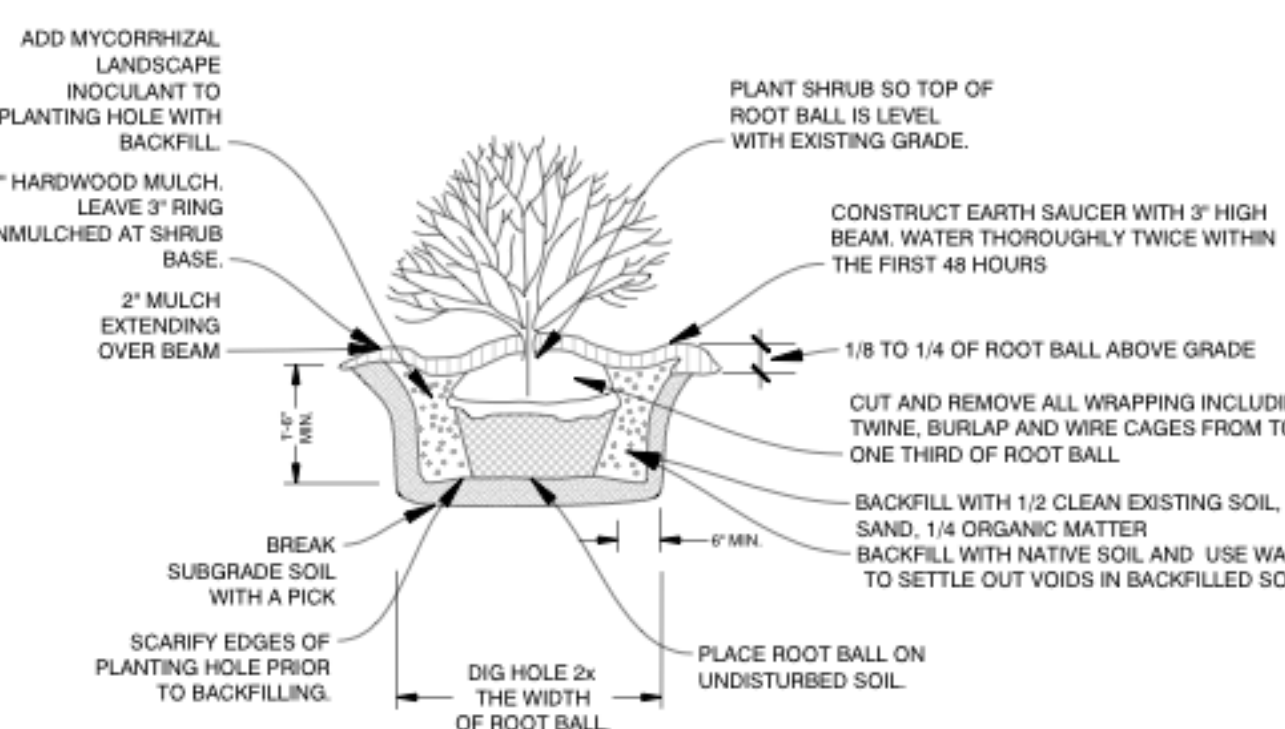
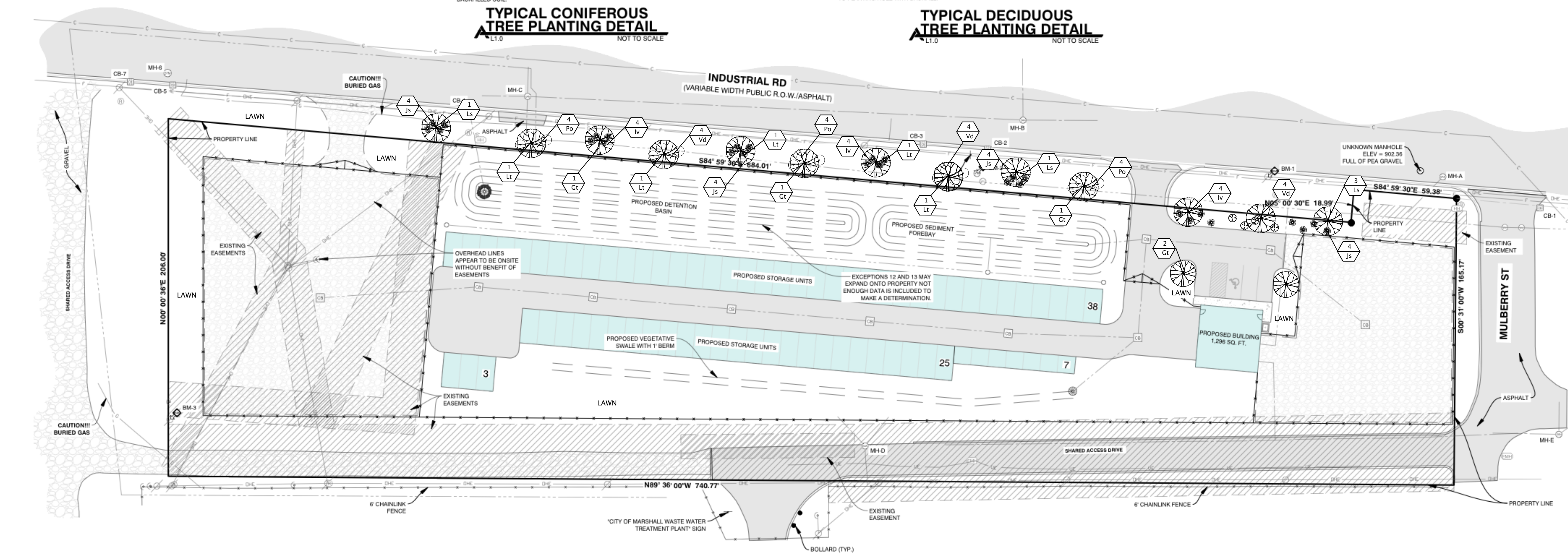


TYPICAL CONIFEROUS TREE PLANTING DETAIL
L1.0 NOT TO SCALE

NOTE: STAKING OF BALL AND BURLAP TREES REQUIRED AT THE DISCRETION OF THE CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL STAKING AT END OF ONE YEAR WARRANTY PERIOD.



TYPICAL DECIDUOUS TREE PLANTING DETAIL
L1.0 NOT TO SCALE



TYPICAL SHRUB PLANTING DETAIL
L1.0 NOT TO SCALE

PLANTING SCHEDULE NOTE: ALL TREES AND SHRUBS ARE NATIVE FROM ORDINANCE DATA BASE FOR REGION

PLANT LIST:	SYM.	BOTANICAL NAME	COMMON NAME	Native:	Size:	ROOT:
QTY:						
5	Ls	Liquidambar styraciflua	American Sweetgum	N	2.5' Cal.	B&B
5	Gt	Gleditsia tricanthos var. inermis	Thornless Honeylocust	N	2.5' Cal.	B&B
5	Lt	Liliodendron tulipifera	Tulip Tree	N	2.5' Cal.	B&B
14	Iv	Ilex verticillata	Winterberry Holly	N	30-36"	Container
12	Po	Physocarpus opulifolius	Common Ninebark	N	30-36"	Container
14	Js	Juniperus 'Seagreen'	Seagreen Juniper	N	30-36"	Container
12	Vd	Viburnum dentatum	Arrowwood Viburnum	N	30-36"	Container



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PLANS PREPARED BY:



DRAWN: BW
CHECKED: --



No.	ISSUED FOR:	DATE	BY
0	SITE PLAN REVIEW	08/17/2025	tc
1			
2			
3			
4			

LANDSCAPE PLAN
TIGER TOWING
DRIVEN DESIGN

775 INDUSTRIAL RD, MARSHALL, MI 49068
SECTION 26, T02S, R06W.

PROJECT:
CLIENT:

JOB NUMBER
25103008

DATE
10/03/2025

SHEET NUMBER

L1.0

TIGER'S TOWING

775 INDUSTRIAL RD, MARSHALL, MI

RENDERING - FOR REFERENCE ONLY



EXISTING PHOTOS - FOR REFERENCE ONLY



PROJECT NOTES

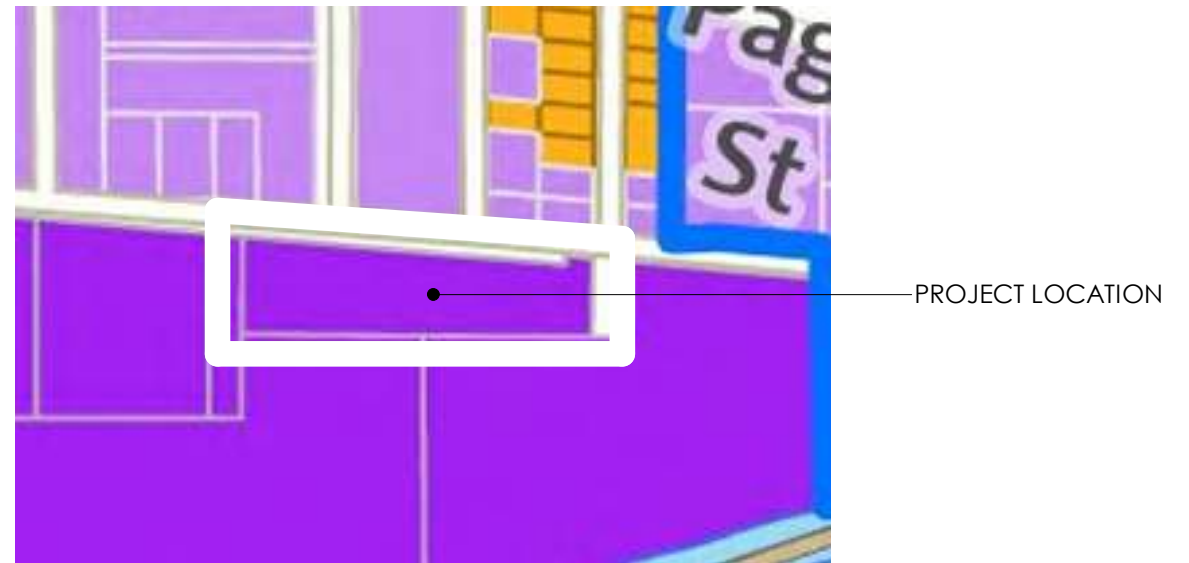
- CONSTRUCTION MUST COMPLY WITH ALL NATIONAL, STATE, AND LOCAL BUILDING CODES, AS WELL AS ALL LOCAL ORDINANCES.
- DO NOT SCALE DRAWINGS. NOMINAL DIMENSIONS ARE SHOWN. REFER TO DETAILS, NOTES, SPECIFICATIONS AND PARTITION KEY FOR INFORMATION. CONTACT ARCHITECT IF ADDITIONAL INFORMATION IS REQUIRED.
- EXISTING BUILDING AND SITE INFORMATION WAS OBTAINED FROM THE OWNER AND ADDITIONAL FIELD MEASUREMENTS BY THE ARCHITECT. THE CONTRACTOR SHALL VERIFY ALL EXISTING FIELD CONDITIONS PRIOR TO COMMENCEMENT OF WORK. DRAWINGS MAY CONTAIN DISCREPANCIES DUE TO CONCEALED CONDITIONS, INACCURACIES IN THE ORIGINAL DRAWINGS, INACCESSIBLE LOCATIONS, UNRECORDED BUILDING ALTERATIONS AND OTHER CONFLICTING INFORMATION. INFORMATION OUTSIDE OF CONTRACT AREA IS RELATIVE AND FOR REFERENCE ONLY. ALWAYS VERIFY FIELD CONDITIONS BEFORE COMMENCING WORK. NOTIFY ARCHITECT IF FIELD CONDITIONS CONFLICT SUBSTANTIALLY WITH PROPOSED WORK.
- INSTRUCTIONS FOR BUILDING CONSTRUCTION MAY BE LOCATED IN ANY PART OF THE CONSTRUCTION DRAWINGS. FAILURE OF THE GENERAL CONTRACTOR OR HIS SUB CONTRACTORS TO SEE INFORMATION IN ANY PART OF THE CONTRACT DOCUMENTS WILL NOT BE A VALID REASON FOR ISSUING A CHANGE ORDER.
- ALL HOLES CREATED FROM ABANDONED DUCT, CONDUIT, ELEC. DEVICES, ETC., WHICH ARE IN VIEW AND ARE NOT SCHEDULED TO BE BOARDED OVER, OR ON A WALL TO BE DEMOLISHED, ARE TO BE FILLED AND PATCHED TO MATCH EXISTING.
- PATCH AND REPAIR ALL EXISTING WALL SURFACES ADJACENT TO NEW WORK AS REQUIRED TO ACHIEVE AN UNINTERRUPTED SURFACE APPEARANCE. PATCH AND REPAIR ALL FLOORING FOR EXISTING BUILDINGS TO ACHIEVE A CONTINUOUS, SMOOTH, AND FLUSH FLOOR SURFACE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SHORING REQUIRED TO EXECUTE WORK. THE CONTRACTOR SHALL COORDINATE ALL TEMPORARY CONSTRUCTION WITH THE ARCHITECT AND OWNER TO ASSURE A MINIMUM AMOUNT OF INTERRUPTION WITH THE OWNER'S ACTIVITIES.
- IF THE PROJECT IS A REMODEL, THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL SURFACES NOT BEING REMODELED IN THE PROJECT AND IN THE PATH OF THE CONTRACTORS TRAVEL, SETUP AND/ OR PROJECT MATERIAL STORAGE. THE CONTRACTOR MUST RETURN THE AREAS DISTURBED AS REQUIRED FOR ACCESS TO ITS PRE-EXISTING CONDITION.
- THE CONTRACTOR AND ALL SUB-CONTRACTORS SHALL BE RESPONSIBLE TO OBTAIN AND PAY FOR ALL LOCAL/REQUIRED PERMITS AND INSPECTIONS.
- ALL SAFETY ISSUES RELATED TO CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR AND MUST COMPLY WITH ALL STATE, LOCAL, ENVIRONMENTAL AND LABOR LAWS DURING THE CONSTRUCTION OF THIS PROJECT.
- ALL WORK TO BE GUARANTEED A MINIMUM OF ONE YEAR FROM THE DATE OF OWNER ACCEPTANCE OF WORK, EXCEPT WHERE MANUFACTURER'S GUARANTEE IS LONGER.
- IF DISCREPANCIES OCCUR BETWEEN DRAWINGS AND FIELD CONDITIONS CONTACT THE ARCHITECT TO VERIFY HOW TO PROCEED BEFORE DOING SO.
- SEE T002 AND T003 FOR ADDITIONAL PROJECT NOTES, MOUNTING HEIGHTS, AND SYMBOLS
- 3D VIEWS AND RENDERINGS ON THIS PAGE AND THROUGHOUT THE SET ARE FOR REFERENCE ONLY. VERIFY ALL CONSTRUCTION DETAILS THROUGHOUT THE ENTIRE SET OF DOCUMENTS
- THE PROJECT SHALL CONFORM TO UNDERWRITERS LABORATORY FIRE RESISTANCE DIRECTORY AND BUILDING MATERIALS DIRECTORY.
- ANY MATERIAL SUBSTITUTIONS TO A LISTED UL DESIGN NUMBER SHALL BE COORDINATED BY THE CONSTRUCTION MANAGER, CONTRACTOR, SUBCONTRACTOR AND/OR MATERIAL SUPPLIER FOR COMPLIANCE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL APPROVALS - FOR ANY MATERIALS SUBSTITUTION IN THE REQUIRED UL DESIGN ASSEMBLY - BY THE FIRE MARSHAL AND BUILDING INSPECTOR HAVING JURISDICTION PRIOR TO ACCEPTANCE.
- FOR ANY CHANGE OF UL DESIGN NUMBER, OR ANY CHANGE IN MATERIAL(S) IN A UL DESIGN ASSEMBLY, IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ALL OTHER RELATED MATERIALS OR ASSEMBLIES AFFECTED BY THE CHANGE OF MATERIAL OR UL DESIGN NUMBER ASSEMBLY.
- PROVIDE COMPLETE UL APPROVED THROUGH-PENETRATION FIRESTOP SYSTEMS AT ALL RATED WALL PENETRATIONS.
- PROVIDE FIRESTOPPING AS REQUIRED AT ALL OPENINGS FOR PLUMBING, CONDUIT, DUCTWORK, ETC AT FIRE RATED ASSEMBLIES.
- REFER TO THE FLOOR PLANS FOR IDENTIFICATION OF ALL FIRE AND SMOKE-RATED PARTITIONS.

PROJECT DESCRIPTION

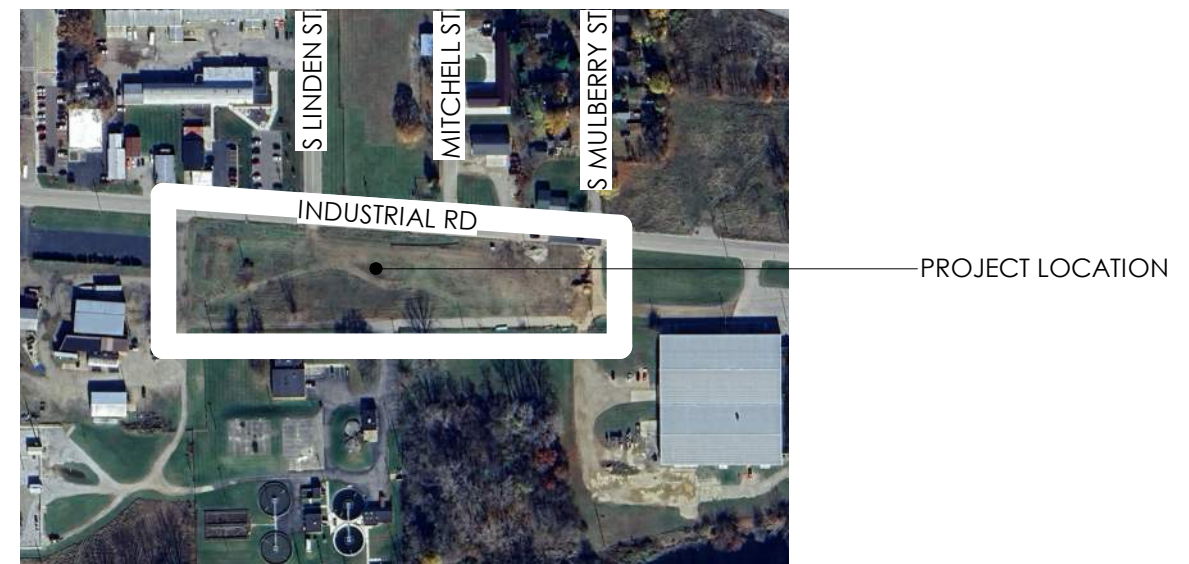
A NEW OFFICE BUILDING IS BEING CONSTRUCTED ON AN EMPTY LOT FOR A TOWING COMPANY FOR STORAGE UNITS AND VEHICLE STORAGE

ZONING MAP

ZONING - I2 - GENERAL INDUSTRIAL



CONTEXT MAP



DRAWING LIST

SHEET LIST		DRAWING TITLE	10/13/2025 - SITE PLAN SET
GENERAL			
T000	TITLE SHEET		X
T001	GENERAL MOUNTING HEIGHTS + ABBREVIATIONS		X
T002	PLUMBING MOUNTING HEIGHTS		X
T003	CODE COMPLIANCE		X
T004	AREA PLANS		X
T005	SECURITY PLAN		X
CIVIL			
C110	DUMPSTER ENCLOSURE DETAILS - SINGLE		X
T1.1	TITLE SHEET		X
C1.0	EX CONDITIONS - DEMO PLAN		X
C2.0	SITE LAYOUT		X
C3.0	UTILITY PLAN		X
C4.0	GRADING - SESG PLAN		X
C5.0	DETAILS		X
L1.0	LANDSCAPE PLAN		X
STRUCTURAL			
S100	STRUCTURAL FOUNDATION PLAN		X
S102	STRUCTURAL ROOF PLAN		X
S101	STRUCTURAL FRAMING PLAN		X
ARCHITECTURAL			
A100	NEW FLOOR PLANS		X
A101	FINISH PLAN & SCHEDULE		X
A200	REFLECTED CEILING PLANS		X
A210	ROOF PLAN AND DETAILS		X
A310	INTERIOR DETAILS		X
A400	DOOR SCHEDULE AND DETAILS		X
A410	WINDOW SCHEDULE AND DETAILS		X
A500	EXTERIOR ELEVATIONS		X
A501	EXTERIOR ELEVATIONS		X
A600	BUILDING SECTIONS		X
A601	BUILDING SECTIONS		X
A700	WALL SECTIONS		X
MECHANICAL			
MEP101	MECH, ELEC, PLUMB SPECS/NOTES		X
Grand total: 30			



ARCHITECTURE/INTERIOR DESIGN

Driven Design Studio PLLC
117 West Michigan Avenue
Battle Creek, MI 49017
(269) 753-8040
cody@drivendesignstudio.com

OWNER

Tiger's Towing
111 S Kendall St
Battle Creek, MI
(269) 963-6613

CONSTRUCTION MANAGER/GC

GC Name
GC Address
GC City
GC Phone Number
GC Email

ENGINEER

AR Engineering
5727 Venture Park Dr A
Kalamazoo, MI
(269) 250-5991

ENGINEER

Centerline Structural Engineering, PLLC
284 N 110 W
Vineyard, UT
Engineer Phone Number
Engineer Email

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PROJECT NAME
TIGER'S TOWING
PROJECT ADDRESS
775 INDUSTRIAL RD, MARSHALL, MI

ISSUE/REVISION
CD SET - 10/13/2025

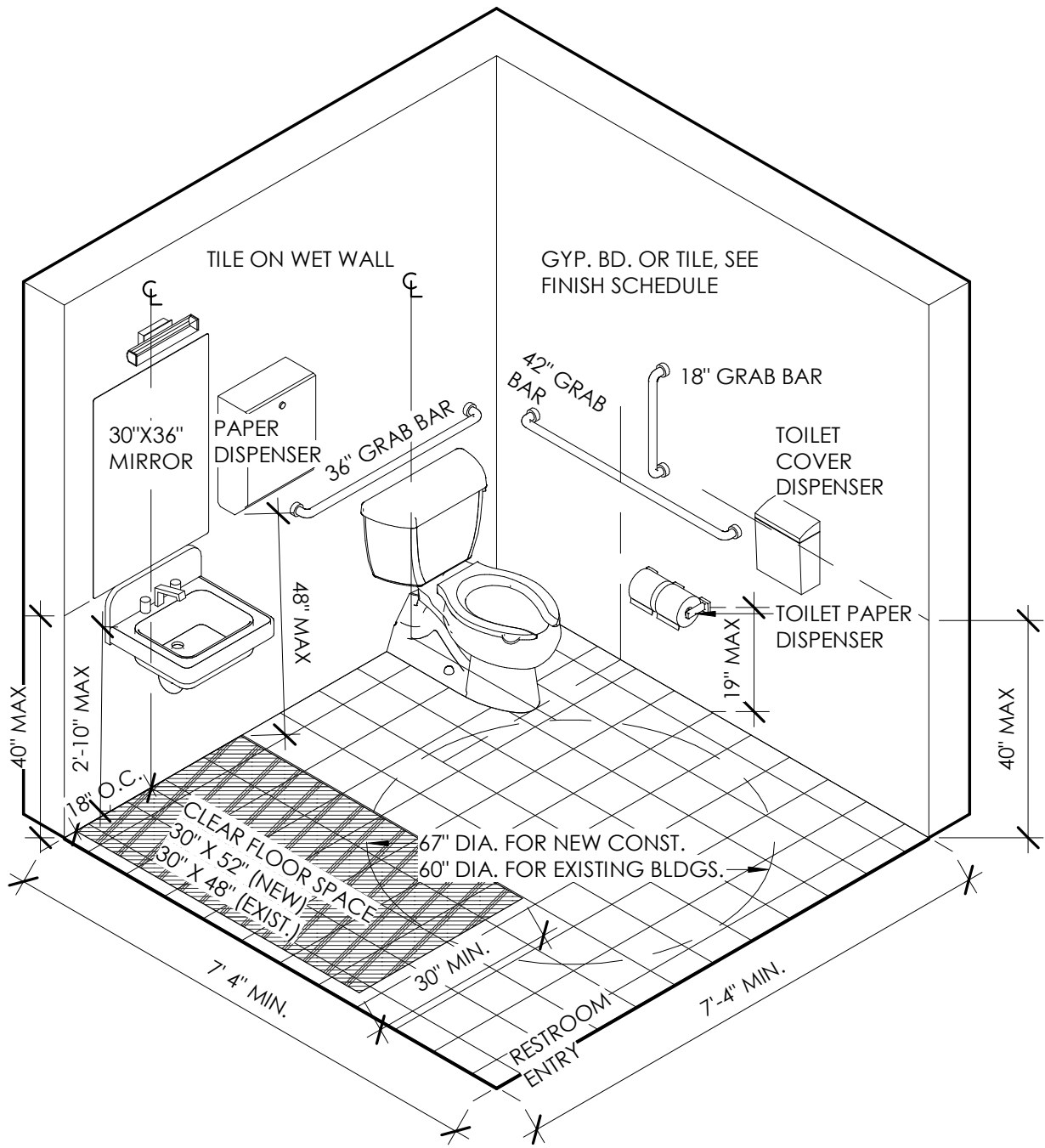
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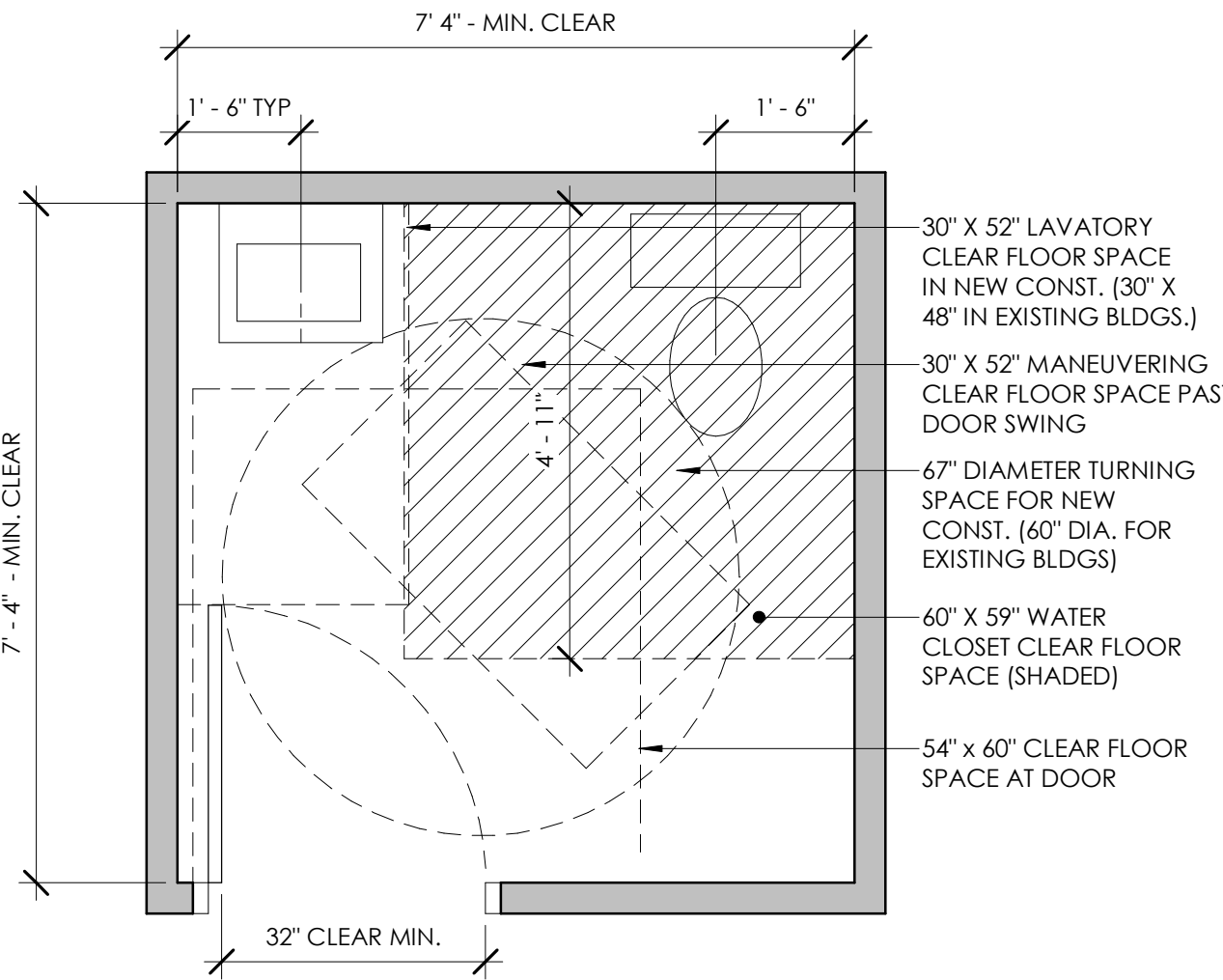
PROJECT NUMBER
2025.053

TITLE SHEET
T000

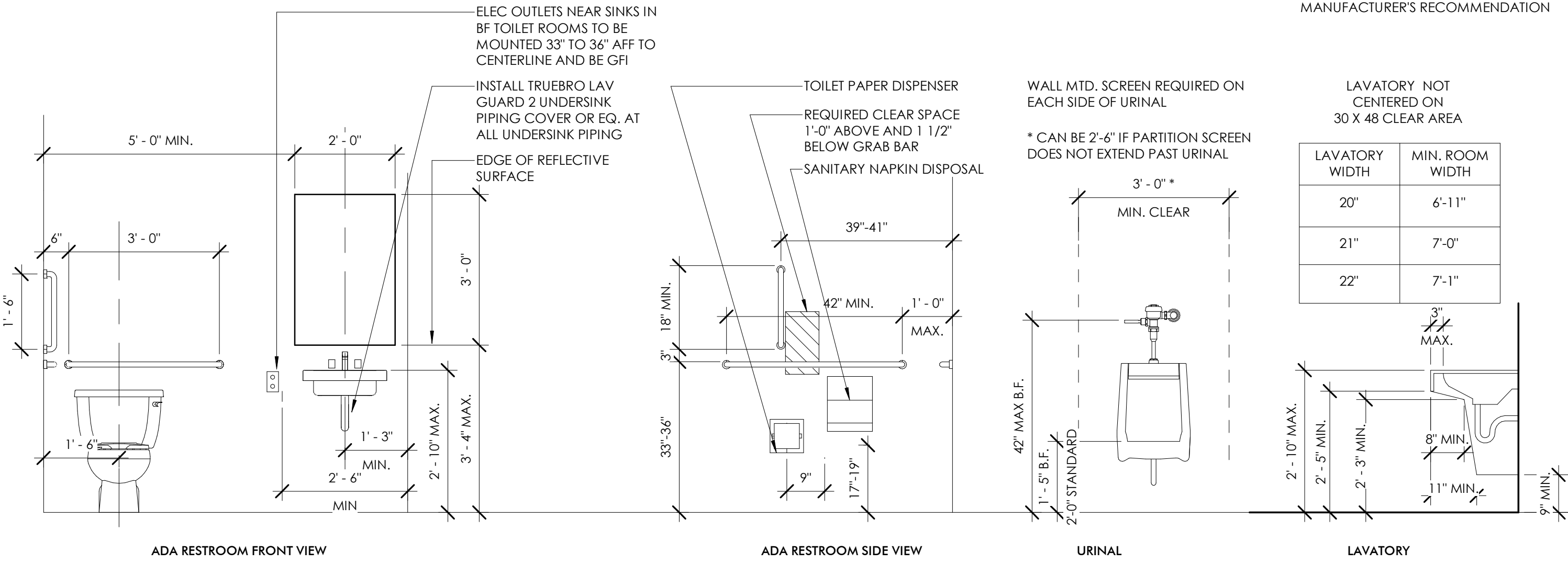
ABBREVIATION LIST A/C AIR CONDITIONING A/V AUDIO/VISUAL ACP ACOUSTICAL CEILING PANEL AD AREA DRAIN ADA AMERICANS WITH DISABILITIES ACT ADJ ADJUSTABLE AFF ABOVE FINISHED FLOOR ALT ALTERNATE ALUM ALUMINIUM APPROX APPROXIMATELY ARCH ARCHITECT[URAL, URE] ASSOC ASSOCIATED AUTO AUTOMATIC AWP ACOUSTICAL WALL PANEL BD BOARD BF BARRIER FREE BIT BITUMINOUS, BITUMEN BLDG BUILDING BLKG BLOCKING BM BEAM BOT BOTTOM CAB CABINET CJ CONTROL JOINT CLG CEILING CLR CLEAR(ANCE) CMU CONCRETE MASONRY UNIT COL COLUMN COM COMMUNICATIONS CONC CONCRETE CONFIG CONFIGURATION CONST CONSTRUCTION CONT CONTINUOUS COORD COORDINATE CORR CORRIDOR CPT CARPET CT CERAMIC TILE CTR CENTER DEG DEGREE DF DRINKING FOUNTAIN DIA DIAMETER DIAG DIAGONAL DIM DIMENSION DIV DIVISION DN DOWN DR DOOR DS DOWNSPOUT DTL DETAIL DWG(S) DRAWING(S) E EAST EA EACH EJ EXPANSION JOINT EL ELEVATION ELEC ELECTRICAL ELEV ELEVATION EMER EMERGENCY ENCL ENCLOS(E)URE EQ EQUAL EQUIP EQUIPMENT EST ESTIMATE(D) EXIST EXISTING EXP EXPANSION EXT EXTERIOR FA FIRE ALARM FD FLOOR DRAIN FDN FOUNDATION FE FIRE EXTINGUISHER FEC FIRE EXTINGUISHER CABINET FF FINISHED FACE FGL FIBERGLASS FHC FIRE HOSE CABINET FIXT FIXTURE FL FLOOR(ING) FLUOR FLUORESCENT FOC FACE OF CONCRETE FOS FACE OF STUDS FP FIREPROOF(ING) FT FEET FTG FOOTING FUR FURR(ED)ING GA GAUGE GALV GALVANIZED GB GRAB BAR GC GENERAL CONTRACT(OR) GL GLASS, GLAZING GOVT GOVERNMENT GT GROUT GYP BD GYP SUM WALLBOARD HC HOLLOW CORE HDR HEADER HDWD HARDWOOD HDWR HARDWARE HGT HEIGHT HM HOLLOW METAL HORIZ HORIZONTAL HP HIGH POINT HR HOUR HT HEIGHT HVAC HEATING, VENTILATION & AIR CONDITIONING	ABBREVIATION LIST ID INSIDE DIAMETER IN INCH(ES) INCAN INCANDESCENT INCL INCLUDE(D)ING INSUL INSULATION, INSULATED INT INTERIOR JAN JANITOR JT(S) JOINT(S) KIT KITCHEN LAM LAMINATE(D) LAV LAVATORY LBL LABEL LH LEFT HAND LL LIVE LOAD LP LOW POINT LTG LIGHTING LTL LINTEL MANF MANUFACTURE(R) MAS MASONRY MATL MATERIAL(S) MAX MAXIMUM MECH MECHANICAL MEMB MEMBRANE MIN MINIMUM MISC MISCELLANEOUS MO MASONRY OPENING MTD MOUNTED MTG MOUNTING MTL METAL N NORTH N/A NOT APPLICABLE NAT NATURAL NIC NOT IN CONTRACT NO NUMBER NOM NOMINAL NTS NOT TO SCALE OC ON CENTER OD OUTSIDE DIAMETER OH OVERHEAD OPNG OPENING OPP OPPOSITE OPP HD OPPOSITE HAND PART PARTITION PC PRECAST PERF PERFORATE(D) PL PLATE PLAM PLASTIC LAMINATE PLAS PLASTER PLWD PLYWOOD PNL PANEL(ED) PR PAIR PREP PREPARE [SURFACE] PROV PROVIDE PSF POUNDS PER SQUARE FOOT PSI POUNDS PER SQUARE INCH PT PAINT PVMT PAVEMENT QTY QUANTITY R RISER RAD RADIUS RB RUBBER BASE REF REFRIDGERATOR REINF REINFORCED REQ'D / REQ'D REQUIRED RES RESILIENT RET RETAINING REV REVISION(S) / REVISE(D) RFG ROOFING RH RIGHT HAND RM ROOM RO ROUGH OPENING S SOUTH SC SOLID CORE
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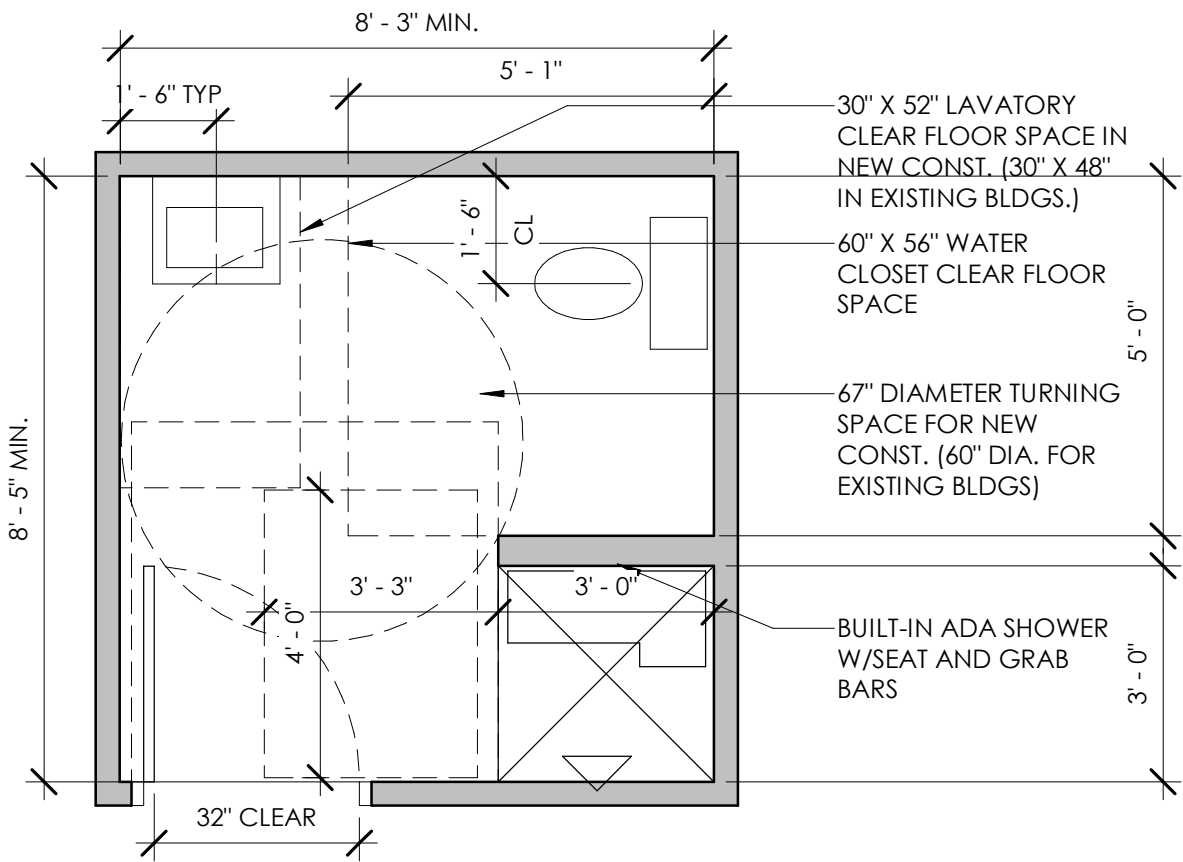
ADA RESTROOM AXON - NTS



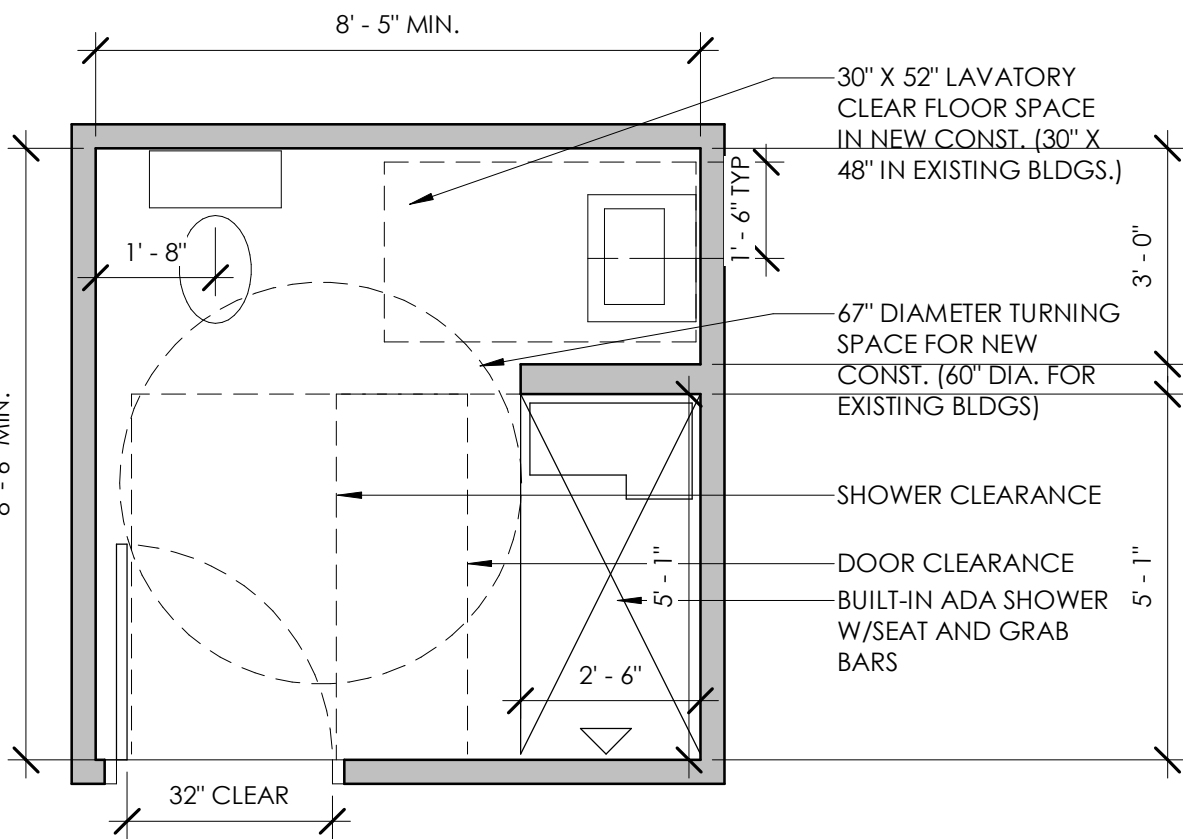
ADA RESTROOM PLAN - NTS



RESTROOM DETAILS - NTS

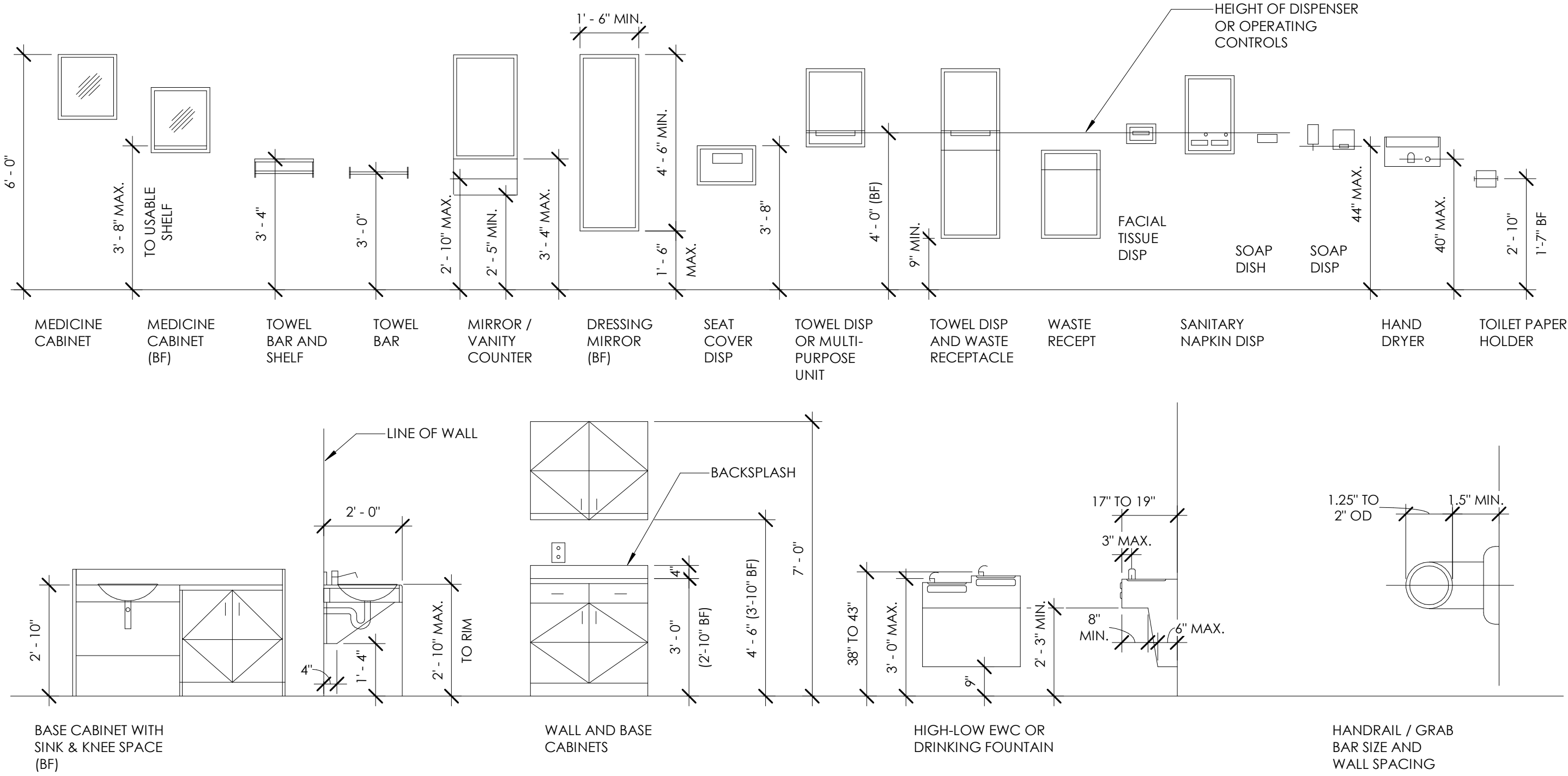


ADA TRANSFER SHOWER PLAN - NTS



ADA ROLL-IN SHOWER PLAN - NTS

ADDITIONAL RESTROOM MOUNTING HEIGHTS

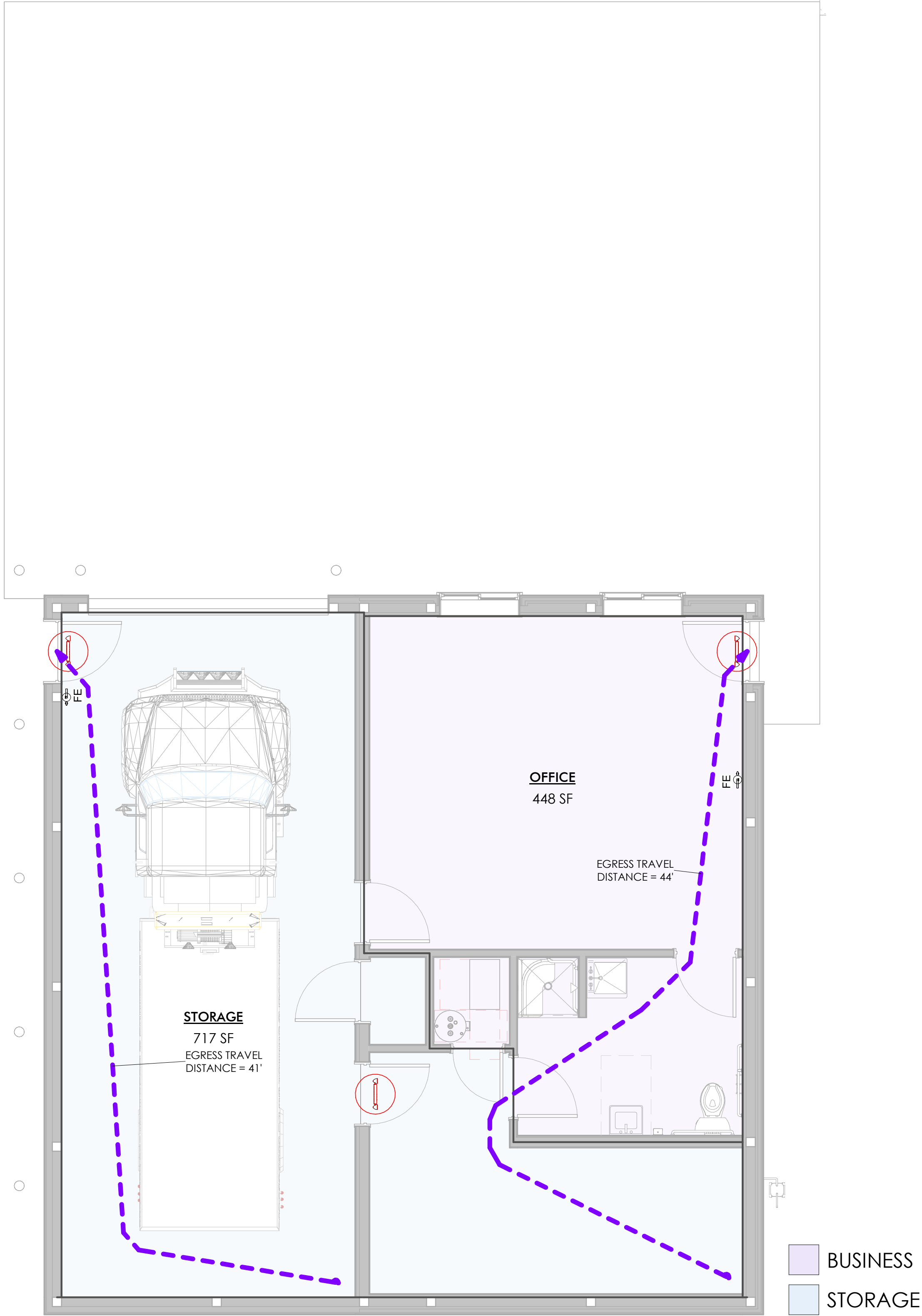


CODE COMPLIANCE GENERAL NOTES

- 1. ENSURE EXIT SIGNS ARE MOUNTED ABOVE THE DOORS AND VISIBLE FROM 75 FEET AWAY. ALL EGRESS LIGHTING IS TO POINT DOWN TO ILLUMINATE THE EGRESS PATH OF TRAVEL.
- 2. ALL FIRE EXTINGUISHERS ARE TO BE ABC EXTINGUISHERS, UNLESS NOTED OTHERWISE. ALL EXTINGUISHERS ARE TO BE TAGGED WITH THE CURRENT YEAR'S INSPECTION ON IT. ANNUAL INSPECTIONS ARE TO OCCUR FOR ALL FIRE EXTINGUISHERS.
- 3. PROVIDE ADA RESTROOM SIGNS AT ALL RESTROOMS, CORRESPONDING TO THE CORRECT SEX.
- 4. SEE T002 FOR MOUNTING HEIGHTS AND LOCATIONS
- 5. SEE T003 FOR ADDITIONAL CODE COMPLIANCE INFORMATION
- 6. FURNITURE AND EQUIPMENT SHOWN ON COMPLIANCE DRAWINGS ARE FOR REFERENCE ONLY

CHAPTER 7: FIRE AND SMOKE PROTECTION
SECTION 708.3 EXCEPTION 1: CORRIDOR WALLS PERMITTED TO HAVE A 1/2 HOUR FIRE RESISTANCE RATING BY TABLE 1020.1.

CHAPTER 12: INTERIOR ENVIRONMENT
SECTION 1208.2 OCCUPIABLE SPACES, HABITABLE SPACES, AND CORRIDORS SHALL HAVE A CEILING HEIGHT OF NOT LESS THAN 7'-6". BATHROOMS, TOILET ROOMS, KITCHENS, STORAGE ROOMS, AND LAUNDRY ROOMS SHALL HAVE A CEILING HEIGHT OF NOT LESS THAN 7'-0". EXCEPTION 4: CORRIDORS CONTAINED WITHIN A DWELLING UNIT OR SLEEPING UNIT IN A GROUP R OCCUPANCY SHALL HAVE A CEILING HEIGHT OF NOT LESS THAN 7'-0".



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

CODE COMPLIANCE

TOPIC	SECTION	ALLOWED/REQUIRED	ACTUAL
APPLICABLE CODES			
2021 MICHIGAN BUILDING CODE			
2021 MICHIGAN MECHANICAL CODE			
2021 MICHIGAN PLUMBING CODE			
2021INTERNATIONAL FIRE CODE			
2023 MICHIGAN ELECTRICAL CODE			
ANSI/ASHRAE 90.1-2019			
ICC/ANSI 117.1-2017			
NFPA 101 (2021) / NFPA 13 (2019)			
ZONING			
ZONING	CITY OF MARSHALL		I2 - GENERAL INDUSTRIAL
1 - SCOPE AND ADMIN			
DEFERRED SUBMITTALS	107.3.4.1		THERE ARE NO DEFERRED SUBMITTALS FOR THIS PROJECT
DESIGN PROFESSIONAL IN CHARGE	107.3.4		CODY NEWMAN IS TO BE THE DESIGN PROFESSIONAL IN CHARGE
SPECIAL INSPECTIONS	110		THERE ARE NO SPECIAL INSPECTIONS FOR THIS PROJECT
5 - GENERAL BUILDING HEIGHTS AND AREAS			
ALLOWABLE BUILDING HEIGHT	TABLE 504.3	40 FEET	18 FEET, 8 INCHES
BASE STORIES ALLOWED	TABLE 504.4	2 STORIES	1 STORY
REQUIRED SEPARATION OF OCCUPANCIES	TABLE 508.4	2 HOUR FIRE SEPARATION	2 HOUR FIRE SEPARATION
TABULAR AREA	TABLE 506.2	9,000 SF	1,165 SF
6 - TYPE OF CONSTRUCTION			
TYPE OF CONSTRUCTION	TABLE 601		V-B
7 - FIRE AND SMOKE PROTECTION			
			THERE ARE NO SPECIAL REQUIREMENTS
9 - FIRE PROTECTION SYSTEMS			
AUTOMATIC SPRINKLER SYSTEM	903.2.1.3	LESS THAN 12,000 SF, NOT REQUIRED	NOT PROVIDED
FIRE ALARM AND DETECTION SYSTEMS	907	LESS THAN 300 PEOPLE, NOT REQUIRED	NOT PROVIDED
27 - ELECTRICAL			
EMERGENCY LIGHTING	1008.1	WILL COMPLY	ON COMPLIANCE DRAWINGS
EMERGENCY POWER	1008.3.2, 1008.3.3	WILL COMPLY	ON COMPLIANCE DRAWINGS
EXIT SIGNS	1011.1	WILL COMPLY	ON COMPLIANCE DRAWINGS

3 - BUILDING AREA BY USE			
OCCUPANCY TYPE	PERCENTAGE OF PROJECT		AREA
LEVEL 1			
BUSINESS	38%		448 SF
STORAGE	62%		717 SF
	100%		1,165 SF
Grand total	100%		1,165 SF

10 - OCCUPANCY AREAS		
OCCUPANCY TYPE	AREA	OCCUPANCY
BUSINESS		
BUSINESS	448 SF	3
STORAGE		
ACCESSORY STORAGE AND MECHANICAL	717 SF	3
	1,165 SF	6

10 - MEANS OF EGRESS								
TOTAL OCCUPANCY	DOOR EGRESS WIDTH 1005.3.2		EXIT ACCESS TRAVEL DISTANCE TABLE 1017.2		NUMBER OF EXITS TABLE 1006.3.1		STAIR EGRESS WIDTH 1005.3.1	
	REQUIRED	PROVIDED	ALLOWED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED
6	36"	72"	200 FEET	44 FEET	2 EXITS	2 EXITS	44"	N/A
28 - PLUMBING								
TABLE 403.1 PLUMBING CLASS	OCCUPANCY	WATER CLOSETS				LAVATORIES		
		REQUIRED		PROVIDED	REQUIRED		PROVIDED	
B	3		1 UNISEX	1 UNISEX		1 UNISEX	1 UNISEX	
S-2	3		1 UNISEX	1 UNISEX		1 UNISEX	1 UNISEX	

*THERE IS TO BE LESS THAN 15 PEOPLE AT ALL TIMES. NO DRINKING FOUNTAIN IS REQUIRED OR PROVIDED

COMPLIANCE LEGEND

- FE FIRE EXTINGUISHER
- EXIT SIGN W/ EGRESS LIGHTS
- EGRESS LIGHTING
- TRAVEL DISTANCE
- 1 HOUR WALL
- 2 HOUR WALL



ARCHITECTURE/INTERIOR DESIGN
Driven Design Studio PLLC
117 West Michigan Avenue
Battle Creek, MI 49017
(269) 753-8040
cody@drivendesignstudio.com

OWNER
Tiger's Towing
111 S Kendall St
Battle Creek, MI
(269) 963-6613

CONSTRUCTION MANAGER/GC
GC Name
GC Address
GC City
GC Phone Number
GC Email

ENGINEER
AR Engineering
5727 Venture Park Dr A
Kalamazoo, MI
(269) 250-5991

ENGINEER
Centerline Structural Engineering, PLLC
284 N 110 W
Vineyard, UT
Engineer Phone Number
Engineer Email

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PROJECT NAME
TIGER'S TOWING
PROJECT ADDRESS
775 INDUSTRIAL RD, MARSHALL, MI

ISSUE/REVISION
CD SET - 10/13/2025

DRAWN BY CMN
DATE 10/13/2025 4:41:52 PM
SCALE 1/4" = 1'-0"
STAMP

PROJECT NUMBER
2025.053
CODE COMPLIANCE

T003

ARCHITECTURE/INTERIOR DESIGN
Driven Design Studio PLLC
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(269) 753-8040
cody@drivendesignstudio.com

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111 S Kendall St
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CONSTRUCTION MANAGER/GC
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ENGINEER
AR Engineering
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284 N 110 W
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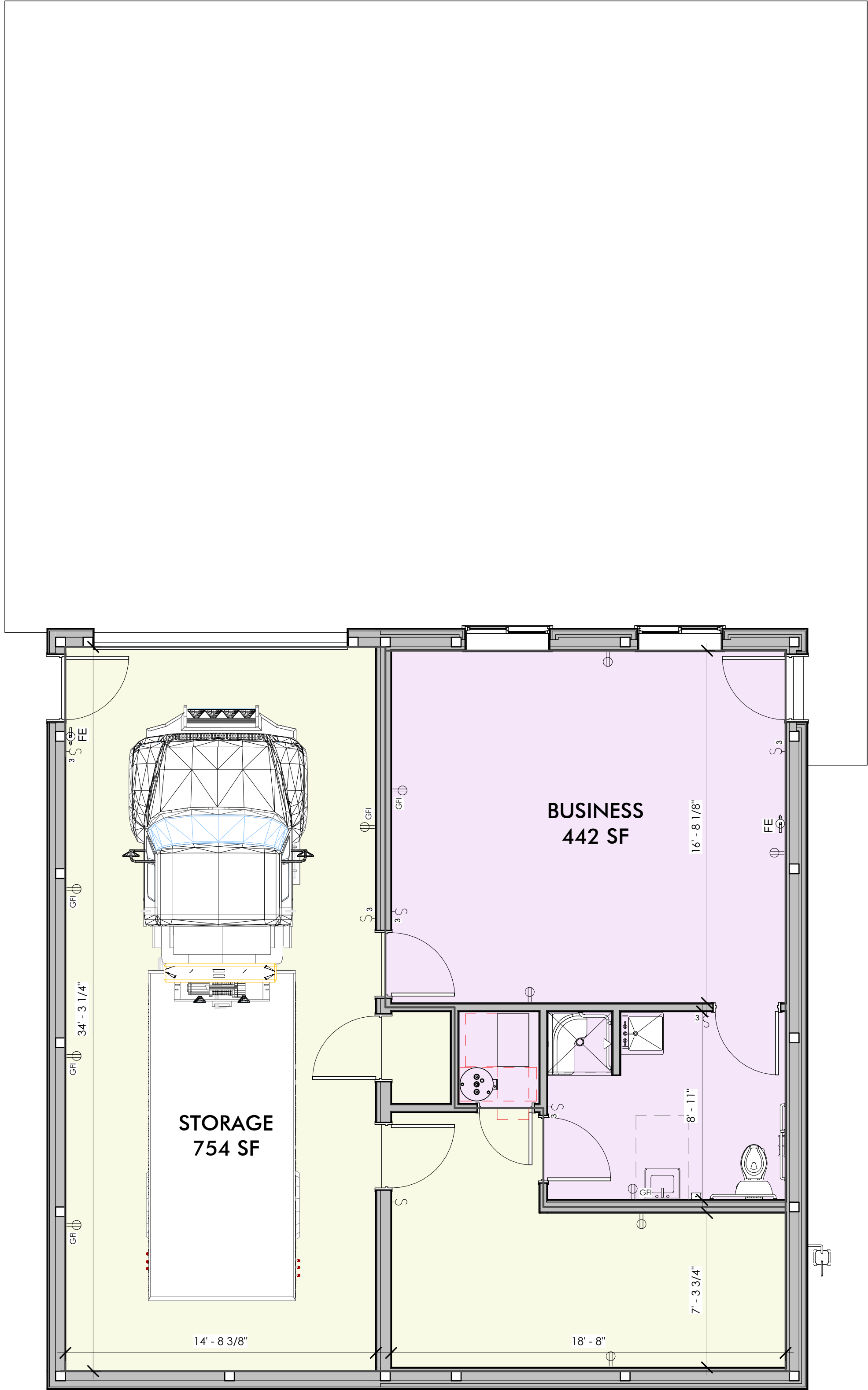
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PROJECT ADDRESS
775 INDUSTRIAL RD, MARSHALL, MI

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PROJECT NUMBER
2025.053

AREA PLANS
T004



1 FIRST FLOOR AREA PLAN
T004 1/4" = 1'-0"

ARCHITECTURE/INTERIOR DESIGN
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CONSTRUCTION MANAGER/GC
GC Name
GC Address
GC City
GC Phone Number
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ENGINEER
Centerline Structural Engineering, PLLC
284 N 110 W
Vineyard, UT
Engineer Phone Number
Engineer Email

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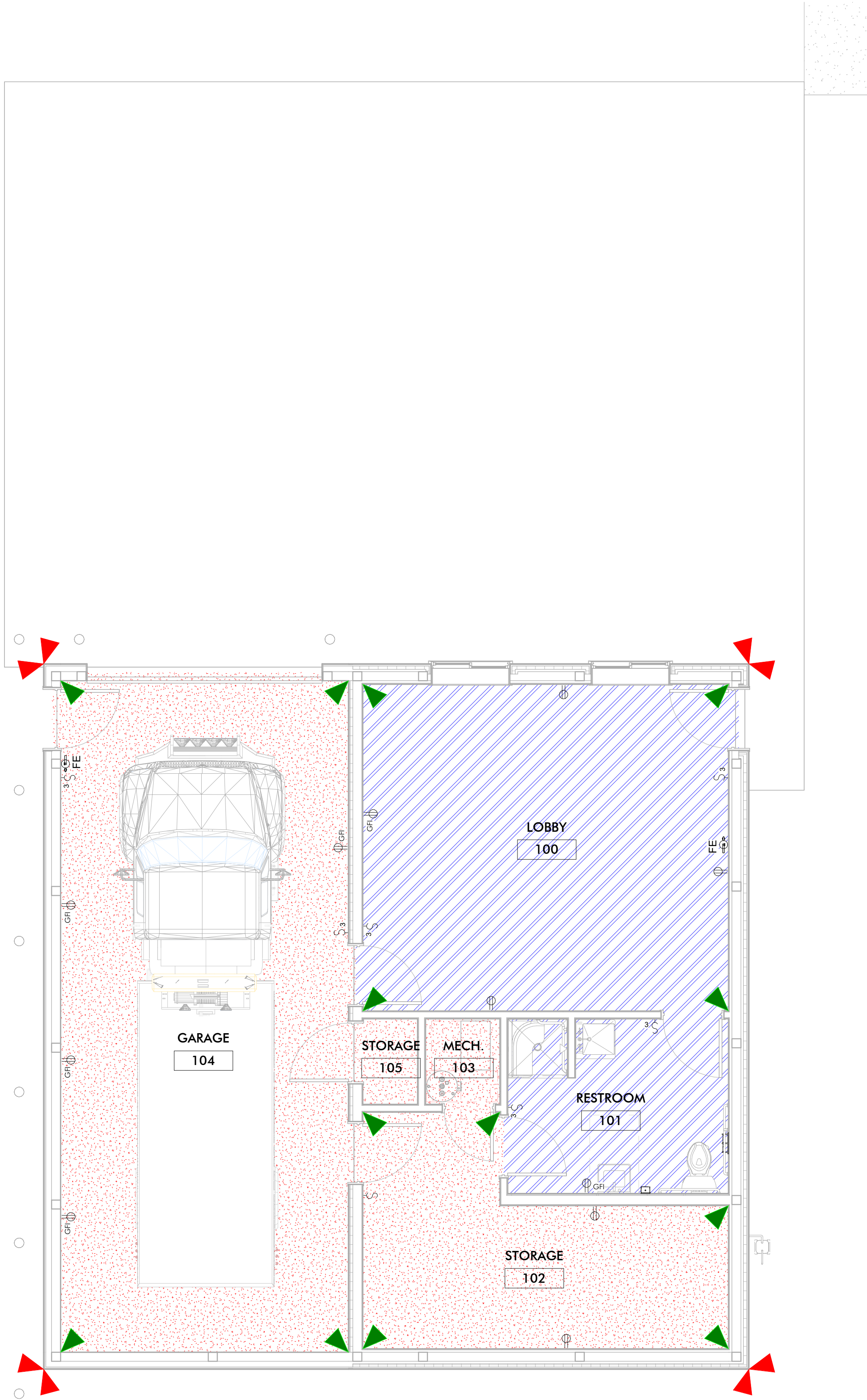
PROJECT NAME
TIGER'S TOWING
PROJECT ADDRESS
775 INDUSTRIAL RD, MARSHALL, MI

ISSUE/REVISION
CD SET - 10/13/2025

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DATE 10/13/2025 4:41:53 PM
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STAMP

PROJECT NUMBER
2025.053

SECURITY PLAN
T005



1 FIRST FLOOR SECURITY PLAN
1005 1/4" = 1'-0"

SECURITY LEGEND

- OUTDOOR LED LIGHT FIXTURE
- AXIS 2-MEGAPIXEL INDOOR CAMERA OR EQUIVALENT
- AXIS 4-MEGAPIXEL OUTDOOR CAMERA OR EQUIVALENT
- MONITOR AND PRINTER
- DVR LOCKBOX
- PUBLIC ACCESS AREA
- LIMITED ACCESS AREA
- RESTRICTED ACCESS AREA

*SECURITY PLANS ARE SHOWN SCHEMATICALLY. A
SECURITY CONSULTANT TO ENSURE ALL AREAS OUTSIDE
OF THE BATHROOMS ARE VISIBLE ON THE INTERIOR AND
EXTERIOR BY CAMERAS

TIGER TOWING

775 INDUSTRIAL RD
SECTION 26, T.02S, R.06W
CITY OF MARSHALL
CALHOUN COUNTY, MI

SITE DEVELOPMENT PLANS
OCTOBER 10, 2025

ISSUED FOR: SITE PLAN REVIEW

SHEET INDEX	
No.	SHEET TITLE
T1.0	TITLE SHEET
C1.0	EX CONDITIONS - DEMO PLAN
C2.0	SITE LAYOUT
C3.0	UTILITY PLAN
C4.0	GRADING - SESC PLAN
C5.0	DETAILS
L1.0	LANDSCAPE PLAN
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.	.
.	.
.	.
.	.

OWNERS:

TIGER TOWING
19218 11 MILE RD
MARSHALL, MI 49068

REVISIONS			
No.	ISSUED FOR:	DATE:	BY:
0	SITE PLAN REVIEW	10/10/2025	tc
1	.	.	.
2	.	.	.
3	.	.	.
4	.	.	.
5	.	.	.

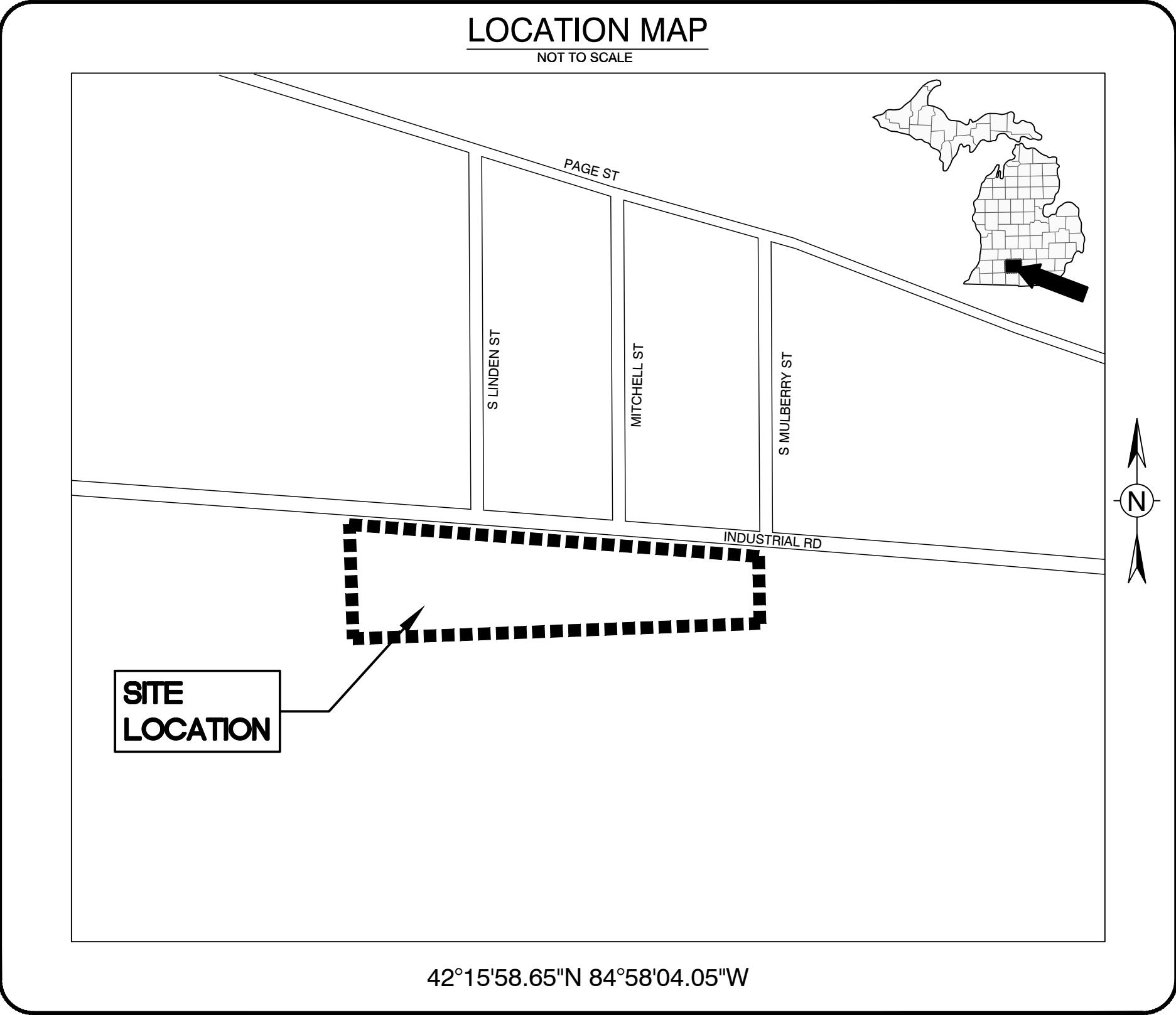
CIVIL ENGINEER:

AR ENGINEERING, LLC.
5725 VENTURE PARK DRIVE, SUITE A
KALAMAZOO, MI 49008
TEL. (269) 250-5991 FAX. (866) 569-0604



WHITNEY L. PIZZALA, P.E.

DATE



UTILITY CONTACTS			
CABLE	AT&T 15869 W MICHIGAN AVE MARSHALL, MI 49068 (269) 269-8040	TELEPHONE	AT&T 15869 W MICHIGAN AVE MARSHALL, MI 49068 (269) 269-8040
WATER	CITY OF MARSHALL 832 EAST GREEN STREET MARSHALL, MI 49068 (269) 781-8631	SEWER	CITY OF MARSHALL 832 EAST GREEN STREET MARSHALL, MI 49068 (269) 781-8631
GAS	CONSUMERS ENERGY 2500 E CORK ST KALAMAZOO, MI 49001 (269) 337-2381	ELECTRIC	CITY OF MARSHALL 832 EAST GREEN STREET MARSHALL, MI 49068 (269) 781-8631
		MISS DIG	811

DEMOLITION NOTES

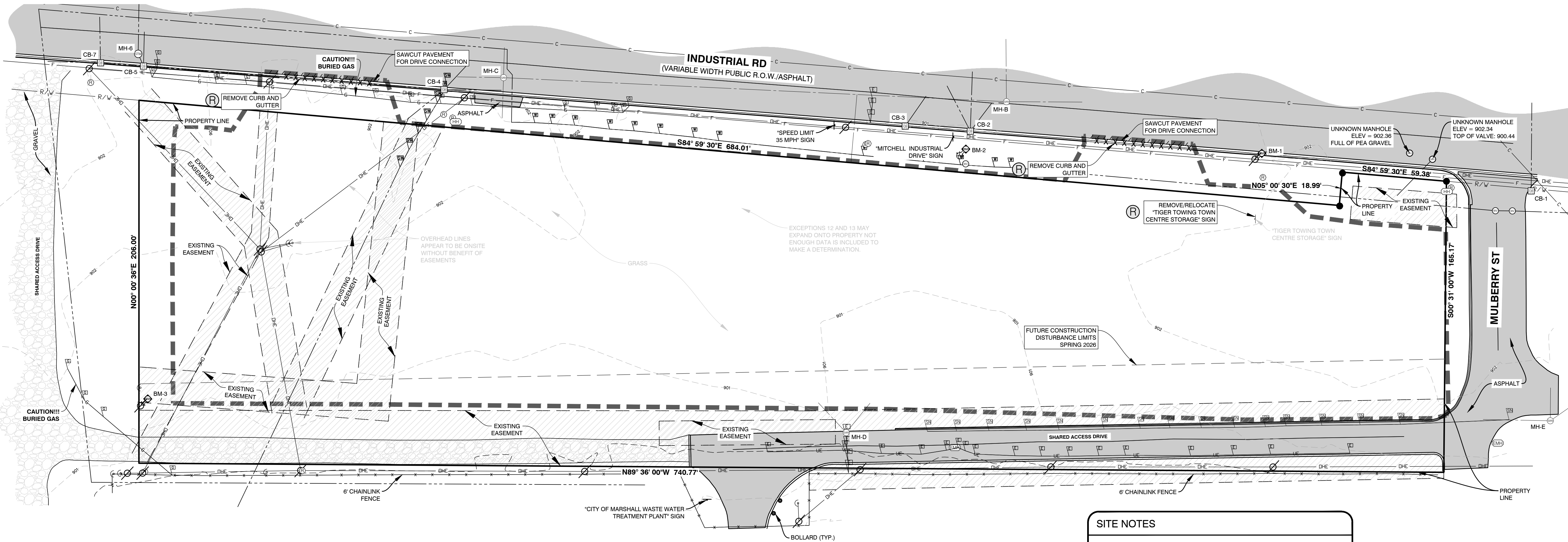
- ALL WORK SHALL CONFORM TO ALL LOCAL, STATE AND FEDERAL LAWS, RULES AND REGULATIONS IN FORCE AT TIME OF CONSTRUCTION.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS, PERMIT COSTS, TAP FEES, METER DEPOSITS, PERMANENT UTILITY APPLICATIONS, BONDS, AND OTHER FEES REQUIRED FOR PROPOSED WORK. THIS SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO THOSE REQUIRED BY THE CITY OF MARSHALL, CALHOUN COUNTY AND THE STATE OF MICHIGAN.
- CONTACT MISS DIG "811" FOR LOCATION OF UNDERGROUND UTILITIES A MINIMUM OF 48 HOURS BEFORE COMMENCING EXCAVATION WORK. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO ARE NOT PART OF THE "MISS DIG" ALERT SYSTEM. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS IN A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.
- DEMOLISH & REMOVE ALL EXISTING SITE FEATURES AS REQUIRED.
- ALL SOIL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO DEMOLITION.
- ALL EXCAVATION SHALL BE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS AND GEOTECHNICAL REPORT FOR THIS SITE.
- ALL EXISTING ELEVATIONS ARE TO BE VERIFIED AND ACCEPTED AS SHOWN PRIOR TO COMMENCEMENT OF WORK.
- CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID TRACKING SOIL ONTO ADJACENT ROADWAYS. CONTRACTOR SHALL SWEEP IMMEDIATELY IF OCCURS.
- ANY DISTURBED AREA WHICH WILL BE LEFT UNWORKED 15 DAYS OR LONGER MUST BE SEEDED TO ESTABLISH VEGETATION FOR TEMPORARY STABILIZATION. BASINS TO BE SEEDED AND MULCH BLANKETS APPLIED IMMEDIATELY TO PROVIDE A STABLE BASE AND AVOID EXCESSIVE EROSION.
- REVIEW ALL THE REMOVALS AND PROTECTION WITH OWNER PRIOR TO COMMENCING CONSTRUCTION. INSTALL TEMPORARY SNOW FENCE AROUND ALL TREES REQUIRING PROTECTION. SNOW FENCE SHALL BE PLACED AT EDGE OF DRIP LINE.
- SAWCUT ALL CURB, SIDEWALK, AND PAVEMENTS PRIOR TO REMOVAL. ADDITIONAL SAWCUT MAY BE NECESSARY PRIOR TO REPLACEMENT TO ENSURE CLEAN EDGE.
- ALL REMOVALS SHALL BE TAKEN OFF-SITE AND DISPOSED OF PROPERLY. NO STOCKPILE OR BURNING OF DEBRIS IS ALLOWED.
- ALL REMOVALS SHALL BE TO THE LIMITS INDICATED ABOVE UNLESS OTHERWISE DIRECTED BY THE ENGINEER. UNAUTHORIZED REMOVALS AND SUBSEQUENT REPLACEMENT SHALL BE AT THE CONTRACTORS EXPENSE.
- REMOVE, STORE, AND RESET ANY EXISTING SIGNS AS DIRECTED BY THE ENGINEER/OWNER.
- REMOVE ALL TREES TO THE CLEARING LIMITS AS SHOWN. REMOVE ALL EXISTING TREES, STUMPS AND BRUSH FROM THE SITE AS NECESSARY TO CONSTRUCT THE IMPROVEMENTS.
- THE CONTRACTOR SHALL DEMOLISH AND REMOVE ANY ITEMS REMAINING FROM THE EXISTING BUILDING, IN ITS ENTIRETY, INCLUDING WALLS, FOUNDATIONS AND FOOTINGS. ALL BUILDING DRAINS AND UTILITY LEADS SHALL BE LOCATED AND PROPERLY PLUGGED. UTILITY LEAD WORK SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY COMPANY.
- BACKFILL EXCAVATED AREAS WITH CLEAN GRANULAR FILL COMPACTED TO 95% OF THE MATERIAL UNIT WEIGHT BY MODIFIED PROCTOR.
- CONTROL SHALL BE MAINTAINED OVER THE SITE AND OPERATION TO ELIMINATE HAZARDS TO THE PUBLIC. NAILS OR OTHER TIRE PUNCTURING ITEMS SHALL NOT BE DROPPED ON STREETS, ALLEYS AND ADJACENT PROPERTY. PUBLIC STREETS, CURBS AND SIDEWALKS SHALL BE PROTECTED FROM DAMAGE. THE PERSON ENGAGED IN THE DEMOLITION WORK SHALL BE LIABLE FOR ANY AND ALL DAMAGE TO CURBS, STREETS, SIDEWALKS AND OTHER PUBLIC OR PRIVATE PROPERTY AND FOR ANY BODILY INJURY OCCURRING AS A RESULT OF THE DEMOLITION WORK.

LEGEND

- | | | | |
|---|--------------------------|---------------|-------------------------------|
| ● | FOUND CAPPED IRON | — x — x — x — | EXISTING FENCE |
| ⊙ | LIGHT POLE | — G — | EXISTING NATURAL GAS |
| ⊙ | UTILITY POLE | — - - - - | EXISTING WATER |
| Δ | CONTROL POINT | — - - - - | EXISTING STORM |
| ⊙ | ROAD SIGN | — - - - - | EXISTING SANITARY |
| ⊙ | CATCH BASIN | — UE — | EXISTING UNDERGROUND ELECTRIC |
| ⊙ | SANITARY MANHOLE | — DHE — | EXISTING OVERHEAD ELECTRIC |
| ⊙ | STORM MANHOLE | ■ | ASPHALT PAVEMENT |
| ⊙ | WATER VALVE | ■ | CONCRETE PAVEMENT |
| ⊙ | HYDRANT | ■ | AND SIDEWALK |
| ⊙ | COMMUNICATIONS HAND HOLE | ■ | GRAVEL PAVEMENT |
| ⊙ | COMMUNICATIONS RISER | ⊙ | SAWCUT |
| ⊙ | GAS LINE MARKER | ⊙ | REMOVE |
| ⊙ | WATER MAIN MARKER | ⊙ | PROTECT |
| ⊙ | UTILITY LINE MARKER | ⊙ | |
| ⊙ | SANITARY LINE MARKER | ⊙ | |
| ⊙ | STORM LINE MARKER | ⊙ | |
| ⊙ | BENCHMARK | ⊙ | |
| ⊙ | BOLLARD | ⊙ | |
| ⊙ | ELECTRIC MANHOLE | ⊙ | |
| ⊙ | GUY WIRE | ⊙ | |
- LIMITS OF CONSTRUCTION
CURB & GUTTER REMOVAL

BENCHMARKS

- BM-1:
ELEV: 903.42
SET MAG NAIL IN SOUTH SIDE OF POWER POLE
- BM-2:
ELEV: 903.46
SET "X" ON SOUTHWEST OF FLANGE BOLT ON HYDRANT
- BM-3:
ELEV: 902.54
SET MAG NAIL IN NORTHEAST SIDE OF POWER POLE



STORM STRUCTURE INFORMATION

- | | |
|---|--|
| CB-1, 4' CONC. STRUCTURE
RIM = 902.24
N 12\" CONC. (INV. = 897.64)
SUMP = 896.99 | CB-5, 4' BLOCK STRUCTURE
RIM = 900.98
NW 10\" CLAY (INV. = 896.33)
N 10\" CLAY (INV. = 896.08)
W 15\" CLAY (INV. = 896.03)
E 15\" CLAY (INV. = 895.93)
SUMP = 895.88 |
| CB-2, 2' CONC. STRUCTURE
RIM = 900.92
NE 6\" CPE (INV. = 898.72)
NW 6\" CPE (INV. = 898.77)
N 12\" PVC (INV. = 897.82)
SUMP = 897.82 | MH-6, 4' BLOCK STRUCTURE
RIM = 901.17
N 10\" PVC (INV. = 897.32)
SE 10\" CLAY (INV. = 896.47)
SUMP = 895.87 |
| CB-3, 4' CONC. STRUCTURE
RIM = 900.90
NE 12\" CONC. (INV. = 897.10)
SUMP = 895.40 | CB-7, 4' BLOCK STRUCTURE
RIM = 901.89
E 15\" CLAY (INV. = 896.04)
W 15\" CLAY (INV. = 896.19)
N 12\" CONC. (INV. = 896.09)
SUMP = 895.89 |
| CB-4, 4' BLOCK STRUCTURE
RIM = 901.49
W 15\" CLAY (INV. = 895.34)
NE 24\" CONC. (INV. = 894.99)
SW 24\" CONC. (INV. = 894.84)
E 6\" CPE (INV. = 898.28)
SUMP = 894.79 | |

SANITARY STRUCTURE INFORMATION

- | | |
|---|---|
| MH-B, 4' BLOCK STRUCTURE
RIM = 901.50
N 10\" CLAY (INV. = 892.85)
W 10\" CLAY (INV. = 891.95)
E 10\" CLAY (INV. = 891.85) | MH-C, 4' BLOCK STRUCTURE
RIM = 901.88
S 4\" PVC (INV. = 896.78) CAPPED LATERAL
N 10\" CLAY (INV. = 893.38)
W 10\" CLAY (INV. = 892.43)
E 10\" CLAY (INV. = 892.38) |
| MH-D, 4' CONC. STRUCTURE
RIM = 900.29
NW 4\" PVC (INV. = 894.24)
NE FM PVC (INV. = 894.04) | MH-E
RIM = 901.61
N (INV. +25\" DEEP)
NE (INV. +25\" DEEP)
W 12\" CLAY (INV. +25\" DEEP) |

SITE NOTES

- SUBJECT PROPERTY HAS PEDESTRIAN AND VEHICULAR ACCESS TO INDUSTRIAL RD. (PUBLIC) VIA SHARED ACCESS DRIVE.
- NO CEMETERIES, GRAVE SITES, OR BURIAL GROUNDS WERE DISCLOSED IN THE RECORD DOCUMENTS OR OBSERVED.
- UTILITIES SHOWN HEREON HAVE BEEN LOCATED PER AVAILABLE EVIDENCE ON SITE, OR HAVE BEEN SHOWN PER AVAILABLE MAPS PROVIDED BY UTILITY OWNER AND ARE AN APPROXIMATE LOCATION. ADDITIONAL UTILITIES MAY EXIST BUT ARE UNKNOWN.
- NO EVIDENCE OF RECENT STREET, SIDEWALK, EARTHWORK, OR CONSTRUCTION WAS OBSERVED.
- NO WETLAND FLAGS WERE OBSERVED.
- NO ZONING REPORT WAS PROVIDED.
- NO BUILDINGS ON SITE.
- NO PARKING SPACES AND NO ADA SPACES WERE OBSERVED.
- THE NEAREST INTERSECTING STREET IS INDUSTRIAL RD AND S MULBERRY ST. THE SITE IS LOCATED AT THE INTERSECTION.
- ELEVATION BASIS: NAVD 88, GEOID 18.
- PROPERTY LINE SHOWN FROM PROVIDED SURVEY BY KEBS, INC. JOB NUMBER 103676.BND, DATED 04/18/2025.



ALL UTILITIES AS SHOWN ARE APPROXIMATE LOCATIONS DERIVED FROM ACTUAL MEASUREMENTS AND AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATION NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THE AREA. FIELD WORK PERFORMED BY: AR ENGINEERING LLC

PLANS PREPARED BY:



DRAWN: aw
CHECKED: WLP

No.	ISSUED FOR:	DATE	BY
0	SITE PLAN REVIEW	10/10/2025	tc
1			
2			
3			
4			

EXISTING CONDITIONS & DEMO PLAN

TIGER TOWING
DRIVEN DESIGN

775 INDUSTRIAL RD, MARSHALL, MI 49068
SECTION 26, T02S, R06W.

PROJECT:
CLIENT:
SITE ADDRESS:
SITE SECTION:

JOB NUMBER
25103008

DATE
10/10/2025

SHEET NUMBER

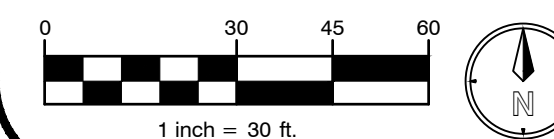
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SITE DATA

- PROPERTY INFORMATION:
PARCEL #: 53-002-535-01
SITE AREA: 131,695 SF (3.02 AC)
OWNER: TIGER TOWING LLC
19218 11 MILE RD
MARSHALL, MI 49068
- ZONING:
PROPERTY CURRENTLY ZONED:
I-2 GENERAL INDUSTRIAL
ABUTTING PROPERTY CURRENTLY ZONED:
NORTH: I-1 RESEARCH AND MANUFACTURING
SOUTH: I-2 GENERAL INDUSTRIAL
EAST: I-2 GENERAL INDUSTRIAL
WEST: I-2 GENERAL INDUSTRIAL
PROPOSED LAND USE = TOWING/SELF STORAGE
*SPECIAL USE IN GENERAL INDUSTRIAL DISTRICT
- SETBACKS
FRONT = 60'
SIDES = 30'
REAR = 30'
- PARKING:
REQUIRED = (1) PARKING SPACE PER (300) SF.
OF USABLE FLOOR AREA
907 SF/300 = 3.02 = 3
PROVIDED = STANDARD 9'X20' SPACES = 3
BARRIER FREE SPACES = 1
TOTAL PROVIDED = 4
- BUILDING:
SINGLE-STORY (18'-8")
MAXIMUM HEIGHT: 60'
TOTAL AREA OF 1,296 SFT. (SEE FLOOR PLAN AND
ELEVATIONS FOR MORE DETAIL.)
PROPOSED LOT COVERAGE: 12%
MAXIMUM LOT COVERAGE: 40%
- LOT:
MINIMUM LOT SIZE: N/A
MINIMUM LOT WIDTH: 200'
LOT SIZE: 131,695 SFT / 3.02 ACRES
LOT DIMENSIONS: IRREGULAR
- LANDSCAPING:
SHALL BE IN ACCORDANCE WITH LANDSCAPING PLAN.
- STORM WATER DETENTION REQUIRED:
STORM WATER MANAGEMENT SHALL BE IN
ACCORDANCE WITH COUNTY STORM WATER
GUIDELINES.

STRIPING LEGEND

YELLOW CURBING AND BOLLARDS - PARKING LOT	SURFACES SHOULD BE CLEAN, DRY AND METAL SURFACES FREE OF HEAVY RUST 2 COATS SHERWIN WILLIAMS - KEM 4000 ACRYLIC ALKYD ENAMEL SAFETY YELLOW B55Y300
STRIPING - PARKING LOT	SURFACES SHOULD BE CLEAN, DRY. TOP COAT SHERWIN WILLIAMS - PROMAR TRAFFIC MARKING PAINT YELLOW TM5495
HANDICAP STRIPING - PARKING LOT	SURFACES SHOULD BE CLEAN, DRY. TOP COAT SHERWIN WILLIAMS - PROMAR TRAFFIC MARKING PAINT "H.C." BLUE



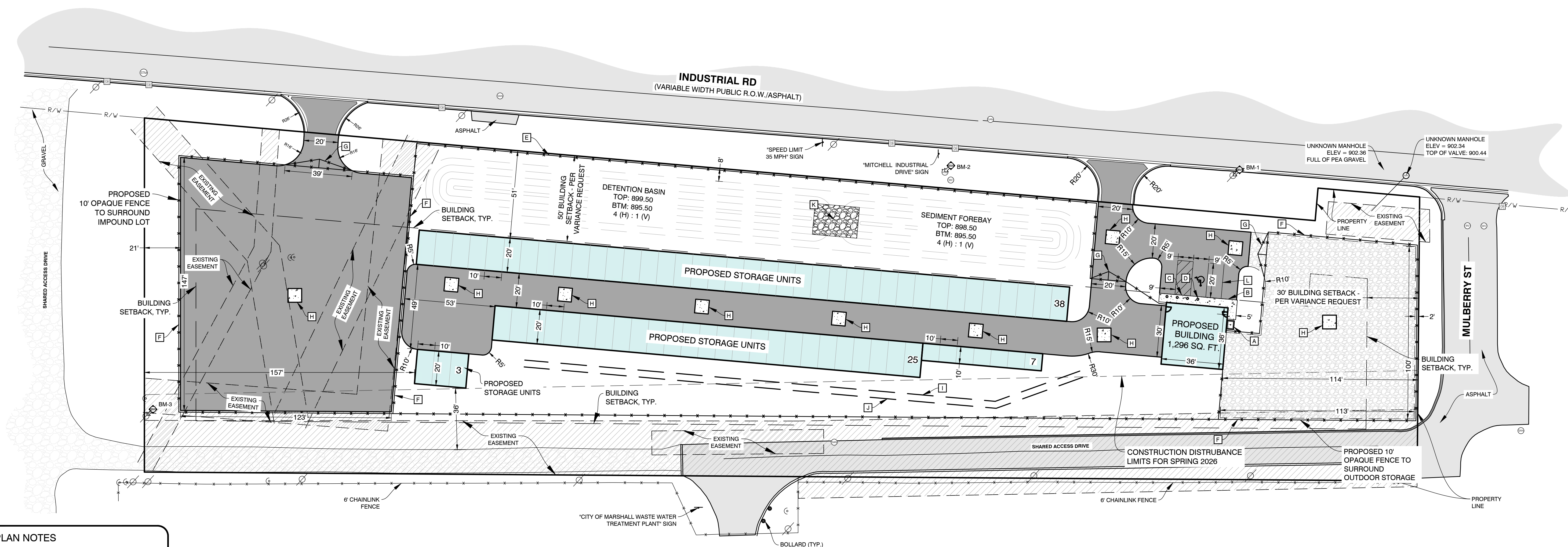
BENCHMARKS

- BM-1:
ELEV: 903.42
SET MAG NAIL IN SOUTH SIDE
OF POWER POLE
- BM-2:
ELEV: 903.46
SET "X" ON SOUTHWEST OF
FLANGE BOLT ON HYDRANT
- BM-3:
ELEV: 902.54
SET MAG NAIL IN NORTHEAST
SIDE OF POWER POLE

PLANS PREPARED BY:



DRAWN: aw
CHECKED: WLP



SITE PLAN NOTES

- [A] 5' X 3' CONCRETE PAD. AREA FOR 2 HERBY CURBYS.
- [B] INTEGRAL CURB/WALK (SEE DETAIL, SHEET C5.0).
- [C] AT-GRADE RAMP (SEE GRADING PLAN, SHEET C4.0).
- [D] BOLLARDS - (6) TOTAL (SEE DETAIL, SHEET C5.0)
- [E] 6' TALL CHAIN LINK FENCE
- [F] 10' OPAQUE FENCE TO SURROUND IMPOUND LOT.
- [G] GATE WITH ACCESS BUTTON.
- [H] 8' x 8' CONCRETE APRON SURROUNDING PROPOSED STORM STRUCTURES
- [I] VEGETATIVE SWALE (SEE DETAIL, SHEET C5.0) (SEE GRADING, SHEET C4.0)
- [J] PROPOSED 1' BERM ADJACENT TO PROPOSED SWALE
- [K] FOREBAY SPILLWAY SECTION (SEE DETAIL, SHEET C5.0)
- [L] 4" PAINTED PARKING LOT MARKING/STRIPING (TYP.) (SEE DETAIL, THIS SHEET)

LEGEND

	EXISTING ASPHALT PAVEMENT
	EXISTING GRAVEL PAVEMENT
	PROPOSED ASPHALT PAVEMENT
	PROPOSED CONCRETE PAVEMENT
	PROPOSED GRAVEL PAVEMENT

GENERAL NOTES

- DIMENSIONS TAKE PRECEDENCE OVER SCALE.
CONTRACTOR TO VERIFY ALL DIMENSIONS IN
FIELD.
- IF ANY ERRORS, DISCREPANCIES, OR OMISSIONS
BECOME APPARENT, THESE SHALL BE BROUGHT
TO THE ATTENTION OF THE ARCHITECT/ENGINEER
PRIOR TO CONSTRUCTION OF ANYTHING
AFFECTED SO THAT CLARIFICATION OR REDESIGN
MAY OCCUR.
- ALL CURB RADI AND DIMENSIONS ARE TO FACE OF
CURB. CURB TO BE PROVIDED WHERE SHOWN
AND INTEGRAL WITH SIDEWALK AT PAVING EDGE.
- SLOPE GRADES UNIFORMLY BETWEEN
ELEVATIONS SHOWN. NOMINAL GRADING, SLOPE
SIDEWALKS AWAY FROM BUILDING AT 1/4" PER
FOOT ON ENTRY WALK.



ALL UTILITIES AS SHOWN ARE APPROXIMATE LOCATIONS DERIVED
FROM ACTUAL MEASUREMENTS AND AVAILABLE RECORDS. THEY
SHOULD NOT BE INTERPRETED TO BE EXACT LOCATION NOR
SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THE
AREA. FIELD WORK PERFORMED BY: AR ENGINEERING LLC

No.	ISSUED FOR:	DATE	BY
0	SITE PLAN REVIEW	10/10/2025	tc
1			
2			
3			
4			

SITE LAYOUT
TIGER TOWING
DRIVEN DESIGN
775 INDUSTRIAL RD, MARSHALL, MI 49068
SECTION 26, T02S, R06W.

PROJECT:
CLIENT:
SITE ADDRESS:
SITE SECTION:

JOB NUMBER
25103008

DATE
10/10/2025

SHEET NUMBER

C2.0

1. ALL WORK SHALL CONFORM TO ALL LOCAL, STATE AND FEDERAL LAWS, RULES AND REGULATIONS IN FORCE AT TIME OF CONSTRUCTION.
2. ELECTRICAL WORK SHALL BE PERFORMED BY A STATE OF MICHIGAN LICENSED ELECTRICIAN ACCORDING TO THE N.E.P.A. NATIONAL ELECTRICAL CODE AS MODIFIED BY THE STATE OF MICHIGAN. FURNISH AND INSTALL ALL MATERIALS AND LABOR TO PROVIDE A COMPLETE WORKING SYSTEM.
3. ALL PLUMBING WORK SHALL BE PERFORMED BY A STATE OF MICHIGAN LICENSED PLUMBER ACCORDING TO THE INTERNATIONAL PLUMBING CODE AS MODIFIED BY THE STATE OF MICHIGAN AND LOCAL HEALTH DEPARTMENT. FURNISH AND INSTALL ALL MATERIALS AND LABOR TO PROVIDE A FULL WORKING SYSTEM.
4. ALL MECHANICAL WORK SHALL BE PERFORMED ACCORDING TO THE INTERNATIONAL MECHANICAL CODE AS MODIFIED BY THE STATE OF MICHIGAN AND THE MICHIGAN ENERGY CODE. FURNISH AND INSTALL ALL MATERIALS AND LABOR TO PROVIDE A FULL WORKING SYSTEM.
5. ALL WORK SHALL CONFORM TO THE MICHIGAN HANDICAPPED ACCESSIBILITY CODE AND THE AMERICANS WITH DISABILITIES ACT.
6. WATER SERVICE PRESSURE TESTING AND CHLORINATION SHALL BE PER EGLE AND THE CITY OF MARSHALL REQUIREMENTS.
7. SANITARY SEWER INSTALLATION AND TESTING MUST MEET THE REQUIREMENTS OF EGLE AND THE CITY OF MARSHALL.
8. ALL REGULATORY SIGNAGE (IF SPECIFIED) SHALL BE PER THE MICHIGAN DEPARTMENT OF TRANSPORTATION.
9. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS, PERMIT COSTS, TAP FEES, METER DEPOSITS, PERMANENT UTILITY APPLICATIONS, BONDS, AND OTHER FEES REQUIRED FOR PROPOSED WORK.
10. CONTACT MISS DIG "811" FOR LOCATION OF UNDERGROUND UTILITIES A MINIMUM OF 48 HOURS BEFORE COMMENCING EXCAVATION WORK. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO ARE NOT PART OF THE "MISS DIG" ALERT SYSTEM. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS IN A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.
11. ANY SANITARY SEWER, SANITARY SEWER SERVICE LEADS, WATER MAIN, WATER SERVICES, OR STORM SEWER WHICH IS DAMAGED BY THE CONTRACTOR DURING HIS OPERATIONS SHALL BE REPAIRED TO THE OWNER'S SATISFACTION, AND AT THE CONTRACTOR'S EXPENSE. IF ANY ELEMENTS OF THE SANITARY SEWER SYSTEM ARE DAMAGED AND NEED REPAIRED, IT MUST MEET THE CITY OF MARSHALL SPECIFICATIONS.

12. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR THE ELECTRICAL TRANSFORMER PAD PER THE UTILITY COMPANY SPECIFICATIONS.
13. THE TELEPHONE UTILITY COMPANY SHALL PROVIDE UNDERGROUND TELEPHONE TO THE BUILDING AT THE OWNERS EXPENSE.
14. REFER TO ELECTRICAL DRAWINGS FOR UNDERGROUND ELECTRICAL REQUIREMENTS FOR SITE LIGHTING & SITE DETAILS SHEETS FOR THE FIXTURE AND & POLE SPECIFICATIONS.
15. DESIGN, INSTALLATION AND SPECIFICATION FOR IMPROVEMENTS RELATED TO GAS, TELEPHONE, ELECTRIC AND CABLE TELEVISION SERVICES SHALL BE COORDINATED BY THE CONTRACTOR.
16. CONTRACTOR SHALL COORDINATE TELEPHONE, ELECTRIC, AND CABLE TELEVISION CONDUITS WITH THE APPROPRIATE UTILITY PRIOR TO PAVEMENT INSTALLATION.
17. CONTRACTOR IS TO UNCOVER AND CONFIRM ALL TAP LOCATIONS. LOCATION DISCREPANCIES ARE TO BE BROUGHT TO THE ENGINEERS ATTENTION FOR RESOLUTION.
18. THE CONTRACTOR IS TO PROVIDE THE WATER SERVICE PIPING FROM THE BUILDING TO THE EXISTING WATER MAIN. THE CONTRACTOR SHALL MAKE THE CONNECTION TO THE SHUT OFF VALVE. THE CONTRACTOR SHALL COORDINATE SERVICES WITH THE CITY OF MARSHALL.
19. CONTRACTOR/OWNER SHALL OBTAIN UTILITY CONNECTION PERMITS AND SETTLE APPLICABLE UTILITY ASSESSMENTS PRIOR TO EXTENSION OF PUBLIC UTILITIES ONSITE.
20. MANHOLE AND CATCH BASIN STRUCTURES SHALL BE PRECAST AND HAVE A MAXIMUM OF 2 ADJUSTING RINGS FOR FINISH GRADE ADJUSTMENT. STORM STRUCTURES MUST ALL HAVE A SUMP OF TWO FEET.
21. ALL WATER MAIN TO HAVE A BURIAL DEPTH AS REQUIRED BY EGLE FOR THE SPECIFIC REGION OF WORK IN CITY OF MARSHALL.
22. DEMOLISH & REMOVE ALL EXISTING SITE FEATURES AS REQUIRED.
23. THE CONTRACTOR SHALL REVIEW THE GEOTECHNICAL REPORT PREPARED FOR THIS SITE.
24. DRIVEWAY LAYOUT AND CONNECTION TO INDUSTRIAL RD SHALL COMPLY WITH ALL ASPECTS OF THE CITY OF MARSHALL / CALHOUN COUNTY ROAD COMMISSION DRIVE PERMIT.

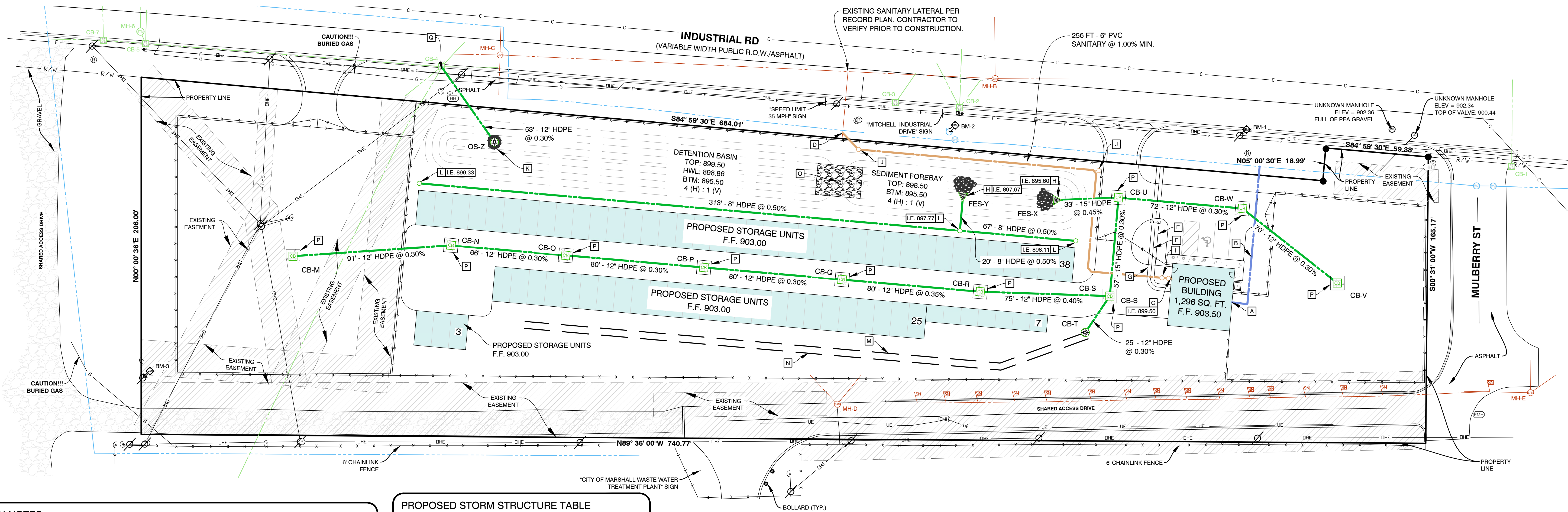
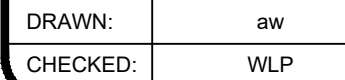
1. SOILS DEPOSED IN THE BASE OF ALL SATISFACTORY FOUNDATION EXCAVATIONS SHOULD BE PROTECTED AGAINST ANY DETRIMENTAL CHANGES IN CONDITION SUCH AS FROM DISTURBANCE, RAIN AND FREEZING. SURFACE RUN-OFF WATER SHOULD BE DRAINED AWAY FROM THE EXCAVATION AND NOT ALLOWED TO POND. IF POSSIBLE, ALL FOOTING CONCRETE SHOULD BE POURED THE SAME DAY THE EXCAVATION IS MADE. IF THIS IS NOT PRACTICAL, THE FOOTING EXCAVATIONS SHOULD BE ADEQUATELY PROTECTED.
2. REMOVE ALL SUBGRADE GRADE MATERIAL THAT MAY BE SOFTENED BY RAINS, FREEZING, OR CONSTRUCTION TRAFFIC, ETC. AND REPLACE WITH COMPACTED GRANULAR FILL.
3. STORM SEWER SHALL BE CORRUGATED HDPE PIPE WITH SMOOTH INTERIOR WALL, BY ADS OR EQUAL. LEACHING BASINS AND MANHOLES ARE TO BE REINFORCED CONCRETE WITH RIM AND SLOTTED GRATING (AS SHOWN). STORM SEWER & LEACHING BASINS ARE TO BE WRAPPED WITH FILTER FABRIC.
4. ALL WATER SERVICE LINES SHALL BE 1" PE PIPE WITHIN 5' OF BUILDING, WITH COMPRESSION FITTINGS OR MECHANICAL FITTINGS OTHER THAN FLARED ENDS. PROVIDE 5' COVER FROM FINISHED GRADE.
5. PROVIDE MINIMUM 5' COVER FROM FINISHED GRADE FOR ALL WATER SERVICE LINES, IF COVER CANNOT BE MAINTAINED DUE TO SITE CONDITIONS OR INVERT ELEVATIONS THE ENTIRE LENGTH OF THE EXTERIOR PIPE MUST BE PROTECTED WITH 2" RIGID INSULATION BOARD ON THE TOP AND SIDES.
6. PROVIDE MINIMUM 5' COVER FROM FINISHED GRADE FOR ALL SANITARY SEWER LINES. IF COVER CANNOT BE MAINTAINED DUE TO SITE CONDITIONS OR INVERT ELEVATIONS THE ENTIRE LENGTH OF THE EXTERIOR PIPE MUST BE PROTECTED WITH 2" RIGID INSULATION BOARD ON THE TOP AND SIDES.
7. MAINTAIN 10 FOOT MINIMUM HORIZONTAL SEPARATION BETWEEN THE SEWER AND WATER MAIN UTILITIES. PROVIDE 18" MINIMUM VERTICAL SEPARATION WHERE UTILITIES CROSS.
8. THE CONTRACTOR SHALL INSTALL A PEDESTRIAN FENCE AROUND ALL EXCAVATIONS TO BE LEFT OPEN OVERNIGHT AS REQUIRED.
9. EXTERIOR CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 4000 PSI AND SHALL HAVE LIMESTONE AGGREGATE AND SHALL HAVE 4 - 6 % AIR ENTRAINMENT WITH A BROOM FINISH.
10. EXPANSION JOINTS IN CONCRETE PAVEMENT AND WALLS SHALL BE 1/2" ASPHALT IMPREGNATED FULL DEPTH 40° C. MAXIMUM & AT SIDEWALK INTERSECTIONS. CRACK CONTROL SCORING AT SIDEWALK WIDTH DIMENSION AND @ 10'-0" C. IN DRIVES.

MH-A, 4' CONC. STRUCTURE RIM = 902.34 SW 20' TOP OF VALVE (INV. = 900.44) SUMP = 896.49	MH-D, 4' CONC. STRUCTURE RIM = 900.29 NW 4' PVC (INV. = 894.24) NE FM PVC (INV. = 894.04)
MH-B, 4' BLOCK STRUCTURE RIM = 901.50 N 10' CLAY (INV. = 892.85) N 10' CLAY (INV. = 891.95) E 10' CLAY (INV. = 891.85)	MH-E RIM = 901.61 N (INV. +25' DEEP) NE (INV. +25' DEEP) W 12' CLAY (INV. +25' DEEP)
MH-C, 4' BLOCK STRUCTURE RIM = 901.88 S 4' PVC (INV. = 896.78) CAPPED LATERAL N 10' CLAY (INV. = 893.38) W 10' CLAY (INV. = 892.43) E 10' CLAY (INV. = 892.38)	

BM-1:
ELEV: 903.42
SET MAG NAIL IN SOUTH SIDE
OF POWER POLE

BM-2:
ELEV: 903.46
SET "X" ON SOUTHWEST OF
FLANGE BOLT ON HYDRANT

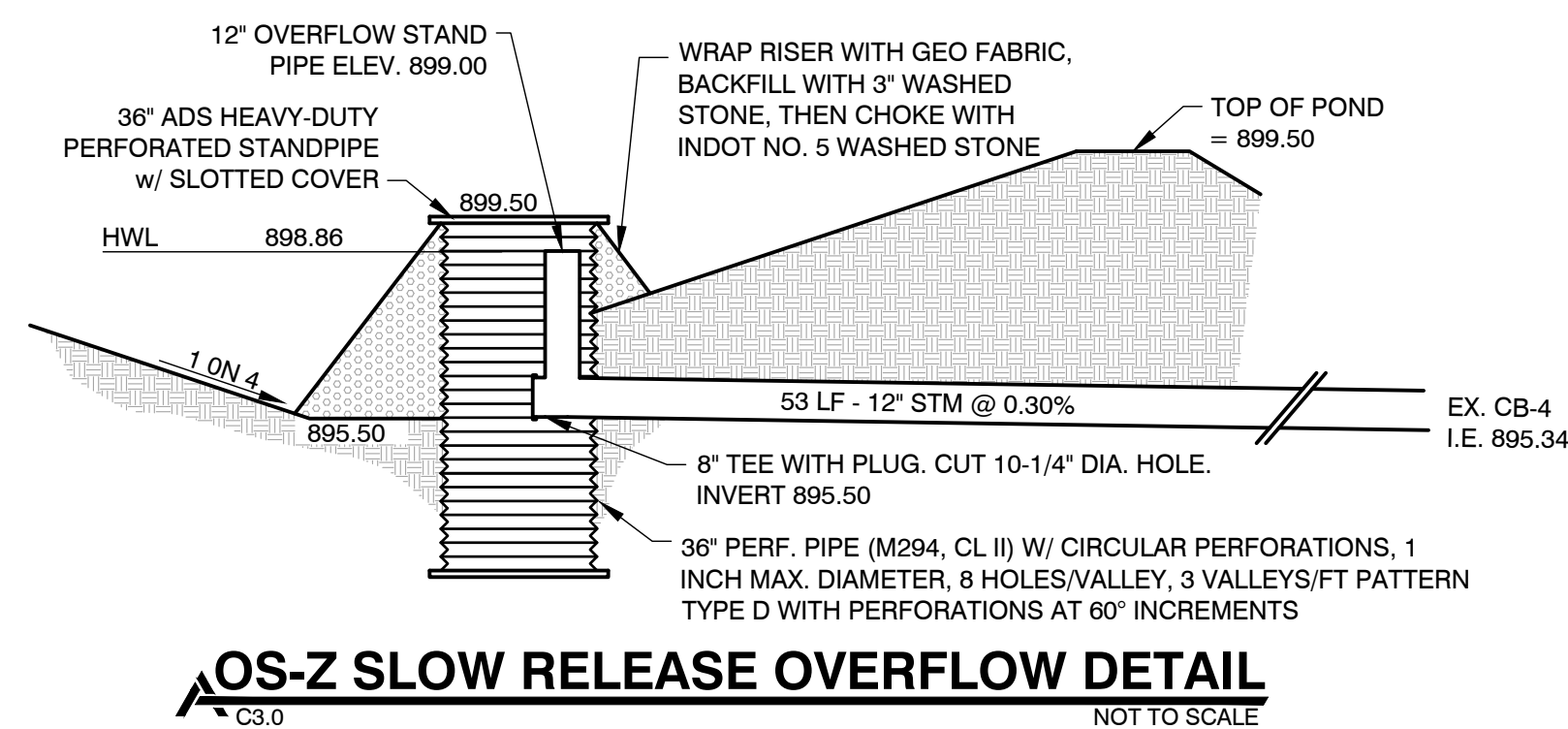
BM-3:
ELEV: 902.54
SET MAG NAIL IN NORTHEAST
SIDE OF POWER POLE



A	WATER SERVICE. COORDINATE CONNECTION WITH PLUMBING PLANS PROVIDED BY THE ARCHITECT.	K	SLOW-RELEASE / OVERFLOW STRUCTURE. (SEE DETAIL, THIS SHEET)
B	89 LF TO EXISTING WATERMAIN - 1" PE WATER SERVICE. CONNECT TO EXISTING WATERMAIN. COORDINATE WITH CITY OF MARSHALL DEPARTMENT OF PUBLIC WORKS - (269) 558-0324.	L	STORM CLEAN OUT (SEE DETAIL, SHEET C5.0)
C	SEWER LATERAL. COORDINATE CONNECTION WITH PLUMBING PLANS PROVIDED BY THE ARCHITECT.	M	PROPOSED VEGETATIVE SWALE (SEE DETAIL, SHEET C5.0) (SEE GRADING, SHEET C4.0)
D	CONNECT TO EXISTING SANITARY LATERAL. COORDINATE WITH CITY OF MARSHALL DEPARTMENT OF PUBLIC WORKS - (269) 558-0324.	N	PROPOSED 1' BERM ADJACENT TO PROPOSED SWALE.
E	U/G ELECTRIC SERVICE.	O	PROPOSED FOREBAY SPILLWAY SECTION (SEE DETAIL, SHEET C5.0)
F	U/G TELEPHONE SERVICE.	P	8' x 8" CONCRETE APRON (SEE DETAIL, SHEET C5.0)
G	U/G GAS SERVICE.	Q	CORE EXISTING CATCH BASIN FOR NEW CONNECTION. COORDINATE CONNECTION WITH CITY OF MARSHALL DEPARTMENT OF PUBLIC WORKS - (269) 558-0324.
H	12" FLARED END SECTION WITH RIP RAP AND REFUSE SCREEN (SEE DETAIL, SHEET C5.0)		
I	TWO-WAY YARD CLEANOUT. SCHEDULE 40 BACKFLOW DEVICE (SEE DETAIL, SHEET C5.0)		
J	SANITARY CLEAN OUT (SEE DETAIL, SHEET C5.0)		

<u>CB-M, 4" DIA., EIJJW 5105</u>	<u>CB-S, 4" DIA., EIJJW 5105</u>
RIM = 900.70	RIM = 902.42
12" HDPE E 897.70	12" HDPE W 896.17
*"SNOUT ON OUTLET PIPE, SEE DETAIL SHEET	12" HDPE SW 896.08
	12" HDPE N 895.92
 <u>CB-N, 4" DIA., EIJJW 5105</u>	 <u>YD-T, **</u>
RIM = 902.55	RIM = 901.83
12" HDPE W 897.43	12" HDPE NE 898.83
12" HDPE E 897.43	
 <u>CB-O, 4" DIA., EIJJW 5105</u>	 <u>CB-U, 4" DIA., EIJJW 5105</u>
RIM = 902.55	RIM = 902.17
12" HDPE W 897.23	15" HDPE S 895.75
12" HDPE E 897.23	12" HDPE E 898.41
	12" HDPE W 895.75
	*"SNOUT ON OUTLET PIPE, SEE DETAIL SHEET
 <u>CB-P, 4" DIA., EIJJW 5105</u>	 <u>CB-V, 4" DIA., EIJJW 5105</u>
RIM = 902.55	RIM = 901.84
12" HDPE W 896.69	12" HDPE E 898.84
12" HDPE E 896.69	
 <u>CB-Q, 4" DIA., EIJJW 5105</u>	 <u>CB-W, 4" DIA., EIJJW 5105</u>
RIM = 902.55	RIM = 902.64
12" HDPE W 896.75	12" HDPE W 898.63
12" HDPE E 896.75	12" HDPE E 898.63
 <u>CB-R, 4" DIA., EIJJW 5105</u>	
RIM = 902.55	
12" HDPE W 896.47	
12" HDPE E 896.47	
	* ALL STRUCTURES HAVE 2 SUMPS
	** ALL YARD DRAINS ARE ADS
	NYLOPLAST INLINE DRAIN W/10"
	SLOTTED COVER

<u>CB-1, 4' CONC. STRUCTURE</u> RIM = 902.24 N 12" CONC. (INV. = 897.64) SUMP = 896.99	<u>CB-5, 4' BLOCK STRUCTURE</u> RIM = 900.98 NW 10" CLAY (INV. = 896.98) N 10" CLAY (INV. = 896.98) W 15" CLAY (INV. = 896.98) E 15" CLAY (INV. = 895.98) SUMP = 895.88
<u>CB-2, 2' CONC. STRUCTURE</u> RIM = 900.92 NW 6" CPE (INV. = 898.72) NE 6" CPE (INV. = 898.77) N 12" CPE (INV. = 898.47) SUMP = 897.82	<u>MH-6, 4' BLOCK STRUCTURE</u> RIM = 901.17 N 10" PVC (INV. = 897.97) SE 10" CLAY (INV. = 896.98) SUMP = 895.87
<u>CB-3, 4' CONC. STRUCTURE</u> RIM = 900.90 NE 12" CONC. (INV. = 897.10) SUMP = 895.40	<u>CB-7, 4' BLOCK STRUCTURE</u> RIM = 900.89 E 15" CLAY (INV. = 896.98) W 15" CLAY (INV. = 896.98) N 10" CONC. (INV. = 896.98) SUMP = 895.89
<u>CB-4, 4' BLOCK STRUCTURE</u> RIM = 901.49 W 15" CLAY (INV. = 895.34) NE 24" CONC. (INV. = 894.99) SW 24" CONC. (INV. = 894.84) N 12" CONC. (INV. = 898.28) S 12" HDPE INV. 895.34 SUMP = 894.79	DENOTES PROPOSED PIPE CONNECTION INFORMATION



ALL UTILITIES AS SHOWN ARE APPROXIMATE LOCATIONS DERIVED FROM ACTUAL MEASUREMENTS AND AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATION NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THE AREA. FIELD WORK PERFORMED BY: AR ENGINEERING LLC

DRAWN:	aw
CHECKED:	WLP

No.	ISSUED FOR:	DATE	BY
0	SITE PLAN REVIEW	10/10/2025	lc
1	.	.	.
2	.	.	.
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UTILITY PLAN
TIGER TOWING
DRIVEN DESIGN
7775 INDUSTRIAL RD, MARSHAL
SECTION 26, T02S, R08E

DATE
10/10/2025

C3.0

SOIL EROSION & SEDIMENT CONTROL NOTES

1. ALL CONSTRUCTION METHODS SHALL BE DONE IN COMPLIANCE WITH MDOT-EGLE. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING A "SOIL EROSION PERMIT" FROM THE GOVERNING AUTHORITY AND A "PERMIT BY RULE/NOTICE OF COVERAGE" FROM THE GOVERNING AUTHORITY. IF APPLICABLE, PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL REQUIREMENTS OF THE "SOIL EROSION PERMIT" AND FOR ALL CERTIFIED STORM WATER INSPECTION SERVICE REQUIRED BY THE "PERMIT BY RULE." EROSION CONTROL MEASURES SHOWN ON THE PLANS ARE THE MINIMUM REQUIREMENTS AND SHALL NOT RELIEVE THE CONTRACTOR'S RESPONSIBILITY FOR PROVIDING ALL REQUIRED EROSION CONTROL MEASURES.

2. AVOID UNNECESSARY DISTURBING OR REMOVING OF EXISTING VEGETATED TOPSOIL OR EARTH COVER, THESE COVER AREAS ACT AS SEDIMENT FILTERS.

3. ALL TEMPORARY SOIL EROSION PROTECTION SHALL REMAIN IN PLACE UNTIL REMOVAL IS REQUIRED FOR FINAL CLEAN UP AND APPROVAL.

4. GEOTEXTILE SILT FENCE SHALL BE INSTALLED AS REQUIRED WHEN CROSSING CREEKS OR WHEN ADJACENT TO WETLANDS OR SURFACE WATER BODIES TO PREVENT SILTATION AND ELSEWHERE AS DIRECTED BY THE ENGINEER. SEEDING AND/OR SODDING SHALL BE INSTALLED ON CREEK BANKS IMMEDIATELY AFTER CONSTRUCTION TO PREVENT EROSION.

5. MAINTENANCE, CLEANING, AND REMOVAL OF THE VARIOUS SEDIMENT CONTROL MEASURES SHALL BE INCLUDED IN THE VARIOUS EROSION CONTROL ITEMS.

ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE PER MDOT STANDARD DETAILS. "P" DENOTES PERMANENT MEASURE AND "T" DENOTES TEMPORARY MEASURE. SOIL EROSION CONTROL PLANS DENOTE MINIMUM EROSION MEASURES REQUIRED AS DESCRIBED BELOW.

3P DENOTES PERMANENT SEEDING. ALL DISTURBED AREAS NOT PAVED OR GRAVELED SHALL BE RESTORED. PLACE TOPSOIL SURFACE, SALV. 3 INCH, MDOT SEEDING, MIXTURE TUF APPLIED AT A RATE OF 220 LB/ACRE, FERTILIZER, CHEMICAL NUTRIENT, CL A APPLIED AT A RATE OF 228 LB/ACRE, MULCH AT A RATE OF 2 TON/ACRE AND MULCH ANCHORING. (APPLIES TO ENTIRE PROJECT)

4T DENOTES DUST CONTROL. DUST CONTROL MAY BE REQUIRED ON THE SUBGRADE CONSTRUCTION AND WILL INCLUDE APPLYING FRESH WATER TO BE INCLUDED IN THE ITEM OF EMBANKMENT. DUST CONTROL ON THE AGGREGATE BASE COURSE WILL BE ACCOMPLISHED BY APPLYING FRESH WATER (INCLUDED IN THE ITEM OF AGGREGATE BASE, 6 INCH) AND APPLYING DUST PALLIATIVE, APPLIED, CAC₂ (TON) AS DIRECTED BY THE PROJECT ENGINEER.

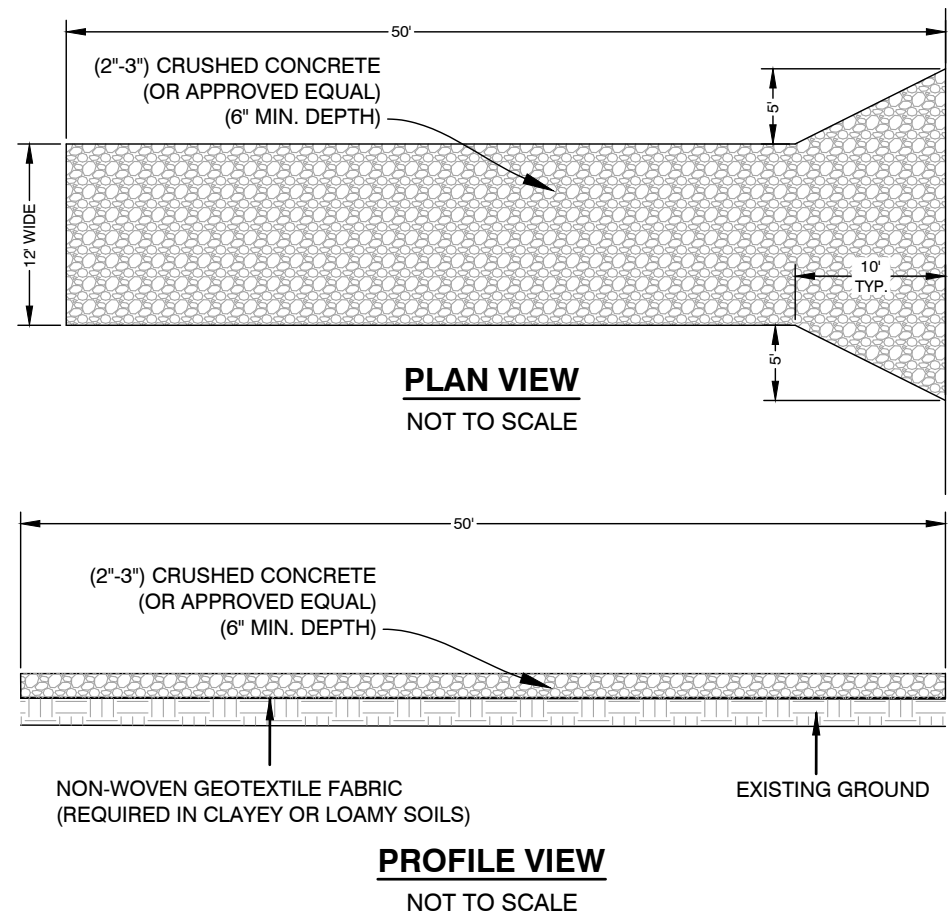
8P DENOTES AGGREGATE COVER/PERMANENT PAVEMENT RESTORATION

14T DENOTES GRAVEL ACCESS APPROACH. APPROACH SHALL BE INSTALLED TO PROVIDE STABLE ACCESS TO ROADWAYS AND MINIMIZE DUST AND TRACKING OF MATERIALS ONTO PUBLIC STREETS AND HIGHWAYS. THE APPROACH SHALL BE A MINIMUM OF 12' WIDE, 6" DEEP, AND CONSIST OF 2"-4" AGGREGATE.

29T DENOTES TEMPORARY SILT FENCE. SILT FENCE SHALL BE INSTALLED AT CREEK CROSSINGS, ADJACENT TO ALL WETLANDS AND SURFACE WATERS, AND OTHER LOCATIONS AS DIRECTED BY THE ENGINEER. EACH SILT FENCE SHALL BE INSTALLED GENERALLY ALONG THE SAME CONTOUR ELEVATION.

29T DENOTES INLET PROTECTION FABRIC DROP. SHALL BE INSTALLED AT EXISTING AND PROPOSED STORM SEWER INLETS TO PROVIDE SETTLING AND FILTERING OF SILT LADEN WATER PRIOR TO ENTRY INTO THE DRAINAGE SYSTEM.

33T DENOTES MULCH BLANKET OR MATTING. SHALL BE NORTH AMERICAN GREEN DS150, OR APPROVED EQUAL. MULCH BLANKETS SHALL BE PLACED ON ALL 1:3 SLOPES OR GREATER, IN AND AROUND DITCH BOTTOMS WHERE THERE IS NO BIOSWALE BY CONTRACTOR RESPONSIBLE FOR RESTORING THAT AREA.



WHEN:
CONSTRUCTION TRAFFIC IS EXPECTED TO LEAVE A CONSTRUCTION SITE.

WHY:
TO MINIMIZE TRACKING OF SEDIMENT ONTO PUBLIC ROADWAYS.

WHERE:
STABILIZED CONSTRUCTION ENTRANCES SHALL BE LOCATED AT EVERY POINT WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE. VEHICLES LEAVING THE SITE MUST BE ROUTED OVER THE INGRESS/EGRESS CORRIDOR.

HOW:
1. CONSTRUCTION TRACKING MAT ACCESS ROAD SHOULD BE ESTABLISHED AT THE ONSET OF THE CONSTRUCTION ACTIVITIES AND MAINTAINED IN PLACE FOR THE DURATION OF THE CONSTRUCTION PROJECT.

2. INSTALLATION OF THIS PRACTICE SHOULD BE THE RESPONSIBILITY OF THE SITE CLEARING OR EXCAVATING CONTRACTOR.

3. ACCESS LOCATION SHOULD BE CLEARED OF WOODY VEGETATION.

4. NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED OVER THE EXISTING GROUND PRIOR TO PLACING STONE. (NECESSARY IN CLAYEY OR LOAMY SOILS)

5. ACCESS LENGTH SHALL BE A MINIMUM OF 50'.

6. ACCESS WIDTH SHALL BE 12' WIDE AND FLARED AT ??.

7. CRUSHED CONCRETE (OR APPROVED EQUAL), SHALL BE PLACED AT LEAST 6" DEEP OVER THE LENGTH AND WIDTH OF THE INGRESS/EGRESS CORRIDOR.

MAINTENANCE:
PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN EVENT.

STABILIZED ENTRANCES SHALL BE REPAIRED AND APPROPRIATE MATERIAL ADDED AS NECESSARY

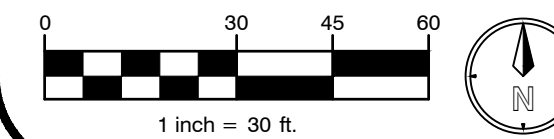
SEDIMENT DEPOSITED ON PUBLIC RIGHTS-OF-WAY SHALL BE REMOVED IMMEDIATELY AND RETURNED TO THE CONSTRUCTION SITE.

IF SOILS ARE SUCH THAT WASHING OF TIRES IS REQUIRED, IT SHALL BE DONE IN A WASH RACK AREA, STABILIZED WITH STONE, IMMEDIATELY PRIOR TO THE CONSTRUCTION ACCESS STABILIZED CORRIDOR.

AT THE PROJECT COMPLETION, THE ACCESS ROAD SHOULD BE REMOVED AND DISPOSED OF UNLESS UTILIZED AS SUBGRADE FOR A FINAL ROAD.

STABILIZED CONSTRUCTION TRACKING MAT DETAIL AND SPECIFICATIONS

NOT TO SCALE



BENCHMARKS

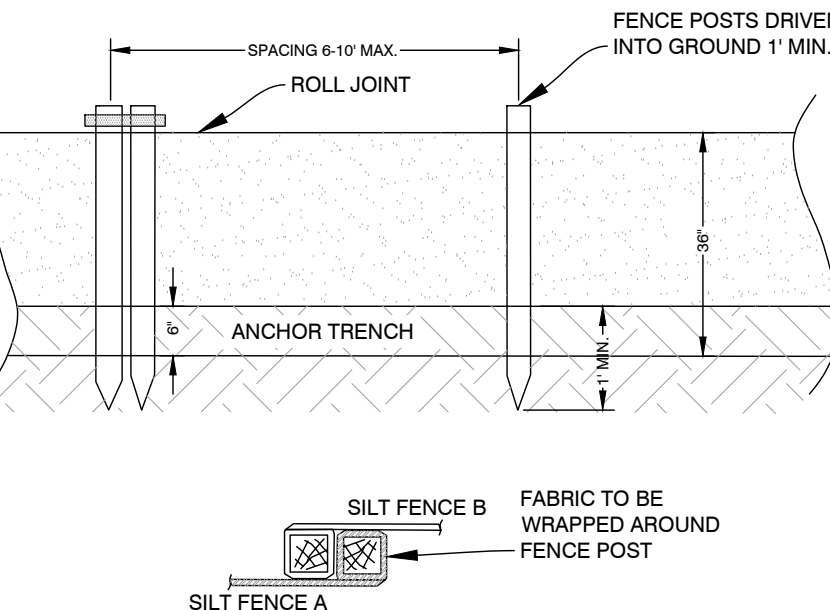
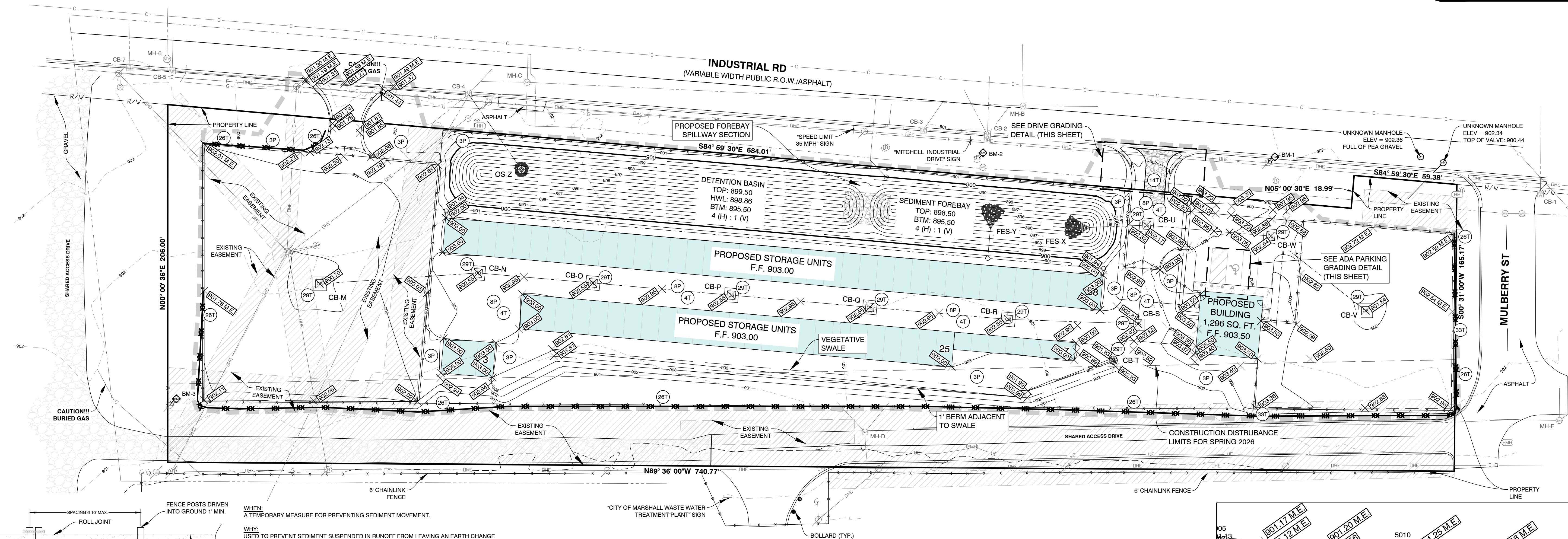
BM-1:
ELEV: 903.42
SET MAG NAIL IN SOUTH SIDE OF POWER POLE

BM-2:
ELEV: 903.46
SET "X" ON SOUTHWEST OF FLANGE BOLT ON HYDRANT

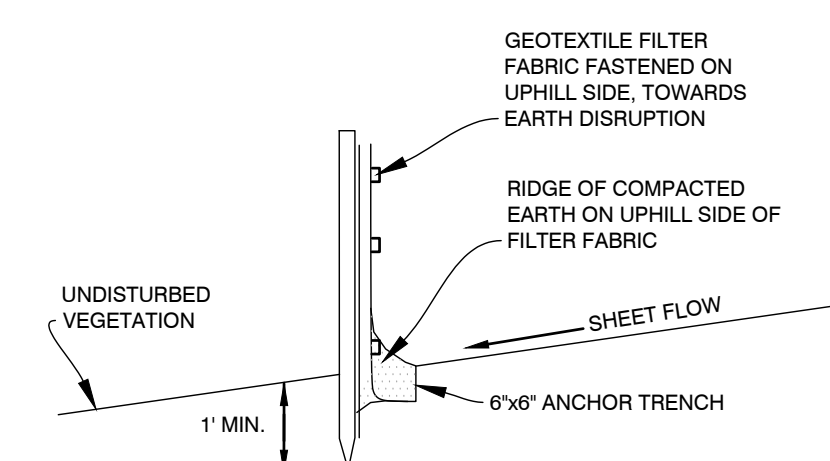
BM-3:
ELEV: 902.54
SET MAG NAIL IN NORTHEAST SIDE OF POWER POLE

LEGEND

- LIMITS OF CONSTRUCTION
- SILT FENCE
- DRAINAGE ARROW
- M.E. MATCH EXISTING



ROLL JOINTS

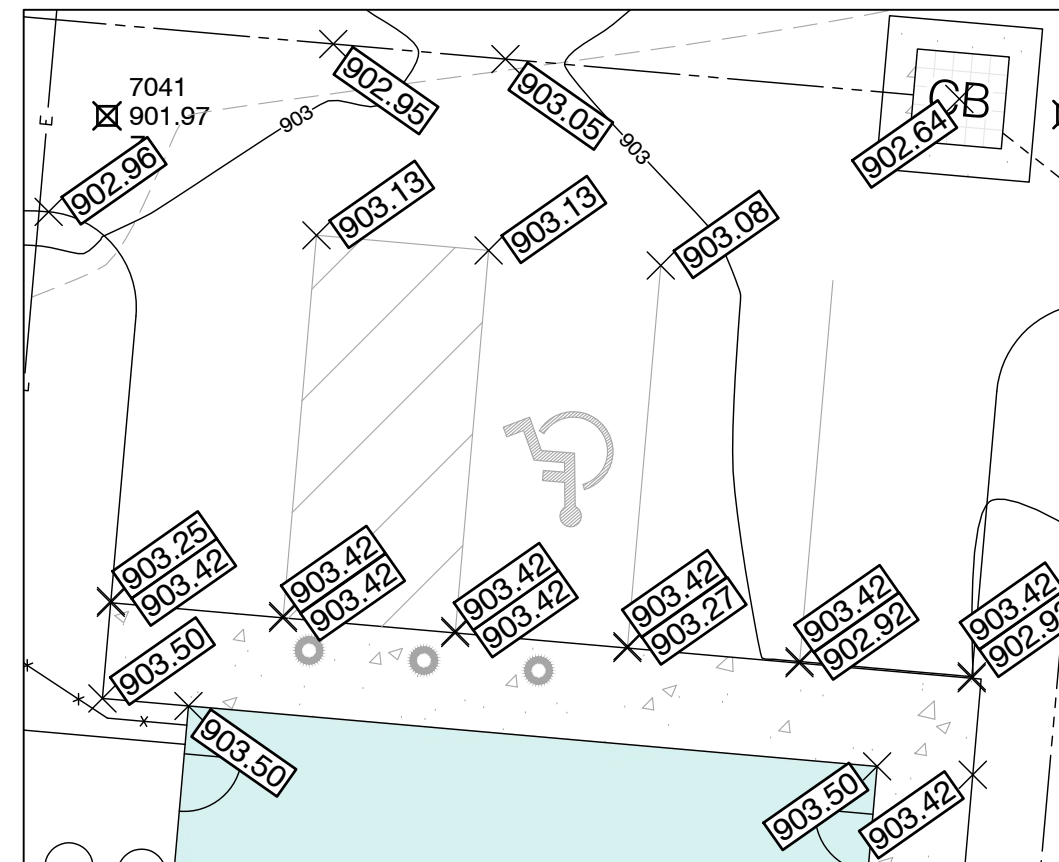


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NOT TO SCALE

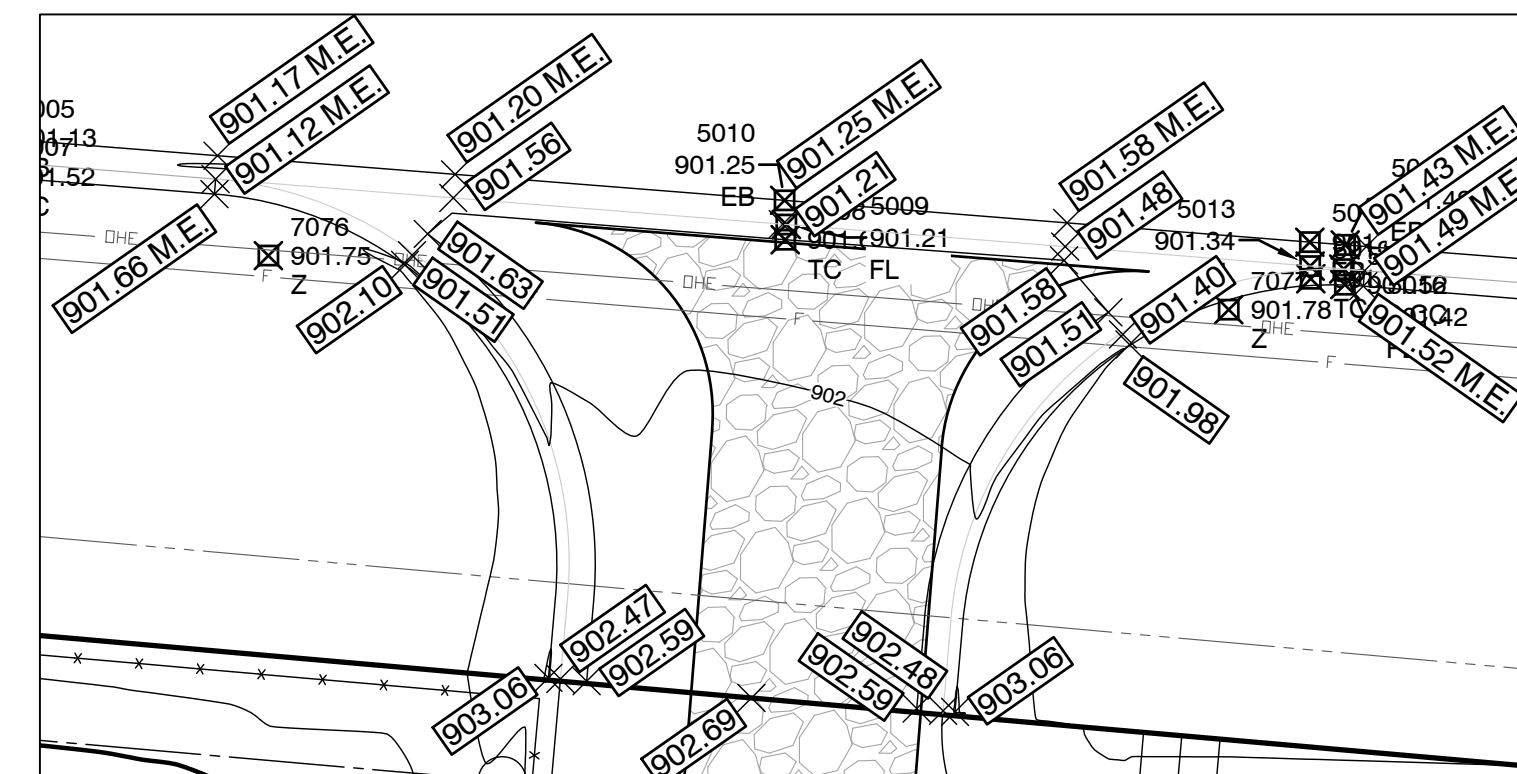
GRADING NOTES

- ALL WORK SHALL CONFORM TO ALL LOCAL, STATE AND FEDERAL LAWS, RULES AND REGULATIONS IN FORCE AT TIME OF CONSTRUCTION.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS, PERMIT COSTS, TAP FEES, METER DEPOSITS, PERMANENT UTILITY APPLICATIONS, BONDS, AND OTHER FEES REQUIRED FOR PROPOSED WORK. THIS SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO THOSE REQUIRED BY THE MICHIGAN DEPARTMENT OF TRANSPORTATION.
- CONTACT MISS DIG "811" FOR LOCATION OF UNDERGROUND UTILITIES A MINIMUM OF 48 HOURS BEFORE COMMENCING EXCAVATION WORK. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO ARE NOT PART OF THE "MISS DIG" ALERT SYSTEM. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS IN A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.
- DEMOLISH & REMOVE ALL EXISTING SITE FEATURES AS REQUIRED.
- MATCH EXISTING GRADES AROUND PERIMETER WITH SLOPES AS SHOWN.
- ALL SPOT ELEVATIONS ARE TOP OF PAVEMENT GRADES AT EDGE OF METAL (EOM) UNLESS OTHERWISE NOTED.
- ALL SOIL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO MASS GRADING.
- ALL EARTHWORK SHALL BE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS AND GEOTECHNICAL REPORT PREPARED FOR THIS SITE.
- ALL EXISTING ELEVATIONS ARE TO BE VERIFIED AND ACCEPTED AS SHOWN PRIOR TO COMMENCEMENT OF WORK.
- CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID TRACKING SOIL ONTO ADJACENT ROADWAYS. CONTRACTOR SHALL SWEEP IMMEDIATELY IF OCCURS.
- ANY DISTURBED AREA WHICH WILL BE LEFT UNWORKED 15 DAYS OR LONGER MUST BE SEED TO ESTABLISH VEGETATION FOR TEMPORARY STABILIZATION. BASINS TO BE SEED AND MULCH BLANKETS APPLIED IMMEDIATELY TO PROVIDE A STABLE BASE AND AVOID EXCESSIVE EROSION.



ADA PARKING GRADING DETAIL

1 INCH = 10 FEET



DRIVEWAY GRADING DETAIL

1 INCH = 10 FEET



ALL UTILITIES AS SHOWN ARE APPROXIMATE LOCATIONS DERIVED FROM ACTUAL MEASUREMENTS AND AVAILABLE RECORDS. THEY SHOULD NOT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THE AREA. FIELD WORK PERFORMED BY: AR ENGINEERING LLC

PLANS PREPARED BY:



DRAWN: **AW**
CHECKED: **WLP**

No.	DATE	BY	ISSUED FOR:
0	10/10/2025	tc	SITE PLAN REVIEW
1			
2			
3			
4			

GRADING & SESC PLAN
TIGER TOWING
DRIVEN DESIGN
775 INDUSTRIAL RD, MARSHALL, MI 49068
SECTION 26, T02S, R06W.

JOB NUMBER
25103008

DATE
10/10/2025

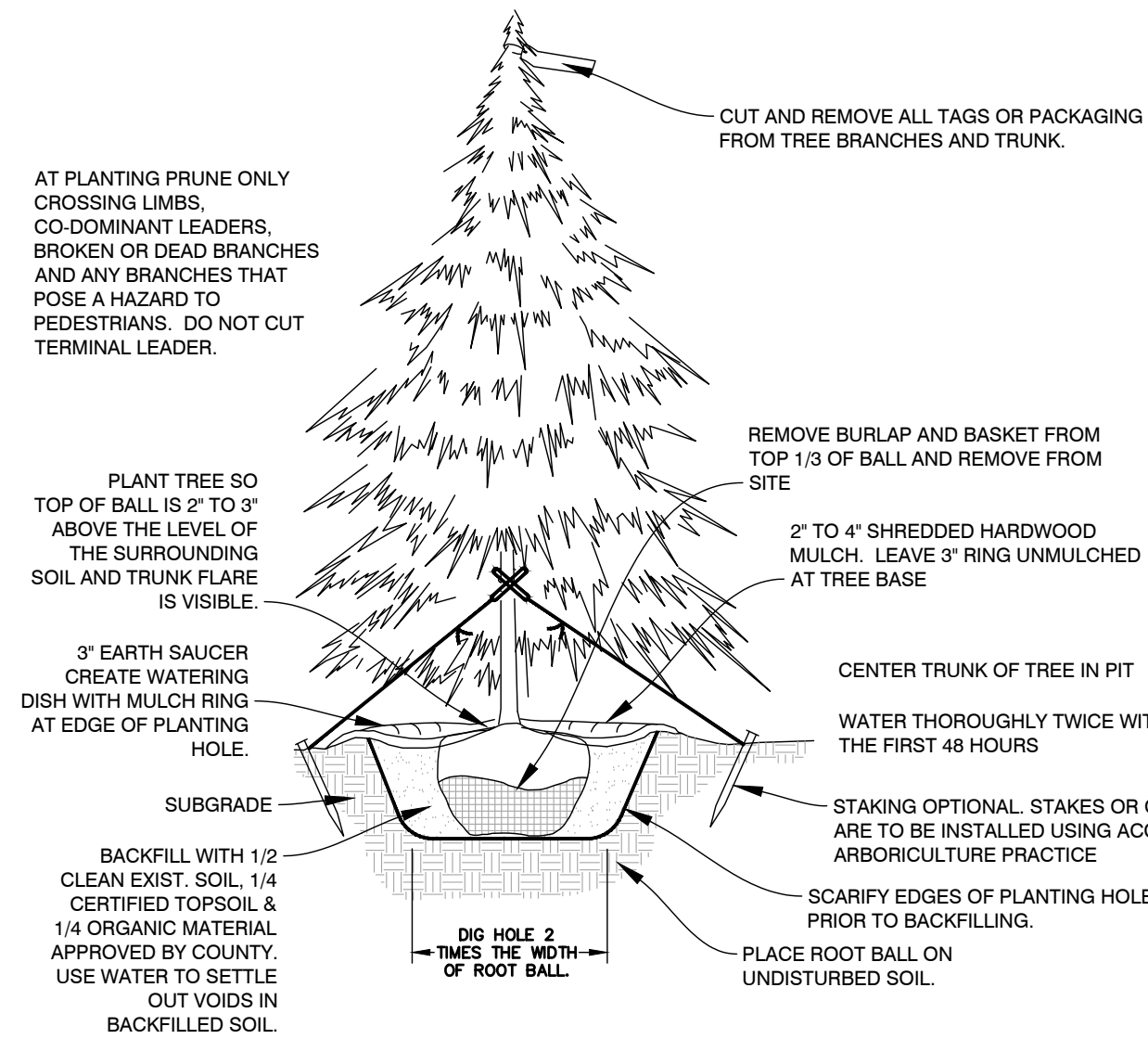
SHEET NUMBER

C4.0

LANDSCAPING NOTES

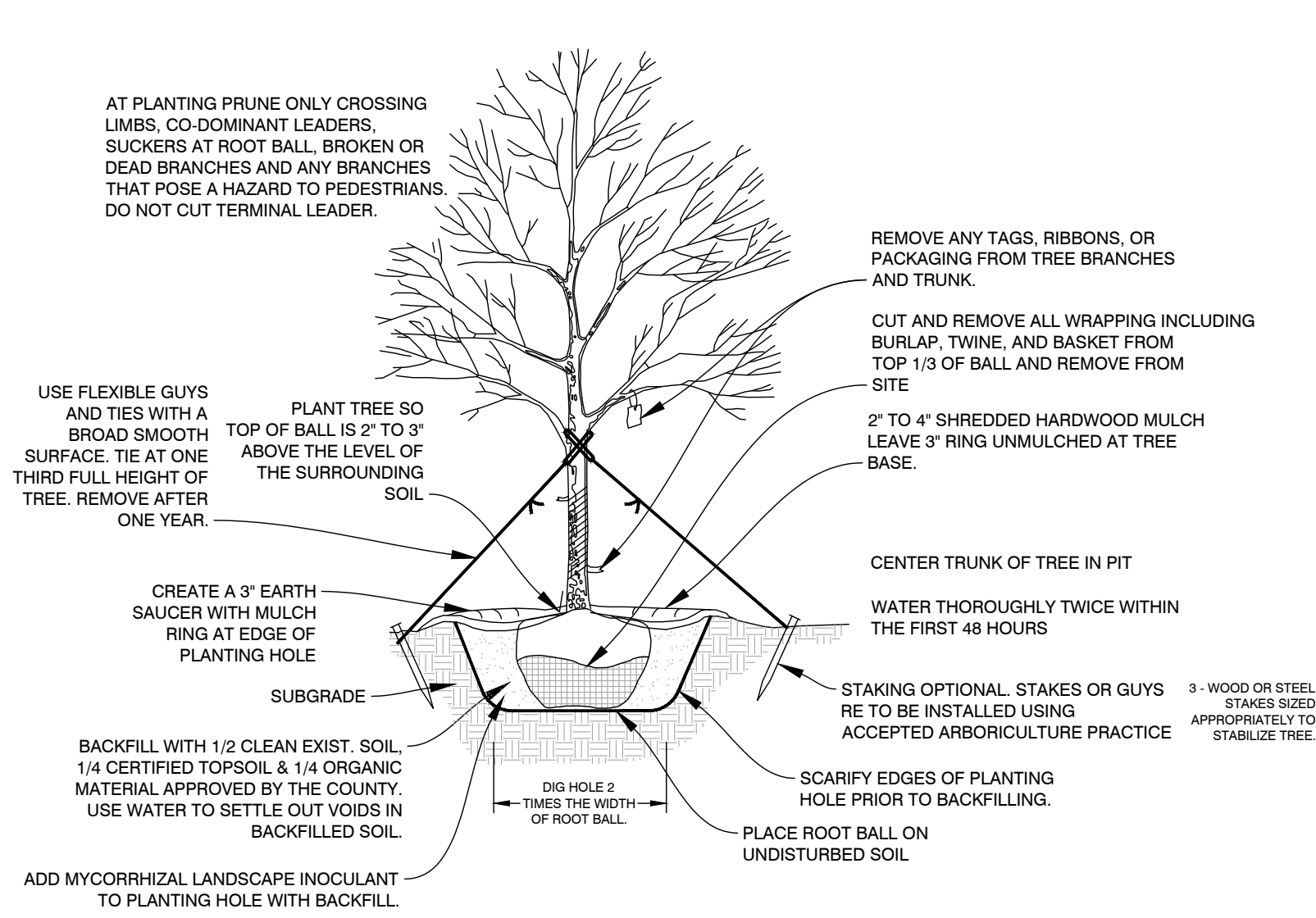
- INSTALL CONSTRUCTION FENCE AROUND DRIP LINES OF EXISTING TREES TO REMAIN. NO COMPACTION OR INCREASED DEPTH OF SOIL OVER THE ROOT SYSTEM AREA PRIOR TO AND DURING CONSTRUCTION.
- ALL LAWN AREAS SHALL BE SEEDED AND MULCHED WITH THE FOLLOWING MIXTURE: 20% IMPROVED PERENNIAL RYEGRASS, 40% FINE FESCUE, AND 40% KENTUCKY BLUEGRASS AT A RATE OF 3-4 LBS/ 1000 SFT.
- ALL EDGING SHALL BE STANDARD COMMERCIAL-STEEL EDGING 3/4" X 4", ROLLED EDGE, FABRICATED IN SECTIONS OF STANDARD LENGTHS, WITH LOOPS STAMPED FROM OR WELDED TO FACE OF SECTIONS TO RECEIVE STAKES IN STANDARD FINISH OF GREEN PAINT.
- PROVIDE QUALITY, SIZE, GENUS, SPECIES, AND VARIETY OF EXTERIOR PLANTS INDICATED, COMPLYING WITH APPLICABLE REQUIREMENTS IN ANSI Z60.1 "AMERICAN STANDARD FOR NURSERY STOCK." MEASURE ACCORDING TO ANSI Z60.1 STANDARDS.
- MAINTAIN AND ESTABLISH LAWN BY WATERING, FERTILIZING, WEEDING, MOWING, TRIMMING, REPLANTING, AND OTHER OPERATIONS. ROLL, REGRADE, AND REPLANT BARE OR ERODED AREAS AND REMULCH TO PRODUCE A UNIFORMLY SMOOTH LAWN.
- BEGIN LAWN MAINTENANCE IMMEDIATELY AFTER EACH AREA IS PLANTED AND CONTINUE UNTIL ACCEPTABLE LAWN IS ESTABLISHED: A MINIMUM OF 60 DAYS AFTER SUBSTANTIAL COMPLETION.
- PROTECT ADJACENT AND ADJOINING STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND PLANTINGS FROM HYDROSEEDING OVER-SPRAY AND DAMAGE CAUSED BY PLANTING OPERATIONS.
- REMOVE STONES LARGER THAN 1" IN ANY DIMENSION AND STICK, ROOTS, RUBBISH, AND OTHER EXTRANEOUS MATTER FROM SITE.
- MAINTAIN LAWN UNTIL A HEALTHY, UNIFORM, CLOSE STAND OF GRASS HAS BEEN ESTABLISHED, FREE OF WEEDS AND SURFACE IRREGULARITIES, WITH COVERAGE EXCEEDING 90% OVER ANY 10 SFT AND BARE SPOTS DO NOT EXCEED 5 BY 5 INCHES.
- MAINTAIN TREES AND SHRUBS FOR ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION BY PRUNING, CULTIVATING, WATERING, WEEDING, FERTILIZING, RESTORING PLANTING SAUCERS, TIGHTENING AND REPAIRING STAKES AND GUY SUPPORTS, AND RESETTling TO PROPER GRADES OR VERTICAL POSITION, AS REQUIRED TO ESTABLISH HEALTHY VIABLE PLANTINGS. SPRAY AS REQUIRED TO KEEP TREES AND SHRUBS FREE OF INSECTS AND DISEASE.
- REMOVE AND REPLACE DEAD PLANTS IMMEDIATELY. REPLACE PLANTS THAT ARE MORE THAN 25% DEAD OR IN AN UNHEALTHY CONDITION AT END OF WARRANTY PERIOD. A LIMIT OF ONE REPLACEMENT OF EACH PLANT WILL BE REQUIRED, EXCEPT FOR LOSSES OR REPLACEMENTS DUE TO FAILURE TO COMPLY WITH REQUIREMENTS.
- TREES, AND SHRUBS SHALL BE WARRANTED FOR ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION AGAINST DEFECTS INCLUDING DEATH AND UNSATISFACTORY GROWTH, EXCEPT FOR DEFECTS RESULTING FROM INCIDENTS THAT ARE BEYOND CONTRACTORS CONTROL.

NOTE:
STAKING OF BALL AND BURLAP TREES REQUIRED AT THE DISCRETION OF THE CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL STAKING AT END OF ONE YEAR WARRANTY PERIOD.

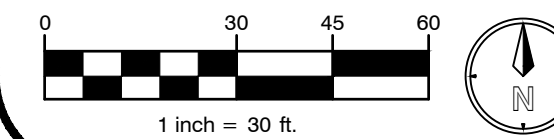


TYPICAL CONIFEROUS TREE PLANTING DETAIL
L1.0 NOT TO SCALE

NOTE:
STAKING OF BALL AND BURLAP TREES REQUIRED AT THE DISCRETION OF THE CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL STAKING AT END OF ONE YEAR WARRANTY PERIOD.



TYPICAL DECIDUOUS TREE PLANTING DETAIL
L1.0 NOT TO SCALE



BENCHMARKS

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ELEV: 903.42
SET MAG NAIL IN SOUTH SIDE OF POWER POLE
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PLANS PREPARED BY:



DRAWN: aw
CHECKED: WLP

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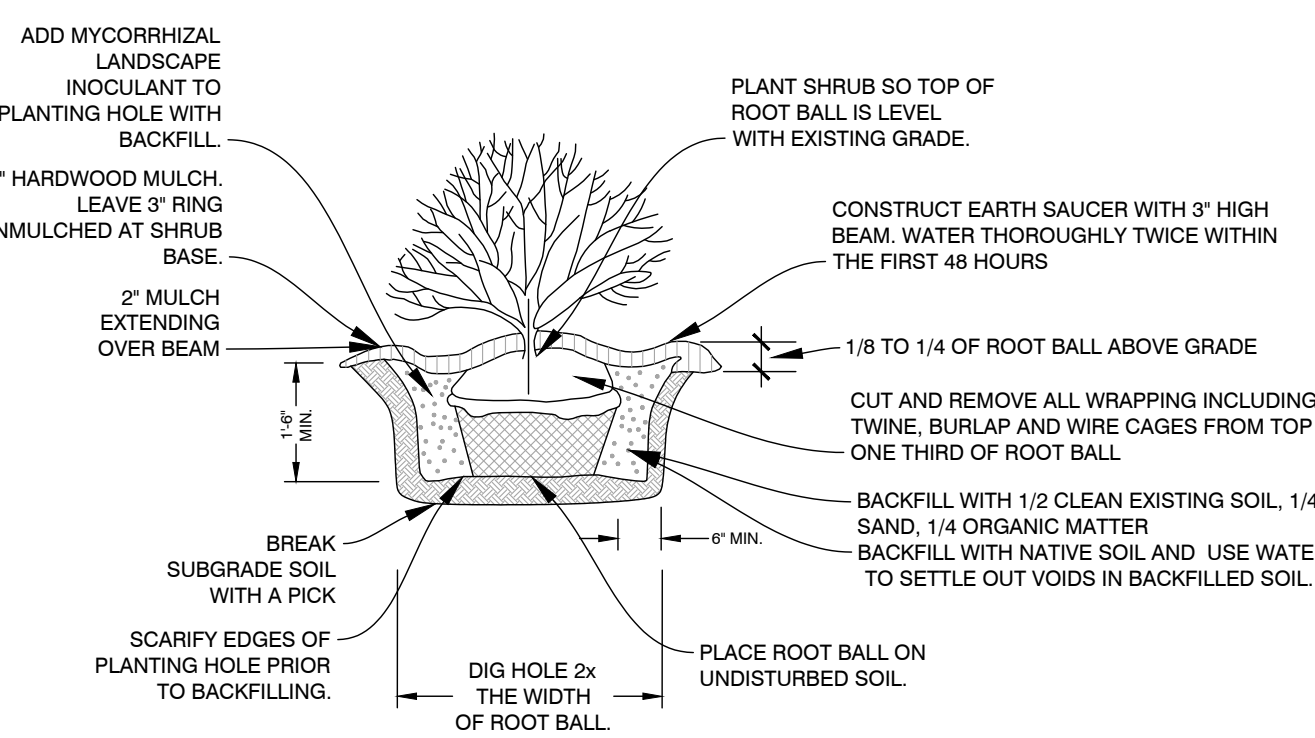
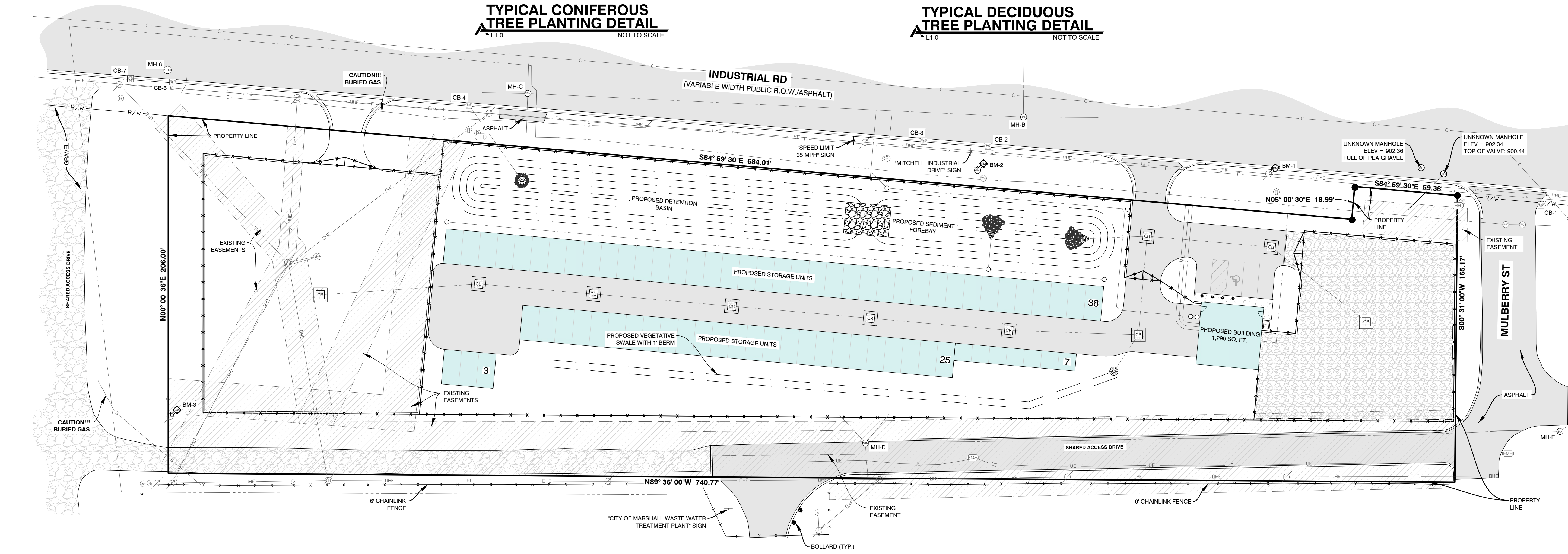
LANDSCAPE PLAN
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SITE ADDRESS:
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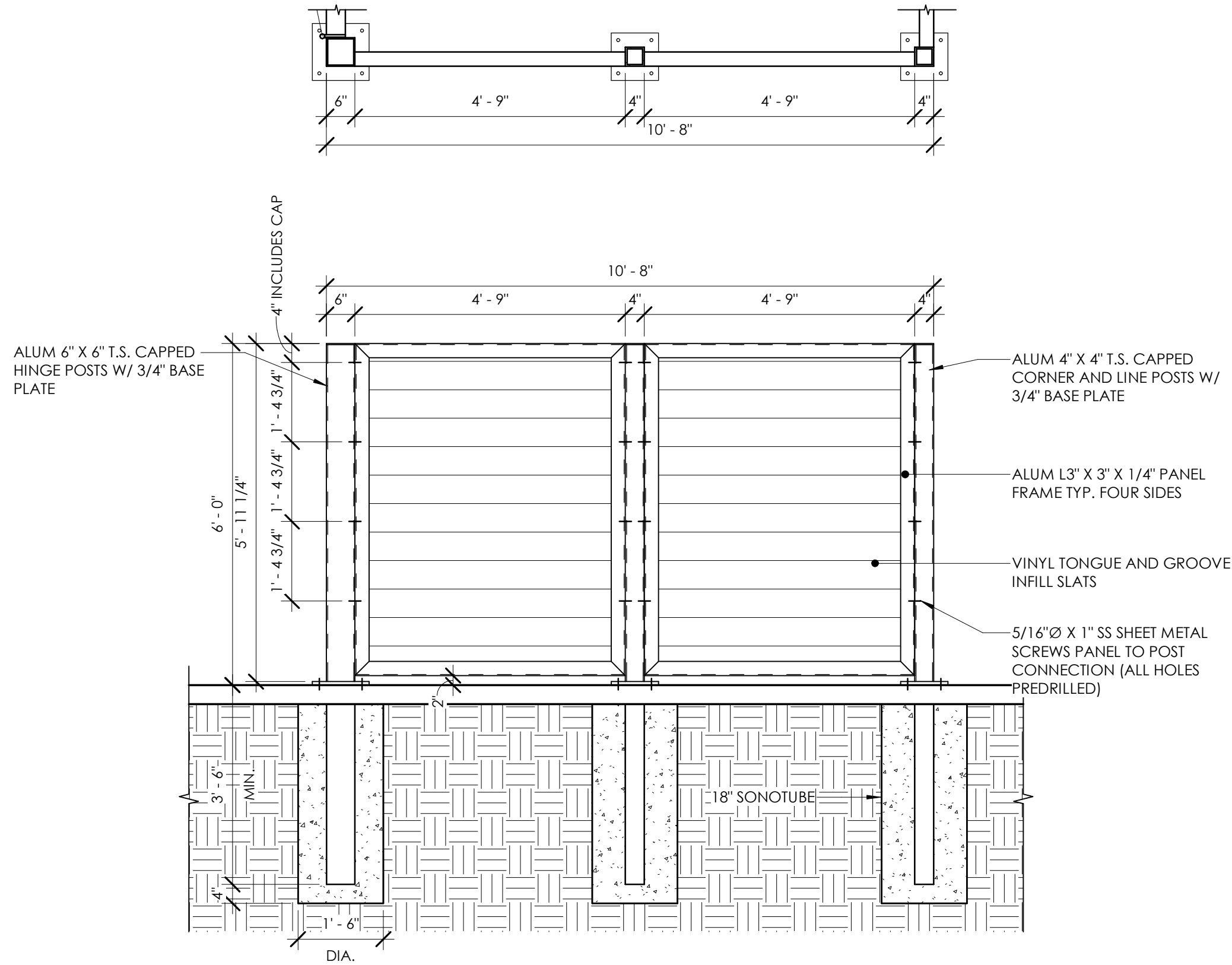
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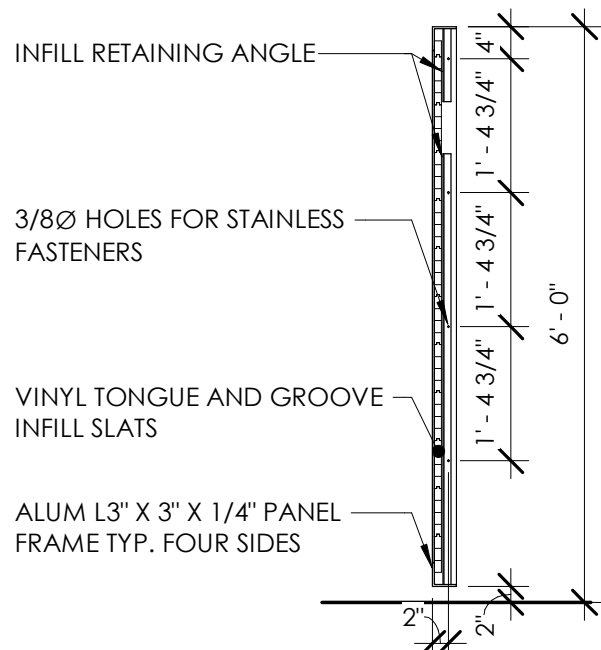
TYPICAL SHRUB PLANTING DETAIL
L1.0 NOT TO SCALE



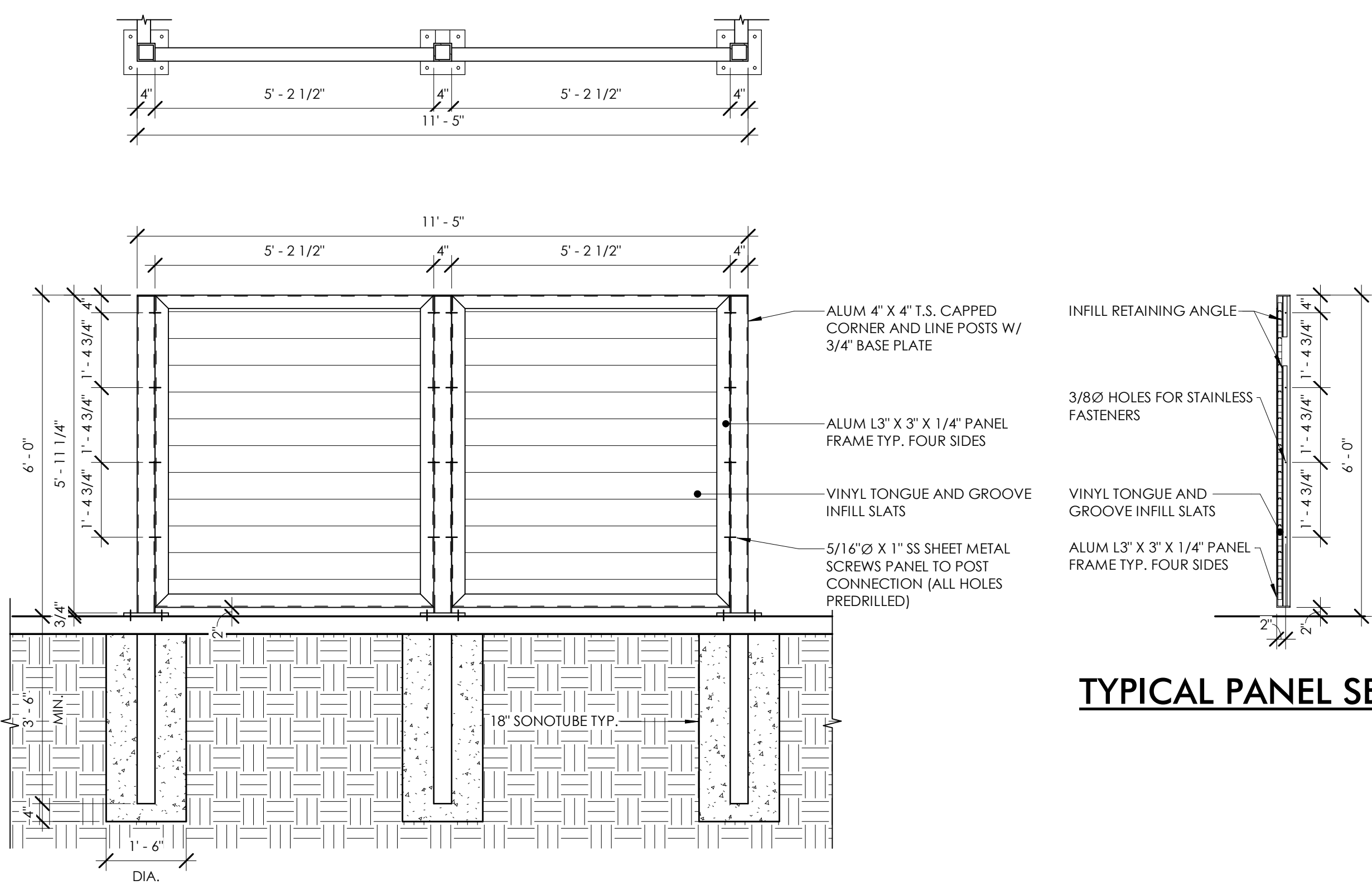
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3 DUMPSTER SIDE ELEVATION AND PLAN
1/2" = 1'-0"

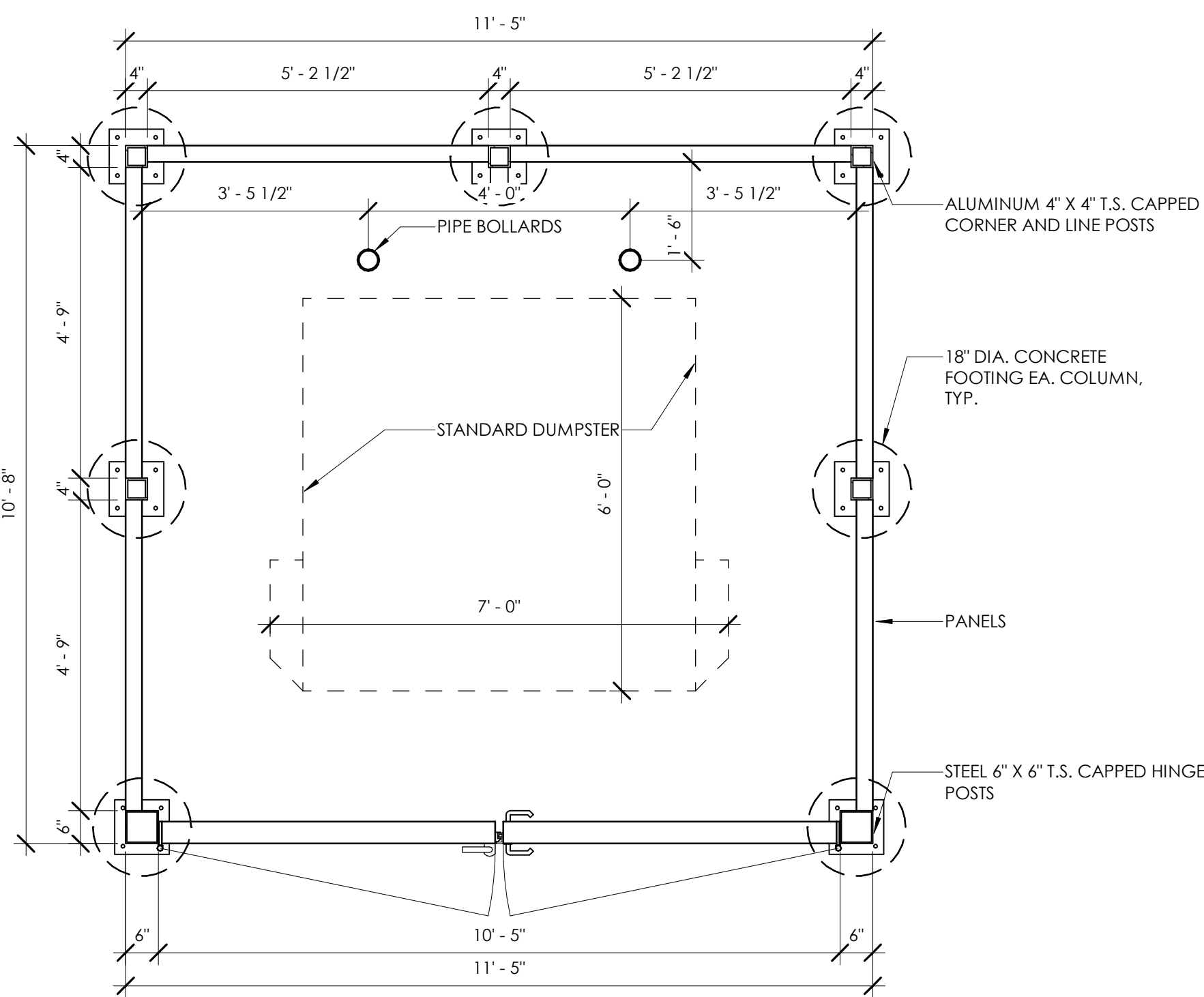
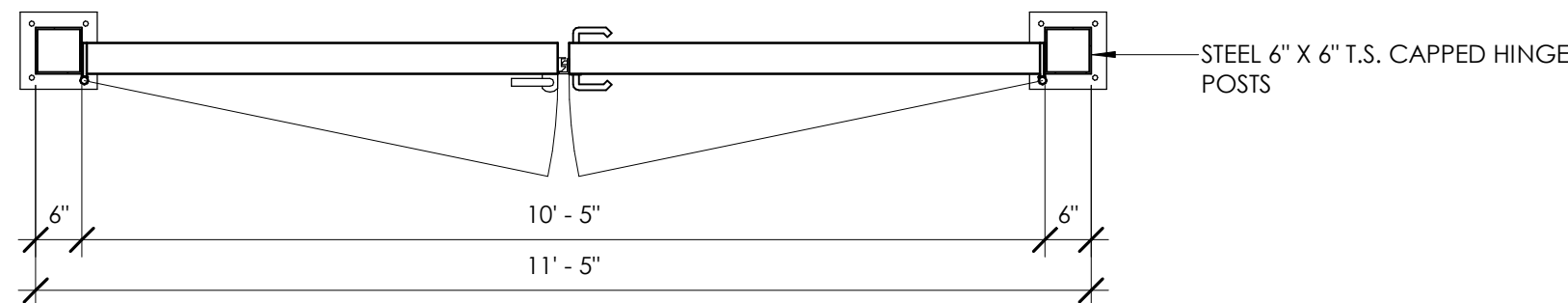


TYPICAL PANEL SECTION

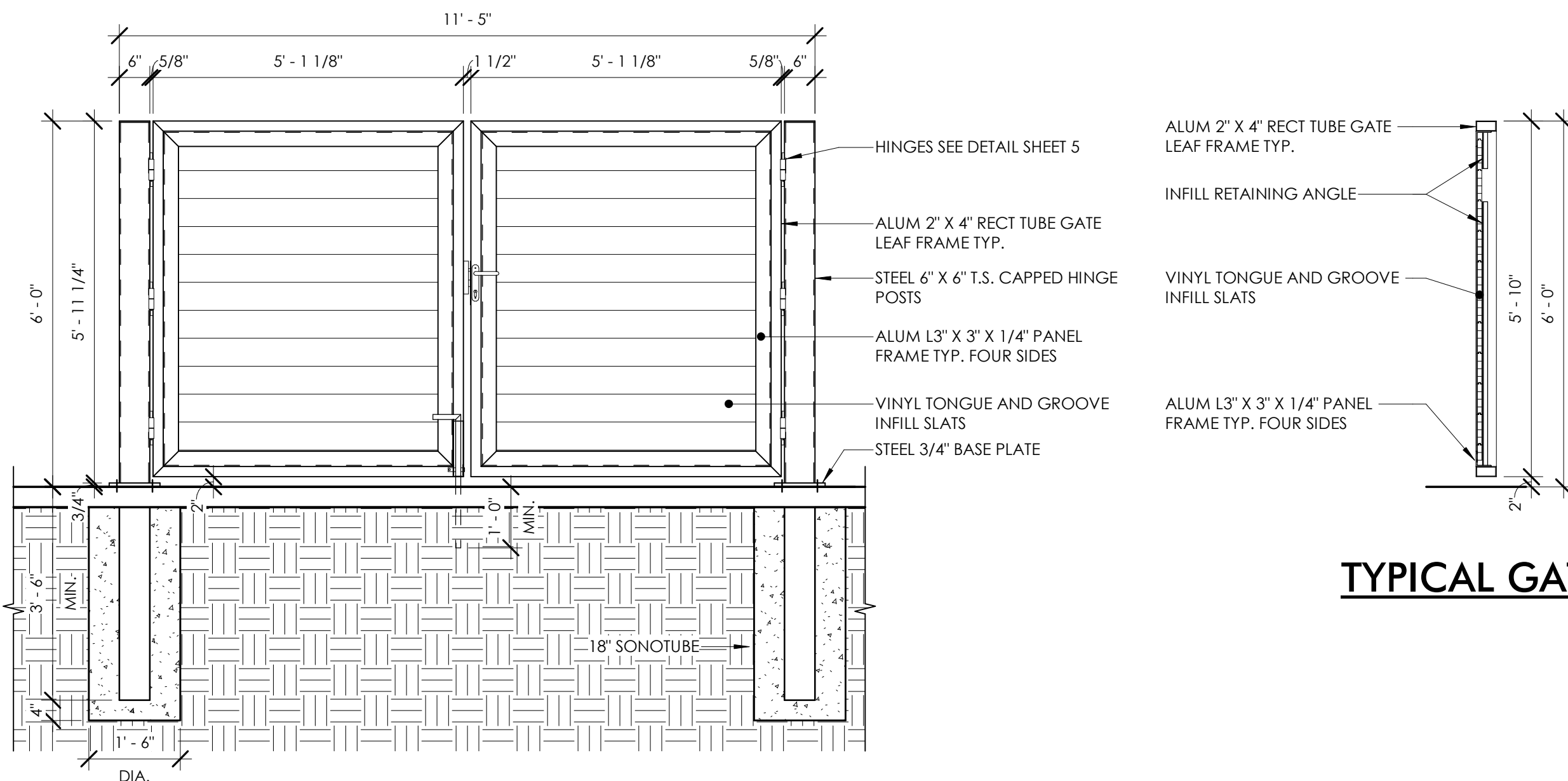


4 DUMPSTER REAR ELEVATION AND PLAN
1/2" = 1'-0"

TYPICAL PANEL SECTION



1 DUMPSTER FLOOR PLAN
1/2" = 1'-0"

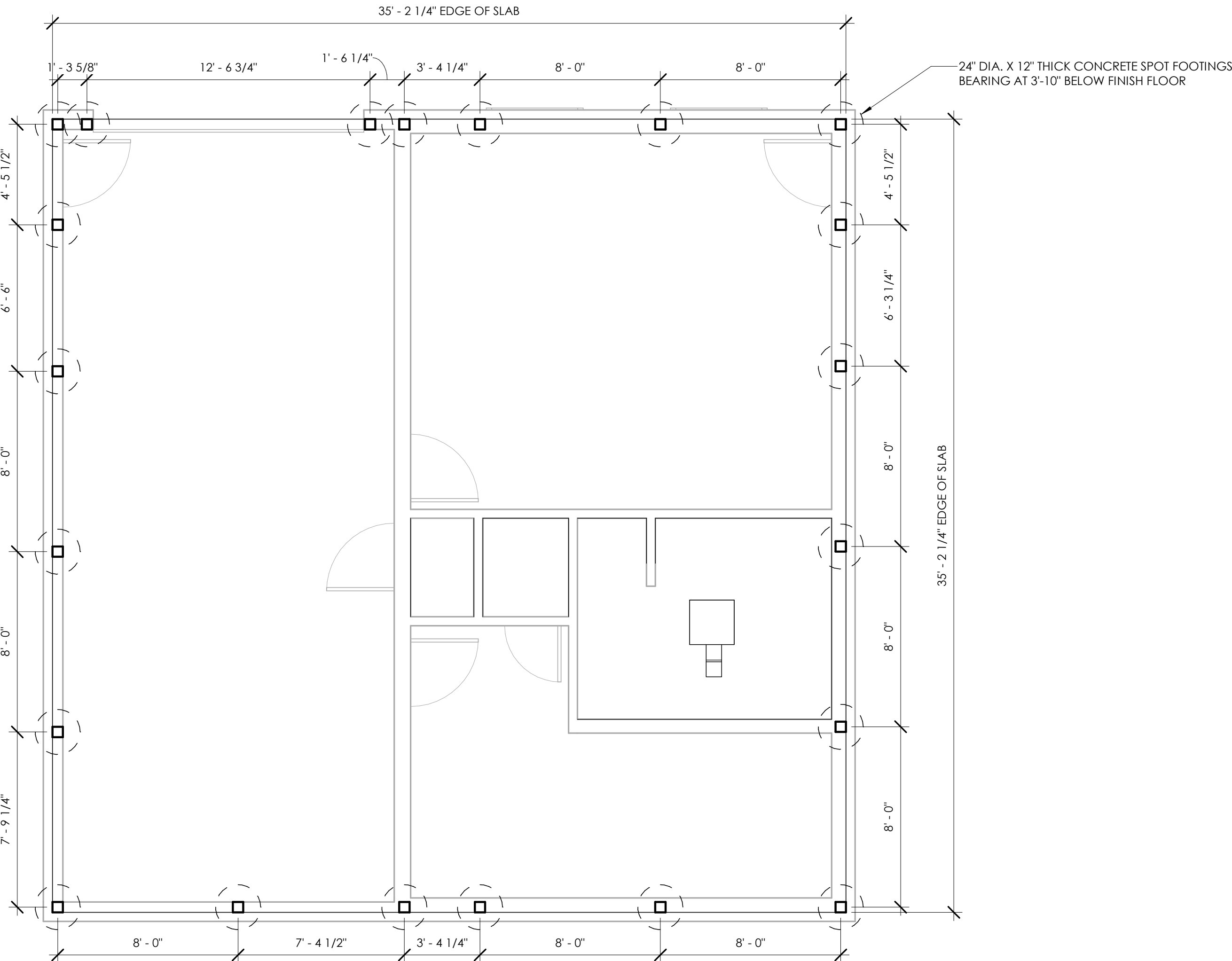


TYPICAL GATE SECTION

SEE SHEET 05 FOR HINGE, LATCH
AND DROP ROD DETAILS

2 DUMPSTER GATE ELEVATION AND PLAN
1/2" = 1'-0"

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



STRUCTURAL NOTES

DESIGN LOADS

THE BELOW DESIGN LOADS ARE BASED ON THE 2021 MICHIGAN BUILDING CODE

- GROUND SNOW LOAD - 30 PSF
- WIND LOAD - 115 MPH
- SEISMIC DESIGN CATEGORY B

SOILS

- FOUNDATIONS ARE DESIGNED BASED ON SOIL BEARING OF 2000 PSF. IF SOIL OF THIS CAPACITY IS NOT FOUND AT THE ELEVATION NOTED, ENLARGE OR LOWER FOOTINGS AT THE DIRECTION OF THE ARCHITECT/ENGINEER.
- PLACE STRUCTURAL BACKFILL MEETING OR EXCEEDING MDOT CLASS II IN LAYERS NOT EXCEEDING 9" LOOSE THICKNESS. COMPACT EACH LAYER TO AT LEAST 95% OF THE MAXIMUM DENSITY PER ASTM D-1557. COMPACTING BY FLOODING IS NOT PERMITTED.
- CENTER FOOTINGS UNDER WALL LOCATION AND COLUMNS UNLESS NOTED.
- EARTH FORMS ARE NOT PERMITTED UNLESS SPECIFICALLY NOTED.
- DISTURBANCE OF THE FOUNDATION BEARING SOILS SHALL BE AVOIDED.
- EXISTING FOUNDATIONS OR FLOOR SLAB ENCOUNTERED DURING SITE GRADINGS AND
- EXCAVATION SHALL BE REMOVED TO A DEPTH OF TWO (2) FEET BELOW NEW CONSTRUCTION. REPLACE WITH STRUCTURAL BACKFILL.
- PROVIDE BOND BREAK MATERIAL BETWEEN ALL GRADE SLABS AND VERTICAL SURFACES.
- BACKFILL AND EXCAVATION PER SPECIFICATIONS.

CONCRETE NOTES

- ACI BUILDING CODE (318); MANUAL OF STANDARD PRACTICE FOR DETAILING (315) FOR THE MIXING, FABRICATION AND PLACEMENT OF CONCRETE, REINFORCING STEEL, AND ACCESSORIES.
- CONCRETE STRENGTH - [STANDARD] WEIGHT CONCRETE:
 - FOOTINGS, WALLS, PIERS: F'C = 3000 MINIMUM PSI
 - CONCRETE FILL ON FORM DECK: F'C = 3500 MINIMUM PSI
 - CONCRETE SLABS ON GRADE: F'C = 3500 MINIMUM PSI
 - EXTERIOR CONCRETE SLABS EXPOSED TO DE-ICING: F'C = 4500 MINIMUM PSI
- REINFORCING - BARS: ASTM A-615 GRADE 60
- WELDED WIRE FABRIC: ASTM A-1064
- CONCRETE SLABS ON GRADE REINFORCING: 6X6 - W1.4XW1.4 WWF UNLESS NOTED. LOCATED IN THE UPPER 1/3 OF SLAB THICKNESS.
- PROVIDE SAWCUT CONTROL JOINTS AT APPROXIMATELY 20' ON CENTER EACH WAY IN SLABS ON GRADE. SEE DETAILS. LOCATE JOINTS UNDER PARTITIONS WHENEVER POSSIBLE. CONSTRUCTION JOINTS AT CONTRACTOR'S OPTION.
- DEPRESS SLABS AS REQUIRED FOR FLOOR FINISHES. SEE ARCHITECT.
- SLOPE FLOORS AS REQUIRED TO FLOOR DRAINS. SEE ARCHITECT.
- FORM ALL CONCRETE.
- PROVIDE CORNER BARS FOR ALL CONTIGUOUS CORNERS.
- WATER/CEMENT RATIO LIMITS:
 - F'C = 3000 PSI 0.68 NON-AIR ENTRAINED, 0.50 AIR ENTRAINED
 - F'C = 3500 PSI 0.62 NON-AIR ENTRAINED, 0.50 AIR ENTRAINED
 - F'C = 4500 PSI 0.4 AIR-ENTRAINED
- SLUMP LIMITS:
 - 3" FOR FOUNDATIONS, 4" FOR SLABS AND WALLS
- PROVIDE AIR ENTRAINED CONCRETE FOR EXTERIOR EXPOSURES.
- CONTRACTOR TO SUBMIT SIZE AND LAYOUT OF CONCRETE WALL SLEEVES, OPENINGS, ETC. FOR REVIEW PRIOR TO CONCRETE PLACEMENT.
- OPENINGS IN THE FLOOR SLAB GREATER THAN 12" SHALL HAVE A MINIMUM OF TWO #5 BARS 30" LONG PLACED DIAGONALLY AT EACH CORNER, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
- WALL FOOTING REINFORCING LAP LENGTH: MINIMUM 27", 21" IF LAPS STAGGERED.
- CONTRACTOR SHALL INCLUDE C-500 XYPEX CONCRETE ADMIXTURE IN THE CONCRETE MIX FOR ELEVATOR PIT.
- X-RAY EX CONC SLAB BEFORE DRILLING CORE THROUGH SLABS FOR MECH PIPING AND ELEC FLOOR BOXES. COORDINATE LOCATIONS WITH ELECTRICAL AND MECHANICAL TRADES.

NEW MASONRY NOTES

- WORK SHALL BE PERFORMED IN ACCORDANCE WITH ACI 530 SPECIFICATIONS.
- MORTAR: ASTM C270, TYPE M BELOW GRADE, TYPE M OR S ABOVE GRADE, TYPE N FOR NON-LOAD BEARING ABOVE GRADE.
- GROUT: ASTM C476, F'C=2000 PSI, TESTED PER ASTM C1019.
- REINFORCING BARS SHALL BE ASTM A-615, GRADE 60, LAP MINIMUM 45 BAR DIAMETERS FOR #5 BARS AND SMALLER, LAP MINIMUM 60 BAR DIAMETERS FOR #6 BARS. HORIZONTAL WALL REINFORCING: PER ASTM A-82, 9 GA. HOT DIPPED GALVANIZED PER ASTM A-153 (1.5 OZ PER SF.), LADDER TYPE, EQUAL TO DUR-A-WAL. BED JOINTS AT 16" O.C. AND AT 1ST AND 2ND BED JOINTS AT BOTTOM OF WALL, TOP OF WALL, ABOVE LINTELS AND BELOW SILLS. REINFORCING CONTINUOUS EXCEPT AT VERTICAL CONTROL JOINTS. SIDE RODS LAPPED A MINIMUM OF 6" AT SPLICES. PROVIDE PREFABRICATED CORNERS AND TEES.
- CONCRETE MASONRY UNITS: ASTM C-90, GRADE N, TWO CORE TYPE FOR REINFORCED MASONRY. DESIGN BASED ON F'M = 1900 PSI.
- VERTICAL WALL REINFORCING: 1 - #5 EACH SIDE OF MASONRY OPENINGS, CONTROL JOINTS AND AS SHOWN, IN GROUT FILLED BLOCK CORES.
- VERTICAL BAR REINFORCING: PLACE ACCURATELY AND MECHANICALLY HOLD IN POSITION WHILE GROUTING. GROUTING SHALL BE DONE IN LIFTS NOT EXCEEDING 4'-0" AND MECHANICALLY CONSOLIDATED IN PLACE; CONSOLIDATION BY RODDING NOT ACCEPTABLE.
- PROVIDE COMPLETELY GROUTED UNITS:
 - UNDER CAST-IN-PLACE CONCRETE FLOOR BEARING
 - UNDER BRICK VENEER BEARING
 - UNDER ANY CHANGE OF WALL THICKNESS, I.E.: 8" ON TOP OF 12"
 - UNDER STEEL JOIST OR BEAM BEARING.
- PROVIDE LINTELS FOR OPENINGS IN MASONRY WALLS OVER 8" WIDE. SEE SCHEDULE(S).
- RUNNING BOND MASONRY SHALL BE BUILT INTEGRALLY AT WALL CORNERS UNLESS INDICATED OTHERWISE.
- BLOCK CONTROL JOINTS SHALL BE "MICHIGAN" TYPE UNLESS NOTED OTHERWISE. HORIZONTAL REINFORCING SHALL BE DISCONTINUOUS AT CONTROL JOINTS.
- TEMPORARY WALL BRACING IS THE CONTRACTORS RESPONSIBILITY. CONFORM TO APPLICABLE CODES AND STANDARDS.
- ANCHOR CONTINUOUS WOOD BLOCKING TO MASONRY WITH MINIMUM 1/2" ANCHOR RODS 8" LONG PLUS 2" HOOK AT 32" O.C. UNLESS NOTED OTHERWISE. (COORDINATE WITH WOOD FRAMING NOTES).

STRUCTURAL STEEL

- STRUCTURAL STEEL: FABRICATED AND ERECTED PER THE AISC MANUAL OF STEEL CONSTRUCTION.
W-BEAMS: ASTM A-992 GR. 50.
HSS: ASTM A-500 GRADE B.
STEEL PIPE: ASTM A53, TYPE E, GRADE B.
ALL OTHER SHAPES: ASTM A-36.
ANCHOR RODS: 36 KSI, ASTM F-1554.
- WELDS: TO BE 70 KSI LOW HYDROGEN FILLER METAL PLACED BY WELDERS CERTIFIED IN WELD AND POSITION BY AWS D1.1, STRUCTURAL WELDING CODE. ALL WELDS SHALL BE APPLIED TO SURFACES FREE OF GREASE, PAINT, DIRT, OR OTHER HARMFUL MATERIAL.
- BOLTED CONNECTIONS: 3/4" DIAMETER A-325 BOLTS WITH HEAVY HEX NUTS UNLESS NOTED. DESIGNED FOR BEARING CONNECTIONS, TIGHTENED TO SNUG TIGHT CRITERIA UNLESS NOTED OTHERWISE.
- STEEL PRIMER: RUST INHIBITING ALKYD INDUSTRIAL PRIMER, SSPC 6, 1.5 MIL MINIMUM THICKNESS EXCEPT STEEL WHICH WILL RECEIVE SPRAYED-ON FIRE PROOFING.
- BEAM CONNECTIONS SHALL BE DESIGNED TO SUPPORT ONE-HALF THE TOTAL UNIFORM LOAD CAPACITY PER AISC. WHEREVER POSSIBLE, EXTEND CONNECTIONS FULL DEPTH OF BEAM.
- SHEAR TAB CONNECTIONS TO STEEL BEAMS ARE NOT ACCEPTABLE UNLESS BEAMS OF EQUAL DEPTHS ARE FASTENED ON OPPOSITE SIDES OF THE STEEL BEAM.
- BEAM BEARING PLATES ARE TO BE LOCATED ON CENTER OF WALL UNLESS NOTED OTHERWISE. BEAR BEAM FULL LENGTH OF BEARING PLATES.
- PROVIDE FITTED STIFFENER PLATES EACH SIDE FOR ALL CONDITIONS WHERE BEAMS BEAR ON COLUMNS, BEAMS BEAR ON BEAMS, BEAMS HANG FROM BEAMS, OR COLUMNS BEAR ON BEAMS. STIFFENER PLATES MINIMUM 1/4" THICK.
- TEMPORARY BRACING IS TO BE MAINTAINED UNTIL PERMANENT CONNECTIONS ARE COMPLETED, APPROVED, AND SUPPORTED SLABS ARE CAST AND CURED.
- METAL DECK**
 - ROOF DECK: 1 1/2", 20 GAUGE, WIDE RIB, MINIMUM 3 SPANS. DESIGNED AND FABRICATED PER STEEL DECK INSTITUTE SPECIFICATIONS (SDI). WELD TO SUPPORTS WITH 5/8" DIAMETER PUDDLE WELDS 12" SPACING. FASTEN SIDE LAPS WITH #10 SCREWS AT 3'-0" MAXIMUM.
 - DECK FINISH: PRIME PAINTED.
 - ROOF DECK OPENINGS LARGER THAN 12" SHALL BE REINFORCED WITH A STEEL ROOF FRAME. SEE ROOF FRAME DETAIL ON DRAWINGS.
 - FORM DECK: 1.5C20; S MIN = .226 IN3/FT., I MIN = .216 IN4/FT GALVANIZED, CAPABLE OF SUPPORTING WET CONCRETE LOAD WITHOUT SHORING. WELD TO STEEL PER MANUFACTURER'S RECOMMENDATIONS.
 - PROVIDE 20 GAUGE CLOSURES FOR CUT OUTS AT OPENINGS AND INTERFERENCE WITH STRUC-TURAL MEMBERS. PROVIDE 20 GAUGE THICK COVER PLATE SCREW FASTENED TO TOP OF METAL DECK, EACH SIDE OF JOINT WHERE DECK DIRECTION CHANGES. PROVIDE 18 GAUGE BENT METAL SCREED AT ALL SLAB EDGES AND OPENINGS. NOTCH AS REQUIRED FOR OTHER MISCELLANEOUS STEEL ATTACHMENTS.

WOOD FRAMING

- DIMENSIONAL FRAMING MATERIAL SHALL BEAR THE GRADE MARK OF AN ALSC APPROVED AGENCY, KILN DRIED, AND HAVE THE FOLLOWING MINIMUM STRESS GRADE:
2X4 STUD WALLS: SPRUCE-PINE-FIR, CONSTRUCTION GRADE OR BETTER.
2X6 AND LARGER: HEM-FIR #2 OR BETTER.
- ANCHOR CONTINUOUS BLOCKING TO MASONRY WITH MINIMUM 1/2" ANCHOR BOLTS 8" LONG PLUS 2" HOOK AT 32" O.C. UNLESS NOTED OTHERWISE.
- ROOF RAFTERS ANCHORED TO CONTIGUOUS PLATES WITH ONE SIMPSON H3 ANCHOR UNLESS NOTED OTHERWISE.
- WOOD TO BE IN CONTACT WITH CONCRETE, MASONRY, OR GRADE SHALL BE PRESSURE TREATED.

PLYWOOD SHEATHING

- PLYWOOD FOR ROOF DECK SHALL BE 5/8" THICK APA RATED SHEATHING, (24/16).
- PLYWOOD FOR FLOORS SHALL BE 3/4" THICK APA RATED SHEATHING, (32/16).
- FLOOR AND ROOF SHEATHING FASTENED WITH 8D COMMON NAILS AT 6" O.C. AT PANEL EDGES AND INTERMEDIATE SUPPORTS UNLESS NOTED OTHERWISE. PROVIDE MINIMUM 2X6 BLOCKING AT VALLEY AND HIP LINES FOR UNSUPPORTED EDGES AS REQUIRED.
- PANELS SHALL BE LAID IN A STAGGERED PATTERN, CONTINUOUS OVER TWO SPANS. STRUCTURAL COMPOSITE LUMBER
- WOOD JOISTS: IN ACCORDANCE WITH APA, EWS STANDARD PRI-400, STANDARD FOR APA EWS I-JOISTS (PRI). DEPTH AND PRI GRADE AS INDICATED ON THE DRAWINGS. INSTALL BLOCKING PANELS, RIM BOARDS, FILLER BLOCKS IN ACCORDANCE WITH APA.
- LAMINATED VENEER LUMBER (LVL):
FB = 2,600 PSI (BOTH TENSION & COMPRESSION)
FC (PERPENDICULAR) = 750 PSI
FC (PARALLEL) = 2,310 PSI
FV = 285 PSI
E = 1.9X106 PSI

LIGHT GAGE METAL FRAMING

- ALL STUDS SHALL BE FORMED FROM HOT-DIPPED GALVANIZED STEEL, G-60 COATING, CORRESPONDING TO THE REQUIREMENTS OF ASTM A653, STRUCTURAL QUALITY, GRADE 33, WITH A MINIMUM YIELD OF 33 KSI. MEMBERS DESIGNED PER AMERICAN IRON AND STEEL INSTITUTE (AISI) SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS". MEMBER DESIGNATIONS IN ACCORDANCE WITH THE STEEL STUD MANUFACTURERS ASSOCIATION (SSMA) I.E. 600-S-162-33
- MEMBER SIZES INDICATED ON THE DRAWINGS AND CAPABLE OF SUPPORTING THE AS INDICATED IN GENERAL NOTE "GENERAL 1.E" FOR WALL COMPONENTS AND CLADDINGS PRESSURES.
- MAX. ALLOWABLE DEFLECTION: L/360; FLOOR JOISTS.
- CONTRACTOR TO BE RESPONSIBLE FOR FINAL DESIGN OF LIGHT GAGE FRAMING MEMBERS, CONNECTIONS AND COMPONENTS. SHOP DRAWINGS SHALL BE PREPARED UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MICHIGAN AND SUBMITTED TO THE ARCHITECT/ENGINEER FOR REVIEW.

ARCHITECTURE/INTERIOR DESIGN

Driven Design Studio PLLC
117 West Michigan Avenue
Battle Creek, MI 49017
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ENGINEER

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PROJECT NAME

TIGER'S TOWING

PROJECT ADDRESS

775 INDUSTRIAL RD, MARSHALL, MI

ISSUE/REVISION

CD SET - 10/13/2025

DRAWN BY

CMN

DATE

10/13/2025 4:41:54 PM

SCALE

1/4" = 1'-0"

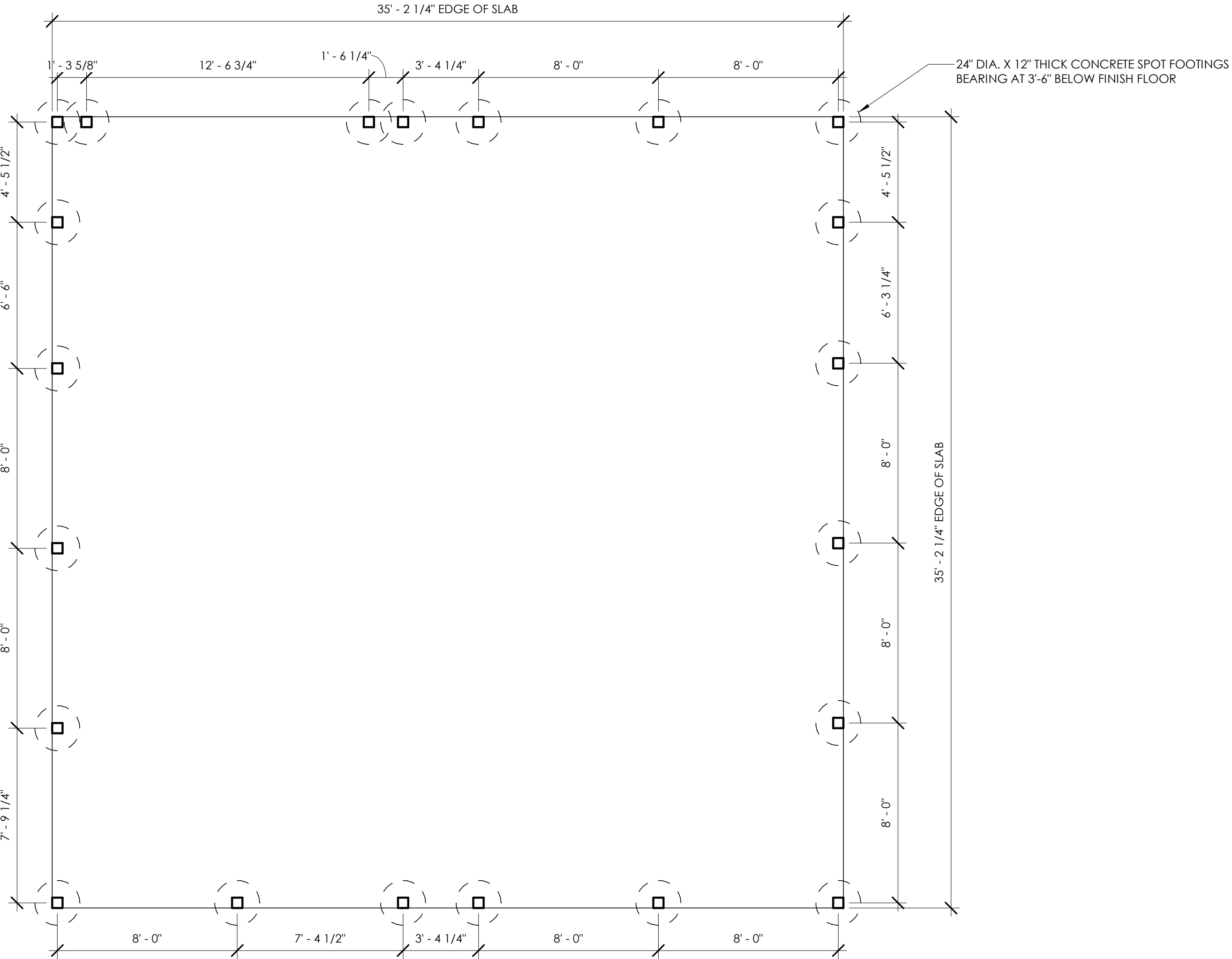
STAMP

PROJECT NUMBER

2025.053

STRUCTURAL FOUNDATION PLAN

S100



STRUCTURAL NOTES

- DESIGN LOADS**
THE BELOW DESIGN LOADS ARE BASED ON THE 2021 MICHIGAN BUILDING CODE
A. GROUND SNOW LOAD - 30 PSF
B. WIND LOAD - 115 MPH
C. SEISMIC DESIGN CATEGORY B

SOILS
1. FOUNDATIONS ARE DESIGNED BASED ON SOIL BEARING OF 2000 PSF. IF SOIL OF THIS CAPACITY IS NOT FOUND AT THE ELEVATION NOTED, ENLARGE OR LOWER FOOTINGS AT THE DIRECTION OF THE ARCHITECT/ENGINEER.
2. PLACE STRUCTURAL BACKFILL MEETING OR EXCEEDING MDOT CLASS II IN LAYERS NOT EXCEEDING 9" LOOSE THICKNESS. COMPACT EACH LAYER TO AT LEAST 95% OF THE MAXIMUM DENSITY PER ASTM D-1557. COMPACTING BY FLOODING IS NOT PERMITTED.
3. CENTER FOOTINGS UNDER WALL LOCATION AND COLUMNS UNLESS NOTED.
4. EARTH FORMS ARE NOT PERMITTED UNLESS SPECIFICALLY NOTED.
5. DISTURBANCE OF THE FOUNDATION BEARING SOILS SHALL BE AVOIDED.
6. EXISTING FOUNDATIONS OR FLOOR SLAB ENCOUNTERED DURING SITE GRADINGS AND
7. EXCAVATION SHALL BE REMOVED TO A DEPTH OF TWO (2) FEET BELOW NEW CONSTRUCTION. REPLACE WITH STRUCTURAL BACKFILL.
8. PROVIDE BOND BREAK MATERIAL BETWEEN ALL GRADE SLABS AND VERTICAL SURFACES.
9. BACKFILL AND EXCAVATION PER SPECIFICATIONS.

CONCRETE NOTES
10. 1. ACI BUILDING CODE (318); MANUAL OF STANDARD PRACTICE FOR DETAILING (315) FOR THE MIXING, FABRICATION AND PLACEMENT OF CONCRETE, REINFORCING STEEL, AND ACCESSORIES.
11. CONCRETE STRENGTH - [STANDARD] WEIGHT CONCRETE:
A. FOOTINGS, WALLS, PIERS: F'C = 3000 MINIMUM PSI
B. CONCRETE FILL ON FORM DECK: F'C = 3500 MINIMUM PSI
C. CONCRETE SLABS ON GRADE: F'C = 3500 MINIMUM PSI
D. EXTERIOR CONCRETE SLABS EXPOSED TO DE-ICING: F'C = 4500 MINIMUM PSI
12. REINFORCING - BARS: ASTM A-615 GRADE 60
13. WELDED WIRE FABRIC: ASTM A-1064
14. CONCRETE SLABS ON GRADE REINFORCING: 6X6 - W1.4XW1.4 WWF UNLESS NOTED. LOCATED IN THE UPPER 1/3 OF SLAB THICKNESS.
15. PROVIDE SAWCUT CONTROL JOINTS AT APPROXIMATELY 20' ON CENTER EACH WAY IN SLABS ON GRADE. SEE DETAILS. LOCATE JOINTS UNDER PARTITIONS WHENEVER POSSIBLE.
CONSTRUCTION JOINTS AT CONTRACTOR'S OPTION
16. DEPRESS SLABS AS REQUIRED FOR FLOOR FINISHES. SEE ARCHITECT.
17. SLOPE FLOORS AS REQUIRED TO FLOOR DRAINS. SEE ARCHITECT.
18. FORM ALL CONCRETE.
19. PROVIDE CORNER BARS FOR ALL CONTIGUOUS CORNERS.
20. WATER/CEMENT RATIO LIMITS:
A. F'C = 3000 PSI 0.68 NON-AIR ENTRAINED, 0.50 AIR ENTRAINED
B. F'C = 3500 PSI 0.62 NON-AIR ENTRAINED, 0.50 AIR-ENTRAINED
C. F'C = 4500 PSI 0.4 AIR-ENTRAINED
21. SLUMP LIMITS:
22. 3" FOR FOUNDATIONS, 4" FOR SLABS AND WALLS
23. PROVIDE AIR ENTRAINED CONCRETE FOR EXTERIOR EXPOSURES.
24. CONTRACTOR TO SUBMIT SIZE AND LAYOUT OF CONCRETE WALL SLEEVES, OPENINGS, ETC. FOR REVIEW PRIOR TO CONCRETE PLACEMENT.
25. OPENINGS IN THE FLOOR SLAB GREATER THAN 12" SHALL HAVE A MINIMUM OF TWO #5 BARS 30" LONG PLACED DIAGONALLY AT EACH CORNER, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
26. WALL FOOTING REINFORCING LAP LENGTH: MINIMUM 27", 21" IF LAPS STAGGERED.
27. CONTRACTOR SHALL INCLUDE C-500 XYPEX CONCRETE ADMIXTURE IN THE CONCRETE MIX FOR ELEVATOR PIT.
28. X-RAY EX CONC SLAB BEFORE DRILLING CORE THROUGH SLABS FOR MECH PIPING AND ELEC FLOOR BOXES. COORDINATE LOCATIONS WITH ELECTRICAL AND MECHANICAL TRADES.

NEW MASONRY NOTES
29. WORK SHALL BE PERFORMED IN ACCORDANCE WITH ACI 530 SPECIFICATIONS.
30. MORTAR: ASTM C270, TYPE M BELOW GRADE, TYPE M OR S ABOVE GRADE, TYPE N FOR NON-LOAD BEARING ABOVE GRADE.
31. GROUT: ASTM C476, F'C=2000 PSI, TESTED PER ASTM C1019.
32. REINFORCING BARS SHALL BE ASTM A-615, GRADE 60, LAP MINIMUM 45 BAR DIAMETERS FOR #5 BARS AND SMALLER, LAP MINIMUM 60 BAR DIAMETERS FOR #6 BARS. HORIZONTAL WALL REINFORCING: PER ASTM A-82, 9 GA. HOT DIPPED GALVANIZED PER ASTM A-153 (1.5 OZ PER SF.), LADDER TYPE, EQUAL TO DUR-A-WAL. BED JOINTS AT 16" O.C. AND AT 1ST AND 2ND BED JOINTS AT BOTTOM OF WALL, TOP OF WALL, ABOVE LINTELS AND BELOW SILLS. REINFORCING CONTINUOUS EXCEPT AT VERTICAL CONTROL JOINTS. SIDE RODS LAPPED A MINIMUM OF 6" AT SPLICES. PROVIDE PREFABRICATED CORNERS AND TEES.
33. CONCRETE MASONRY UNITS: ASTM C-90, GRADE N, TWO CORE TYPE FOR REINFORCED MASONRY. DESIGN BASED ON F'M = 1900 PSI.
34. VERTICAL WALL REINFORCING: 1 - #5 EACH SIDE OF MASONRY OPENINGS, CONTROL JOINTS AND AS SHOWN, IN GROUT FILLED BLOCK CORES.
35. VERTICAL BAR REINFORCING: PLACE ACCURATELY AND MECHANICALLY HOLD IN POSITION WHILE GROUTING. GROUTING SHALL BE DONE IN LIFTS NOT EXCEEDING 4'-0" AND MECHANICALLY CONSOLIDATED IN PLACE; CONSOLIDATION BY RODDING NOT ACCEPTABLE.
36. PROVIDE COMPLETELY GROUTED UNITS:
A. UNDER CAST-IN-PLACE CONCRETE FLOOR BEARING
B. UNDER BRICK VENEER BEARING
C. UNDER ANY CHANGE OF WALL THICKNESS, I.E.: 8" ON TOP OF 12"
D. UNDER STEEL JOIST OR BEAM BEARING.
37. PROVIDE LINTELS FOR OPENINGS IN MASONRY WALLS OVER 8" WIDE. SEE SCHEDULE(S).
38. RUNNING BOND MASONRY SHALL BE BUILT INTEGRALLY AT WALL CORNERS UNLESS INDICATED OTHERWISE.
39. BLOCK CONTROL JOINTS SHALL BE "MICHIGAN" TYPE UNLESS NOTED OTHERWISE. HORIZONTAL REINFORCING SHALL BE DISCONTINUOUS AT CONTROL JOINTS.
40. TEMPORARY WALL BRACING IS THE CONTRACTORS RESPONSIBILITY. CONFORM TO APPLICABLE CODES AND STANDARDS.
41. ANCHOR CONTINUOUS WOOD BLOCKING TO MASONRY WITH MINIMUM 1/2" ANCHOR RODS 8" LONG PLUS 2" HOOK AT 32" O.C., UNLESS NOTED OTHERWISE. (COORDINATE WITH WOOD FRAMING NOTES).

STRUCTURAL STEEL
42. 1STRUCTURAL STEEL: FABRICATED AND ERECTED PER THE AISC MANUAL OF STEEL CONSTRUCTION.
W-BEAMS: ASTM A-992 GR. 50.
HSS: ASTM A-500 GRADE B.
STEEL PIPE: ASTM A53, TYPE E, GRADE B.
ALL OTHER SHAPES: ASTM A-36.
ANCHOR RODS: 36 KSI, ASTM F-1554.
43. WELDS: TO BE 70 KSI LOW HYDROGEN FILLER METAL PLACED BY WELDERS CERTIFIED IN WELD AND POSITION BY AWS D1.1, STRUCTURAL WELDING CODE. ALL WELDS SHALL BE APPLIED TO SURFACES FREE OF GREASE, PAINT, DIRT, OR OTHER HARMFUL MATERIAL.
44. BOLTED CONNECTIONS: 3/4" DIAMETER A-325 BOLTS WITH HEAVY HEX NUTS UNLESS NOTED. DESIGNED FOR BEARING CONNECTIONS, TIGHTENED TO SNUG TIGHT CRITERIA UNLESS NOTED OTHERWISE.
45. STEEL PRIMER: RUST INHIBITING ALKYD INDUSTRIAL PRIMER, SSPC 6, 1.5 MIL MINIMUM THICKNESS EXCEPT STEEL WHICH WILL RECEIVE SPRAYED-ON FIRE PROOFING.
46. BEAM CONNECTIONS SHALL BE DESIGNED TO SUPPORT ONE-HALF THE TOTAL UNIFORM LOAD CAPACITY PER AISC, WHEREVER POSSIBLE. EXTEND CONNECTIONS FULL DEPTH OF BEAM.
47. SHEAR TAB CONNECTIONS TO STEEL BEAMS ARE NOT ACCEPTABLE UNLESS BEAMS OF EQUAL DEPTHS ARE FASTENED ON OPPOSITE SIDES OF THE STEEL BEAM.
48. BEAM BEARING PLATES ARE TO BE LOCATED ON CENTER OF WALL UNLESS NOTED OTHERWISE. BEAR BEAM FULL LENGTH OF BEARING PLATES.
49. PROVIDE FITTED STIFFENER PLATES EACH SIDE FOR ALL CONDITIONS WHERE BEAMS BEAR ON COLUMNS, BEAMS BEAR ON BEAMS, BEAMS HANG FROM BEAMS, OR COLUMNS BEAR ON BEAMS. STIFFENER PLATES MINIMUM 1/4" THICK.
50. TEMPORARY BRACING IS TO BE MAINTAINED UNTIL PERMANENT CONNECTIONS ARE COMPLETED, APPROVED, AND SUPPORTED SLABS ARE CAST AND CURED.
METAL DECK
51. ROOF DECK: 1½", 20 GAUGE, WIDE RIB, MINIMUM 3 SPANS. DESIGNED AND FABRICATED PER STEEL DECK INSTITUTE SPECIFICATIONS (SDI). WELD TO SUPPORTS WITH 5/8" DIAMETER PUDDLE WELDS 12" SPACING. FASTEN SIDE LAPS WITH #10 SCREWS AT 3'-0" MAXIMUM.
52. DECK FINISH: PRIME PAINTED.
53. ROOF DECK OPENINGS LARGER THAN 12" SHALL BE REINFORCED WITH A STEEL ROOF FRAME. SEE ROOF FRAME DETAIL ON DRAWINGS.
54. FORM DECK: 1.5C20; S MIN = .226 IN3/FT., I MIN = .216 IN4/FT GALVANIZED, CAPABLE OF SUPPORTING WET CONCRETE LOAD WITHOUT SHORING. WELD TO STEEL PER MANUFACTURER'S RECOMMENDATIONS.
55. PROVIDE 20 GAUGE CLOSURES FOR CUT OUTS AT OPENINGS AND INTERFERENCE WITH STRUC-TURAL MEMBERS. PROVIDE 20 GAUGE THICK COVER PLATE SCREW FASTENED TO TOP OF METAL DECK, EACH SIDE OF JOINT WHERE DECK DIRECTION CHANGES. PROVIDE 18 GAUGE BENT METAL SCREED AT ALL SLAB EDGES AND OPENINGS. NOTCH AS REQUIRED FOR OTHER MISCELLANEOUS STEEL ATTACHMENTS.

WOOD FRAMING
56. DIMENSIONAL FRAMING MATERIAL SHALL BEAR THE GRADE MARK OF AN ALSC APPROVED AGENCY, KILN DRIED, AND HAVE THE FOLLOWING MINIMUM STRESS GRADE:
2X4 STUD WALLS: SPRUCE-PINE-FIR, CONSTRUCTION GRADE OR BETTER.
2X6 AND LARGER: HEM-FIR #2 OR BETTER.
57. ANCHOR CONTINUOUS BLOCKING TO MASONRY WITH MINIMUM 1/2" ANCHOR BOLTS 8" LONG PLUS 2" HOOK AT 32" O.C., UNLESS NOTED OTHERWISE.
58. ROOF RAFTERS ANCHORED TO CONTINUOUS PLATES WITH ONE SIMPSON H3 ANCHOR UNLESS NOTED OTHERWISE.
59. WOOD TO BE IN CONTACT WITH CONCRETE, MASONRY, OR GRADE SHALL BE PRESSURE TREATED.

PLYWOOD SHEATHING
60. PLYWOOD FOR ROOF DECK SHALL BE 5/8" THICK APA RATED SHEATHING, (24/16).
61. PLYWOOD FOR FLOORS SHALL BE 3/4" THICK APA RATED SHEATHING, (32/16).
62. FLOOR AND ROOF SHEATHING FASTENED WITH 8D COMMON NAILS AT 6" O.C. AT PANEL EDGES AND INTERMEDIATE SUPPORTS UNLESS NOTED OTHERWISE. PROVIDE MINIMUM 2X6 BLOCKING AT VALLEY AND HIP LINES FOR UNSUPPORTED EDGES AS REQUIRED.
63. PANELS SHALL BE LAID IN A STAGGERED PATTERN, CONTINUOUS OVER TWO SPANS. STRUCTURAL COMPOSITE LUMBER
64. WOOD JOISTS: IN ACCORDANCE WITH APA, EWS STANDARD PRI-400, STANDARD FOR APA EWS I-JOISTS (PRI). DEPTH AND PRI GRADE AS INDICATED ON THE DRAWINGS. INSTALL BLOCKING PANELS, RIM BOARDS, FILLER BLOCKS IN ACCORDANCE WITH APA.
65. LAMINATED VENEER LUMBER (LVL):
FB = 2,600 PSI (BOTH TENSION & COMPRESSION)
FC (PERPENDICULAR) = 750 PSI
FC (PARALLEL) = 2,310 PSI
FV = 285 PSI
E = 1.9X106 PSI

LIGHT GAGE METAL FRAMING
66. ALL STUDS SHALL BE FORMED FROM HOT-DIPPED GALVANIZED STEEL, G-60 COATING, CORRESPONDING TO THE REQUIREMENTS OF ASTM A653, STRUCTURAL QUALITY, GRADE 33, WITH A MINIMUM YIELD OF 33 KSI. MEMBERS DESIGNED PER AMERICAN IRON AND STEEL INSTITUTE (AISI) SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS*. MEMBER DESIGNATIONS IN ACCORDANCE WITH THE STEEL STUD MANUFACTURERS ASSOCIATION (SSMA) I.E. 600-S-162-33
67. MEMBER SIZES INDICATED ON THE DRAWINGS AND CAPABLE OF SUPPORTING THE AS INDICATED IN GENERAL NOTE "GENERAL 1.E" FOR WALL COMPONENTS AND CLADDINGS PRESSURES.
68. MAX. ALLOWABLE DEFLECTION:1/360; FLOOR JOISTS.
69. CONTRACTOR TO BE RESPONSIBLE FOR FINAL DESIGN OF LIGHT GAGE FRAMING MEMBERS, CONNECTIONS AND COMPONENTS. SHOP DRAWINGS SHALL BE PREPARED UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MICHIGAN AND SUBMITTED TO THE ARCHITECT/ENGINEER FOR REVIEW.

ARCHITECTURE/INTERIOR DESIGN
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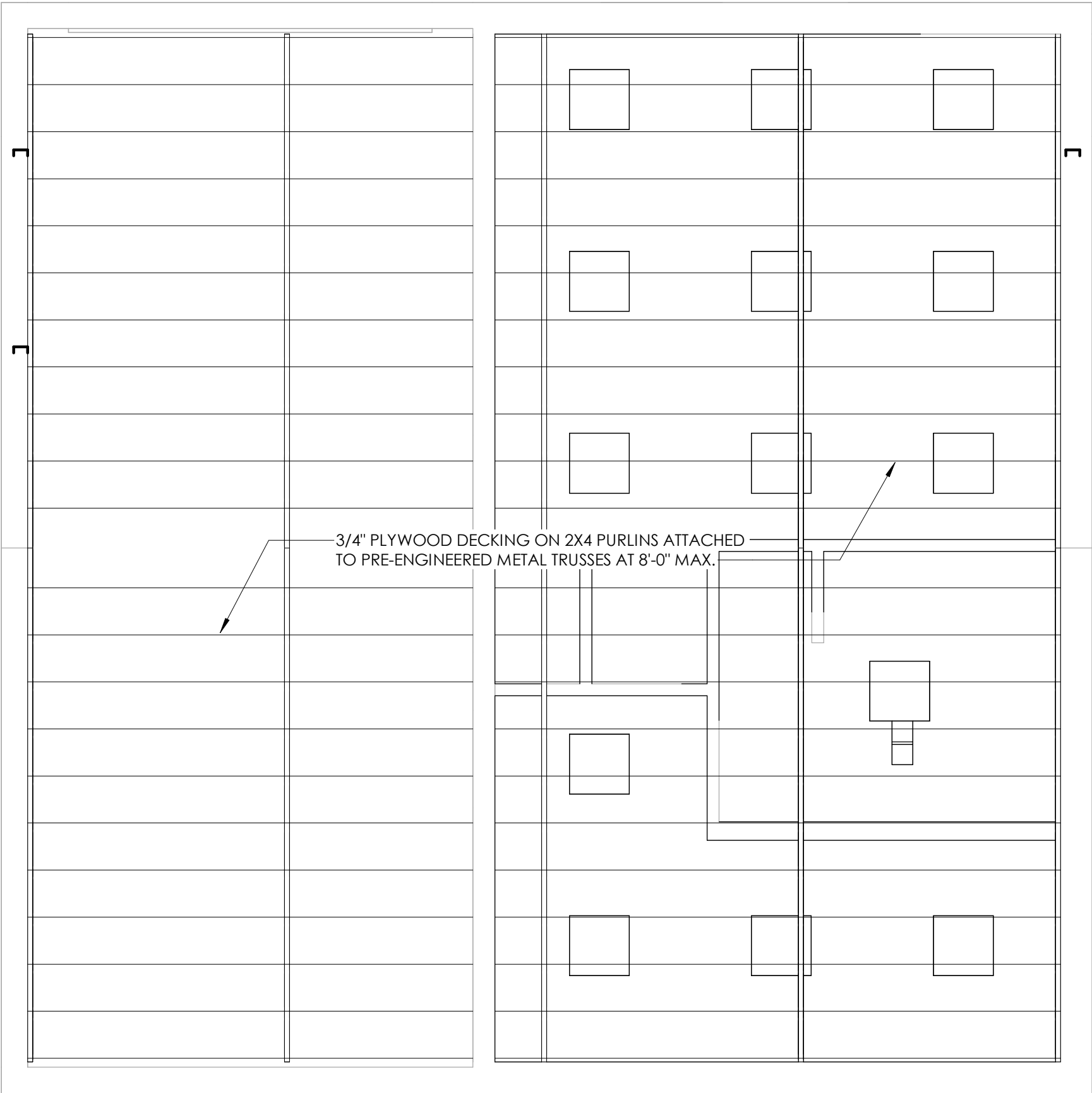
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STRUCTURAL FRAMING PLAN

S101



STRUCTURAL NOTES

- DESIGN LOADS**

THE BELOW DESIGN LOADS ARE BASED ON THE 2021 MICHIGAN BUILDING CODE

 - A. GROUND SNOW LOAD - 30 PSF
 - B. WIND LOAD - 115 MPH
 - C. SEISMIC DESIGN CATEGORY B

SOILS

1. FOUNDATIONS ARE DESIGNED BASED ON SOIL BEARING OF 2000 PSF. IF SOIL OF THIS CAPACITY IS NOT FOUND AT THE ELEVATION NOTED, ENLARGE OR LOWER FOOTINGS AT THE DIRECTION OF THE ARCHITECT/ENGINEER.

2. PLACE STRUCTURAL BACKFILL MEETING OR EXCEEDING MDOT CLASS II IN LAYERS NOT EXCEEDING 9" LOOSE THICKNESS. COMPACT EACH LAYER TO AT LEAST 95% OF THE MAXIMUM DENSITY PER ASTM D-1557. COMPACTING BY FLOODING IS NOT PERMITTED.

3. CENTER FOOTINGS UNDER WALL LOCATION AND COLUMNS UNLESS NOTED.

4. EARTH FORMS ARE NOT PERMITTED UNLESS SPECIFICALLY NOTED.

5. DISTURBANCE OF THE FOUNDATION BEARING SOILS SHALL BE AVOIDED.

6. EXISTING FOUNDATIONS OR FLOOR SLAB ENCOUNTERED DURING SITE GRADINGS AND

7. EXCAVATION SHALL BE REMOVED TO A DEPTH OF TWO (2) FEET BELOW NEW CONSTRUCTION. REPLACE WITH STRUCTURAL BACKFILL.

8. PROVIDE BOND BREAK MATERIAL BETWEEN ALL GRADE SLABS AND VERTICAL SURFACES.

9. BACKFILL AND EXCAVATION PER SPECIFICATIONS.

CONCRETE NOTES

10. 1. ACI BUILDING CODE (318); MANUAL OF STANDARD PRACTICE FOR DETAILING (315) FOR THE MIXING, FABRICATION AND PLACEMENT OF CONCRETE, REINFORCING STEEL, AND ACCESSORIES.

11. CONCRETE STRENGTH - [STANDARD] WEIGHT CONCRETE:

 - A. FOOTINGS, WALLS, PIERS: F'C = 3000 MINIMUM PSI
 - B. CONCRETE FILL ON FORM DECK: F'C = 3500 MINIMUM PSI
 - C. CONCRETE SLABS ON GRADE: F'C = 3500 MINIMUM PSI
 - D. EXTERIOR CONCRETE SLABS EXPOSED TO DE-ICING: F'C = 4500 MINIMUM PSI

12. REINFORCING - BARS: ASTM A-615 GRADE 60

13. WELDED WIRE FABRIC: ASTM A-1064

14. CONCRETE SLABS ON GRADE REINFORCING: 6X6 - W1.4XW1.4 WWF UNLESS NOTED. LOCATED IN THE UPPER 1/3 OF SLAB THICKNESS.

15. PROVIDE SAWCUT CONTROL JOINTS AT APPROXIMATELY 20' ON CENTER EACH WAY IN SLABS ON GRADE. SEE DETAILS. LOCATE JOINTS UNDER PARTITIONS WHENEVER POSSIBLE. CONSTRUCTION JOINTS AT CONTRACTOR'S OPTION.

16. DEPRESS SLABS AS REQUIRED FOR FLOOR FINISHES. SEE ARCHITECT.

17. SLOPE FLOORS AS REQUIRED TO FLOOR DRAINS. SEE ARCHITECT.

18. FORM ALL CONCRETE.

19. PROVIDE CORNER BARS FOR ALL CONTIGUOUS CORNERS.

20. WATER/CEMENT RATIO LIMITS:

 - A. F'C = 3000 PSI 0.68 NON-AIR ENTRAINED, 0.50 AIR ENTRAINED
 - B. F'C = 3500 PSI 0.62 NON-AIR ENTRAINED, 0.50 AIR ENTRAINED
 - C. F'C = 4500 PSI 0.4 AIR-ENTRAINED

21. SLUMP LIMITS:

22. 3" FOR FOUNDATIONS, 4" FOR SLABS AND WALLS

23. PROVIDE AIR ENTRAINED CONCRETE FOR EXTERIOR EXPOSURES.

24. CONTRACTOR TO SUBMIT SIZE AND LAYOUT OF CONCRETE WALL SLEEVES, OPENINGS, ETC. FOR REVIEW PRIOR TO CONCRETE PLACEMENT.

25. OPENINGS IN THE FLOOR SLAB GREATER THAN 12" SHALL HAVE A MINIMUM OF TWO #5 BARS 30" LONG PLACED DIAGONALLY AT EACH CORNER, UNLESS NOTED OTHERWISE ON THE DRAWINGS.

26. WALL FOOTING REINFORCING LAP LENGTH: MINIMUM 27", 21" IF LAPS STAGGERED.

27. CONTRACTOR SHALL INCLUDE C-500 XYPEX CONCRETE ADMIXTURE IN THE CONCRETE MIX FOR ELEVATOR PIT.

28. X-RAY EX CONC SLAB BEFORE DRILLING CORE THROUGH SLABS FOR MECH PIPING AND ELEC FLOOR BOXES. COORDINATE LOCATIONS WITH ELECTRICAL AND MECHANICAL TRADES.

NEW MASONRY NOTES

29. WORK SHALL BE PERFORMED IN ACCORDANCE WITH ACI 530 SPECIFICATIONS.

30. MORTAR: ASTM C270, TYPE M BELOW GRADE, TYPE M OR S ABOVE GRADE, TYPE N FOR NON-LOAD BEARING ABOVE GRADE.

31. GROUT: ASTM C476, F'C=2000 PSI, TESTED PER ASTM C1019.

32. REINFORCING BARS SHALL BE ASTM A-615, GRADE 60, LAP MINIMUM 45 BAR DIAMETERS FOR #5 BARS AND SMALLER, LAP MINIMUM 60 BAR DIAMETERS FOR #6 BARS. HORIZONTAL WALL REINFORCING: PER ASTM A-82, 9 GA. HOT DIPPED GALVANIZED PER ASTM A-153 (1.5 OZ PER SF.), LADDER TYPE, EQUAL TO DUR-A-WAL. BED JOINTS AT 16" O.C. AND AT 1ST AND 2ND BED JOINTS AT BOTTOM OF WALL, TOP OF WALL, ABOVE LINTELS AND BELOW SILLS. REINFORCING CONTINUOUS EXCEPT AT VERTICAL CONTROL JOINTS. SIDE RODS LAPPED A MINIMUM OF 6" AT SPLICES. PROVIDE PREFABRICATED CORNERS AND TEES.

33. CONCRETE MASONRY UNITS: ASTM C-90, GRADE N, TWO CORE TYPE FOR REINFORCED MASONRY. DESIGN BASED ON F'M = 1900 PSI.

34. VERTICAL WALL REINFORCING: 1 - #5 EACH SIDE OF MASONRY OPENINGS, CONTROL JOINTS AND AS SHOWN, IN GROUT FILLED BLOCK CORES.

35. VERTICAL BAR REINFORCING: PLACE ACCURATELY AND MECHANICALLY HOLD IN POSITION WHILE GROUTING. GROUTING SHALL BE DONE IN LIFTS NOT EXCEEDING 4'-0" AND MECHANICALLY CONSOLIDATED IN PLACE; CONSOLIDATION BY RODDING NOT ACCEPTABLE.

36. PROVIDE COMPLETELY GROUTED UNITS:

 - A. UNDER CAST-IN-PLACE CONCRETE FLOOR BEARING
 - B. UNDER BRICK VENEER BEARING
 - C. UNDER ANY CHANGE OF WALL THICKNESS, I.E.: 8" ON TOP OF 12"
 - D. UNDER STEEL JOIST OR BEAM BEARING.

37. PROVIDE LINTELS FOR OPENINGS IN MASONRY WALLS OVER 8" WIDE. SEE SCHEDULE(S).

38. RUNNING BOND MASONRY SHALL BE BUILT INTEGRALLY AT WALL CORNERS UNLESS INDICATED OTHERWISE.

39. BLOCK CONTROL JOINTS SHALL BE "MICHIGAN" TYPE UNLESS NOTED OTHERWISE. HORIZONTAL REINFORCING SHALL BE DISCONTINUOUS AT CONTROL JOINTS.

40. TEMPORARY WALL BRACING IS THE CONTRACTORS RESPONSIBILITY. CONFORM TO APPLICABLE CODES AND STANDARDS.

41. ANCHOR CONTINUOUS WOOD BLOCKING TO MASONRY WITH MINIMUM 1/2" ANCHOR RODS 8" LONG PLUS 2" HOOK AT 32" O.C., UNLESS NOTED OTHERWISE. (COORDINATE WITH WOOD FRAMING NOTES).

STRUCTURAL STEEL

42. 1STRUCTURAL STEEL: FABRICATED AND ERECTED PER THE AISC MANUAL OF STEEL CONSTRUCTION.

W-BEAMS: ASTM A-992 GR. 50.

HSS: ASTM A-500 GRADE B.

STEEL PIPE: ASTM A53, TYPE E, GRADE B.

ALL OTHER SHAPES: ASTM A-36.

ANCHOR RODS: 36 KSI, ASTM F-1554.

43. WELDS: TO BE 70 KSI LOW HYDROGEN FILLER METAL PLACED BY WELDERS CERTIFIED IN WELD AND POSITION BY AWS D1.1, STRUCTURAL WELDING CODE. ALL WELDS SHALL BE APPLIED TO SURFACES FREE OF GREASE, PAINT, DIRT, OR OTHER HARMFUL MATERIAL.

44. BOLTED CONNECTIONS: 3/4" DIAMETER A-325 BOLTS WITH HEAVY HEX NUTS UNLESS NOTED. DESIGNED FOR BEARING CONNECTIONS, TIGHTENED TO SNUG TIGHT CRITERIA UNLESS NOTED OTHERWISE.

45. STEEL PRIMER: RUST INHIBITING ALKYD INDUSTRIAL PRIMER, SSPC 6, 1.5 MIL MINIMUM THICKNESS EXCEPT STEEL WHICH WILL RECEIVE SPRAYED-ON FIRE PROOFING.

46. BEAM CONNECTIONS SHALL BE DESIGNED TO SUPPORT ONE-HALF THE TOTAL UNIFORM LOAD CAPACITY PER AISC, WHEREVER POSSIBLE. EXTEND CONNECTIONS FULL DEPTH OF BEAM.

47. SHEAR TAB CONNECTIONS TO STEEL BEAMS ARE NOT ACCEPTABLE UNLESS BEAMS OF EQUAL DEPTHS ARE FASTENED ON OPPOSITE SIDES OF THE STEEL BEAM.

48. BEAM BEARING PLATES ARE TO BE LOCATED ON CENTER OF WALL UNLESS NOTED OTHERWISE. BEAR BEAM FULL LENGTH OF BEARING PLATES.

49. PROVIDE FITTED STIFFENER PLATES EACH SIDE FOR ALL CONDITIONS WHERE BEAMS BEAR ON COLUMNS, BEAMS BEAR ON BEAMS, BEAMS HANG FROM BEAMS, OR COLUMNS BEAR ON BEAMS. STIFFENER PLATES MINIMUM 1/4" THICK.

50. TEMPORARY BRACING IS TO BE MAINTAINED UNTIL PERMANENT CONNECTIONS ARE COMPLETED, APPROVED, AND SUPPORTED SLABS ARE CAST AND CURED.

METAL DECK

51. ROOF DECK: 1 1/2", 20 GAUGE, WIDE RIB, MINIMUM 3 SPANS. DESIGNED AND FABRICATED PER STEEL DECK INSTITUTE SPECIFICATIONS (SDI). WELD TO SUPPORTS WITH 5/8" DIAMETER PUDDLE WELDS 12" SPACING. FASTEN SIDE LAPS WITH #10 SCREWS AT 3'-0" MAXIMUM.

52. DECK FINISH: PRIME PAINTED.

53. ROOF DECK OPENINGS LARGER THAN 12" SHALL BE REINFORCED WITH A STEEL ROOF FRAME. SEE ROOF FRAME DETAIL ON DRAWINGS.

54. FORM DECK: 1.5C20; S MIN = .226 IN3/FT., I MIN = .216 IN4/FT GALVANIZED, CAPABLE OF SUPPORTING WET CONCRETE LOAD WITHOUT SHORING. WELD TO STEEL PER MANUFACTURER'S RECOMMENDATIONS.

55. PROVIDE 20 GAUGE CLOSURES FOR CUT OUTS AT OPENINGS AND INTERFERENCE WITH STRUC-TURAL MEMBERS. PROVIDE 20 GAUGE THICK COVER PLATE SCREW FASTENED TO TOP OF METAL DECK, EACH SIDE OF JOINT WHERE DECK DIRECTION CHANGES. PROVIDE 18 GAUGE BENT METAL SCREED AT ALL SLAB EDGES AND OPENINGS. NOTCH AS REQUIRED FOR OTHER MISCELLANEOUS STEEL ATTACHMENTS.

WOOD FRAMING

56. DIMENSIONAL FRAMING MATERIAL SHALL BEAR THE GRADE MARK OF AN ALSC APPROVED AGENCY, KILN DRIED, AND HAVE THE FOLLOWING MINIMUM STRESS GRADE:

2X4 STUD WALLS: SPRUCE-PINE-FIR, CONSTRUCTION GRADE OR BETTER.

2X6 AND LARGER: HEM-FIR #2 OR BETTER.

57. ANCHOR CONTINUOUS BLOCKING TO MASONRY WITH MINIMUM 1/2" ANCHOR BOLTS 8" LONG PLUS 2" HOOK AT 32" O.C., UNLESS NOTED OTHERWISE.

58. ROOF RAFTERS ANCHORED TO CONTINUOUS PLATES WITH ONE SIMPSON H3 ANCHOR UNLESS NOTED OTHERWISE.

59. WOOD TO BE IN CONTACT WITH CONCRETE, MASONRY, OR GRADE SHALL BE PRESSURE TREATED.

PLYWOOD SHEATHING

60. PLYWOOD FOR ROOF DECK SHALL BE 5/8" THICK APA RATED SHEATHING, (24/16).

61. PLYWOOD FOR FLOORS SHALL BE 3/4" THICK APA RATED SHEATHING, (32/16).

62. FLOOR AND ROOF SHEATHING FASTENED WITH 8D COMMON NAILS AT 6" O.C. AT PANEL EDGES AND INTERMEDIATE SUPPORTS UNLESS NOTED OTHERWISE. PROVIDE MINIMUM 2X6 BLOCKING AT VALLEY AND HIP LINES FOR UNSUPPORTED EDGES AS REQUIRED.

63. PANELS SHALL BE LAID IN A STAGGERED PATTERN, CONTINUOUS OVER TWO SPANS. STRUCTURAL COMPOSITE LUMBER

64. WOOD JOISTS: IN ACCORDANCE WITH APA, EWS STANDARD PRI-400, STANDARD FOR APA EWS I-JOISTS (PRI). DEPTH AND PRI GRADE AS INDICATED ON THE DRAWINGS. INSTALL BLOCKING PANELS, RIM BOARDS, FILLER BLOCKS IN ACCORDANCE WITH APA.

65. LAMINATED VENEER LUMBER (LVL):

FB = 2,600 PSI (BOTH TENSION & COMPRESSION)

FC (PERPENDICULAR) = 750 PSI

FC (PARALLEL) = 2,310 PSI

FV = 285 PSI

E = 1.9X106 PSI

LIGHT GAGE METAL FRAMING

66. ALL STUDS SHALL BE FORMED FROM HOT-DIPPED GALVANIZED STEEL, G-60 COATING, CORRESPONDING TO THE REQUIREMENTS OF ASTM A653, STRUCTURAL QUALITY, GRADE 33, WITH A MINIMUM YIELD OF 33 KSI. MEMBERS DESIGNED PER AMERICAN IRON AND STEEL INSTITUTE (AISI) SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS". MEMBER DESIGNATIONS IN ACCORDANCE WITH THE STEEL STUD MANUFACTURERS ASSOCIATION (SSMA) I.E. 600-S-162-33.

67. MEMBER SIZES INDICATED ON THE DRAWINGS AND CAPABLE OF SUPPORTING THE AS INDICATED IN GENERAL NOTE "GENERAL 1.E" FOR WALL COMPONENTS AND CLADDINGS PRESSURES.

68. MAX. ALLOWABLE DEFLECTION: L/360; FLOOR JOISTS.

69. CONTRACTOR TO BE RESPONSIBLE FOR FINAL DESIGN OF LIGHT GAGE FRAMING MEMBERS, CONNECTIONS AND COMPONENTS. SHOP DRAWINGS SHALL BE PREPARED UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MICHIGAN AND SUBMITTED TO THE ARCHITECT/ENGINEER FOR REVIEW.

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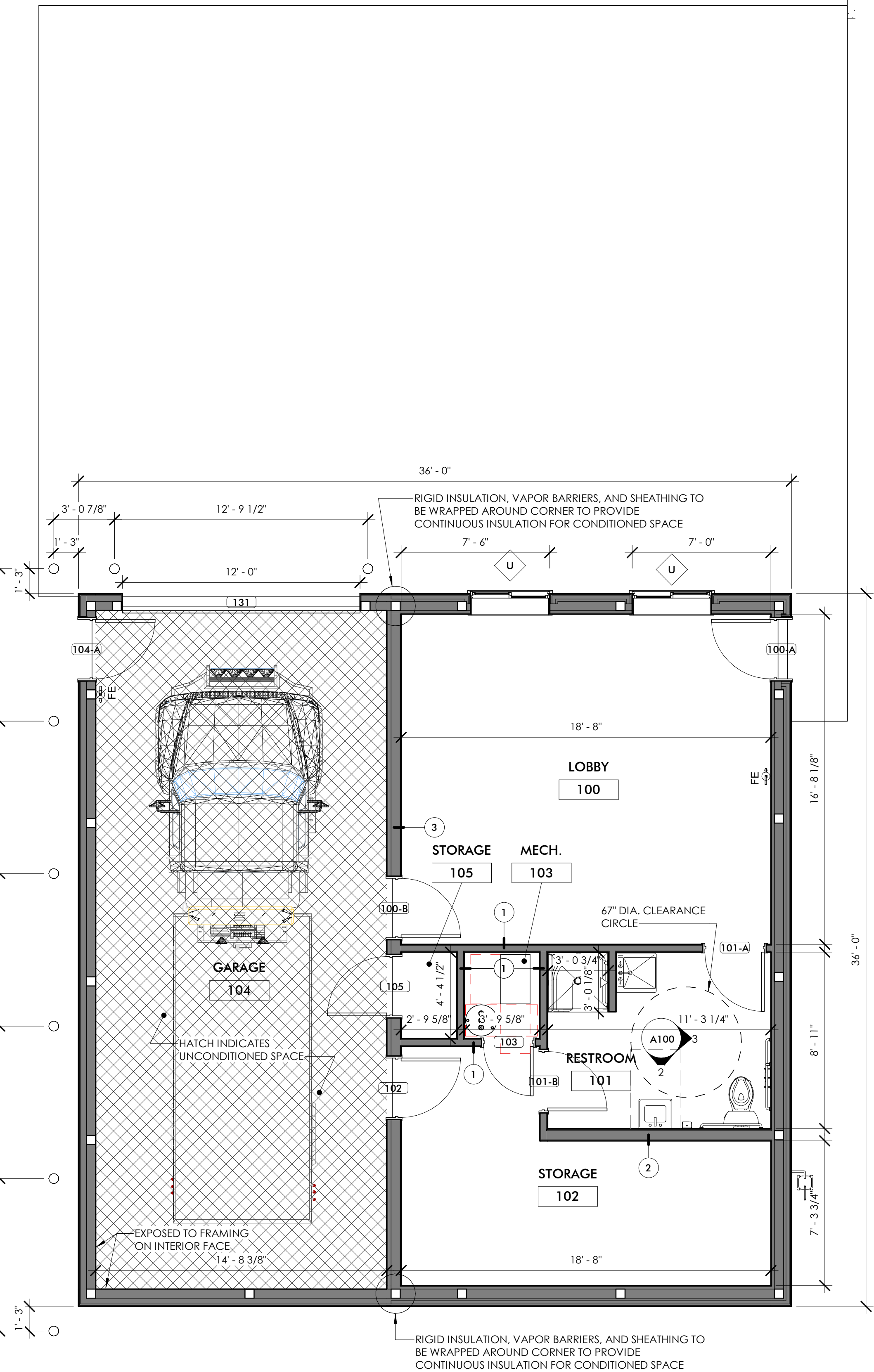
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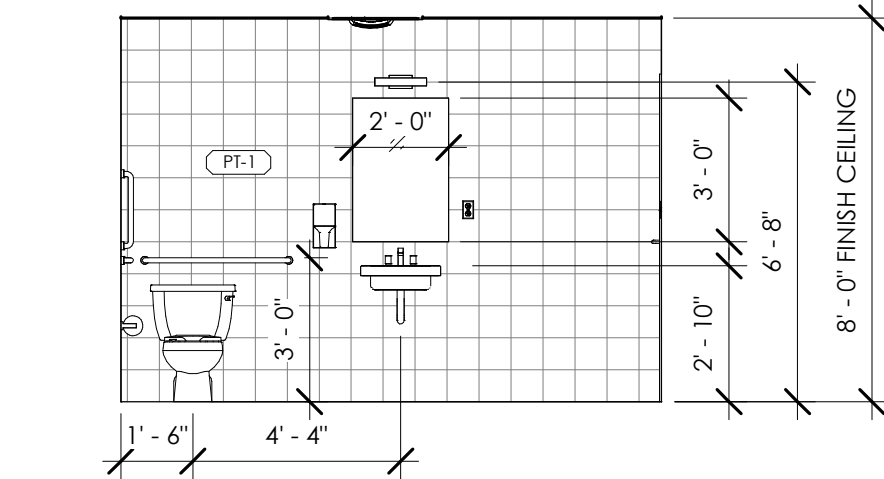
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STRUCTURAL ROOF PLAN

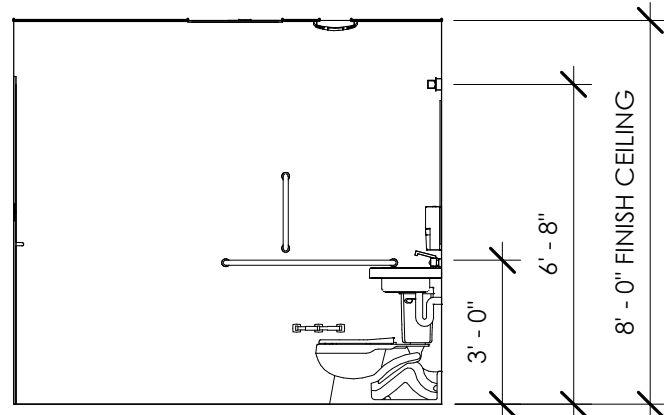
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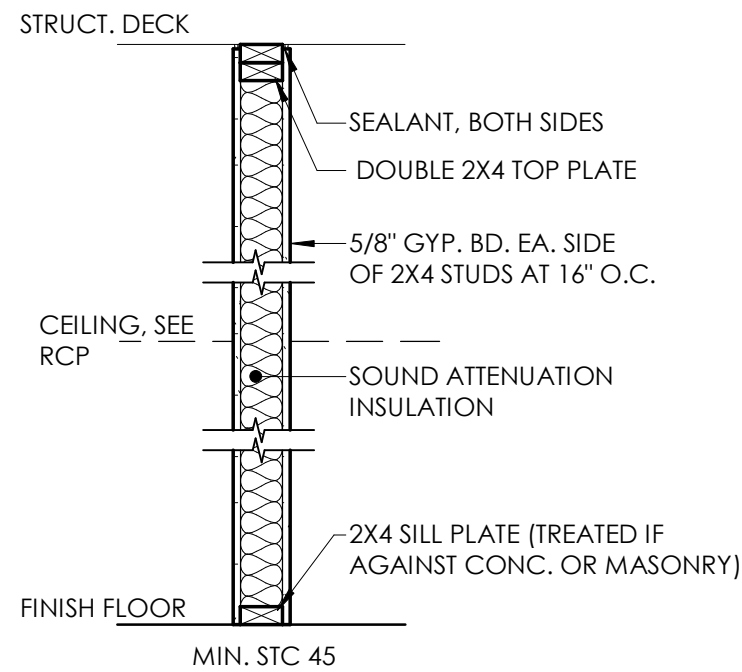
1 FIRST FLOOR PLAN
1/4" = 1'-0"



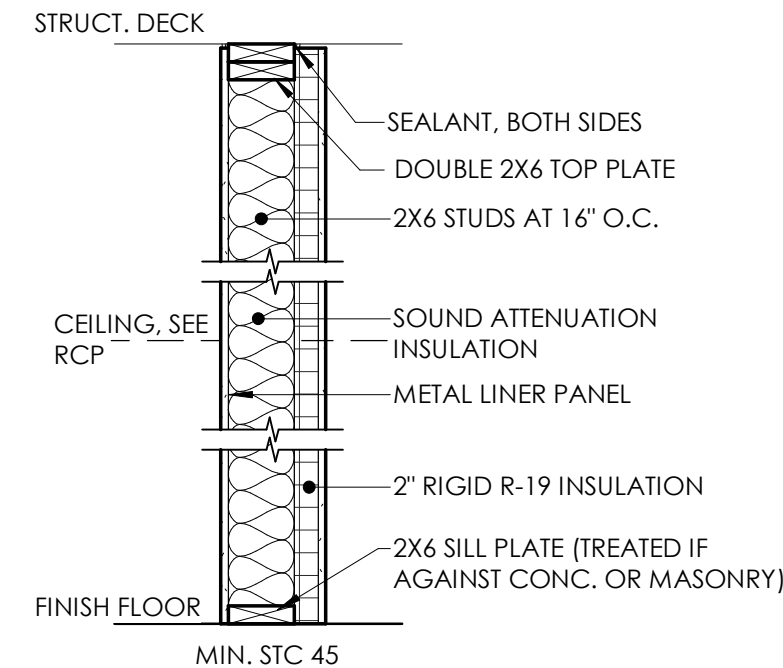
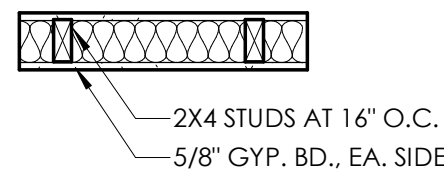
2 101 RESTROOM - S
1/4" = 1'-0"



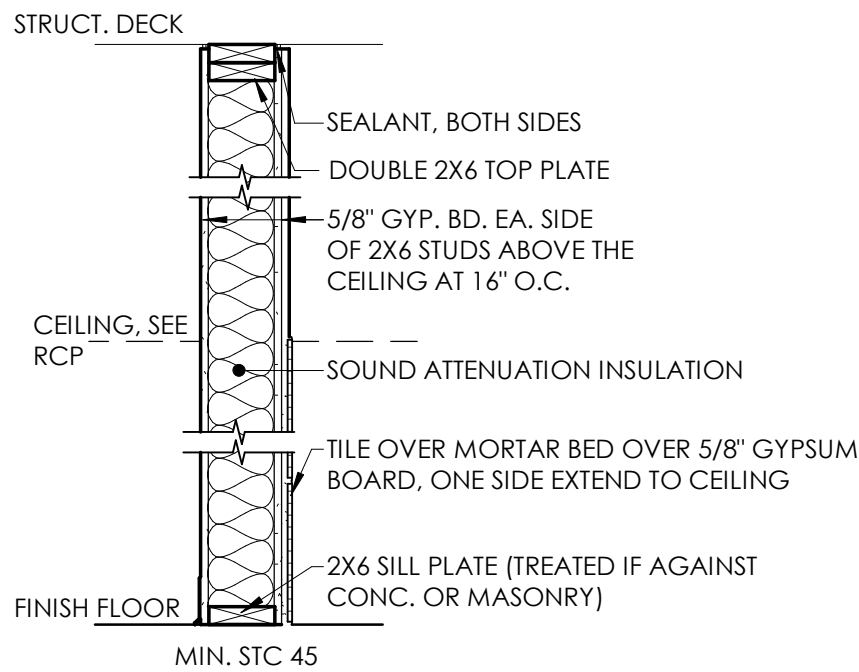
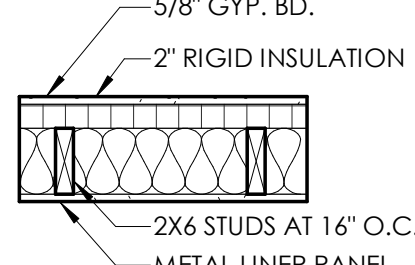
3 101 RESTROOM - E
1/4" = 1'-0"



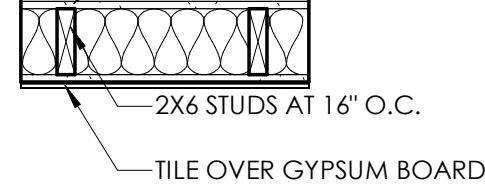
PARTITION TYPE - 1



PARTITION TYPE - 3



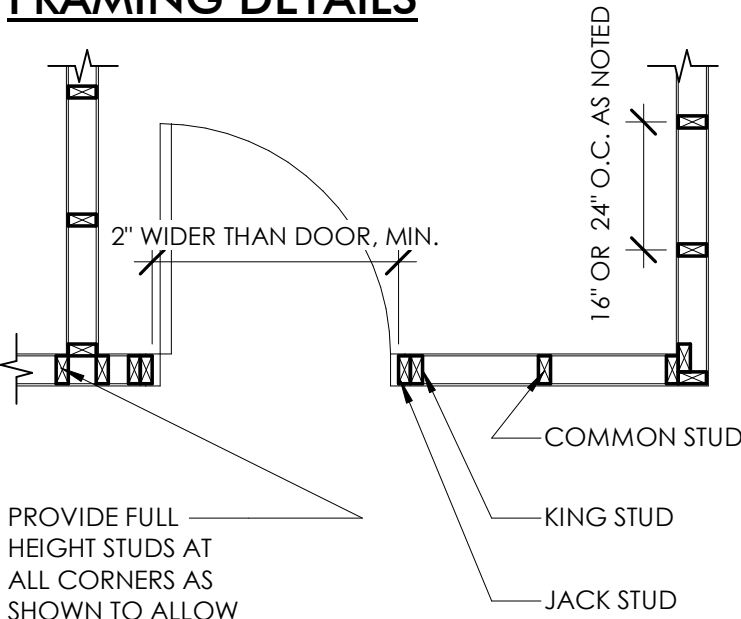
PARTITION TYPE - 2



GENERAL NOTES

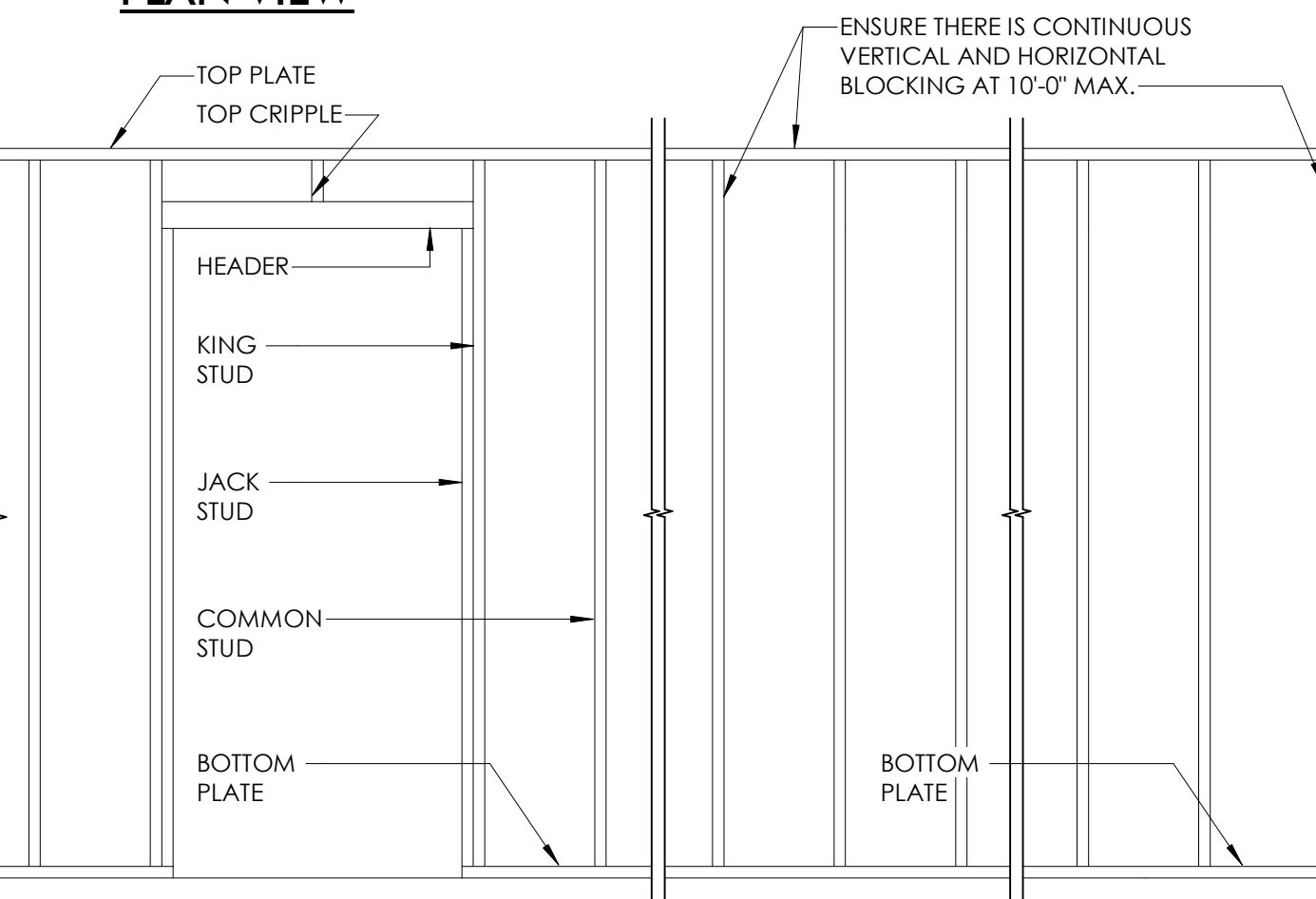
1. ALL GYPSUM BOARD THROUGHOUT IS TO BE 5/8" TYPE-X AS A MINIMUM.
2. INSTALL WOOD BLOCKING IN WALLS AS NECESSARY FOR INSTALLATION OF ALL CASEWORK, MIRRORS, TOWEL BARS, SHOWER CURTAIN RODS, TOILET PAPER DISPENSERS, PAPER TOWEL HOLDERS, TOILET PARTITIONS, RAILINGS, AND ANY OTHER ACCESSORIES.
3. PROVIDE 5/8" GYPSUM BOARD W/ KERDI MEMBRANE ON ALL WET WALLS IN BATHTUBS, SHOWERS, AND KITCHEN LOCATIONS TO RECEIVE TILE. COORDINATE WITH INTERIORS.
4. DRAWINGS ESTABLISH THE DESIGN INTENT OF WORK TO BE PERFORMED. ALL PRODUCTS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ALL TRADES SHALL CAREFULLY COORDINATE WORK OF ALL OTHER TRADES. CONTRACTORS SHALL BE RESPONSIBLE FOR FIELD VERIFYING EXISTING CONDITIONS AND FOR VERIFYING THEM WITH THE CONTRACT DOCUMENTS. ANY DISCREPANCIES OR CONFLICTS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT AND THE OWNER PRIOR TO FABRICATION OR INSTALLATION.
5. COORDINATE SIZE AND LOCATION OF ALL EQUIPMENT SUPPORTS INCLUDING BUT NOT RESTRICTED TO CONCRETE HOUSEKEEPING PADS WITH APPROPRIATE EQUIPMENT MANUFACTURER.
6. VERIFY QUANTITY, SIZE, AND LOCATION OF ALL FLOOR, ROOF, AND WALL OPENINGS FOR ALL DISCIPLINES INCLUDING BUT NOT RESTRICTED TO MECHANICAL AND ELECTRICAL WORK WITH THE APPROPRIATE TRADE. PROVIDE ALL OPENINGS SHOWN OR REQUIRED FOR THE COMPLETION OF THE WORK. PROVIDE ALL LINTELS REQUIRED FOR THESE OPENINGS PER SPECIFICATIONS.
7. VERIFY QUANTITY, SIZE, AND LOCATION OF ALL FLOOR, ROOF, AND WALL OPENINGS FOR ALL DISCIPLINES INCLUDING BUT NOT RESTRICTED TO MECHANICAL AND ELECTRICAL WORK WITH THE APPROPRIATE TRADE.
8. DIMENSIONS FOLLOWED BY +/- SHOULD BE REVIEWED AND ALL NECESSARY ADJUSTMENTS MADE PRIOR TO FABRICATION AND/OR INSTALLATION OF AFFECTED WORK. NOTIFY ARCHITECT'S REPRESENTATIVE IF DISCREPANCIES ARISE BEFORE PROCEEDING WITH THE WORK.
9. BATHROOM MIRRORS AND LIGHT FIXTURES ABOVE VANITIES SHALL BE CENTERED ON THE SINKS.

FRAMING DETAILS



PROVIDE FULL HEIGHT STUDS AT ALL CORNERS AS SHOWN TO ALLOW FOR PROPER GYP. BD. INSTALLATION

PLAN VIEW

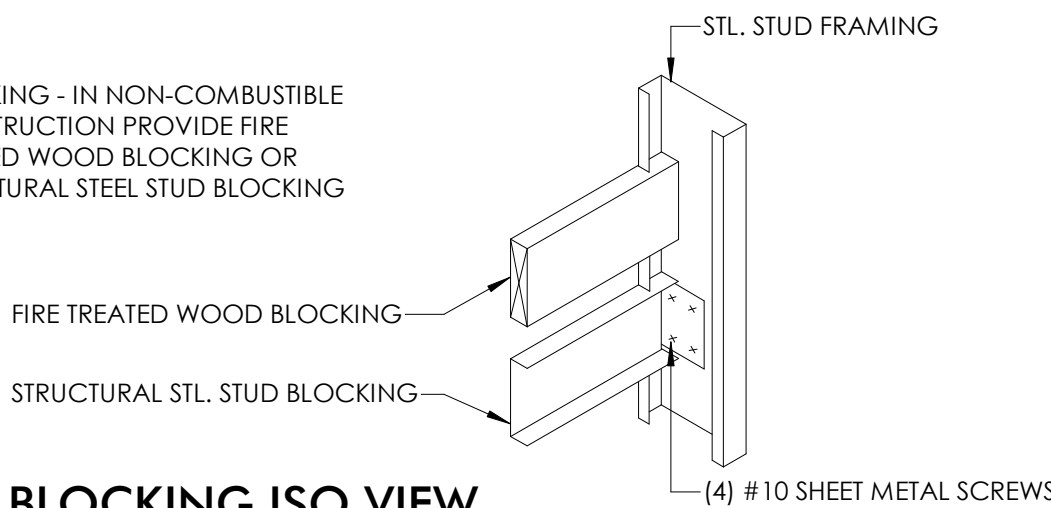


*PROVIDE TREATED WOOD OR METAL TRACK AGAINST ANY CONC. OR MASONRY SURFACE

ELEVATION VIEW

BLOCKING - IN NON-COMBUSTIBLE CONSTRUCTION PROVIDE FIRE TREATED WOOD BLOCKING OR STRUCTURAL STEEL STUD BLOCKING

BLOCKING ISO VIEW



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NEW FLOOR PLANS

A100

FINISH SCHEDULE KEY								
CODE	MATERIAL	MANUFACTURER	STYLE	SIZE	COLOR	FLAME SPREAD RATING	CONTACT INFO	NOTES
ACP-1	ACOUSTICAL CEILING PANEL							*call out grid*
CAB-1	WOOD-FACED ARCHITECTURAL CABINETS							
CPT-1	CARPET							
CWT-1	CERAMIC WALL TILE							
ICB-1	INTEGRAL COVE BASE							
IPS-1	PAINT (TO MATCH)							
LVT-1	LUXURY VINYL TILE							
PL-1	PLASTIC LAMINATE							
PT-1	PORCELAIN TILE							
PTB-1	PORCELAIN TILE BASE							
RST-1	RUBBER STAIR TREAD							
SC-1	SEALED CONCRETE							
SS-1	SOLID SURFACE							
VWB-1	VINYL WALL BASE							
VWC-1	VINYL WALLCOVERING							
WDB-1	WOOD BASEBOARD							
WDT-1	WOOD TRIM							
WF-1	WINDOW FILM							

FINISH SCHEDULE											
ROOM NUMBER	ROOM NAME	FLOOR	BASE	WALL				CEILING	MILLWORK		NOTES
				NORTH	EAST	SOUTH	WEST		CABINET	TOP	
100	LOBBY										
101	RESTROOM										
102	STORAGE										
103	MECH.										
104	GARAGE										
105	STORAGE										

*ALL FINISHES TO BE SELECTED BY OWNER AND INSTALLED BY GC

GENERAL NOTES

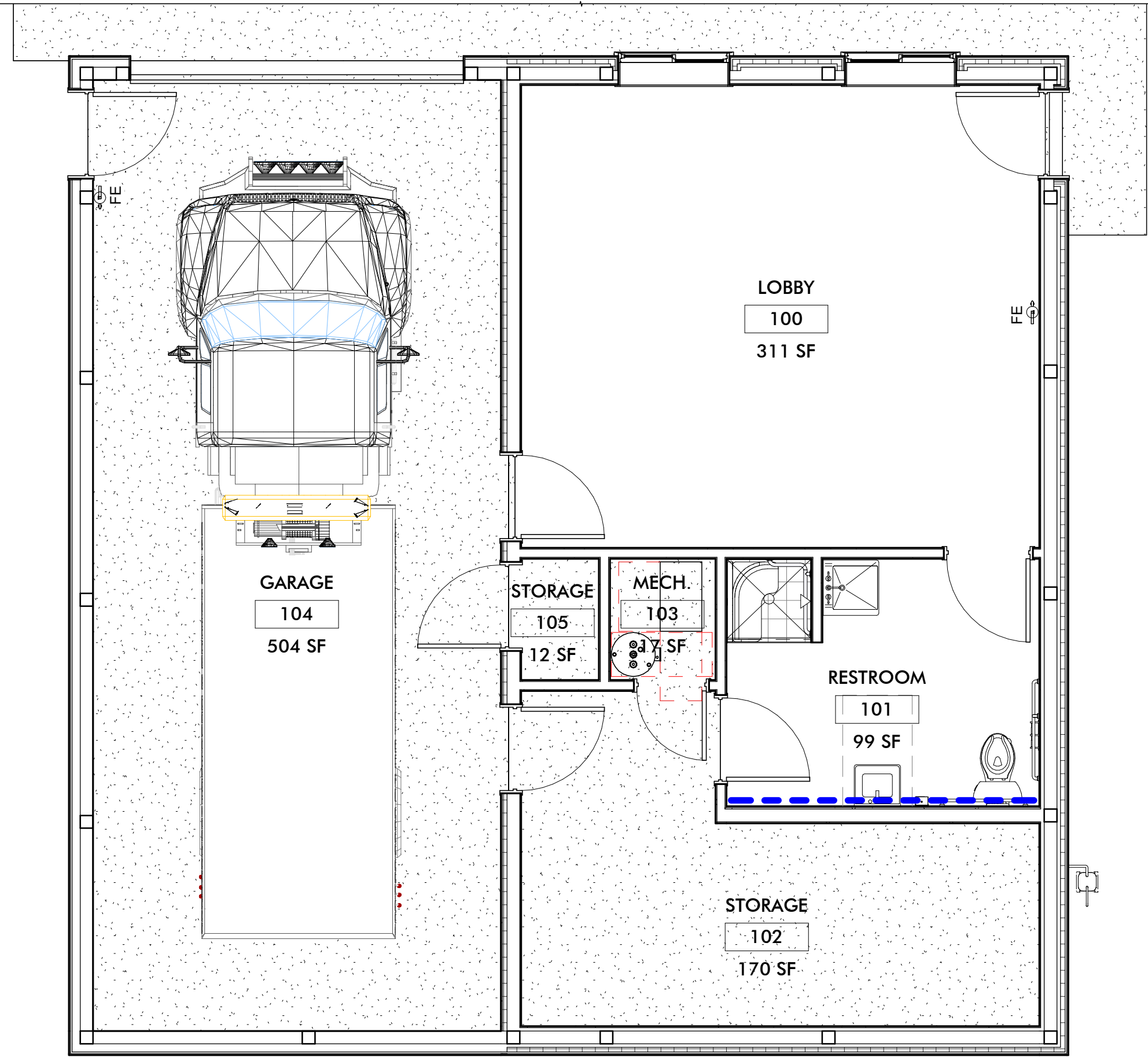
- PROJECT NORTH FOR ALL FINISH PLANS SHALL BE LOCATED AT THE TOP OF THE DRAWING AREA, UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL SUBMIT SAMPLES OF ALL SPECIFIED FINISH MATERIALS FOR SUBMITTAL REVIEW AND FINAL APPROVAL PRIOR TO ORDERING AND INSTALLATION.
- ALL FURNITURE SHOWN ON PLANS IS FOR REFERENCE. SCALE, SPACE PLANNING AND ELECTRICAL/DATA CONNECTION LOCATION PURPOSES, ONLY. ALL FURNITURE (INCLUDING SPECIALTY ITEMS, SUCH AS DISPLAY CASES) SPECIFICATION, SELECTION, PROCUREMENT AND INSTALLATION SHALL NOT BE PART OF SCOPE OF WORK FOR BUILDING CONTRACTOR.
- PRIME AND PAINT ALL SURFACES WITH A MINIMUM (2) FINISH COATS.
- AS NOTATED ON FINISH PLANS, CONTRACTOR TO PROVIDE AND INSTALL GLAZED CERAMIC WALL TILE (WITH CERAMIC TILE BASE) FROM FLOOR TO CEILING AT 'WET WALL' LOCATIONS. GROUT FOR ALL TILE INSTALLATIONS SHALL BE TEC POWER GROUT OR APPROVED EQUAL. REFER TO MATERIAL SELECTION SCHEDULE FOR TILE STYLE/ COLOR AND GROUT COLOR.
- FLOORS
AFTER DEMOLITION OF ALL NOTED EXISTING FLOORING, CONTRACTOR SHALL GRIND CONCRETE OR REPAIR/REPLACE SUBFLOOR, AS REQUIRED, TO PROVIDE A LEVEL, SMOOTH SURFACE FOR INSTALLATION OF ALL NEW FLOORING PRODUCTS. CONTRACTOR TO INSTALL ALL NEW FLOORING PRODUCTS PER MANUFACTURERS RECOMMENDATIONS.
- FOR PROJECTS THAT HAVE CONCRETE SLAB ON GRADE AS EXISTING CONDITIONS OR NEW POUR, CONTRACTOR SHALL CONDUCT REQUIRED MOISTURE TESTS PRIOR TO INSTALLATION OF ALL SPECIFIED NEW FLOOR FINISH MATERIALS. **RECORD PASSING MOISTURE LEVELS PRIOR TO START OF INSTALLATION. REFERENCE MANUFACTURERS INSTALLATION SPECIFICATIONS FOR EACH FLOOR FINISH TYPE TO VERIFY REQUIREMENTS**
- CONTRACTOR TO PROVIDE AND INSTALL ALL REQUIRED TRANSITIONS STRIPS, AS DETAILED ON FINISH PLANS. ALL FLOORING TRANSITIONS/ TRANSITION STRIPS SHALL BE CENTERED UNDER DOORS WHEN THEY ARE IN THE CLOSED POSITION OR CENTERED BETWEEN ROOM OPENINGS, UNLESS OTHERWISE NOTED. CONTRACTOR SHALL UTILIZE ANY NECESSARY AMOUNT OF LEVELING COMPOUND AT ALL UNEVEN SUBFLOOR CONDITIONS SO THAT THE APPROPRIATE HEIGHT TO ENSURE A FLUSH AND EVEN TRANSITION BETWEEN ADJACENT FLOOR MATERIALS IS ACHIEVED AND MAINTAINED THROUGHOUT ROOM. REFER TO MATERIAL FINISH SCHEDULE FOR SPECIFIED TRANSITION STRIP MANUFACTURER, STYLE/ TYPE AND COLOR/ FINISH.
- WALL BASE
FOR INTEGRAL COVE BASE (SHEET VINYL) INSTALLATIONS, CONTRACTOR SHALL NOT PROVIDE METAL CORNER PIECES FOR OUTSIDE OR INSIDE CORNERS. CONTRACTOR TO PROVIDE AND INSTALL METAL CHANNEL CAP FOR EXPOSED TOP EDGE OF SHEET VINYL BASE.
- IN ROOMS THAT SPECIFY RUBBER OR VINYL WALL BASE, CONTRACTOR SHALL PROVIDE CONTINUOUS LENGTH OF WALL BASE WITH FIELD FORMED INSIDE AND OUTSIDE CORNERS, UNLESS OTHERWISE NOTED.
- WALLS
ANY REQUIRED WALL PROTECTION SHALL BE INSTALLED AT TOP OF BASE AND TERMINATE AT ____" AFF UNLESS NOTED OTHERWISE. PROVIDE AND INSTALL ALL NECESSARY TRIM PIECES REQUIRED FOR ANY WALL PROTECTION PRODUCTS.
- CONTRACTOR TO PAINT ALL BULKHEADS TO MATCH SURROUNDING WALL PAINT SELECTION ON FACE AND UNDERSIDE OF EACH BULKHEAD, UNLESS NOTED OTHERWISE
- CEILINGS
CONTRACTOR TO PAINT ALL BULKHEADS TO MATCH SURROUNDING WALL PAINT SELECTION ON FACE AND UNDERSIDE OF EACH BULKHEAD, UNLESS NOTED OTHERWISE.
- CONTRACTOR SHALL PAINT ANY EXPOSED CONDUIT, PIPING, JUNCTION BOXES, DUCTWORK AND OTHER EXPOSED UTILITIES AT EXPOSED CEILING LOCATIONS. PAINT SHALL FOR THESE EXPOSED ITEMS MATCH SPECIFIED CEILING PAINT, OTHER THAN IN MECHANICAL AND ELECTRICAL ROOMS U.N.O. DRYFALL NOTE - SPEC
- MILLWORK
CONTRACTOR TO PROVIDE AND INSTALL DOOR AND DRAWER PULLS FOR SPECIFIED CABINETRY. PULLS FOR CABINERY SHALL BE SS - BASIS OF DESIGN. ALL WALL CABINET PULLS SHALL BE INSTALLED VERTICALLY, MOUNTED TO THE LATCH SIDE OF WALL CABINET DOORS. CENTER OF DRAWERS (U.N.O.) ALL DRAWER PULLS ARE SHOWN FOR REFERENCE ONLY AND IS NOT AN INDICATION OF EXACT MOUNTING LOCATION.
- CONTRACTOR TO PROVIDE AND INSTALL GROMMETS AS SPECIFIED ON FINISH PLANS. GROMMETS SHALL BE (DOUG MOCKETT - BASIS OF DESIGN). VERIFY/ REVIEW ALL GROMMET LOCATIONS WITH OWNER PRIOR TO INSTALLATION.
- FOR ALL EXPOSED METAL COUNTERTOP SUPPORTS, CONTRACTOR TO PAINT IN FIELD WITH SAME PAINT COLOR AS SURROUNDING WALL FINISH. PAINT SHALL BE AN ALKYD WITH SEMI-GLOSS FINISH, UNLESS OTHERWISE NOTED.
- ALL CONCEALED SUPPORT BRACKETS FOR SHELVING AND WALL MOUNTED COUNTERTOPS TO BE A&M HARDWARE C/EC FLAT CONCEALED BRACKETS IN APPROPRIATE SIZE - BASIS OF DESIGN (COMBINE WITH OTHER SUPPORT BRACKET NOTE)
- PROVIDE A SMOOTH LEVEL 4 DRYWALL FINISH ON ALL GYPSUM WALLS U.N.O.
- ALL JANITOR CLOSETS OR ROOMS WITH A MOP SINK OR SERVICE SINK SHALL HAVE FIBER REINFORCED PANEL (FRP) INSTALLED FROM TOP OF WALL BASE TO 4'-0" A.F.F. WITHIN 4' OF SINK FIXTURE.

TABLE 803.11 INTERIOR WALL AND CEILING FINISH REQUIREMENTS
INTERIOR WALL & CEILING FINISHES
EXIT ENCLOSURE AND PASSAGEWAY CLASS B / SMOKE-DEVELOPED INDEX 0-450 / FLAME SPREAD 26-75
CORRIDORS CLASS C / SMOKE-DEVELOPED INDEX 0-450 / FLAME SPREAD 76-200
ROOMS AND ENCLOSED SPACES C / SMOKE-DEVELOPED INDEX 0-450 / FLAME SPREAD 76-200

INTERIOR FINISH FLOOR REQUIREMENTS
INTERIOR WALL & CEILING FINISHES
EXIT ENCLOSURE AND PASSAGEWAY CLASS II / WATTS / CM2 .22 OR GREATER
CORRIDORS CLASS II / WATTS / CM2 .22 OR GREATER
ROOMS AND ENCLOSED SPACES CLASS II / WATTS / CM2 .22 OR GREATER

FINISH PLAN LEGEND

--- TILE



1 FIRST FLOOR FINISH PLAN

1/4" = 1'-0"
ON ALL FINISH PLANS, NORTH IS TO BE ASSUMED DIRECTLY STRAIGHT UP ON THE FLOOR PLAN TO CORRELATE WITH WALL FINISH LOCATIONS



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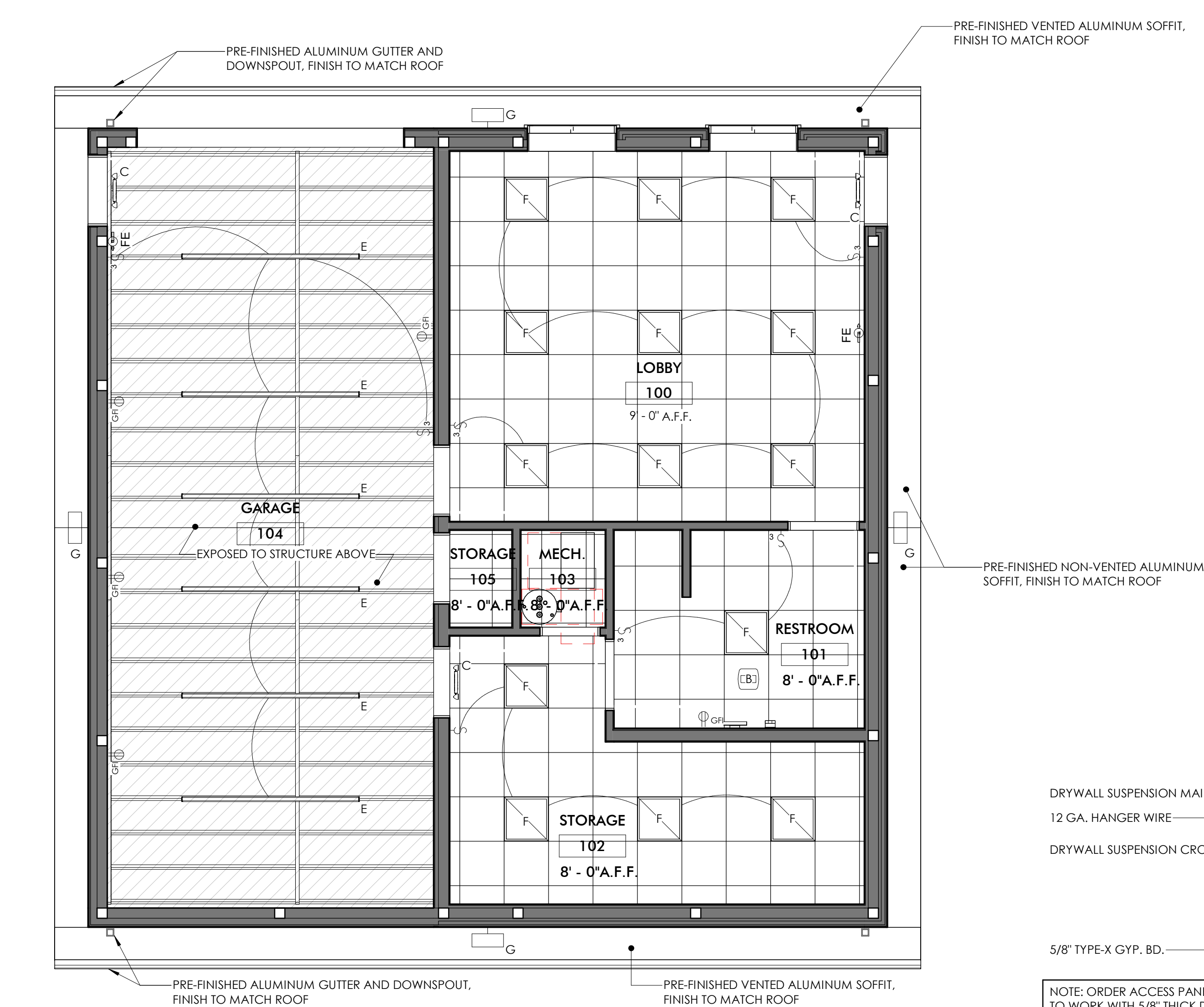
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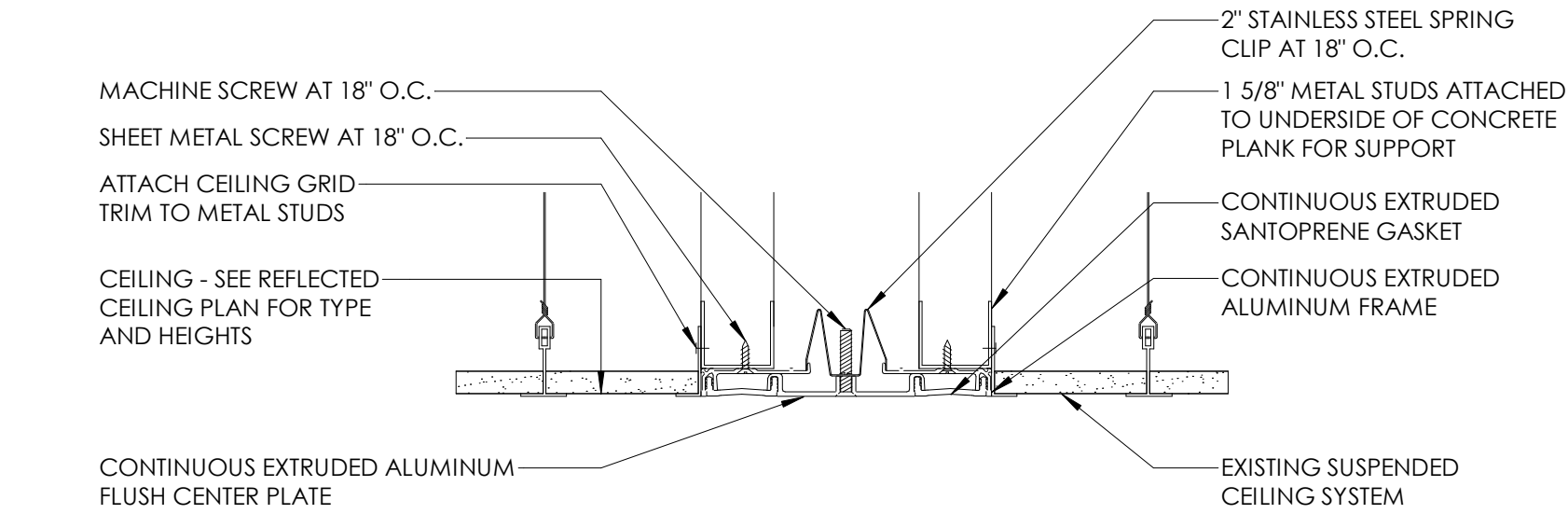
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FINISH PLAN & SCHEDULE

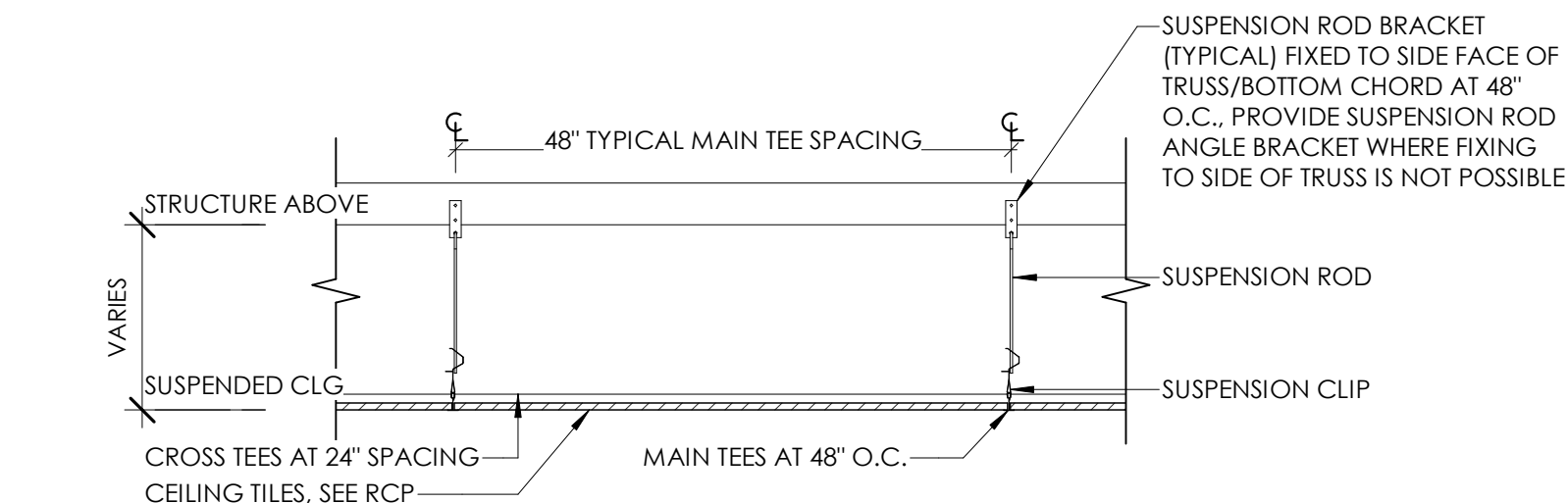
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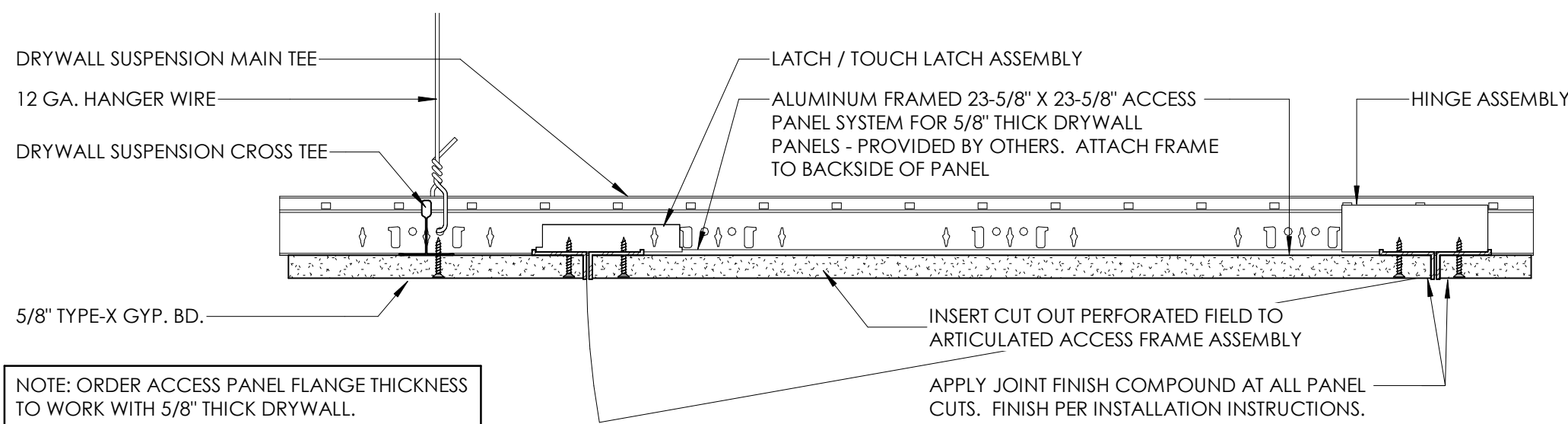
1 FIRST FLOOR REFLECTED CEILING PLAN
1/4" = 1'-0"



4 EXPANSION JOINT ACP CEILING
3" = 1'-0"



3 TYPICAL SUSPENDED CEILING
1 1/2" = 1'-0"



2 ACCESS PANEL DETAIL
3" = 1'-0"

REFLECTED CEILING GENERAL NOTES

- ALL LIGHT SWITCHES SHALL BE SILENT TYPE, 20 AMP, WHITE COLOR WITH WHITE COVER PLATES.
- ALL NEW LIGHT FIXTURES TO BE LED, FIXTURES AND LAYOUT ARE SHOWN SCHEMATICALLY.
- IF CEILING HEIGHTS ARE NOT CALLED OUT, THEN THE CEILING IS EXISTING OR SHALL BE EXPOSED TO THE EXISTING STRUCTURE ABOVE. CONFIRM WITH ARCHITECT
- COORDINATE LIGHT FIXTURE, MECHANICAL, PLUMBING, ALONG WITH ANY OTHER SYSTEMS AS REQUIRED TO NOT INTERFERE WITH ONE ANOTHER.
- ALL LIGHT FIXTURES AND HVAC SHALL BE CENTERED IN ALL ROOMS, 2x2 CEILING GRIDS, CLOUDS OR BETWEEN OTHER ELEMENTS OR EQUALLY SPACED UNLESS NOTED OTHERWISE.
- ALL 2X2 CEILING GRIDS TO BE CENTERED IN ROOM UNLESS NOTED OTHERWISE, NO PANEL SHALL BE LESS THAN 4" WIDE
- SEE MEP PLANS FOR ADDITIONAL MECHANICAL, ELECTRICAL, AND PLUMBING NOTES.
- REPLACE ANY CEILING TILES IN CEILINGS THAT ARE TO REMAIN.
- ALL BULKHEAD HEIGHTS AT NON-CABINERY LOCATIONS TO BE ____ UNLESS NOTED OTHERWISE. REFER TO INTERIOR ELEVATIONS FOR ADDITIONAL BULKHEAD HEIGHTS
- REFER TO INTERIOR ELEVATIONS AND RCP FOR UNDER CABINET LIGHTING LOCATIONS.
- REFER TO ROOM FINISH KEY AND SCHEDULE FOR ACP DESIGNATIONS
- ALL DIMENSIONS ARE FROM CENTER LINE OF FIXTURE TO FINISHED FACE OF WALL
- PATCH AND REPAIR EXISTING CEILING AS REQUIRED THAT WAS DISTURBED DURING DEMOLITION AND/OR NEW CONSTRUCTION ACTIVITIES. PATCH AND REPAIR TO MATCH EXISTING ADJACENT CONSTRUCTION, SUPPORT SYSTEM, CEILING FINISH, PATTERN AND ELEVATION.

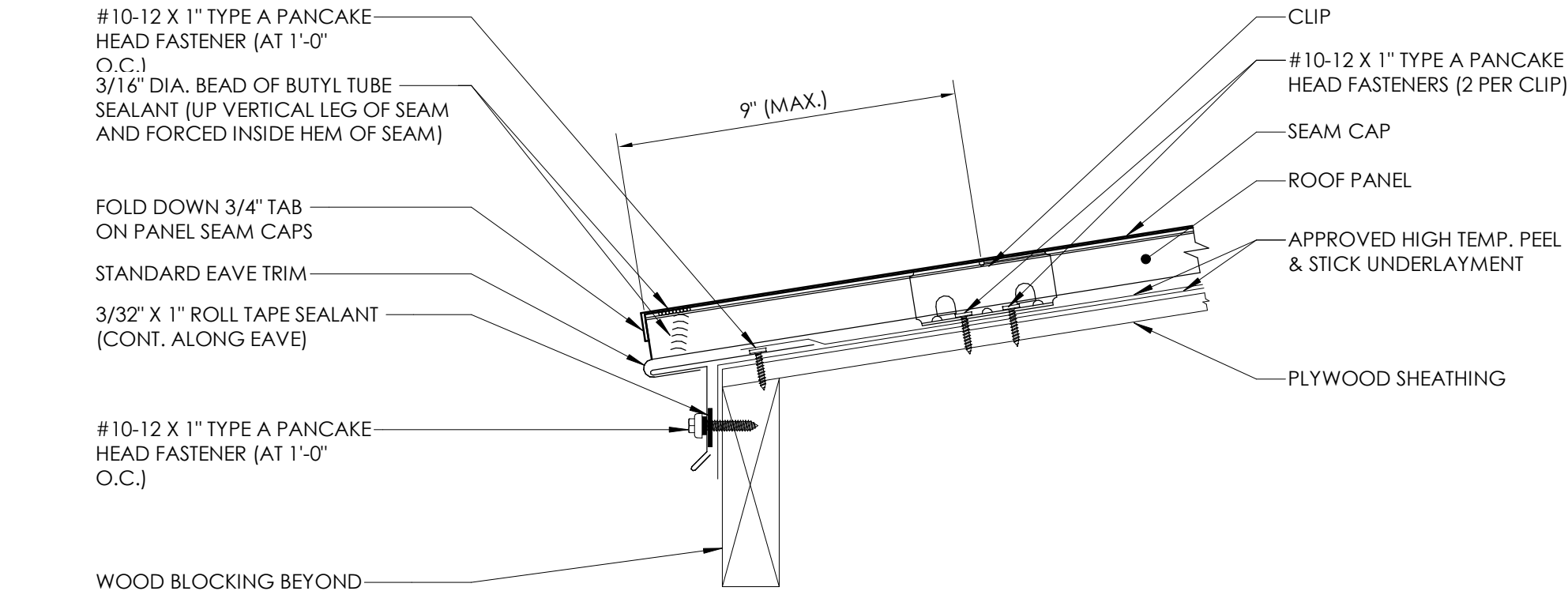
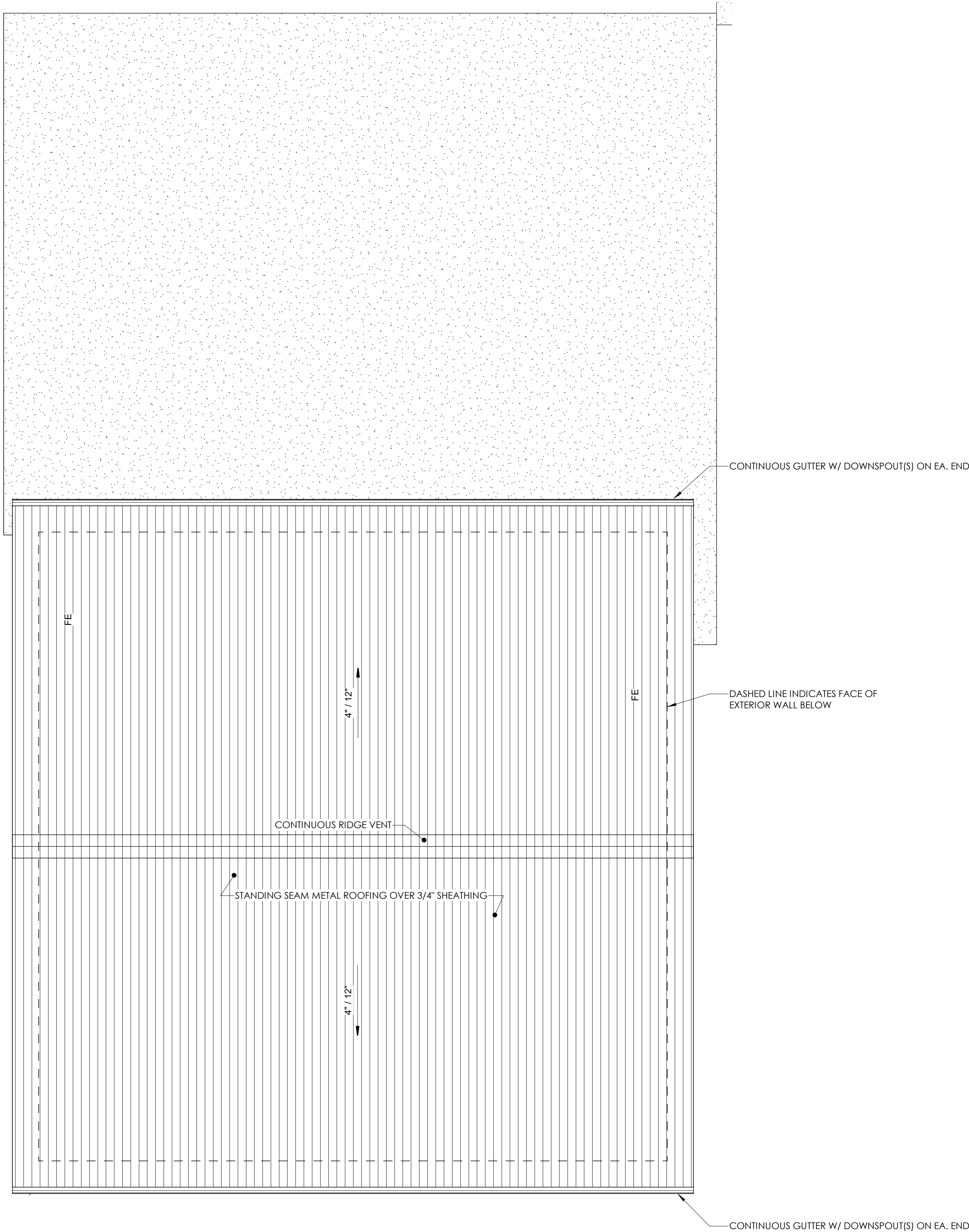
REFLECTED CEILING LEGEND

	EXISTING 2X2 CEILING TILES & GRID. SEE FINISH SCHEDULE FOR TYPE
	NEW 2X2 CEILING TILES & GRID. SEE FINISH SCHEDULE FOR TYPE
	GYP. BD. CEILING
	EXPOSED CEILING TO STRUCTURE
	LINE OF CASEWORK BELOW

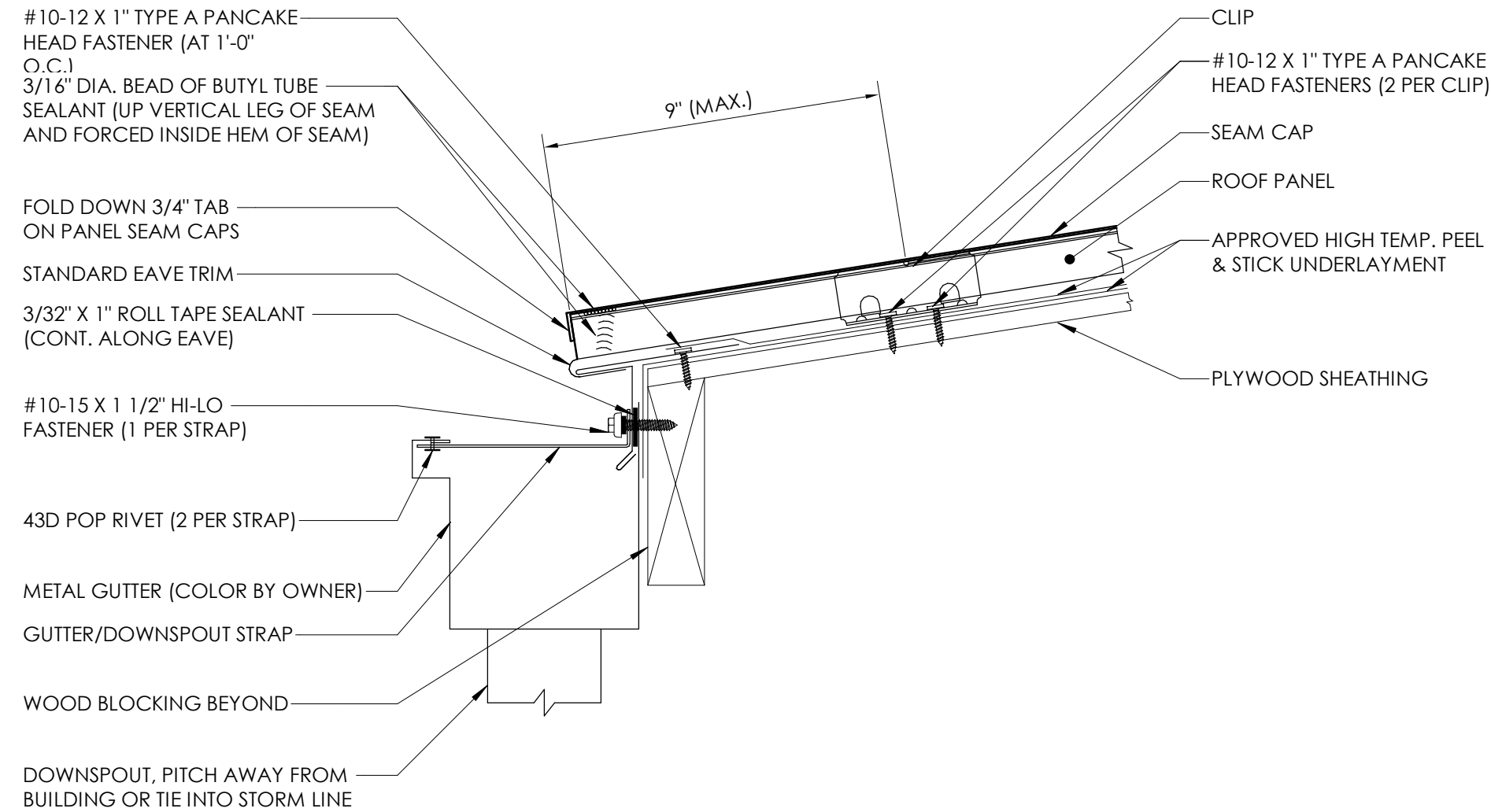
LIGHT FIXTURE LEGEND

*ALL FIXTURES SHOWN ARE TO BE A BASIS OF DESIGN. EQUAL EQUIVALENTS ARE ACCEPTED.

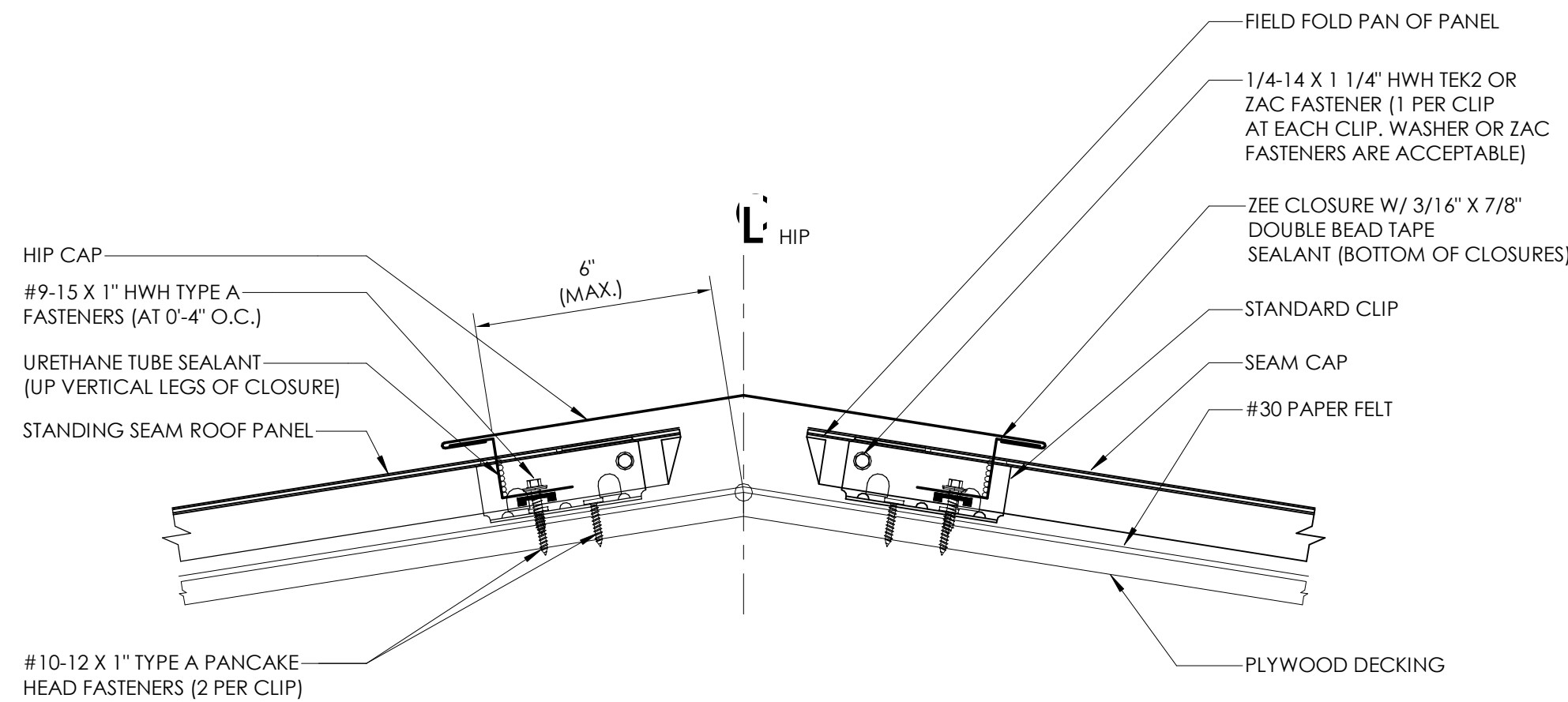
TAG	SYMBOL	MANUFACTURER & DESCRIPTION	MODEL / COLOR
A		BROAN EXHAUST FAN WITH LED LIGHT, 110 CFM	NUTONE FLEX SERIES / WHITE IN COLOR
B		LITHONIA EMERGENCY LIGHT	ELM6L / WHITE IN COLOR
C		LITHONIA EXIT-UNIT COMBO	LHQM LED / WHITE IN COLOR
D		BROWNLEE LIGHTING VANITY LIGHT	FLOW SQ / SILVER IN COLOR
E		ACUITYBRANDS STRIP LIGHT	CSS LED / WHITE IN COLOR
F		LITHONIA LED FLAT PANEL 2'X2' OR 2'X4' LED FIXTURE	CPX / WHITE IN COLOR
G		LED WALL PACK	LED WALLPACK TWR1 LED ALO SWW2 UVOLT PE DDBTXD (DUSK TO DAWN)



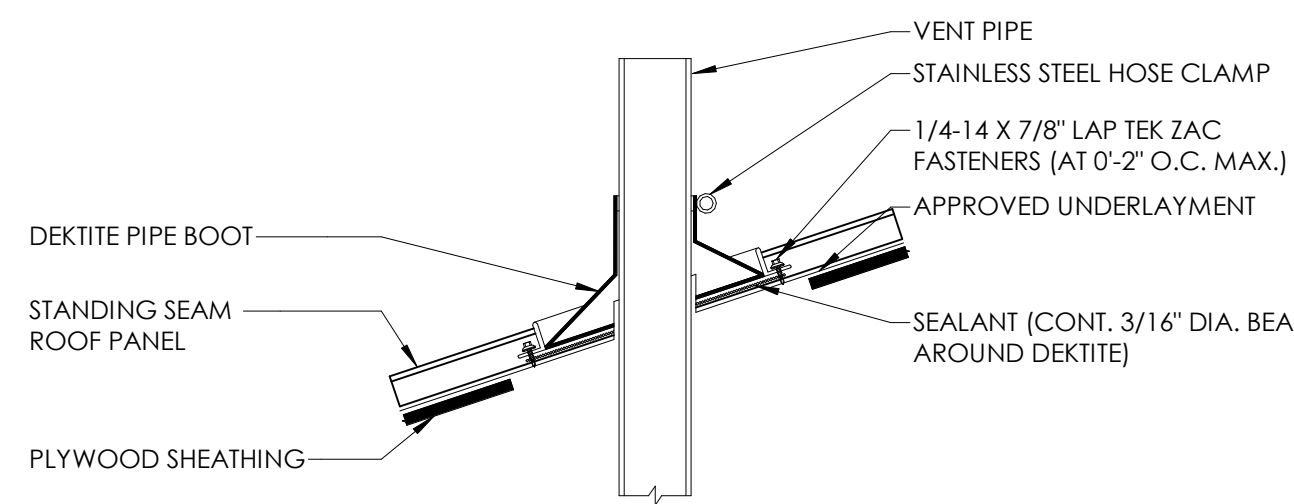
5
A210
EAVE DETAIL
3" = 1'-0"



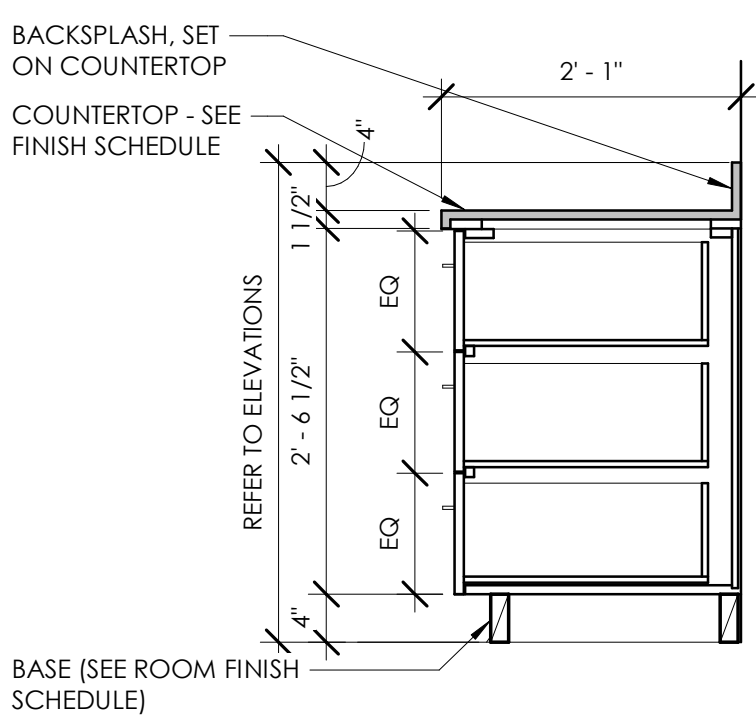
4
A210
EAVE DETAIL GUTTER
3" = 1'-0"



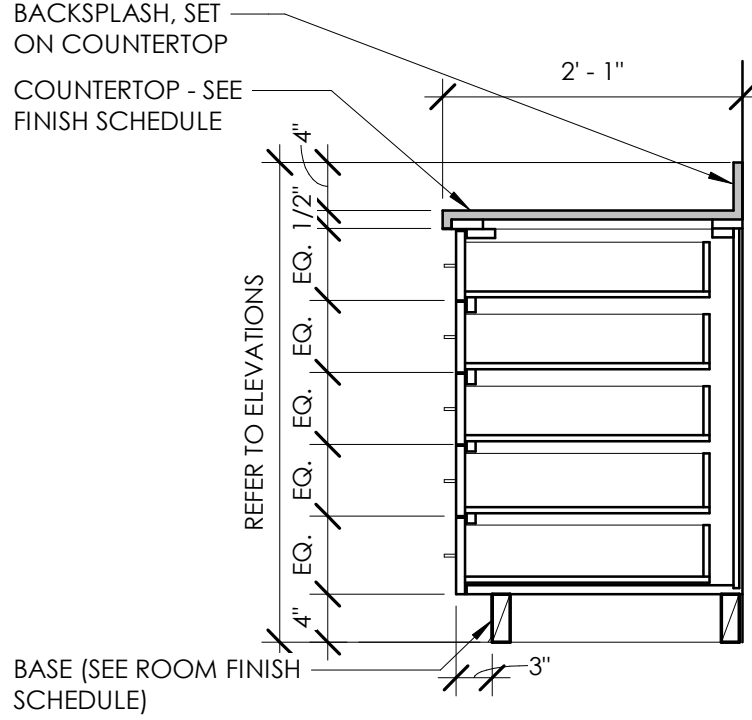
3
A210
HIP DETAIL
3" = 1'-0"



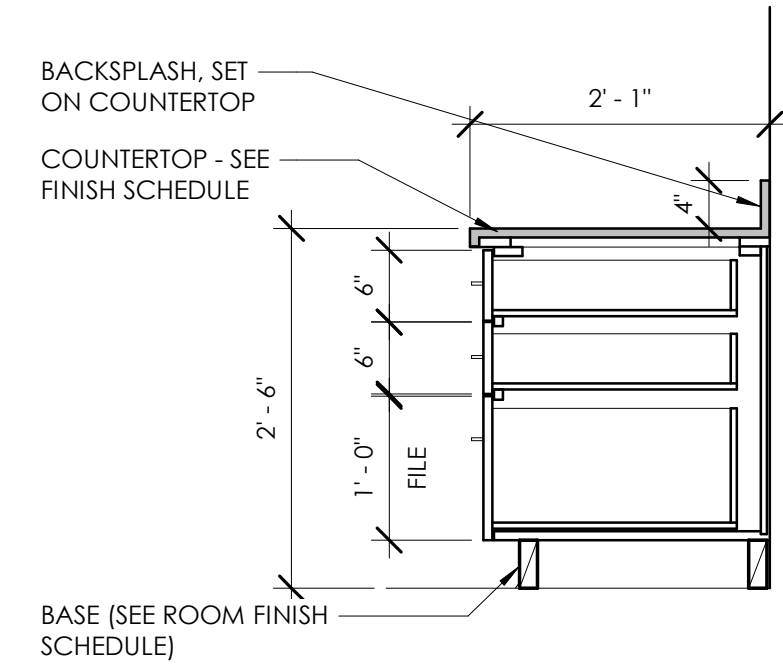
2
A210
PIPE PENETRATION
1 1/2\"/>



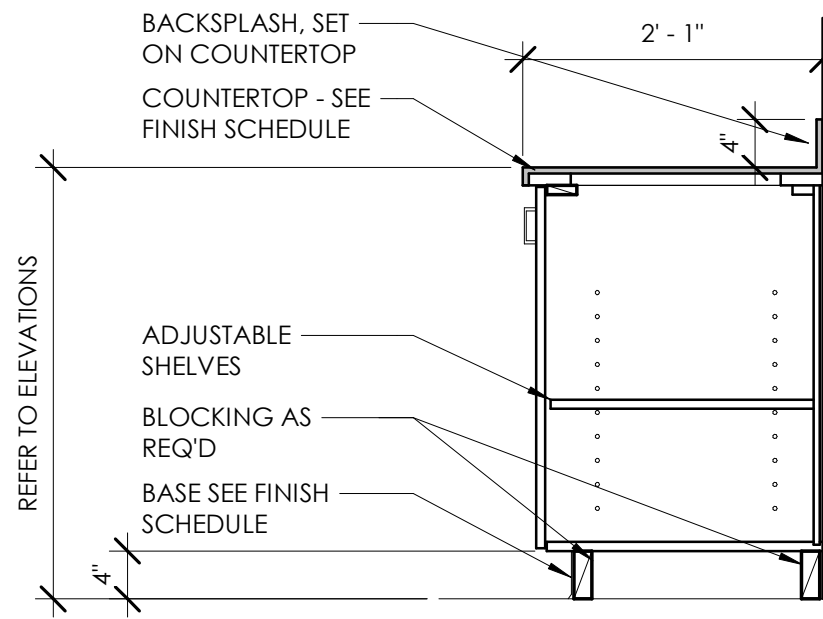
1 **BASE - 3 EQ DRAWER**
A310 3/4" = 1'-0"



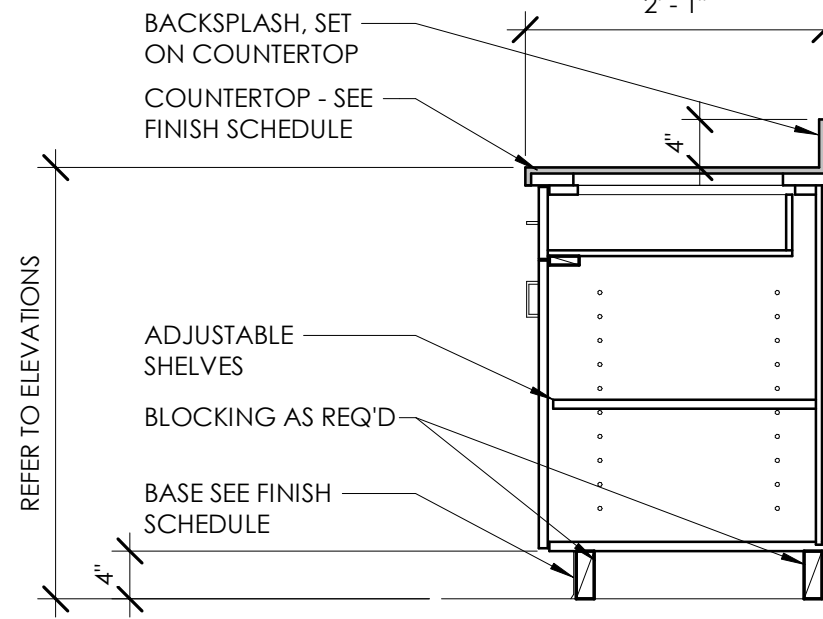
2 **BASE - 5 EQ DRAWER**
A310 3/4" = 1'-0"



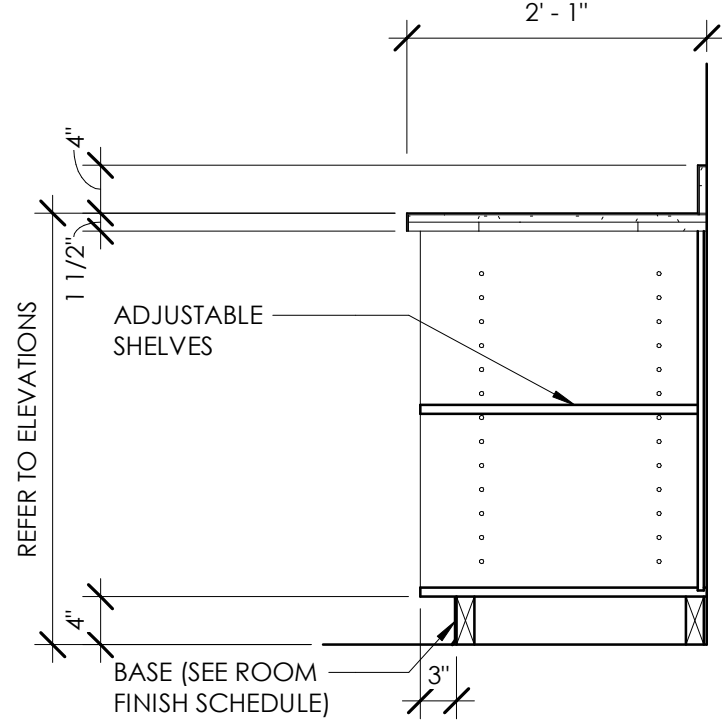
3 **BASE - DESK FILE**
A310 3/4" = 1'-0"



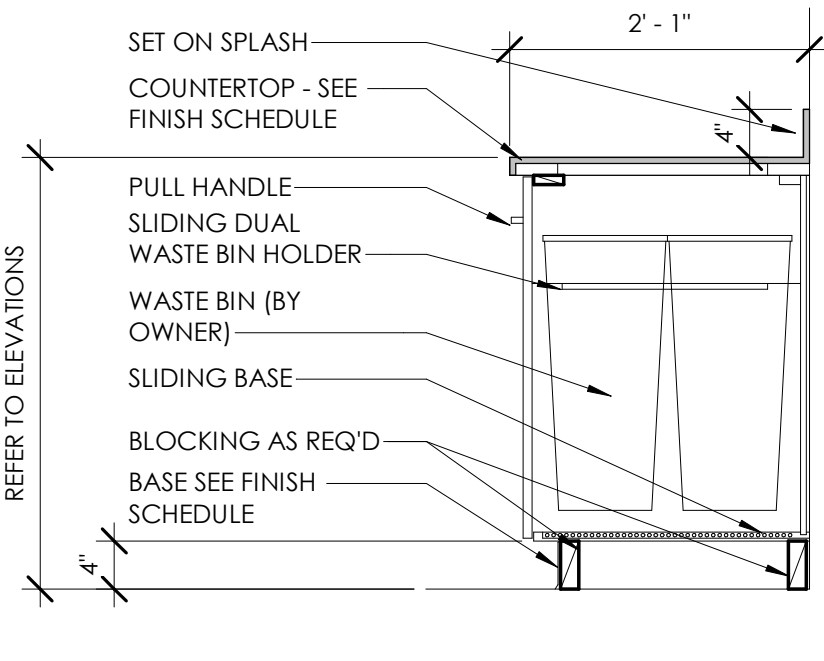
5 **BASE - DOOR**
A310 3/4" = 1'-0"



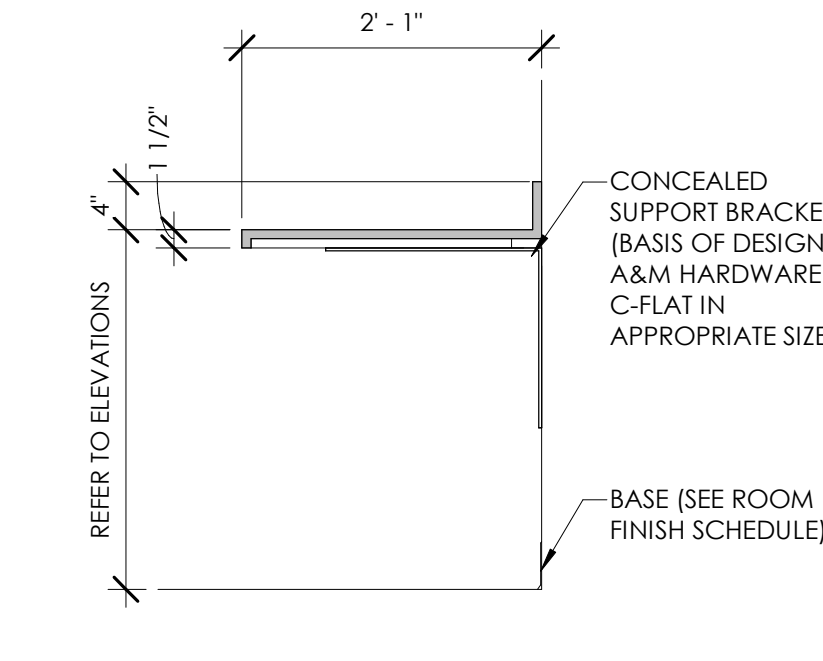
7 **BASE - DOOR/DRAWER**
A310 3/4" = 1'-0"



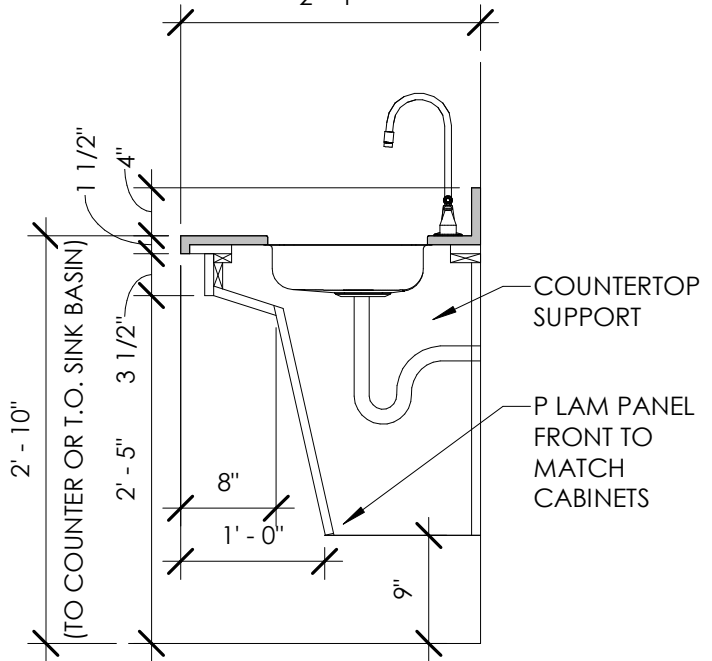
8 **BASE CABINET SECTION**
A310 3/4" = 1'-0"



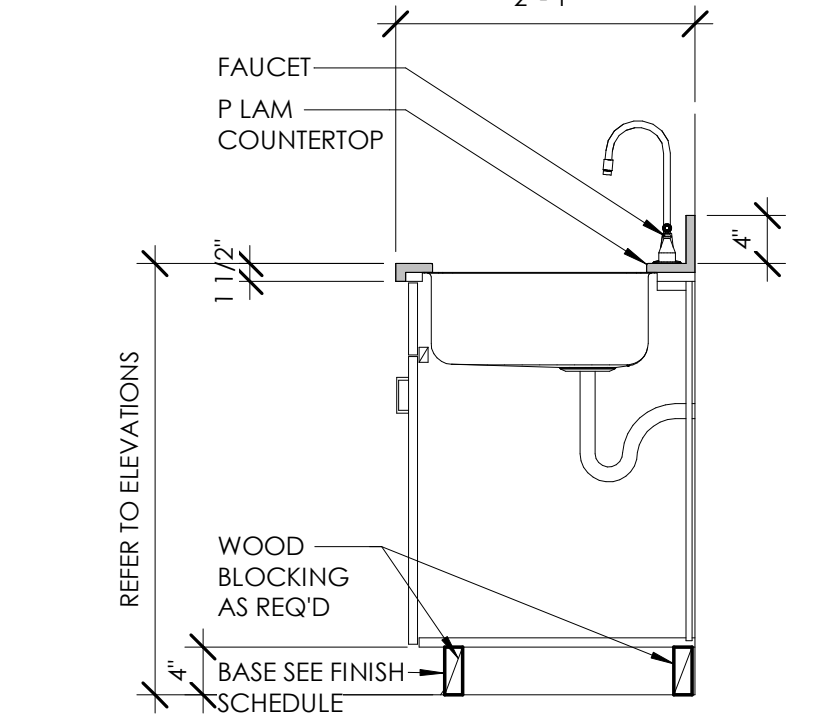
9 **BASE - TRASH**
A310 3/4" = 1'-0"



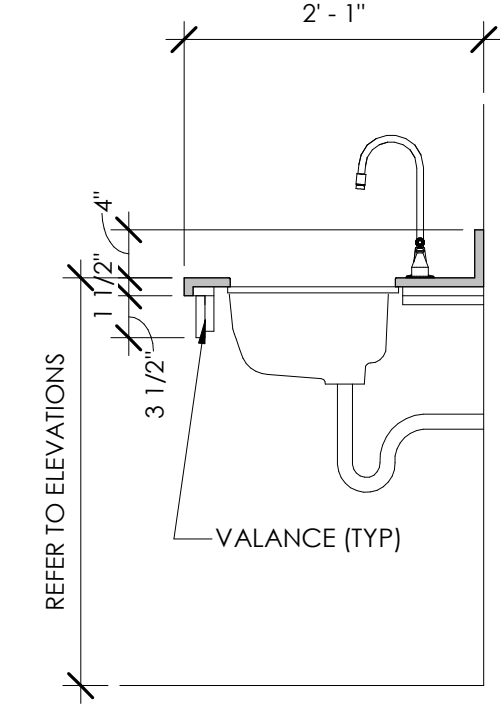
10 **COUNTER SECTION**
A310 3/4" = 1'-0"



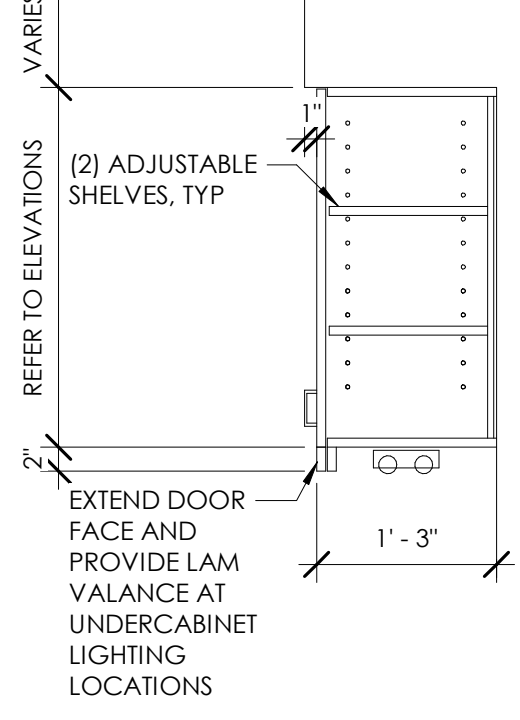
11 **COUNTER WITH SINK**
A310 3/4" = 1'-0"



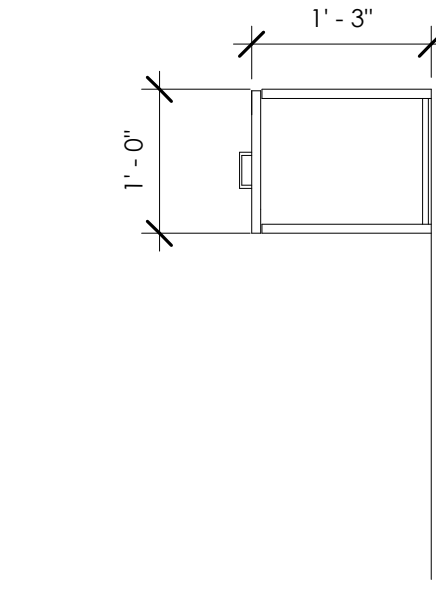
12 **SINK - BASE**
A310 3/4" = 1'-0"



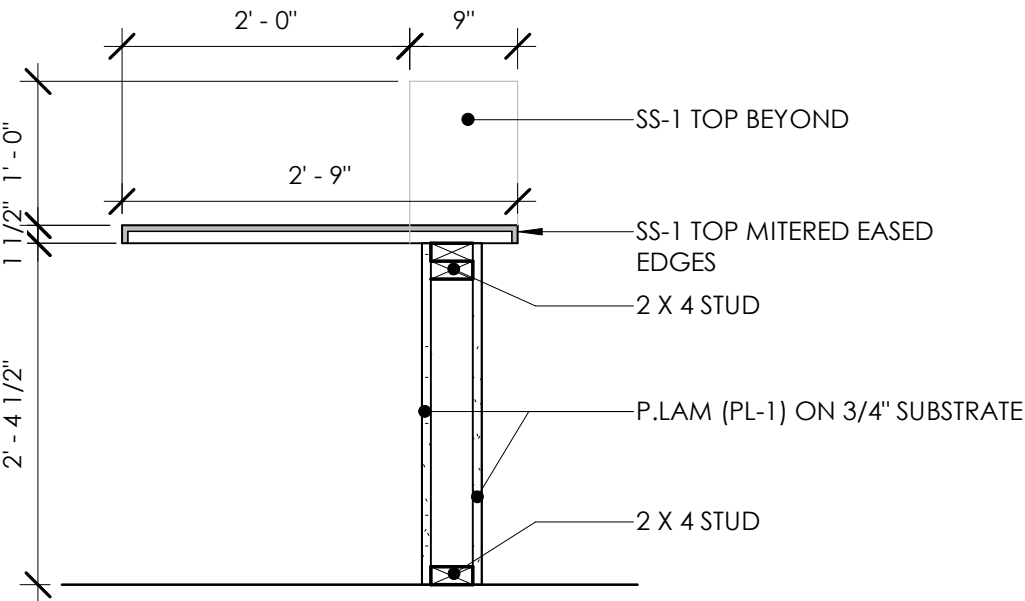
13 **SINK - COUNTER VALANCE**
A310 3/4" = 1'-0"



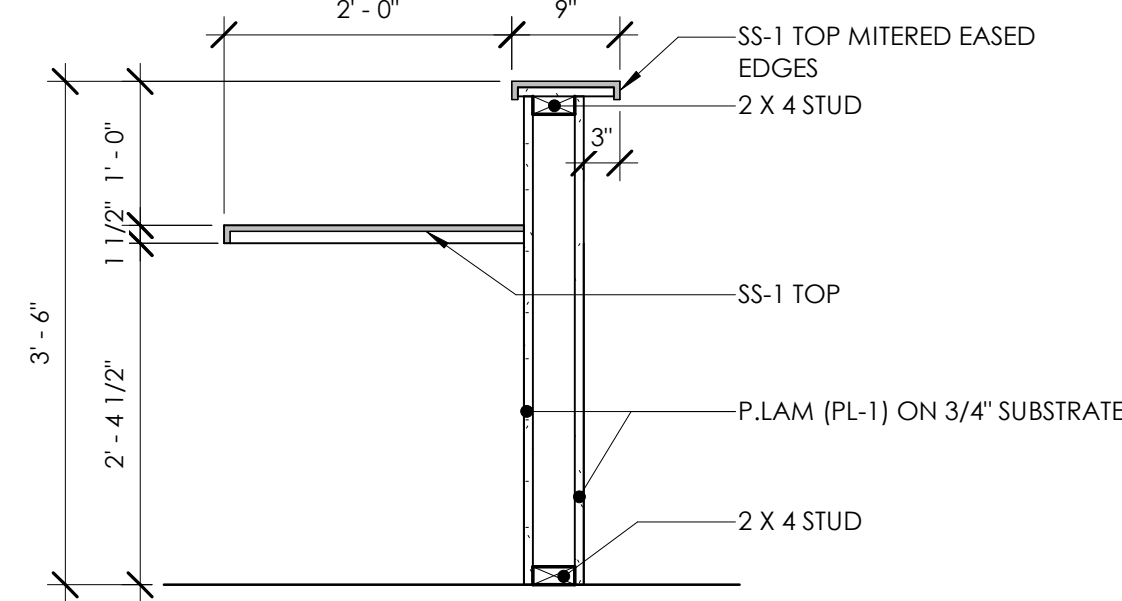
14 **UPPER CABINET**
A310 3/4" = 1'-0"



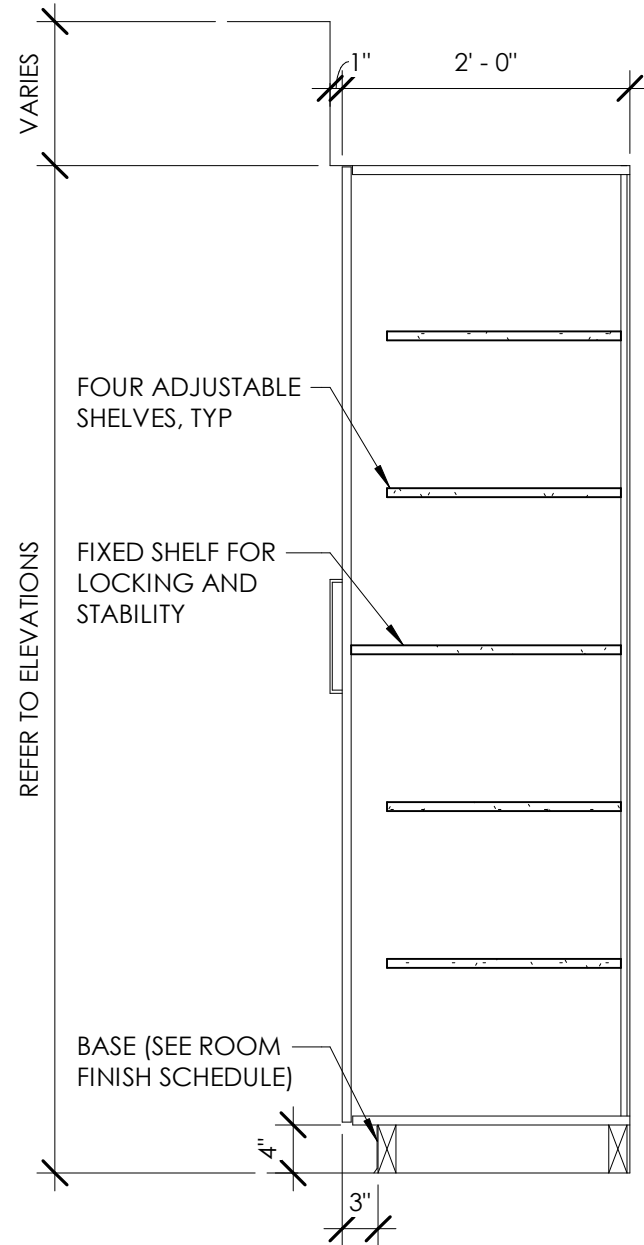
15 **UPPER CABINET**
A310 3/4" = 1'-0"



16 **RECEPTION DESK DETAIL - WOOD 1**
A310 3/4" = 1'-0"



17 **RECEPTION DESK DETAIL - WOOD 2**
A310 3/4" = 1'-0"



18 **TALL CABINET**
A310 3/4" = 1'-0"

GENERAL NOTES

1. ALL BASE CABINET DEPTHS TO BE 2'-0" (WALL TO OUTSIDE DOOR FACE) UNLESS NOTED OTHERWISE.
2. ALL WALL CABINET DEPTHS TO BE 1'-3" (WALL TO DOOR FACE) UNLESS NOTED OTHERWISE
3. ALL COUNTERTOP DEPTHS TO BE 2'-1" UNLESS NOTED OTHERWISE. COUNTERS TO EXTEND 1" BEYOND OPEN END EDGE OF MILLWORK UNLESS NOTED OTHERWISE
4. REFER TO INTERIOR ELEVATIONS FOR DIMENSIONS OF ALL CABINETRY
5. REFER TO FINISH SCHEDULES FOR MILLWORK FINISH
6. REFER TO FINISH SCHEDULES FOR COUNTERTOP MATERIAL AND FINISH
7. ALL BASE CABINETS TO HAVE A SINGLE SHELF UNLESS NOTED OTHERWISE
8. ALL WALL/VALANCE CABINETS LESS THAN 2'-0" IN HEIGHT TO HAVE A SINGLE SHELF, AND GREATER THAN 2'-0" IN HEIGHT TO HAVE TWO SHELVES, UNLESS NOTED OTHERWISE
9. ALL SHELVES TO BE ADJUSTABLE UNLESS NOTED OTHERWISE
10. REFER TO INTERIOR ELEVATION FOR INDICATION OF LOCKABLE CABINETS
11. REFER TO INTERIOR ELEVATIONS FOR DOOR SWINGS
12. ALL WALL CABINETS TO BE MOUNTED 7'-6" AFF TO TOP OF CABINET UNLESS NOTED OTHERWISE
13. DOOR HANDLE PULLS ARE SHOWN FOR GRAPHICAL REFERENCE ONLY. REFER TO ROOM FINISH SCHEDULE
14. ALL BASE DRAWERS/ APRONS ARE 6" UNLESS NOTED OTHERWISE
15. ALL SPLASHES ARE 4" UNLESS NOTED OTHERWISE
16. ALL EXPOSED EXTERIOR SURFACES OF CASEWORK TO BE FINISHED TO MATCH THE CASEWORK

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Engineer Email

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INTERIOR DETAILS

A310

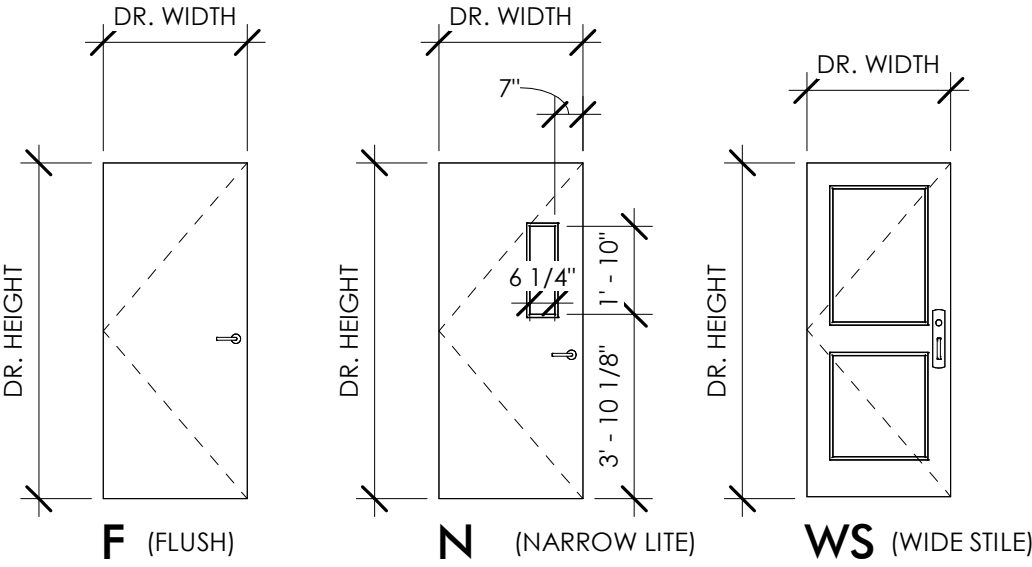
DOOR SCHEDULE															
DOOR NUMBER	ROOM		NEW OR EXIST	DOOR TYPE	FIRE RATING	DOOR				DOOR FRAME		DOOR FRAME			COMMENTS
	ROOM NUMBER	ROOM NAME				SIZE			DOOR MAT'L	TYPE	FRAME MAT'L	DETAILS			
						WIDTH	HEIGHT	THICKNESS				HEAD	JAMB	SILL	
LEVEL 1															
100-A	100	LOBBY	New	F	NONE	3' - 0"	6' - 8"	1 3/4"	H.M.		H.M.	1/A400	2/A400	3/A400	
100-B	100	LOBBY	New	F	NONE	3' - 0"	6' - 8"	1 3/4"	H.M.		H.M.	1/A400	2/A400	3/A400	
101-A	101	RESTROOM	New	F	NONE	3' - 0"	6' - 8"	1 3/4"	WD		H.M.	1/A400	2/A400	3/A400	
101-B	101	RESTROOM	New	F	NONE	3' - 0"	6' - 8"	1 3/4"	WD		H.M.	1/A400	2/A400	3/A400	
102	102	STORAGE	New	F	NONE	3' - 0"	6' - 8"	1 3/4"	H.M.		H.M.	1/A400	2/A400	3/A400	
103	102	STORAGE	New	F	NONE	2' - 6"	6' - 8"	1 3/4"	WD		H.M.	1/A400	2/A400	3/A400	
104-A	104	GARAGE	New	F	NONE	3' - 0"	6' - 8"	1 3/4"	H.M.		H.M.	1/A400	2/A400	3/A400	
105	104	GARAGE	New	F	NONE	3' - 0"	6' - 8"	1 3/4"	H.M.		H.M.	1/A400	2/A400	3/A400	
131	104	GARAGE	New	OHD		12' - 0"	10' - 0"	1 1/2"	STEEL		STEEL				

ABBREVIATIONS

H.M. - HOLLOW METAL
IPS - INTERIOR PAINT SYSTEM
EXIST - EXISTING
ALUM - ALUMINUM
FS - ROLLING FIRE SHUTTER
WD - SOLID CORE WOOD DOOR
AE - AUTOMATIC ENTRY DOORS

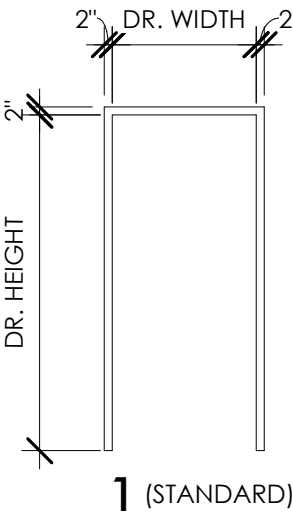
GENERAL NOTES

- REFER TO DOOR SCHEDULE FOR HEIGHTS, WIDTHS AND GLAZING TYPES.
- ALL HARDWARE TO BE ADA COMPLIANT LEVER HARDWARE.
- ALL EXTERIOR AND RATED DOORS ARE TO HAVE ADA COMPLIANT SILLS WITH MAX THRESHOLDS OF 1/2"



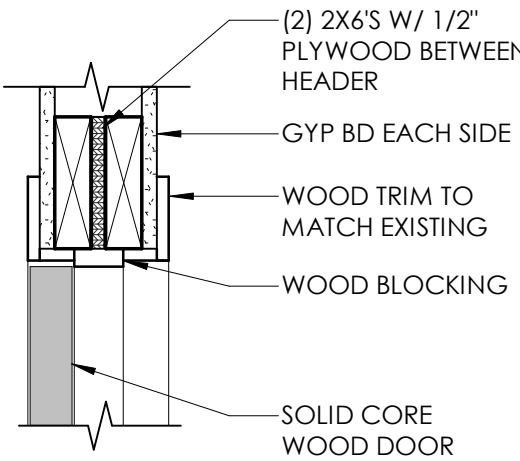
DOOR TYPES

NOTE: REFER TO DOOR SCHEDULE FOR HEIGHTS / WIDTHS AND GLAZING TYPE

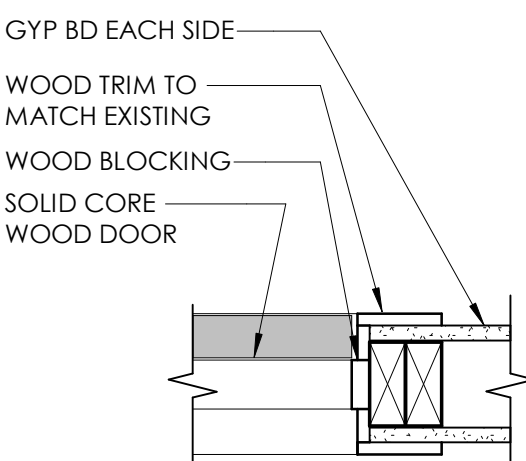


FRAME TYPES

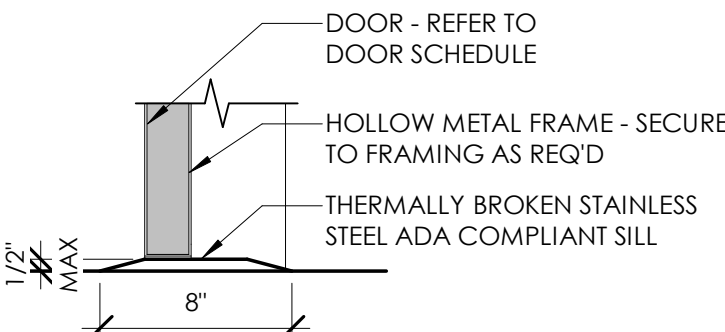
NOTE: REFER TO DOOR SCHEDULE FOR HEAD, JAMB, AND SILL DETAILS



1 HEAD DETAIL - WD GYP BD
1 1/2" = 1'-0"



2 JAMB DETAIL - WD GYP. BD.
1 1/2" = 1'-0"



3 SILL DETAIL - H.M. FRAME
1 1/2" = 1'-0"



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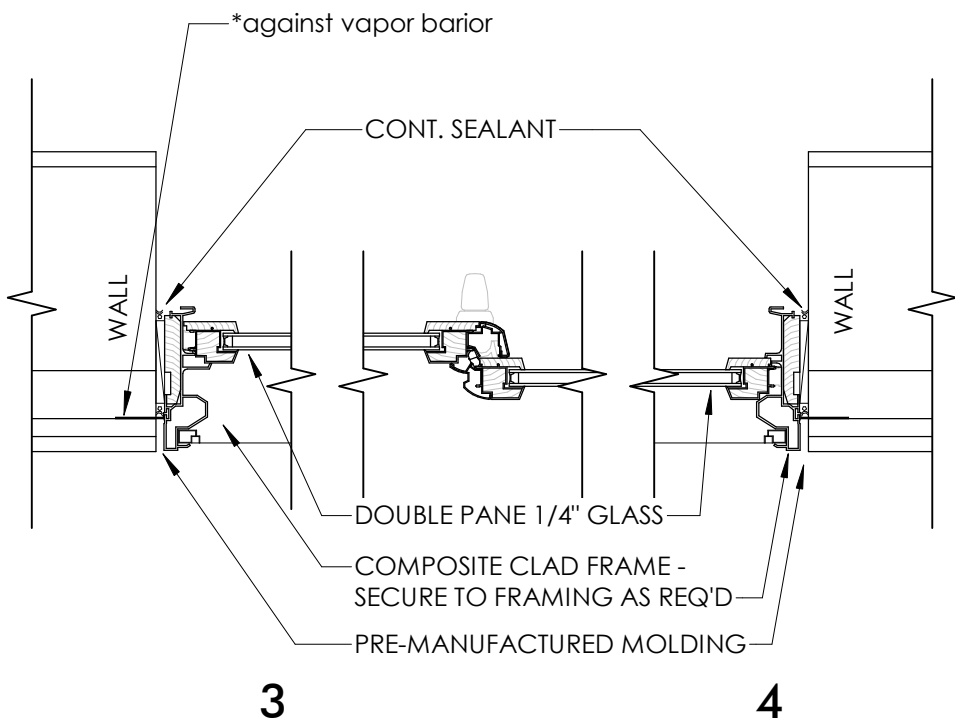
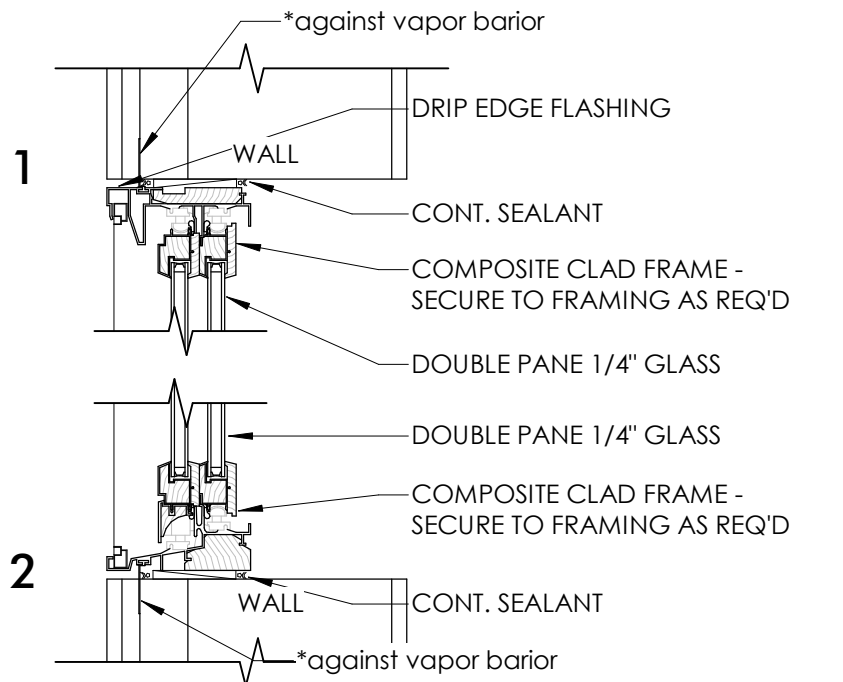
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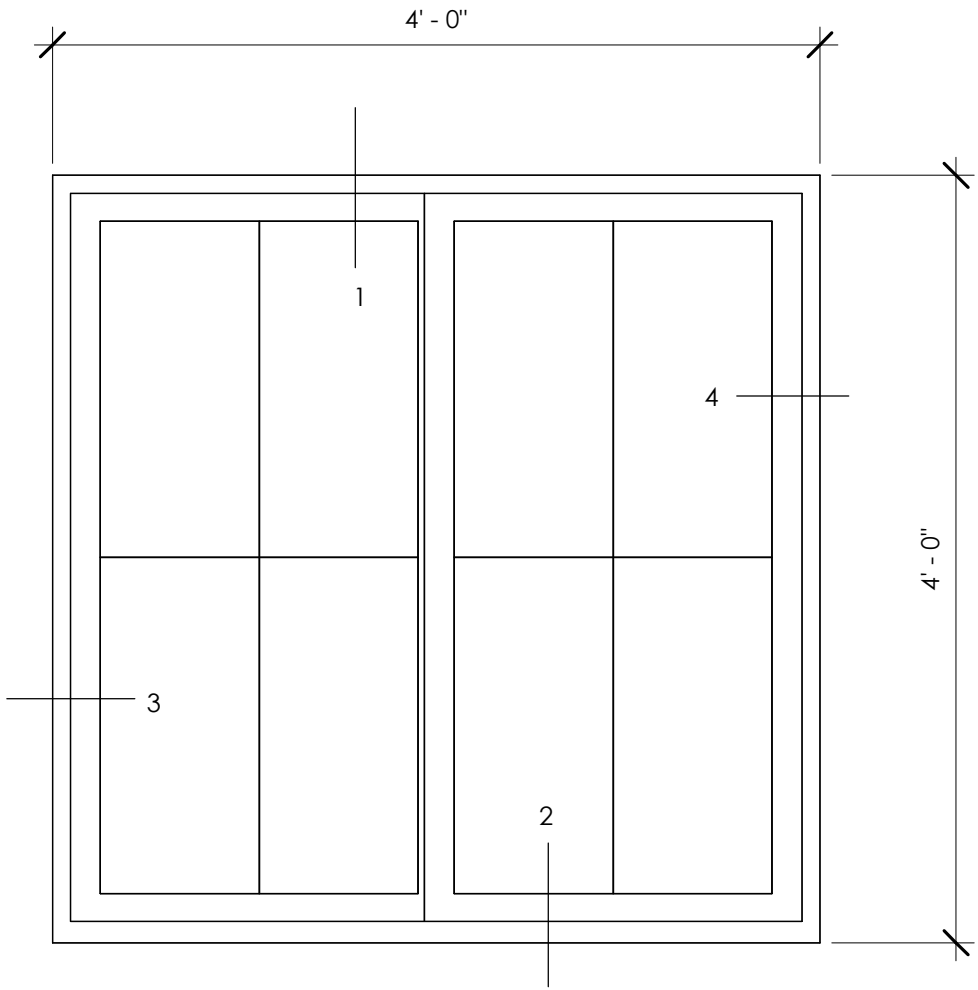
DOOR SCHEDULE AND DETAILS

A400

WINDOW SCHEDULE												
MARK	From Room: Number	NEW OR EXIST	SIZE			MAT'L	GLAZING	DETAILS			FIRE RATING	COMMENTS
			WIDTH	HEIGHT	SILL HEIGHT			HEAD	JAMB	SILL		
LEVEL 1												
U	100	New	4' - 0"	4' - 0"	3' - 0"			1/A400	1/A400	1/A400		
U	100	New	4' - 0"	4' - 0"	3' - 0"			1/A400	1/A400	1/A400		



GLIDING DETAILS



U (GLIDING)

ANDERSEN A 400 SERIES TO BE THE BASIS OF DESIGN

1

A410

GLIDING DETAILS

1 1/2" = 1'-0"



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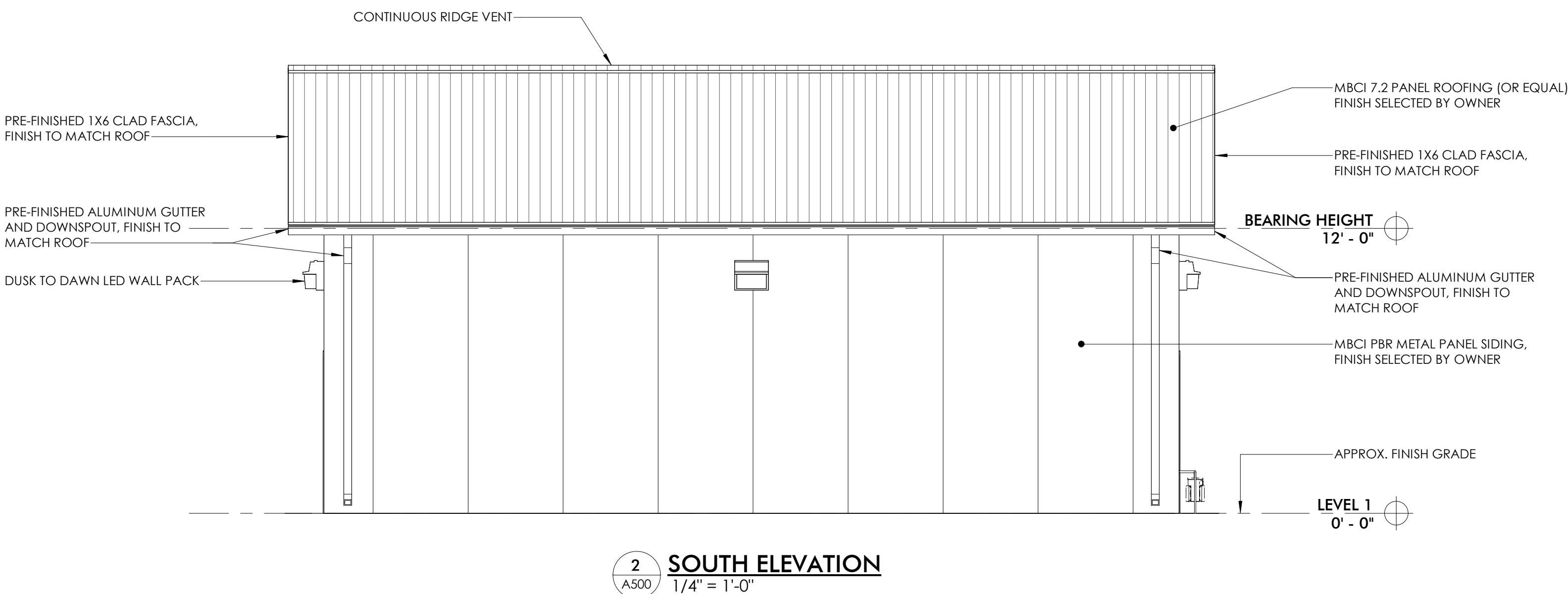
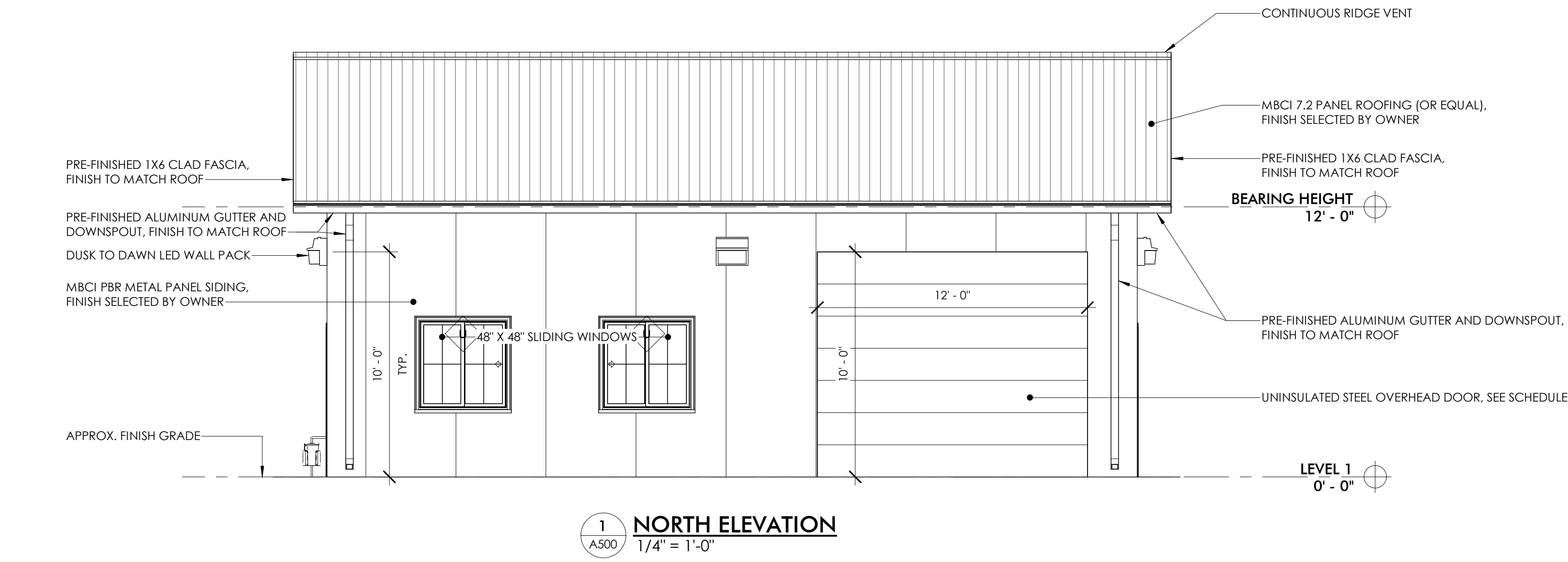
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WINDOW SCHEDULE AND DETAILS

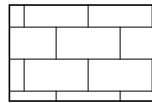
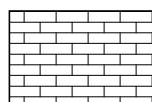
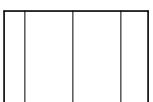
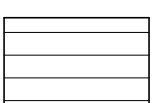
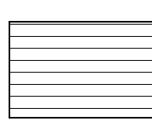
A410



GENERAL NOTES

- 1. REFER TO MATERIAL LEGEND FOR EXTERIOR FINISH PANEL TYPES AND COLOR.
- 2. REFER TO MATERIAL LEGEND FOR ROOF TYPES AND COLOR.
- 3. ALL GLAZING SHALL BE LOW-E GLASS. TINT TO BE RECOMMENDED BY MANUFACTURER.
- 4. ALL FINISH MATERIALS TO BE VERIFIED WITH OWNER AND ARCHITECT PRIOR TO CONSTRUCTION. ALL SUBSTITUTIONS NEED TO BE APPROVED IN WRITING.

EXTERIOR ELEVATION SYMBOL LEGEND

	CMU		METAL ROOFING
	BRICK		ASPHALT ROOFING
	STONE		KNOT WOOD
	SIDING / METAL SIDING		



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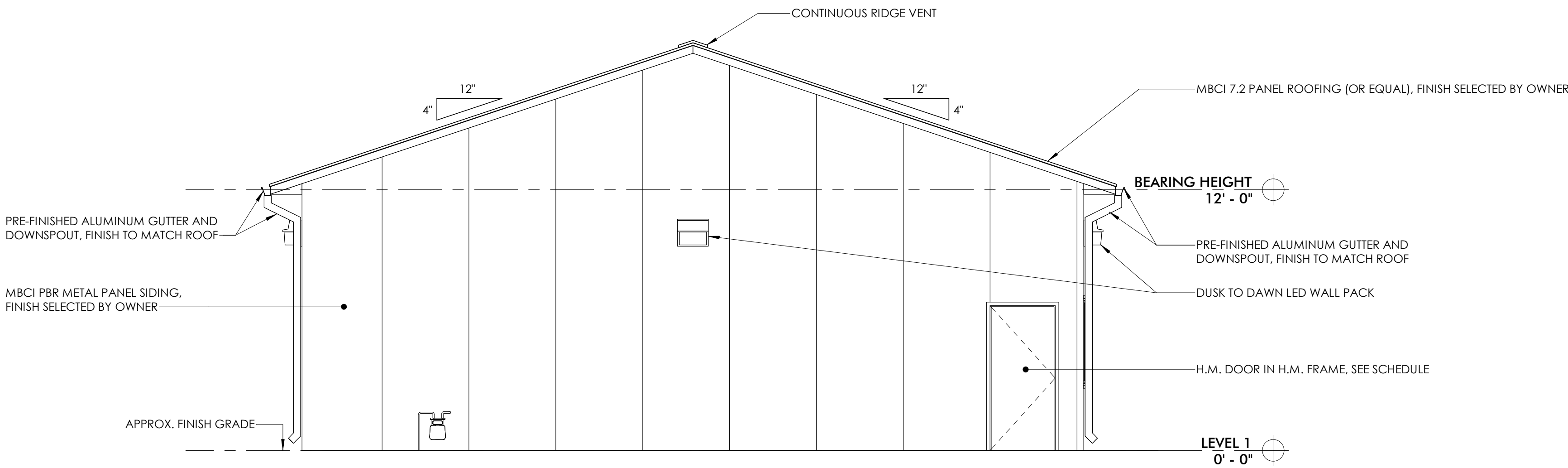
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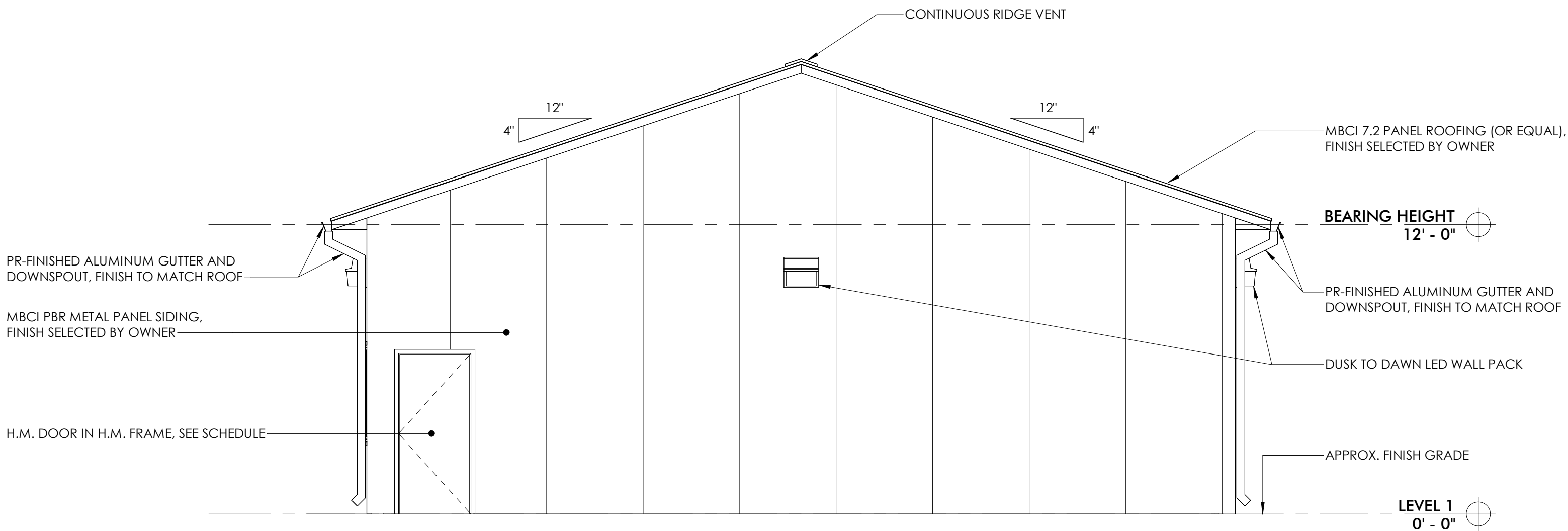
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EXTERIOR ELEVATIONS

A500



1 EAST ELEVATION
A501 1/4" = 1'-0"



2 WEST ELEVATION
A501 1/4" = 1'-0"

GENERAL NOTES

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EXTERIOR ELEVATION SYMBOL LEGEND	
	CMU
	METAL ROOFING
	BRICK
	ASPHALT ROOFING
	STONE
	KNOT WOOD
	SIDING / METAL SIDING



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EXTERIOR ELEVATIONS

A501

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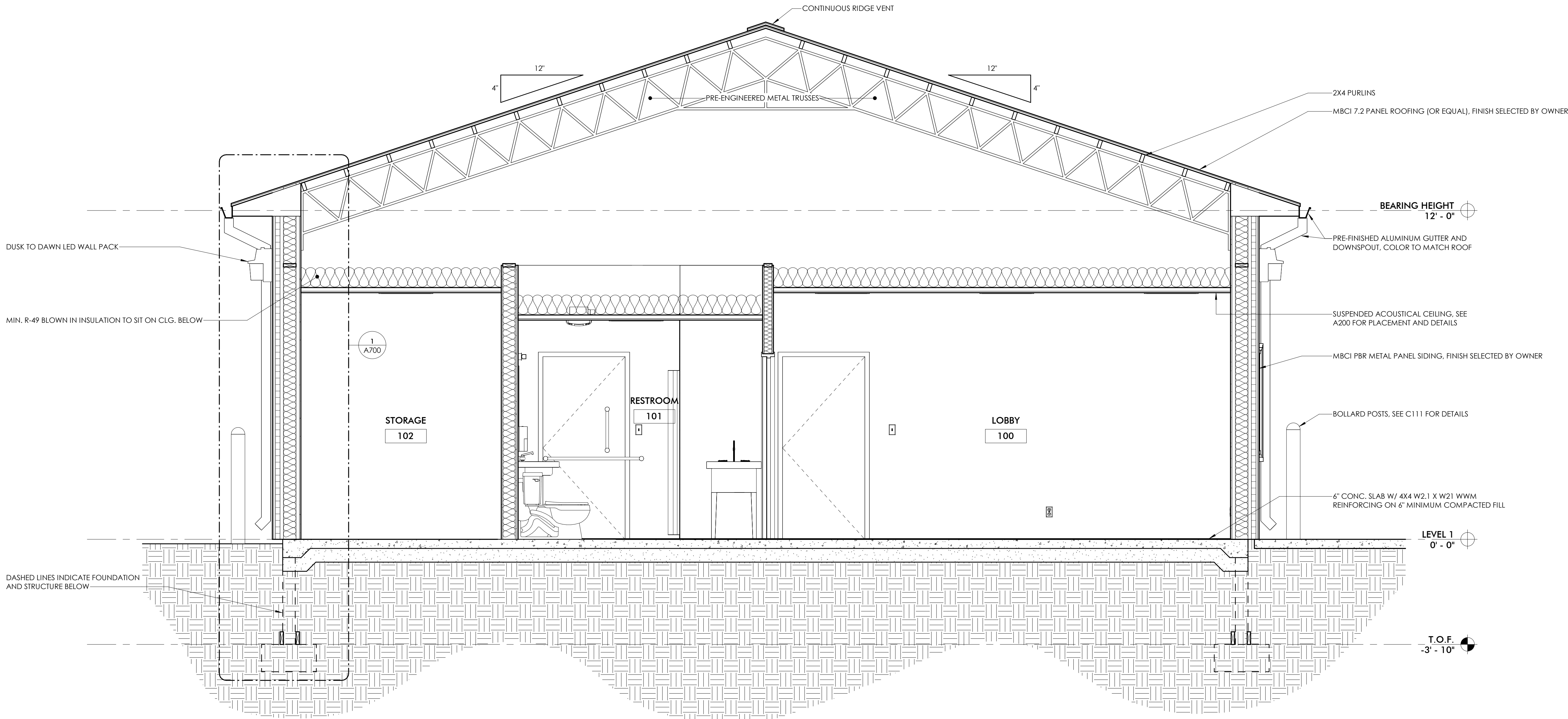
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BUILDING SECTIONS

A600



1 TRANSVERSE BUILDING SECTION
A600 1/2" = 1'-0"

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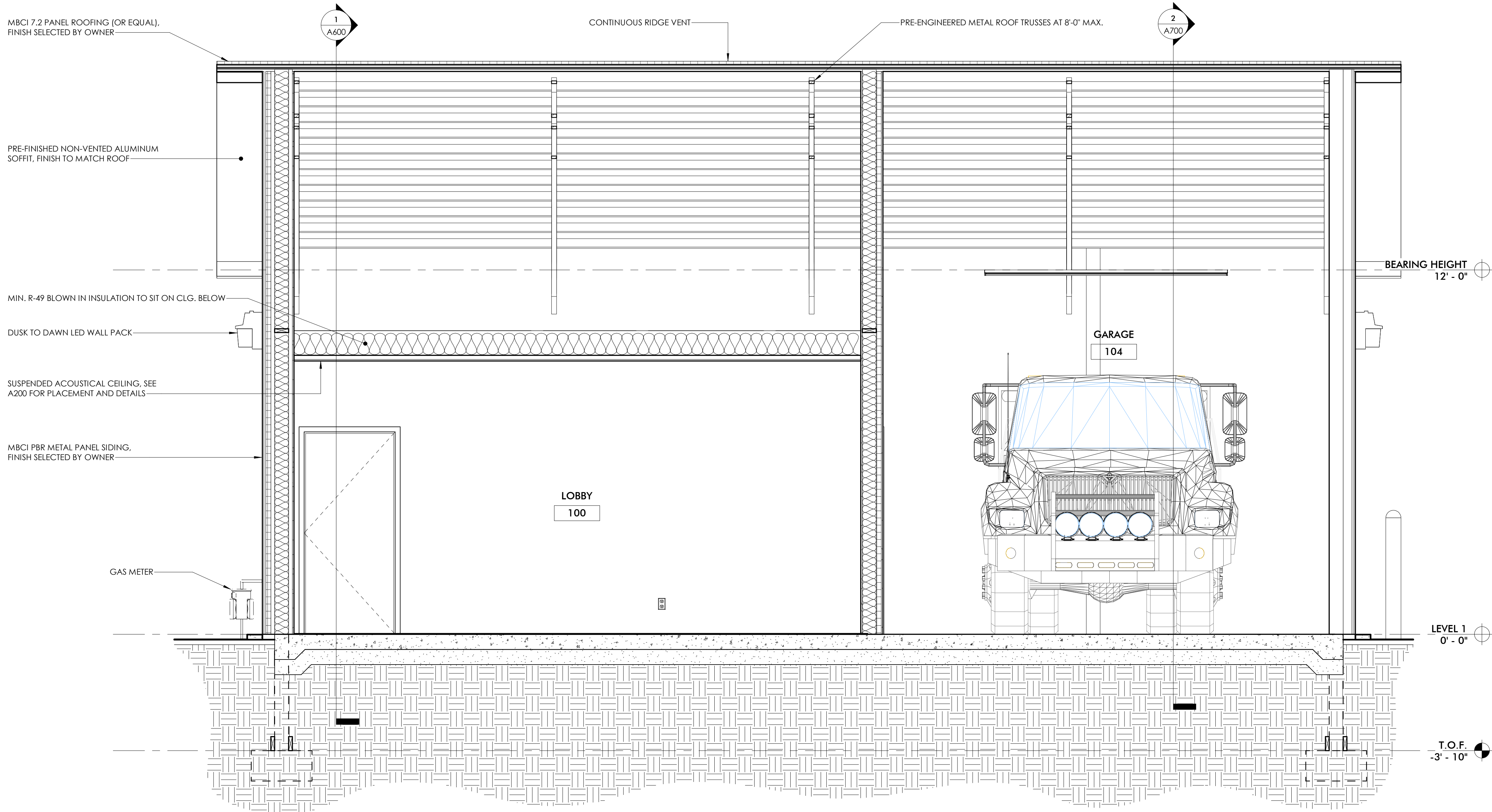
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DATE 10/13/2025 4:42:02 PM
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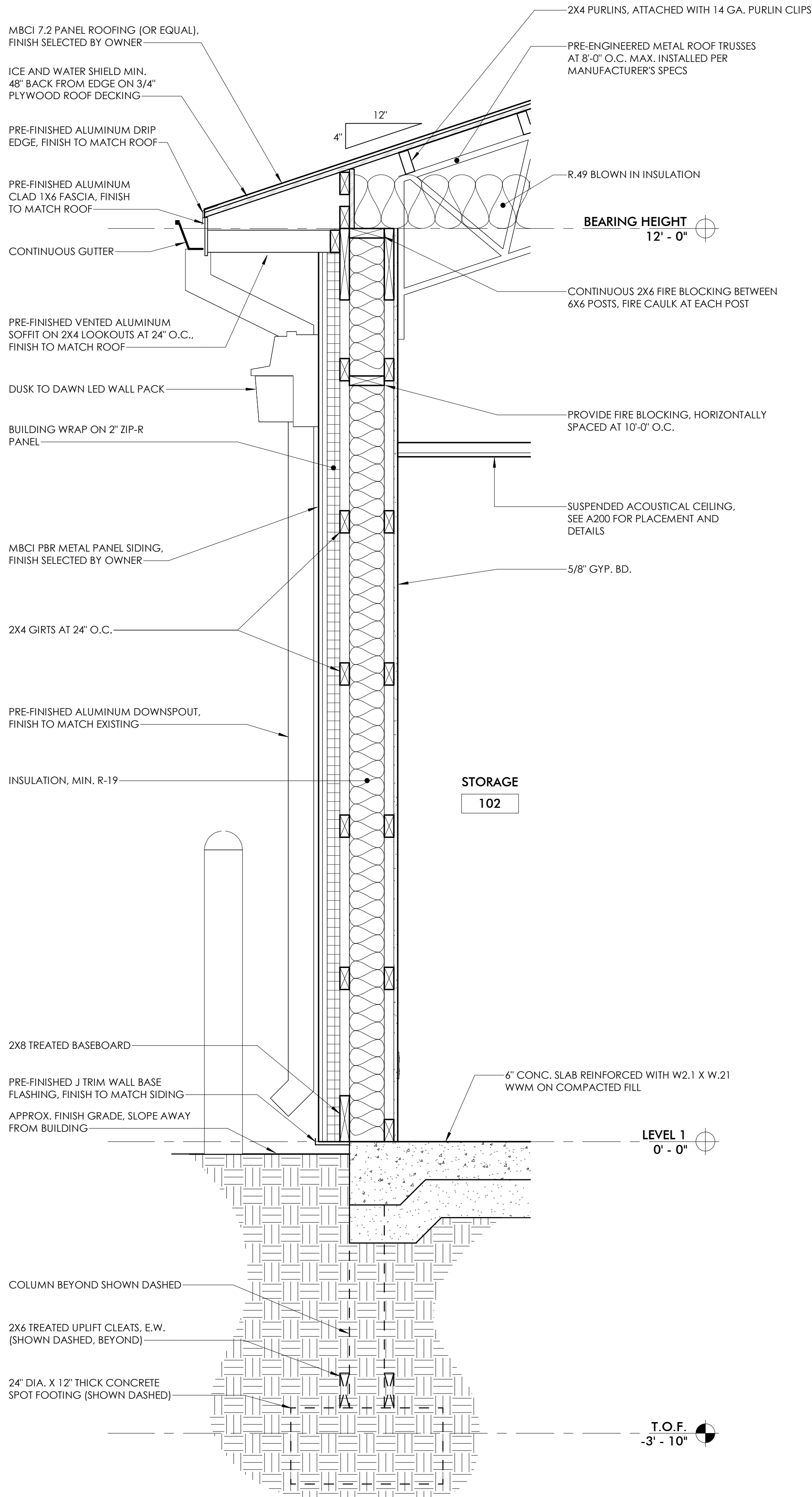
PROJECT NUMBER
2025.053

BUILDING SECTIONS

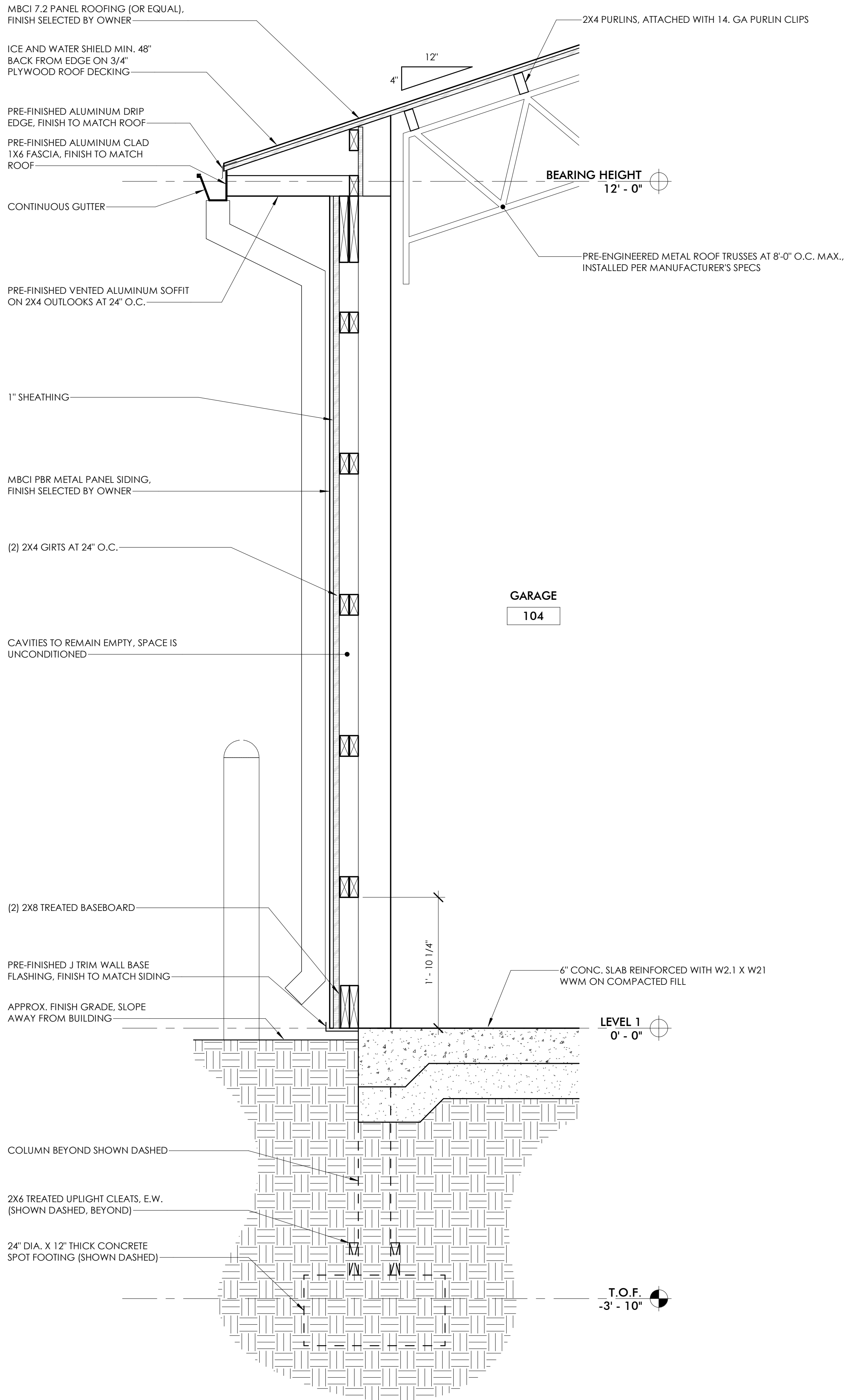
A601



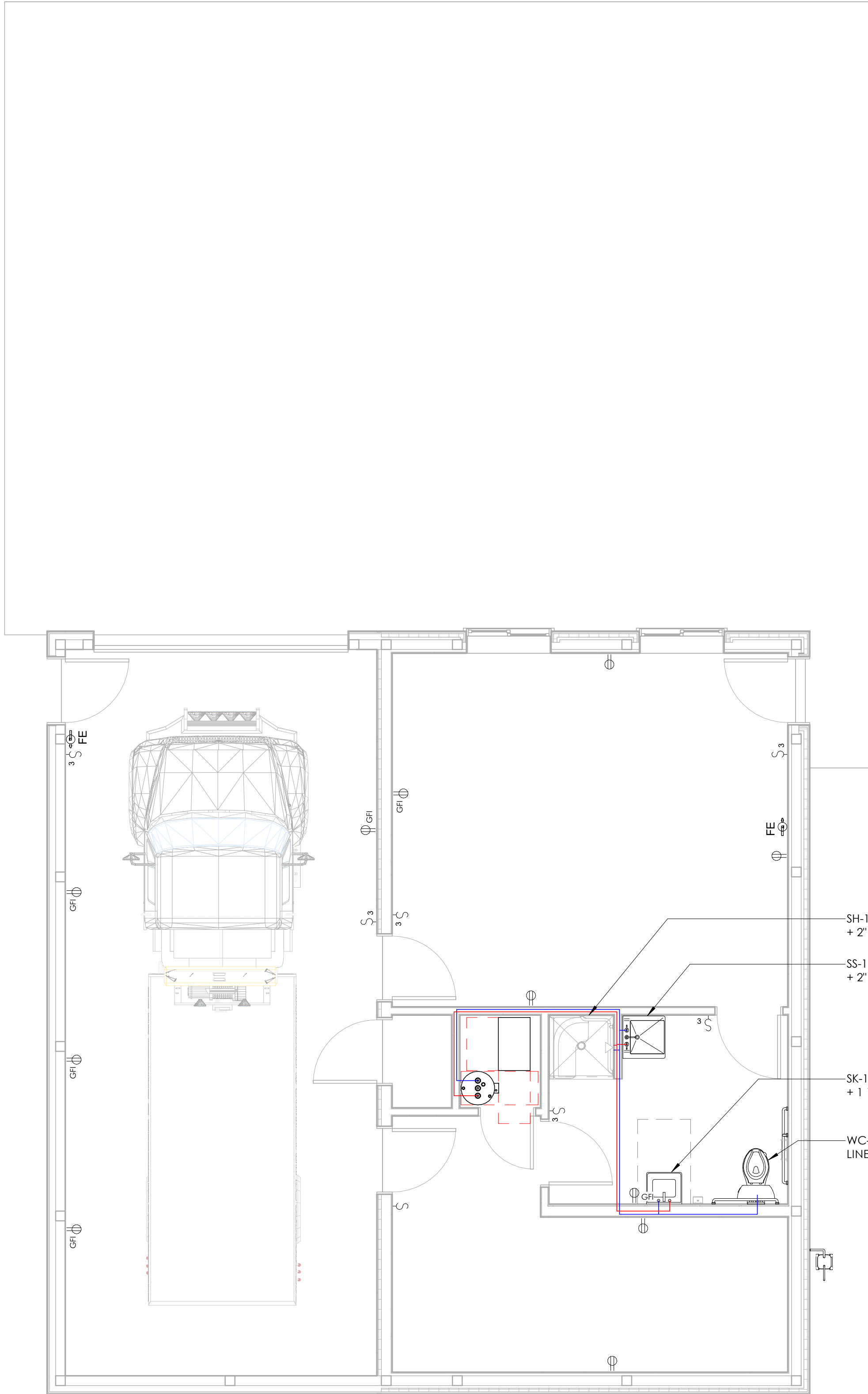
1
A601
LONGITUDINAL BUILDING SECTION
1/2" = 1'-0"



1 INSULATED EXTERIOR WALL SECTION
1" = 1'-0"



2 UNINSULATED EXTERIOR WALL SECTION
1" = 1'-0"



MECHANICAL NOTES

1. INSTALL ALL DUCTWORK PER SMACNA STANDARDS. USING METAL DUCT ADEQUATELY SUPPORTED TO AVOID DEFLECTION IN DUCT. WRAP ALL SUPPLY DUCTWORK WITH 1 1/2", 3/4 P.C.F. DENSITY FIBERGLASS INSULATION WITH VAPOR BARRIER. TAPE & SEAL ALL SEAMS, CUT-OUTS, & PENETRATIONS. INSULATE TOPS & NECKS OF ALL DIFFUSERS AND REGISTERS. PROVIDE EXPOSED SPIRAL UNINSULATED DUCT IN ALL CONDITIONED SPACES.
2. TEST AND BALANCE AIR DISTRIBUTION SYSTEM, PROVIDE BALANCE REPORT TO OWNER FOR REVIEW AT PROJECT COMPLETION.
3. RUN ALL DUCTS ABOVE CEILING, UNLESS NOTED OTHERWISE
4. PROVIDE ALL NECESSARY DUCT FITTINGS AND TRANSITIONS FOR A COMPLETE SYSTEM.
5. INSTALL DIFFUSERS WITH AIR TIGHT CONNECTIONS.
6. FIELD VERIFY CONDITIONS OF EXHAUST FANS, MODIFY OR CHANGE AS NECESSARY TO PROVIDE REQUIRED CFM'S.
7. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES, AND LAWS.
8. ARRANGE AND PAY FOR ALL PERMITS AND INSPECTIONS AS REQUIRED.
9. ALL WORK SHALL BE TESTED, BALANCED, AND GUARANTEED, PROVIDE REPORT TO ARCHITECT AND OWNER FOR THEIR RECORDS.
10. ANY MECHANICAL UNITS OR SYSTEMS SHOWN ARE DIAGRAMMATIC IN NATURE, THE CONTRACTOR SHALL PROVIDE FITTINGS, OFFSETS, ETC. AS NECESSARY TO PROVIDE COMPLETE SYSTEMS.
11. FINAL LOCATION OF ALL CEILING FEATURES TO BE COORDINATED WITH ALL TRADES.
12. MECHANICAL CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS.
13. PROVIDE APPROPRIATE FIRE STOPPING MATERIALS WHERE FIRE RATED ASSEMBLIES ARE PENETRATED.
14. ALL WORK AND MATERIALS SHALL BE GUARANTEED IN WRITING FOR ONE YEAR FROM THE PROJECT COMPLETION.
15. ANY MODEL NUMBERS OR MANUFACTURERS LISTED THROUGHOUT THE DRAWINGS ARE A BASIS OF DESIGN. THE CONTRACTOR MAY AT HIS OPTION PROVIDE AN "OR EQUAL" MANUFACTURER OR PRODUCT. THE CONTRACTOR IS RESPONSIBLE FOR ANY AND ALL COST ADDITIONS REQUIRED TO THE SYSTEM SHOULD AN "OR EQUAL" MANUFACTURER BE SELECTED.
16. ALL GAS PIPING SHALL BE SCHEDULE 40 BLACK STEEL. RUN IN BULKHEADS OR EMBEDDED IN WALL WHERE APPLICABLE. PAINT TO MATCH WHEN EXPOSED.
17. PROVIDE A GAS SHUTOFF VALVE, COMPLETE WITH DIRT LEG AT EACH PIECE OF GAS FIELD EQUIPMENT.
18. THE HEATING AND COOLING SYSTEMS ARE TO BE A DESIGN BUILD SYSTEM, IT IS TO BE DESIGNED, PROVIDED AND INSTALLED BY A LICENSED MECHANICAL CONTRACTOR OR ENGINEER IN THE STATE OF MICHIGAN. THE SYSTEM IS TO BE DESIGNED TO ALL APPLICABLE MICHIGAN MECHANICAL CODES IN FORCE AT THE TIME OF INSTALLATION AND INSPECTION. ANY MECHANICAL SHOWN ON THE PLANS ARE FOR REFERENCE ONLY AND HAVE BEEN PROVIDED BY A LICENSED CONTRACTOR. THE ARCHITECT DOES NOT TAKE ANY LIABILITY FOR THESE SYSTEMS.
19. A CFM SCHEDULE IS TO BE PROVIDED WITH A LAYOUT OF DUCTWORK WHEN APPLYING FOR MECHANICAL PERMIT.

ELECTRICAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRIC CODE AND ALL AUTHORITIES HAVING JURISDICTION.
2. ELECTRICAL CONTRACTOR TO SECURE AND PAY FOR ALL PERMITS AND FEES.
3. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES FOR INSTALLATION OF ALL EQUIPMENT. INSTALL EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS.
4. ALL WIRING SHALL BE COPPER NO. 12 AWG MINIMUM SIZE, TYPE THHN/THXX INSULATION.
5. ALL WIRING SHALL BE INSTALLED IN A METALLIC CONDUIT SYSTEM. RUN ALL NEW CONDUIT CONCEALED IN FINISHED AREAS.
6. ALL RECEPTACLES SHALL BE 20 AMP, GROUNDING TYPE, TO BE WHITE WITH WHITE COVERPLATES. PROVIDE GFCI TYPES WHERE SHOWN AND ANYWHERE WITHIN SIX FEET OF A PLUMBING FIXTURE. VERIFY AND COORDINATE ALL POWER OUTLETS TYPES AND LOCATIONS WITH OWNER PRIOR TO INSTALLATIONS.
7. ALL LIGHT SWITCHES SHALL BE SILENT TYPE, 20 AMP., TO BE WHITE WITH WHITE COVERPLATES.
8. MAXIMUM LOAD FOR A 20 AMP BREAKER SHALL BE 15 AMPS OR 1800 WATTS AT 120 VAC.
9. PROVIDE NEW TYPED PANEL INDEXES ON ALL ELECTRICAL PANELS THAT WERE REVISED.
10. LIGHTING SHOWN SCHEMATICALLY ON REFLECTED CEILING PLAN, CENTER LIGHTINGS IN ROOM UNLESS NOTED OTHERWISE.
11. ELECTRICAL CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS.
12. GUARANTEE ELECTRICAL MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE.
13. IT IS UNDERSTAND AND AGREED BY THE INSTALLER THAT WORK HEREIN DESCRIBED SHALL BE COMPLETE IN EVERY DETAIL, EVEN THOUGH EVERY ITEM INVOLVED IS NOT PARTICULARLY MENTIONED. INSTALLER SHALL BE HELD TO PROVIDE ALL LABOR AND MATERIALS NECESSARY FOR THE WORK INTENDED AND DESCRIBED FOR A COMPLETE AND OPERATIONAL SYSTEM. SUCH MATERIALS SHALL INCLUDE, BUT ARE NOT LIMITED TO, CONDUIT, FITTINGS, COVERPLATES, WIRING, BREAKERS, CONTROL DEVICES, LIGHTING ACCESSORIES, ETC. THIS ALSO INCLUDES EQUIPMENT REQUIRED BY STATE AND LOCAL CODES.
14. ELECTRICAL AND DATA OUTLETS ARE SHOWN SCHEMATICALLY IN NATURE. REVIEW FINAL PLACEMENT WITH OWNER BEFORE INSTALL.
15. THE ELECTRICAL SYSTEM IS TO BE A DESIGN BUILD SYSTEM. IT IS TO BE DESIGNED, PROVIDED, AND INSTALLED BY A LICENSED ELECTRICAL CONTRACTOR OR ENGINEER IN THE STATE OF MICHIGAN. THE SYSTEM IS TO BE DESIGNED TO MEET ALL APPLICABLE MICHIGAN ELECTRICAL CODES IN FORCE AT THE TIME OF INSTALLATION AND INSPECTION. ANY ELECTRICAL SHOWN IS FOR REFERENCE ONLY AND HAS BEEN DESIGNED BY A LICENSED CONTRACTOR. THE ARCHITECT DOES NOT TAKE ANY LIABILITY FOR THESE SYSTEMS.

LIGHTING SYMBOLS

*ALL FIXTURES SHOWN ARE TO BE A BASIS OF DESIGN. EQUAL EQUIVALENTS ARE ACCEPTED.			
TAG	SYMBOL	MANUFACTURER & DESCRIPTION	MODEL / COLOR
A		BROAN EXHAUST FAN WITH LED LIGHT, 110 CFM	NUTONE FLEX SERIES / WHITE IN COLOR
B		LITHONIA EMERGENCY LIGHT	ELM6L / WHITE IN COLOR
C		LITHONIA EXIT-UNIT COMBO	LHQM LED / WHITE IN COLOR
D		BROWNLEE LIGHTING VANITY LIGHT	FLOW SQ / SILVER IN COLOR
E		ACUITYBRANDS STRIP LIGHT	CSS LED / WHITE IN COLOR
F		LITHONIA LED FLAT PANEL 2'X2' OR 2'X4' LED FIXTURE	CPX / WHITE IN COLOR
G		LED WALL PACK	LED WALLPACK: TWR1 LED ALO SSW2 UVOLT PE DDBTDX (DUSK TO DAWN)

ELECTRICAL SYMBOLS

	THREE-WAY SWITCH		DIMMER SWITCH
	SWITCH		QUADRUPLUX OUTLET
	GROUNDING FAULT INTERCEPTOR OUTLET		240 VOLT RANGE OUTLET
	DUPLEX OUTLET		FLOOR OUTLET

PLUMBING NOTES

1. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES, AND LAWS.
2. ARRANGE AND PAY FOR ALL PERMITS AND INSPECTIONS AS REQUIRED.
3. ALL WORK SHALL BE PERFORMED TO FACILITATE EXPEDITIOUS PROGRESS ON THE WHOLE PROJECT. COORDINATE WORK WITH OTHER TRADES TO MINIMIZE AND RESOLVE POTENTIAL CONFLICTS.
4. THE DRAWINGS ARE DIAGRAMMATIC IN NATURE. THE CONTRACTOR SHALL PROVIDE FITTINGS, OFFSETS, ETC., AS NECESSARY TO PROVIDE COMPLETE SYSTEMS.
5. FURNISH AND INSTALL ALL VALVING FOR THE PROPER SECTIONALIZING AND OPERATION OF PIPING SYSTEMS. PROVIDE ACCESS PANELS AS REQUIRED FOR ACCESS TO VALVES.
6. ALL PIPES PASSING THROUGH FINISHED WALLS, PARTITIONS, AND FLOORS SHALL BE FITTED WITH ADJUSTABLE ESCUTCHEONS, AND APPROPRIATE FIRE STOPPING WHERE REQUIRED.
7. ATTACH ALL FIXTURES TO SUPPORTING SURFACES PLUMB AND LEVEL. WALL HUNG UNITS SHALL BE SECURELY FASTENED TO WALL BACKING. PROVIDE CHAIR CARRIERS FOR ALL LAVATORIES
8. WHERE FIXTURES ARE MOUNTED TO WALLS AND FLOORS, SEAL ALL INTERSECTIONS WITH DOW WHITE SILICONE CAULK.
9. IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY DETAIL OF CONSTRUCTION. CONTRACTOR SHALL FURNISH AND INSTALL ALL ITEMS NECESSARY FOR A COMPLETE CODE COMPLYING SYSTEM.
10. ALL WORK AND MATERIALS SHALL BE GUARANTEED IN WRITING FOR ONE YEAR FROM PROJECT COMPLETION.
11. PLUMBING CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS.
12. SLOPE ALL NEW SANITARY PIPING A MIN. OF 1/8" PER FOOT.
13. SANITIZE ALL NEW HOT & COLD WATER LINES PER LOCAL WATER DEPARTMENT REQUIREMENTS. FLUSH AND TEST SYSTEM FOR LEAKS. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR PROPER LEAK-FREE OPERATION OF SYSTEM. SOLDER JOINTS WITH NON-LEAD SOLDER.
14. PROVIDE DI-ELECTRIC FITTINGS WHERE DISSIMILAR METALS ARE CONNECTED.
15. SUPPLY ALL NECESSARY TRIM, P-TRAPS, AND ANGLE STOPS AT EACH PLUMBING FIXTURE.
16. FIXTURES ARE TO BE PROVIDED BY OWNER AND INSTALLED BY THE PLUMBING CONTRACTOR PER THE MANUFACTURER'S RECOMMENDATIONS.
17. INSULATE ALL COLD WATER LINES WITH 1" MINERAL FIBER INSULATION WITH VAPOR BARRIER. INSULATE ALL HOT WATER LINES WITH 1" FIBERGLASS.
18. DRAIN, VENT AND WASTE PIPING SHALL BE SCHEDULE DWV PVC. CLEAN OUTS IN FINISHED AREAS SHALL BE RECESSED AND HAVE CHROME OR BRASS COVER PLATES FLUSH WITH THE FINISHED FLOOR.
19. PROVIDE SHUTOFF VALVES ON HOT & COLD WATER BRANCH PIPING TO ISOLATE BRANCH.
20. INSTALL EACH FIXTURE WITH TRAP, EASILY REMOVABLE FOR SERVICE AND CLEANING.
21. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT.
22. FURNISH AND INSTALL WATER HAMMER ARRESTERS IN ACCORDANCE WITH PDI WH201.
23. LAY OUT PLUMBING WORK TO AVOID CONFLICTS WITH OTHER BUILDING COMPONENTS. ESTABLISH ELEVATION OF PUBLIC SEWER SYSTEM.
24. THE PLUMBING SYSTEMS ARE TO BE A DESIGN BUILD SYSTEM. IT IS TO BE DESIGNED, PROVIDED, AND INSTALLED BY A LICENSED PLUMBING CONTRACTOR OR ENGINEER IN THE STATE OF MICHIGAN. THE SYSTEM IS TO BE DESIGNED BY A LICENSED PLUMBING CONTRACTOR OR ENGINEER IN THE STATE OF MICHIGAN. ANY PLUMBING SHOWN IS FOR REFERENCE ONLY. THE ARCHITECT DOES NOT TAKE ANY LIABILITY FOR THESE SYSTEMS.

PLUMBING FIXTURES

- WATER CLOSET (TANK TYPE) WC-1**
WATER CLOSET (FLOOR MOUNTED); KOHLER WELLWORTH CLASSIC, TWO-PIECE ELONGATED 1.6 GPF TOILET, K-3505-SS, VITREOUS CHINA, EQUIPPED WITH SLOAN FLUSHMATE POLISHED CHROME LEFT HANDED LEVER, WITH ANTIMICROBIAL FINISH, WHITE IN COLOR, CONTRACTOR TO SUPPLY OPEN FRONT SEAT, TO MATCH, THE TOILET IS ASME A112.19.2/CSA B45.1 AND ADA COMPLIANT
- SK-1**
KOHLER SOHO K-2084-0 WHITE 20" X 18" WALL-MOUNT BATHROOM SINK WITH SINGLE FAUCET HOLE KOHLER KUMIN K-98827-4-CP POLISHED CHROME SINGLE-HANDLE BATHROOM SINK FAUCET
- DF-1**
ELKAY HIGH-LO DRINKING FOUNTAIN EZSTL8C
- SS-1**
SERVICE SINK: ONE PIECE 23"x23" FLOOR MOUNT SINGLE UTILITY SERVICE SINK WHITE BY FLORESTONE MANUFACTURER PART #FM-1 UD
- SH-1**
ADA SHOWER: 36"x36" ACCESSIBLE 1-PIECE TRANSFER SHOWER STALL W/ RIGHT SEAT AND GRAB BARS WHITE BY ACRYLX
- FLOOR DRAIN FD-1**
ASME A112.21.1: LACQUERED CAST IRON TWO PIECE BODY WITH DOUBLE DRAINAGE FLANGE, WEEP HOLES, REVERSIBLE CLAMPING COLLAR, AND 6 INCH DIAMETER, ROUND, ADJUSTABLE NICKEL-BRONZE STRAINER. PROVIDE TRAP PRIMER CONNECTION AT ALL LOCATIONS SHOWN ON PLANS, AND AS REQUIRED BY CODE.
- FLOOR TROUGH FT-1**
48" x 12" FLOOR TRENCH
- WATER HEATER WH-1**
(140°F WATER TO KITCHEN EQUIP) BASED ON LOCHINVAR SHIELD GAS WATER HEATER, MODEL SNR201-100 115V/102, 90 GALLON, 199,999 BTUH INPUT, 233 GPH RECOVERY AT 100°F RISE, 305 GPH FIRST HOUR, 3"Ø AIR INLET AND 3"Ø VENT. PROVIDE WITH VENT TERMINATION KIT, CONDENSATION NEUTRALIZATION KIT, ELECTRICAL DATA: 120/1/60.

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CONSTRUCTION MANAGER/GC
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GC City
GC Phone Number
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PROJECT NAME
TIGER'S TOWING
PROJECT ADDRESS
775 INDUSTRIAL RD, MARSHALL, MI

ISSUE/REVISION
CD SET - 10/13/2025

DRAWN BY CMIN
DATE 10/13/2025 4:42:03 PM
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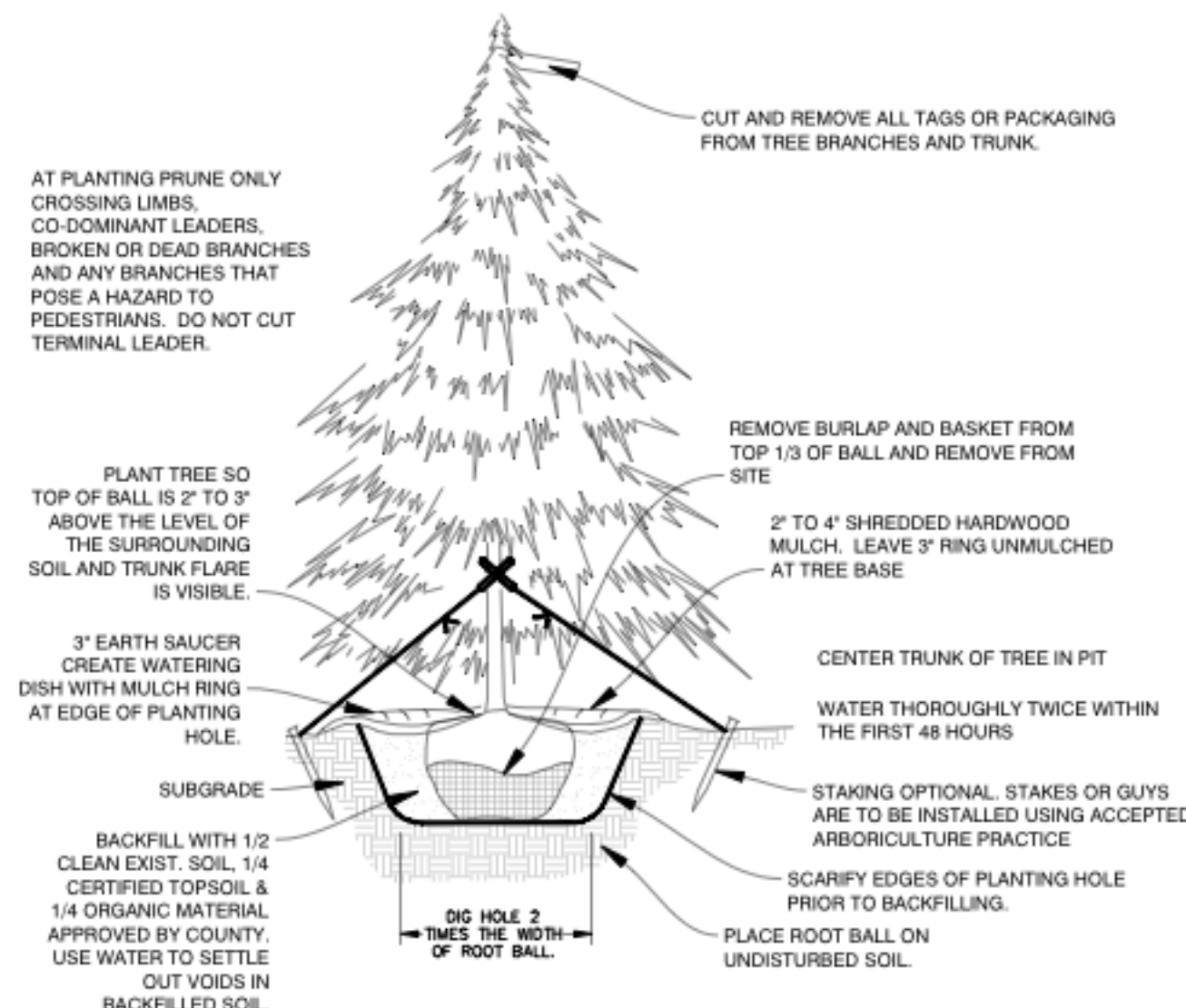
MECH, ELEC, PLUMB SPECS/NOTES

MEP101

LANDSCAPING NOTES

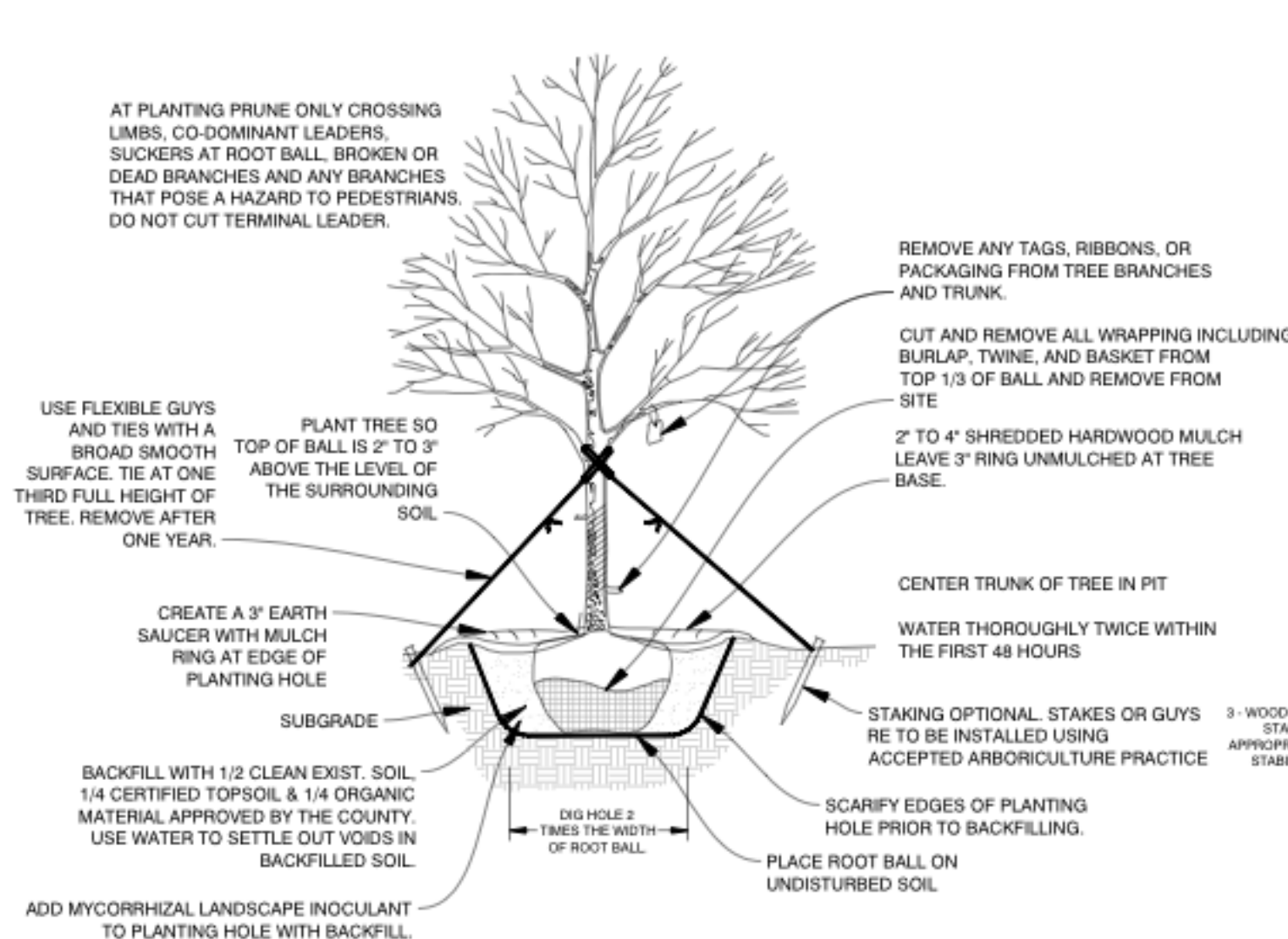
1. INSTALL CONSTRUCTION FENCE AROUND DRIP LINES OF EXISTING TREES TO REMAIN. NO COMPACTION OR INCREASED DEPTH OF SOIL OVER THE ROOT SYSTEM AREA PRIOR TO AND DURING CONSTRUCTION.
2. ALL LAWN AREAS SHALL BE SEEDED AND MULCHED WITH THE FOLLOWING MIXTURE: 30% IMPROVED PERENNIAL RYEGRASS, 40% FINE FESCUE, AND 40% KENTUCKY BLUEGRASS AT A RATE OF 3-4 LBS/ 1000 SFT.
3. ALL EDGING SHALL BE STANDARD COMMERCIAL-STEEL EDGING 1/2" X 4", ROLLED EDGE, FABRICATED IN SECTIONS OF STANDARD LENGTHS, WITH LOOPS STAMPED FROM OR WELDED TO FACE OF SECTIONS TO RECEIVE STAKES IN STANDARD FINISH OF GREEN PAINT.
4. PROVIDE QUALITY, SIZE, GENUS, SPECIES, AND VARIETY OF EXTERIOR PLANTS INDICATED, COMPLYING WITH APPLICABLE REQUIREMENTS IN ANSI Z60.1 "AMERICAN STANDARD FOR NURSERY STOCK." MEASURE ACCORDING TO ANSI Z60.1 STANDARDS.
5. MAINTAIN AND ESTABLISH LAWN BY WATERING, FERTILIZING, WEEDING, MOWING, TRIMMING, REPLANTING, AND OTHER OPERATIONS. ROLL, REGRADE, AND REPLANT BARE OR ERODED AREAS AND REMULCH TO PRODUCE A UNIFORMLY SMOOTH LAWN.
6. BEGIN LAWN MAINTENANCE IMMEDIATELY AFTER EACH AREA IS PLANTED AND CONTINUE UNTIL ACCEPTABLE LAWN IS ESTABLISHED: A MINIMUM OF 60 DAYS AFTER SUBSTANTIAL COMPLETION.
7. PROTECT ADJACENT AND ADJOINING STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND PLANTINGS FROM HYDROSEEDING OVER-SPRAY AND DAMAGE CAUSED BY PLANTING OPERATIONS.
8. REMOVE STONES LARGER THAN 1" IN ANY DIMENSION AND STICK, ROOTS, RUBBISH, AND OTHER EXTRANEOUS MATTER FROM SITE.
9. MAINTAIN LAWN UNTIL A HEALTHY, UNIFORM, CLOSE STAND OF GRASS HAS BEEN ESTABLISHED, FREE OF WEEDS AND SURFACE IRREGULARITIES, WITH COVERAGE EXCEEDING 90% OVER ANY 10 SFT AND BARE SPOTS DO NOT EXCEED 5 BY 5 INCHES.
10. MAINTAIN TREES AND SHRUBS FOR ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION BY PRUNING, CULTIVATING, WATERING, WEEDING, FERTILIZING, RESTORING PLANTING SAUCERS, TIGHTENING AND REPAIRING STAKES AND GUY SUPPORTS, AND RESETTling TO PROPER GRADES OR VERTICAL POSITION, AS REQUIRED TO ESTABLISH HEALTHY VIABLE PLANTINGS. SPRAY AS REQUIRED TO KEEP TREES AND SHRUBS FREE OF INSECTS AND DISEASE.
11. REMOVE AND REPLACE DEAD PLANTS IMMEDIATELY. REPLACE PLANTS THAT ARE MORE THAN 25% DEAD OR IN AN UNHEALTHY CONDITION AT END OF WARRANTY PERIOD. A LIMIT OF ONE REPLACEMENT OF EACH PLANT WILL BE REQUIRED, EXCEPT FOR LOSSES OR REPLACEMENTS DUE TO FAILURE TO COMPLY WITH REQUIREMENTS.
12. TREES, AND SHRUBS SHALL BE WARRANTED FOR ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION AGAINST DEFECTS INCLUDING DEATH AND UNSATISFACTORY GROWTH, EXCEPT FOR DEFECTS RESULTING FROM INCIDENTS THAT ARE BEYOND CONTRACTOR'S CONTROL.

NOTE: STAKING OF BALL AND BURLAP TREES REQUIRED AT THE DISCRETION OF THE CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL STAKING AT END OF ONE YEAR WARRANTY PERIOD.

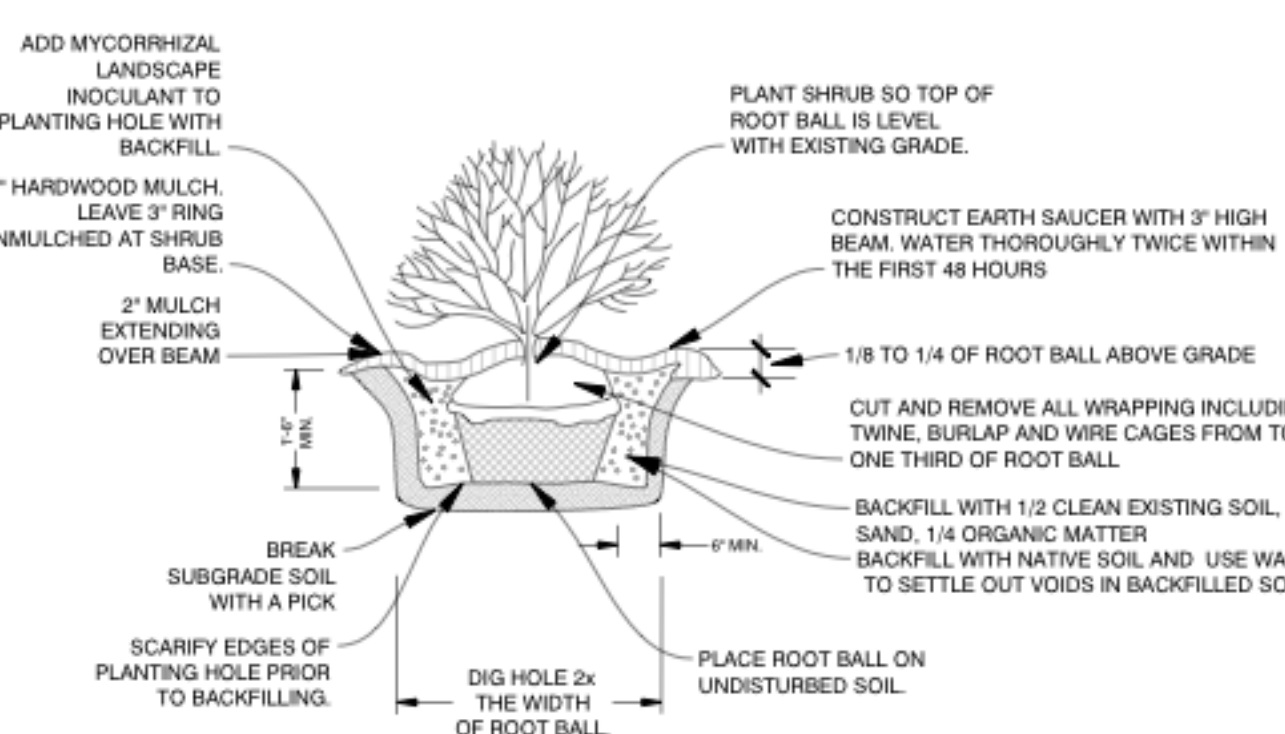
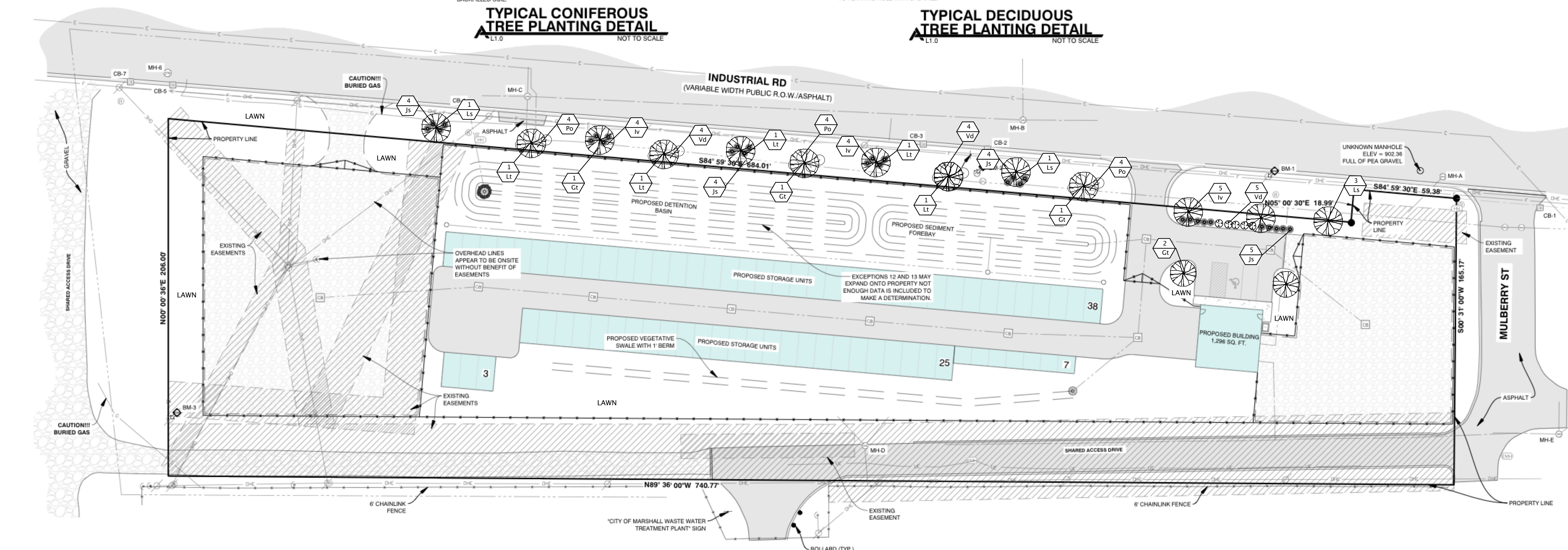


TYPICAL CONIFEROUS TREE PLANTING DETAIL
L1.0 NOT TO SCALE

NOTE: STAKING OF BALL AND BURLAP TREES REQUIRED AT THE DISCRETION OF THE CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL STAKING AT END OF ONE YEAR WARRANTY PERIOD.



TYPICAL DECIDUOUS TREE PLANTING DETAIL
L1.0 NOT TO SCALE



TYPICAL SHRUB PLANTING DETAIL
L1.0 NOT TO SCALE

PLANTING SCHEDULE NOTE: ALL TREES AND SHRUBS ARE NATIVE FROM ORDINANCE DATA BASE FOR REGION

PLANT LIST:	SYM.	BOTANICAL NAME	COMMON NAME	Native:	Size:	ROOT:
QTY:						
5	Ls	Liquidambar styraciflua	American Sweetgum	N	2.5" Cal.	B&B
5	Gt	Gleditsia triacanthos var. inermis	Thornless Honeylocust	N	2.5" Cal.	B&B
5	Lt	Liliodendron tulipifera	Tulip Tree	N	2.5" Cal.	B&B
15	Iv	Ilex verticillata	Winterberry Holly	N	30-36"	Container
12	Po	Physocarpus opulifolius	Common Ninebark	N	30-36"	Container
15	Js	Juniperus 'Seagreen'	Seagreen Juniper	N	30-36"	Container
13	Vd	Viburnum dentatum	Arrowwood Viburnum	N	30-36"	Container

LANDSCAPE ORDINANCE REVIEW

PARKING LOT SCREENING
REQUIREMENT 1 TREE 5 SHRUBS 30 L.F.
TOTAL DISTANCE EAST PARKING 68L.F.
REQUIRED 3 TREES 15 SHRUBS
PROVIDED 3 TREES 15 SHRUBS

GREENBELT ROW SCREENING
REQUIREMENT 1 TREE 4 SHRUBS EVERY 40 L.F.
TOTAL DISTANCE 397 L.F.
REQUIRED 10 TREES 40 SHRUBS
PROVIDED 10 TREES 40 SHRUBS



ALL UTILITIES AS SHOWN ARE APPROXIMATE LOCATIONS DERIVED FROM ACTUAL MEASUREMENTS AND AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATION NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THE AREA. FIELD WORK PERFORMED BY: AR ENGINEERING LLC

PLANS PREPARED BY:



DRAWN: BW
CHECKED: --



No.	ISSUED FOR:	DATE	BY
0	SITE PLAN REVIEW	08/17/2025	tc
1			
2			
3			
4			

LANDSCAPE PLAN
TIGER TOWING
DRIVEN DESIGN

775 INDUSTRIAL RD, MARSHALL, MI 49068
SECTION 26, T02S, R06W.

PROJECT:
CLIENT:

JOB NUMBER
25103008

DATE
10/03/2025

SHEET NUMBER

L1.0