ADDENDUM NO. 1

June 13, 2024

PORTER COUNTY HIGHWAY DEPARTMENT – CENTRAL FACILITY

TO: ALL BIDDERS OF RECORD

This Addendum forms a part of and modifies the Bidding Requirements, Contract Forms, Contract Conditions, the Specifications, and the Drawings dated May 24, 2024 by A & Z Engineering and MartinRiley. Acknowledge receipt of the Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

This Addendum consists of Page ADD 1-1 through ADD 1-4, revised Specification Section 00 20 00 – Information Available to Bidders, attached Addendum No. 1 from A & Z Engineering, consisting of 1 page and 8 drawings, and attached Addendum No. 1 from MartinRiley, consisting of 4 pages, Specification Sections 00 01 10 - Table of Contents, 07 42 13 – Metal Wall Panels, 07 71 00 - Roof Specialties, 10 28 00 - Toilet, Bath, and Laundry Accessories, 11 11 19 - Vehicle Lubrication Equipment, 23 31 00 - HVAC Ducts and Castings, 41 22 00 - Hoists and Cranes, and 13 Drawings.

A. SPECIFICATION SECTION 00 00 20 – TABLE OF CONTENTS

1. Under Section 00 20 00 Information Available to Bidders

   ADD:

   Geotechnical Report

2. **ADD:**

   Specification Section 09 77 00 – Prefinished Wall Panels
   Specification Section 10 26 01 – Wall and Corner Guards

DIVISION 3 - CONCRETE

1. **REVISE:**

Specification Section 03 30 00 – Cast-In-Place Concrete

TO READ:

Specification Section 03 30 00 – Cast-In-Place Concrete (Refer to S001)

DIVISION 4 - MASONRY

1. **REVISE:**

Specification Section 04 20 00 – Unit Masonry

TO READ:

Specification Section 04 20 00 – Unit Masonry (Refer to S001)

DIVISION 5 - METALS

1. **REVISE:**

Specification Section 05 12 00 – Structural Steel Framing
Specification Section 05 21 00 – Steel Joist Framing
Specification Section 05 31 00 – Steel Decking

TO READ:

Specification Section 05 12 00 – Structural Steel Framing (Refer to S001)
Specification Section 05 21 00 – Steel Joist Framing (Refer to S001)
Specification Section 05 31 00 – Steel Decking (Refer to S001)

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

1. **ADD:**

Specification Section 07 71 00 – Roof Specialties

DIVISION 9 - FINISHES

1. **ADD:**

Specification Section 09 77 00 – Prefinished Wall Panels

DIVISION 10 - SPECIALTIES

1. **ADD:**

Specification Section 10 26 01 – Wall and Corner Guards

B. SPECIFICATION SECTION 01 12 00 - MULTIPLE CONTRACT SUMMARY

BID CATEGORY NO. 1 – GENERAL TRADES/SITEWORK

1. **ADD:**

Specification Section 09 77 00 – Prefinished Wall Panels
Specification Section 10 26 01 – Wall and Corner Guards

BID CATEGORY NO. 3 – ROOFING

1. **ADD:**

Specification Section 07 71 00 - Roofing

BID CATEGORY NO. 7 – PLUMBING

1. **DELETE:**

Specification Section 22 15 00 – General-Service Compressed-Air Systems

BID CATEGORY NO. 8 – MECHANICAL

1. **ADD:**

Specification Section 22 15 00 – General-Service Compressed-Air Systems

C. SPECIFICATION SECTION 01 52 60 – RUBBISH CONTAINER

Under 1.02 RUBBISH CONTAINER

1. **REVISE:**

A. The **Bid Category No. 1 Contractor** is to provide One Hundred Eighty (70) thirty (30) CY rubbish containers for the Project waste, debris, and rubbish for the life of the project except as specified in 1.02.B and 1.02.C below.

TO READ:

A. The **Bid Category No. 1 Contractor** is to provide Seventy (70) thirty (30) CY rubbish containers for the Project waste, debris, and rubbish for the life of the project except as specified in 1.02.B and 1.02.C below.

SECTION 00 20 00 - INFORMATION AVAILABLE TO BIDDERS

A. Subsurface Investigation Information: The Soils Exploration Report and Soil Boring Logs were prepared for the Owner by **GME Testing, 3517 Focus Dr., Fort Wayne, IN 46818, (260) 497-8127** for use in design. The following Subsurface Investigation Report is not a part of the construction Contract Documents and is enclosed within this document for informational use only. The Architect/Engineer and Construction Manager do not accept responsibility for the information contained in the report.

1. The enclosed report and Log of Borings, and any interpolations of conditions between test borings is not a warrant or guarantee by the Owner or Architect/Engineer of subsurface conditions.
2. The Contractor should visit the site and acquaint himself with all existing conditions. Prior to bidding, bidders may make their own subsurface investigations to satisfy themselves as to the site and subsurface conditions, but such subsurface investigations shall be performed only under the time schedules and arrangements approved in advance by the Owner. Any additional information, needed by the Contractor, shall be obtained by the Contractor at no cost to the Owner.

B. Structural design has been based on the report and assumes that existing soils are clean and can be compacted and will achieve the densities specified in the earthwork section. It shall be the Contractor's responsibility to determine for himself existing Site and or soil conditions.

C. Existing Site Survey Information: A Site survey can be found within the construction drawings. It is not however, part of the Construction Contract Documents and is for informational use only. Information found is not a warrant or guarantee by the Owner or Project Consultant. The Contractor should visit the site and acquaint himself with all existing conditions. Any additional information, needed by the Contractor, shall be obtained by the Contractor at no cost to the Owner.

D. Asbestos Report: The Asbestos Report (if applicable), prepared for the Owner, is not part of the Construction Documents, and is on file at the Owner's Office and is available for review upon written request. The Architect and Construction Manager do not accept responsibility for the information contained in the report.

D. Lead Based Paint: Lead Based Paint Report (if applicable), prepared for the Owner, is not part of the Construction Documents, and is on file at the Owner's Office and is available for review upon written request. The Architect and Construction Manager do not accept responsibility for the information contained in the report.

END OF SECTION 00 20 00

GEOTECHNICAL REPORT

PROPOSED TRUCK WASH GARAGE
1955 IN-2
VALPARAISO, IN

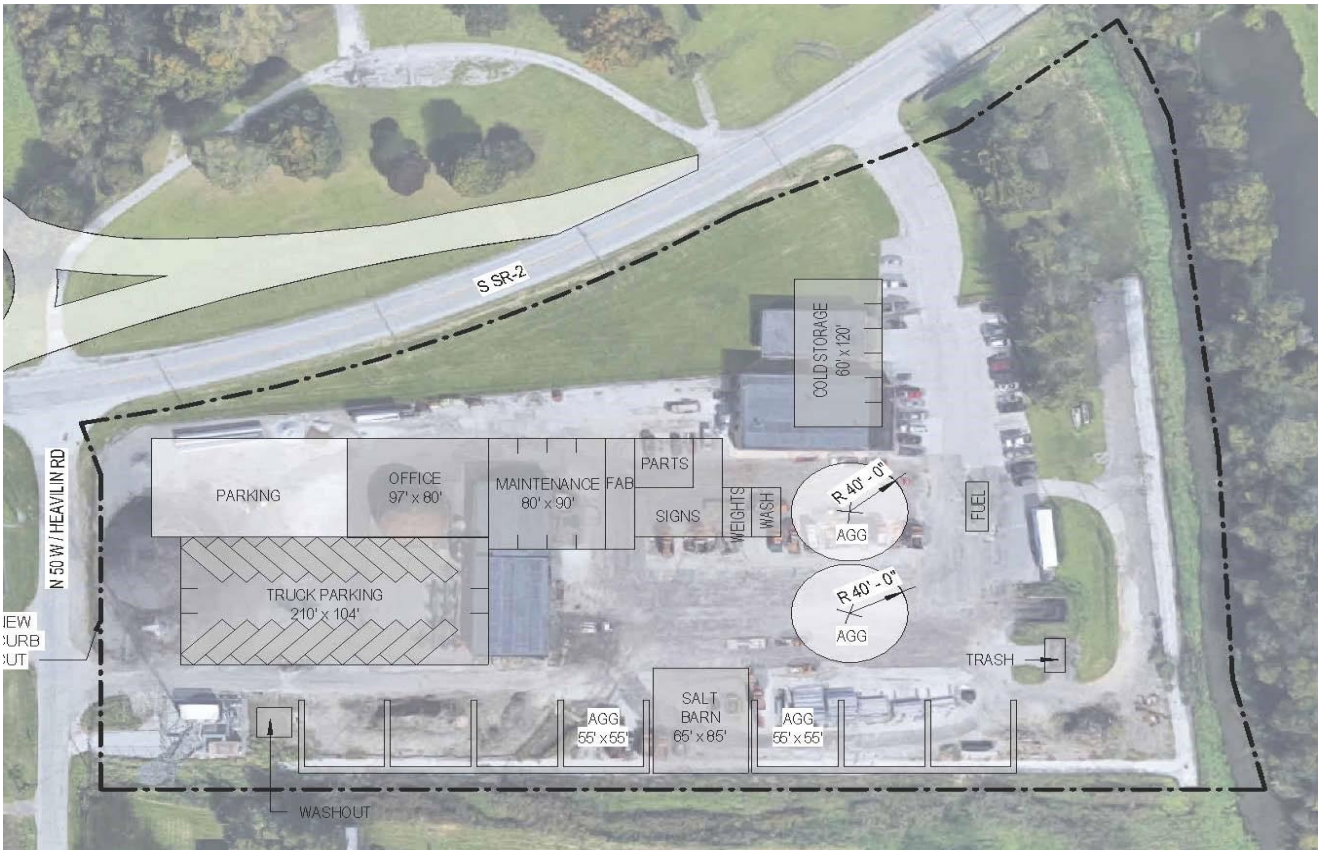
January 3, 2024

Prepared For:

A&Z Engineering, LLC
1220 Ruston Pass
Fort Wayne, IN 46825

Prepared By:

GME Testing
3517 Focus Dr
Fort Wayne, IN 46818



GME TESTING

January 3, 2024
G23-112119

A&□ E□□□□□□□□□□□, LLC (A&□)
1220 R□□□□□ P□□□
F□□□W□□□□, IN 46825
A□□□ J□□ □□A□□□□□□ □, P.E. L□□□□□ G□□□□, E.I.

REF SUBSURFACE EXPLORATION AND RECOMMENDATIONS
P□□□□□□□ P□□□□□C□□□□□ H□□□ □□ G□□□□□ I□ □□□□□□ □□□□
1955 IN-2
V□□□□□□□□□, IN

Gentlemen:

In compliance with your request and authorization, ***GME Testing*** is pleased to submit this report on our subsurface exploration and recommendations for the above-referenced project.

We appreciate the opportunity to be of service on this project. Please contact us if you have any questions or require additional services.

Sincerely,
GME T□□□□□

Rami M. Anabtawi, P.E., BC.GE

RAMI M. ANABTAWI
920294
REGISTERED
PROFESSIONAL
ENGINEER
STATE OF INDIANA

Robert W. McMichael, P.E., GE, BC.GE

S M Naziur Mahmud, E.I.T.

CC: Jack Daniel, AIA – Martin Riley Architects,
Andrew Waugh, AIA – Martin Riley Architects

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 Purpose and Scope of Work

The purposes of our assignment were to evaluate the subsurface conditions and develop geotechnical recommendations. We anticipate that these will be used by the Owner's team in planning and performing the design and construction for the project. As discussed in this report, some additional geotechnical study may be needed.

1.2 Authorization

Our services were performed according to our proposal (GMEP 23-070318) dated July 31, 2023. This proposal was accepted, and our work authorized on December 7, 2023.

1.3 Site Location and Site Description

The project is located at 1955 State Road 2 in Valparaiso. At the time of our field exploration, the site was occupied by several existing structures that will be demolished to allow for the proposed new construction planned on site. The Civil Plans, including the Grading and Drainage Plans, Demolition Plans, Utilities, etc. were not available for our review.

According to *Quaternary Geologic Map of Indiana, Indiana Geological Survey Miscellaneous Map 49*, Gray, H.H. (1989), the surficial geology at the Site consists of geologically recent "Muck". This material is aligned and associated with the channel of Salt Creek (Figure 1) and indicated in blue in Figure 1. The USDA *Web Soil Survey* furthermore detailed mapping of the muck and defines this as Adrian muck, Houghton muck, Riddles silt loam and Riddles loam deposits. A copy of the *Custom Soil Resource Report of Porter County, Indiana* is included as Exhibit A of this report.

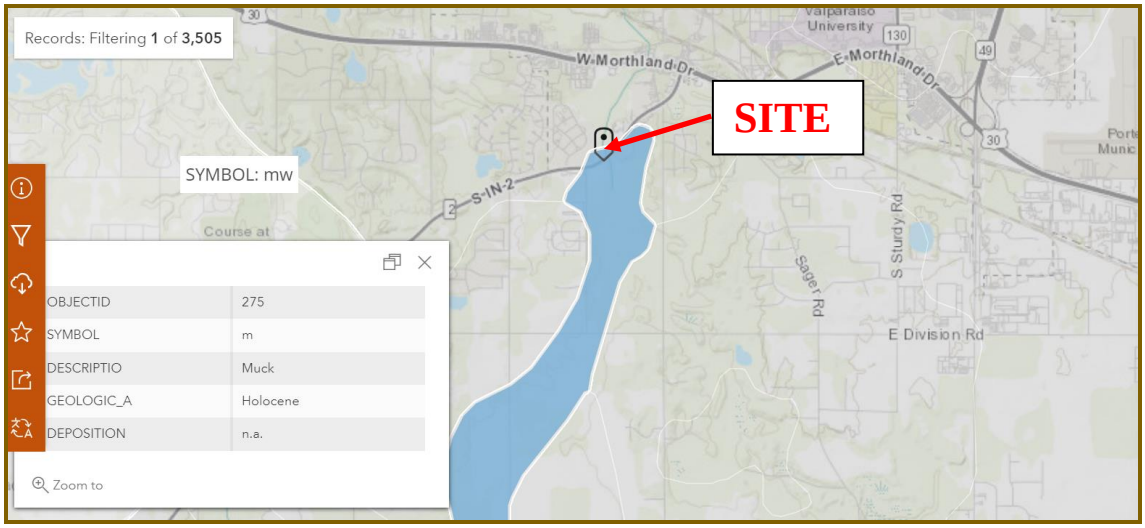


Figure 1 Site Geology Map Showing Location of Site

We researched various historical aerial photographs, topographic maps, and flood plain maps (from the Federal Emergency Management Agency, FEMA). Figure 2 presents excerpts from 1962 (photorevised 1980) and 2019 USGS topographic quadrangle maps for Valparaiso, with the location of the Site indicated. A comparison of these images reveals that the Site had been filled and leveled sometime after 1980 indicated. The contour interval is these maps is 10 feet.

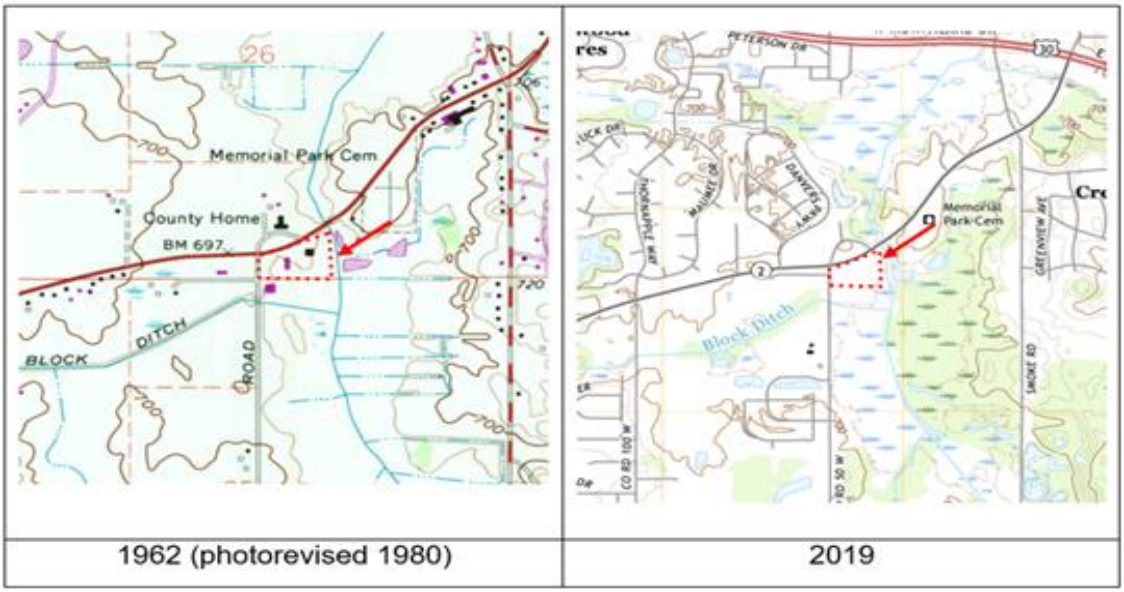
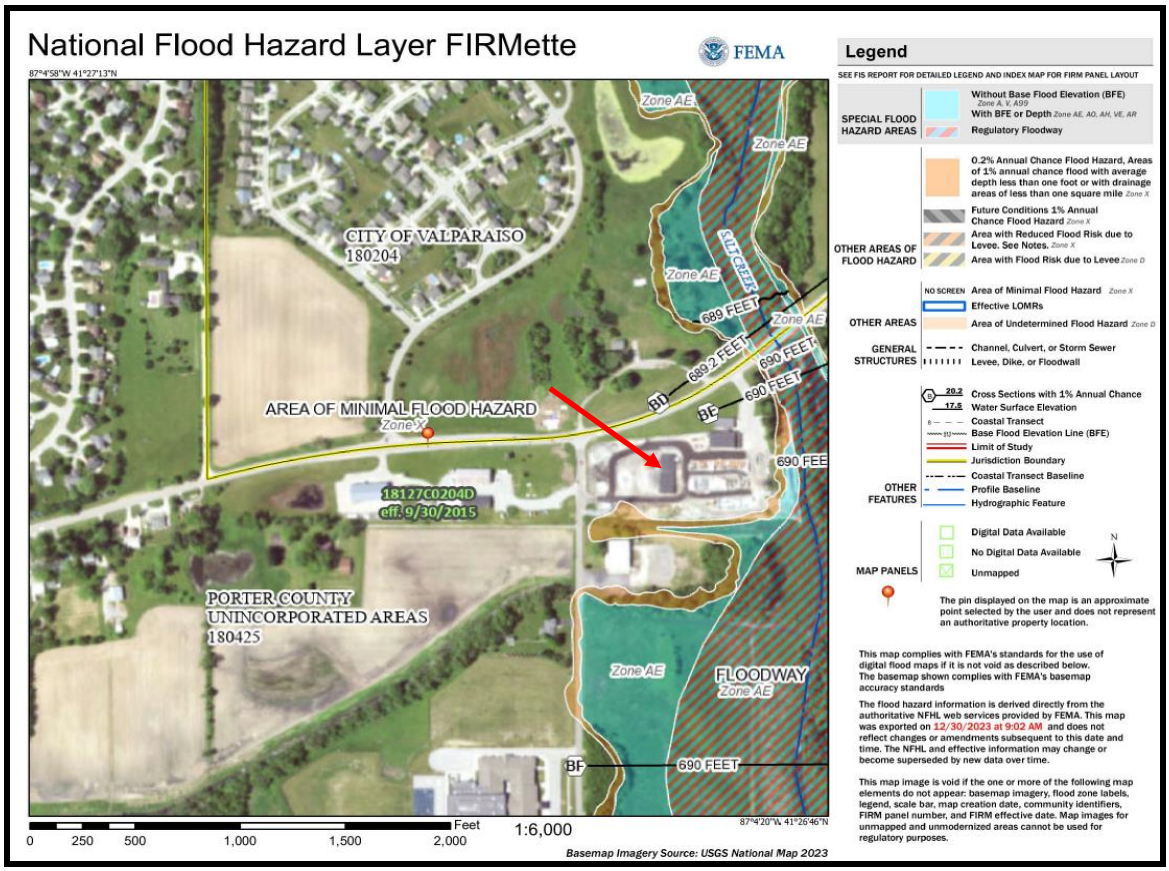


Figure 2 Comparison of 1962 and 2019 Maps

Figure 3 presents the “FIRMETTE” for the Site as obtained from FEMA, with the location of the Site indicated. An examination of this photograph indicates that a fill pad was constructed over muck prior to the construction of the existing facility. That had the effect of raising most or much of the Site above such that it was in Zone X (Area of Minimal Flood Hazard). The area immediately to the east of the fill pad remains in a flood hazard zone, as does a “finger” of land that extends to the south of the Site.



F□□□□ 3 FIRMETTE □□□S□□□ S□□□ □□□ F□□P□□

1.4 Proposed Construction

The proposed construction features are shown in Figure 4 and include the following, with approximate plan dimensions. Each building will be single-story in height with no basement.

- Cold storage building (60 ft by 120 ft)
- Office building, (80 ft by 100 ft)
- Maintenance building (80 ft by 90 ft)
- Salt barn (65 ft by 85 ft)

Other Project construction will include:

- Truck parking
- Associated car parking and driveways.
- Aggregate storage bins and piles

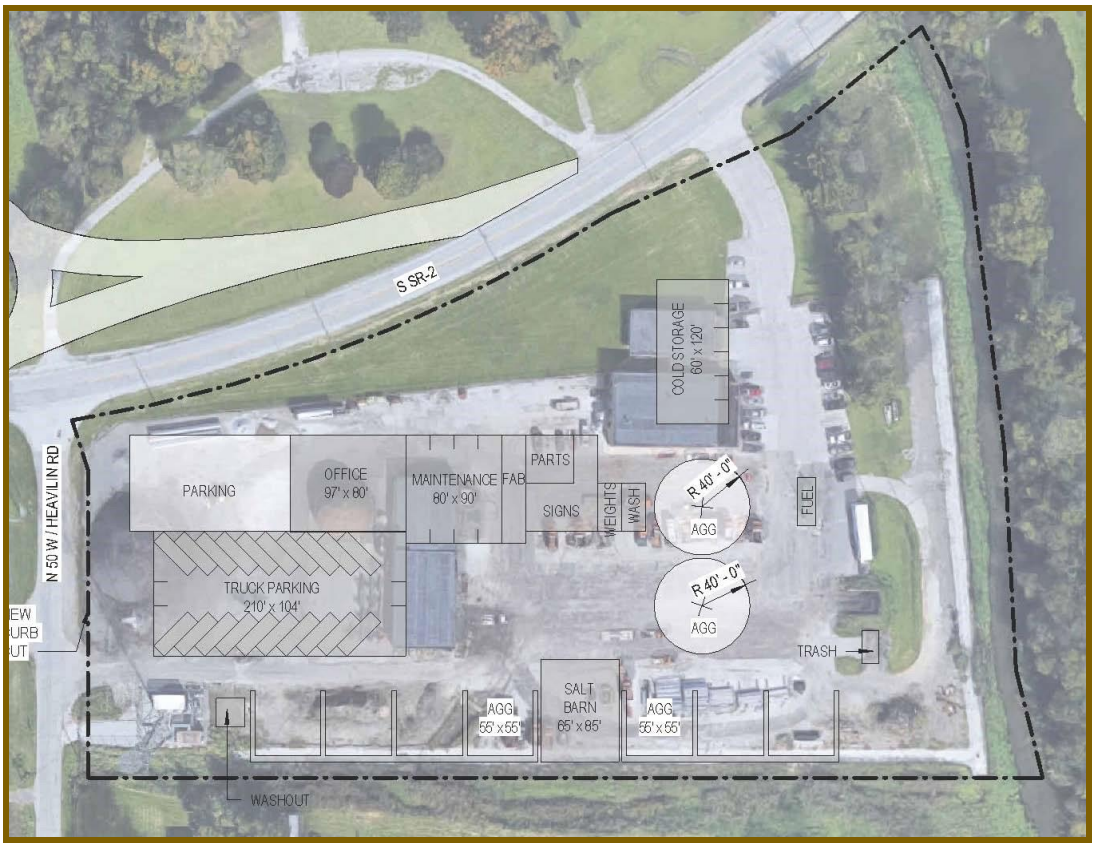


Figure 4 Proposed Construction Plan

No information regarding the structural systems was available and structural loadings are not known at this time. However, we anticipate these loads to be light to moderate, with maximum column, wall, and floor loadings no more than about 100 kips/column, 6 kips per linear foot for walls and 125 psf, respectively.

Given the existing site conditions as described in Section 1.3 as well as the results of our field and laboratory investigation (discussed in Section 2.0), the Site grading and drainage needs to be carefully planned. The conditions include the presence of a body of undocumented fill that was placed with no known engineering control over organic deposits and very loose sand. For this reason, fill slopes and/or retaining walls used to affect grade changes (e.g., at the edges of the fill pad) should be specifically designed for the conditions at those locations. This design should consider the various potential failure modes, including global stability. **F**or these reasons , it is critical that **GME** be contacted and authorized to review and comment on the grading plans and offer recommendations for further analysis .

Furthermore, proposed truck maneuvering and drive aisles will be constructed as a part of the project. Due to the nature of the facility, we anticipate that there will be repeated heavy truck traffic and that the pavements will be constructed of Portland cement concrete. Other pavement areas may be constructed of asphalt concrete. We have provided recommendations for subgrade preparation; however, the design and detailing of the pavement will be the responsibility of others.

For the purposes of this report, all floor slabs and foundations of the proposed cold storage building will be suitably protected against any frost penetration and extreme cold temperatures. This aspect of design should be checked by the design team. We understand that special provisions to address the potential for frost heave are being implemented into the design. Moreover, the proposed construction should be designed such that suitable installation thickness and

materials are used and the structural details must follow good industrial chiller building standards.

We realize that final plans may differ slightly from the initial understandings and available preliminary information reported. If significant changes occur or our assumptions are inaccurate, our office should be contacted to determine if any changes to our recommendations will be necessary after our review.

2.0 GME FIELD INVESTIGATION

GME Testing coordinated their field work logistics, site access, utilities marking, and the geotechnical drilling program schedule with a representative of the client to conduct this geotechnical engineering investigation.

Our field exploration program consisted of drilling twenty-two (22) vertical soil test borings to depths of approximately 10 to 20-feet below the existing ground surface (bgs) as shown on the borehole logs.

The locations of the test borings were established in the field by GME Testing personnel based on a marked aerial plan provided by the client. The boring locations are tabulated in Table 1 and graphically depicted in Exhibit B of this report. We estimated the approximate existing surface elevations at our boring locations from GIS data and have included these on the boring logs (Appendix B). We recommend that A&Z's surveying department determine the site elevations.

T□□□□ 1 S□□ □ □□□ □□B□□□□□					
D□□□□□□□□□	B□□□□ N□□ □□□	L□□□□□□	L□□□□□□□	G□□□□ E□□□□□□□ (E□), □□□	B□□□□ D□□□, □□□
Parking	B-01	41.450319	-87.073628	±696	±20
	B-02	41.450325	-87.073458	±696	±20
Cold Storage Building	B-03	41.450219	-87.073539	±697	±20
	B-04	41.450081	-87.073461	±697	±20
Maintenance Building	B-05	41.449658	-87.073300	±696	±10
	B-06	41.449792	-87.073897	±696	±10
	B-07	41.449764	-87.074144	±696	±20
Parking	B-08	41.449969	-87.073903	±697	±10
	B-09	41.449969	-87.074211	±696	±20
	B-10	41.449961	-87.074486	±696	±20
	B-11	41.449942	-87.074819	±697	±20
Office Building	B-12	41.449828	-87.074494	±696	±20
Parking	B-13	41.449753	-87.074853	±696	±10
	B-14	41.449753	-87.075228	±696	±10
Truck Parking	B-15	41.449592	-87.075042	±694	±10
	B-16	41.449586	-87.074725	±695	±10
	B-17	41.449661	-87.074508	±696	±10
	B-18	41.449358	-87.074611	±694	±10
	B-19	41.449428	-87.074858	±692	±10
	B-20	41.449431	-87.075222	±693	±10
Parking	B-21	41.449392	-87.074050	±694	±20
Salt Barn Building	B-22	41.449267	-87.073853	±693	±20

All depths and elevations referred to in this report are referenced from the ground surface existing at the time of this report was prepared, unless otherwise stated. The elevations presented on our borehole logs are considered accurate to ± one (1) foot.

3.0 GME LABORATORY TESTING PROGRAM

Representative soils collected using a split spoon sampler were subjected to laboratory testing according to ASTM and/or AASHTO standard specifications. Our laboratory testing program included performing a) visual soil classifications according to ASTM D-2487 and ASTM D-2488, b) natural moisture content tests according to ASTM D-2216 on all samples, c) unconfined compressive strength tests and calibrated spring hand penetration tests in general accordance with ASTM D-2166. The results of all laboratory tests are included on the respective plots in Appendix B. Additionally, grain size distribution and analyses (ASTM D-421, D-422, and D-1140), Loss-on-Ignition Test (ASTM D-2974), and Atterberg limit determinations (ASTM D-4318) were performed on representative samples.

Testing of old fills, soils, and groundwater for corrosivity characteristics or environmental contamination was not in the scope of our work and therefore was not performed. We recommend that the design and construction team address these concerns.

4.0 SUMMARY OF GEOTECHNICAL CONDITIONS AND ANALYSIS

The geotechnical conditions at the Site are very poor and necessitate that special care be taken in the planning and execution of the Project. While the planned design and construction is possible (feasible), it will be challenging and require a high attention to detail.

The poor conditions include old, undocumented fills. In places, these fills were placed directly over old organic soils. The natural soils include extensive loose sand deposits. **T[illegible]** We provide our recommendations for support of structures in Section 5.0.

T[illegible] and will vary with conditions including the stage of the adjacent Salt Creek and its associated marsh lands. **T[illegible]**

T[illegible] It should be expected that these areas are underlain by very weak organic soils. In some places, these will be hidden beneath old fills and may escape detection during earthwork operations.

Exterior pavement areas can be rendered suitable for traffic. However, long-term compression of deeper organic soils may occur, especially where there is additional net loading (e.g., in areas of new grade-raise fill).

The following narrative provides a general summary of the Site geotechnical conditions based on our field and laboratory testing programs. These are based on the conditions observed at the time of our work on the specified dates. **I[illegible]**

4.1 S□□□□□□ M□□□□□□□□

Given the development history of the Site, the surficial materials are generally not natural. The conditions at the boring locations included:

- Topsoil in borings B-01 through B-03 ranging between approximately 12 to 18-inches.
- Approximately 2 to 15 inches of man-made limestone products were disclosed on surface at the B-07 through B-15 locations.
- Old asphalt ranging from 2 to 13 inches thick, was noted at Borings B-05 through B-07 and B-17.
- Various granular aggregate materials were found in borings B-07 through B-09, B-12 and B-13. These ranged in thickness of up to about 19 inches.

4.2 O□□ F□□□

Based on our soil boring results, as well as our research into the development history, the Site was filled to raise it above the flood hazard zone associated with Salt Creek. In places, the fill was placed over muck, peat or otherwise unsuitable soils. This will represent a concern for the proposed development.

The fill material is undocumented and consisted of a mixture of black, dark brown and brown, fine to medium coarse silty sand, clayey sand, sand and gravel, crushed limestone, sandy silty clay with traces of organics, gravel, cobblestones, interbedded clay lenses as shown on the test boring logs. Some test borings encountered dark colored soil that may resemble topsoil. The old fill materials were typically disclosed to varying depths of approximately 1.5 to 9-feet as shown below in Table 2.

T□□□ 2 D□□□□ □□O F□M□□□□□			
B□□□ N□.	A□□□□□ □□ D□□□ □F, □□□	B□□□ N□.	A□□□□□ □□ D□□□ □F, □□□
B-07	±3	B-16	±8
B-09	±9	B-17	±8.5
B-10	±7.5	B-18	±7.5
B-11	±5	B-19	±3
B-12	±5.5	B-20	±2.5
B-13	±5.5	B-21	±1.5
B-15	±5	B-22	±3

**Depths referenced below existing ground surface.*

The old fills are undocumented and non-engineered. They cannot reliably support structures, heavy or concentrated loads, or settlement-sensitive construction and will require mitigation. Mitigation strategies are discussed in Section 5.

4.3 N□□□ M□□□□ S□□

The existing native soils (disclosed below existing fill) generally consisted of cohesionless soils such as sand, silty sand, sand and gravel, clayey silty sand, clayey sand, and gravelly sand. The relative densities of the granular soils ranged from loose to medium dense to dense. Such granular soils were in moist to wet/saturated condition. In boring B-06, medium stiff, sandy clay was present.

4.4 N□□□ O□□□□ S□□

Test borings B-07, B-13, B-16, B-18, B-19, B-21, and B-22 encountered organic clays and peat to depths of approximately 6 to 10-feet or more as shown in the test boring logs.

Note that such organic clays and peat are highly compressible material and will undergo large and long-term settlement when loaded and also upon dewatering. The variations, exact depth, and lateral extent of existing organic soils on site are not known. It should be expected that significant organic deposits will be undetected because they are often hidden beneath the thickness of the old fill.

4.5 G[illegible]

Groundwater level measurements were taken during our field operations by noting the depth of water on the rods and in open boreholes following withdrawal of the drilling augers after the completion of drilling activities in test borings.

In summary, perched water and groundwater were encountered during or following our drilling program in the borings as shown on Table 3 and the boring logs.

T[illegible] 3 G[illegible] D[illegible] B[illegible] T[illegible]					
B[illegible] N[illegible].	G[illegible] D[illegible], [illegible] (E[illegible], [illegible])		B[illegible] N[illegible].	G[illegible] D[illegible], [illegible] (E[illegible], [illegible])	
	D[illegible] D[illegible]	I[illegible] F[illegible] D[illegible]		D[illegible] D[illegible]	I[illegible] F[illegible] D[illegible]
B-01	±11 (±685)	NO	B-12	NO	±6.5 (±689.5)
B-02	±10 (±686)	±8 (±688)	B-13	±8 (±688)	±8.5 (±687.5)
B-03	±10 (±687)	±9 (±688)	B-14	±8 (±688)	NO
B-04	±10 (±687)	±8 (±689)	B-15	NO	NO
B-05	NO	NO	B-16	±8 (±687)	±8.5 (±686.5)
B-06	±9.5 (±686.5)	NO	B-17	±8.5 (±687.5)	±8.5 (±687.5)
B-07	±8 (±688)	NO	B-18	NO	NO
B-08	NO	NO	B-19	NO	NO
B-09	±8.5 (±687.5)	±8.5 (±687.5)	B-20	NO	NO
B-10	±9 (±687)	±9 (±687)	B-21	±8 (±686)	±8 (±686)

Table 3 Groundwater Depths in the Borings at Time of Drilling					
Boring No.	Groundwater Depth, ft (Elevation, ft)		Boring No.	Groundwater Depth, ft (Elevation, ft)	
	Depth to Groundwater	If not encountered Final Depth		Depth to Groundwater	If not encountered Final Depth
B-11	±5 (±692)	NO	B-22	±10 (±683)	±8 (±685)

**Depths referenced below existing ground surface.*
† Not Observed (NO) at completion of drilling.

The groundwater depths shown on the boring logs reflect groundwater levels only for the date which the borings were drilled. Fluctuations in the level and rate of seepage of groundwater will occur due to variations in rainfall, water level, and other factors.

4.6 Seismic Considerations

The seismic design requirements for buildings and other structures are based on seismic design category. A seismic site class "D" may be used for this project, and seismic report is included in Appendix B of this report. The parameters presented in Table 4 below can be used for design.

Table 4 Seismic Considerations Parameters	
Description	Value
2012 International Building Code Site Classification (IBC)	D[1]
Site Latitude	41.450319
Site Longitude	-87.073628
Ss	0.117g
S_1	0.064g
S_{DS}	0.125
S_{D1}	0.102

1. The 2012 IBC uses a site profile extending to a depth of 100-feet for seismic site classification. Borings at this site were extended to a maximum depth of 20-feet. The site properties below the boring depth to 100 feet were estimated based on our experience and knowledge of geologic conditions of the general area.

5.0 DESIGN RECOMMENDATIONS

The following design recommendations have been developed to assist in the design and development of the proposed project. They are intended for the specific project discussed herein and any substantial changes in the project description, location, or assumed grades should be brought to our attention so that we may evaluate how such changes may affect our evaluation.

A strategy for mitigating the geotechnical problems at this Site is needed because the underlying materials (both native and man-made) are not suitable for heavy, concentrated or settlement-sensitive construction. In such areas, we recommend ground improvement using rammed earth rigid inclusions for the proposed buildings (foundations and slabs).

We have considered other methods of ground improvement such as removing the old fills and organic soils and replacing them with new engineered fill, grouting, preloading/surcharging the site, deep dynamic compaction, etc. but have deemed these to be impractical for this project.

Structural solutions, such as supporting the structural loads and floors on systems of deep foundations (i.e., helical piers) are potentially viable and could be addressed separately if requested by the client.

5.1 G□□□□□ M□□□□□□□□□□ □□□ S□□□□□ F□□□□□□□ □□ B□□□□□□ A□□□□

We recommend conventional footings constructed over rammed aggregate piers to support the proposed Porter County highway garage facility buildings. We recommend that the rammed aggregate piers must tip to suitable depths below the existing fill and organic soils as determined by the specialty contractor. That contractor should consider the effectiveness of their product given the geotechnical conditions, including the existence of buried organic soils.

This specialty work should only be performed using a contractor with a proven record of performance that delivers their work on a design-build basis. Exhibit C provides a letter from Geopiers® representing that they deem the use of their product to be feasible.

Rammed aggregate piers are constructed by drilling 24 to 30-inch diameter holes within the shallow foundation footprint, and then compacting the holes with crushed stone to form a dense aggregate pier. The footings are then constructed directly on the reinforced subgrade using conventional construction methods.

It is important to note that the ground improvement contractor retains the responsibility for the final pier designs and can estimate settlements, along with warranting the performance of the footings supported by rammed aggregate piers. The ground improvement contractor should review the soil conditions at the site and ensure that the proposed ground improvement system is suitable for the site soil conditions. It will be their responsibility to determine whether additional geotechnical data is needed for their purposes.

All exterior footings and footings in unheated areas should bear at a minimum of three and a half (3.5) feet below final exterior grade for frost protection. All footings should be adequately protected from frost penetration during and after construction and should bear on firm material.

Special attention should be made to the placement of backfill against the building foundations and walls as inadequate compaction of these locations may cause cracking of the slab edges and corners due to subsidence of the backfill.

The detailing of joints in heavily loaded floor areas will be the responsibility of the floor designer. However, the interior slabs should be effectively isolated from the foundations so that a small amount of independent movement can occur without causing damage.

We recommend the slab-on-grade subgrade soils be protected from frost during winter construction. Frozen soils must be thawed and compacted or removed and replaced prior to slab-on-grade construction.

Depending on the choice of floor finishes, it may be appropriate to incorporate a moisture barrier below the floor slab. This decision should be evaluated by the architect and structural engineer based on the intended floor usage, planned finishes, and in accordance with ACI recommendations.

The floor slab subgrade soils should be protected from frost penetration both during construction and the service life of the proposed building(s). To protect foundations and slabs under extreme cold temperatures associated with the proposed cold storage building, we recommend that these structural elements be suitably designed by a qualified professional structural engineer in accordance with special cold storage specifications and good construction practice.

Additional details regarding the design and construction of the foundations and floor slabs for the buildings will be provided by the specialty contractor.

5.2 G□□□□□□ □□□ E□□□□□ □□□ □□ E□□□□□□□A□□□□

Given the general concerns about the undocumented fill and underlying organic soils, special attention will be needed in planning and executing the Site grading. In areas outside the footprint of new buildings or other settlement-sensitive construction, it will probably be possible to avoid the full ground improvement called for in building areas.

Considerations in planning the grading include the amount and location of cutting and filling. In general, the application of grade-raise fill will result in settlement, some of which would be long-term in nature. As such, filling should be avoided wherever possible.

Activities that require construction dewatering should be avoided to the extent possible. A reason for this is that dewatering could induce settlement.

Of particular concern are the design and construction of retaining walls or slopes. Given the subsurface conditions, engineering stability analyses (geotechnical and structural) will be needed.

Due to the undocumented nature of the existing development, there may be buried objects that are unknown to GME. This might include tanks, wells, cisterns, old concrete remnants, utilities, etc. Identification of contaminated soil or groundwater was not within the scope of our assignment.

GME should be retained to review and comment on the grading and drainage plans when they are available.

5.3 T□□□□ P□□□□□□ □□□ □□D□□□□□ □□□ S□□□□□□□□ A□□□□

We anticipate that regrading can result in a California Bearing Ratio (CBR) value of approximately 3 percent (a resilient modulus value equivalent to approximately 4,500 psi). This assumes that the subgrade is properly prepared and new fill is compacted as recommended in this report.

Notwithstanding the above, the Owner and project team should, however, be aware of an increased but unquantifiable risk of long-term settlement due to the presence of buried organic soils. This will probably require more frequent that normal maintenance and may favor the use of flexible (asphalt) pavements over Portland cement concrete pavements.

The installation of pavement surfaces for the proposed parking lot and driveway areas should be in accordance with project plans and specifications. GME can assist the team in the development of these specifications upon request. All construction methods and materials should conform to the applicable and current INDOT Standards and Specifications.

Controlling subsurface water in pavement areas is important to enhance the long-term performance of the pavements. The subgrade surface should be uniformly sloped to facilitate drainage through the granular base to the shoulders or inlets and to avoid any ponding of water beneath the pavement.

Assuming that post construction pavement movement can be tolerated, mitigation may include geotextile byproducts. We recommend that a geotextile engineer familiar with similar conditions be contacted to determine the feasibility of their product for the proposed project. Available geotextile products may include woven fabric (i.e., Mirafi® RS580i), Geogrid (e.g., BX 1300 or TriAx® products (e.g., TX 140, TX 150, or TX 190) and new engineered fill may include crushed limestone aggregate (INDOT No. 1 or 2).

Water infiltration into pavement subgrade soils can reduce the service life of the pavement. Therefore, we recommend that adequate surface drainage be provided at the site to minimize any increase in moisture content of the pavement soils. The subgrade surface should be uniformly sloped to facilitate drainage through the granular base to shoulders or inlets and to avoid any ponding of water beneath the pavement.

6.0 CONSTRUCTION RECOMMENDATIONS

In addition to the foregoing design recommendations, we provide the following construction-phase recommendations. The degree and applicability of these recommendations may vary depending on the role of the specialty contractor performing the ground improvement work.

6.1 S□□□ P□□□□□□□□□□□

The initial step of site preparation should include the demolition of old structures, removal of undocumented fill, vegetation, topsoil, concrete flat work, and properly abandon or relocate all existing utilities within the influence of the proposed construction areas. All buried construction elements shall be removed before new grade-raise is placed on site.

All exposed areas need to be subject to inspection by GME Testing. This will generally consist of probing and proof rolling to expose unsuitable subgrade materials.

Except as directed by a specialty contractor, any subgrade areas observed to be pumping and yielding under evaluation should be undercut and replaced with engineered fill or otherwise mitigated prior to the placement of new fill, floor slabs, pavement, or flatwork. The extent of undercutting will depend on several factors, including weather condition at time of construction and the condition of existing soils at the design subgrade and anticipated traffic within the cut and fill areas.

Depending on the time of the year and moisture contents of existing soils at the time of construction, aerating and conditioning and/or subgrade stabilization may be needed below the building pad and pavement areas.

Care must be exercised during grading and fill placement operations. Repeated and uncontrolled heavy construction traffic over the subgrade could cause the subgrade to pump, yield, and weak areas to develop and, therefore should be avoided. Heavy construction traffic should use designated areas as directed by the contractor.

All excavations should be monitored by a “Competent Person”, as defined by the OSHA standard, and appropriate shoring or sloping techniques used to prevent cave-ins.

6.2 Engineered Fill

New engineered fill will be needed to establish desired grade on site and for the purpose of backfill. The materials removed during site preparation activities may not be suitable for reuse and structural fill and may require offsite disposal. As such, new materials should be imported from approved offsite sources.

All engineered fill needed to replace undercut materials or as a grade-raise fill should be approved by GME Testing prior to placement on site.

During cold and wet periods of the year, approved clean granular fill such as **INDOT No. 53** should be used. Otherwise, existing approved clay soils with adequate moisture content as recommended in this report can be used. All fills shall be compacted to **95** percent of the maximum density obtained in accordance with **ASTM D-1557.**

For granular soils used on this project, it is recommended that it exhibits less than 10 percent non-plastic fines. The proposed material(s) should be sampled at the source for testing and then approved prior to import to the site.

To achieve the recommended compaction limit of the structural fill, the fill material should be placed and compacted in layers not exceeding 8-inches in loose thickness (the loose lift thickness should be reduced to 6-inches when utilizing small hand compactors) and within the range of ±2 percentage (%) of the optimum moisture content value. All fill placements should be monitored by a GME Testing representative.

6.3 Temporary Excavations

Where mass removal and replacement are selected for this project, the excavations will be prone to sloughing and cave ins. Additionally, excavations that will extend to or below groundwater levels and granular soils are anticipated to be unstable and will collapse. Therefore, a properly designed and installed

temporary earth retention system comprised of steel sheeting will be necessary to support the excavation. The design of the sheeting and any required bracing is typically performed by the contractor's licensed professional engineer and will be based on economy as well as geometric and ground conditions. In some cases, additional geotechnical information could be required.

Consideration should be given to how installation and extraction of sheeting will affect any nearby structures and underground utilities.

All excavations should be monitored by a "Competent Person", as defined by the OSHA standard, and appropriate shoring or sloping techniques used to prevent cave-ins.

Soils exposed in the bases of all excavations must be protected against any detrimental change in conditions such as from disturbance, rain, and freezing. Surface run-off water must be drained away and not allowed to pond in the excavations.

6.4 D□□□□□□□ □□□ G□□□□□□ □□□□C□□□□□

We observe a high groundwater table that is subject to changing elevation. The soil encountered was generally very transmissive. Moreover, dewatering may induce ground settlement. The design and planning of the work for this project should preferably avoid activities that would require suppression of the ground water table.

Some perched or "nuisance" water seepage and surface drainage might be manageable using conventional sump pump methods.

Whenever groundwater is encountered during construction, measures should be taken to permit the construction to be completed in relatively dry conditions. When designing site drainage patterns, site runoff should be diverted away from the foundations and directed to on-site retention areas or storm sewer systems. It is anticipated that these measures can reduce the potential for softening and possible erosion of the foundation subgrade soils. It is necessary that water is not permitted to pond near the building areas and foundations.

7.0 LIMITATIONS

The field evaluation, laboratory testing, and geotechnical analyses presented in this geotechnical investigation report have been conducted in general accordance with current practice and the standard of care exercised by geotechnical consultants performing similar tasks in the project area. Although individual test borings are representative of the subsurface conditions at the boring locations on the dates drilled, they are not necessarily representative of the subsurface conditions between boring locations or subsurface conditions during other seasons of the year.

The lines of demarcation shown on the logs represent approximate boundaries between the various classifications. The stratification of soils, as shown on the accompanying test borehole logs, represents the soil conditions at the drilled borehole locations, and variations may occur between the boreholes. In-situ strata changes could occur gradually or at different levels. Also, it should be noted that the boreholes depict conditions at the particular locations and times indicated.

The report was prepared by GME Testing solely for the use of the Client in accordance with an executed contract. The Client's use of or reliance on this report is limited by the terms and conditions of the contract and by the qualifications and limitations stated in the report. It is also acknowledged that the Client's use of and reliance of this report is limited for reasons which include actual site conditions that may change with time; hidden conditions, not discoverable within the scope of the assessment may exist at the site; and the scope of the investigation may have been limited by time, budget and other constraints imposed by the client.

Neither the report nor its contents, conclusions or recommendations are intended for the use of any party other than the Client. GME Testing and the Client assume no liability for any reliance placed on this report by such party. The rights of the client under contract may not be assigned to any person or entity, without the consent of GME Testing which shall not be unreasonably withheld.

Our services have been provided consistent with its professional standards of care. No other warranties are made, either expressed or implied.

APPENDIX A

I. FIELD EXPLORATION

Drilling and Sampling Procedures

The test borings were drilled using conventional augers to advance the holes and representative samples of the soils were obtained employing split-barrel sampling techniques in accordance with ASTM procedures D-1586-84. After completion of the borings and water level readings, the auger holes were backfilled with auger cuttings.

The description and depths of soil strata encountered and levels at which samples were recovered are indicated on the accompanying borehole log sheets in the Appendix B. In the column “Soil/Material Description” on the drill borehole log, the horizontal lines represent stratum changes. A solid line represents an observed change, and a dashed line represents an estimated change. An explanation of the symbols and terms used on the boring log sheets is given in Appendix B of this report.

Field Tests and Measurements

Standard Penetration Test: During the sampling procedures, Standard Penetration Test (SPT) was performed at regular intervals through the depth of the borings. The SPT value (“N”-value) is defined as the number of blows required to advance a 2-inch O.D., split-barrel sampler a distance of one foot by a 140-pound hammer falling 30-inches. These values provide a useful preliminary indication of the consistency or relative density of most soil deposits and are included on the Borehole Logs in Appendix B.

Water Level Measurements: Groundwater level observations were made in the boring holes during and upon completion of the boring operations. The groundwater level measurements are noted on the boring logs presented herein.

All recovered samples were returned to GME Testing laboratory for visual examination and subsequent laboratory testing.

II. LABORATORY TESTING

Selected soil samples obtained from the drilling and sampling program were tested in the laboratory to evaluate additional pertinent engineering characteristics of the foundation materials necessary in estimating the engineering properties of these materials.

S□□L□□□□□□□□ T□□□□ □□□ M□□□□□□□ □□□□

Visual Classification: All samples were visually classified by a geotechnical engineer in general accordance with ASTM D-2488, and on the Borehole Logs, which are located in Appendix B of this report.

Moisture Content Tests: The natural moisture content of selected samples was determined by ASTM method D-2216 and is recorded on the Borehole Logs as a percentage of dry weight of soil under the “MC”.

Hand Penetration Tests: Samples of cohesive soils obtained from the split spoon sampler were tested with a calibrated hand penetrometer to aid in evaluating the soil strength characteristics. The results from this testing are tabulated on the Borehole Logs under the heading “Q_P”.

Unconfined Compressive Strength Tests: The undrained shear strengths of the cohesive soils were evaluated utilizing unconfined compressive tests on specimens obtained from the split-barrel and/or thin wall tube sampler. The values of strength tests performed on soil samples obtained from the split-barrel sampler are considered approximate recognizing that the sampler provides a representative but somewhat disturbed sample. The test results are tabulated on the Borehole Logs under the heading “Q_u”.

EXHIBIT A
Custom Soil Resource Report

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Porter County, Indiana

December 18, 2023

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

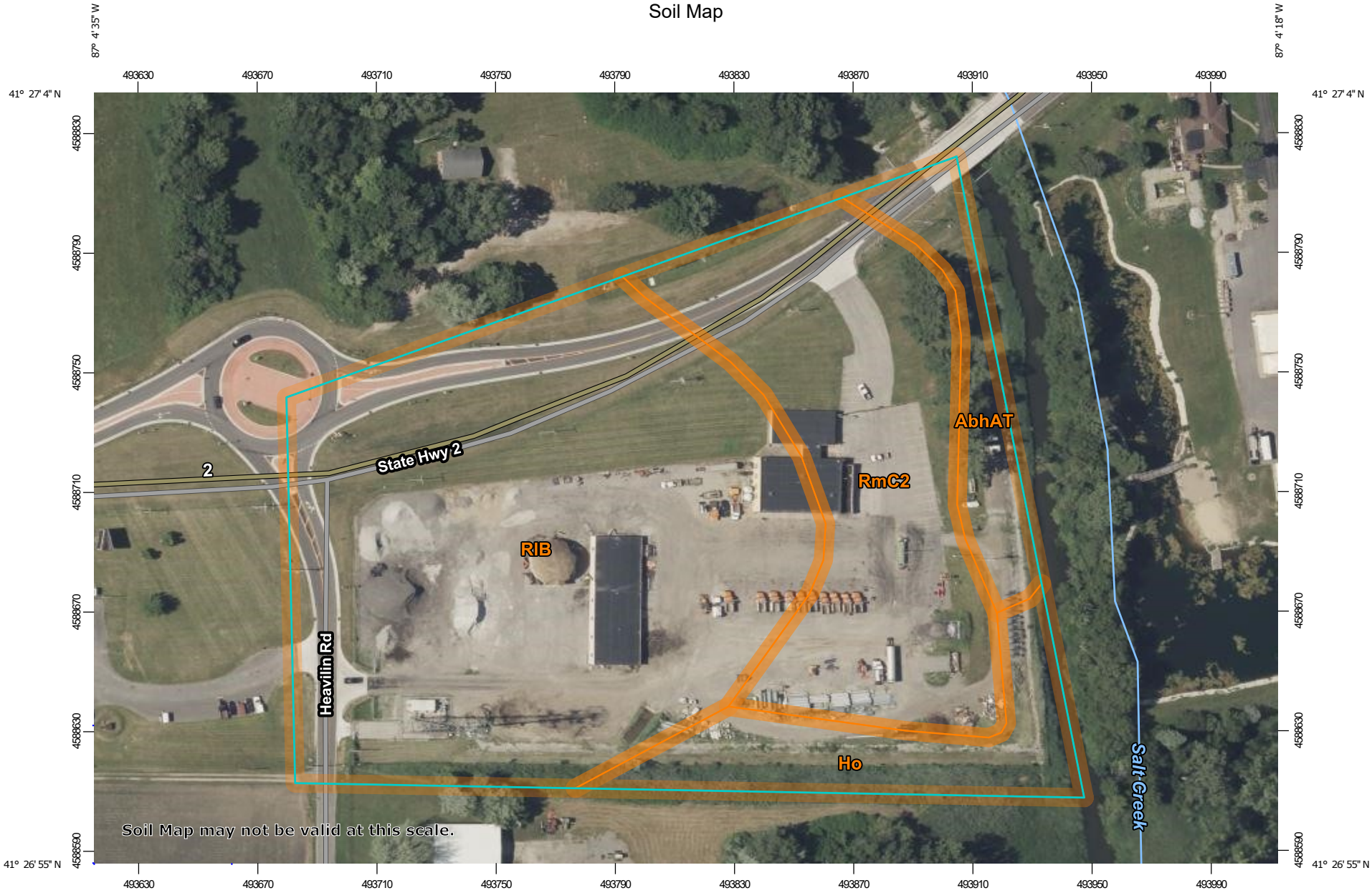
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



Map Scale: 1:1,820 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Porter County, Indiana
Survey Area Data: Version 27, Sep 1, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 16, 2022—Jun 27, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AbhAT	Adrian muck, drained, heavy till plain, 0 to 1 percent slopes	0.7	6.4%
Ho	Houghton muck, drained	1.1	9.9%
RlB	Riddles silt loam, 2 to 6 percent slopes	5.9	55.8%
RmC2	Riddles loam, 6 to 12 percent slopes, eroded	3.0	27.9%
Totals for Area of Interest		**10.6**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate

pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Porter County, Indiana

AbhAT—Adrian muck, drained, heavy till plain, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 30n4v
Elevation: 630 to 740 feet
Mean annual precipitation: 34 to 41 inches
Mean annual air temperature: 46 to 54 degrees F
Frost-free period: 155 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Adrian, drained, and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Adrian, Drained

Setting

Landform: Flood plains, moraines, till plains, lake plains, depressions on outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Herbaceous organic material over sandy outwash

Typical profile

Oap - 0 to 10 inches: muck
Oa - 10 to 28 inches: muck
Cg - 28 to 80 inches: sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum: 0.4
Available water supply, 0 to 60 inches: Very high (about 13.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: R110XY024IL - Ponded Depressional Sedge Meadow
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Minor Components

Antung, drained

Percent of map unit: 10 percent
Landform: Moraines, till plains, lake plains, depressions on outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: R110XY024IL - Ponded Depressional Sedge Meadow
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Edwards, drained

Percent of map unit: 6 percent
Landform: Moraines, till plains, lake plains, depressions on outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: R110XY024IL - Ponded Depressional Sedge Meadow
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Houghton, drained

Percent of map unit: 6 percent
Landform: Moraines, till plains, lake plains, depressions on outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: R110XY024IL - Ponded Depressional Sedge Meadow
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Muskego, drained

Percent of map unit: 3 percent
Landform: Depressions on outwash plains, moraines, till plains, lake plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: R110XY024IL - Ponded Depressional Sedge Meadow
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Ho—Houghton muck, drained

Map Unit Setting

National map unit symbol: 5d5b

Elevation: 600 to 1,400 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 51 degrees F
Frost-free period: 170 to 185 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Houghton, drained, and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Houghton, Drained

Setting

Landform: Depressions on moraines, depressions on lake plains, depressions on till plains, depressions on outwash plains
Landform position (two-dimensional): Footslope, toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Herbaceous organic material

Typical profile

Op - 0 to 9 inches: muck
Oa - 9 to 80 inches: muck

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water supply, 0 to 60 inches: Very high (about 23.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: R111XC013IN - Deep Muck
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Minor Components

Adrian, drained

Percent of map unit: 7 percent
Landform: Depressions on lake plains, depressions on outwash plains, depressions on till plains
Landform position (two-dimensional): Footslope, toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Edwards, drained

Percent of map unit: 7 percent
Landform: Depressions on till plains, depressions on outwash plains, depressions on lake plains
Landform position (two-dimensional): Footslope, toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Muskego, drained

Percent of map unit: 6 percent
Landform: Depressions on till plains, depressions on outwash plains, depressions on lake plains
Landform position (two-dimensional): Footslope, toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Palms, drained

Percent of map unit: 5 percent
Landform: Depressions on till plains, depressions on outwash plains
Landform position (two-dimensional): Footslope, toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

RIB—Riddles silt loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 5d68
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 140 to 170 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Riddles and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Riddles

Setting

Landform: Till plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve

Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy till

Typical profile

H1 - 0 to 10 inches: silt loam
H2 - 10 to 48 inches: loam
H3 - 48 to 60 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Available water supply, 0 to 60 inches: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F097XA018MI - Dry Loamy Drift Plains
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Pewamo

Percent of map unit: 5 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Washtenaw

Percent of map unit: 5 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

RmC2—Riddles loam, 6 to 12 percent slopes, eroded

Map Unit Setting

National map unit symbol: 5d69
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 50 degrees F

Frost-free period: 140 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Riddles and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Riddles

Setting

Landform: Till plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy till

Typical profile

H1 - 0 to 10 inches: loam
H2 - 10 to 48 inches: loam
H3 - 48 to 60 inches: loam

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Available water supply, 0 to 60 inches: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: F097XA018MI - Dry Loamy Drift Plains
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Pewamo

Percent of map unit: 5 percent
Landform: Drainageways
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Washtenaw

Percent of map unit: 5 percent
Landform: Drainageways
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

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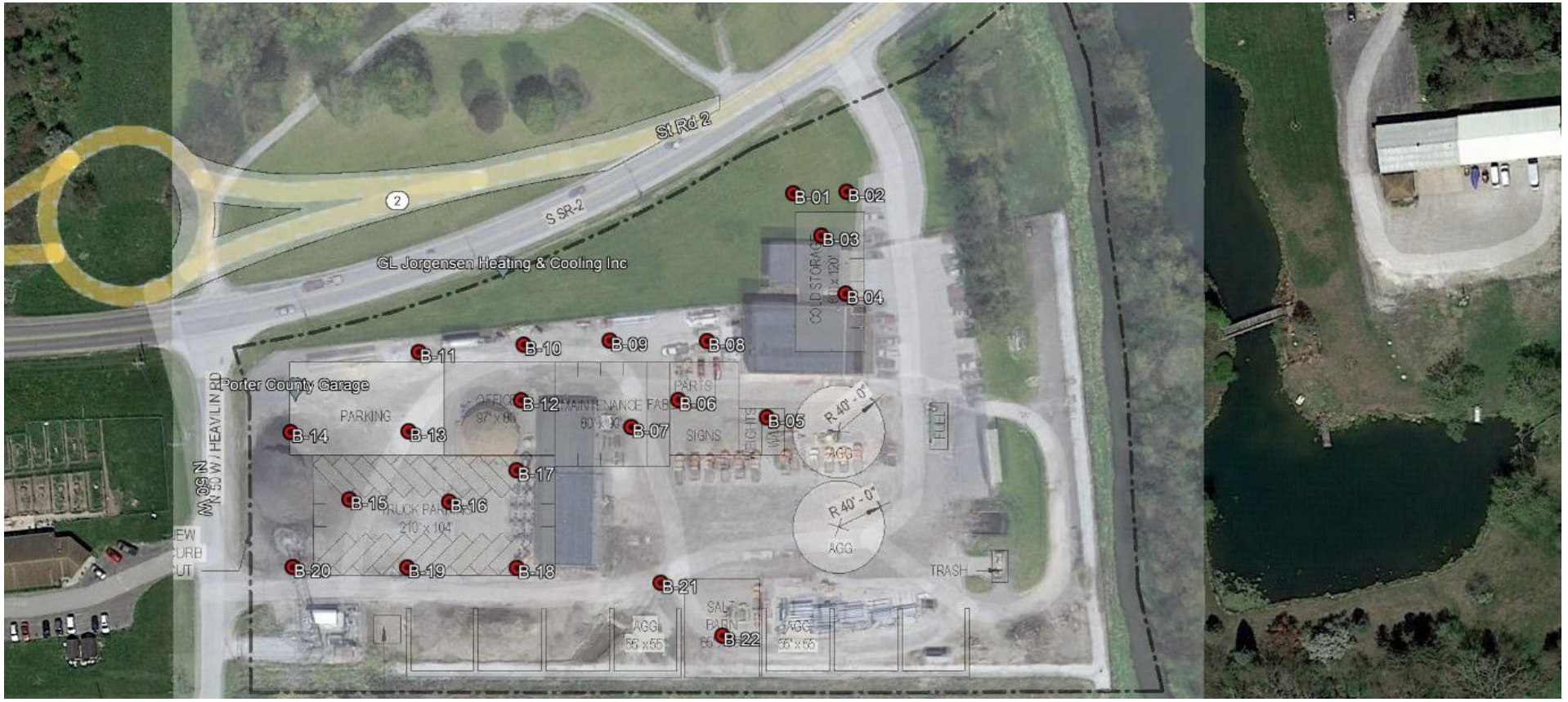
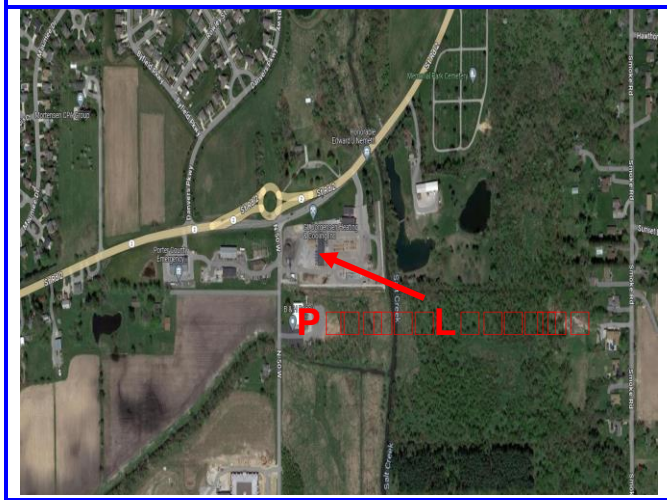


VICINITY MAP (NOT TO SCALE)



NOTES

1. All boring locations are approximate.
2. Vicinity map generated using imagery from google.com/maps.

N

LEGEND

B-01
Test Boring Location and Designation

E B – APPROXIMATE BORING LOCATION MAP

P N Proposed Porter County Highway Garage

L 1955 IN-2, Valparaiso, IN

C N A&Z Engineering, LLC (A&Z)

GME P N G23-112119

GME TESTING

EXHIBIT C
Geopier® Evaluation Letter

GEOPIER®

Zach Ethington, PE
Region Engineer

Geopier
zethington@geopier.com
Tel. 859.583.3681

To:	Rami Anabtawi	**From:**	Zach Ethington, P.E.
Company:	Geotechnical & Materials Engineers, Inc.	**Pages:**	2
Re:	Delegated Design Technical Memorandum Porter County Highway Garage GFC Project No.: PGL-3340	**Date:**	January 3, 2024
		CC:	

In combination with our licensed installer for this area, Geopier is pleased to present this technical memorandum to utilize a *Geopier*® system for the above-referenced project. A future budget estimate for a scope of work based upon our review of the preliminary information can be provided by our licensed installer. Please note that any changes to the proposed site layout may necessitate additional soil borings for this project.

This anticipated scope includes the following:

- Installation of piers below foundations at the following structures as designated by Geopier.
  - 60'x120' Cold Storage Building
  - 97'x80' Office Building
  - 80'x90' Maintenance Building
  - 65'x85' Salt Barn Building
- Mobilization and demobilization from the site.
- Union installer.
- Geopier testing (fulltime technician on site during installation).
- Geopier design calculations and preparation of shop drawings.

Items not included in anticipated scope are:

- Support of parking lot areas.
- Spoils removal from the building pad.
- Surveying/layout of the piers in the field.
- Obstruction removal, if encountered.
- Street cleaning / traffic control.
- Modulus test.

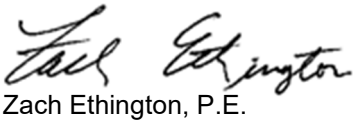
Technical Comments:

- This memo is based on the following assumed design criteria:
  - Anticipated column loads not exceeding 100 kips
  - Anticipated wall loads not exceeding 6 kips per linear foot
  - Anticipated floor loads not exceeding 125 pounds per square foot
  - Site grading requiring no more than 2 feet of new fill
- Please refer to the geotechnical information prepared by GME (Project No.: G23-112119) for more information regarding the subsurface conditions at the project site. Problematic subgrade conditions consist of variable soft/saturated clays, loose sands, and pockets of organics.
- *Geopier can provide a foundation-support system with bearing capacities up to 4,000 ksf and calculated overall settlements of approximately 1-inch for the above assumed conditions.*
- Stable working grades with maximum slopes of 2.5% should be established prior to Geopier installations. We expect working grades at or near the existing surface grade.
- All Geopier elements should be installed to depths required for settlement control. Piers will be terminated upon mandrel refusal in dense till when encountered.

- Please note that the general contractor is responsible for removal of all below-grade obstructions (including remnant foundations, slabs, shallow fill obstructions, utilities, etc.) prior to the installation of the Geopier® elements.
- Prior to pricing, generation of shop drawings, and Geopier® installation, it will be necessary to provide us with:
    - Civil site/grading plans
    - Foundation plans (with Auto CAD copy)
    - Loading information for Geopier supported foundations.
    - Settlement criteria
    - Confirmation of working pad elevations, locations, and approach
- Based on the information provided, our licensed contractor can provide a future budget proposal for design and construction of a Geopier ground improvement system for this project.
- Geopier systems are provided turn-key. Upon project approval, we will submit detailed design calculations and shop drawings for the Geopier Design.

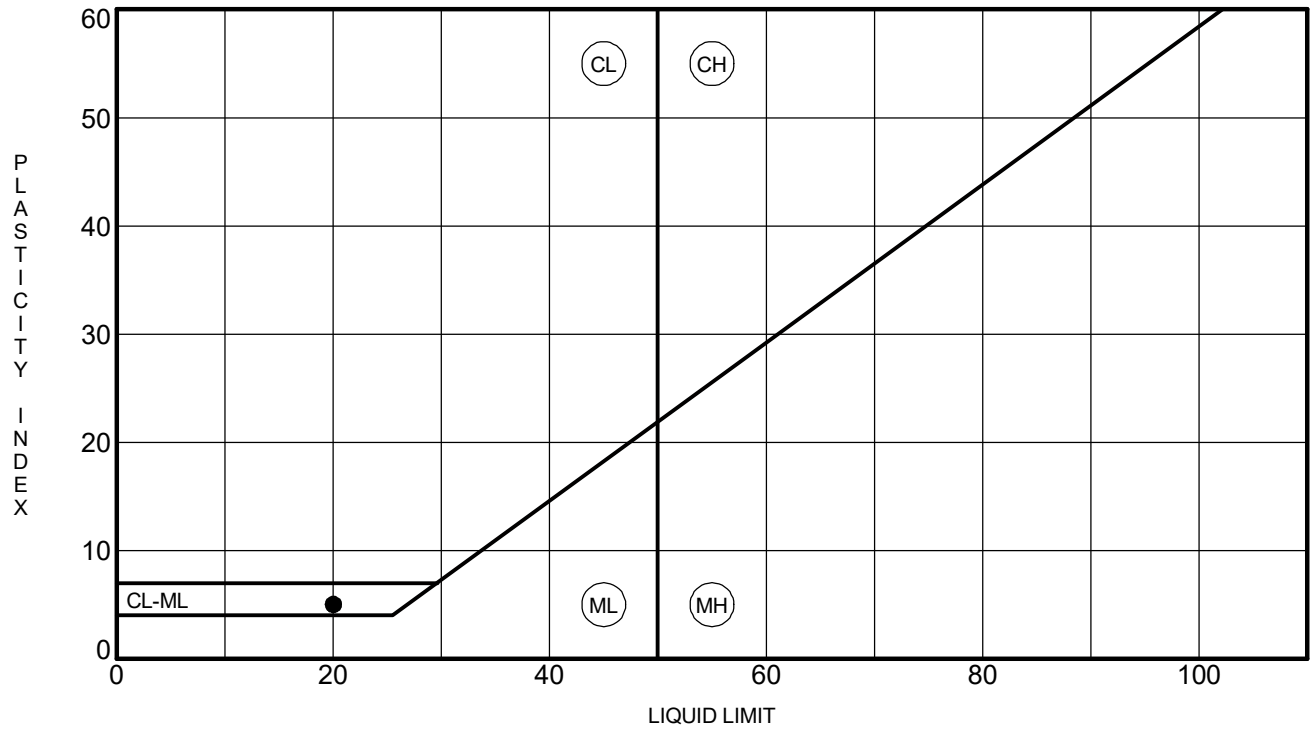
Should this bid be accepted, your contract would be with the licensed installer for this area. This appears to be a good site for Rammed Aggregate Pier® soil improvement using the Geopier® system. A Geopier® solution should offer great economy and schedule savings to this project while providing proven performance. If you have any questions concerning this report, or if we can be of further assistance, please contact us.

Sincerely,



Zach Ethington, P.E.
Region Engineer
859 583 3681
zethington@geopier.com

APPENDIX B



Specimen Identification		LL	PL	PI	Fines	Classification
● **B-13**	**1.00**	**20.0**	**15.0**	**5.0**		

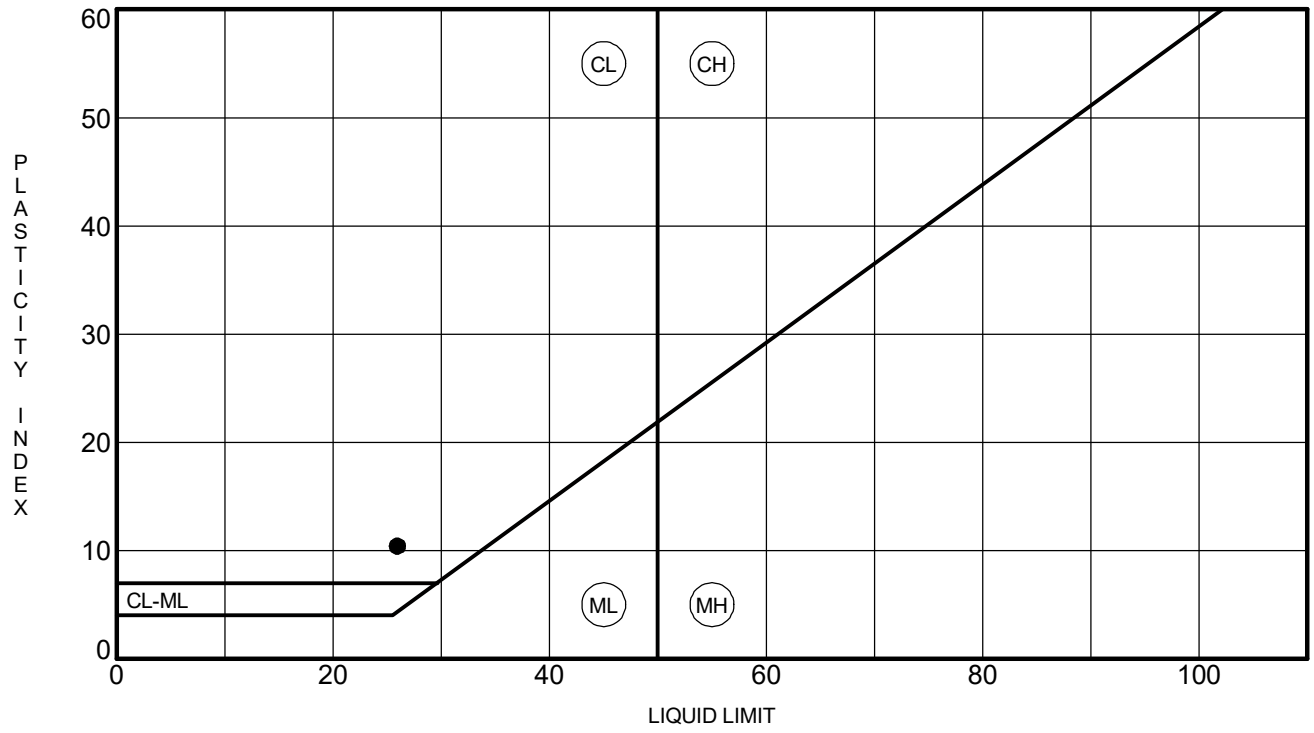
GME TESTING

Project Name: Proposed Porter County Highway Garage

Location: 1955 IN-2, Valpraiso, IN

Client Name: A&Z Engineering, LLC

GME Project Number: G23-112119



	Specimen Identification		LL	PL	PI	Fines	Classification
●	**B-15**	**3.50**	**25.9**	**15.5**	**10.4**		

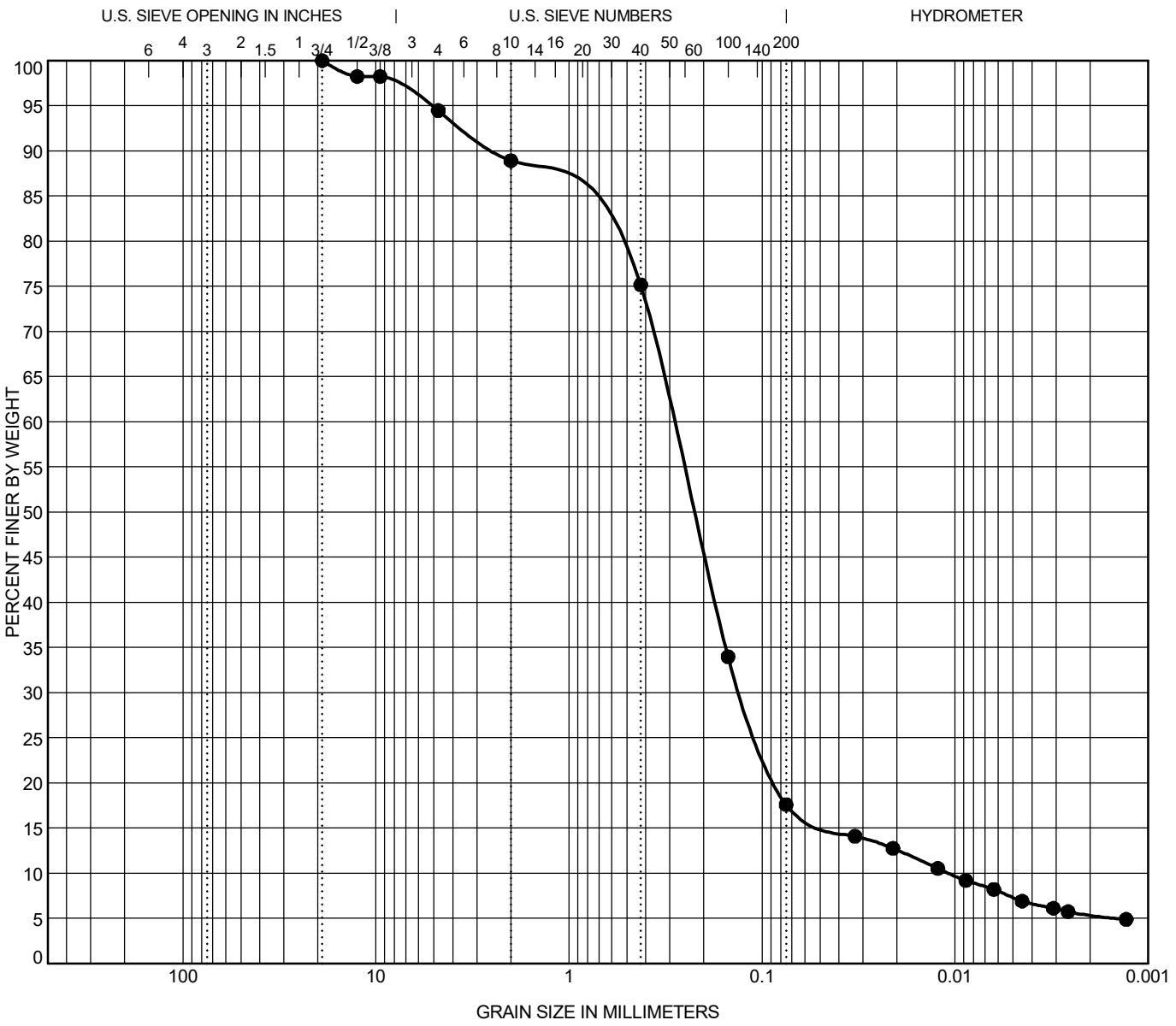
GME TESTING

Project Name: Proposed Porter County Highway Garage

Location: 1955 IN-2, Valpraiso, IN

Client Name: A&Z Engineering, LLC

GME Project Number: G23-112119



COBBLES	GRAVEL	SAND		SILT	Clay
		coarse	fine		

	Specimen Identification		Classification	LL	PL	PI	Cc	Cu
●	**B-01**	**3.5**	**SAND**				**5.16**	**26.93**

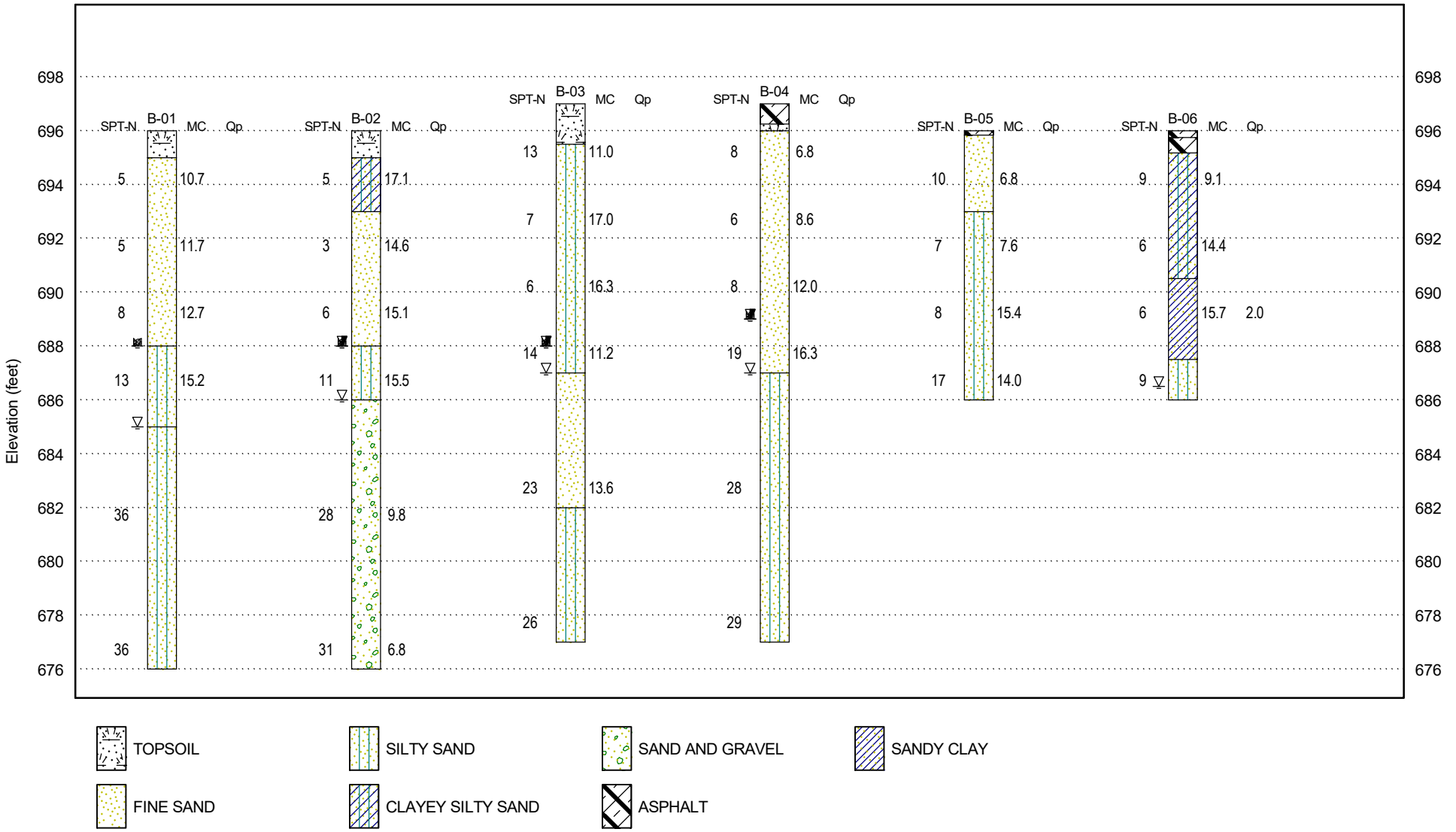
	Specimen Identification		D60	D30	D10	%Gravel	%Sand	%Silt	%Clay	%Colloid
●	**B-01**	**3.5**	**0.29**	**0.127**	**0.011**	**11.1**	**71.3**	**12.2**	**5.4**	

GME TESTING

GRAIN SIZE DISTRIBUTION TEST REPORT

Project Name: Proposed Porter County Highway Garage
Location: 1955 IN-2, Valpraiso, IN
Client Name: A&Z Engineering, LLC
GME Project Number: G23-112119

SUMMARY OF BORINGS



GME TESTING

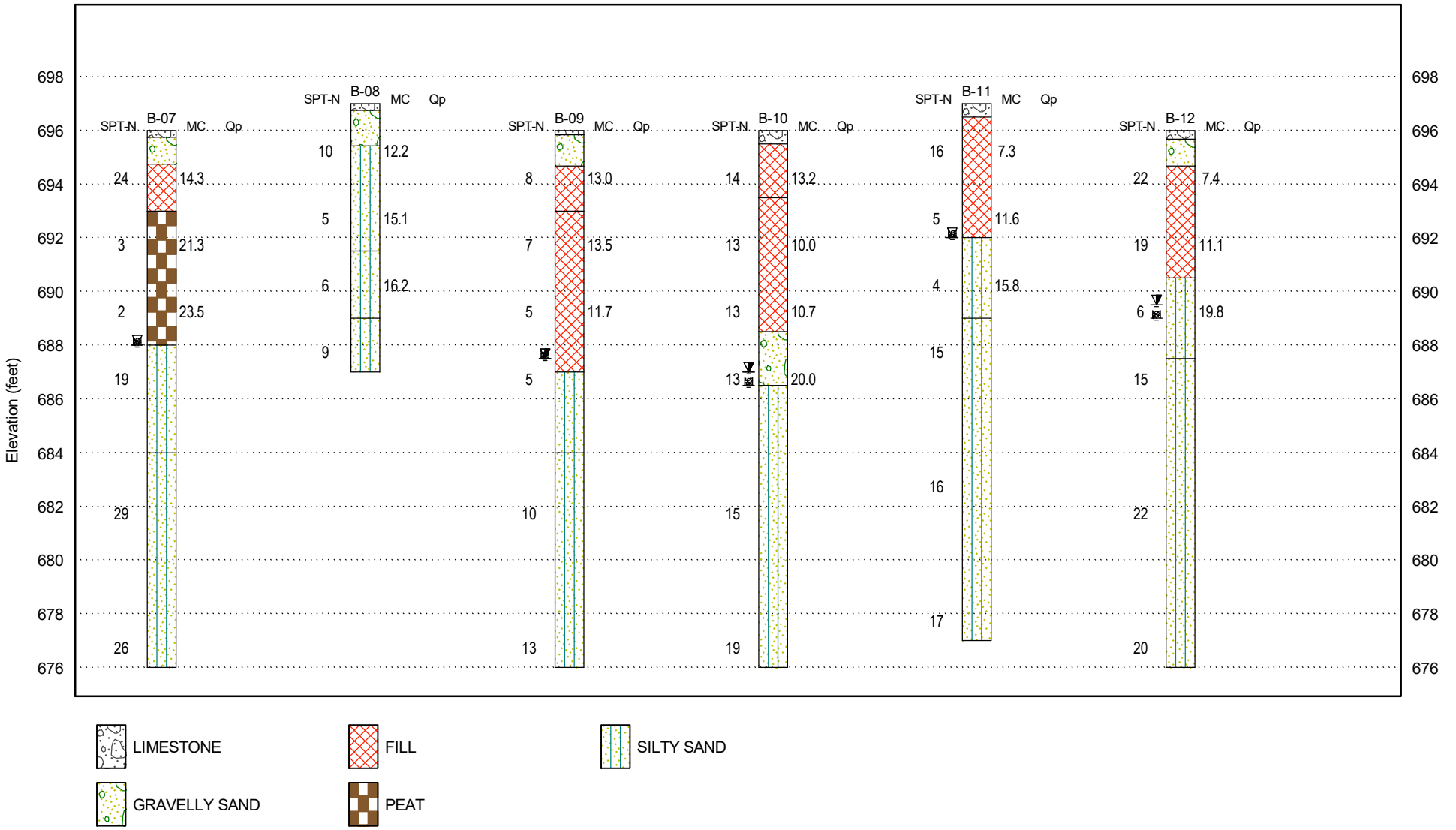
CLIENT: A&Z Engineering, LLC

GME PROJECT NO: G23-112119

PROJECT TYPE: Proposed Porter County Highway Garage

LOCATION: 1955 IN-2, Valpraiso, IN

SUMMARY OF BORINGS



GME TESTING

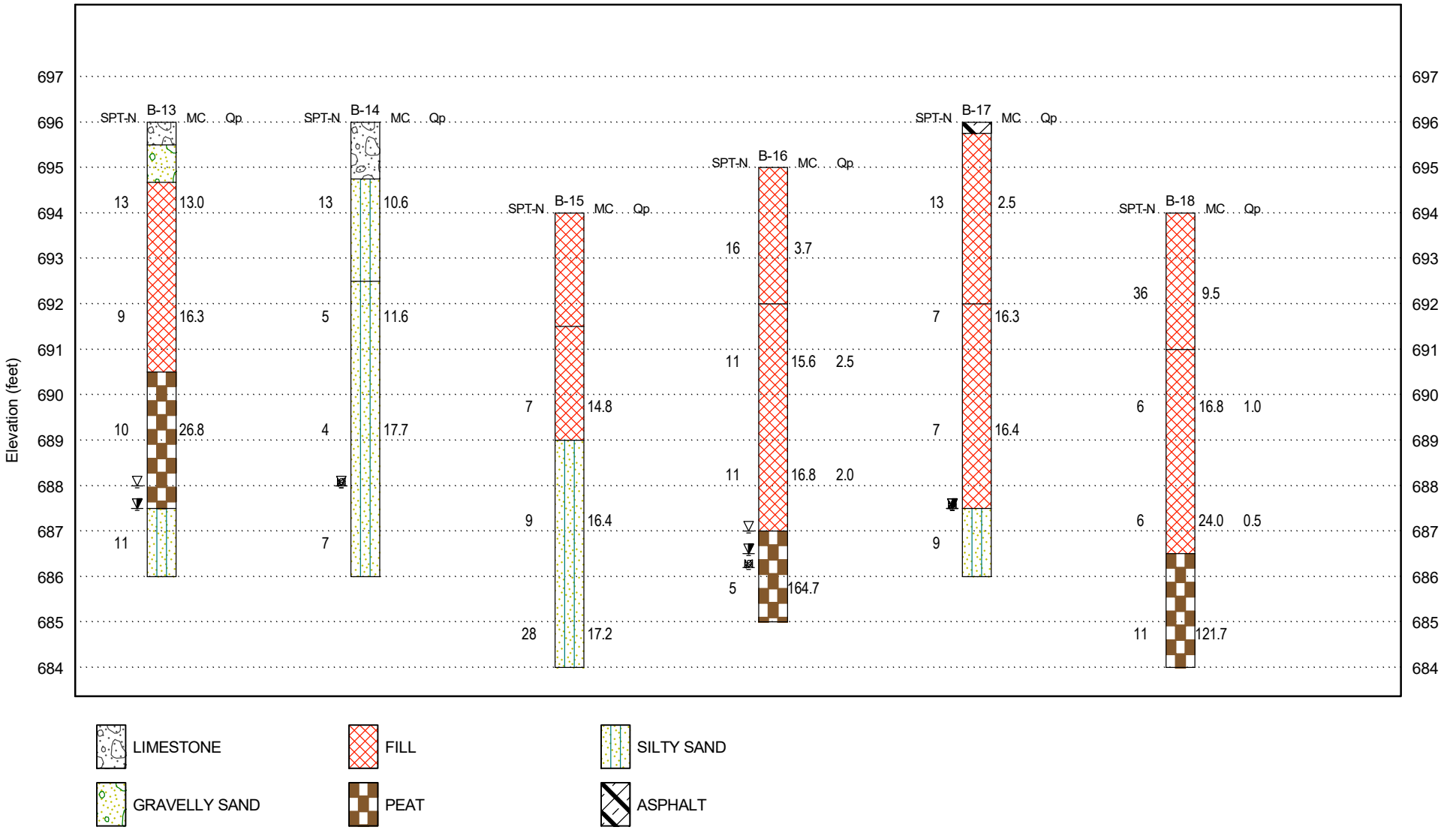
CLIENT: A&Z Engineering, LLC

GME PROJECT NO: G23-112119

PROJECT TYPE: Proposed Porter County Highway Garage

LOCATION: 1955 IN-2, Valpraiso, IN

SUMMARY OF BORINGS



GME TESTING

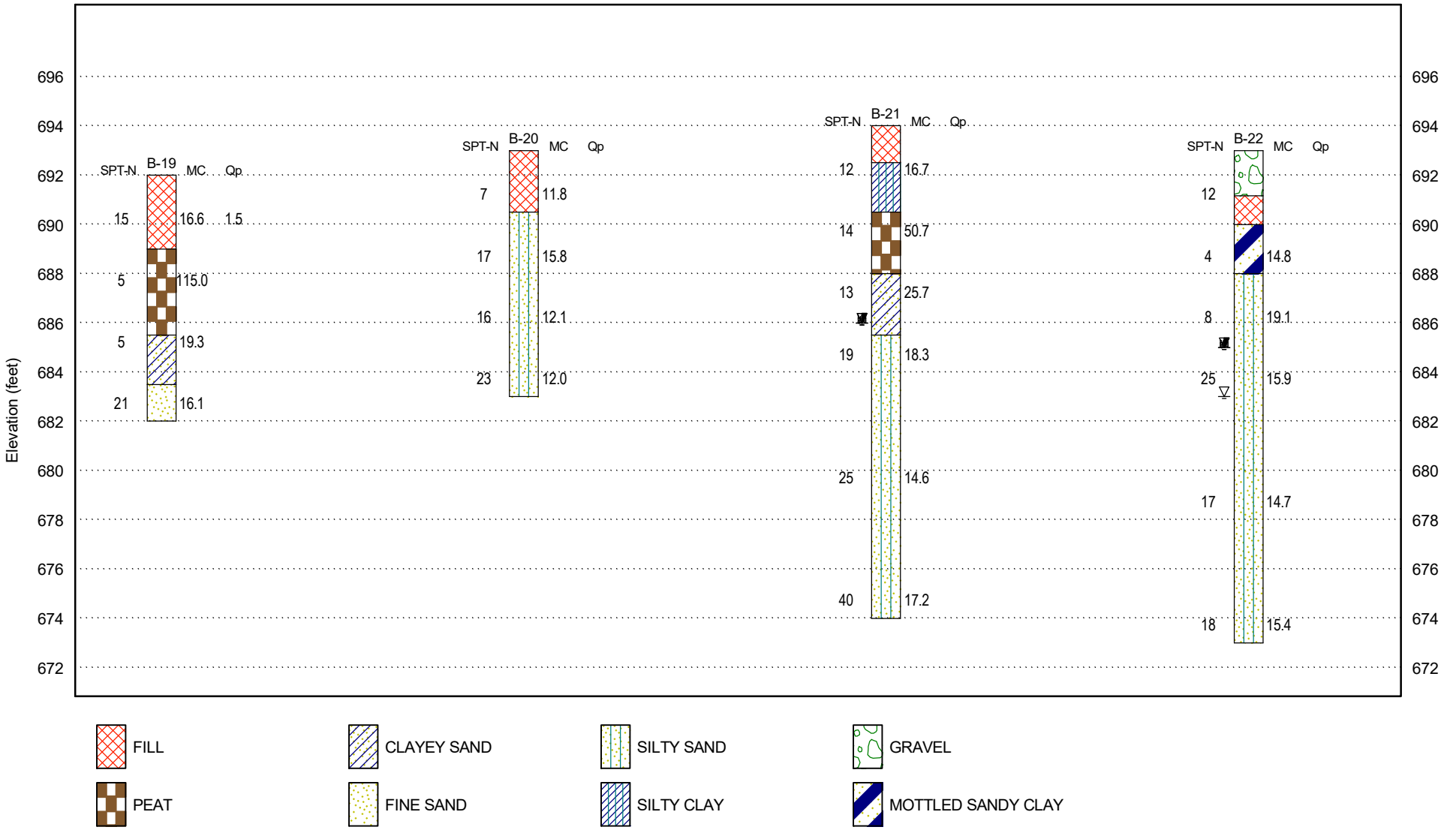
CLIENT: A&Z Engineering, LLC

GME PROJECT NO: G23-112119

PROJECT TYPE: Proposed Porter County Highway Garage

LOCATION: 1955 IN-2, Valpraiso, IN

SUMMARY OF BORINGS



GME TESTING

CLIENT: A&Z Engineering, LLC

GME PROJECT NO: G23-112119

PROJECT TYPE: Proposed Porter County Highway Garage

LOCATION: 1955 IN-2, Valpraiso, IN

GME TESTING

TEST BORING LOG

BORING NO.: **B-01**
SHEET 1 OF 1
GME PROJECT NO: G23-112119
STRUCTURE
DATUM :
DATE STARTED : 12-13-23
DRILLER/INSP : DB/BG

CLIENT: A&Z Engineering, LLC
PROJECT TYPE : Proposed Porter County Highway Garage
LOCATION : 1955 IN-2, Valpraiso, IN

ELEVATION	: 696.0	BORING METHOD	: ASTM D-1586	LATITUDE	: 41.450319
STATION	:	RIG TYPE	: Skid	LONGITUDE	: -87.073628
OFFSET	:	CASING DIA.	: 3.3 in		
LINE	:	HAMMER	: Auto		
DEPTH	: 20.0 ft				

GROUNDWATER: ▽ Encountered at 11.0 ft ▼ At completion Dry ▨ Caved in at 8.0 ft

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6" (N)	% RECOVERY	% MOISTURE CONTENT	UNCONF. COMP., tsf	Qp (tsf)	REMARKS
695.0		±12" Black, Sandy TOPSOIL. 1.0							
	2.5		SS 1	2-3-2 (5)	100	10.7			
	5.0	Brown, Moist, Fine SAND, Trace Gravel.	SS 2	1-2-3 (5)	100	11.7			
	7.5		SS 3	3-4-4 (8)	100	12.7			
688.0 ▨		8.0							
	10.0	Brown, Moist, Fine SILTY SAND, Trace Gravel and Clay.	SS 4	4-6-7 (13)	100	15.2			
685.0 ▽		11.0							
	12.5								
	15.0	Gray, Wet, Fine to Medium Coarse SILTY SAND, with Gravel.	SS 5	16-17-19 (36)	100				
	17.5								
676.0	20.0	20.0	SS 6	20-16-20 (36)	100				
		Bottom of Boring at 20.0 ft							
	22.5								
	25.0								

GME TESTING

TEST BORING LOG

BORING NO.: **B-02**
SHEET 1 OF 1
GME PROJECT NO: G23-112119
STRUCTURE
DATUM :
DATE STARTED : 12-13-23
DRILLER/INSP : DB/BG

CLIENT: A&Z Engineering, LLC
PROJECT TYPE : Proposed Porter County Highway Garage
LOCATION : 1955 IN-2, Valpraiso, IN

ELEVATION	: 696.0	BORING METHOD	: ASTM D-1586	LATITUDE	: 41.450325
STATION	:	RIG TYPE	: Skid	LONGITUDE	: -87.073458
OFFSET	:	CASING DIA.	: 3.3 in		
LINE	:	HAMMER	: Auto		
DEPTH	: 20.0 ft				

GROUNDWATER: ▽ Encountered at 10.0 ft ▼ At completion 8.0 ft ▨ Caved in at 8.0 ft

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6" (N)	% RECOVERY	% MOISTURE CONTENT	UNCONF. COMP., tsf	Qp (tsf)	REMARKS
695.0		±12" Black, Sandy TOPSOIL. 1.0							
	2.5	Brown, Moist, CLAYEY SILTY SAND, Trace Gravel.	SS 1	3-2-3 (5)	100	17.1			
693.0		3.0							
	5.0		SS 2	2-1-2 (3)	100	14.6			
		Brown, Moist, Fine SAND, Trace Gravel.							
	7.5		SS 3	2-2-4 (6)	100	15.1			
688.0 ▼		8.0							
		Brown, Very Moist, SILTY SAND.	SS 4	9-5-6 (11)	100	15.5			
686.0 ▽	10.0	10.0							
	12.5								
	15.0	Gray, Very Moist, Medium Coarse SAND and GRAVEL.	SS 5	14-13-15 (28)	100	9.8			
	17.5								
676.0	20.0	20.0	SS 6	15-16-15 (31)	100	6.8			
		Bottom of Boring at 20.0 ft							
	22.5								
	25.0								

GME TESTING

TEST BORING LOG

BORING NO.: **B-03**
SHEET 1 OF 1
GME PROJECT NO: G23-112119
STRUCTURE
DATUM :
DATE STARTED : 12-13-23
DRILLER/INSP : DB/BG

CLIENT: A&Z Engineering, LLC
PROJECT TYPE : Proposed Porter County Highway Garage
LOCATION : 1955 IN-2, Valpraiso, IN

ELEVATION	: 697.0	BORING METHOD	: ASTM D-1586	LATITUDE	: 41.450219
STATION	:	RIG TYPE	: Skid	LONGITUDE	: -87.073539
OFFSET	:	CASING DIA.	: 3.3 in		
LINE	:	HAMMER	: Auto		
DEPTH	: 20.0 ft				

GROUNDWATER: ▽ Encountered at 10.0 ft ▼ At completion 9.0 ft ▩ Caved in at 9.0 ft

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6" (N)	% RECOVERY	% MOISTURE CONTENT	UNCONF. COMP., tsf	Qp (tsf)	REMARKS
695.5		±18" Black, Sandy TOPSOIL.							
		1.5							
	2.5		SS 1	4-6-7 (13)	100	11.0			
	5.0		SS 2	2-3-4 (7)	100	17.0			
		Brown, Moist, Fine SILTY SAND, Trace Gravel, Occassional Clayey Sand.							
	7.5		SS 3	5-3-3 (6)	100	16.3			
687.0	10.0		SS 4	10-4-10 (14)	100	11.2			
		10.0							
	12.5	Gray, Moist, Fine SAND, Trace Gravel.							
682.0	15.0		SS 5	10-11-12 (23)	100	13.6			
		15.0							
	17.5	Gray, Wet, Medium Coarse SILTY SAND, Trace Gravel.							
677.0	20.0		SS 6	11-12-14 (26)	100				
		20.0							
		Bottom of Boring at 20.0 ft							
	22.5								
	25.0								

GME TESTING

TEST BORING LOG

BORING NO.: **B-04**
SHEET 1 OF 1
GME PROJECT NO: G23-112119
STRUCTURE
DATUM :
DATE STARTED : 12-13-23
DRILLER/INSP : DB/BG

CLIENT: A&Z Engineering, LLC
PROJECT TYPE : Proposed Porter County Highway Garage
LOCATION : 1955 IN-2, Valpraiso, IN

ELEVATION	: 697.0	BORING METHOD	: ASTM D-1586	LATITUDE	: 41.450081
STATION	:	RIG TYPE	: Skid	LONGITUDE	: -87.073461
OFFSET	:	CASING DIA.	: 3.3 in		
LINE	:	HAMMER	: Auto		
DEPTH	: 20.0 ft				

GROUNDWATER: ▽ Encountered at 10.0 ft ▼ At completion 8.0 ft ▩ Caved in at 8.0 ft

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6" (N)	% RECOVERY	% MOISTURE CONTENT	UNCONF. COMP., tsf	Qp (tsf)	REMARKS
696.3		±9" ASPHALT. 0.8							
696.0		±12" Black, Sandy TOPSOIL. 1.0							
	2.5		SS 1	6-5-3 (8)	100	6.8			
	5.0		SS 2	4-3-3 (6)	100	8.6			
		Brown, Moist, Fine SAND, Trace Gravel.							
	7.5		SS 3	4-4-4 (8)	100	12.0			
687.0	10.0	10.0	SS 4	10-10-9 (19)	100	16.3			
	12.5								
	15.0	Gray, Wet, Fine to Medium Coarse SILTY SAND, Trace Gravel.	SS 5	10-13-15 (28)	100				
	17.5								
677.0	20.0	20.0	SS 6	10-15-14 (29)	100				
		Bottom of Boring at 20.0 ft							
	22.5								
	25.0								

GME TESTING

TEST BORING LOG

BORING NO.: **B-05**
SHEET 1 OF 1
GME PROJECT NO: G23-112119
STRUCTURE
DATUM :
DATE STARTED : 12-13-23
DRILLER/INSP : DB/BG

CLIENT: A&Z Engineering, LLC
PROJECT TYPE : Proposed Porter County Highway Garage
LOCATION : 1955 IN-2, Valpraiso, IN

ELEVATION	: 696.0	BORING METHOD	: ASTM D-1586	LATITUDE	: 41.449658
STATION	:	RIG TYPE	: Skid	LONGITUDE	: -87.0733
OFFSET	:	CASING DIA.	: 3.3 in		
LINE	:	HAMMER	: Auto		
DEPTH	: 10.0 ft				

GROUNDWATER: ▽ Encountered at Dry ▼ At completion Dry

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6" (N)	% RECOVERY	% MOISTURE CONTENT	UNCONF. COMP., tsf	Qp (tsf)	REMARKS
695.8		±2" ASPHALT. 0.2							
	2.5	Brown, Moist, Fine SAND.	SS 1	10-6-4 (10)	100	6.8			
693.0		3.0							
	5.0		SS 2	3-4-3 (7)	100	7.6			
	7.5	Brown, Moist, Fine SILTY SAND, Trace Gravel, Fuel Smell to ±5'.	SS 3	5-4-4 (8)	100	15.4			
686.0	10.0	10.0	SS 4	10-8-9 (17)	100	14.0			
		Bottom of Boring at 10.0 ft							
	12.5								
	15.0								
	17.5								
	20.0								
	22.5								
	25.0								

GME TESTING

TEST BORING LOG

BORING NO.: **B-06**
SHEET 1 OF 1
GME PROJECT NO: G23-112119
STRUCTURE
DATUM :
DATE STARTED : 12-13-23
DRILLER/INSP : RS/DW

CLIENT: A&Z Engineering, LLC
PROJECT TYPE : Proposed Porter County Highway Garage
LOCATION : 1955 IN-2, Valpraiso, IN

ELEVATION	: 696.0	BORING METHOD	: ASTM D-1586	LATITUDE	: 41.449792
STATION	:	RIG TYPE	: Skid	LONGITUDE	: -87.073897
OFFSET	:	CASING DIA.	: 3.3 in		
LINE	:	HAMMER	: Auto		
DEPTH	: 10.0 ft				

GROUNDWATER: ▽ Encountered at 9.5 ft ▼ At completion Dry

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6" (N)	% RECOVERY	% MOISTURE CONTENT	UNCONF. COMP., tsf	Qp (tsf)	REMARKS
695.8		±3" ASPHALT Product. 0.3							
695.2		±10" Black, Moist, Sandy ASPHALT Product. 0.8							
	2.5	Brown, Moist, Fine CLAYEY SILTY SAND, Trace Gravel.	SS 1	7-5-4 (9)	100	9.1			
	5.0		SS 2	3-3-3 (6)	100	14.4			
690.5		5.5							
	7.5	Brown and Gray, Moist, SANDY CLAY.	SS 3	3-3-3 (6)	100	15.7		2.0	
687.5		8.5							
686.0	10.0	Brown, Wet, Fine SILTY SAND, Trace Gravel. 10.0	SS 4	4-4-5 (9)	100				
		Bottom of Boring at 10.0 ft							
	12.5								
	15.0								
	17.5								
	20.0								
	22.5								
	25.0								

GME TESTING

TEST BORING LOG

BORING NO.: **B-07**
SHEET 1 OF 1
GME PROJECT NO: G23-112119
STRUCTURE
DATUM :
DATE STARTED : 12-13-23
DRILLER/INSP : RS/DW

CLIENT: A&Z Engineering, LLC
PROJECT TYPE : Proposed Porter County Highway Garage
LOCATION : 1955 IN-2, Valpraiso, IN

ELEVATION	: 696.0	BORING METHOD	: ASTM D-1586	LATITUDE	: 41.449764
STATION	:	RIG TYPE	: Skid	LONGITUDE	: -87.074144
OFFSET	:	CASING DIA.	: 3.3 in		
LINE	:	HAMMER	: Auto		
DEPTH	: 20.0 ft				

GROUNDWATER: ▽ Encountered at 8.0 ft ▼ At completion Dry ▨ Caved in at 8.0 ft

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6" (N)	% RECOVERY	% MOISTURE CONTENT	UNCONF. COMP., tsf	Qp (tsf)	REMARKS
695.8		±3" LIMESTONE Product. 0.3							
694.8		±15" Black and Dark Brown, Moist, Gravelly SAND Product. 1.3							
	2.5	FILL: Brown and Black, Moist, Fine Silty Sand, Trace Gravel, Interbedded Clay Lenses.	SS 1	10-11-13 (24)	100	14.3			
693.0		3.0							
	5.0	Black, Very Moist, Sandy PEAT.	SS 2	1-1-2 (3)	100	21.3			
	7.5		SS 3	2-1-1 (2)	100	23.5			
688.0 ▨		8.0							
	10.0	Brown, Wet, Fine SILTY SAND, Trace Fine Gravel.	SS 4	8-9-10 (19)	100				
684.0		12.0							
	12.5								
	15.0	Gray, Wet, Fine SILTY SAND, Trace Fine Gravel.	SS 5	8-14-15 (29)	100				
	17.5								
676.0	20.0	20.0	SS 6	8-12-14 (26)	100				
		Bottom of Boring at 20.0 ft							
	22.5								
	25.0								

GME TESTING

TEST BORING LOG

BORING NO.: **B-08**
SHEET 1 OF 1
GME PROJECT NO: G23-112119
STRUCTURE
DATUM :
DATE STARTED : 12-13-23
DRILLER/INSP : RS/DW

CLIENT: A&Z Engineering, LLC
PROJECT TYPE : Proposed Porter County Highway Garage
LOCATION : 1955 IN-2, Valpraiso, IN

ELEVATION	: 697.0	BORING METHOD	: ASTM D-1586	LATITUDE	: 41.449969
STATION	:	RIG TYPE	: Skid	LONGITUDE	: -87.073903
OFFSET	:	CASING DIA.	: 3.3 in		
LINE	:	HAMMER	: Auto		
DEPTH	: 10.0 ft				

GROUNDWATER: ▽ Encountered at Dry ▼ At completion Dry

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6" (N)	% RECOVERY	% MOISTURE CONTENT	UNCONF. COMP., tsf	Qp (tsf)	REMARKS
696.8		±3" LIMESTONE Product. 0.3							
695.4	2.5	±19" Black, Moist, Gravelly SAND Product. 1.6	SS 1	6-6-4 (10)	100	12.2			
691.5	5.0	Brown, Moist, Fine SILTY SAND, Trace Fine Gravel. 5.5	SS 2	2-2-3 (5)	100	15.1			
689.0	7.5	Brown and Gray, Moist, Fine SILTY SAND, Trace Fine Gravel. 8.0	SS 3	2-3-3 (6)	100	16.2			
687.0	10.0	Brown, Wet, Fine SILTY SAND, Trace Fine Gravel. 10.0	SS 4	4-4-5 (9)	100				
	12.5	Bottom of Boring at 10.0 ft							
	15.0								
	17.5								
	20.0								
	22.5								
	25.0								

GME TESTING

TEST BORING LOG

BORING NO.: **B-09**
SHEET 1 OF 1
GME PROJECT NO: G23-112119
STRUCTURE
DATUM :
DATE STARTED : 12-13-23
DRILLER/INSP : RS/DW

CLIENT: A&Z Engineering, LLC
PROJECT TYPE : Proposed Porter County Highway Garage
LOCATION : 1955 IN-2, Valpraiso, IN

ELEVATION	: 696.0	BORING METHOD	: ASTM D-1586	LATITUDE	: 41.449969
STATION	:	RIG TYPE	: Skid	LONGITUDE	: -87.074211
OFFSET	:	CASING DIA.	: 3.3 in		
LINE	:	HAMMER	: Auto		
DEPTH	: 20.0 ft				

GROUNDWATER: ▽ Encountered at 8.5 ft ▼ At completion 8.5 ft ▩ Caved in at 8.5 ft

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6" (N)	% RECOVERY	% MOISTURE CONTENT	UNCONF. COMP., tsf	Qp (tsf)	REMARKS
695.8		±2" LIMESTONE Products. 0.2							
694.7		Brown, Dark Stained, Moist, Gravelly SAND Product. 1.3							
	2.5	FILL: Brown and Black, Moist, Silty Sand, Trace Clay and Gravel.	SS 1	3-4-4 (8)	100	13.0			
693.0		3.0							
	5.0		SS 2	1-2-3 (5)	100	13.5			
		POSSIBLE FILL: Dark Brown and Black, Moist, Clayey Sand, Trace Organics.							
	7.5		SS 3	2-2-3 (5)	100	11.7			
687.0		9.0							
	10.0		SS 4	3-3-3 (6)	100				
		Brown, Wet, Very Fine SILTY SAND, Trace Gravel.							
684.0		12.0							
	12.5								
	15.0		SS 5	4-5-7 (12)	100				
		Gray, Wet, Fine SILTY SAND, Trace Fine Gravel.							
	17.5								
676.0	20.0	20.0	SS 6	7-8-8 (16)	100				
		Bottom of Boring at 20.0 ft							
	22.5								
	25.0								

GME TESTING

TEST BORING LOG

BORING NO.: **B-10**
SHEET 1 OF 1
GME PROJECT NO: G23-112119
STRUCTURE
DATUM :
DATE STARTED : 12-13-23
DRILLER/INSP : RS/DW

CLIENT: A&Z Engineering, LLC
PROJECT TYPE : Proposed Porter County Highway Garage
LOCATION : 1955 IN-2, Valpraiso, IN

ELEVATION	: 696.0	BORING METHOD	: ASTM D-1586	LATITUDE	: 41.449961
STATION	:	RIG TYPE	: Skid	LONGITUDE	: -87.074486
OFFSET	:	CASING DIA.	: 3.3 in		
LINE	:	HAMMER	: Auto		
DEPTH	: 20.0 ft				

GROUNDWATER: ▽ Encountered at 9.0 ft ▼ At completion 9.0 ft ⊠ Caved in at 9.5 ft

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6" (N)	% RECOVERY	% MOISTURE CONTENT	UNCONF. COMP., tsf	Qp (tsf)	REMARKS
695.5		±6" LIMESTONE Product. 0.5							
	2.5	FILL: Brown and Dark Brown, Moist, Sand, Trace Gravel. 2.5	SS 1	5-7-7 (14)	100	13.2			
693.5	5.0	FILL: Dark Brown, Moist, Fine Silty Sand, Trace Fine Gravel.	SS 2	5-6-7 (13)	100	10.0			
688.5	7.5	7.5	SS 3	6-7-6 (13)	100	10.7			
		Brown, Gravelly SAND.							
686.5	10.0	9.5	SS 4	5-6-7 (13)	100	20.0			
	12.5								
	15.0	Brown and Gray, Wet, Fine SILTY SAND, Trace Gravel.	SS 5	5-7-8 (15)	100				
	17.5								
676.0	20.0	20.0	SS 6	9-10-9 (19)	100				
		Bottom of Boring at 20.0 ft							
	22.5								
	25.0								

GME TESTING

TEST BORING LOG

BORING NO.: **B-11**
SHEET 1 OF 1
GME PROJECT NO: G23-112119
STRUCTURE
DATUM :
DATE STARTED : 12-13-23
DRILLER/INSP : RS/DW

CLIENT: A&Z Engineering, LLC
PROJECT TYPE : Proposed Porter County Highway Garage
LOCATION : 1955 IN-2, Valpraiso, IN

ELEVATION	: 697.0	BORING METHOD	: ASTM D-1586	LATITUDE	: 41.449942
STATION	:	RIG TYPE	: Skid	LONGITUDE	: -87.074819
OFFSET	:	CASING DIA.	: 3.3 in		
LINE	:	HAMMER	: Auto		
DEPTH	: 20.0 ft				

GROUNDWATER: ▽ Encountered at 5.0 ft ▼ At completion Dry ▨ Caved in at 5.0 ft

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6" (N)	% RECOVERY	% MOISTURE CONTENT	UNCONF. COMP., tsf	Qp (tsf)	REMARKS
696.5		±6" Dark Stained, Moist, LIMESTONE Product. 0.5							
	2.5	POSSIBLE FILL: Brown, Moist, Fine to Medium Coarse Silty Sand, Trace Gravel.	SS 1	8-8-8 (16)	100	7.3			
692.0	5.0	5.0	SS 2	2-3-2 (5)	100	11.6			
	7.5	Brown, Moist, Fine to Medium Coarse SILTY SAND.	SS 3	2-2-2 (4)	100	15.8			
689.0		8.0							
	10.0		SS 4	6-7-8 (15)	100				
	12.5								
	15.0	Brown, Wet, Fine SILTY SAND, Trace Clay and Gravel.	SS 5	6-7-9 (16)	100				
	17.5								
677.0	20.0	20.0	SS 6	6-7-10 (17)	100				
		Bottom of Boring at 20.0 ft							
	22.5								
	25.0								

GME TESTING

TEST BORING LOG

BORING NO.: **B-12**
SHEET 1 OF 1
GME PROJECT NO: G23-112119
STRUCTURE
DATUM :
DATE STARTED : 12-13-23
DRILLER/INSP : RS/DW

CLIENT: A&Z Engineering, LLC
PROJECT TYPE : Proposed Porter County Highway Garage
LOCATION : 1955 IN-2, Valpraiso, IN

ELEVATION	: 696.0	BORING METHOD	: ASTM D-1586	LATITUDE	: 41.449828
STATION	:	RIG TYPE	: Skid	LONGITUDE	: -87.074494
OFFSET	:	CASING DIA.	: 3.3 in		
LINE	:	HAMMER	: Auto		
DEPTH	: 20.0 ft				

GROUNDWATER: ▽ Encountered at Dry ▼ At completion 6.5 ft ▩ Caved in at 7.0 ft

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6" (N)	% RECOVERY	% MOISTURE CONTENT	UNCONF. COMP., tsf	Qp (tsf)	REMARKS
695.7		±4" LIMESTONE Product. 0.3							
694.7		Black, Moist, Sandy GRAVEL Product. 1.3							
	2.5		SS 1	9-13-9 (22)	100	7.4			
		FILL: Dark Brown, Moist, Clayey Sand, Trace Gravel.							
	5.0		SS 2	10-11-8 (19)	100	11.1			
690.5		5.5							
	7.5	Gray, Very Moist, SILTY SAND, Trace Peat and Gravel.	SS 3	2-3-3 (6)	100	19.8			
687.5		8.5							
	10.0		SS 4	5-7-8 (15)	100				
	12.5								
	15.0	Gray and Brown, Wet, Fine SILTY SAND, Trace Gravel.	SS 5	7-9-13 (22)	100				
	17.5								
	20.0		SS 6	6-7-13 (20)	100				
676.0		20.0							
		Bottom of Boring at 20.0 ft							
	22.5								
	25.0								

GME TESTING

TEST BORING LOG

BORING NO.: **B-13**
SHEET 1 OF 1
GME PROJECT NO: G23-112119
STRUCTURE
DATUM :
DATE STARTED : 12-13-23
DRILLER/INSP : RS/DW

CLIENT: A&Z Engineering, LLC
PROJECT TYPE : Proposed Porter County Highway Garage
LOCATION : 1955 IN-2, Valpraiso, IN

ELEVATION	: 696.0	BORING METHOD	: ASTM D-1586	LATITUDE	: 41.449753
STATION	:	RIG TYPE	: Skid	LONGITUDE	: -87.074853
OFFSET	:	CASING DIA.	: 3.3 in		
LINE	:	HAMMER	: Auto		
DEPTH	: 10.0 ft				

GROUNDWATER: ▽ Encountered at 8.0 ft ▼ At completion 8.5 ft

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6" (N)	% RECOVERY	% MOISTURE CONTENT	UNCONF. COMP., tsf	Qp (tsf)	REMARKS
695.5		±6" LIMESTONE Product. 0.5							
694.7		Black, Moist, Sandy GRAVEL Product. 1.3							
	2.5		SS 1	6-6-7 (13)	100	13.0			
		FILL: Dark Brown and Black, Moist, Silty Sandy Clay, Trace Organics and Gravel.	SS 2	3-4-5 (9)	100	16.3			
	5.0								
690.5		5.5							
	7.5	Black, Very Moist, PEAT, and Brown, Moist, Sand, with Peat.	SS 3	4-5-5 (10)	100	26.8			
687.5		8.5							
686.0	10.0	Brown and Gray, Wet, Fine SILTY SAND. 10.0	SS 4	4-5-6 (11)	100				
		Bottom of Boring at 10.0 ft							
	12.5								
	15.0								
	17.5								
	20.0								
	22.5								
	25.0								

GME TESTING

TEST BORING LOG

BORING NO.: **B-14**
SHEET 1 OF 1
GME PROJECT NO: G23-112119
STRUCTURE
DATUM :
DATE STARTED : 12-13-23
DRILLER/INSP : RS/DW

CLIENT: A&Z Engineering, LLC
PROJECT TYPE : Proposed Porter County Highway Garage
LOCATION : 1955 IN-2, Valpraiso, IN

ELEVATION	: 696.0	BORING METHOD	: ASTM D-1586	LATITUDE	: 41.449753
STATION	:	RIG TYPE	: Skid	LONGITUDE	: -87.075228
OFFSET	:	CASING DIA.	: 3.3 in		
LINE	:	HAMMER	: Auto		
DEPTH	: 10.0 ft				

GROUNDWATER: ▽ Encountered at 8.0 ft ▼ At completion Dry ⊠ Caved in at 8.0 ft

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6" (N)	% RECOVERY	% MOISTURE CONTENT	UNCONF. COMP., tsf	Qp (tsf)	REMARKS
694.8		±15" Black Stained, Moist, LIMESTONE Product. 1.3							
	2.5	Brown, Moist, Fine SILTY SAND.	SS 1	15-8-5 (13)	100	10.6			
692.5		3.5							
	5.0		SS 2	2-3-2 (5)	100	11.6			
		Brown and Gray, Moist to Wet, Fine SILTY SAND, Trace Gravel,							
	7.5	Wet @ ±8.5'.	SS 3	2-2-2 (4)	100	17.7			
			SS 4	4-3-4 (7)	100				
686.0	10.0	10.0							
		Bottom of Boring at 10.0 ft							
	12.5								
	15.0								
	17.5								
	20.0								
	22.5								
	25.0								

GME TESTING

TEST BORING LOG

BORING NO.: **B-15**
SHEET 1 OF 1
GME PROJECT NO: G23-112119
STRUCTURE
DATUM :
DATE STARTED : 12-13-23
DRILLER/INSP : DB/BG

CLIENT: A&Z Engineering, LLC
PROJECT TYPE : Proposed Porter County Highway Garage
LOCATION : 1955 IN-2, Valpraiso, IN

ELEVATION	: 694.0	BORING METHOD	: ASTM D-1586	LATITUDE	: 41.449592
STATION	:	RIG TYPE	: Skid	LONGITUDE	: -87.075042
OFFSET	:	CASING DIA.	: 3.3 in		
LINE	:	HAMMER	: Auto		
DEPTH	: 10.0 ft				

GROUNDWATER: ▽ Encountered at Dry ▼ At completion Dry

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6" (N)	% RECOVERY	% MOISTURE CONTENT	UNCONF. COMP., tsf	Qp (tsf)	REMARKS
691.5	2.5	FILL: Black, Sand and Gravel, with Cobble Stones.	SS 1	N/S-Stone- ()					
689.0	5.0	FILL: Black, Organic Sandy Silty Clay.	SS 2	3-3-4 (7)	100	14.8			
	7.5	Gray, Moist, Fine SILTY SAND, Trace Gravel.	SS 3	4-4-5 (9)	100	16.4			
684.0	10.0		SS 4	14-14-14 (28)	100	17.2			
		Bottom of Boring at 10.0 ft							
	12.5								
	15.0								
	17.5								
	20.0								
	22.5								
	25.0								

GME TESTING

TEST BORING LOG

BORING NO.: **B-16**
SHEET 1 OF 1
GME PROJECT NO: G23-112119
STRUCTURE
DATUM :
DATE STARTED : 12-13-23
DRILLER/INSP : RS/DW

CLIENT: A&Z Engineering, LLC
PROJECT TYPE : Proposed Porter County Highway Garage
LOCATION : 1955 IN-2, Valpraiso, IN

ELEVATION	: 695.0	BORING METHOD	: ASTM D-1586	LATITUDE	: 41.449586
STATION	:	RIG TYPE	: Skid	LONGITUDE	: -87.074725
OFFSET	:	CASING DIA.	: 3.3 in		
LINE	:	HAMMER	: Auto		
DEPTH	: 10.0 ft				

GROUNDWATER: ▽ Encountered at 8.0 ft ▼ At completion 8.5 ft ⊠ Caved in at 8.8 ft

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6" (N)	% RECOVERY	% MOISTURE CONTENT	UNCONF. COMP., tsf	Qp (tsf)	REMARKS
	2.5	FILL: Crushed Limestone Product.	SS 1	10-9-7 (16)	100	3.7			
692.0		3.0							
	5.0	POSSIBLE FILL: Dark Brown and Gray, Moist, Clay with Organics, Trace Gravel.	SS 2	4-5-6 (11)	100	15.6		2.5	
	7.5		SS 3	5-5-6 (11)	100	16.8	4.3	2.0	
687.0 ▽		8.0							
		Black, Very Moist, PEAT.	SS 4	2-2-3 (5)	100	164.7			
685.0	10.0	10.0							
		Bottom of Boring at 10.0 ft							
	12.5								
	15.0								
	17.5								
	20.0								
	22.5								
	25.0								

GME TESTING

TEST BORING LOG

BORING NO.: **B-17**
SHEET 1 OF 1
GME PROJECT NO: G23-112119
STRUCTURE
DATUM :
DATE STARTED : 12-13-23
DRILLER/INSP : RS/DW

CLIENT: A&Z Engineering, LLC
PROJECT TYPE : Proposed Porter County Highway Garage
LOCATION : 1955 IN-2, Valpraiso, IN

ELEVATION	: 696.0	BORING METHOD	: ASTM D-1586	LATITUDE	: 41.449661
STATION	:	RIG TYPE	: Skid	LONGITUDE	: -87.074508
OFFSET	:	CASING DIA.	: 3.3 in		
LINE	:	HAMMER	: Auto		
DEPTH	: 10.0 ft				

GROUNDWATER: ▽ Encountered at 8.5 ft ▼ At completion 8.5 ft ▨ Caved in at 8.5 ft

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6" (N)	% RECOVERY	% MOISTURE CONTENT	UNCONF. COMP., tsf	Qp (tsf)	REMARKS
695.8		±3" ASPHALT. 0.3							
	2.5	FILL: Crushed Limestone Product.	SS 1	10-8-5 (13)	100	2.5			
692.0		4.0	SS 2	5-4-3 (7)	100	16.3			
	5.0	FILL: Dark Gray and Black, Moist, Organic Sandy Clay, and Brown, Clayey Sand.							
	7.5		SS 3	3-4-3 (7)	100	16.4			
687.5		8.5							
		Gray, Wet, SILTY SAND, Trace Fine Gravel.	SS 4	4-4-5 (9)	100				
686.0	10.0	10.0							
		Bottom of Boring at 10.0 ft							
	12.5								
	15.0								
	17.5								
	20.0								
	22.5								
	25.0								

GME TESTING

TEST BORING LOG

BORING NO.: **B-18**
SHEET 1 OF 1
GME PROJECT NO: G23-112119
STRUCTURE
DATUM :
DATE STARTED : 12-13-23
DRILLER/INSP : DB/BG

CLIENT: A&Z Engineering, LLC
PROJECT TYPE : Proposed Porter County Highway Garage
LOCATION : 1955 IN-2, Valpraiso, IN

ELEVATION	: 694.0	BORING METHOD	: ASTM D-1586	LATITUDE	: 41.449358
STATION	:	RIG TYPE	: Skid	LONGITUDE	: -87.074611
OFFSET	:	CASING DIA.	: 3.3 in		
LINE	:	HAMMER	: Auto		
DEPTH	: 10.0 ft				

GROUNDWATER: ▽ Encountered at Dry ▼ At completion Dry

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6" (N)	% RECOVERY	% MOISTURE CONTENT	UNCONF. COMP., tsf	Qp (tsf)	REMARKS
	2.5	FILL: Black, Sand, Silty Limestone Fragments.	SS 1	12-19-17 (36)	100	9.5			
691.0		3.0							
	5.0	POSSIBLE FILL: Dark Brown, Moist, Silty Clay, Trace Organics.	SS 2	3-2-4 (6)	100	16.8		1.0	
	7.5		SS 3	4-2-4 (6)	100	24.0	0.8	0.5	
686.5		7.5							
	10.0	Black, Fiberous PEAT.	SS 4	7-6-5 (11)	100	121.7			
684.0		10.0							
		Bottom of Boring at 10.0 ft							
	12.5								
	15.0								
	17.5								
	20.0								
	22.5								
	25.0								

GME TESTING

TEST BORING LOG

BORING NO.: **B-19**
SHEET 1 OF 1
GME PROJECT NO: G23-112119
STRUCTURE
DATUM :
DATE STARTED : 12-13-23
DRILLER/INSP : DB/BG

CLIENT: A&Z Engineering, LLC
PROJECT TYPE : Proposed Porter County Highway Garage
LOCATION : 1955 IN-2, Valpraiso, IN

ELEVATION	: 692.0	BORING METHOD	: ASTM D-1586	LATITUDE	: 41.449428
STATION	:	RIG TYPE	: Skid	LONGITUDE	: -87.074858
OFFSET	:	CASING DIA.	: 3.3 in		
LINE	:	HAMMER	: Auto		
DEPTH	: 10.0 ft				

GROUNDWATER: ▽ Encountered at Dry ▼ At completion Dry

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6" (N)	% RECOVERY	% MOISTURE CONTENT	UNCONF. COMP., tsf	Qp (tsf)	REMARKS
	2.5	MISC. FILL: Black, Moist, Sandy Clay, with Trace Gravel and Brick Fragments.	SS 1	6-7-8 (15)	100	16.6		1.5	
689.0		3.0							
	5.0	Black, Fiberous PEAT.	SS 2	2-2-3 (5)	100	115.0			
685.5		6.5							
	7.5	Gray, Moist, CLAYEY SAND.	SS 3	4-3-2 (5)	100	19.3			
683.5		8.5							
682.0	10.0	Gray, Very Moist, Fine SAND.	SS 4	12-11-10 (21)	100	16.1			
		10.0							
		Bottom of Boring at 10.0 ft							
	12.5								
	15.0								
	17.5								
	20.0								
	22.5								
	25.0								

GME TESTING

TEST BORING LOG

BORING NO.: **B-20**
SHEET 1 OF 1
GME PROJECT NO: G23-112119
STRUCTURE
DATUM :
DATE STARTED : 12-13-23
DRILLER/INSP : DB/BG

CLIENT: A&Z Engineering, LLC
PROJECT TYPE : Proposed Porter County Highway Garage
LOCATION : 1955 IN-2, Valpraiso, IN

ELEVATION	: 693.0	BORING METHOD	: ASTM D-1586	LATITUDE	: 41.449431
STATION	:	RIG TYPE	: Skid	LONGITUDE	: -87.075222
OFFSET	:	CASING DIA.	: 3.3 in		
LINE	:	HAMMER	: Auto		
DEPTH	: 10.0 ft				

GROUNDWATER: ▽ Encountered at Dry ▼ At completion Dry

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6" (N)	% RECOVERY	% MOISTURE CONTENT	UNCONF. COMP., tsf	Qp (tsf)	REMARKS
		FILL: Dark Brown, Moist, Fine Silty Sand.	SS 1	7-4-3 (7)	100	11.8			
690.5	2.5	2.5							
	5.0		SS 2	7-8-9 (17)	100	15.8			
		Gray, Moist, Fine to Medium Coarse SILTY SAND, Trace Gravel.	SS 3	10-8-8 (16)	100	12.1			
	7.5								
			SS 4	12-13-10 (23)	100	12.0			
683.0	10.0	10.0							
		Bottom of Boring at 10.0 ft							
	12.5								
	15.0								
	17.5								
	20.0								
	22.5								
	25.0								

GME TESTING

TEST BORING LOG

BORING NO.: **B-21**
SHEET 1 OF 1
GME PROJECT NO: G23-112119
STRUCTURE
DATUM :
DATE STARTED : 12-13-23
DRILLER/INSP : DB/BG

CLIENT: A&Z Engineering, LLC
PROJECT TYPE : Proposed Porter County Highway Garage
LOCATION : 1955 IN-2, Valpraiso, IN

ELEVATION	: 694.0	BORING METHOD	: ASTM D-1586	LATITUDE	: 41.449392
STATION	:	RIG TYPE	: Skid	LONGITUDE	: -87.07405
OFFSET	:	CASING DIA.	: 3.3 in		
LINE	:	HAMMER	: Auto		
DEPTH	: 20.0 ft				

GROUNDWATER: ▽ Encountered at 8.0 ft ▼ At completion 8.0 ft ▩ Caved in at 8.0 ft

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6" (N)	% RECOVERY	% MOISTURE CONTENT	UNCONF. COMP., tsf	Qp (tsf)	REMARKS
692.5		POSSIBLE FILL: Black Stained, Moist, Clayey Silty Sand, Trace Gravel.							
		1.5	SS 1	11-7-5 (12)	100	16.7			
	2.5	Black and Gray, Moist, SILTY CLAY.							
690.5		3.5	SS 2	4-7-7 (14)	100	50.7			
	5.0	Black, Fiberous PEAT.							
688.0		6.0	SS 3	8-5-8 (13)	100	25.7			
	7.5	Gray, Moist, CLAYEY SAND, Trace Organics.							
685.5		8.5	SS 4	8-9-10 (19)	100	18.3			
	10.0								
	12.5								
	15.0	Gray, Moist, Fine to Medium Coarse SILTY SAND, Trace Gravel, Interbedded Clay Lenses.	SS 5	14-15-10 (25)	100	14.6			
	17.5								
674.0	20.0	20.0	SS 6	13-20-20 (40)	100	17.2			
		Bottom of Boring at 20.0 ft							
	22.5								
	25.0								

GME TESTING

TEST BORING LOG

BORING NO.: **B-22**
SHEET 1 OF 1
GME PROJECT NO: G23-112119
STRUCTURE
DATUM :
DATE STARTED : 12-13-23
DRILLER/INSP : DB/BG

CLIENT: A&Z Engineering, LLC
PROJECT TYPE : Proposed Porter County Highway Garage
LOCATION : 1955 IN-2, Valpraiso, IN

ELEVATION	: 693.0	BORING METHOD	: ASTM D-1586	LATITUDE	: 41.449267
STATION	:	RIG TYPE	: Skid	LONGITUDE	: -87.073853
OFFSET	:	CASING DIA.	: 3.3 in		
LINE	:	HAMMER	: Auto		
DEPTH	: 20.0 ft				

GROUNDWATER: ▽ Encountered at 10.0 ft ▼ At completion 8.0 ft ⊠ Caved in at 8.0 ft

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6" (N)	% RECOVERY	% MOISTURE CONTENT	UNCONF. COMP., tsf	Qp (tsf)	REMARKS
		±22" Black Stained, Sandy GRAVEL Product.							
691.2		1.8	SS 1	10-7-5 (12)	100				
	2.5	FILL: Brown, Moist, Sandy Silty Clay, Trace Gravel.							
690.0		3.0							
		Dark Gray, Moist, Organic SANDY CLAY.	SS 2	2-2-2 (4)	100	14.8			
688.0	5.0	5.0							
	7.5		SS 3	4-2-6 (8)	100	19.1			
	10.0		SS 4	13-10-15 (25)	100	15.9			
	12.5	Gray, Moist, Fine to Medium Coarse SILTY SAND, Trace Gravel.							
	15.0		SS 5	7-8-9 (17)	100	14.7			
	17.5								
673.0	20.0	20.0	SS 6	8-8-10 (18)	100	15.4			
		Bottom of Boring at 20.0 ft							
	22.5								
	25.0								

GENERAL NOTES

SAMPLE IDENTIFICATION

Visual soil classifications are made in general accordance with the United States Soil Classification System on the basis of textural and particle size categorization, and various soil behavior and characteristics. Visual classifications should be made by appropriate laboratory testing when more exact soil identification is required to satisfy specific project applications criteria.

RELATIVE PROPORTIONS OF COHESIONLESS SOILS

Term	Defining Range by % of Weight
Trace	1-10 %
Little	11-20 %
Some	21-35 %
And	36-50 %

WATER LEVEL MEASUREMENT

NE	No Water Encountered
BF	Backfilled upon Completion

ORGANIC CONTENT BY COMBUSTION METHOD

Soil Description	LOI
w/ organic matter	4-15 %
Organic Soil (A-8)	16-30 %
Peat (A-8)	More than 30%

LABORATORY TESTS

Qp	Penetrometer Reading, tsf
Qu	Unconfined Strength, tsf
MC	Moisture Content, %
LL	Liquid Limit, %
PL	Plastic Limit, %
PI	Plastic Index
SL	Shrinkage Limit, %
pH	Measure of Soil Alkalinity/Acidity
γ	Dry Unit Weight, pcf
LOI	Loss of Ignition, %

DRILLING AND SAMPLING SYMBOLS

AS	Auger Sample
BS	Bag Sample
PID	Photo ionization Detector (Hnu meter) volatile vapor level,(PPM)
COA	Clean-Out Auger
CS	Continuous Sampling
FA	Flight Auger
HA	Hand Auger
HAS	Hollow Stem Auger
NR	No Recovery
PT	3” O.D. Piston Tube Sample
RB	Rock Bit
RC	Rock Coring
REC	Recovery
RQD	Rock Quality Designation
RS	Rock Sounding
S	Soil Sounding
SS	2”O.D. Split-Barrel Sample
2ST	2”O.D. Tin-Walled Tube Sample
3ST	3” O.D. Thin-Walled Tube Sample
VS	Vane Shear Test
DB	Diamond Bit
WS	Wash Sample
RB	Roller Bit
ST	Shelby Tube, 2” O.D. or 3” O.D.
CB	Carbide Bit
WOH	Weight of the Hammer

GRAIN SIZE TERMINOLOGY

Soil fraction	Particle size	Us standard sieve size
Boulders	larger than 75 mm	Larger than 3”
Gravel	2mm to 75 mm	#10 to 75 mm
Coarse Sand	0.425 mm to 2 mm	#40 to #10
Fine Sand	0.075mm to 0.425 mm	#200 to #40
Silt	0.002 mm to 0.075 mm	Smaller than #200
Clay	Smaller than 0.002 mm	Smaller than #200

RELATIVE DENSITY

Term	“N” Value
Very Loose	0-5
Loose	6-10
Medium Dense	11-30
Dense	31-50
Very Dense	51+

CONSISTENCY

Term	“N” Value
Very Soft	0-3
Soft	4-5
Medium Stiff	6-10
Stiff	11-15
Very Stiff	16-30
Hard	31+

PLASTICITY

Term	Plastic Index
None to Slight	0-4
Slight	5-7
Medium	8-22
High/Very High	Over 22

Note(s):
The penetration resistance, “N” Value, is the summation of the number of blows required to effect two successive 6-inch penetrations of the 2-inch split-barrel sampler. The sampler is driven with a 140-lb. weight falling 30-inches and is seated to a depth of 6-inches before commencing the standard penetration test.
Water level measurements shown on the boring logs represent conditions at the time indicated and may not reflect static levels, especially in cohesive soils

GME TESTING
3517 Focus Drive
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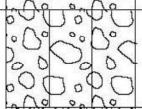
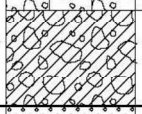
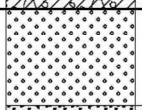
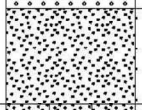
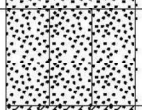
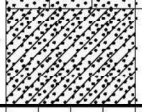
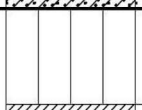
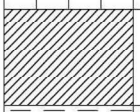
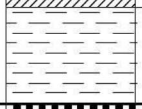
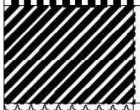
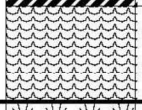
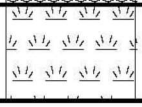
Division of ***GEOTECHNICAL & MATERIALS ENGINEERS, INC.***
www.gmetesting.com

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS — MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS — MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS — MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS — MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

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USGS web services were down for some period of time and as a result this tool wasn't operational, resulting in *timeout* error.
USGS web services are now operational so this tool should work as expected.

OSHPD

Latitude, Longitude: 41.450319, -87.073628

Date	12/18/2023, 2:45:18 PM
Design Code Reference Document	IBC-2012
Risk Category	III
Site Class	D - Stiff Soil

Type	Value	Description
S_S	0.117	MCE_R ground motion. (for 0.2 second period)
S_1	0.064	MCE_R ground motion. (for 1.0s period)
S_{MS}	0.188	Site-modified spectral acceleration value
S_{M1}	0.153	Site-modified spectral acceleration value
S_{DS}	0.125	Numeric seismic design value at 0.2 second SA
S_{D1}	0.102	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	B	Seismic design category
F_a	1.6	Site amplification factor at 0.2 second
F_v	2.4	Site amplification factor at 1.0 second
PGA	0.055	MCE_G peak ground acceleration
F_{PGA}	1.6	Site amplification factor at PGA
PGA_M	0.088	Site modified peak ground acceleration
T_L	12	Long-period transition period in seconds
SsRT	0.117	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	0.128	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	1.5	Factored deterministic acceleration value. (0.2 second)
S1RT	0.064	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.073	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.6	Factored deterministic acceleration value. (1.0 second)
PGAd	0.6	Factored deterministic acceleration value. (Peak Ground Acceleration)
PGA_{UH}	0.055	Uniform-hazard (2% probability of exceedance in 50 years) Peak Ground Acceleration
C_{RS}	0.917	Mapped value of the risk coefficient at short periods

Type	Value	Description
C_{R1}	0.867	Mapped value of the risk coefficient at a period of 1 s
C_V		Vertical coefficient

DISCLAIMER

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1. Sheet C105 – Site Plan
    a. Revised dimensions of Aggregate Bays to reflect the actual size of the ecology blocks.
    b. Added note that Aggregate Bays (Ecology Blocks) will be procured and installed by others.
    c. Added note to HMA for Mainline Legend item to clarify procurement and installation of materials.
        - HMA materials will be procured and installed by the County
        - The contractor is responsible for the procurement and installation of Compacted Aggregate No. 53's and Geogrid BX1300.
        - The Contractor is responsible for preparation of Subgrade.

2. Sheet C106 – Grading Plan
    a. Added spot elevations for the proposed Concrete Washout.

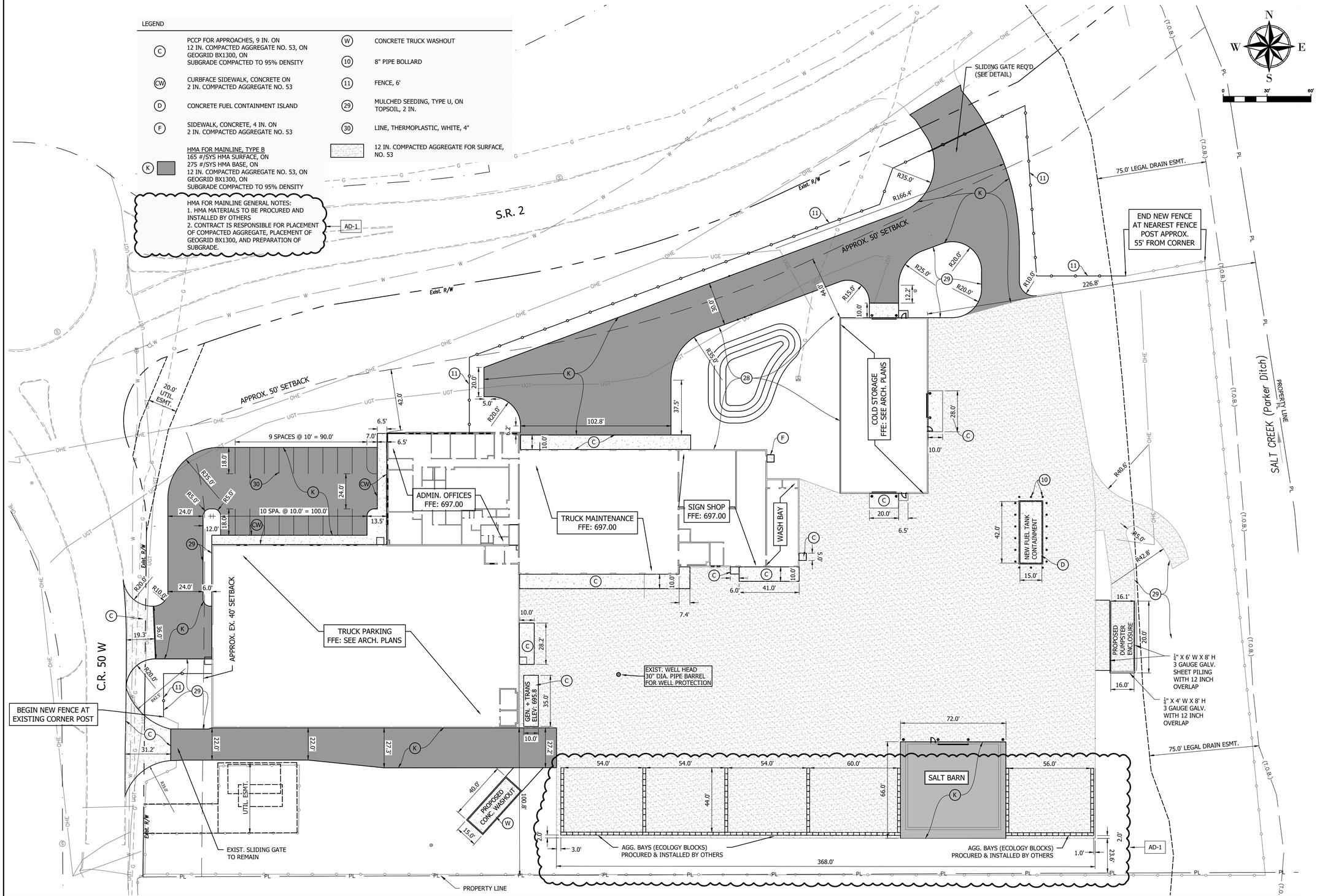
3. Sheet C109 – Storm Sewer Utility Plan
    a. Added 4" Aluminum Orifice Plate to the basin's 12" outlet pipe.

4. Sheet C110 – Sanitary Sewer Utility Plan
    a. Changed callout for Sanitary Interceptor to Sanitary Triple Basin Separator.
    b. Revised invert elevations for the following structures:
        - Sanitary Manhole 3
        - Sanitary Triple Basin Separator
        - Sanitary Cleanouts 4, 5, 6,7, 8 & 9
    c. Revised slopes of sanitary sewer pipes (SDR-35) between the following structures:
        - Sanitary Cleanouts 5 & 6
        - Sanitary Cleanouts 6 & 7
        - Sanitary Cleanouts 8 & 9

5. Sheet C112 – Sanitary Sewer Profiles
    a. SAN – 1 Profile
        - Changed callout for Sanitary Interceptor to Sanitary Triple Basin Separator.
        - Revised invert elevations for Sanitary Triple Basin Separator
    b. SAN – 3 Profile
        - Revised invert elevations and slopes of pipes
        - Added 8" PVC Storm Drain crossing

6. Sheets C117 to C119 – Miscellaneous Details
    a. Added Orifice Restrictor detail to C117
    b. Moved RIPRAP Swale Section (Adjacent to Aggregate Storage) and RIPRAP Swale Typical Section from C118 to C119
    c. Added Concrete Truck Washout detail to C118
    d. Revised "Grade to Inlet Invert" and "Grade to Outlet Invert" for 550 Gallon Triple-Basin Detail.

7. Provided Geotechnical Report



New Construction Work for :

Porter County Highway Department - Central Facility

1955 IN-2
Valparaiso, IN 46383

PORTER COUNTY Indiana

A&Z ENGINEERING LLC
1220 Ruston Pass
Fort Wayne, IN 46825
260.485.7077
www.az-engineering.net

BY: Warren J. Zwick
DATE: 5-24-2024

REVISION:	DATE:
AD-1 - ADDENDUM #1	06/04/24

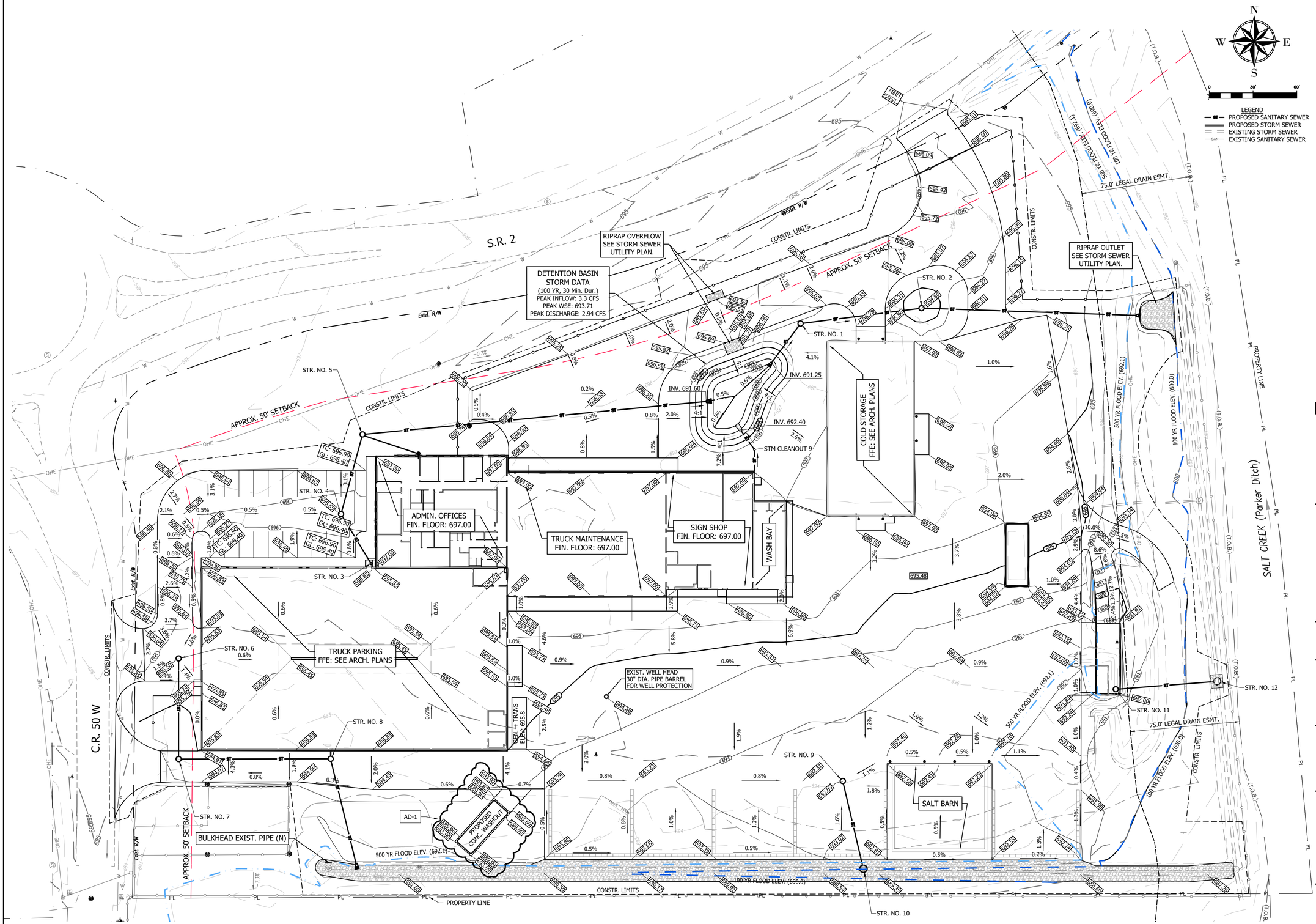
DRAWN BY:	PDH	REVIEWED BY:	LSG
COMMISSION NUMBER:	F22146	DATE:	2024-05-24

C105

SITE PLAN

NOTE: SEE ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS.

S:\2023 Projects\23-1829 Porter County Valpo Shs-Design\CAD\231829 SITE PLAN.dwg — 6/7/2024 — ######## — LandonGregg



S:\2023 Projects\23-1529 Porter County Vdpo Site-Design\CAD\231529 DESIGN BASE - REVGRAD.dwg---8/4/2024---#######---PaulHoward

New Construction Work for :

Porter County Highway Department - Central Facility

1955 IN-2
Valparaiso, IN 46383

PORTER COUNTY Indiana

A&Z ENGINEERING LLC
1220 Ruston Pass
Fort Wayne, IN 46825
260.485.7077
www.az-engineering.net

WARREN J. ZWICK
REGISTERED
No. 910335
STATE OF INDIANA
PROFESSIONAL ENGINEER

BY: Warren J. Zwick
DATE: 5-24-2024

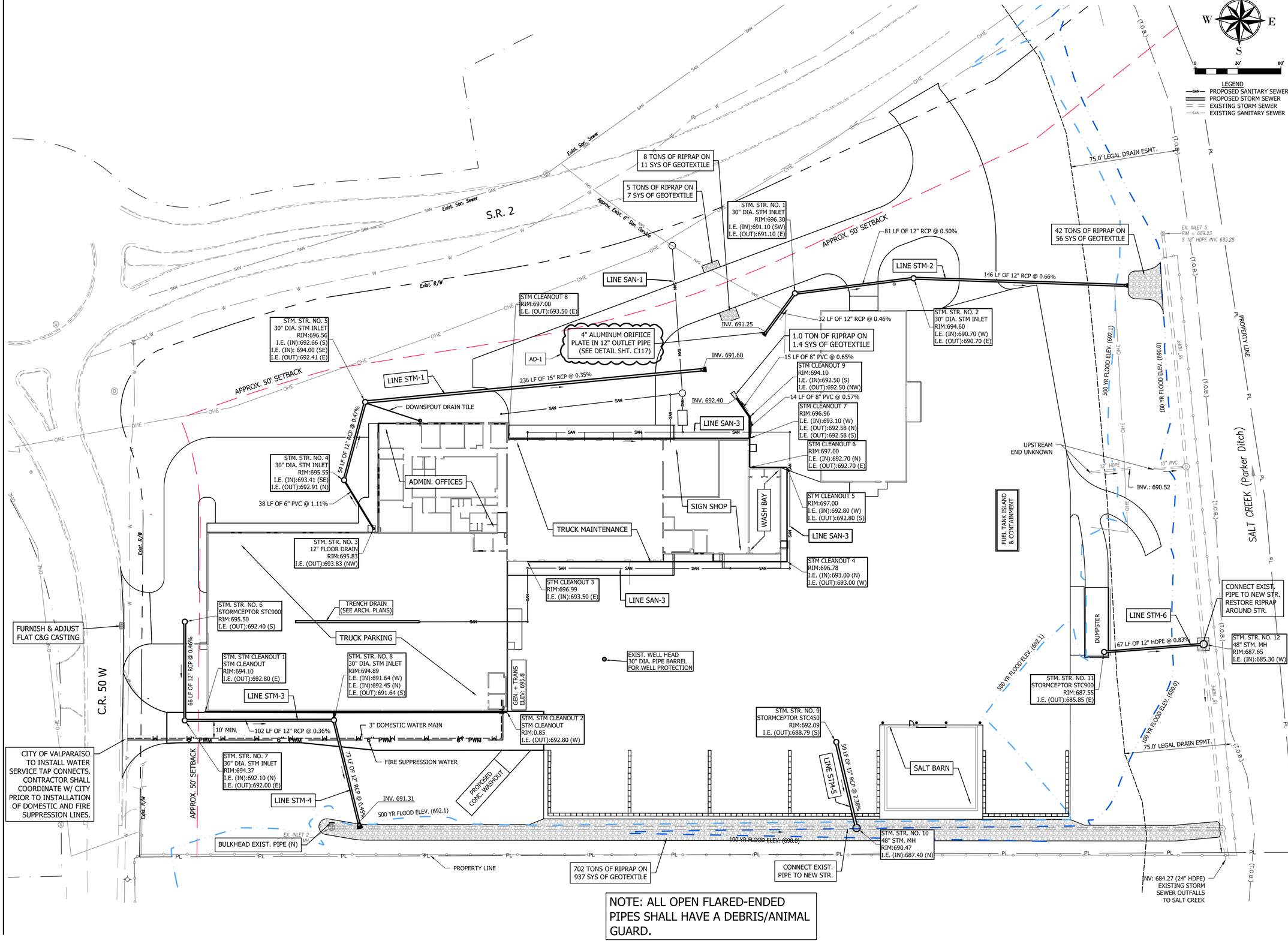
REVISION:	DATE:
AD-1 - ADDENDUM #1	06/04/24

DRAWN BY:	PDH	REVIEWED BY:	LSG
COMMISSION NUMBER:	F22146	DATE:	2024-05-24

C106

GRADING PLAN

S:\2023 Projects\23-1520 Porter County Volpo Site-Design\CAD\231520 UTIL PLAN.dwg — 6/4/2024 — 1" = 30' — LandonGregg



New Construction Work for :

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Valparaiso, IN 46383

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1220 Ruston Pass
Fort Wayne, IN 46825
260.485.7077
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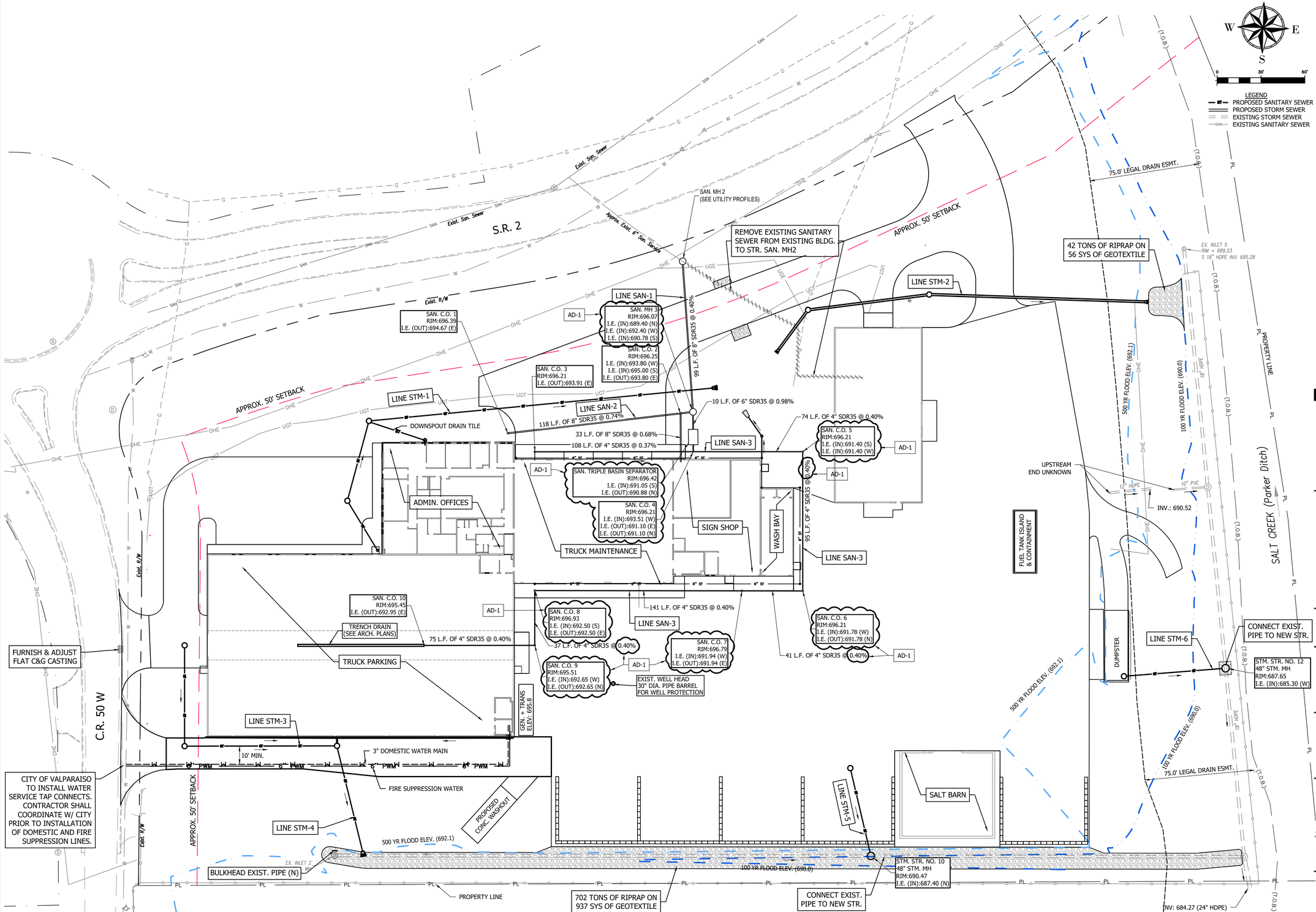
BY: Warren J Zwick
DATE: 5-24-2024

REVISION:	DATE:
AD-1 - ADDENDUM #1	06/04/24

DRAWN BY:	PDH	REVIEWED BY:	LSG
COMMISSION NUMBER:	F22146	DATE:	2024-05-24

C109

STORM SEWER UTILITY PLAN



NOTE: ALL OPEN FLARED-ENDED PIPES SHALL HAVE A DEBRIS/ANIMAL GUARD.

New Construction Work for :

Porter County Highway Department - Central Facility

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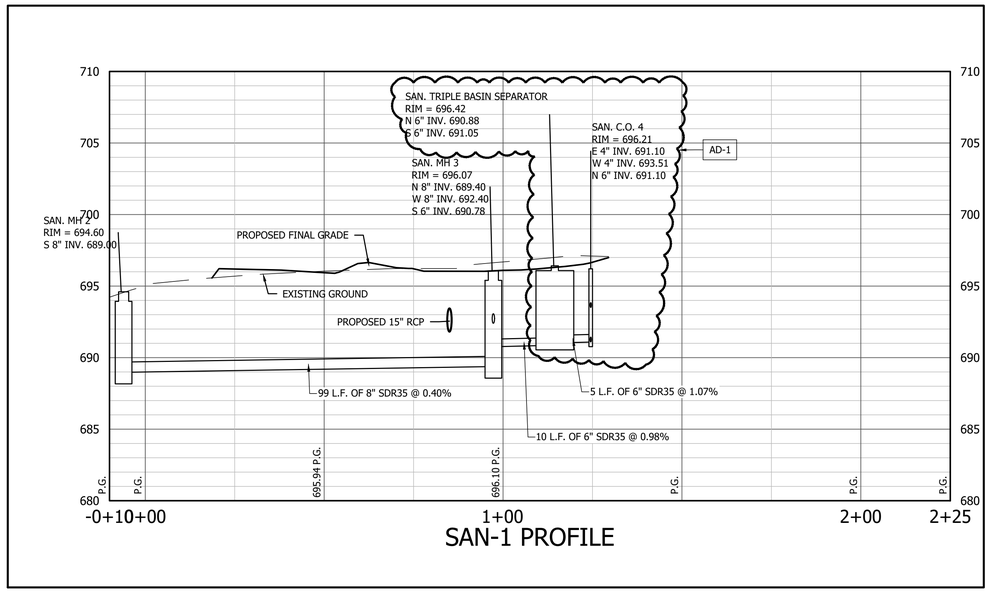
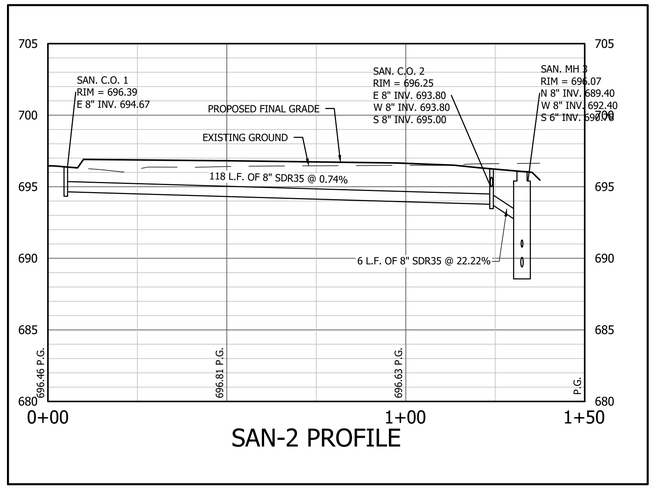
DRAWN BY:	PDH	REVIEWED BY:	LSG
COMMISSION NUMBER:	F22146	DATE:	2024-05-24

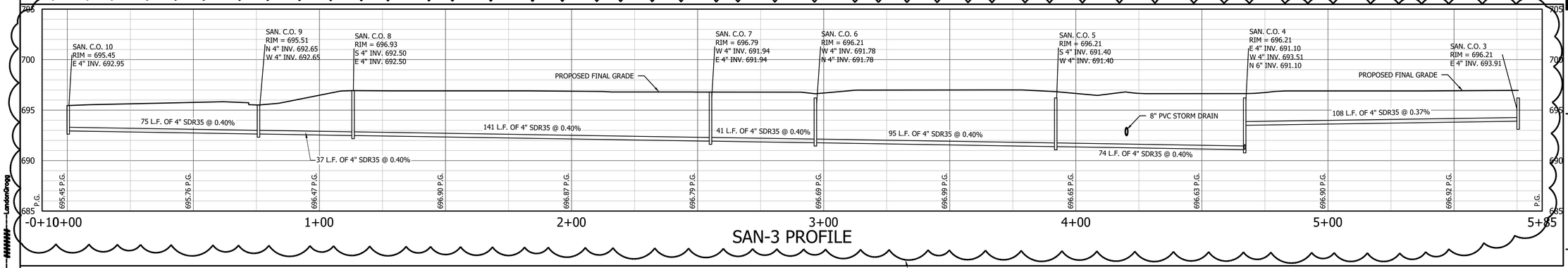
C110

SANITARY SEWER UTILITY PLAN

S:\2023 Projects\23-1529 Porter County Volpo Site-Design\CAD\231529 SAN-SEWER PLAN.dwg — 6/4/2024 — 1" = 30' — LandonGrogg







ALL STORM SEWER, SANITARY SEWER AND WATER MAIN CROSSINGS SHALL MEET A MINIMUM OF 18" SEPARATION. ALL PROPOSED PARALLEL WATER MAIN AND SEWER LINES SHALL MEET A MINIMUM 10 FT. SEPARATION.

New Construction Work for :

Porter County Highway Department - Central Facility

1955 IN-2
Valparaiso, IN 46383

PORTER COUNTY Indiana

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Fort Wayne, IN 46825
260.485.7077
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WARREN J. ZWICK REGISTERED No. 910335 STATE OF INDIANA PROFESSIONAL ENGINEER

BY: Warren J Zwick
DATE: 5-24-2024

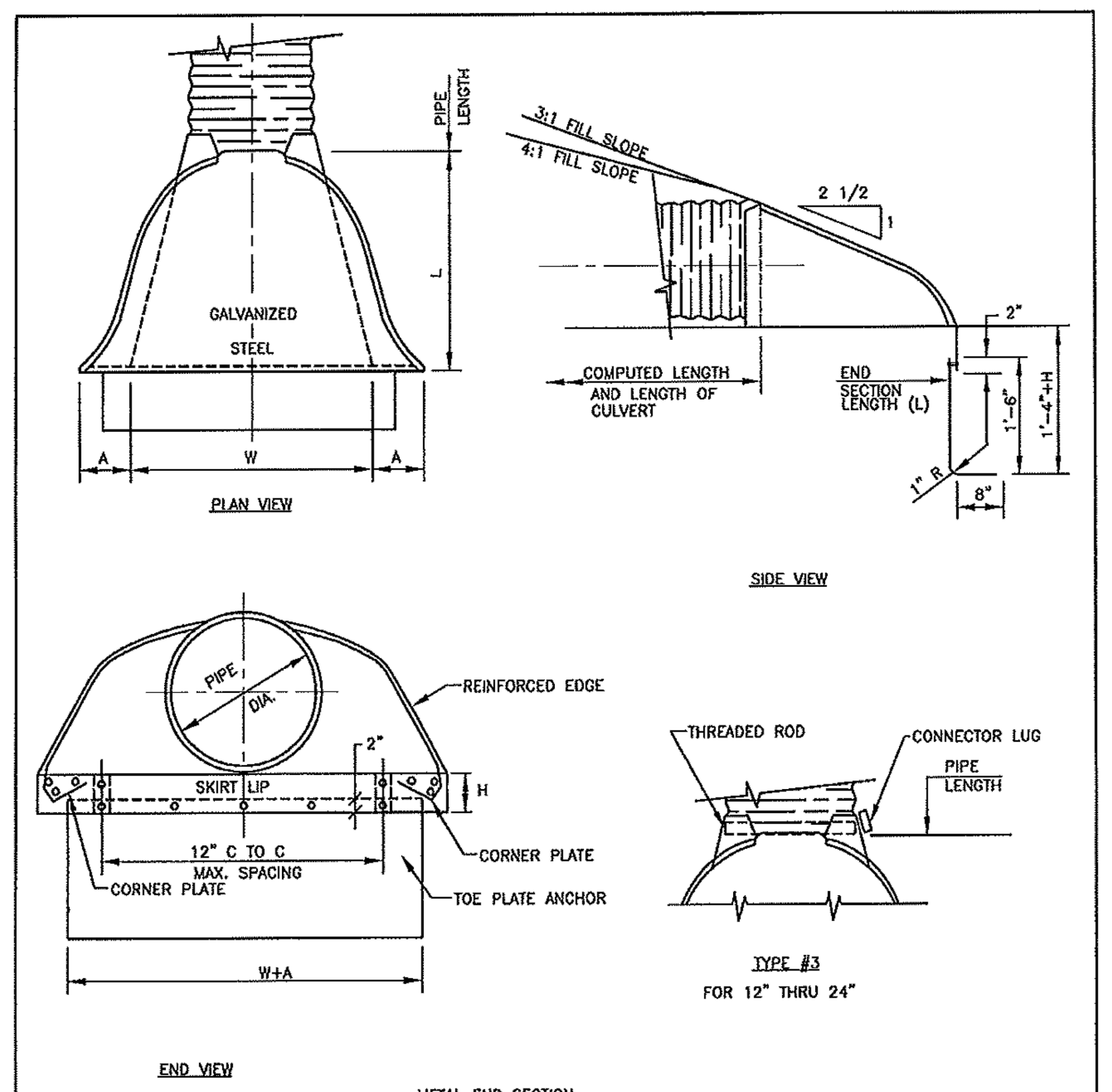
REVISION:	DATE:
AD-1 - ADDENDUM #1	06/04/24

DRAWN BY:	PDH	REVIEWED BY:	LSG
COMMISSION NUMBER:	F22146	DATE:	2024-05-24

C112

SANITARY SEWER PROFILES

S:\2023 Projects\23-1839 Porter County Valpo Site-Design\CAD\231839 DESIGN BASE - REVGRAD.dwg ---- 6/7/2024 ---- ####### ---- LandonGrogg



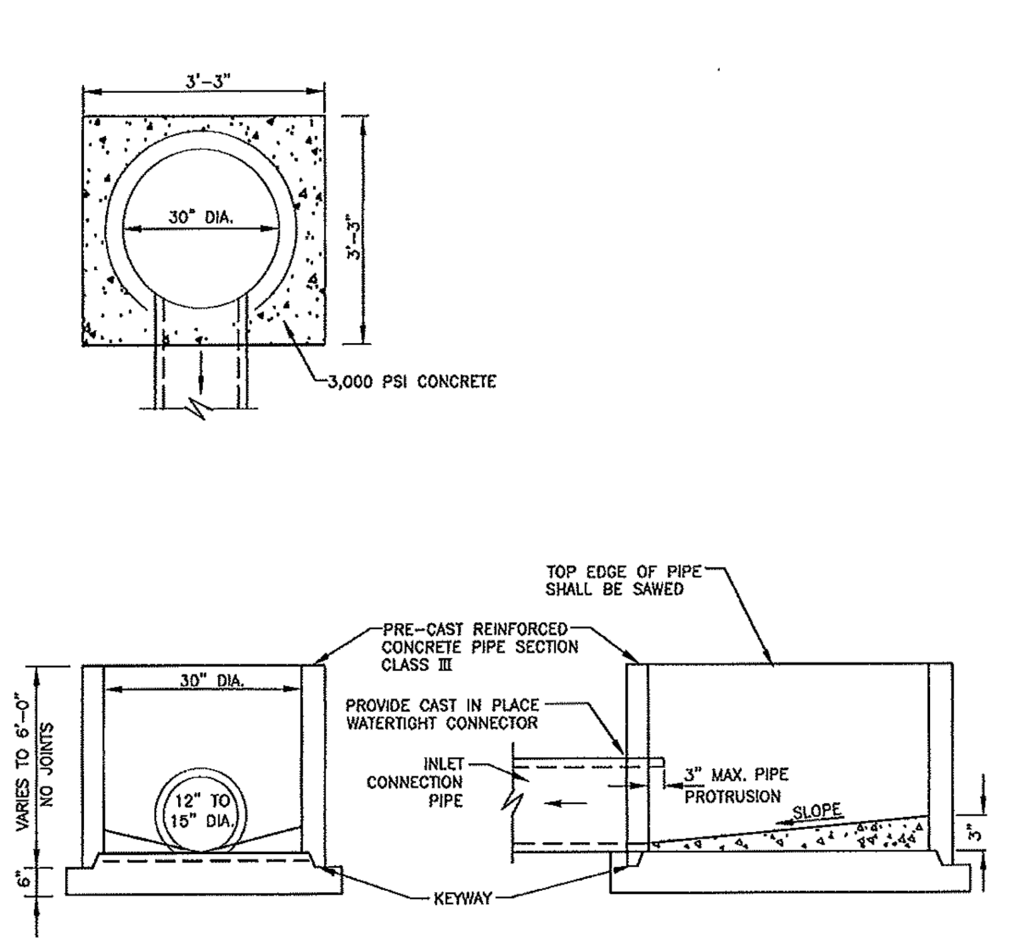
METAL END SECTION

PIPE DIA.	END SECTION THICK. (IN.)	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	W (±2")	APPROX. SLOPE	BODY
12"	.064	6"	6"	6"	21"	24"	2 1/2":1	1 PC.
15"	.064	7"	8"	6"	26"	30"	2 1/2":1	1 PC.
18"	.064	8"	10"	6"	31"	36"	2 1/2":1	1 PC.
21"	.064	9"	12"	6"	36"	42"	2 1/2":1	1 PC.
24"	.064	10"	13"	6"	41"	48"	2 1/2":1	1 PC.
30"	.079	12"	16"	8"	51"	60"	2 1/2":1	1 PC.
36"	.079	14"	19"	9"	60"	72"	2 1/2":1	2 PC.

WHEN DIA. >36", APPROVED DESIGN BY PORTER COUNTY ENGINEER IS REQUIRED.

ITEM	REVISION	APPROVED DATE

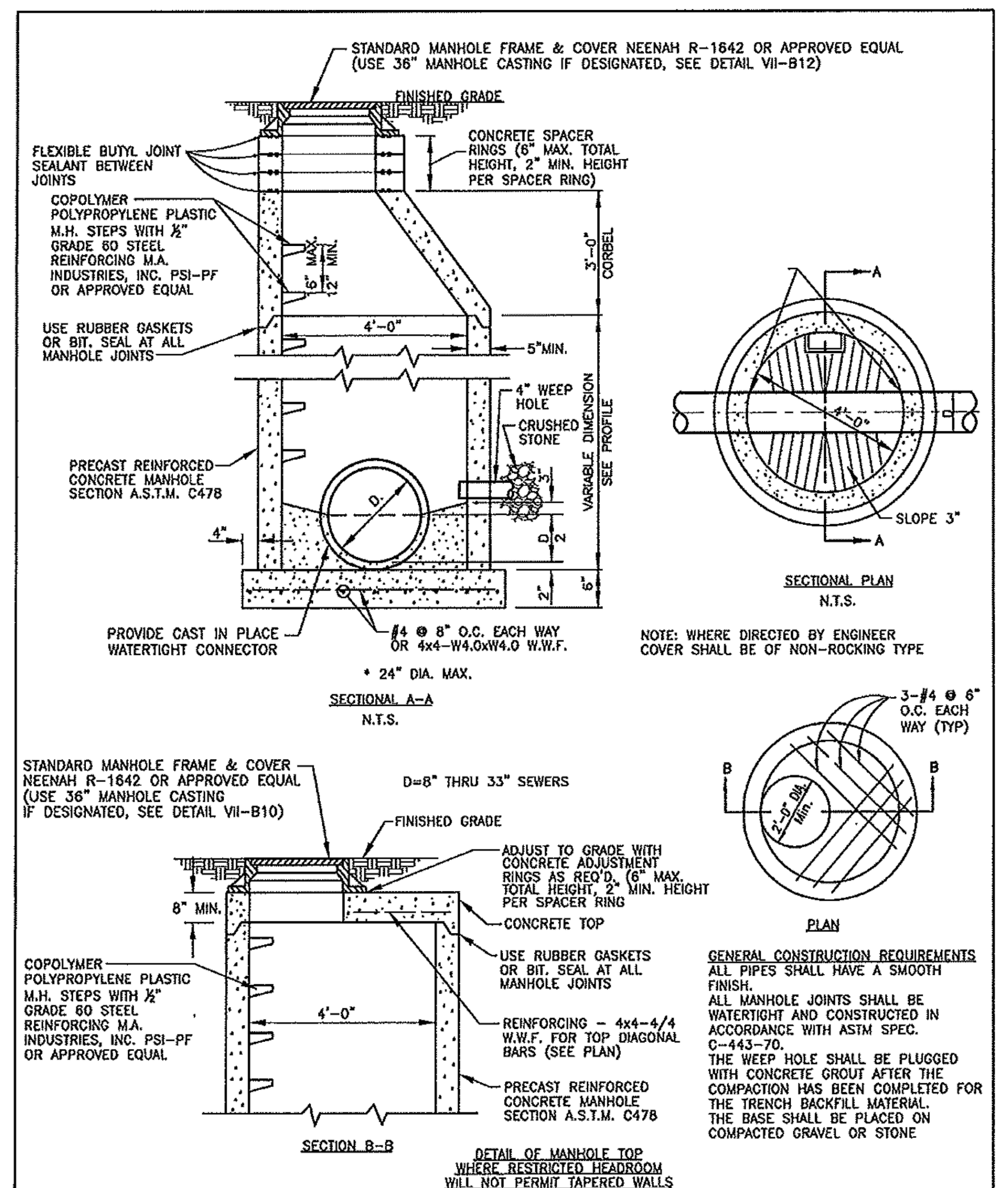
PORTER COUNTY, INDIANA
STANDARD DRAWINGS
METAL END SECTIONS — SHT. NO. VII-B5



NOTE:
1. POURED CONCRETE BASE WITH #5 BARS BOTH WAYS 12" C. TO C.
2. CASTING SHALL BE NEENAH R-3274, EAST JORDAN IRONWORKS 7020, OR APPROVED EQUAL. "DUMP NO WASTE! DRAINS TO WATERWAYS!" MESSAGE WITH FISH IMAGE REQUIRED ON ALL CASTINGS.

ITEM	REVISION	APPROVED DATE

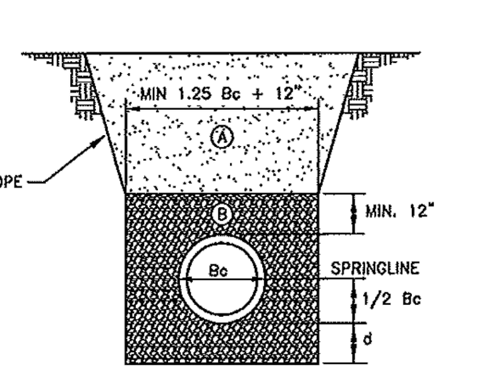
PORTER COUNTY, INDIANA
STANDARD DRAWINGS
INLET TYPE 1 — SHT. NO. VII-B13



GENERAL CONSTRUCTION REQUIREMENTS
ALL PIPES SHALL HAVE A SMOOTH FINISH.
ALL MANHOLE JOINTS SHALL BE WATERTIGHT AND CONSTRUCTED IN ACCORDANCE WITH ASTM SPEC. C-443-70.
THE WEEP HOLE SHALL BE PLUGGED WITH CONCRETE GROUT AFTER THE COMPACTION HAS BEEN COMPLETED FOR THE TRENCH BACKFILL MATERIAL.
THE BASE SHALL BE PLACED ON COMPACTED GRAVEL OR STONE

ITEM	REVISION	APPROVED DATE

PORTER COUNTY, INDIANA
STANDARD DRAWINGS
STORM MANHOLE TYPE 1 — SHT. NO. VII-B6



DEPTH OF BEDDING MATERIAL BELOW PIPE	
Bc	d (MIN. IN.)
27" & SMALLER	3"
30" TO 60"	4"
66" & LARGER	6"

LEGEND

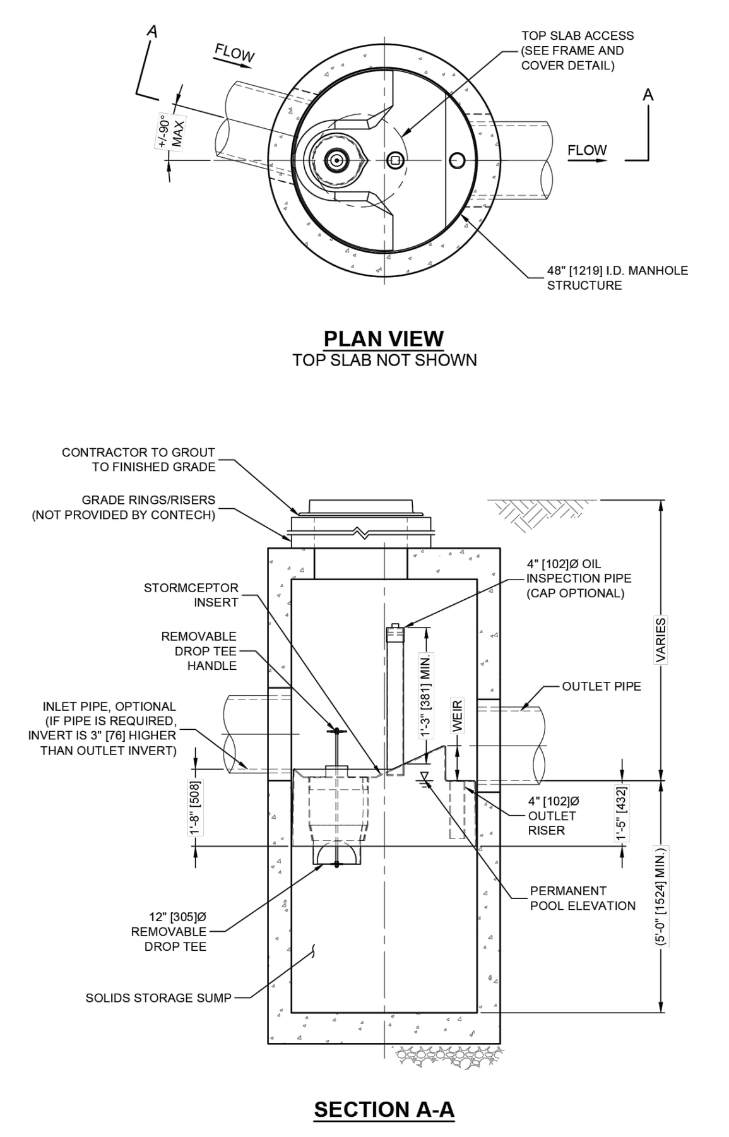
(A) FOR BACKFILL IN EASEMENTS OR OPEN AREAS, NATIVE MATERIAL WILL BE ACCEPTABLE. BACKFILL IN 12" LAYERS SOLIDLY TAMPED FOR AREAS UNDER PROPOSED OR NEAR PROPOSED OR EXISTING PAVEMENT USE INDOT NO. 53 OR NO. 73 COMPACTED AGGREGATE (NO SLAG).

(B) CRUSHED STONE OR GRAVEL INDOT NO. 8, NO. 9 OR NO. 73 COMPACTED AGGREGATE WITH A 50% MECHANICAL CRUSH COUNT.

NOTES:
1. ALL BEDDING AND INITIAL BACKFILL SHALL BE INSTALLED IN 4" TO 6" BALANCED LIFTS AND MECHANICALLY TAMPED. BEDDING MATERIAL SHALL BE HAND PLACED AROUND THE HAUNCH AND SIDES OF THE PIPE TO ENSURE PROPER COMPACTION AND COMPLETE FILLING OF ALL VOIDS.
2. SEE STANDARD DRAWINGS VII-A4 AND VII-A5 FOR ADDITIONAL REQUIREMENTS WHEN PIPE IS INSTALLED UNDER PROPOSED PAVEMENT OR NEAR PROPOSED OR EXISTING PAVEMENT.

ITEM	REVISION	APPROVED DATE

PORTER COUNTY, INDIANA
STANDARD DRAWINGS
PIPE BEDDING AND BACKFILL — SHT. NO. V11-A3



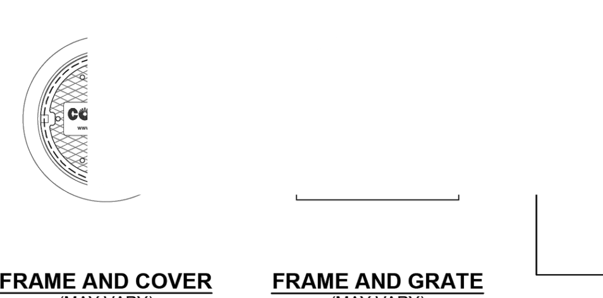
STORMCEPTOR DESIGN NOTES

THE STANDARD STC450I CONFIGURATION WITH ROUND, SOLID FRAME AND COVER, AND INLET PIPE IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION
GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB IN

USE NEENAH CASTING R-2370
(SEE DETAIL BELOW)
OR APPROVED EQUAL

SITE SPECIFIC
ATA REQUIREMENTS



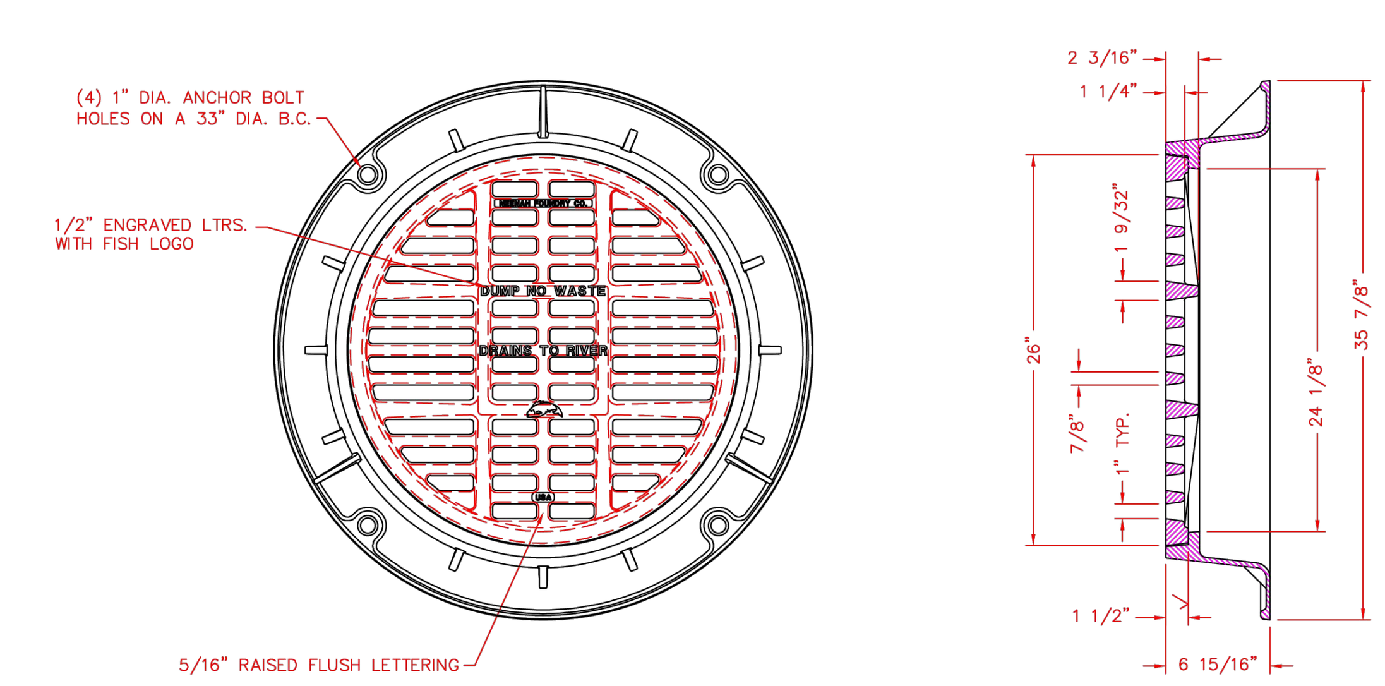
FRAME AND COVER (MAY VARY) NOT TO SCALE — FRAME AND GRATE (MAY VARY) NOT TO SCALE

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. STORMCEPTOR WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STORMCEPTOR STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2' [610], AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
5. STORMCEPTOR STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.
6. ALTERNATE UNITS ARE SHOWN IN MILLIMETERS [mm].

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO STR. NO. 9 - STC450i STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

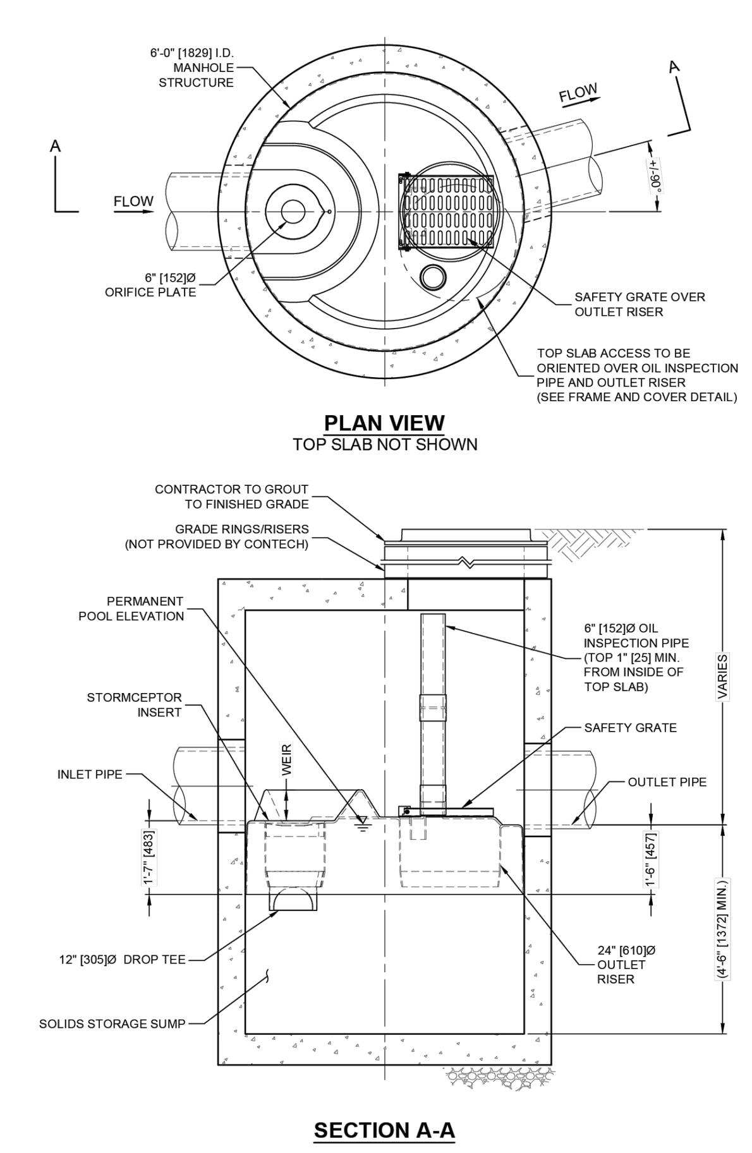
STC450i
STORMCEPTOR
STANDARD DETAIL



NOTES:
- ALL DIMENSIONS SHOWN ARE IN ENGLISH
- COMPLIES WITH AASHTO M306.
- LOAD RATING: H-25 / HS-25 (MEETS 50,000 LB. PROOF LOAD)
- MADE IN USA.
- QUALIFIES FOR "LEED" CREDITS.
- COMPONENT NO'S: 1642-2310, GRATE 2370-3005
- MATERIAL: FRAME-CAST GRAY IRON ASTM A-48, CLASS 40A; GRATE-CAST GRAY IRON ASTM A-48, CLASS 35B
- FINISH: NO PAINT
- WEIGHT: FRAME ≈126#, GRATE ≈120#

DRAWING CONTROL: CONTROLLED DRAWINGS ON NFCO SERVER. ALL OTHER COPIES, ELECTRONIC OR PRINTED ARE FOR REFERENCE ONLY

DR. E. NIVER — CH. RKB — APP. SPT — DATE 06-11-2019 — SCALE 1/8"=1"
TITLE: R-2370 FRAME & TYPE "G" GRATE LTRD. "DUMP NO WASTE...RIVER" W/FISH LOGO
NEENAH FOUNDRY — NEENAH WISCONSIN 54956 PHONE 800-558-5075 — LINCOLN, NEBRASKA 68529 PHONE 800-234-7466 — www.nfco.com
NF-2370 348 B
CAD DWG. REF: 2370 348.DWG- 1



STORMCEPTOR DESIGN NOTES

THE STANDARD STC900 CONFIGURATION IS SHOWN.

USE NEENAH CASTING R-2370
(SEE DETAIL BELOW)
OR APPROVED EQUAL

SITE SPECIFIC DATA REQUIREMENTS			
STRUCTURE ID			
WATER QUALITY FLOW RATE (cfs [L/s])			
PEAK FLOW RATE (cfs [L/s])			
RETURN PERIOD OF PEAK FLOW (yrs)			
RIM ELEVATION			
PIPE DATA:	INVERT	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			
NOTES / SPECIAL REQUIREMENTS:			

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. STORMCEPTOR WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STORMCEPTOR STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2' [610], AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
5. STORMCEPTOR STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.
6. ALTERNATE UNITS ARE SHOWN IN MILLIMETERS [mm].

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMCEPTOR MANHOLE STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
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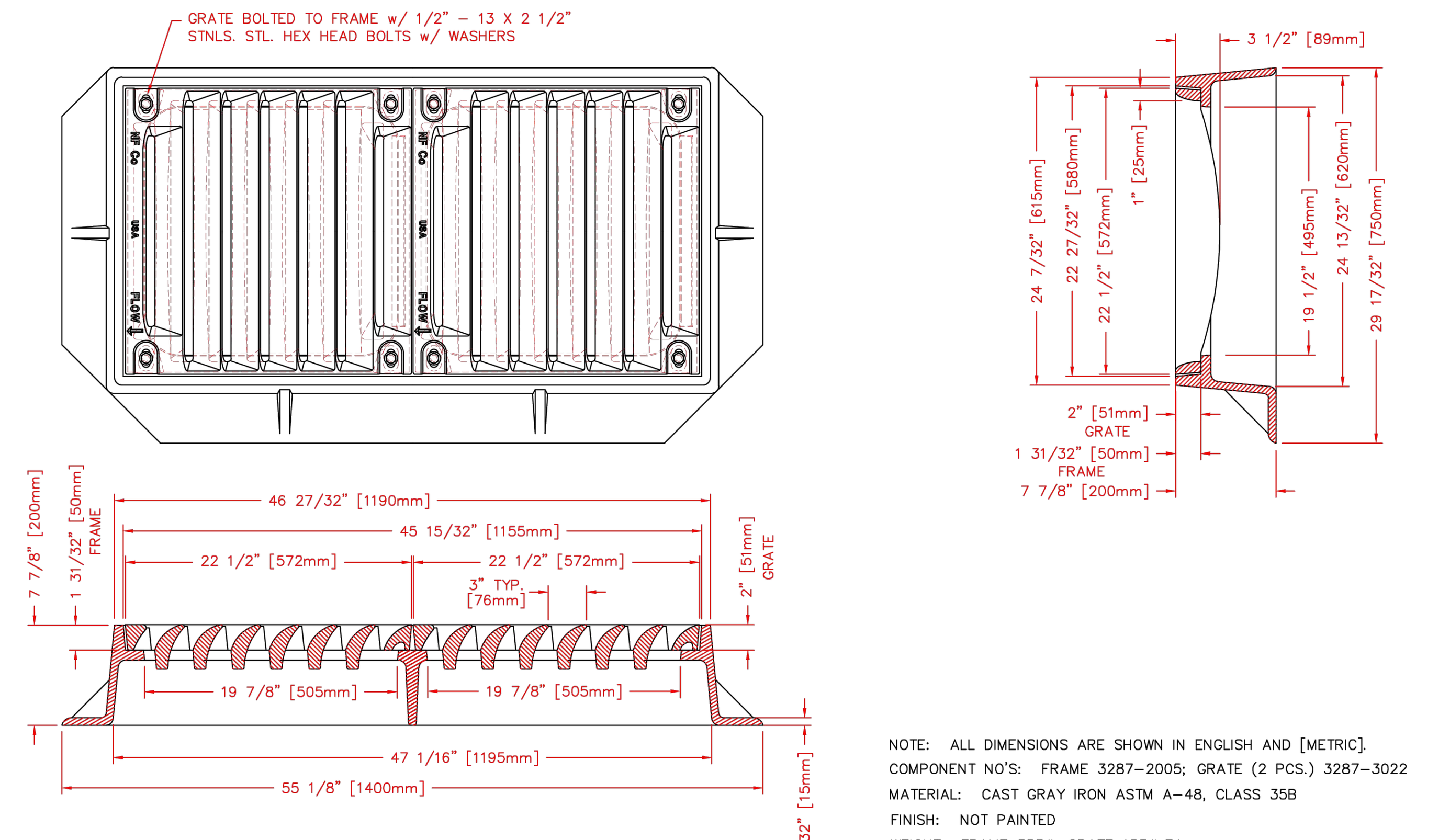
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

STR. NO. 11 - STC900
STORMCEPTOR
STANDARD DETAIL



NOTE: ALL DIMENSIONS ARE SHOWN IN ENGLISH AND [METRIC].
COMPONENT NO'S: FRAME 3287-2005; GRATE (2 PCS.) 3287-3022
MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B
FINISH: NOT PAINTED
WEIGHT: FRAME 353#; GRATE 153# EA.

	DATE	REVISION	
	06-20-2013	CHANGED THE BOLT RECESS TO 15° DRAFT	ELN
	5-29-2013	UPDATED BOLT SLOTS IN GRATE	CAG

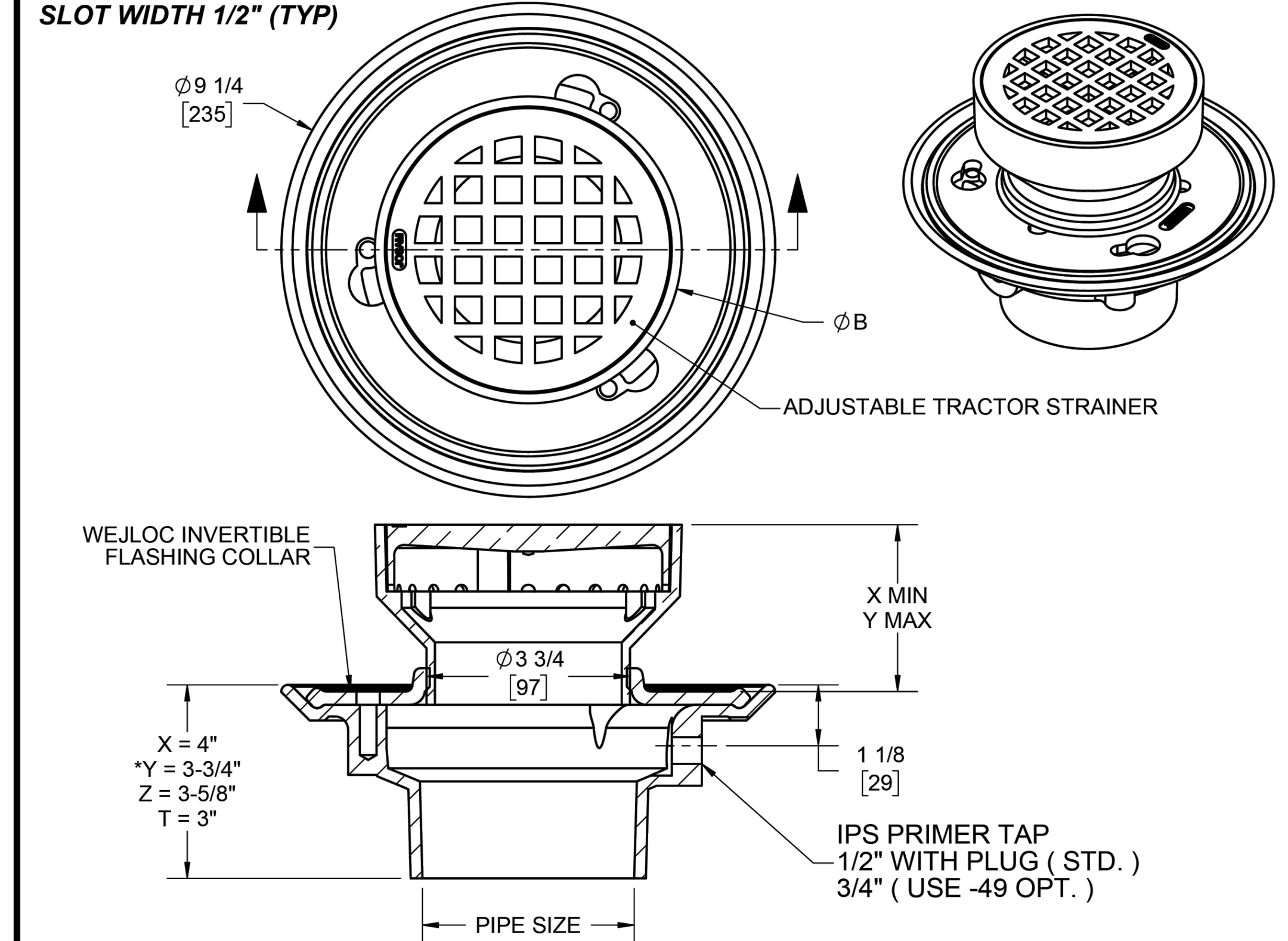
DR. E. REMME — CH. — APP. — DATE 10-10-2007 — SCALE 1/8"=1"
TITLE: R-3287-5 FRAME AND TYPE "V" GRATES
NEENAH FOUNDRY COMPANY — NEENAH WISCONSIN 54956
NF-3287 419 B
CAD DWG. REF: 3287 419.DWG-3

SPECIFICATION: FD-1 Floor Drain

JOSAM SERIES 30000-E CAST IRON FLOOR DRAIN, TWO-PIECE BODY WITH DOUBLE DRAINAGE FLANGE AND 1/2" PRIMER TAP, WEJLOC ® INVERTIBLE FLASHING COLLAR, WEEPHOLES, BOTTOM OUTLET CONNECTION AND NIKALOY ADJUSTABLE ROUND STRAINER WITH HEAVY DUTY TRACTOR GRATE.

FLOOR DRAIN
ADJUSTABLE FLOOR DRAIN
SERIES 30000-E

SLOT WIDTH 1/2" (TYP)



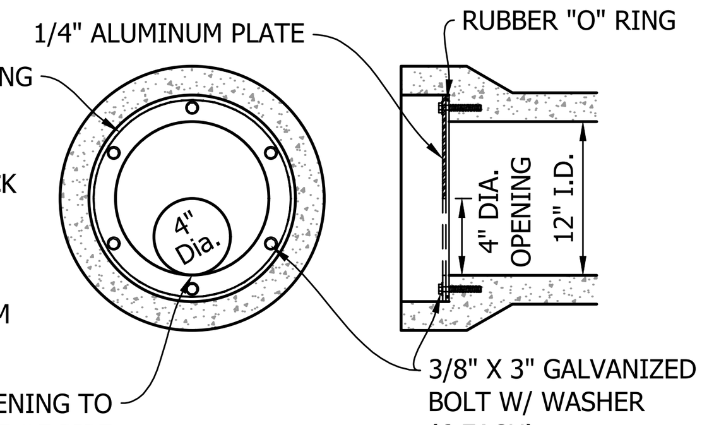
	STRAINER	B	X	Y	FREE AREA
✓	-6E	6	2-1/4	3-1/2	6.7
	-7E	7	1-7/8	3-1/8	12.0
	-9E	9	2-1/4	3-3/8	21.2

*GASKET ON -Y CONNECTION CONFORMS WITH ASTM-C564

	2"	PIPE SIZE		-93	CAST IRON STRAINER (7E ONLY)
✓	3"	PIPE SIZE	✓	-SS	STAINLESS STEEL TOP (6E OR 7E ONLY)
	4"	PIPE SIZE		-2	BRONZE ADJUSTABLE STRAINER
	-TSO	THREADED SIDE OUTLET		-80	PERFORATED STAINLESS STEEL BASKET
	-ST	WITH SHALLOW TRAP (2" AND 3" ONLY)		-J	BACKWATER VALVE
	-PD	PRISON DRAIN (2" AND 3" ONLY)		-VP	SECURED GRATE, VANDAL-PROOF SCREWS
	-ARE	ACID-RESISTING EPOXY		-T	THREADED OUTLET
	-49	3/4" PRIMER TAP		-X	INSIDE CAULK OUTLET
	-91	ROUGH BRONZE BODY		-Y	HUB OUTLET WITH GASKET*
	-92	GALVANIZED CAST IRON PARTS		-Z	NO-HUB SPIGOT OUTLET

DATE OF LAST CHANGE: 07/23/18
DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES AND CHANGE WITHOUT NOTICE. WE CAN ASSUME NO RESPONSIBILITY FOR USE OF SUPERSEDED OR VOID DATA.
JOSAM
MICHIGAN CITY, INDIANA
NOTES

NOTE:
THE BELL IS TO BE PLACED IN A STANDARD TRASH RACK (SEE DETAIL). THE INVERT OF THE BELL IS TO MATCH THE INVERT ON THE TRASH RACK SO THAT THE BOTTOM BOLT CAN BE ACCESSED.



ORIFICE RESTRICTOR
NOT TO SCALE

AD-1

New Construction Work for :
Porter County Highway Department - Central Facility
1955 IN-2
Valparaiso, IN 46383

PORTER COUNTY Indiana

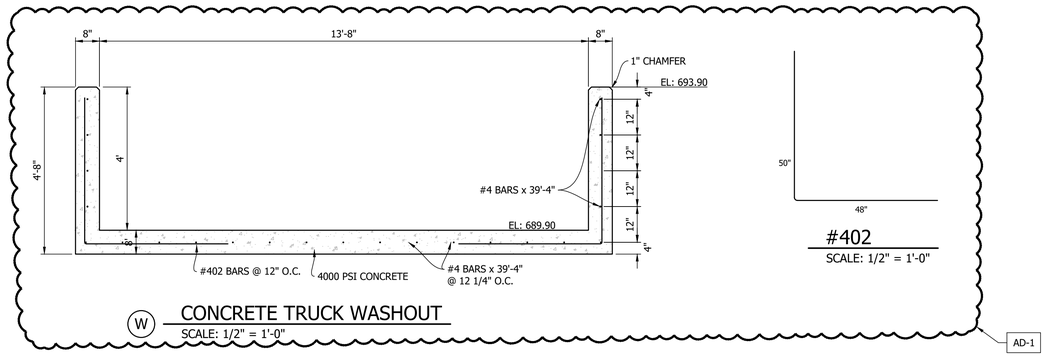
A & Z ENGINEERING
1220 Ruston Pass
Fort Wayne, IN 46825
260.485.7077
www.az-engineering.net

WARREN J. ZWICK REGISTERED No. 910335 STATE OF INDIANA PROFESSIONAL ENGINEER
BY: [signature]
DATE: 5-24-2024

REVISION:	DATE:
AD-1 - ADDENDUM #1	06/04/24

DRAWN BY: PDH — REVIEWED BY: LSG
COMMISSION NUMBER: F22146 — DATE: 2024-05-24

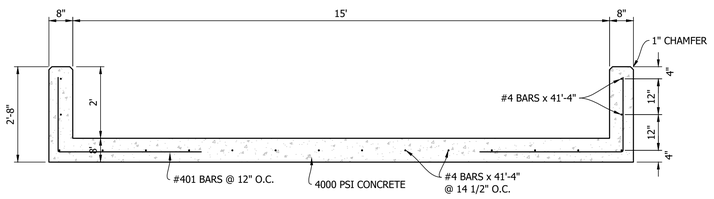
C117
MISC. DETAILS



W CONCRETE TRUCK WASHOUT
SCALE: 1/2" = 1'-0"

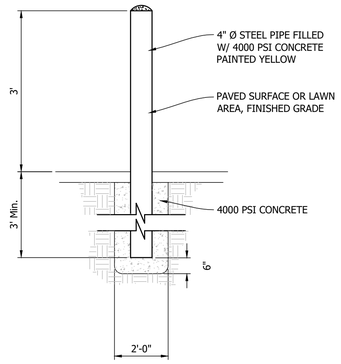
#402
SCALE: 1/2" = 1'-0"

AD-1

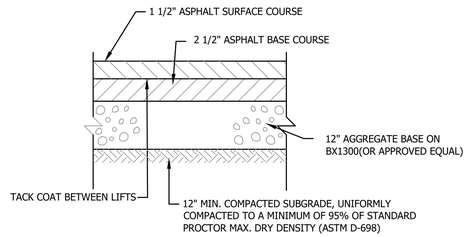


D CONCRETE FUEL CONTAINMENT ISLAND
SCALE: 1/2" = 1'-0"

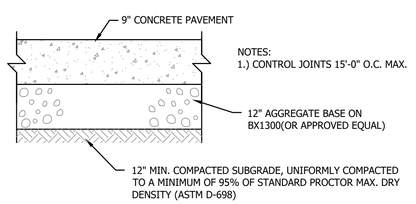
#401
SCALE: 1/2" = 1'-0"



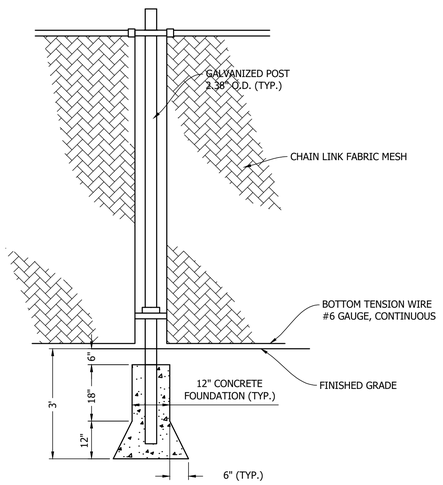
BOLLARD
SCALE: NTS



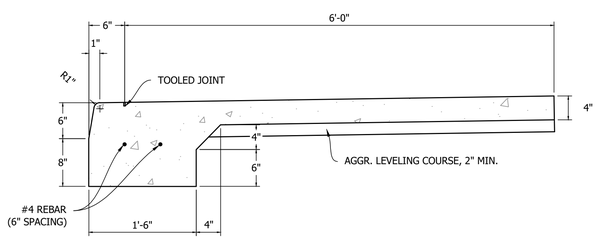
K HMA FOR PARKING LOT, TYPE B
SCALE: NTS



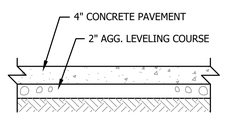
C PCCP FOR APPROACHED
SCALE: NTS



CHAIN LINK FENCE
SCALE: NTS

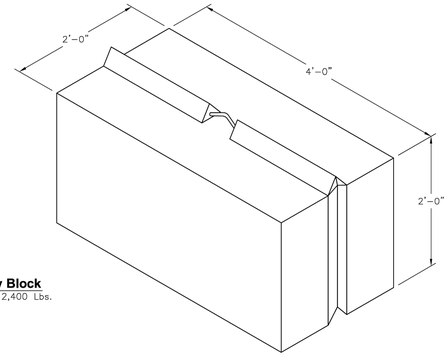


W CURBFACE SIDEWALK, CONCRETE
SCALE: NTS



F SIDEWALK, CONCRETE
SCALE: NTS

NOTE: ALL CONCRETE FLATWORK SHALL ADHERE TO PORTER COUNTY CONSTRUCTION STANDARD SECTIONS 8.06, 8.07 & 8.08 WITH REGARD TO DETAILS C, F, K & W.



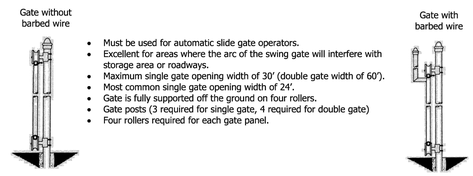
Ecology Block
Weight – 2,400 Lbs.

SPECIFICATIONS:

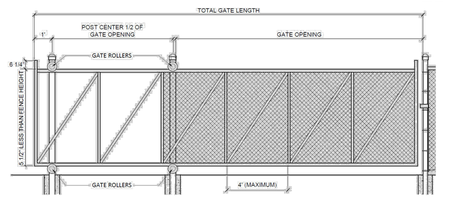
1. Concrete: Design Strength of 5500 PSI at 28 Days.
2. Steel Reinforcement: ASTM A-615 Grade 60.

Oldcastle Precast® 13600 S. Wayside Dr., Houston, TX 77048 Phone: 713-991-2400 Fax: 713-991-0815	2'-0" X 4'-0" X 2'-0" O.D.	ECOLOGY BLOCK
	FILE NAME: 264MAM242EB.DWG	
	ISSUE DATE: JANUARY, 2007	
	www.oldcastlehouston.com	Copyright © 2007 Oldcastle Precast, Inc.

CANTILEVER SLIDE GATES



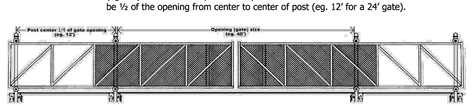
- Must be used for automatic slide gate operators.
- Excellent for areas where the arc of the swing gate will interfere with storage area or roadways.
- Maximum single gate opening width of 30' (double gate width of 60').
- Most common single gate opening width of 24'.
- Gate is fully supported off the ground on four rollers.
- Gate posts (3 required for single gate, 4 required for double gate)
- Four rollers required for each gate panel.



Total gate length = opening size x 1.5, then add 1' (eg. 24' opening: 24' x 1.5 = 36', 36' + 1' = 37')

Construction: 1 7/8" O.D. Schedule 40 top/bottom rails and end uprights.
1 3/8" O.D. .090 wall vertical and horizontal braces.

Gate posts: Gate posts on either side of gate opening are to be set to the actual opening (eg. 24') face to face of post. Gate posts for the counter balance are set to be ½ of the opening from center to center of post (eg. 12' for a 24' gate).



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1955 IN-2
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Fort Wayne, IN 46825
260.485.7077
www.az-engineering.net

WARREN J. ZWICK REGISTERED No. 910335 STATE OF INDIANA PROFESSIONAL ENGINEER

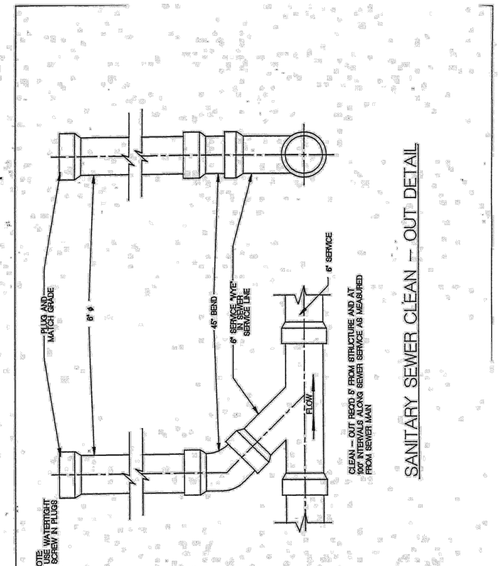
BY: Warren J Zwick
DATE: 5-24-2024

REVISION:	DATE:
AD-1 - ADDENDUM #1	06/04/24

DRAWN BY:	PDH	REVIEWED BY:	LSG
COMMISSION NUMBER:	F22146	DATE:	2024-05-24

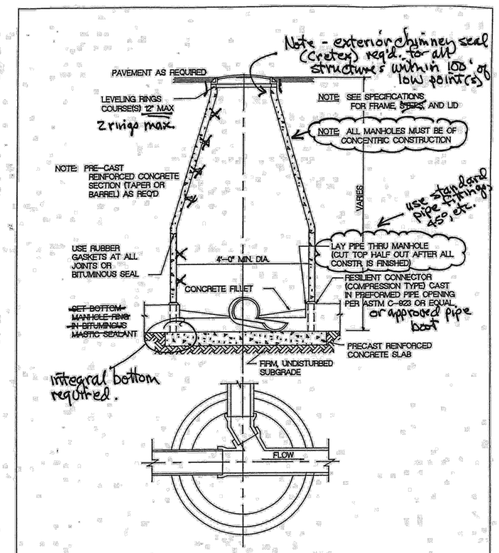
C118

MISC. DETAILS



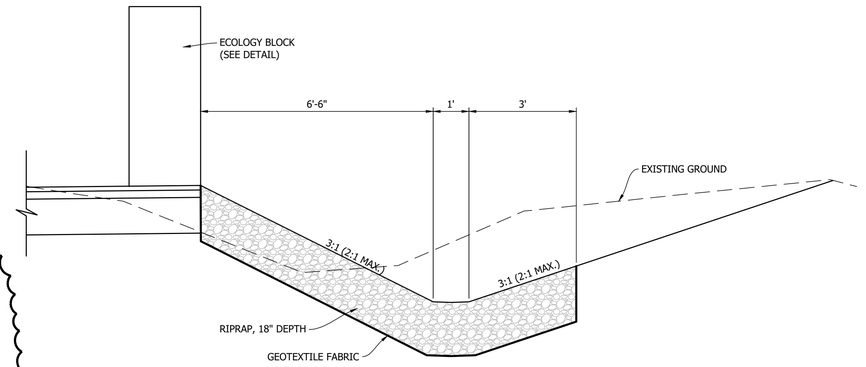
SANITARY SEWER CLEAN – OUT DETAIL

NO.	BY	DATE	REVISION	BOARD OF PUBLIC WORKS VALPARAISO, INDIANA	NO.
				ENGINEERS DEPARTMENT DATE: DR: APPROVED:	H 05



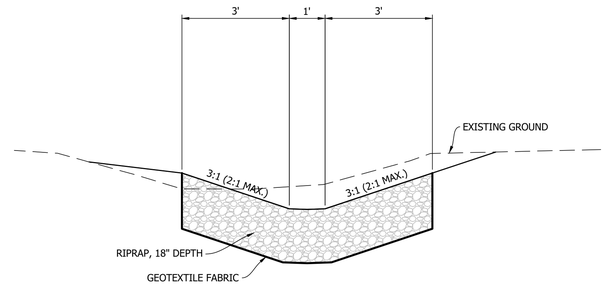
STANDARD SANITARY MANHOLE DETAIL

NO.	BY	DATE	REVISION	BOARD OF PUBLIC WORKS VALPARAISO, INDIANA	NO.
				ENGINEERS DEPARTMENT DATE: DR: APPROVED:	H 02



RIPRAP SWALE SECTION (ADJACENT TO AGGREGATE STORAGE)

SCALE: 1/2" = 1'-0"



RIPRAP SWALE TYPICAL SECTION

SCALE: 1/2" = 1'-0"

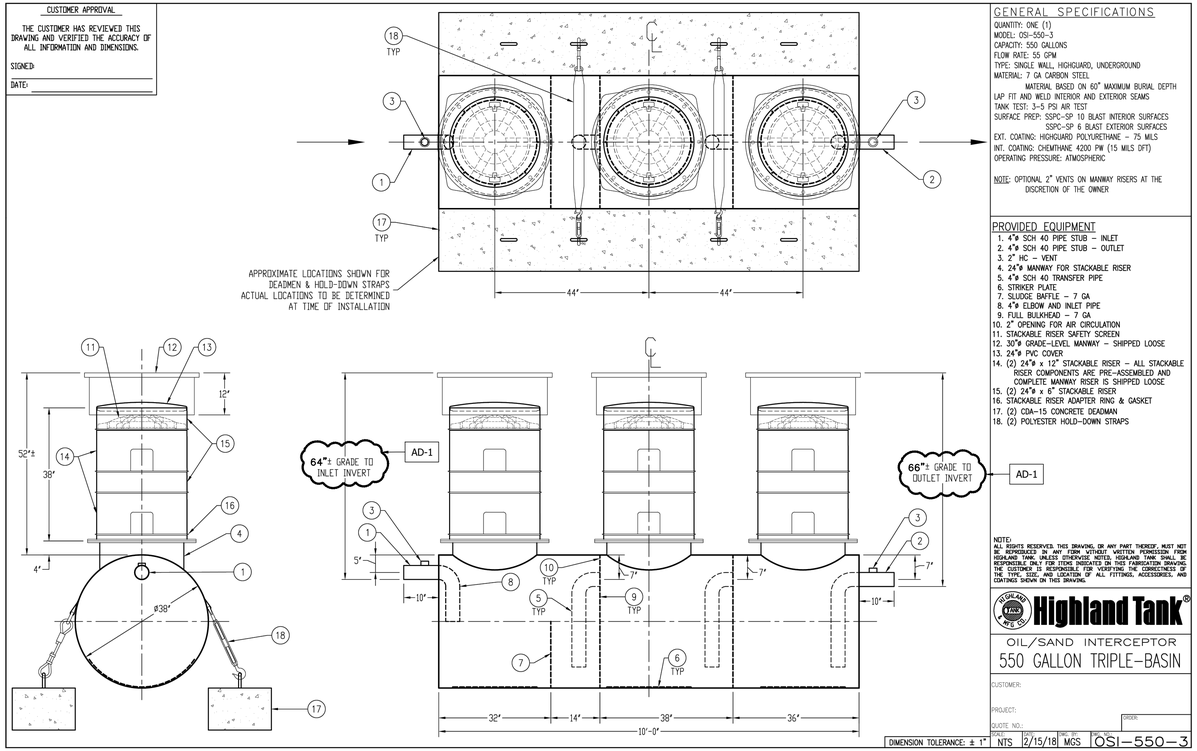
AD-1

CUSTOMER APPROVAL

THE CUSTOMER HAS REVIEWED THIS DRAWING AND VERIFIED THE ACCURACY OF ALL INFORMATION AND DIMENSIONS.

SIGNED:

DATE:



DIMENSION TOLERANCE: ± 1"

GENERAL SPECIFICATIONS

QUANTITY: ONE (1)
MODEL: OSI-550-3
CAPACITY: 550 GALLONS
FLOW RATE: 55 GPM
TYPE: SINGLE WALL, HIGHGUARD, UNDERGROUND
MATERIAL: 7 GA CARBON STEEL
MATERIAL BASED ON 60" MAXIMUM BURIAL DEPTH
LAP FIT AND WELD INTERIOR AND EXTERIOR SEAMS
TANK TEST: 3-5 PSI AIR TEST
SURFACE PREP: SSPC-SP 10 BLAST INTERIOR SURFACES
SSPC-SP 6 BLAST EXTERIOR SURFACES
EXT. COATING: HIGHGUARD POLYURETHANE – 75 MILS
INT. COATING: CHEMTHANE 4200 PW (15 MILS DFT)
OPERATING PRESSURE: ATMOSPHERIC

NOTE: OPTIONAL 2" VENTS ON MANWAY RISERS AT THE DISCRETION OF THE OWNER

PROVIDED EQUIPMENT

1. 4"ø SCH 40 PIPE STUB – INLET
2. 4"ø SCH 40 PIPE STUB – OUTLET
3. 2" HC – VENT
4. 24"ø MANWAY FOR STACKABLE RISER
5. 4"ø SCH 40 TRANSFER PIPE
6. STRIKER PLATE
7. SLUDGE BAFFLE – 7 GA
8. 4"ø ELBOW AND INLET PIPE
9. FULL BULKHEAD – 7 GA
10. 2" OPENING FOR AIR CIRCULATION
11. STACKABLE RISER SAFETY SCREEN
12. 30"ø GRADE-LEVEL MANWAY – SHIPPED LOOSE
13. 24"ø PVC COVER
14. (2) 24"ø x 12" STACKABLE RISER – ALL STACKABLE RISER COMPONENTS ARE PRE-ASSEMBLED AND COMPLETE MANWAY RISER IS SHIPPED LOOSE
15. (2) 24"ø x 6" STACKABLE RISER
16. STACKABLE RISER ADAPTER RING & GASKET
17. (2) CDA-15 CONCRETE DEADMAN
18. (2) POLYESTER HOLD-DOWN STRAPS

Highland Tank®

OIL/SAND INTERCEPTOR
550 GALLON TRIPLE-BASIN

CUSTOMER:			
PROJECT:			
QUOTE NO.:		ORDER:	
SCALE: NTS	DATE: 2/15/18	DR. BY: MGS	DWG. NO.: OSI-550-3

New Construction Work for :

Porter County Highway Department - Central Facility

1955 IN-2
Valparaiso, IN 46383

PORTER COUNTY Indiana

A&Z ENGINEERING LLC
1220 Ruston Pass
Fort Wayne, IN 46825
260.485.7077
www.az-engineering.net

WARREN J. ZWICK REGISTERED No. 910335 STATE OF INDIANA PROFESSIONAL ENGINEER

BY:

DATE: 5-24-2024

AD-1 - ADDENDUM #1	06/04/24
REVISION:	DATE:

DRAWN BY:	PDH	REVIEWED BY:	LSG
COMMISSION NUMBER:	F22146	DATE:	2024-05-24

C119

MISC. DETAILS

S:\2023 Projects\23-1529 Porter County Volpo Site-Design\CAD\23-1529 MISC DETAILS.dwg — 6/4/2024 — ######## — PaulHoward

ADDENDUM ONE

Porter County Highway Department
1955 IN-2
Valparaiso, IN 46385

MARTINRILEY architects/engineers
221 West Baker Street
Fort Wayne, Indiana 46802
260-422-7994

Commission No.: F22146

Addendum Date: 12 June 2024

Conditions: The following clarifications, amendments, additions, deletions, revisions and modifications are a part of the contract documents and change the original documents only in the manner and to the extent stated.

Copies of the Addendum shall be bound with all contract sets of drawings and specifications.

CLARIFICATIONS:

There are no anticipated locations of double wall duct.

Owner will provide their existing air compressor. Contractor is responsible for moving and installing. Compressor is a Sullair rotary screw air compressor, Model ST0510AC, Serial CN0122080703 with built-in dryer.

Porter County does not require any specific proprietary temperature control vendor for this project. Remainder of requirements as indicated in specification for compatibility are still required.

Section 08 3613 Sectional Doors, Paragraph 2.06.G. **CLARIFY** the 20 transmitters are only for Doors 140B and 140E associated with Truck Parking 140. The operation of these two doors can be combined onto (1) transmitter as long as both buttons meet size requirements. All other overhead doors two have (2) transmitters as applicable.

Section 08 3613 Sectional Doors, Paragraph 2.06.G.3 **CLARIFY** reference to transmitters to "accommodate winter clothing". Buttons should have a minimum size of 1 ½" x ½" to meet this requirement.

CHANGES TO THE SPECIFICATIONS:

Section 00 0110 Table of Contents, **REPLACE** attached section to volume.

Section 07 4213 Metal Wall Panels, **MODIFY** Paragraph 2.02.B.1. to read, "Profile: Vertical;". **ADD** sub-paragraph 2.02.B.1.a to read, "Basis of Design: Butler Thermawall Fluted Panels" with additional sub-paragraph 2.02.B.1.a.1 to read, "Main Building"

Section 07 4213 Metal Wall Panels, **ADD** Paragraph 2.02.B.1.b. to read, "Basis of Design: Butler Stylwall II Fluted Panels". **ADD** additional sub-paragraph 2.02.B.1.b.1 to read, "Cold Storage"

Section 07 7100 Roof Specialties, **ADD** section to volume.

Section 10 2800 Toilet, Bath, and Laundry Accessories, **ADD** "Bobrick: www.bobrick.com" as a third approved manufacturer.

Section 11 1119 Vehicle Lubrication Equipment, **ADD** Paragraph 2.02.A.2 to read, "Air: Graco; SDL65B: www.graco.com".

Section 11 1119 Vehicle Lubrication Equipment, **ADD** Paragraph 2.02.A.3 to read, "Coolant: Graco; SDL65B: www.graco.com".

Section 11 1119 Vehicle Lubrication Equipment, **MODIFY** Paragraph 2.02.A.1 to read, "Oils: Graco; SDM65B: www.graco.com".

Section 11 1119 Vehicle Lubrication Equipment, **ADD** Paragraph 2.02.F to read, "Provide hose retraction stops".

Section 23 3100 HVAC Ducts and Casings, **DELETE** the word "outer" from paragraphs 2.02.B.1 and 2.02.C.1.

Section 41 2200 Hoists and Cranes, **ADD** Paragraph 2.01.B.8.c to read, "Wire Rope".

Section 41 2200 Hoists and Cranes, **MODIFY** Paragraph 2.01.A.3 to indicate an operating temperature range to 115 degrees F instead of current indication.

CHANGES TO DRAWINGS:

Sheet S001 Structural Specifications **MODIFY** Structural Design Criteria. Add "Main Building and Cold Storage" after "1. Risk Category II:".

Sheet S001 Structural Specifications **MODIFY** Structural Design Criteria. Add "2. Risk Category I: Salt Barn" with sub line item "a. Design Engineer to determine minimum uniform snow load and other criteria".

Sheet A001 Life Safety Plan – Central Facility **MODIFY** General Fire Protection Note 8. Add the following sentence to the end of the existing note. "Wash Bay 137 pipe and fittings to be galvanized."

Sheet A002 Life Safety Plans – Cold Storage / Salt Barn **MODIFY** Salt Barn Code Summary classification to indicate S-2 Low Hazard Storage. **MODIFY** allowable square footage to 13,635 square feet and height of 2 stories

Sheet A104 Enlarged Plans **MODIFY / ADD** dimensions for Door 134C and Door 137A.

Sheet A510 Door Schedule and Details **DELETE** Door 150I reference from schedule.

Sheet A510 Door Schedule and Details **MODIFY** Door 160A. Door and frame material to indicate “FIBER”.

Sheet A510 Door Schedule and Details **MODIFY** Door 160A. Door and frame material to indicate “FIBER”.

Sheet A520 Window Schedule and Details **MODIFY** Detail I/A520. Transaction window counter should be noted, “Solid Surface (SS-1) counter, 4” depth on each side of wall, eased edge”.

Sheet A601 Room Finish Schedule and Interior Elevations **DELETE** Rooms 110, 111, and 112 from Room Finish Schedule.

Sheet A601 Room Finish Schedule and Interior Elevations **MODIFY** Room Finish Schedule line item 105 to indicate “CPT-1” floor finish.

Sheet A601 Room Finish Schedule and Interior Elevations **MODIFY** Room Finish Schedule line item 109 to indicate “CPT-2” floor finish.

Sheet A601 Room Finish Schedule and Interior Elevations **MODIFY** Room Finish Schedule line item 121 to indicate “R-1” floor finish.

Sheet A602 Finish Plans **MODIFY** floor finish in Mech Foreman 109 to indicate CPT-2.

Sheet R201 Roof Details **MODIFY** Detail 2 to indicate Work Description Note 20 at all roof insulation locations.

Sheet R201 Roof Details **MODIFY** Details 2 and 3 to remove blanket wall insulation.

Sheet R201 Roof Details **MODIFY** Work Description Note 26 to read, “New manufacturers prefinished GI corrugated wall panel or insulated metal wall panel, refer to wall sections and specifications”.

Sheet R201 Roof Details **MODIFY** Detail 7 to remove Work Description Note 48 and move Work Description Note 47.

Sheet R201 Roof Details **MODIFY** Work Description Note 47 to read, “Refer to wall sections for wall composition”.

Sheet R201 Roof Details **MODIFY** Work Description Note 20 to read, “New R-19 blanket insulation with vapor retarder at Central Facility. Cold Storage Building does not require insulation”.

Sheet P103 Plumbing Plan - Maintenance **MODIFY** Work Description Note 5. Delete “at 23’ AFF” from first sentence. Add “, refer to A302” at end of second sentence.

Sheet E102 Electrical Power Plan **ADD** “MDP” reference in Electrical 142.

Sheet E501 Electrical Schedules & Details **MODIFY** wire size reference between MDP and Transfer Switch.

Sheet E502 Electrical Schedules & Details **MODIFY** Main rating for Panel: MDP to 800A.

ATTACHMENTS:

S001	A001	Spec 00 0110 – Table of Contents
A002	A104	Spec 07 4213 - Metal Wall Panels
A510	A520	Spec 07 7100 – Roof Specialties
A601	A602	Spec 10 2800 - Toilet, Bath, and Laundry Accessories
R201	P103	Spec 11 1119 - Vehicle Lubrication Equipment
E102	E501	Spec 23 3100 - HVAC Ducts and Casings
E502		Spec 41 2200 - Hoists and Cranes

END OF ADDENDUM NUMBER ONE

SECTION 00 0110
TABLE OF CONTENTS

END OF SECTION

SECTION 07 4213
METAL WALL PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Manufactured metal panels for exterior wall panels and interior liner panels, with insulation, related flashings, and accessory components.

1.02 RELATED REQUIREMENTS

A. Section 07 2100 - Thermal Insulation.

B. Section 07 9200 - Joint Sealants: Sealing joints between metal wall panel system and adjacent construction.

C. Section 13 3419 - Metal Building Systems

1.03 REFERENCE STANDARDS

A. ASTM A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process; 2023.

1.04 SUBMITTALS

A. See Skillman 01 3300 - Submital Procedure 01 3000 - Administrative Requirements for submittal procedures.

B. Shop Drawings: Indicate dimensions, layout, joints, construction details, support clips, and methods of anchorage.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in installing products specified in this section with minimum three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Protect panels from accelerated weathering by removing or venting sheet plastic shipping wrap.

B. Store prefinished material off the ground and protected from weather; prevent twisting, bending, or abrasion; provide ventilation; slope metal sheets to ensure proper drainage.

C. Prevent contact with materials that may cause discoloration or staining of products.

1.07 FIELD CONDITIONS

A. Do not install wall panels when air temperature or relative humidity are outside manufacturer's limits.

1.08 WARRANTY

A. See SkillmaSection 01 7800 - Closeout Submittals for additional warranty requirements.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Design is based on Stylwall II Fluted Wall System manufactured by Butler Manufacturing.

B. Same as Building Manufacturer

2.02 METAL WALL PANEL SYSTEM

A. Wall Panel System: Factory fabricated prefinished metal panel system, site assembled.
   1. Provide exterior wall panels, interior liner panels, and subgirt framing assembly.

2. Design and size components to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of wall.
3. Design Pressure: In accordance with applicable codes.
4. Maximum Allowable Deflection of Panel: L/90 for length(L) of span.
5. Movement: Accommodate movement within system without damage to components or deterioration of seals, movement between system and perimeter components when subject to seasonal temperature cycling; dynamic loading and release of loads; and deflection of structural support framing.
6. Drainage: Provide positive drainage to exterior for moisture entering or condensation occurring within panel system.
7. Fabrication: Formed true to shape, accurate in size, square, and free from distortion or defects; pieces of longest practical lengths.
8. Corners: Factory-fabricated in one continuous piece with minimum 18-inch returns.
9. Exterior Finish: Panel manufacturer's standard polyvinylidene fluoride (PVDF) coating, top coat over epoxy primer.
10. Interior Panel Finish: Panel manufacturer's standard siliconized polyester coating, top coat over recommended primer

B. Exterior Wall Panels:
1. Profile: Vertical;
a. Basis of Design: Butler Thermawall Fluted Panels
1) Main Building
b. Basis of Design: Butler Stylwall II Fluted Panels
1) Cold Storage
2. Side Seams: Manufacturer's standard, sealed with continuous gaskets.
3. Material: Precoated steel sheet, 24 gage, 0.
4. Panel Width: 36 inches.
5. Color: As selected by Architect from manufacturer's standard line.

C. Interior Liner Panels:
1. Profile: Vertical.
2. Side Seams: Interlocking, unsealed.
3. Material: Precoated steel sheet, 26 gauge, 0.0188 inch minimum thickness.
4. Color: As selected by Architect from manufacturer's standard line.

D. Subgirt Framing Assembly:
1. Profile as indicated; to attach panel system to building.

E. Internal and External Corners: Same material, thickness, and finish as exterior sheets; profile to suit system; shop cut and factory mitered to required angles.

F. Trim: Same material, thickness and finish as exterior sheets; brake formed to required profiles.

G. Anchors: Galvanized steel.

2.03 MATERIALS

A. Precoated Steel Sheet: Hot-dipped galvanized steel sheet, ASTM A653/A653M, Structural Steel (SS) or Forming Steel (FS), with G90/Z275 coating; continuous coil-coated on exposed surfaces with specified finish coating and on panel back with specified panel back coating.

B. Insulation: Various types specified in Section 07 2100.

2.04 FINISHES

A. Panel Backside Finish: Panel manufacturer's standard siliconized polyester wash coat.

B. Interior Application, Panel Finish: Panel manufacturer's standard siliconized polyester coating, top coat over recommended primer.

C. Fluoropolymer Coil Coating System: Polyvinylidene fluoride (PVDF) multi-coat superior performing organic coatings system complying with AAMA 2605, including at least 70 percent PVDF resin, and at least 80 percent of coil coated metal surfaces having minimum total dry film thickness (DFT) of 0.9 mil, 0.0009 inch; color and gloss as scheduled.

2.05 ACCESSORIES

A. Gaskets: Manufacturer's standard type suitable for use with system, permanently resilient; ultraviolet and ozone resistant.

B. Sealants:
   1. Concealed Sealants: Non-curing butyl sealant or tape sealant, see Section 07 9200
   2. Exposed Sealant: Elastomeric; silicone, polyurethane, or silyl-terminated polyether/polyurethane.

C. Fasteners: Manufacturer's standard type to suit application; with soft neoprene washers, steel, hot dip galvanized. Fastener cap same color as exterior panel.

D. Field Touch-up Paint: As recommended by panel manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that building framing members are ready to receive panels.

3.02 INSTALLATION

A. Install panels on walls in accordance with manufacturer's instructions.

B. Protect surfaces in contact with cementitious materials and dissimilar metals with bituminous paint; allow to dry prior to installation.

C. Fasten panels to structural supports; aligned, level, and plumb.

D. Locate joints over supports. Lap panel ends minimum 2 inches.

E. Provide expansion and control joints where indicated.

F. Use concealed fasteners unless otherwise indicated by Architect.

G. Seal and place gaskets to prevent weather penetration. Maintain neat appearance.

3.03 TOLERANCES

A. Offset From True Alignment Between Adjacent Members Abutting or In Line: 1/16 inch, maximum.

B. Variation from Plane or Location As Indicated on Drawings: 1/4 inch, maximum.

3.04 CLEANING

A. Remove site cuttings from finish surfaces.

B. Clean and wash prefinished surfaces with mild soap and water; rinse with clean water.

END OF SECTION

SECTION 07 7100
ROOF SPECIALTIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Pipe Seal Flashings

B. Pipe seal curb

C. Walkpads

1.02 RELATED REQUIREMENTS

A. Section 07 9200 - Joint Sealers.

1.03 REFERENCE STANDARDS

A. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2007.

B. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2007.

C. ASTM B 209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate [Metric]; 2007.

D. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants; 2005.

E. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free; 2007 (Reapproved 2018).

F. NRCA (RM) - The NRCA Roofing Manual; 2024.

G. ASTM D 4479 - Standard Specification for Asphalt Roof Coatings - Asbestos-Free; 2007.

H. SMACNA (ASMM) - Architectural Sheet Metal Manual; 2012.

1.04 SUBMITTALS

A. Product Data: Provide data on shape of components, materials and finishes, anchor types and locations.

B. Shop Drawings: Indicate configuration and dimension of components, adjacent construction, required clearances and tolerances, and other affected work. Include plans, elevations, sections and details. Provide shop drawings for factory or shop fabricated items including installation drawings.

C. Coordination Drawings: Roof plans drawn to scale and coordinating penetrations and roof-mounted items.

D. Manufacturer's Installation Instructions: Indicate special procedures, fasteners, supporting members, and perimeter conditions requiring special attention.

PART 2 PRODUCTS

2.01 MATERIALS

A. Aluminum:
   1. Sheet: ASTM B 209 (ASTM B 209M) for alclad alloy 3005H25 or alloy and temper required to suit forming operations, with mill finish, unless otherwise indicated.

B. Galvanized Steel Sheet:
   1. ASTM A 653/A 653M with G90 (Z275); commercial steel, unless otherwise indicated.
      a. Structural Quality: Grade 40 (Grade 275), where indicated or as required for strength.

C. Fasteners:

1. Same metal as metals being fastened, or nonmagnetic stainless steel or other noncorrosive metal as recommended by manufacturer. Match finish of exposed fasteners with finish of material being fastened.

D. Gaskets:
1. Manufacturer's standard tubular or fingered design of neoprene, EPDM, or PVC; or flat design of foam rubber, sponge neoprene, or cork.

E. Elastomeric Sealant:
1. Recommended by unit manufacturer that is compatible with joint surfaces; ASTM C 920, Type S, Grade NS, Class 25.

2.02 MANUFACTURERS

A. Pipe Seal Flashings:
1. Thermoplastic Membrane: As recommended by membrane manufacturer
2. Metal Roof Flashings: Dektite; Deks North America Inc
3. Substitutions: See Skillman Section 01 6000 - Product Requirements

B. Pipe Seal Curb:
1. Portals Plus, Inc
2. Substitutions: See Skillman Section 01 6000 - Product Requirements

C. Walkway Pads:
1. Carlisle Syntec Corporation
a. Sure-Seal interlocking Rubber Pavers
2. Substitutions: See Skillman Section 01 6000 - Product Requirements

2.03 COMPONENTS

A. Pipe Seal Flashing: Provide new spun aluminum base with neoprene or EPDM pipe seal boots for new or retrofit flashing conditions as required at penetrating elements 6" or less. Separate and reroute clusters of penetrations to install pipe seal flashings. Pipe seal boot shall flash around penetrating element and produce a water tight and weather proof seal with the roof membrane and the penetrating element.

B. Pipe seal curb: Shall be an 18 GA galvanized curb. Factory installed nailer and 1.5" 3lb rigid fiberglass insulation, and an EPDM compression molded cap. Attachment and installation of the Pipe Portal shall be done in accordance with Portals Plus instructions and the roofing membrane manufacturer's recommendations.

C. Walkway Pads:
1. Provide 24 inch square by 2 inch thick rubber pavers with premolded "U" channels weighing 24 pounds per unit. Install whole units according to manufacturer's specification with adhesive attachment along the "U" channel as furnished by walkway pad manufacturer.
2. Provide ramp tiles (if any) of the same material at transitions and as identified on the drawings.

2.04 ACCESSORIES

A. Sealant: Type Elastomeric as specified in Section 07 9200.

B. Plastic Cement: ASTM D 4586, Type I.

C. Protective Backing Paint: Asphaltic mastic, ASTM D 4479 Type I.

D. Mastic Sealant: Polyisobutylene, nonhardening, nonskinning, nondrying, nonmigrating sealant.

E. Adhesive: Type recommended for waterproof and weather-resistant seaming and adhesive.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that deck, curbs, roof membrane, base flashing, and other items affecting work of this Section are in place and positioned correctly.

3.02 INSTALLATION

A. Install components in accordance with manufacturer's instructions and NRCA (RM) applicable requirements.

B. Coordinate installation of roof accessories with installation of roof deck, roof insulation, flashing, roofing membranes, penetrations, equipment, and other construction to ensure that combined elements are waterproof and weathertight. Anchor roof accessories securely to supporting structural substrates so they are capable of withstanding lateral and thermal stresses, and inward and outward loading pressures. Conform to SMACNA Architectural Sheet Metal Manual drawing details for fabricating units.

C. NRCA's "Roofing and Waterproofing Manual" details for installing units.

D. Coordinate installation of sealants and roofing cement with work of this section to ensure water tightness.

E. Separation: Separate metal from incompatible metal or corrosive substrates, including wood, by coating concealed surfaces, at locations of contact, with bituminous coating or providing other permanent separation.

F. Flange Seals: Unless otherwise indicated, set flanges of accessory units in a thick bed of roofing cement to form seal.

G. Clean exposed surfaces according to manufacturer's written instructions. Touch up damaged metal coatings.

END OF SECTION

SECTION 10 2800
TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Commercial toilet accessories.

B. Commercial shower accessories.

1.02 RELATED REQUIREMENTS

A. Section 10 2113.19 - Plastic Toilet Compartments.

B. Section 22 4000 - Plumbing Fixtures: Under-lavatory pipe and supply covers.

1.03 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

B. ASTM C1036 - Standard Specification for Flat Glass; 2021.

C. ASTM C1503 - Standard Specification for Silvered Flat Glass Mirror; 2024.

D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.

E. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.

1.04 SUBMITTALS

A. See Skillman Section 01 3300 - Submittal Procudure, for submittal procedures.

B. Product Data: Submit data on accessories describing size, finish, details of function, and attachment methods.

C. Manufacturer's Installation Instructions: Indicate special procedures and conditions requiring special attention.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Commercial Toilet, and Shower Accessories:
   1. American Specialties, Inc: www.americanspecialties.com/#sle.
   2. Bradley Corporation: www.bradleycorp.com/#sle.
   3. Bobrick: www.bobrick.com
   4. Substitutions: See Skillman Section 01 6000 - Product Requirements.

2.02 MATERIALS

A. Accessories - General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.

B. Keys: Provide 2 keys for each accessory to Owner; master key lockable accessories.

C. Mirror Glass: Annealed float glass, ASTM C1036 Type I, Class 1, Quality Q2, with silvering, protective and physical characteristics complying with ASTM C1503.

D. Adhesive: Two component epoxy type, waterproof.

E. Fasteners, Screws, and Bolts: Hot dip galvanized; tamper-proof; security type.

2.03 FINISHES

A. Stainless Steel: Satin finish, unless otherwise noted.

2.04 COMMERCIAL TOILET ACCESSORIES

A. Toilet Paper Dispenser:

1. Products: Surface mounted cabinet & mounting plate in 18 gauge satin finish stainless steel. Cabinet holds two 9 inch diameter rolls of 3" or 2 1/4 inch diameter core toilet tissue.
   a. Bradley Model #5425: www.bradleycorp.com/#sle.
   b. Substitutions: Skillman Sectin 01 6000 - Product rEquirementsSection 01 6000 - Product Requirements.

B. Combination Towel Dispenser/Waste Receptacle: Recessed flush with wall, stainless steel; seamless wall flanges, continuous piano hinges.
   1. Towel dispenser capacity: 800 multi-fold or 600 C-fold paper towels.
   2. Waste receptacle capacity: 12 gallons.
   3. Products:
      a. Bradley Corp; #234: www.bradleycorp.com/#sle.
      b. Substitutions: Skillman Section 01 6000 - Product Requirements.

C. Soap Dispenser: foam soap dispenser, heavy gauge stainless steel with exposed surfaces in architectural satin finish. ABS plastic wall plate. Battery box holds (4) "AA" Alkaline batteries provided by contractor.
   1. Capacity: 27 oz.
   2. Products:
      a. Bradley Corp; #6A01: www.bradleycorp.com/#sle..
      b. Substitutions: Skillman Section 01 6000 - Product Requirements.

D. Mirrors:
   1. Types:
      a. Frameless, 1/4 inch thick float glass, thermosetting infrared-cured paint backing
         1) Size: 36 by 60 inch.
         2) Product: Bradley Corp #747-036600
      b. Fixed Tilt Mirrors: Minimum 3 inches tilt from top to bottom.
         1) Size: 24 by 36 inch
         2) Product: Bradley Corp #740-024360

E. Grab Bars: Stainless steel, smooth surface.
   1. Standard Duty Grab Bars:
      a. Push/Pull Point Load: 250 pound-force, minimum.
      b. Dimensions: 1-1/2 inch outside diameter, minimum 0.05 inch wall thickness, exposed flange mounting, 1-1/2 inch clearance between wall and inside of grab bar.
      c. Finish: Satin.
      d. Length and Configuration: As indicated on drawings.
      e. Products:
         1) Bradley Corp; 812 Series: www.bradleycorp.com/#sle.
         2) Substitutions: Skillman Section 01 6000 - Product Requirements.

F. Sanitary Napkin Disposal Unit: Stainless steel, surface-mounted, self-closing door, locking bottom panel with full-length stainless steel piano-type hinge, removable receptacle.
   1. Products:
      a. Bradley Corp: :www.bradleycorp.: #4722-15: www.bradleycorp.com/#sle..
      b. Substitutions: Skillman Section 01 6000 - Product Requirements.

2.05 COMMERCIAL SHOWER AND BATH ACCESSORIES

A. Shower Curtain Rod: 18 gauge stainless steel tube, 1 1/4 inch outside diameter, glass polypropylene flanges, 22-gauge stainless stell escutcheons that snapls over flanges to conceal mounting screws.
   1. Products:
      a. Bradley Corp; #9539: www.bradleycorp.com/#sle..
      b. Substitutions: Skillman Section 01 6000 - Product Requirements.

B. Antimicrobial Shower Curtain:
   1. Material: 9-oz. nylon reinforced antimicrobial PVC vinyl fabric (flameproof and stain resistant, self-deoderizing).

2. Size: 60" x 72" inches, hemmed edges.
3. Grommets: Aluminum; pierced through top hem on 6 inch centers.
4. Color: White.
5. Products:
    a. Bradley Corp; #9533: www.bradleycorp.com/#sle.
    b. Substitutions: Skillman Section 01 6000 - Product Requirements.

C. Folding Shower Seat: Wall-mounted surface; welded tubular seat frame, structural support members, hinges, and 7 gauge sating finish stainless steel mounting flanges , L-shaped, right hand and left hand seats.
1. Seat: 1/2 inch thick Phenolic one-piece seat or seat slats, of white color.
2. Size: ADA Standards compliant.
3. Products:
    a. Bradley Corp; #9569.
    b. Substitutions: Skillman Section 01 6000 - Product Requirements.

D. Towel Bar: No. 4 satin finish stainless steel , 3/4" square that projects 3"
1. Length: 24 inches.
2. Products:
    a. Bradley Corp; #9065: www:bradleycorp.com/#sle..
    b. Substitutions: Skillman Section 01 6000 - Product Requirements.

E. Towel Hook: No. 4 satin finish stainless steel, projects 4- 7/16 inch
1. Products:
    a. Bradley Corp; #9314; www:bradleycorp.com/#sle.
    b. Substitutions: _____.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify exact location of accessories for installation.

C. Verify that there is reinforcemnt/blocking in wall for installatio.

3.02 PREPARATION

A. Deliver inserts and rough-in frames to site for timely installation.

3.03 INSTALLATION

A. Install accessories in accordance with manufacturers' instructions in locations indicated on drawings.

B. Install plumb and level, securely and rigidly anchored to substrate.

C. Mounting Heights: As required by accessibility regulations, unless otherwise indicated. Refer to drawings for mounting heights.
1. Grab Bars: As indicated on drawings.
2. Mirrors: 40 inch, measured from floor to bottom of mirrored surface.
3. Other Accessories: As indicated on drawings.

3.04 PROTECTION

A. Protect installed accessories from damage due to subsequent construction operations.

END OF SECTION

SECTION 11 1119
VEHICLE LUBRICATION EQUIPMENT

GENERAL

1.01 SUMMARY

A. This section includes vehicle lubrication systems including the following components:
   1. Pneumatic Pumps
   2. Reels & Hoses
   3. Dispensers
   4. Tanks
   5. Pipe & Fittings
   6. Accessories

1.02 SUBMITTALS

A. Product data for the following products: pumps, reels, hose, dispensers, tanks, accessories.

B. Shop Drawings showing piping systems including pipe routing, sizing, valving, lubricators, regulators, pumps, nozzles etc. fully noted and scheduled.

C. Qualifications data for firms and persons specified in the “quality assurance” article to demonstrate their capabilities and experience. Include list of all similar projects with project name, addresses, name(s) of architect(s) and owner(s), plus any other information specified.

D. Maintenance data for specified products for inclusion into operating and maintenance (O&M) manuals.

1.03 QUALITY ASSURANCE

A. Installer shall have (5) years of experience installing similar lubrication systems.

B. Single Source Responsibility: Obtain system components from single source having the responsibility and accountability to answer and resolve any problems regarding proper installation, compatibility, performance, and acceptance.

1.04 PROJECT CONDITIONS

A. Field Measurements: Verify dimensions by field measurements. Verify that the products and equipment may be installed in compliance with the original design and referenced standards.

1.05 WARRANTY

A. Submit written warranty, executed by the contractor agreeing to repair or replace products, which fails in materials or workmanship within the specified warranty period.

B. The warranty period shall be one (1) year following the date of substantial completion.

PRODUCTS

2.01 PNEUMATIC PUMPS

A. Air powered pumps for petroleum and synthetic based oils.

B. Manufacturers:
   1. Graco; Fire-Ball 300 #225852: www.graco.com
   2. Substitutions: See Section 01 6000 - Product Requirements.

C. Fluid Pressure Ratio: 5:1

D. Air Pressure Operational Range: 40 to 180 psi

E. Max Fluid Working Pressure: 900 psi.

2.02 REELS & HOSE

A. Manufacturers:

1. Oils: Graco; SDM65B: www.graco.com
2. Air: Graco; SDL65B : www.graco.com
3. Coolant: Graco; SDL65B: www.graco.com
4. Substitutions: See Section 01 6000 - Product Requirements.

B. Reel spool and frame shall be of steel construction.

C. Reel shall have spring return with constant torque through entire range of operation.

D. Multi-position guide arm

E. 50 ft long, 1/2" diameter hose.

F. Provide hose retraction stops

2.03 DISPENSERS

A. Manufacturers:
1. Graco; 24V037: www.graco.com
2. Substitutions: See Section 01 6000 - Product Requirements.

B. Mechanical meter

C. Flow Rate: 0.28 to 8 GPM

D. Dial Units: Quarts

E. Accessories: Flexible extension

2.04 TANKS

A. Used Oil:
1. Volume: 500 gallons
2. Type: Above ground
3. Construction: 12 GA double wall mild carbon steel
4. 10" fill hole
5. Max Dimensions: 3'-8" x 6'-3"
6. Finish: Primed and painted
7. Provide field touchup kit

B. New Fluids:
1. Oil, Coolant, hydraulic fluid, and transmission fluid rated
2. Volume: 250 gallons minimum each
3. Type: Above ground
4. Construction: HDPE with galvanized steel cage
5. Max Dimensions: 4'-0" x 4'-0"
6. Finish: Manufacturer standard plastic / galvanized
7. Coordinate with pump system requirements
8. Provide forklift compatible base

2.05 PIPING & FITTINGS

A. Schedule 40 black steel pipe ASTM A-53

B. Extra Heavy Malleable Iron fittings.

2.06 USE LONG SWEEP ELBOWS WHERE POSSIBLE.

2.07 ACCESSORIES

A. Provide pressure relief valve set below the lowest rated system component.

B. Provide bleed-type air shutoff valve, filter, regulator, lubricator as recommended by pump manufacturer.

EXECUTION

3.01 INSTALLATION

A. Install equipment in strict accordance with approved shop drawings and manufacturer's installation instructions.

B. Provide shut-off valves at each reel for individual service.

C. Provide mounting channels and brackets as recommended by manufacturer for reel bank support and connection. Mounting heights as indicated in the drawings. Provide required bracket for such installation.

D. Install piping adjacent to equipment to allow servicing and maintenance.

3.02 FIELD QUALITY CONTROL

A. Provide the services of qualified manufacturer's representatives to perform the following:
   1. Supervise preparatory work performed by other trades.
   2. Supervise installation.
   3. Coordinate, prior to installation, the mounting requirements of the fluid pumps to the tanks to assure that proper hardware has been provided.
   4. Prior to substantial completion of the facility, supervise testing, by the Vendor/Contractor in the presence of the Engineer, to ensure proper operation of the equipment.
   5. Train Owner's personnel in the proper safe operation and maintenance of the equipment.
   6. Perform all scheduled and unscheduled maintenance during warranty period; provide all labor and materials.

3.03 STARTUP & OWNER TRAINING

A. Startup Services, General: Provide services of a factory-authorized service representative to provide startup service and to demonstrate and train owner’s maintenance personnel as specified below.

B. The training program shall include familiarization with safe equipment operation and performance and detailed instruction in operation, maintenance and test procedures.

C. Review the data in the operation and maintenance (O & M) manuals.

D. Schedule training with the owner through the Architect with at least seven (7) days’ notice.

END OF SECTION

SECTION 23 3100
HVAC DUCTS AND CASINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Metal ducts.

B. Flexible ducts.

C. Air plenums and casings.

1.02 RELATED REQUIREMENTS

A. Section 07 8400 - Firestopping.

B. Section 23 0130.51 - HVAC Air-Distribution System Cleaning: Post install duct cleaning.

C. Section 23 0713 - Duct Insulation: External insulation and duct liner.

D. Section 23 3300 - Air Duct Accessories.

E. Section 23 3700 - Air Outlets and Inlets: Fabric air distribution devices.

1.03 REFERENCE STANDARDS

A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.

B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.

C. NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilating Systems; 2024.

D. NFPA 90B - Standard for the Installation of Warm Air Heating and Air-Conditioning Systems; 2024.

E. SMACNA (DCS) - HVAC Duct Construction Standards Metal and Flexible; 2020.

F. UL 181 - Standard for Factory-Made Air Ducts and Air Connectors; Current Edition, Including All Revisions.

1.04 SUBMITTALS

A. See Skillman Section 01 3300 - Submittal Procedure, for submittal procedures.

B. Product Data: Provide data for duct materials.

1.05 FIELD CONDITIONS

A. Do not install duct sealants when temperatures are less than those recommended by sealant manufacturers.

B. Maintain temperatures within acceptable range during and after installation of duct sealants.

1.06 WARRANTY

A. See Skillman Section 01 770a - Closeout for additional warranty requirements.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

A. Provide UL Class 1 ductwork, fittings, hangers, supports, and appurtenances in accordance with NFPA 90A and SMACNA (DCS) guidelines unless stated otherwise.

B. Provide metal duct unless otherwise indicated.

C. Duct Fabrication Requirements:

1. Duct and Fitting Fabrication and Support: SMACNA (DCS) including specifics for continuously welded round and oval duct fittings.

2. Use reinforced and sealed sheet-metal materials at recommended gauges for indicated operating pressures or pressure class.
3. Construct tees, bends, and elbows with radius of not less than 1-1/2 times width of duct on centerline. Where not possible and where rectangular elbows must be used, provide airfoil turning vanes of perforated metal with glass fiber insulation.
4. Provide turning vanes of perforated metal with glass fiber insulation when acoustical lining is indicated.
5. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible; maximum 30 degrees divergence upstream of equipment and 45 degrees convergence downstream.
6. Provide turning vanes of perforated metal with glass fiber insulation when an acoustical lining is required.
7. Where ducts are connected to exterior wall louvers and duct outlet is smaller than louver frame, provide blank-out panels sealing louver area around duct. Use same material as duct, painted black on exterior side; seal to louver frame and duct.

2.02 METAL DUCTS

A. Material Requirements:
   1. Galvanized Steel: Hot-dipped galvanized steel sheet, ASTM A653/A653M FS Type B, with G60/Z180 coating.

B. Round Metal Ducts:
   1. Round Single Wall Duct: Round lock seam duct with galvanized steel wall.
   2. Round Connection System: Interlocking duct connection system in accordance with SMACNA (DCS).

C. Round Spiral Duct:
   1. Round spiral lock seam duct with galvanized steel wall.

D. Connectors, Fittings, Sealants, and Miscellaneous:
   1. Fittings: Manufacture with solid inner wall of perforated galvanized steel.
   2. Joint Sealers and Sealants: Non-hardening, water resistant, mildew and mold resistant.
      a. Type: Heavy mastic or liquid used alone or with tape, suitable for joint configuration and compatible with substrates, and recommended by manufacturer for pressure class of ducts.
      b. VOC Content: Not more than 250 g/L, excluding water.
      c. Surface Burning Characteristics: Flame spread index of zero and smoke developed index of zero, when tested in accordance with ASTM E84.
      d. For Use with Flexible Ducts: UL labeled.
   3. Gasket Tape:
      a. Provide butyl rubber gasket tape for a flexible seal between transfer duct connector (TDC), transverse duct flange (TDF), applied flange connections, and angle ring connections.

2.03 FLEXIBLE DUCTS

A. Flexible Ducts: UL 181, Class 1, polyethylene film, mechanically fastened and rolled using galvanized steel to form spiral helix.
   1. Insulation: R6 insulation with polyethylene vapor barrier film.
   2. Pressure Rating: 10 in-wc positive and 5 in-wc negative.
   3. Maximum Velocity: 5500 fpm.
   4. Temperature Range: Minus 20 degrees F to 250 degrees F.

B. Acoustic Flexible Ducts: UL 181, Class 1, spunbond nylon, mechanically fastened and rolled using galvanized steel to form spiral helix.
   1. Insulation: Fiberglass insulation with metallic vapor barrier.
   2. Inner Core: Spunbonded, nonwoven inner core.
   3. Pressure Rating: 6 in-wc positive and 5 in-wc negative.
   4. Maximum Velocity: 4000 fpm.

5. Temperature Range: Minus 20 degrees F to 250 degrees F.

2.04 AIR PLENUMS AND CASINGS

A. Fabricate in accordance with SMACNA (DCS) for indicated operating pressures indicated.

B. Minimum Fabrication Requirements:
   1. Fabricate acoustic plenum or casing with reinforcing turned inward.
   2. Provide 16-gauge, 0.059-inch sheet steel back facing and 22-gauge, 0.029-inch perforated sheet steel front facing with 3/32 inch diameter holes on 5/32 inch centers.
   3. Construct panels 3 inches thick, packed with 4.5 pcf minimum glass fiber insulation media, on inverted channel of 16-gauge, 0.059-inch sheet steel.
   4. Mount floor-mounted plenum or casings on 4-inch high concrete curbs. At floor, rivet panels on 8-inch centers to angles. Where floors are acoustically insulated, provide liner of galvanized 18-gauge, 0.052-inch expanded metal mesh supported at 12-inch centers, turned up 12 inches at sides with sheet metal shields.

C. Access Doors:
   1. Install hinged access doors where indicated or required for access to equipment for cleaning and inspection.
   2. Reinforce door frames with steel angles tied to horizontal and vertical plenum supporting angles.
   3. Provide clear wire glass observation ports, minimum 6 by 6 inch size.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install, support, and seal ducts in accordance with SMACNA (DCS).

B. Install products following the manufacturer's instructions.

C. Comply with safety standards NFPA 90A and NFPA 90B.

D. During construction, provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering the ductwork system.

E. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible; maximum 30 degrees divergence upstream of equipment and 45 degrees convergence downstream.

F. Duct sizes indicated are precise inside dimensions. For lined ducts, maintain sizes inside lining.

G. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.

H. Use crimp joints with or without bead for joining round duct sizes 8 inch and smaller with a crimp in the direction of airflow.

I. Use double nuts and lock washers on threaded rod supports.

J. Connect terminal units to supply ducts with two feet maximum length of flexible duct. Do not use flexible duct to change direction.

K. Connect diffusers or light troffer boots to low-pressure ducts with 5 feet maximum length of flexible duct held in place with strap or clamp.

L. At exterior wall louvers, seal duct to louver frame and install blank-out panels.

M. Louver Fit-out:
   1. Provide blank-out panels sealing available area of wall-mounted exterior-faced louver when connected ductwork is smaller than actual louver free area, and duct outlet is smaller than the louver frame.
   2. Use the same duct material painted black on the exterior side, then seal louver frame and duct.

N. Fire Partitions: Provide firestopping sealing. See Section 07 8400.

O. Duct Accessories, Terminal Units, Inlets, and Outlets: Interconnect as indicated in Sections 23 3300, and 23 3700.

P. Duct Insulation: Provide duct insulation. See Section 23 0713.

3.02 CLEANING

A. Clean thoroughly each duct system.

END OF SECTION

SECTION 41 2200
HOISTS AND CRANES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Cranes, Hoists and Lifts of the Following Types:
   1. Bridge crane
   2. Free standing jib cranes

1.02 RELATED SECTIONS

A. Section 03 3000 - Cast-in-Place Concrete

1.03 REFERENCES

A. American Institute of Steel Construction (AISC) - Manual of Steel Construction, Part 5, Specification for Structural Joints Using ASTM A325 or ASTM A490 Bolts.

B. American National Standards Institute (ANSI):ANSI B30.11 - Monorails and Underhung Cranes.

C. ASTM International (ASTM):
   1. ASTM A36 - Carbon Structural Steel.
   2. ASTM A325 - Structural Bolts, Steel, Heat Treated, 120/150 ksi Minimum Tensile Strength.
   3. ASTM A490 - Structural Bolts, Alloy Steel, Heat Treated, 150 ksi Minimum Tensile Strength.

D. American Society for Testing and Materials (ASTM) B221 - Aluminum-Alloy Extruded Bar, Rod, Wire, Shape, and Tube.

E. American Welding Society (AWS) D1.1 - Structural Welding Code.

F. Occupational Safety and Health Administration (OSHA) - Specification 1910.179 - Overhead and Gantry Cranes.

1.04 SUBMITTALS

A. Submit under provisions of Skillman Section 01 3300 - Administrative Requirements.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Describe capacities, performance, operation, and applied forces to foundation
   2. Preparation instructions and recommendations
   3. Storage and handling requirements and recommendations
   4. Installation methods

C. Shop Drawings:
   1. Shop drawings showing configuration, dimensions, service area, and construction and installation details.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in designing and manufacturing cranes with 25 years successful experience.

B. Installer Qualifications: Company experienced in assembly and installation of cranes with 5 years successful experience and acceptable to crane manufacturer.
   1. Perform welding by certified operators in accordance with AWS D14.1.
   2. Bolted connections shall be in accordance with torque tightening procedures specified in AISC Manual, Part 5.
   3. Clearly label crane with rated load capacity. Place label at height and location easily read from floor level and loading position.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.07 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.08 WARRANTY

A. Manufacturer's Warranty: On manufacturer's standard form, in which manufacturer agrees to repair or replace assemblies and components that fail in materials and workmanship within warranty period from date of Substantial Completion.
   1. 5 years or 10,000 hours warranty for manual push-pull work station crane, jib crane, and gantry crane products to cover defects in materials and workmanship.
   2. 2 years or 4,000 hours warranty for motorized tractor products.

PART 2 PRODUCTS

2.01 BRIDGE CRANES

A. Performance:
   1. Crane shall provide coverage of rectangular area of size indicated on Drawings and consist of:
      a. Support structure requiring only primary structural support without longitudinal or lateral bracing.
      b. Two rigid, parallel runways. Cranes with more than two runways or with articulating runways are not acceptable.
      c. Rigid, single girder bridge moving perpendicular to runways or monorail.
   2. Productivity ratio: Crane shall be designed to manually move load with maximum force of 1/100 load weight.
   3. Crane operating temperature: 5 to 115 degrees F (-15 to 46 C).
   4. Crane shall be designed to withstand:
      a. Structural design shall include full rated load capacity plus 15 percent for hoist and trolley weight and 25 percent impact factor for speed of lifting device and weight of tooling.
      b. Crane and hoist dead load.
      c. Live load capacity equal to net rated hook load: 20,000 pounds
      d. Inertia forces from crane and load movement.
      e. CMAA Group C
   5. Control Voltage: 460 / 115 V; 60 Hz
      a. Coordinate with electrical design of building. Provide any required upgrades to provide fully functioning system.
   6. Control Type: Pendant
   7. Lift: 20'-0"

B. Bridge crane with support structure, two runways, bridge moving perpendicular to runways, and equipped with track, end trucks, hoist trolley, festooning system, bumpers, and other accessories.
   1. Construction: Fabricate from ASTM A36 steel sections with finished ends and surfaces.
   2. Support structure: Support crane runways with metal building columns.
      a. Columns: As designed by Building Manufacturer.
         1) Attachment of runway beam to building column by Building Manufacturer
   3. Runways: Refer to Drawings.
   4. Bridge: Single girder
      a. Speed: 100 ft/min, stepless

5. End trucks: Rigid frame end truck designed to ride on ASCE 40# rail
    a. Wheels: Removable, self-centering wheels with sealed lifetime lubricated bearings.
    b. Designed for easy attachment of peripherals.
6. Hoist trolley: Rigid-body trolley designed to ride on bridge and to carry hoist and load. Articulating trolleys are not acceptable.
    a. Speed: 65 ft/min / 19 ft/min
7. End stops: Molded composite, resilient bumper installed in runway and bridge tracks to prevent end trucks, hoist trolley, and festoon carriers from rolling out of track. Bolt stops without energy absorbing bumper are not acceptable.
8. Hoist:
    a. Hoist Group: ASME H4
    b. Speed: 20 / 3.2 ft/min, 2 speed
    c. Wire Rope
9. Options:
    a. Overload Protection
    b. Under Voltage and Over Current Protection
    c. Fused disconnect switch and mainline contactor
    d. 4 Step geared upper limit switch
    e. Factory Paint: Safety Yellow
    f. 4 bar runway conductor system with tandem collectors

C. Festoon Assemblies: Cable type

2.02 JIB CRANES

A. Basis of Design: Gorbel Freestanding Jib Crane (FS350S-24-W24)

B. Performance:
1. Crane shall be designed, fabricated, and installed in accordance with ANSI B30.11 and OSHA 1910-179.
2. Crane shall be designed for minimum effort manual rotation.
3. Boom shall not drift when at rest.
4. Maximum deflection at boom end: 1/150 span based on capacity plus 15 percent for hoist and trolley weight.
5. Live load capacity equal to net rated hook load: 5 ton (1814 kg).
6. Base crane structural design on live load capacity plus 15 percent for hoist and trolley weight and 25 percent for impact.

C. Free Standing Jib Crane: Crane shall consist of mast requiring foundation support and a 270 degree rotating boom. Provide rotating collector assembly with service entrance and festoon service support as indicated.
1. Foundation:
    a. Sleeve mounting: Provide steel pipe sleeve with steel base plate and centering pin of size indicated on shop drawings. Pipe sleeve shall be bolted to concrete foundation cast below floor slab and then embedded with reinforced concrete. Sleeve, base plate, and bolts shall not be exposed. Mast equipped with steel plate end with centering hole shall be inserted in sleeve and permanently secured to prevent rotation.
2. Construction: Fabricate from ASTM A36 steel sections with finished ends and surfaces.
3. Mast: Stationary steel pipe, perpendicular to boom. Equip mast top with plate and pivot pin to receive head assembly.
    a. Accommodate under slab electrical feed for hoist. Junction location to be 24" above finish floor.
4. Boom: Horizontal, wide flange steel beam bolted to head assembly and designed for hoist trolley traveling on bottom flange. Reinforce with cap channel as required for lateral stability. Equip boom with stops to limit movement of trolley.
    a. Provide rotation stops
    b. Span: 16 feet

c. Height Under Boom: 11'-8" minimum
d. Max Height: Clear opening height of overhead doors minus 0'-6".
e. Rotation: Manual

5. Head assembly: Welded steel plate and channel fabrication fitted over mast, bolted to boom, and designed to transfer boom load to mast and to rotate. Assembly shall allow for installation of head prior to boom attachment and provide maximum hoist lift.
   a. Top pivot bearing assembly: Designed to connect head assembly to mast and transfer load from boom. Weight bearing channel connecting sides of head assembly shall contain tapered roller bearings allowing easy rotation.
   b. Retaining pin: Inserted through mast pivot pin above weight bearing channel to prevent accidentally dislodging head assembly. Cranes without retaining pin are not acceptable.
   c. Trunnion roller assembly: Designed to rotate around mast and transmit moment force from boom to mast. Provide trunnion rollers with tapered bearings held in steel channel with 1 inch (25 mm) diameter bolts. Masts less than 18 inches (457 mm) diameter shall have 2 rollers and larger masts shall have 4 rollers. Assembly shall rotate around mast with full roller face contact. Roller surface shall be sufficiently large to prevent cutting into mast. Cranes with small rollers or cams requiring wear band on mast are not acceptable.

D. Hoist:
1. Basis of Design: Harrington Electric Chain Hoist (PN: NER2M050LD-L)
2. Capacity: 5 ton
3. Lift Height: 15'-0" minimum
4. Lift Speed: 11 / 2 FPM (Dual Speed)
5. Power: 460 volt, 3 phase, 60 cycle
6. Trolley Type: motorized
7. Options:
   a. Power supply cord sized for span
   b. Chain container
   c. Plug in connections
   d. Limit switch
   e. Control pendant
   f. Tagline kit
   g. Wire rope trolleys
   h. Flat 8 cable cord grips
   i. Canvas chain container

E. Festoon Assemblies:
1. Provide length of cable and/or air hose to supply lifting device. Supply shall be festooned along boom.
2. Festoon trolleys: Four-wheeled trolleys with pivoting saddle and applicable attachment to support service run on boom and allowing festooning as hoist trolley travels.
3. Festoon clamp: Steel clamp assembly attached to track to prevent festoon trolleys and gliders from exiting track.

2.03 SHOP FINISHING

A. Steel: Steam wash steel crane components with iron phosphate solution and apply yellow baked enamel finish.

B. Provide spray can of matching color, air-drying paint for field touch-up.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin installation until support structures have been properly prepared.

B. Design and construction of reinforced concrete footings and slabs as detailed on Drawings and specified in other sections. Verify that accurate crane applied forces and anchor bolt patterns

are provided for foundation design.

3.02 INSTALLATION

A. Install units and accessories in accordance with manufacturer's instructions and approved shop drawings.

B. Do not modify crane components in any manner without advance written approval by crane manufacturer.

C. Clearances for moving crane components:
   1. 3 inches (76 mm) minimum vertical clearance from any overhead obstruction.
   2. 2 inches (51 mm) minimum horizontal clearance from any lateral obstruction.
   3. Prior to applying proper torque to the bolts, ensure runways are:
      a. Level to within plus or minus 1/8 inch in 20 feet (3 mm in 6.1 m).
      b. Parallel with opposite runway to within plus or minus 1/8 inch in 20 feet (3 mm in 6.1 m).

3.03 FIELD QUALITY CONTROL

A. Perform field quality control testing as recommended by manufacturer.

B. Move bridge and hoist trolley through entire travel to ensure crane is clear of obstructions and moves freely and smoothly.

C. Inspect installed crane. Verify all bolts are tight and lock washers fully compressed.

D. Field test crane and accessories for operating functions. Ensure crane movement is smooth and proper. Adjust as required and correct deficiencies.

E. Clean surfaces. If necessary, touch-up paint damage, scratches, and blemishes with manufacturer provided matching paint.

F. Protect crane from other construction operations.

3.04 COMMISSIONING

A. Provide all inspections and required commsioning

3.05 DEMONSTRATING AND TRAINING

A. Provide demonstration and training session for Owner's representative covering operation and maintenance.

3.06 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

Code Summary

Code:

Indiana Building Code - 2014 Edition
Indiana Fire Code - 2014 Edition
Indiana Plumbing Code - 2012 Edition
Indiana Mechanical Code - 2014 Edition
Indiana Fuel Gas Code - 2012 Edition
Indiana Electrical Code - 2009 Edition
Indiana Energy Code - 2010 Edition

Occupancy Classification

B: Office and Administrative	[304.1]
A-3: Training Room (Accessory)	[303.4]
S-1: Maintenance and Fabrication	[311.2]
S-2: Parts, Sign Shop, Wash Bay, Fluid Storage	[311.3]
S-2: Truck Parking	[311.3]

Construction Type

Type II-B Construction [503.1.2]

Building Areas

Total Existing:	0	Square Feet
New construction: B	6,078	Square Feet
New construction: A-3 (Accessory)	1,215	Square Feet
New construction: S-2 Trucks	25,931	Square Feet
New construction: S-2 Truck Mezz	619	Square Feet
New construction: S-1	9,265	Square Feet
New construction: S-2 Misc	6,120	Square Feet
New construction: S-2 Misc Mezz	704	Square Feet
New construction: S-2 Wash Bay Mezz	127	Square Feet
Total Complete:	48,609	Square Feet

Allowable Height & Area:

Allowable area per floor: 15,750 square feet [507.3, 507.6]
Frontage increase [506.2]
Sprinkler increase [506.3]

Allowable height of 3 stories / 75 feet [T503]

Mezzanines may occupy up to 50% of room square footage in Type II construction [505.2.1 EX 2]

Mezzanines may be enclosed if occupancy is less than 10 [505.2.3 EX 1]

Building Elements

Structural Frame -	Noncombustible	[T601, 602.2]
Bearing Walls -	Noncombustible	[T601, 602.2]
Nonbearing walls (Exterior) -	Noncombustible	[T601, 602.2]
Nonbearing walls (Interior) -	Noncombustible	[T601, 602.2]
Roof Assembly -	Noncombustible	[T601]
Exterior Walls -	Noncombustible	[T601, 602.2]

Occupancy Separation

B to S-1: Not required
B to S-2: 1 Hour
B to A-3: Not required (Accessory)
S-1 to S-2: 1 Hour [508.4]

Incidental Uses

Mechanical 143: Equipment over 400,000 BTU
Equipment Room 139: Equipment over 400,000 BTU [T509]

Egress

Occupant Load: See plan [T1004.1.2]
Accessible means of egress: [1007.1]
Door Swing in direction of egress: [1008.1.2]
Maximum Travel Distance:
Office: 250'-0"
Maintenance / Fab: 250'-0"
All Others: 400'-0" [T1016.2]
Maximum Common Path of Egress Travel:
Office: 75'-0"
All Others: 100'-0" [T1014.3]
Corridor Fire Resistance: N/R [T1018.1]
Corridor Minimum width: 44" [T1018.2]

Automatic Sprinklers

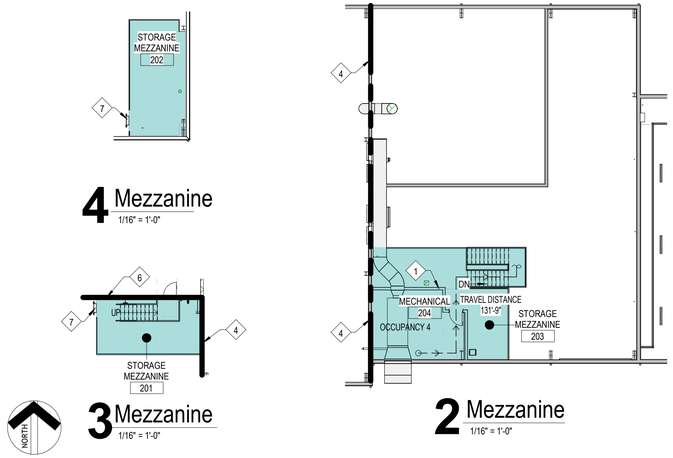
Automatic sprinklers are required [406.8.6, 903.2.9.1, 903.2.10]

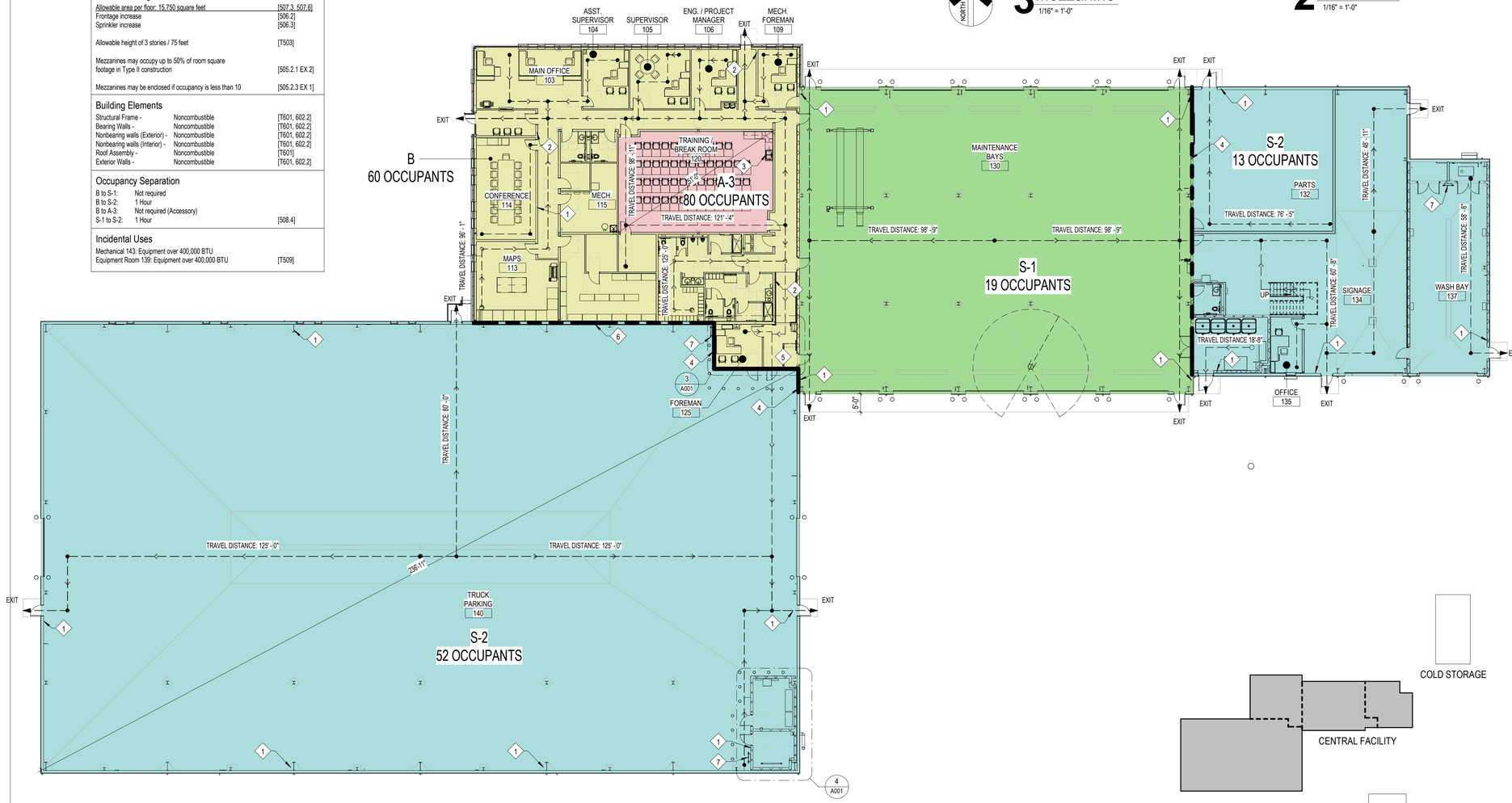
Fire Alarm

Required [903.4]

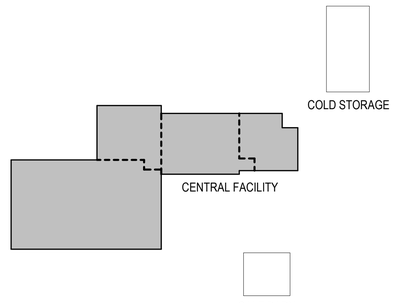
LEGEND

PATH OF EGRESS
FIRE BARRIER
OCCUPANCY
A-3
B
S-1
S-2





1 First Floor 1/16" = 1'-0"



KEY PLAN

General Notes

1. IN ANY AND ALL RATED WALL ASSEMBLIES, ANY AND ALL PENETRATIONS SHALL MAINTAIN THE REQUIRED RATED PROTECTION BY FIRESTOPPING ALL MATERIALS, AT ALL EDGES AND OPENINGS THROUGH THE WALL, SO THAT THERE IS NO OPEN PASSAGE THROUGH THE WALL OR BREECH IN THE RATED ASSEMBLY. PROVIDE SMOKE AND FIRE DAMPERS AT ALL DUCTS THROUGH THE WALL.
2. IT IS THE RESPONSIBILITY OF THE CONTRACTORS TO COORDINATE PROTECTION AT RATED ASSEMBLIES AS REQUIRED FOR ALL TRADES, AND ALL COMPONENTS, WHETHER ARE NOT ITEMS ARE SPECIFICALLY INDICATED ON DRAWING SHEETS. WALL SECTIONS OR DETAILS MAY ILLUSTRATE SELECTED COMPONENTS THAT PENETRATE A FIRE RATED ASSEMBLY, HOWEVER THE CONTRACTOR IS RESPONSIBLE TO COORDINATE THE ENTIRE SCOPE OF FIRE STOPPING WORK WITH THE CONSTRUCTION DOCUMENTS.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTORS TO INSTALL ALL RATED SYSTEMS PER THE MANUFACTURER AS REQUIRED TO MAINTAIN A TESTED UL LISTED SYSTEM ASSEMBLY. PROVIDE DOCUMENTATION OF UL CERTIFICATION FOR ANY AND ALL RATED MATERIALS AND ASSEMBLIES AS REQUIRED BY THE ARCHITECT, FIRE MARSHALL, OR BUILDING OFFICIAL.
4. ALL WORK SHALL COMPLY WITH THE CURRENT EDITION OF THE UNDERWRITERS LABORATORY, INC. DIRECTORY FIRE RESISTANCE MANUAL.
5. CONTRACTOR TO PROVIDE PORTABLE FIRE EXTINGUISHERS DURING CONSTRUCTION

Work Description Notes

1 PROVIDE 4A-80B:C FIRE EXTINGUISHER, MOUNTING BRACKET AND SIGNAGE
2 PROVIDE 4A-80B:C FIRE EXTINGUISHER AND SEMI RECESSED CABINET
3 PROVIDE TYPE K FIRE EXTINGUISHER UNDER SINK
4 1 HOUR RATING
5 1 HOUR RATED CEILING / DECK
6 EXTEND RATED ASSMEBLY 2'-0" ABOVE HIGHEST POINT OF OFFICE ROOF
7 LADDER

General Fire Protection Notes

1. DESIGN AND INSTALL A COMPLETE FIRE SPRINKLER SYSTEM IN ACCORDANCE WITH CRITERIA OUTLINED ON PLANS, NFPA 13 AND ALL APPLICABLE CODES & REQUIREMENTS.
2. FIRE PROTECTION SYSTEM SHALL BE DESIGNED BY A STATE LICENSED FIRE PROTECTION CONTRACTOR.
3. FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR MEETING WITH LOCAL FIRE DEPARTMENT AND BUILDING OFFICIALS TO INSURE THE SYSTEM MEETS ALL LOCAL REQUIREMENTS AND THAT THEY ARE ALL INCORPORATED INTO THE SYSTEM DESIGN. NO ADDITIONAL COMPENSATION WILL BE CONSIDERED FOR LOCAL OFFICIAL REQUIREMENTS THAT MAY NOT HAVE BEEN INDICATED ON THE PLAN. THIS INCLUDES, BUT IS NOT LIMITED TO: VAULTS, METERING, AND LOCATIONS OF ALL UTILITY AND SERVICE EQUIPMENT.
4. FIRE PROTECTION CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING ALL DOCUMENTS TO STATE FOR APPROVAL AND PERMITTING, INCLUDING ALL ASSOCIATED FEES.
5. FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR CONDUCTING A FLOW TEST FOR USE IN DETERMINATION OF SPRINKLER SYSTEM DESIGN REQUIREMENTS.
6. CONTRACTOR RESPONSIBLE FOR SUBMITTING FINAL PENDANT LAYOUT TO ARCHITECT FOR REVIEW OF LAYOUT FOR PURPOSES OF AESTHETICS AND DESIGN INTENT; NOT FOR COVERAGE OR CAPACITY OF SPRINKLER SYSTEM. ALL HEADS TO BE CENTERED ON CEILING TILE. COORDINATE FINAL PENDANT LOCATIONS WITH ALL TRADES TO AVOID CONFLICT WITH OTHER CEILING MOUNTED DEVICES.
7. FIRE PROTECTION WORK IS TO BE HELD TIGHT TO BUILDING STRUCTURE. REFER TO ARCHITECTURAL/STRUCTURAL DRAWINGS FOR DETAILS OF THE BUILDING STRUCTURE.
8. PIPING MATERIALS TO BE BLACK STEEL PIPE, CAST-IRON THREADED FITTINGS AND/OR MECHANICAL FITTING AND COUPLINGS TO SUIT PRESSURE/TEMPERATURE DUTY.
9. PIPING SUPPORTS MAY BE REGULARLY FURNISHED MATERIALS.
10. COORDINATE FIRE PROTECTION PENETRATIONS OF/WITH OTHER WORK TO AVOID INTERFERENCES. SEAL PENETRATIONS AS NOTED AND/OR SPECIFIED MAINTAINING THE FIRE RATING OF OTHER WORK WHERE APPLICABLE.
11. EACH CONTRACTOR IS RESPONSIBLE FOR THE CUTTING, PATCHING, AND FINISHING ASSOCIATED WITH THE INSTALLATION OF HIS/HER WORK. PROVIDE CUTTING, PATCHING, AND FINISHING IN A FIRST-CLASS, WORKMAN LIKE MANNER WITH METHODS AND MATERIALS TO MATCH EXISTING WORK.
12. WATER SUPPLY TO THE FACILITY IS PROVIDED BY THE PUBLIC UTILITY. COORDINATE WITH THE UTILITY COMPANY FOR DETAILS OF THE AVAILABLE WATER SUPPLY.
13. THE SPRINKLER SYSTEM SHALL BE CONNECTED TO THE FIRE ALARM SYSTEM PER NFPA AND BE ELECTRICALLY SUPERVISED AS REQUIRED.
14. FIRE PROTECTION CONTRACTOR SHALL COORDINATE ALL ELECTRICAL CONNECTIONS WITH THE ELECTRICAL CONTRACTOR INCLUDING BUT NOT LIMITED TO FLOW SWITCHES, TAMPER SWITCHES, PIV SWITCHES AND FIRE ALARM BELL.

New Construction Work for :

Porter County Highway Department - Central Facility

1955 IN-2
Valparaiso, IN 46385

PORTER COUNTY Indiana

MARTIN RILEY architects · engineers

221 West Baker Street pho 260.422.7994
Fort Wayne, Indiana 46802 fax 260.426.2067

JACK E. DANIEL REGISTERED No. AR01028 STATE OF INDIANA

REVISION: DATE:

DRAWN BY: SAG
REVIEWED BY: ALW
COMMISSION NUMBER: F22146
DATE: 2024-05-24

A001

LIFE SAFETY PLAN - CENTRAL FACILITY

F22146 - Porter County Highway
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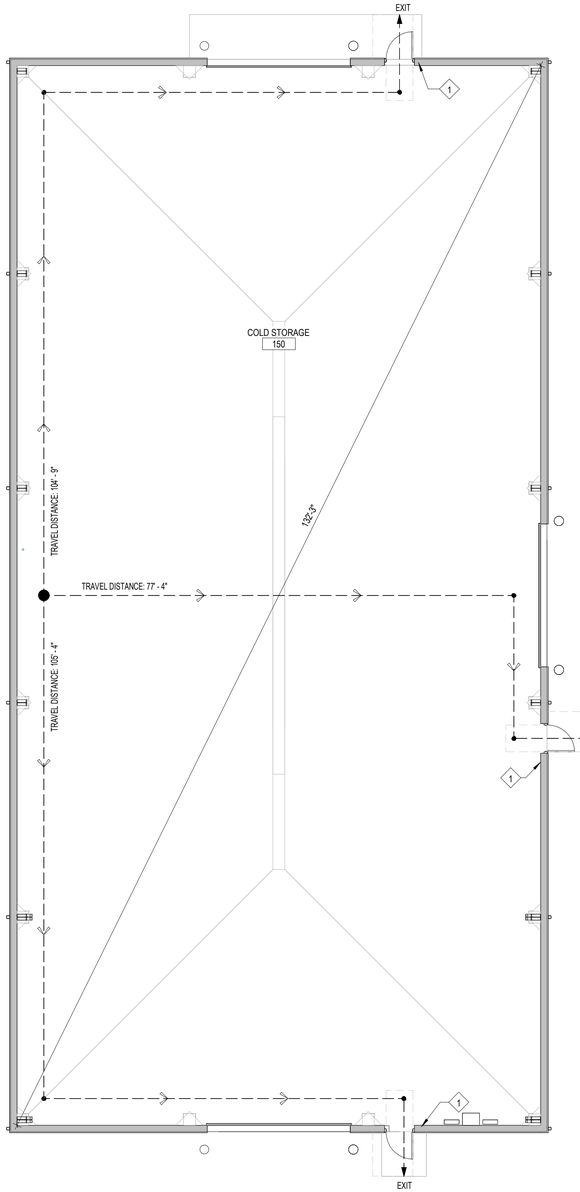
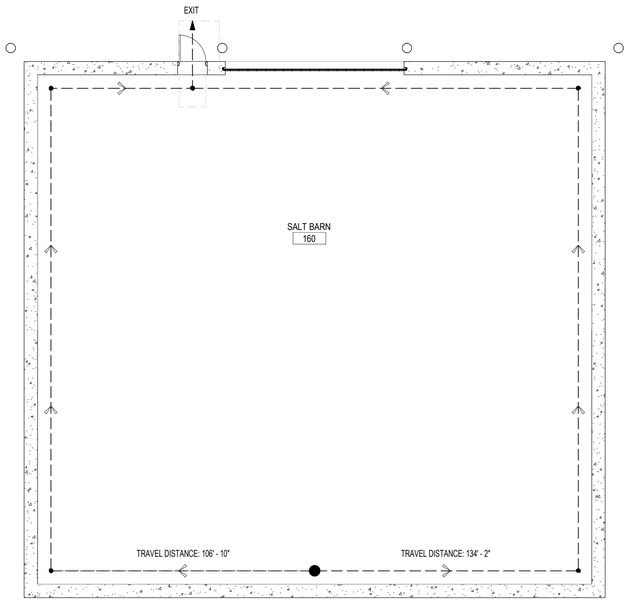


1 Life Safety Plan
1/8" = 1'-0"



2 Life Safety Plan
1/8" = 1'-0"

Code Summary

Code:
Indiana Building Code - 2014 Edition
Indiana Fire Code - 2014 Edition
Indiana Plumbing Code - 2012 Edition
Indiana Mechanical Code - 2014 Edition
Indiana Fuel Gas Code - 2012 Edition
Indiana Electrical Code - 2009 Edition
Indiana Energy Code - 2010 Edition

Occupancy Classifications:
S-2: Low Hazard Storage [311.3]

Construction Type:
Type VB Construction - Two or more buildings on the same lot are within the limits of Table 503 [503.1.2]

Building Areas:

Total Existing:	0	Square Feet
New construction: Salt Barn	3,900	Square Feet
Total Complete:	3,900	Square Feet

Allowable Height & Area:
Allowable area per floor: 13,635 Square Feet [506]
Frontage increase allowed due to 30 feet wide open space surrounding building
Allowable height of 2 stories / 40 feet [T503]

Building Elements:

Structural Frame -	Any material permitted by code	[T601, 602.5]
Bearing Walls -	Any material permitted by code	[T601, 602.5]
Nonbearing walls (Exterior) -	Any material permitted by code	[T601, 602.5]
Nonbearing walls (Interior) -	Any material permitted by code	[T601, 602.5]
Roof Assembly -	Any material permitted by code	[T601]
Exterior Walls -	Any material permitted by code	[T601, 602.5]

Occupancy Separations:
Not Applicable [508.3]

Incidental Uses:
Not Applicable [T509]

Egress:

Occupant Load:	8 per floor	[T1004.1.2]
Maximum Travel Distance:	300'-0"	[T1016.2]
Maximum Common Path of Egress Travel:	100'-0"	[T1014.3]

Automatic Sprinklers:
Not required [903.2.11]

Code Summary

Code:
Indiana Building Code - 2014 Edition
Indiana Fire Code - 2014 Edition
Indiana Plumbing Code - 2012 Edition
Indiana Mechanical Code - 2014 Edition
Indiana Fuel Gas Code - 2012 Edition
Indiana Electrical Code - 2009 Edition
Indiana Energy Code - 2010 Edition

Occupancy Classification
S-2: Low Hazard Storage [311.3]

Construction Type
Type VB Construction - [602.5]

Building Areas

Total Existing:	0	Square Feet
New construction: Cold Storage	7,200	Square Feet
Total Complete:	7,200	Square Feet

Allowable Height & Area:
Allowable area per floor: 23,625 square feet
Frontage increase allowed due to 55 feet wide open space surrounding building [506]
Allowable height of 2 stories / 40 feet [T503]

Building Elements

Structural Frame -	Any material permitted by code	[T601, 602.5]
Bearing Walls -	Any material permitted by code	[T601, 602.5]
Nonbearing walls (Exterior) -	Any material permitted by code	[T601, 602.5]
Nonbearing walls (Interior) -	Any material permitted by code	[T601, 602.5]
Roof Assembly -		[T601]
Exterior Walls -	Any material permitted by code	[T601, 602.5]

Incidental Uses
Not applicable [T509]

Egress

Occupant Load:	36 per floor	[T1004.1.2]
Accessible means of egress:		[1007.1]
Maximum Travel Distance:	300'-0"	[T1016.2]
Maximum Common Path of Egress Travel:	75'-0"	[T1014.3]

Automatic Sprinklers
Not required [903.2.10, 406.6]

Smoke Detectors:
Not required [406.6]

Fire Alarm
Not Required [406.6]

Work Description Notes

1 PROVIDE 4A-80B:C FIRE EXTINGUISHER, MOUNTING BRACKET AND SIGNAGE

New Construction Work for :

Porter County Highway Department - Central Facility

1955 IN-2
Valparaiso, IN 46385

PORTER COUNTY Indiana

MARTIN RILEY
architects • engineers

221 West Baker Street pho 260.422.7994
Fort Wayne, Indiana 46802 fax 260.426.2067

JACK E. DANIEL REGISTERED No. AR910026 STATE OF INDIANA

REVISION:		DATE:
1	ADDENDUM 1	2024-06-12

DRAWN BY: SAG
REVIEWED BY: ALW
COMMISSION NUMBER: F22146
DATE: 2024-05-24

A002

LIFE SAFETY PLANS - COLD STORAGE / SALT BARN

F22146 Porter County Highway Department - Central facility
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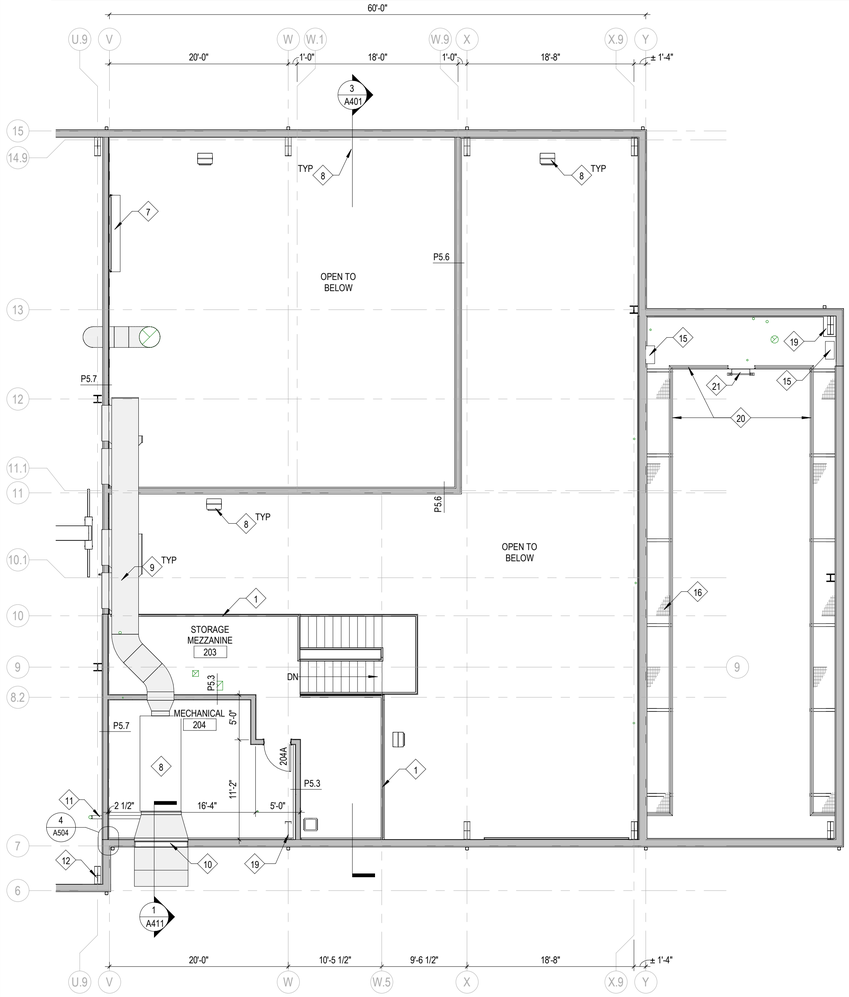
TOILET ACCESSORY SCHEDULE (REFER TO ADA MOUNTING HEIGHTS ON SHEET G101)

NO.	ITEM	DESCRIPTION	MOUNTING HEIGHT	MODEL	REMARKS
A	GRAB BAR- CONCEALED MOUNTING	42" x 1-1/2" DIAMETER	34" A.F.F. TO CENTER	BRADLEY 812 SERIES, MODEL #001-42"	
B	GRAB BAR- CONCEALED MOUNTING	36" x 1-1/2" DIAMETER	34" A.F.F. TO CENTER	BRADLEY 812 SERIES, MODEL #001-36"	
C	GRAB BAR- CONCEALED MOUNTING	18" x 1-1/2" DIAMETER	34" A.F.F. TO CENTER	BRADLEY 812 SERIES, MODEL #001-18"	
D	TOWEL DISPENSER/ WASTE RECEPTACLE	17-1/8" x 56" x 8-25/32" D	44" MAX. TO CENTER OF OPERABLE COMPONENT	BRADLEY MODEL #234 - RECESSED	
E	PAPER TOWEL DISPENSER	11" x 15-5/16" x 4"D	44" MAX. TO CENTER OF OPERABLE COMPONENT	BRADLEY MODEL #250-15	
F	DUAL ROLL TOILET PAPER DISPENSER	20-9/16" x 11-3/8" x 4-7/10"	18" A.F.F. TO BOTTOM	BRADLEY MODEL #5425	
G	TILT MIRROR	24" x 36"	40" A.F.F. TO BOTTOM OF REFLECTIVE SURFACE	BRADLEY MODEL #740-024360	2
H	FRAMELESS MIRROR	36" x 60"	60" TO CENTER OF MIRROR	BRADLEY MODEL #747-036600	2
I	SOAP DISPENSER-SURFACE MOUNTED	4-5/8" x 10-9/16" x 4-3/16"	44" MAX. TO CENTER OF OPERABLE COMPONENT	BRADLEY MODEL #6A01	
J	SHOWER SEAT- REVERSIBLE	34-1/2" x 22"	17"-19" TO TOP OF SEAT	BRADLEY MODEL #9569	4
K	TOWEL HOOK-SURFACE MOUNTED	2" x 2" x 4-7/16"	48" MAX TO TOP OF HOOK	BRADLEY MODEL #9314	1
L	TOWEL BAR-SURFACE MOUNTED	24" WIDE	48" MAX TO TOP OF BAR	BRADLEY MODEL #9065	1
M	SHOWER CURTAIN ROD- CONCEALED MOUNTING	60" x 1-1/4" DIA.	75"-77" FROM THE FLOOR	BRADLEY MODEL #9539	1
N	ANTIMICROBIAL VINYL SHOWER CURTAIN	60" x 72"		BRADLEY MODEL #9533	3
O	FRAMELESS MIRROR	36" x 60"	TOP OF MIRROR AT 6'-2"	BRADLEY MODEL 747-036600	
P	L-SHAPED HORIZONTAL GRAB BAR	24" x 36" x 1-1/4" O.D	33"-36" TO TOP OF BAR	AMERICAN SPECIALTIES 3450-P	5
Q	SANITARY NAPKIN DISPOSAL- SURFACE MOUNTED	10 3/4"W x 15 1/8"H x 4"D	24" FROM WALL. SEE G101 FOR MOUNTING HEIGHT	BRADLEY MODEL 4722-15	

REMARKS

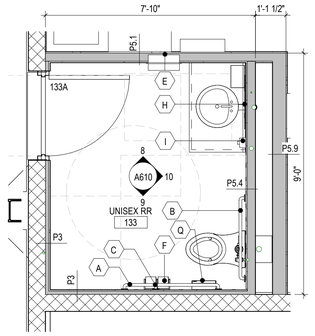
1. SATIN STAINLESS STEEL
2. MIRROR NOT TO TOUCH PLUMBING FIXTURE
3. SHOWER CURTAIN HOOKS, BRADLEY MODEL #9536
4. REVERSIBLE-LEFT OR RIGHT HAND CONFIGURATION
5. PEENED FINISH



NORTH

2 Enlarged Maintenance Mezzanine

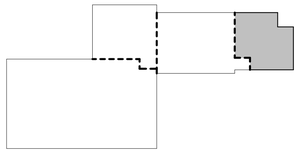
1/8" = 1'-0"



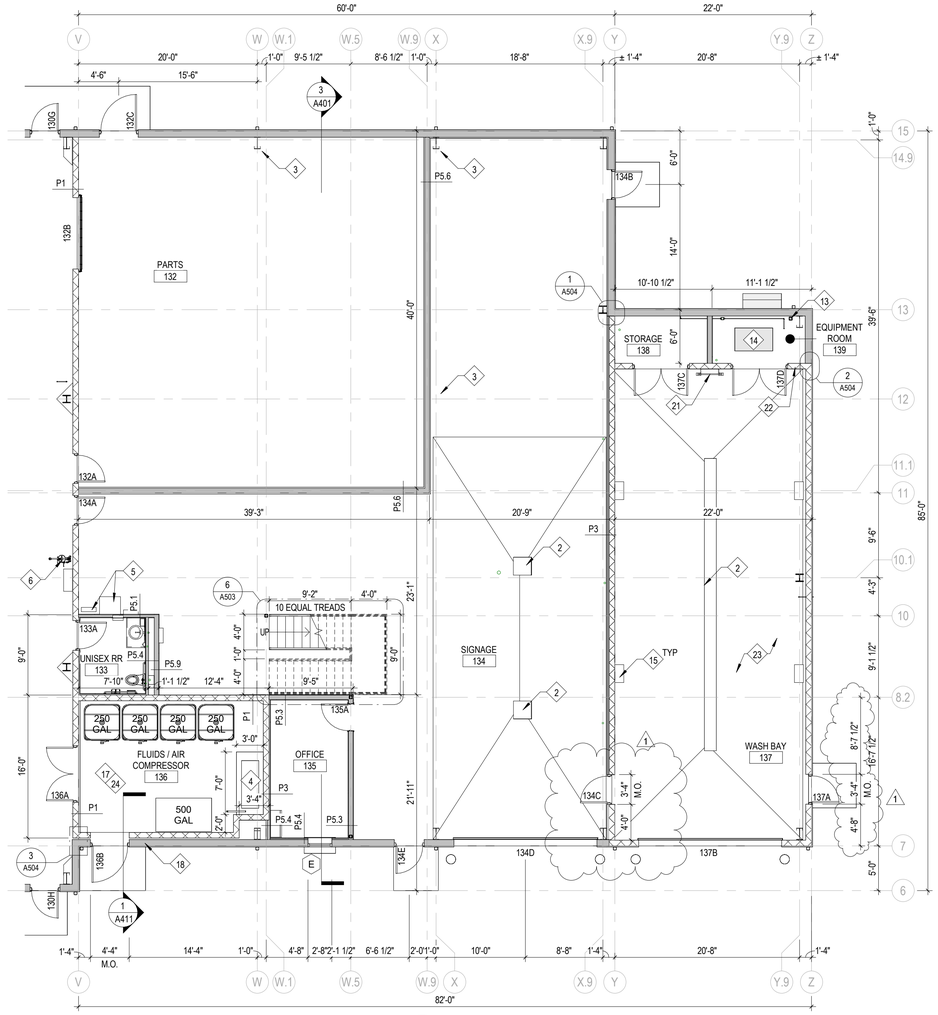
NORTH

3 Enlarged Restroom

3/8" = 1'-0"



KEY PLAN



NORTH

1 Enlarged Parts & Signage

1/8" = 1'-0"

Work Description Notes

1. REMOVABLE RAILING SECTION
2. FLOOR / TRNECH DRAIN, REFER TO STRUCTURAL AND PLUMBING
3. SEPARATE INFILL POUR AT PIERS RELATED TO FUTURE MEZZANINE LOCATION
4. REINSTALL SALVAGED AIR COMPRESSOR. REFER TO ELECTRICAL AND PLUMBING
5. ELECTRICAL EQUIPMENT
6. PLUMBING FIXTURE
7. COILING OVERHEAD DOOR BELOW
8. MECHANICAL EQUIPMENT
9. DUCTWORK, SEE MECHANICAL
10. LOUVER, SEE MECHANICAL
11. NATURAL GAS SUPPLY, SEE MECHANICAL
12. STRUCTURE, REFER TO PRE-ENGINEERED METAL BUILDING MANUFACTURER DRAWINGS
13. STRUCTURE REFER TO S SERIES DRAWINGS
14. PROVIDE PRESSURE WASHER, REFER TO PLUMBING SCHEDULE
15. HOSE REEL, REFER TO PLUMBING, COORDINATE EXACT PLACEMENT WITH OWNER
16. CATWALK, PAINTED, REFER TO STRUCTURAL
17. PROVIDE (4) 250 GALLON FLUID STORAGE CONTAINERS WITH PALLET JACK/FORKLIFT COMPATIBLE BASE. CONTAINERS TO BE COMPATIBLE WITH OIL, HYDRUALIC FLUID, COOLANT, AND TRANSMISSION FLUID. PROVIDE 500 GALLON USED OIL STORAGE TANK
18. PROVIDE 12"x12" INSULATED STAINLESS STEEL ACCESS DOOR AND WALL SLEEVE. INCLUDE PIANO HINGE, DRIP CAP, AND MORTISE CYLINDER KEYED TO BUILDING. BASIS OF DESIGN NYSTROM XTM-CS
19. PROVIDE 1/4" STEEL PLATE MECHANICALLY ANCHORED TO FLOOR SLAB TO INFILL VOID. LEAVE MIN 2" SPACE BETWEEN PLATE AND COLUMN
20. GUARDRAIL, PAINT, REFER TO DETAILS
21. LADDER, REFER TO DETAILS
22. PRESSURE WASHER REMOTE INTERFACE LOCATION
23. PAINT ALL EXPOSED PRIMARY AND SECONDARY STEEL IN THIS AREA
24. PROVIDE TURN KEY FLUID DISTRIBUTION SYSTEM FROM 250 GALLON TANKS TO REELS IN MAINTENANCE BAYS 130. ALL EQUIPMENT, DISPENSERS, PIPING, AND REQUIRED COMPONENTS TO BE PROVIDED. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION

New Construction Work for :

Porter County Highway Department - Central Facility

1955 IN-2
Valparaiso, IN 46385

PORTER COUNTY Indiana

MARTIN RILEY
architects • engineers

221 West Baker Street
Fort Wayne, Indiana 46802

pho 260.422.7994
fax 260.426.2067

JACK E. DANIEL REGISTERED No. AR910026 STATE OF INDIANA

REVISION:		DATE:
1	ADDENDUM 1	2024-06-12

DRAWN BY: SAG
REVIEWED BY: ALW
COMMISSION NUMBER: F22146
DATE: 2024-05-24

A104

ENLARGED PLANS

F22146 Porter County Highway Department - Central facility
9/12/2024 2:33:06 PM
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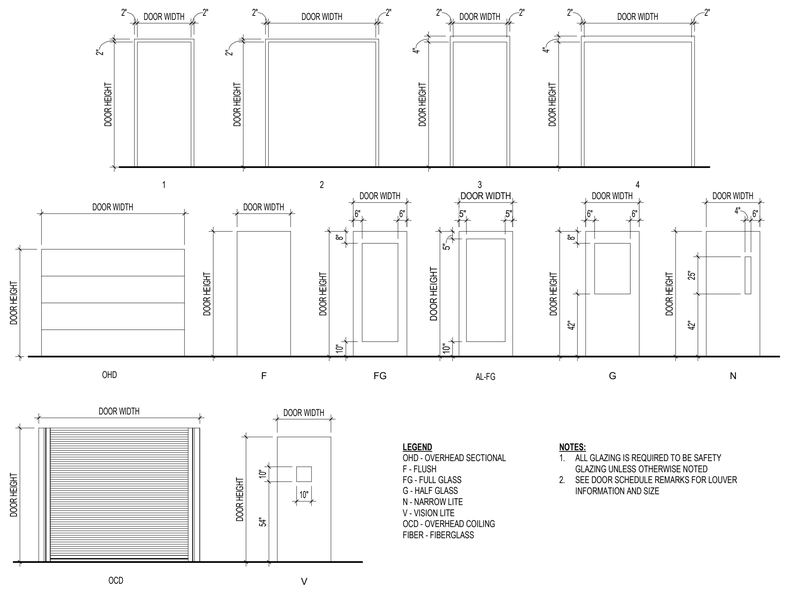
SD/DD/CD



LEGEND
OHD - OVERHEAD SECTIONAL
F - FLUSH
FG - FULL GLASS
G - HALF GLASS
N - NARROW LITE
V - VISION LITE
OCD - OVERHEAD COILING
FIBER - FIBERGLASS

NOTES:
1. ALL GLAZING IS REQUIRED TO BE SAFETY GLAZING UNLESS OTHERWISE NOTED
2. SEE DOOR SCHEDULE REMARKS FOR LOUVER INFORMATION AND SIZE

Hardware Sets

#01.01
DOORS: 113A, 114A, 116A 117A

3	HINGES	5BB1 4 1/2 X 4 1/2	652	IV
1	LEVERSET	ND10 RHO 10-025	626	SC
1	PROTECTION PLATE	8400 8" X 34" B-CS	US32D	IV
1	WALL STOP	WS406/407CCV	US32D	IV

#02.01
DOORS: 123B,124B

3	HINGES	5BB1 4 1/2 X 4 1/2	652	IV
1	LEVERSET	ND40 RHO 10-025	626	SC
1	PROTECTION PLATE	8400 8" X 34" B-CS	US32D	IV
1	WALL STOP	WS406/407CCV	US32D	IV

#02.02
DOORS: 133A

3	HINGES	5BB1 4 1/2 x 4 1/2	652	IV
1	LEVERSET	ND40 RHO 10-025	626	SC
1	CLOSER	4040XP REGARM	AL	LC
1	WALL STOP	WS406/407CCV	US32D	IV

#02.03
DOORS: 107A, 108A

3	HINGES	5BB1 4 1/2 x 4 1/2	652	IV
1	LEVERSET	ND40 RHO 10-025	626	SC
1	CLOSER	4040XP REGARM	AL	LC
1	PROTECTION PLATE	8400 8" X 34" B-CS	US32D	IV
1	WALL STOP	WS406/407CCV	US32D	IV

#03.01
DOORS: 104A, 105A, 106A, 109A, 125A

3	HINGES	5BB1 4 1/2 x 4 1/2	652	IV
1	LOCKSET	ND53P RHO 10-025	626	SC
1	WALL STOP	WS406/407CCV	US32D	IV

#03.02
DOORS: 135A

3	HINGES	5BB1 4 1/2 x 4 1/2	652	IV
1	LOCKSET	ND53P RHO 10-025	626	SC
1	WALL STOP	WS406/407CCV	US32D	IV

#03.03
DOORS: 122A

3	HINGES	5BB1 4 1/2 x 4 1/2	652	IV
1	LOCKSET	ND53P RHO 10-025	626	SC
1	CLOSER	4040XP RWPA	AL	LC
1	PROTECTION PLATE	8400 8" X 34" B-CS	US32D	IV
1	WALL STOP	WS406/407CCV	US32D	IV

#03.04
DOORS: 125B

3	HINGES	5BB1 4 1/2 x 4 1/2	652	IV
1	LOCKSET	ND53P RHO 10-025	626	SC
1	CLOSER	4040XP RW82A	AL	LC
1	OVERHEAD STOP	904S	US32D	GL
1	GASKETING	2525 B-20 20'		NA
1	AUTO DOOR BOTTOM	420 NA 36"		NA

#03.05
DOORS: 134C, 150I

1	CONTINUOUS HINGE	112HD 83"	628	IV
1	LOCKSET	ND53P RHO 10-025	626	SC
1	CLOSER	1461 RW62A	AL	LC
1	OVERHEAD STOP	904S	US32D	GL

#04.01
DOORS: 115A, 118A, 121A

3	HINGES	5BB1 4 1/2 x 4 1/2	652	IV
1	LOCKSET	ND70P RHO 10-025	626	SC
1	PROTECTION PLATE	8400 8" X 34" B-CS	US32D	IV
1	WALL STOP	WS406/407CCV	US32D	IV

#04.02
DOORS: 109B

3	HINGES	5BB1 4 1/2 x 4 1/2	652	IV
1	LOCKSET	ND70P RHO 10-025	626	SC
1	CLOSER	4040XP REGRAM	AL	LC
1	WALL STOP	WS406/407CCV	US32D	IV
1	GASKETING	160 VA 1 x 36" 2 x 84"		NA
1	AUTO DOOR BOTTOM	420 NA 36"		NA

#04.04
DOORS: 122B

3	HINGES	5BB1 4 1/2 X 4 1/2	652	IV
1	LOCKSET	ND70P RHO 10-025	626	SC
1	CLOSER	4040XP RW62A	AL	LC
1	OVERHEAD STOP	904S	US32D	GL
1	GASKETING	2525 B-20 20'		NA
1	AUTO DOOR BOTTOM	420 NA 36"		NA

#04.05
DOORS: 130R, 130S, 130T

3	HINGES	5BB1 4 1/2 X 4 1/2	652	IV
1	LOCKSET	ND70P RHO 10-025	626	SC
1	CLOSER	1461 RW62A	AL	LC
1	OVERHEAD STOP	904S	US32D	GL
1	GASKETING	160 VA 1 x 36" 2 x 84"		NA
1	AUTO DOOR BOTTOM	420 NA 36"		NA

#04.06
DOORS: 132A, 134A

3	HINGES	5BB1 4 1/2 X 4 1/2	652	IV
1	LOCKSET	ND70P RHO 10-025	626	SC
1	CLOSER	4040XP REGRAM	AL	LC
1	WALL STOP	WS406/407CCV	US32D	IV
1	GASKETING	2525 B-20 20'		NA

#04.07
DOORS: 137C, 137D

2	CONTINUOUS HINGE	112HD 83"	628	IV
2	FLUSH BOLT	FB458	US26D	IV
1	STRIKE	DP1	US26D	IV
1	LOCKSET	ND70P RHO 10-025	626	SC
1	OVERHEAD STOP	904S	US32D	GL
1	WALL STOP	WS406/407CCV	US32D	IV

*NOTE: WALL STOP TO BE USED WHERE DOOR IS ABLE TO FULLY SWING TO WALL. OVERHEAD STOP AT OTHER LEAF

#05.02
DOORS: 204A

3	HINGES	5BB1 4 1/2 x 4 1/2	652	IV
1	LOCKSET	ND80P RHO 10-025	626	SC
1	CLOSER	4040XP REGARM	AL	LC
1	WALL STOP	WS406/407CCV	US32D	IV

#05.04
DOORS: 141A,142A

3	HINGES	5BB1 4 1/2 x 4 1/2	652	IV
1	LOCKSET	ND80P RHO 10-025	626	SC
1	CLOSER	1461 RW62A	AL	LC
1	OVERHEAD STOP	904S	US32D	GL

#05.05
DOORS: 136B

1	CONTINUOUS HINGE	112HD 83"	628	IV
1	LOCKSET	ND80P RHO 10-025	626	SC
1	CLOSER	4040XP RW62A	AL	LC
1	OVERHEAD STOP	906S	US32D	GL
1	GASKETING	160 V 1 x 48" 2 x 84"		NA
1	DRIP CAP	16 A 52"		NA
1	DOOR SWEEP	D698 A 48"		NA
1	THRESHOLD	896 V 48"	AL	NA

#05.06
DOORS: 136A

6	HINGES	5BB1 4 1/2 x 4 1/2	652	IV
1	FLUSH BOLT KIT	FB32	US32D	IV
1	LOCKSET	ND80P RHO 10-025	626	SC
1	DOOR COORDINATOR	CORS2 2-M82 SP28 FL20	US28	IV

*NOTE: VERIFY MOUNTING BRACKET (M82) REQUIREMENTS BASED ON FRAME JAMB DEPTH

2	CLOSER	1461 RW62A	AL	LC
2	OVERHEAD STOP	904S	US32D	GL
1	GASKETING	2525 B-25 25'		NA
2	AUTO DOOR BOTTOM	420 NA 36"		NA

*NOTE SEE RFI QUESTION REGARDING SURFACE AUTO DOOR BOTTOMS

#06.01
DOORS: 123A, 124A

3	HINGES	5BB1 4 1/2 X 4 1/2	652	IV
1	PUSH PLATE	8200 4 x 16 B-CS	US32D	IV
1	PULL PLATE	8302-0 4 x 16	US32D	IV
1	CLOSER	4040XP REGARM	AL	LC
1	PROTECTION PLATE	8400 8" X 34" B-CS	US32D	IV
1	WALL STOP	WS406/407CCV	US32D	IV

#07.01
DOORS: 120A, 120B

3	HINGES	5BB1 4 1/2 x 4 1/2	652	IV
1	EXIT DEVICE	99L x 996L-R&V	US26D	VO
1	RIM CYLINDER	20-022	626	SC
1	CLOSER	4040XP HWPA	AL	LC
1	OVERHEAD STOP	104S	US32D	GL
1	PROTECTION PLATE	8400 8" X 34" B-CS	US32D	IV

#07.02
DOORS: 130A, 130G, 130P, 140C,

1	CONTINUOUS HINGE	112HD 83"	628	IV
1	EXIT DEVICE	CD 99NL-OP x 110MD-NL	US26D	VO
1	RIM CYLINDER	20-022	626	SC
1	MORTISE CYLINDER	20-001 1 1/4"	626	SC
1	CLOSER	4040XP RW62A	AL	LC
1	OVERHEAD STOP	904S	US32D	GL
1	GASKETING	160 VA 1 x 36" 2 x 84"		NA
1	DRIP CAP	16 A 40"		NA
1	DOOR SWEEP	D698 A 36"		NA
1	THRESHOLD	896 V 36"	AL	NA

#08.01
DOORS: 130B, 130C, 130D, 130E, 130F, 130I, 130J, 130K, 130L, 130M, 132B, 134D,137B, 140B, 140E, 150A, 150C, 150G, 160B, AND FLUIDS ACCESS DOOR

1	MORTISE CYLINDER	20-001 1 1/8"	626	SC

*NOTE: VERIFY CYLINDER REQUIREMENTS WITH DOOR SUPPLIER PRIOR TO ORDERING

#09.01
DOORS: 132C

1	CONTINUOUS HINGE	112HD 83"	628	IV
1	LOCKSET	ND80P RHO 10-025	626	SC
1	CLOSER	4040XP RW62A	AL	LC
1	OVERHEAD STOP	906S	US32D	GL
1	GASKETING	160 V 1 x 48" 2 x 84"		NA
1	DRIP CAP	16 A 52"		NA
1	DOOR SWEEP	D698 A 48"		NA
1	THRESHOLD	896 V 48"	AL	NA

#09.02
DOORS: 134B, 137A, 144A, 150B, 150D, 150E, 160A, 201A

1	CONTINUOUS HINGE	112HD 83"	628	IV
1	LOCKSET	ND60P RHO 10-025	626	SC
1	CLOSER	4040XP RW62A	AL	LC
1	OVERHEAD STOP	904S	US32D	GL
1	GASKETING	2525 B-20 20'		NA
1	GASKETING	160 V 1 x 48" 2 x 84"		NA
1	DRIP CAP	16 A 40"		NA
1	DOOR SWEEP	D698 A 36"		NA
1	THRESHOLD	896 V 36"	AL	NA

#10.01
DOORS: 101A

1	CONTINUOUS HINGE	112HD 95" CUSTOM CUT	628	IV
1	EXIT DEVICE	CD 99NL-OP x 110MD-NL	US26D	VO
1	RIM CYLINDER	20-022	626	SC
1	MORTISE CYLINDER	20-001 1 1/4"	626	SC
1	DOOR PULL	8190EZHD-2	US32D316	IV
1	CLOSER	4040XP RWPA	AL	LC
1	OVERHEAD STOP	104S	US32D	GL
1	DOOR SWEEP	D698 A 36"		NA
1	THRESHOLD	896 V 36"	AL	NA

*NOTE: PERIMETER SEAL BY DOOR SUPPLIER

#10.02
DOORS: 102A

1	CONTINUOUS HINGE	112HD 85"	628	IV
1	EXIT DEVICE	CD 99NL-OP x 110MD-NL	US26D	VO
1	RIM CYLINDER	20-022	626	SC
1	MORTISE CYLINDER	20-001 1 1/4"	626	SC
1	DOOR PULL	8190EZHD-2	US32D316	IV
1	CLOSER	4040XP RWPA	AL	LC
1	OVERHEAD STOP	104S	US32D	GL
1	DOOR SWEEP	D698 A 36"		NA
1	THRESHOLD	896 V 36"	AL	NA

*NOTE: PERIMETER SEAL BY DOOR SUPPLIER

Door & Frame Schedule

Door Number	Leaf Count	Door Material	Door Elevation	Door Size (Each Leaf) Width	Height	Thickness	Frame Material	Frame Elevation	Door Head	Door Jamb	Rating	Hardware	Remarks
101A	1	AL	A/A520	3' - 0"	7' - 10"	0' - 1 3/4"	AL	A/A520				10.01	2
101B	1	AL	AL-FG	3' - 0"	7' - 0"	0' - 1 3/4"	AL	1				EL 10.01	
102A	1	AL	AL-FG	3' - 0"	7' - 2"	0' - 1 3/4"	AL	1				10.02	2
104A	1	WD	N	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				03.01	
105A	1	WD	N	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				03.01	
106A	1	WD	N	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				03.01	
107A	1	WD	F	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				02.03	
108A	1	WD	F	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				02.03	
109A	1	WD	N	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				03.01	
109B	1	HM	G	3' - 0"	7' - 0"	0' - 1 3/4"	HM	3				04.02	
113A	1	WD	N	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				01.01	
114A	1	WD	N	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				01.01	
115A	1	WD	F	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				04.01	
116A	1	WD	F	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				01.01	
117A	1	WD	F	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				01.01	
118A	1	WD	F	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				04.01	
119A	1	HM	F	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				EL 05.02	
120A	1	WD	N	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				07.01	
120B	1	WD	N	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				07.01	
121A	1	WD	F	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				04.01	
122A	1	WD	G	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				03.03	
122B	1	HM	N	3' - 0"	7' - 0"	0' - 1 3/4"	HM	3			45 MIN	04.04	1
123A	1	WD	F	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				06.01	
123B	1	WD	F	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				02.01	
124A	1	WD	F	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				06.01	
124B	1	WD	F	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				02.01	
125A	1	WD	N	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				03.01	
125B	1	HM	N	3' - 0"	7' - 0"	0' - 1 3/4"	HM	3			45 MIN	03.04	1
130A	1	HM	N	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				07.02	
130B	1	STL	OHD	16' - 0"	16' - 0"	0' - 2"	STL	-				08.01	
130C	1	STL	OHD	16' - 0"	16' - 0"	0' - 2"	STL	-				08.01	
130D	1	STL	OHD	16' - 0"	16' - 0"	0' - 2"	STL	-				08.01	
130E	1	STL	OHD	16' - 0"	16' - 0"	0' - 2"	STL	-				08.01	
130F	1	STL	OHD	16' - 0"	16' - 0"	0' - 2"	STL	-				08.01	
130G	1	HM	N	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				07.02	
130H	1	HM	N	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				EL 07.01	
130I	1	STL	OHD	16' - 0"	16' - 0"	0' - 2"	STL	-				08.01	
130J	1	STL	OHD	16' - 0"	16' - 0"	0' - 2"	STL	-				08.01	
130K	1	STL	OHD	16' - 0"	16' - 0"	0' - 2"	STL	-				08.01	
130L	1	STL	OHD	16' - 0"	16' - 0"	0' - 2"	STL	-				08.01	
130M	1	STL	OHD	16' - 0"	16' - 0"	0' - 2"	STL	-				08.01	
130P	1	HM	N	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				07.02	
130R	1	HM	N	3' - 0"	7' - 0"	0' - 1 3/4"	HM	3				04.05	1
130S	1	HM	N	3' - 0"	7' - 0"	0' - 1 3/4"	HM	3				04.05	1
130T	1	HM	N	3' - 0"	7' - 0"	0' - 1 3/4"	HM	3				04.05	1
132A	1	HM	N	3' - 0"	7' - 0"	0' - 1 3/4"	HM	3			45 MIN	04.06	1
132B	1	STL	OCD	8' - 0"	10' - 0"	0' - 0"	-	-	PER MFG	PER MFG	45 MIN	08.01	
132C	1	HM	F	4' - 0"	7' - 0"	0' - 1 3/4"	HM	1				09.01	
133A	1	HM	F	3' - 0"	7' - 0"	0' - 1 3/4"	HM	3			45 MIN	02.02	
134A	1	HM	F	3' - 0"	7' - 0"	0' - 1 3/4"	HM	3			45 MIN	04.06	
134B	1	HM	F	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				09.02	
134C	1	FIBER	N	3' - 0"	7' - 0"	0' - 1 3/4"	FBR	3				03.05	
134D	1	STL	OHD	16' - 0"	16' - 0"	0' - 2"	STL	-				08.01	
134E	1	HM	N	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				EL 07.01	
135A	1	HM	N	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				03.02	
136A	2	HM	F	3' - 0"	7' - 0"	0' - 1 3/4"	HM	4			45 MIN	05.06	1
136B	1	HM	F	4' - 0"	7' - 0"	0' - 1 3/4"	HM	3				05.05	
137A	1	FIBER	N	3' - 0"	7' - 0"	0' - 1 3/4"	FBR	3				09.02	
137B	1	STL	OHD	16' - 0"	16' - 0"	0' - 2"	STL	-				08.01	
137C	2	FIBER	F	3' - 0"	7' - 0"	0' - 1 3/4"	FIBER	4				04.07	
137D	2	FIBER	F	3' - 0"	7' - 0"	0' - 1 3/4"	FIBER	4				04.07	
140A	1	HM	F	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				EL 07.01	
140B	1	STL	OHD	16' - 0"	16' - 0"	0' - 2"	STL	-				08.01	
140C	1	HM	F	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				07.02	
140D	1	HM	N	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				EL 07.01	
140E	1	STL	OHD	16' - 0"	16' - 0"	0' - 2"	STL	-				08.01	
141A	1	HM	F	3' - 0"	7' - 0"	0' - 1 3/4"	HM	3				05.04	
142A	1	HM	F	3' - 0"	7' - 0"	0' - 1 3/4"	HM	3				05.04	
150A		STL	OHD	16' - 0"	16' - 0"	0' - 2"	STL	-				08.01	
150B	1	HM	F	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				09.02	
150C		STL	OHD	16' - 0"	16' - 0"	0' - 2"	STL					08.01	
150D	1	HM	F	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				09.02	
150E	1	HM	F	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				09.02	
150G		STL	OHD	16' - 0"	16' - 0"	0' - 2"	STL	-				08.01	
160A	1	FIBER	F	3' - 0"	7' - 0"	0' - 1 3/4"	FIBER	1				09.02	
160B	1	STL	OCD	20' - 0"	24' - 0"	0' - 0"	-	-	PER MFG	PER MFG		08.01	
201A	1	HM	F	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1			45 MIN	09.02	
204A	1	HM	F	3' - 0"	7' - 0"	0' - 1 3/4"	HM	1				05.02	

REMARKS

1. INSULATED
2. THERMALLY BROKEN
3.

GENERAL NOTES

1. PAINT HOLLOW METAL DOOR, FRAMES AND HOLLOW METAL WINDOW FRAMES IN ALL ROOMS WHERE WORK IS BEING PERFORMED
2. PROVIDE SEALANT BETWEEN DOOR FRAMES AND ADJACENT SURFACE, PAINT OR COLOR TO MATCH
3. FIELD VERIFY ALL EXISTING CONDITIONS
4. PROVIDE STEEL LINTELS AND INFILL MASONRY AS REQUIRED FOR NEW OPENINGS AND OPENING MODIFICATIONS, SEE STRUCTURAL
5. PROVIDE DOOR SILENCERS AT NEW AND EXISTING DOOR LOCATIONS SCHEDULED
6. FILL AND SAND ANY HOLES IN HOLLOW METAL DOORS AND FRAMES
7. PROVIDE BLANK TRIMS FOR DOORS AS REQUIRED
8. PROVIDE DOOR SIGNAGE IN AREAS OF WORK, REFER TO DETAILS AND SPECIFICATION
9. PROVIDE ADDITIONAL SECONDARY FRAMING AS REQUIRED FOR DOOR LOCATIONS IN PRE-ENGINEERING BUILDINGS
10. PROVIDE ADDITIONAL TRIMS AS REQUIRED TO COVER PEMB FRAMING AT OVERHEAD DOOR LOCATIONS

#EL 05.02
DOORS: 119A

3	HINGES	5BB1 4 1/2 x 4 1/2	652	IV
1	LOCKSET	ND80P RHO 10-025	626	SC
1	ELECTRIC STRIKE	6211	US32D	VO
1	CLOSER	4040XP RWPA	AL	LC
1	WALL STOP	WS406/407CCV	US32D	IV
1	POWER SUPPLY	PS902		VO

* NOTE: CREDENTIAL READER BY DIVISION 28 SUPPLIER.
OPERATION: INGRESS BY CARD READER OR KEY. FREE EGRESS AT ALL TIMES

#EL 07.01
DOORS: 130H, 134E, 140A, 140D

1	CONTINUOUS HINGE	112HD 83" EPT	628	IV
1	EXIT DEVICE	SD-QEL 99NL x 990NL-R&V	US26D	VO
1	RIM CYLINDER	20-022	626	SC
1	MORTISE CYLINDER	20-001 1 1/4"	626	SC
1	CLOSER	4040XP RW62A	AL	LC
1	OVERHEAD STOP	904S	US32D	GL
1	ELECTRIC POWER TRANSFER	EPT 10	SP28	VO
1	POWER SUPPLY	PS902		VO
1	GASKETING	160 VA 1 x 36" 2 x 84"		NA
1	DRIP CAP	16 A 40"		NA
1	DOOR SWEEP	D698 A 36"		NA
1	THRESHOLD	896 V 36"	AL	NA

* NOTE: CREDENTIAL READER BY DIVISION 28 SUPPLIER.
OPERATION: INGRESS BY CARD READER OR KEY. FREE EGRESS AT ALL TIMES

#EL 10.01
DOORS: 101B

1	CONTINUOUS HINGE	112HD 83" EPT	628	IV
1	EXIT DEVICE	QEL 99NL-OP x 110MD-NL	US26D	VO
1	RIM CYLINDER	20-022	626	SC
1	DOOR PULL	8190EZHD-2	US32D316	IV
1	CLOSER	4040XP RWPA	AL	LC
1	WALL STOP	WS406/407CCV	US32D	IV
1	ELECTRIC POWER TRANSFER	EPT 10	SP28	VO
1	POWER SUPPLY	PS902		VO

New Construction Work for :
Porter County Highway Department - Central Facility
1955 IN-2
Valparaiso, IN 46385

PORTER COUNTY Indiana

MARTIN RILEY
architects · engineers

221 West Baker Street
Fort Wayne, Indiana 46802
pho 260.422.7994
fax 260.426.2067

JACK E. DANIEL REGISTERED No. AR01C028 STATE OF INDIANA

REVISION:		DATE:
1	ADDENDUM 1	2024-06-12

DRAWN BY: SAG
REVIEWED BY: ALW
COMMISSION NUMBER: F22146
DATE: 2024-05-24

A510

DOOR SCHEDULE AND DETAILS

F22146 - Porter County Highway
Porter County Highway Dept
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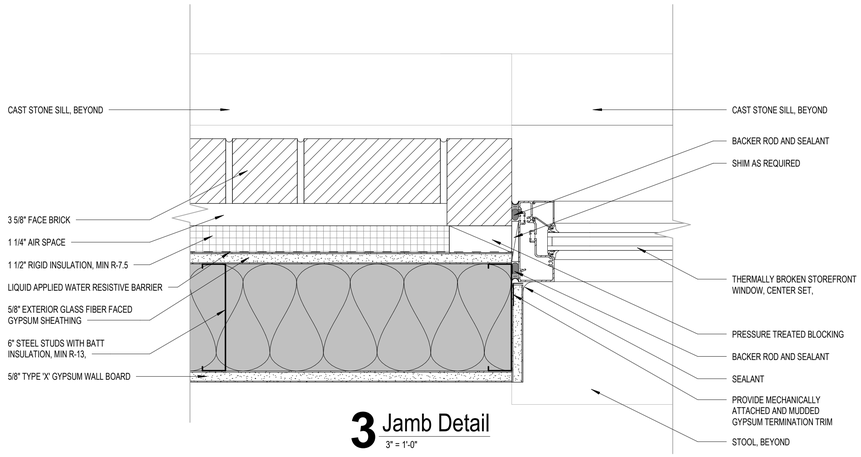
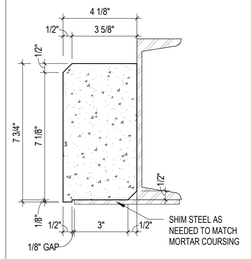
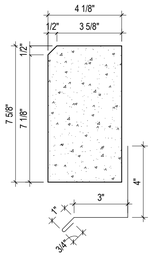
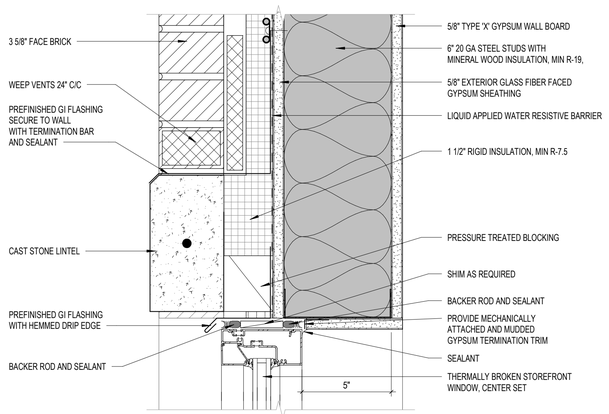
SD/DD/CD



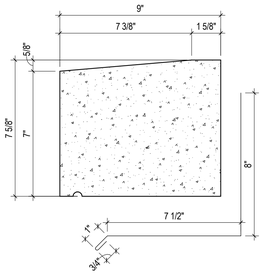
3 Jamb Detail
3" = 1'-0"

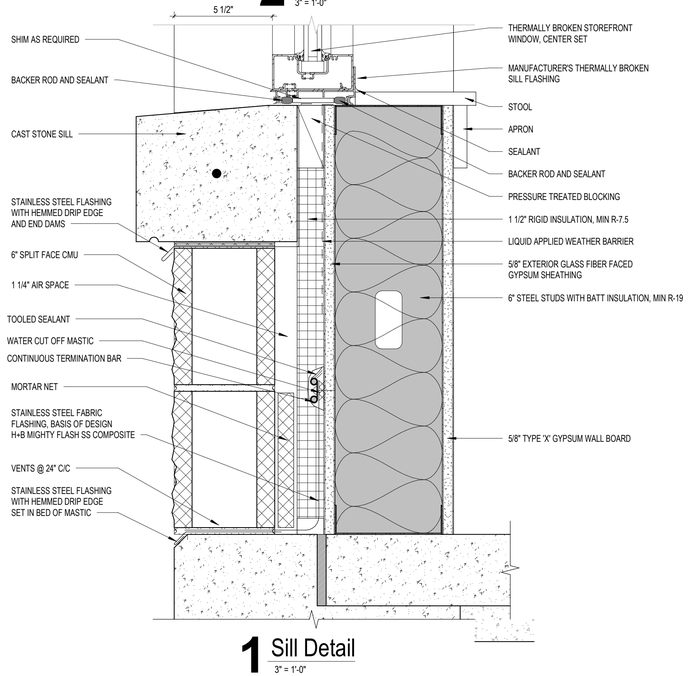






2 Head Detail
3" = 1'-0"





1 Sill Detail
3" = 1'-0"

F22146 - Porter County Highway
Department - Central Facility
5/17/2024 2:33:59 PM
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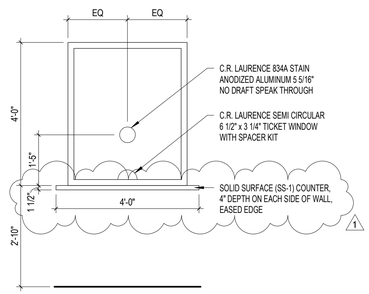
SD/DD/CD

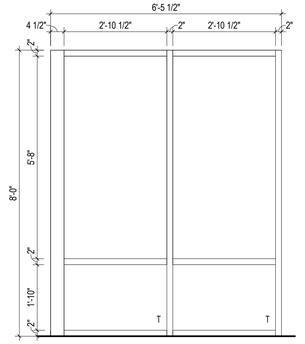
Window Schedule

Mark	Rough Opening Width	Rough Opening Height	Material	Glass	Sill Height	Sill	Jamb	Head	Comments
B	2' - 8"	6' - 0"	AL	1" LOW-E	2' - 0"	1/A520	3/A520	2/A520	
E	2' - 8"	4' - 0"	AL	1"	3' - 4"	1/A521	3/A521	2/A521	
I	3' - 4"	4' - 0"	AL	CLEAR	2' - 10"				

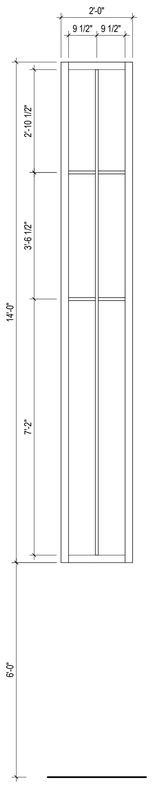
GENERAL NOTES:
1. PROVIDE ANY AND ALL TRIM PIECES AND COMPONENTS REQUIRED FOR WEATHER TIGHT AND AESTHETICALLY COMPLETE WINDOW SYSTEM



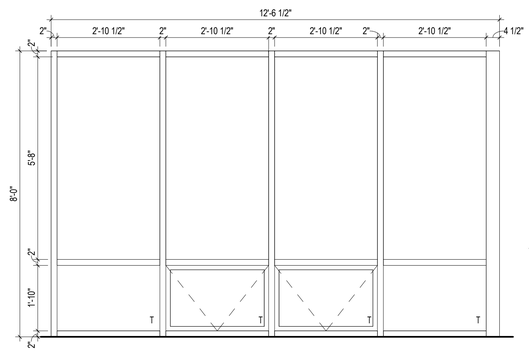
Transaction Window
1/2" = 1'-0"



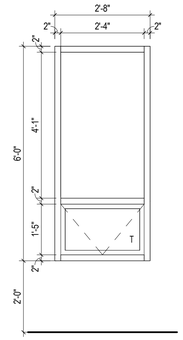
G Storefront
1/2" = 1'-0"



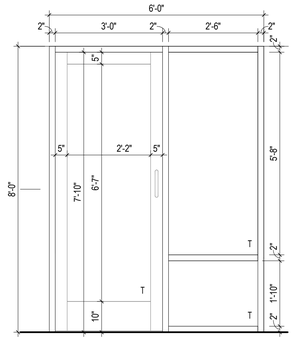
C Translucent Wall System
1/2" = 1'-0"



D Storefront
1/2" = 1'-0"



B Storefront
1/2" = 1'-0"



A Storefront
1/2" = 1'-0"

New Construction Work for :

Porter County Highway Department - Central Facility

1955 IN-2
Valparaiso, IN 46385

PORTER COUNTY Indiana

MARTIN RILEY
architects · engineers

221 West Baker Street
Fort Wayne, Indiana 46802

pho 260.422.7994
fax 260.426.2067

JACK E. DAVIS REGISTERED No. AR910026 STATE OF INDIANA

REVISION:		DATE:
1	ADDENDUM 1	2024-06-12

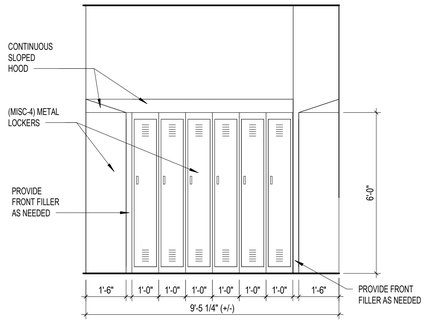
DRAWN BY: SAG
REVIEWED BY: ALW
COMMISSION NUMBER: F22146
DATE: 2024-05-24

A520

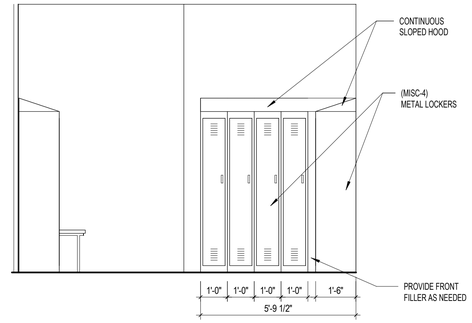
WINDOW SCHEDULE AND DETAILS

Room Finish Schedule

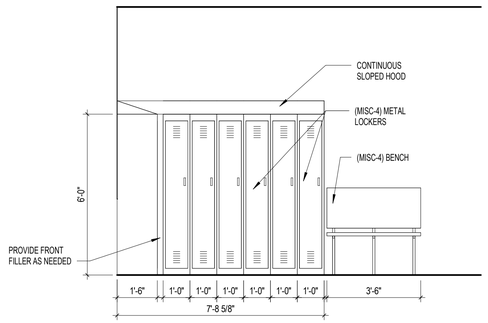
Room Number	Room Name	Floor Finish	Base Finish	Wall Finish				Ceiling Finish	Ceiling Height	Remarks
				North	South	East	West			
101	VESTIBULE	CPT-2	B-1	PNT-3	PNT-2	PNT-2	PNT-2	A-1	10'-0"	
102	CIRCULATION	CPT-1/CPT-2	B-1	PNT-2/PNT-3	PNT-2/PNT-3	PNT-2/PNT-3	PNT-2/PNT-3	A-1	10'-0"	1
103	MAIN OFFICE	CPT-1	B-1	PNT-2	PNT-3	PNT-2	PNT-2	A-1	10'-0"	
104	ASST. SUPERVISOR	CPT-1	B-1	PNT-1	PNT-1	PNT-1	PNT-1	A-1	10'-0"	
105	SUPERVISOR	CPT-1	B-1	PNT-1	PNT-1	PNT-1	PNT-1	A-1	10'-0"	
106	ENG. / PROJECT MANAGER	CPT-1	B-1	PNT-1	PNT-1	PNT-1	PNT-1	A-1	10'-0"	
107	UNISEX RR	R-1	B-1	PNT-2	PNT-2	PNT-2	PNT-2	A-2	10'-0"	
108	UNISEX RR	R-1	B-1	PNT-2	PNT-2	PNT-2	PNT-2	A-2	10'-0"	
109	MECH. FOREMAN	CPT-2	B-1	PNT-1	PNT-1	PNT-1	PNT-1	A-1	10'-0"	
113	MAPS	CPT-1	B-1	PNT-1	PNT-1	PNT-1	PNT-1	A-1	10'-0"	
114	CONFERENCE	CPT-1	B-1	PNT-1	PNT-1	PNT-1	PNT-1	A-1	10'-0"	
115	MECH.	CONC-1	B-1	PNT-1	PNT-1	PNT-1	PNT-1	A-3	TO DECK	
116	LAUNDRY	R-1	B-1	PNT-2	PNT-2	PNT-2	PNT-2	A-2	10'-0"	
117	STORAGE	CONC-1	B-1	PNT-1	PNT-1	PNT-1	PNT-1	A-1	10'-0"	
118	OFFICE SUPPLY	CPT-1	B-1	PNT-1	PNT-1	PNT-1	PNT-1	A-1	10'-0"	
119	IT	CONC-1	B-1	PNT-1	PNT-1	PNT-1	PNT-1	A-1	TO DECK	
120	TRAINING / BREAK ROOM	R-1	B-1	PNT-1	PNT-1	PNT-1	PNT-1	A-1	10'-0"	
121	STORAGE	R-1	B-1	PNT-1	PNT-1	PNT-1	PNT-1	A-1	10'-0"	
122	CIRCULATION	CPT-2/EPXY-1	B-1	PNT-2/PNT-3	PNT-2/PNT-3	PNT-2/PNT-3	PNT-2/PNT-3	A-1	10'-0"	1
123	LOCKER ROOM	EPXY-1	B-1	PNT-2	PNT-2	PNT-2	PNT-2	A-2/A-4	10'-0"	3,5
124	LOCKER ROOM	EPXY-1	B-1	PNT-2	PNT-2	PNT-2	PNT-2	A-2/A-4	10'-0"	3,5
125	FOREMAN	CPT-2	B-1	PNT-2	PNT-2	PNT-2	PNT-2	A-1	10'-0"	
130	MAINTENANCE BAYS	CONC-3	NF	LP	LP	PNT-4/LP	LP	A-3	TO DECK	2
131	FABRICATION	CONC-1	NF	LP	LP	LP	LP	A-3	TO DECK	2
132	PARTS	CONC-3	NF	LP	LP/PNT-4	LP/PNT-4	LP/PNT-4	A-3	TO DECK	2
133	UNISEX RR	CONC-1	B-1	PNT-4	PNT-4	PNT-4	PNT-4	A-3	TO DECK	
134	SIGNAGE	CONC-3	NF	PNT-4/LP	PNT-4/LP	LP	PNT-4/LP	A-3	TO DECK	2
135	OFFICE	CPT-2	B-1	PNT-4	PNT-2	PNT-4	PNT-4	A-1	TO DECK	
136	FLUIDS / AIR COMPRESSOR	CONC-3	NF	PNT-4	PNT-4	PNT-4	PNT-4	A-3	TO DECK	
137	WASH BAY	CONC-2	CONC-2	PNT-6	PNT-6	PNT-6	PNT-6	A-3	TO DECK	4
138	STORAGE	CONC-2	CONC-2	LP	PNT-6	PNT-6	PNT-6	A-3	TO DECK	
139	EQUIPMENT ROOM	CONC-2	NF	LP	PNT-6	LP	PNT-6	A-3	TO DECK	
140	TRUCK PARKING	CONC-3	NF	LP/PNT-4	LP	PNT-4/LP	LP	A-3	TO DECK	2
141	FIRE RISER	CONC-1	NF	PNT-4	PNT-4	PNT-4	PNT-4	A-3	TO DECK	
142	ELECTRICAL	CONC-1	NF	PNT-4	PNT-4	PNT-4	PNT-4	A-3	TO DECK	
150	COLD STORAGE	CONC-3	NF	LP	LP	LP	LP	A-3	TO DECK	2
160	SALT BARN	--	NF	NF	NF	NF	NF	A-3	TO DECK	
201	STORAGE MEZZANINE	CONC-1	NF	LP	--	LP/PNT-4	--	A-3	TO DECK	
202	STORAGE MEZZANINE	CONC-1	NF	--	LP	LP	--	A-3	TO DECK	
203	STORAGE MEZZANINE	CONC-1	NF	--	LP/PNT-4	--	LP/PNT-4	A-3	TO DECK	2
204	MECHANICAL	CONC-1	NF	PNT-4	LP	PNT-4	LP	A-3	TO DECK	
232	STORAGE MEZZANINE	CONC-1	NF	LP	LP	LP	LP	A-3	TO DECK	2



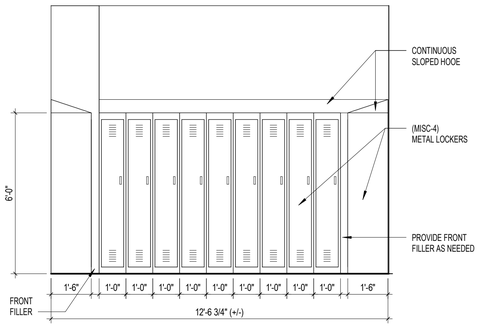
6 Locker 123- East
3/8" = 1'-0"



5 Locker 123- North
3/8" = 1'-0"



4 Locker 123- West
3/8" = 1'-0"



3 Locker 123- South
3/8" = 1'-0"

FINISH SCHEDULE REMARKS

1. REFER TO FINISH PLANS FOR LOCATIONS OF FINISHES.
2. TOUCH UP RUST SPOTS ON PRIMED STEEL.
3. DRYWALL CEILING IN SHOWER ROOM TO BE PAINTED (PNT-7)
4. TOUCH UP PRIMER ON STEEL COLUMNS IN WASH BAY
5. PROVIDE LOCKERS AND ADA BENCH (MISC-4) REFER TO ELEVATIONS ON SHEET A601.

FINISH LEGEND

(A) CEILING

1. ARMSTRONG CEILINGS "FINE FISSURED" HIGH NRC PANELS NO. 1754
   a. DIMENSIONS: 24" x 24" x 7/8"
   b. EDGE/COLOR: SQUARE LAY-IN, WHITE
   c. SUSPENSION SYSTEM/COLOR: 15/16" PRELUDE, WHITE
2. ARMSTRONG CEILINGS "CLEAN ROOM VL" PANELS NO. 869
   a. DIMENSIONS: 24" x 24" x 5/8"
   b. EDGE/COLOR: SQUARE LAY-IN, WHITE
   c. SUSPENSION SYSTEM/COLOR: PRELUDE 15/16", WHITE
3. EXPOSED STRUCTURE. NO FINISH.
4. GYPSUM BOARD, PAINTED (PNT-6)

(B) BASE

1. ROPPE 4" PINNACLE RUBBER COVE BASE
   a. COLOR: TO BE SELECTED
   b. ADHESIVE: MANUFACTURER APPROVED

(CPT) CARPET

1. J&J FLOORING "REFLECTIONS" 1855 KINETIX TILE
   a. DIMENSIONS: 24" x 24" x .205 THICK
   b. COLOR: TO BE SELECTED
   c. INSTALLATION METHOD: QUARTER TURN
   d. ADHESIVE: KINTETEX ADHESIVE
2. J&J FLOORING "CATWALK" WALK-OFF TILE
   a. DIMENSIONS: 24" x 24"
   b. COLOR: TO BE SELECTED
   c. INSTALLATION METHOD: QUARTER TURN
   c. ADHESIVE: MANUFACTURER APPROVED

(CONC) CONCRETE

1. SEALED, CLEAR: SHERWIN WILLIAMS (2) COATS TREAD-PLEX ACRYLIC WATER BASED PRIMER/SEALER, CLEAR (BASIS OF DESIGN)
   a. FINISH: SEMI-GLOSS
2. WASH BAY: SHERWIN WILLIAMS (1) COAT 2-PART PRIMER EPOXY 3447 (1) COAT FASTOP SL45 (1) COAT RESUFLOOR 3741 NOVOLAC EPOXY, HIGH GLOSS (BASIS OF DESIGN)
   a. TOTAL SYSTEM THICKNESS: 1/4"
   b. COLOR: TO BE SELECTED FROM STANDARD COLORS
   c. COVE BASE: 6" INTEGRAL COVE BASE, APPLY SILICONE CAULK AT TOP OF BASE
   d. SLIP RESISTANT FINISH: PROVID GRIT ADDITIVE FOR SLIP RESISTANCE
3. SEALED, CLEAR: SHERWIN WILLIAMS ARMORSEAL (1) 33 EPOXY PRIMER/SEALER (1) COAT ARMORSEAL 100 HS EPOXY, CLEAR (BASIS OF DESIGN)
   a. FINISH: GLOSS

(EXPY) EPOXY FLOORING

1. DUR-A-FLEX "DUR-A-CHIP" EPOXY FLOORING SYSTEM
   a. SYSTEM: TOPCOAT, GROUT COAT, SECOND CHIP BROADCAST, CHIP BROADCAST, AND PRIMER
   b. MACRO CHIP COLOR: MANUFACTURER STANDARD COLOR
   c. FINISH: TEXTURED

(LP) LINER PANEL

(MISC) MISCELLANEOUS

1. PLASTIC LAMINATE CASEWORK
   a. FINISH: (PL-1)
   b. DOOR/DRAWER PULLS: MOCKETT SLENDER BAR PULL #DP252A- 5 3/8" IN SATIN NICKEL FINISH (17S)
   c. TRASH GROMMET: MOCKETT 8" DIA.x 2" DEEP TRASH GROMMET #TM2B, SATIN STAINLELESS STEEL FINISH
2. SCRANTON PRODUCTS "HINY HIDERS" HDPE TOILET PARTITION AND URINAL SCREEN
   a. LAYOUT: FLOOR MOUNTED-OVERHEAD BRACED
   b. COLOR: TESTED IN ACCORDANCE WITH NFPA 286 STANDARD COLOR WITH ORANGE PEEL TEXTURE
3. SWF CONTRACT "CLASSIC 1" ALUMINUM BLINDS"
   a. DIMENSION: CONTRACTOR TO FIELD VERIFY MEASUREMENTS
   b. SLAT THICKNESS: .008" THICK
   c. COLOR: MANUFACTURER STANDARD COLORS
   d. CORD LENGTH: COMPLIANT WITH ANSI WCMA A#10.1-2018 STANDARD FOR CORD LENGTH
4. PENCO "GEN2" SINGLE TIER METAL WELDED LOCKERS
   a. DIMENSIONS: 12"W x 18" D x 72" H
   b. DOOR STYLE: SOLID DOOR WITH MANUF. STANDARD MINI LOUVER
   c. COLOR: TO BE SELECTED FROM MANUFACTURER STANDARD COLORS
   d. TOP: CONTINUOUS SLOPE HOOD
   e. BASE: 4" METAL CHANNEL BASE
   f. LOCK STYLE: MULTI-POINT LATCH WITH PADLOCK
   g. LOCKER QUANTITY: REFER TO FLOOR PLAN. TWO (2) LOCKERS TO BE ADA COMPLIANT. ONE PER LOCKER ROOM.
   h. ADA COMPLIANT FREESTANDING BENCH: (1) PER LOCKER ROOM. 42" WIDE x 24" SEAT DEPTH WITH 18" BENCH BACK. STAINLESS STEEL PEDESTALS WITH RUBBER FEET
5. A&M ADA VANITY BRACKETS
   a. SIZE: BRACKETS FOR 24"D TOP
   b. FINISH: US ADA STAINLESS
   c. PANEL SKIRT: (PL-3) FINISHED W/ SCREWS AND SPRING CLIPS
   d. MOUNTING: PROVIDE BLOCKING IN WALL AND HARDWARE FOR MOUNTING SINK
6. ROPPE FLOORING ACCESSORIES
   a. REDUCERS: CARPET TO CONCRETE
   b. TRANSITIONS: CARPET TO LVT
   b. COLOR: MANUFACTURER STANDARD COLOR
   c. ADHESIVE: MANUFACTURER APPROVED

(MISC) MISCELLANEOUS CONTINUED

7. NOT USED
8. ADA COMPLIANT INTERIOR SIGNAGE
   a. PRODUCT: INPRO CORP "ASPEN COLLECTION"
   b. MATERIAL: NON-GLARE ACRYLIC
   c. TEXT/CHARACTER: TACTILE TEXT WITH RAISED CHARACTERS AND GRADE 2 BRAILLE
   d. FONT: SANS SERIF FONT, ALL CAPS
   e. REFER TO SIGNAGE SCHEDULE ON SHEET
9. CS ACROVYN "SM-20AN" SURFACE MOUNTED CORER GUARD
   a. LEG/PROFILE: 3", 1/4" NOSE RADIUS
   b. LENGTH: 4'-0"
   c. COLOR: TO BE SELECTED FROM MANUF. STANDARD COLORS
10. CRANE COMPOSITES "GLASBORD" FRP PANEL
    a. SIZE: 4' x 8' x 0.09" (EMBOSSED)
    b. COLOR: MANUF. STANDARD COLOR
    c. SEAM TREATMENT: STAINLESS INSIDE CORNER, END CAP TRIM
11. ROPPE RUBBER REDUCER STRIP
    a. PROFILE: FLOORING CONTRACTOR TO VERIFY
    b. COLOR: MANUF. STANDARD COLOR
    c. ADHESIVE: MANUF. RECOMMENDED/APPROVED

(NF) NO FINISH

(PL) HIGH PRESSURE PLASTIC LAMINATE

1. CABINETS: WILSONART VERTICAL GRADE
   a. COLOR: TO BE SELECTED FROM MANUFACTURER'S STANDARD LAMINATES
2. COUNTERTOP: WILSONART POSTFORMING GRADE
   a. COLOR: TO BE SELECTED FROM MANUFACTURER'S STANDARD LAMINATES

(PNT) PAINT

1. OFFICE GYP BD WALLS: SHERWIN WILLIAMS (1) COAT PROMAR 200 ZERO VOC LATEX PRIMER (2) COATS PROMAR 200 ZERO VOC INTERIOR LATEX, EG-SHEL
   a. COLOR: TO BE SELECTED
   b. CMU: PRIMER TO BE (1) COAT LOXON BLOCK SURFACER
2. CORRIDOR/RESTROOM/LOCKER ROOM WALLS (HIGH PERFORMANCE): SHERWIN WILLIAMS (1) COAT PROMAR 200 ZERO VOC LATEX PRIMER (2) COATS PRO INDUSTRIAL PRE-CATALYZED WATERBASED EPOXY, SEMI-GLOSS
   a. COLOR: TO BE SELECTED
   b. CMU: PRIMER TO BE (1) COAT LOXON BLOCK SURFACER
3. ACCENT WALLS (HIGH PERFORMANCE): SHERWIN WILLIAMS (1) COAT PROMAR 200 ZERO VOC LATEX PRIMER (2) COATS PRO INDUSTRIAL PRE-CATALYZED WATERBASED EPOXY, SEMI-GLOSS
   a. COLOR: TO BE SELECTED
   b. CMU: PRIMER TO BE (1) COAT LOXON BLOCK SURFACER
4. WAREHOUSE/MANUF/DISTRIBUTION CMU WALLS (HIGH PERFORMACE): SHERWIN WILLIAMS (1) COAT LOXON BLOCK SURFACER (2) COATS PRO INDUSTRIAL WATER BASED CATALYZED EPOXY , SEMI-GLOSS
   a. COLOR: TO BE SELECTED
5. WASH BAY CMU WALLS: SHERWIN WILLIAMS (1) COAT KEM CATI-COAT HS EPOXY FILLER/SEALER (2) COATS MACROPOXY 646 FAST CURE EPOXY, GLOSS (1) COAT SHER-LOXANE 800 PROTECTIVE COATING, GLOSS
   a. COLOR: TO BE SELECTED
6. DRYWALL CEILING: SHERWIN WILLIAMS (1) COAT PROMAR 200 ZERO VOC PRIMER (2) COATS PROMAR 200 ZERO VOC INTERIOR LATEX, SEMI-GLOSS
   a. COLOR: TO BE SELECTED
7. INTERIOR METAL DOORS/DOOR FRAMES/RAILINGS: SHERWIN WILLIAMS (1) COAT PRO INDUSTRIAL PRO-CRYL UNIVERSAL PRIMER (2) COATS PRO INDUSTRIAL PRE-CATALYZED EPOXY, SEMI-GLOSS
   a. COLOR: TO BE SELECTED
8. TOP 3'-0" OF LADDER: SHERWIN WILLIAMS (1) COAT PRO INDUSTRIAL PRO-CRYL UNIVERSAL PRIME (2) COATS PRO INDUSTRIAL PRE-CATALYZED EPOXY, SEMI-GLOSS
   a. COLOR: SAFETY YELLOW
9. WASH BAY MEZZANINE RAILING AND LADDER: SHERWIN WILLIAMS (1) COAT PRO INDUSTRIAL PRO- CRYL UNIVERSAL PRIMER (2) COATS WATERBASED ACROLON 100 POLYURETHANE, GLOSS
   a. COLOR: TO BE SELECTED
   b. SECTION OF LADDER: SAFETY YELLOW

(R) RESILIENT FLOORING

1. J&J FLOORING "COMPOSITE 3 MM"
   a. DIMENSIONS: 18" x 36" x 3MM THICK
   b. WEAR LAYER: 20 MIL
   c. COLOR: MANUF. STANDARD COLOR
   d. INSTALLATION METHOD: MONOLITHIC
   e. ADHESIVE: MANUFACTURER APPROVED

(SS) SOLID SURFACE

1. COUNTERTOP: CORIAN 1/2" SOLID SURFCE
   a. COLOR: TO BE SELECTED FROM "GROUP 2" COLORS
   b. FINISH: MATTE
2. WINDOW SILL: CORIAN 1/2" SOLID SURFACE
   a. COLOR: TO BE SELECTED FROM "GROUP 2" COLORS
   b. FINISH: MATTE

New Construction Work for :

Porter County Highway Department - Central Facility

1955 IN-2
Valparaiso, IN 46385

PORTER COUNTY Indiana

MARTIN RILEY architects • engineers

221 West Baker Street
Fort Wayne, Indiana 46802

pho 260.422.7994
fax 260.426.2067

JACK E. DANIEL REGISTERED No. AR01C026 STATE OF INDIANA

REVISION:		DATE:
1	ADDENDUM 1	2024-06-12

DRAWN BY: MEK
REVIEWED BY: ALW
COMMISSION NUMBER: F22146
DATE: 2024-05-24

A601

ROOM FINISH SCHEDULE AND INTERIOR ELEVATIONS

F22146 Porter County Highway
Department - Central Facility
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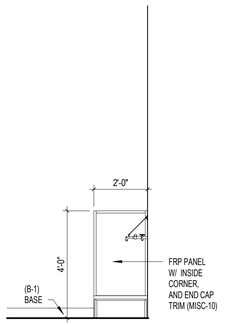
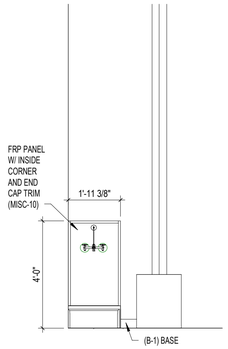


4 Mech 115 Mop Sink -East
3/8" = 1'-0"



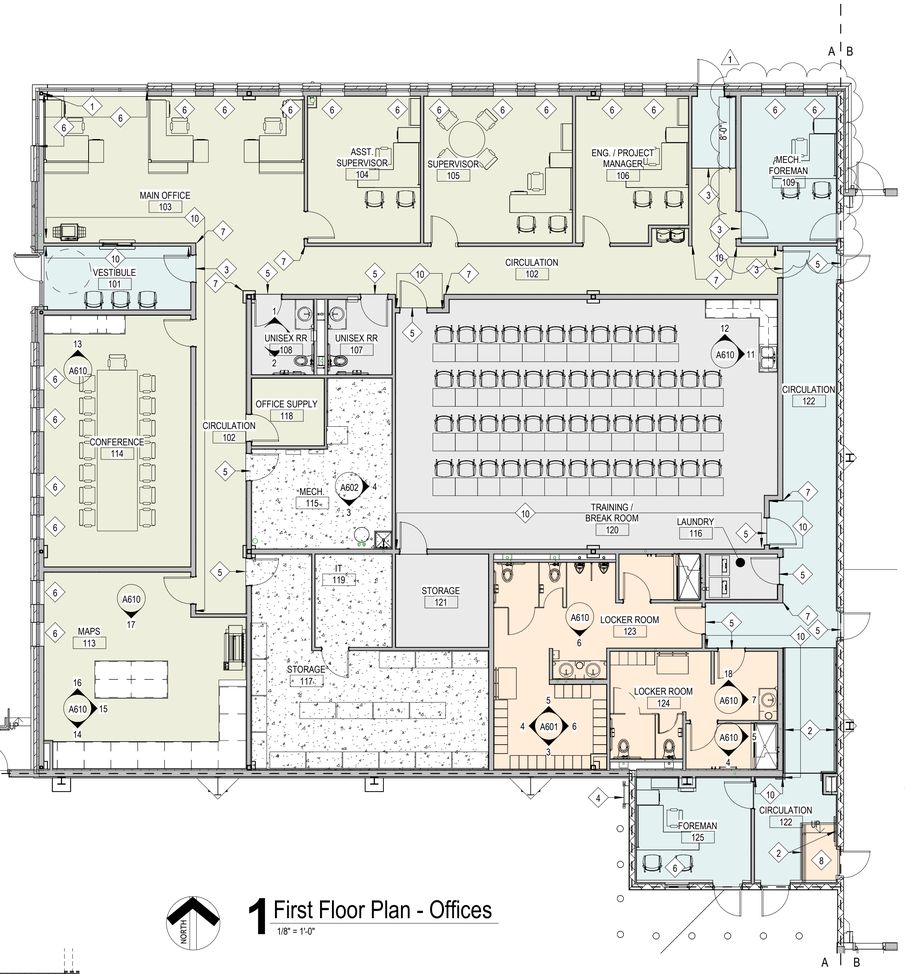
3 Mech 115 Mop Sink-South
3/8" = 1'-0"

Work Description Notes

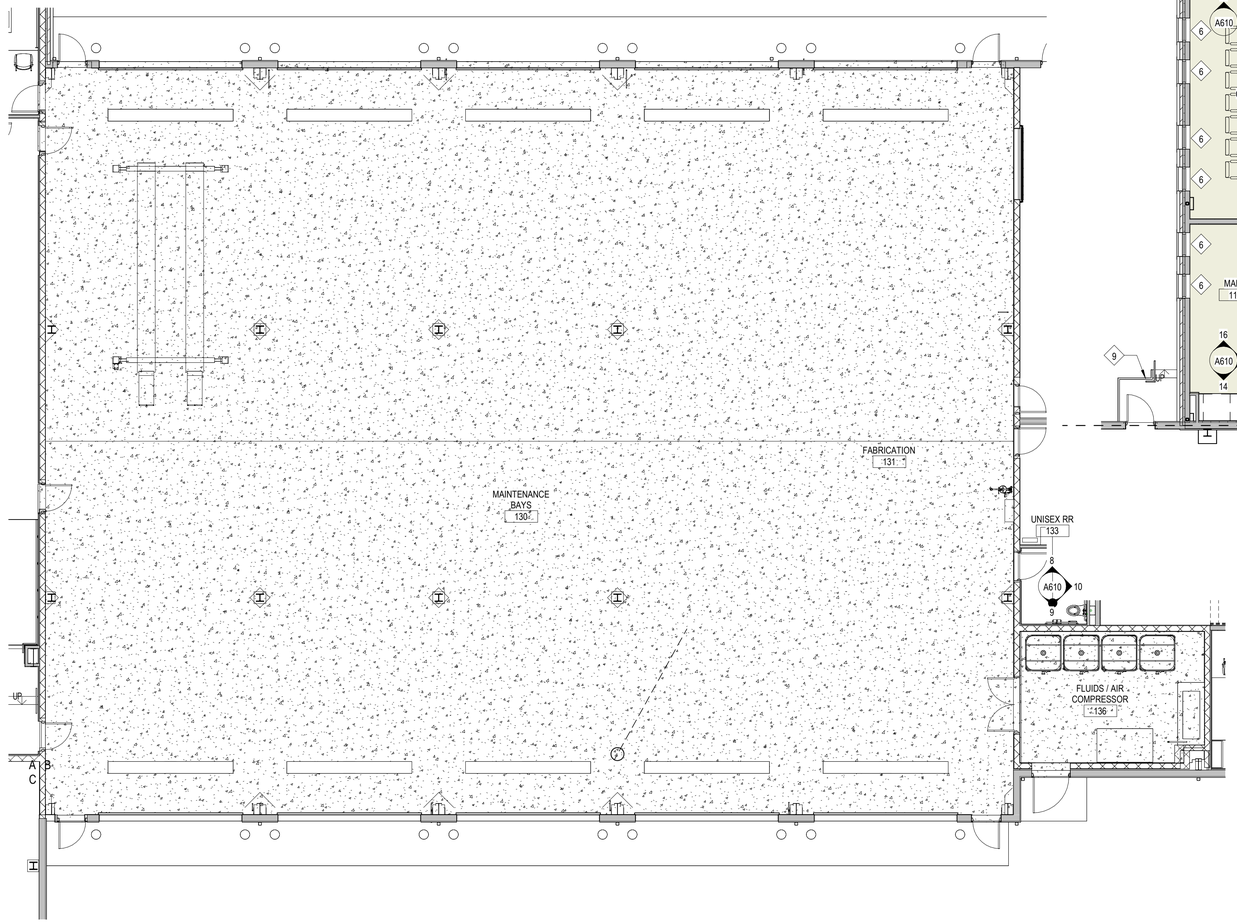
1. PAINT COLUMN (PNT-7)
2. PAINT RAILING (PNT-7)
3. PROVIDE SHEETROCK FIBERGLASS SCRIM OR DUCT TAPE TO BUILD UP LOWER IN HEIGHT FLOOR FINISH SO THAT THE 2 FORMATS ARE FLUSH
4. PAINT MOST OF LADDER (PNT-7). PAINT TOP 3'-0" SECTION OF LADDER SAFETY YELLOW (PNT-8)
5. PROVIDE FLOORING TRANSITION/REDUCER BETWEEN TWO DIFFERENT FLOORING MATERIALS/HEIGHT (MISC-6)
6. PROVIDE WINDOW BLINDS (MISC-3)
7. PROVIDE CORNER GUARD (MISC-9)
8. PREP CONCRETE TO RECIEVE EPOXY FINISH (EPXT-1) ON ENTIRE CONCRETE LANDING AND STEPS
9. PAINT GUARD RAIL. SEE EXTERIOR PAINT SCHEDULE
10. ACCENT WALL (PNT-3)

General Finish Notes

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL OR OTHER GOVERNING BODIES' CODES. ADDITIONALLY, WORK SHALL BE COMPLETED IN ACCORDANCE WITH APPLICABLE INDUSTRY STANDARDS OR GUIDELINES.
2. ALL DIMENSIONS ARE TO THE FACE OF MASONRY, FACE OF EXISTING WALL AND/OR FACE OF NEW FRAMING UNLESS NOTED OTHERWISE.
3. FURNITURE AND OFFICE EQUIPMENT BY OWNER.
4. ALL DRYWALLED WALL SURFACES SHALL BE MADE SMOOTH PRIOR TO RECEIVING PAINTED FINISH.
5. PRIME AND PAINT HOLLOW METAL DOOR FRAMES (PNT-7).
6. FLOOR COVERING TRANSITIONS (MISC-6) SHALL BE CENTERED BELOW DOORS IN THE CLOSED POSITION UNLESS NOTED OTHERWISE.



1 First Floor Plan - Offices
1/8" = 1'-0"

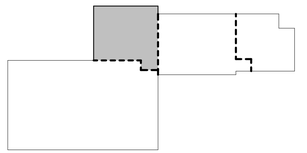


2 Maintenance Facility Floor Plan
1/8" = 1'-0"

Floor Finish Legend

- (CPT-1) KINETIX TILE
- (CPT-2) WALK-OFF TILE
- (EPXY-1) EPOXY FLOORING
- (CONC-1) SEALED CONCRETE
- (R-1) LVT FLOORING

KEY PLAN



New Construction Work for :

Porter County Highway Department - Central Facility

1955 IN-2
Valparaiso, IN 46385

PORTER COUNTY Indiana

MARTIN RILEY architects·engineers

221 West Baker Street
Fort Wayne, Indiana 46802

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fax 260.426.2067

JACK E. DANIEL REGISTERED No. AR01028 STATE OF INDIANA

REVISION:		DATE:
1	ADDENDUM 1	2024-06-12

DRAWN BY:	SAG	REVIEWED BY:	MEK
COMMISSION NUMBER:	F22146	DATE:	2024-05-24

A602

FINISH PLANS

F22146 Porter County Highway
Dept - Central Facility
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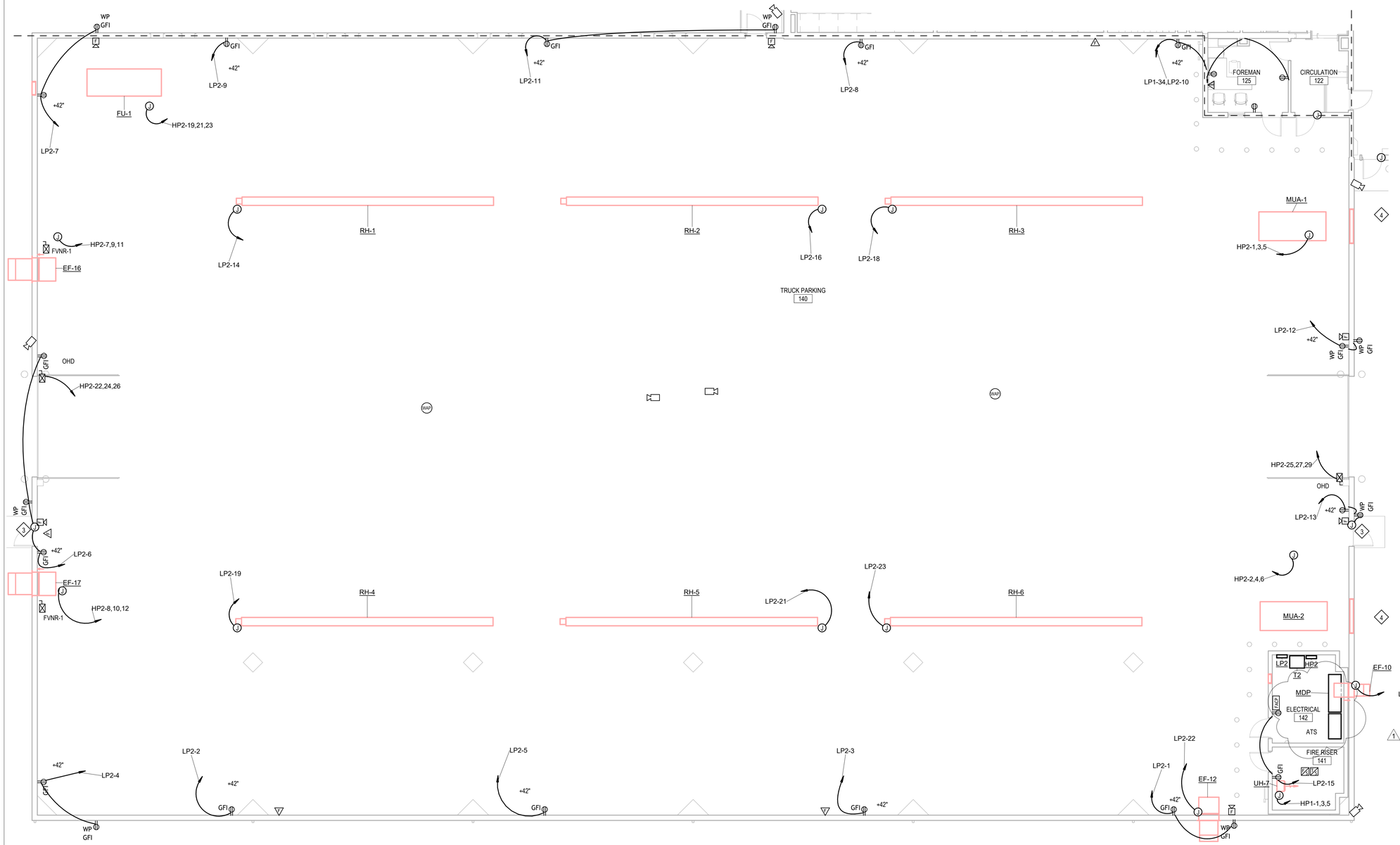
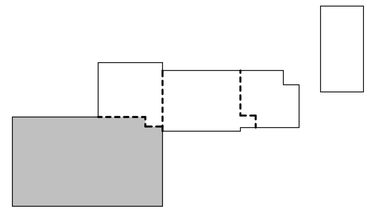


1 Enlarged Truck Parking

1/8" = 1'-0"

Work Description Notes

1. WIRE INDOOR UNIT TO OUTDOOR UNIT WITH 2-#12, 1-#12G IN 3/4"C.
2. CAMERA TO BE LOCATED HERE IF COLD STORAGE BLDG ALTERNATE IS NOT TAKEN
3. POWER FOR DOOR ACCESS; SEE 7/E501 FOR DETAIL
4. RUN 4-#14, 1-#14G IN 3/4"C FORM LOUVER TO STARTER



KEY PLAN

New Construction Work for :

Porter County Highway Department - Central Facility

1955 IN-2
Valparaiso, IN 46385

PORTER COUNTY Indiana

MARTIN RILEY
architects · engineers

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REVISION:		DATE:
1	ADDENDUM 1	2024-06-12

DRAWN BY: RPS
REVIEWED BY: RPS
COMMISSION NUMBER: F22146
DATE: 2024-05-24

E102

ELECTRICAL POWER PLAN

F22146 Porter County Highway
Department - Central Facility
6/12/2024 2:12:49 PM
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Project Status

LIGHTING FIXTURE SCHEDULE

TAG	MFG	MODEL	DESCRIPTION	MAX WATTS	MOUNTED	LUMENS	NOTES	ACCEPTABLE MFG/MODEL	ACCEPTABLE MFG/MODEL	ACCEPTABLE MFG/MODEL
EMA	LITHONIA LIGHTING	ERE W SGL SQ WP	EM REMOTE HEAD	5	UNIVERSAL		WIRE TO EXIT	COOPER	HUBBELL	
EX	LITHONIA LIGHTING	LHQM S W 3 R	HO EXIT SIGN	10	UNIVERSAL			COOPER	HUBBELL	
K				50						
L01	LITHONIA LIGHTING	STAK 2X4 5000LM 40K MIN10 MVOLT	VOLUMETRIC TROFFER	42	RECESSED	5000		COOPER	HUBBELL	
L01E	LITHONIA LIGHTING	S/A L01 W/ EM DRIVER	VOLUMETRIC TROFFER	42	RECESSED	5000		COOPER	HUBBELL	
L02	LITHONIA LIGHTING	STAK 2X4 3000LM 40K MIN10 MVOLT	VOLUMETRIC TROFFER	24	RECESSED	3000		COOPER	HUBBELL	
L02E	LITHONIA LIGHTING	S/A L02 W/ EM DRIVER	VOLUMETRIC TROFFER	24	RECESSED	3000		COOPER	HUBBELL	
L03	LITHONIA LIGHTING	2GT8-3-32-A12125-MVOLT-GEB10IS	LENSED STRIP	50	<varies>					
L03E	LITHONIA LIGHTING	2GT8-3-32-A12125-MVOLT-GEB10IS	LENSED STRIP	50	UNIVERSAL					
L04	LITHONIA LIGHTING	STAK 2X2 3000LM 40K MIN10 MVOLT	VOLUMETRIC TROFFER	24	CHAIN HANG	3000		COOPER	HUBBELL	
L04E	LITHONIA LIGHTING	S/A L04 W/ EM DRIVER	VOLUMETRIC TROFFER	24	RECESSED	3000		COOPER	HUBBELL	
L05	LITHONIA LIGHTING	CPHB 30LM MVOLT 40K	HI BAY	214	CHAIN HANG	30000		COOPER	HUBBELL	
L05E	LITHONIA LIGHTING	S/A L05 W/ EM DRIVER	HI BAY	214	CHAIN HANG	30000		COOPER	HUBBELL	
L06	JUNO	WF6C REG TUWH MW M6	6" WAFER DOWNLIGHT	13	<varies>		<varies>			
L07	LITHONIA LIGHTING	DSXW1LED 20C 700 40K T3M MVOLT PE DDBXD	WALL PACK	65	WALL	5000		COOPER	HUBBELL	
L08	LITHONIA LIGHTING	FHE L48 28000LM FST MD MVOLT 40K 80 CRI WLF	WET RATED HI BAY WRAP	173	CHAIN HANG	28000		COOPER	HUBBELL	
L08E	LITHONIA LIGHTING	FHE L48 28000LM FST MD MVOLT 40K 80 CRI WLF	WET RATED HI BAY WRAP	173	CHAIN HANG	28000		COOPER	HUBBELL	
L09	LITHONIA LIGHTING	DSXW1LED 20C 700 40K T3M MVOLT DDBXD	AREA POLE MOUNT FIXTURE	45	POLE			COOPER	HUBBELL	
L10	LITHONIA LIGHTING	ESXF1 ALO SWW2 KY DDB	LED FLOODLIGHT	20	KNUCKLE/YOKE	3000		COOPER	HUBBELL	
L11	LITHONIA LIGHTING		4FT FIBERGLASS STRIP FIXTURE	30						

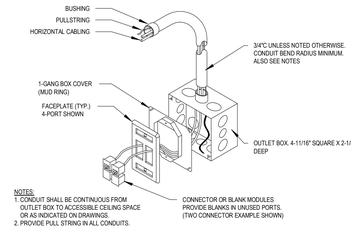
ELECTRICAL - TRANSFORMER SCHEDULE

TAG	MANUFACTURER	KVA	PRIMARY VOLTAGE	SECONDARY VOLTAGE	FED FROM	TEMP (C)	HOUSING	MOUNTING	LOCATION	NOTES
T1	SQUARE D	75	480	120/208	HP1	150	NEMA 1	FLOOR		
T2	SQUARE D	30	480	120/208	HP2	150	NEMA 1	FLOOR		
T3	SQUARE D	75	480	120/208	HP3	150	NEMA 1	FLOOR		
T4	SQUARE D	15	480	120/208	HP4	150	NEMA 1	FLOOR		

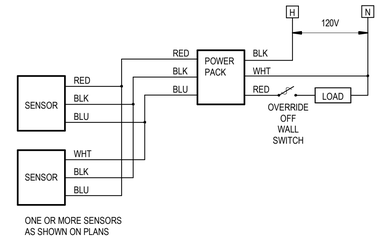
ELECTRICAL MOTOR STARTER SCHEDULE

TAG	MFG.	EQUIP. TYPE	HP	VOLTAGE	PHASE	BYPASS	NOTES
FVNR-1	SQUARE D	FAN	1-1/2	480	3	YES	1, 2, 3, 4, 5
FVNR-2	SQUARE D	FAN	1	480	3	YES	1, 2, 3, 4, 5
FVNR-3	SQUARE D	FAN	7-1/2	480	3	YES	1, 2, 3, 4, 5

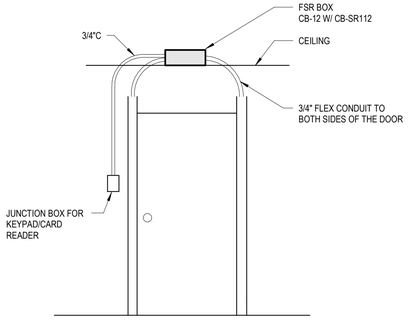
NOTES:
1. HAND/OFF/AUTO CONTROLS
2. INTERLOCKS
3. PILOT LIGHT
4. SOLID STATE OVERLOAD
5. BACNET CAPABLE
* COORDINATE ALL COIL VOLTAGES WITH MECHANICAL CONTRACTOR



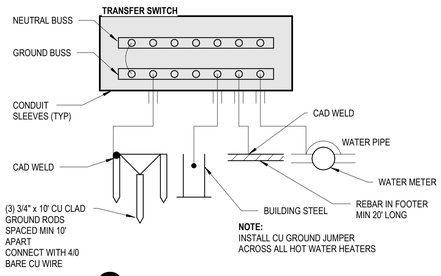
4 Data /Phone Receptacle Detail
NTS



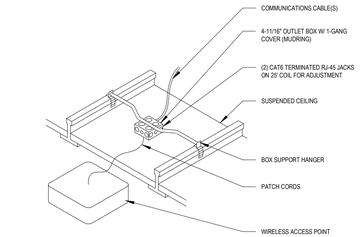
3 Occupancy Sensor Diagram
NTS



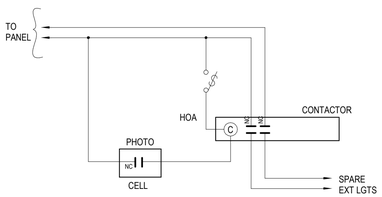
7 Entry Door Detail
NTS



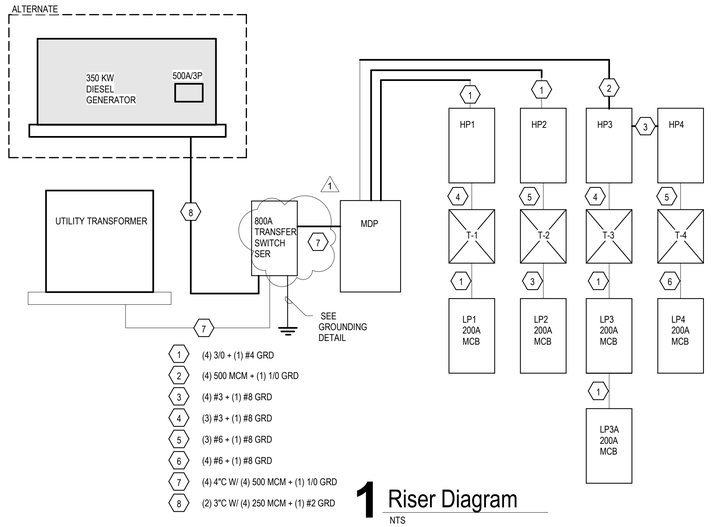
2 MDP Grounding Detail
NTS



6 WAP Equipment Outlet
NTS



5 Exterior Lighting Controls
NTS



1 Riser Diagram
NTS

New Construction Work for :

Porter County Highway Department - Central Facility

1955 IN-2
Valparaiso, IN 46385

PORTER COUNTY Indiana

MARTIN RILEY architects · engineers

221 West Baker Street
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pho 260.422.7994
fax 260.426.2067

REVISION:		DATE:
1	ADDENDUM 1	2024-06-12

DRAWN BY: VRK
REVIEWED BY: RPS
COMMISSION NUMBER: F22146
DATE: 2024-05-24

E501

ELECTRICAL SCHEDULES & DETAILS

F22146 Porter County Highway Department - Central Facility
6/12/2024 2:12:22 PM
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Project Status

PANEL: MDP

AMPS	PHASE	WIRE	VOLTAGE	MOUNTING	MAIN	REMARKS:
800 A	3	4	480/277 WYE	SURFACE	800 A	NEMA 1, BOLT ON BREAKERS, 65 KAIC, MCB

DESCRIPTION	Circuit Number	TRIP	POLE	PHASE A (kVA)		PHASE B (kVA)		PHASE C (kVA)		POLE	TRIP	Circuit Number	DESCRIPTION
HP1	MDP-1	200 A	3	5.75	4.91					3	200 A	MDP-2	HP2
--	MDP-3	--	--			6.01	4.77			--	--	MDP-4	--
--	MDP-5	--	--					1.98	2.91	--	--	MDP-6	--
HP3	MDP-7	400 A	3	11....	0.00					3	250 A	MDP-8	WH-3
--	MDP-9	--	--			9.12	0.00			--	--	MDP-10	--
--	MDP-11	--	--					11.43	0.00	--	--	MDP-12	--
HP4	MDP-13	100 A	3	0.00								MDP-14	
--	MDP-15	--	--			0.00						MDP-16	
--	MDP-17	--	--					0.00				MDP-18	
	MDP-19											MDP-20	
	MDP-21											MDP-22	
	MDP-23											MDP-24	
	MDP-25											MDP-26	
	MDP-27											MDP-28	
	MDP-29											MDP-30	

PANEL: LP3A

AMPS	PHASE	WIRE	VOLTAGE	MOUNTING	MAIN	REMARKS:
100 A	3	4	120/208 WYE	SURFACE	100 A	NEMA 1, BOLT ON BREAKERS, 10 KAIC, MCB

DESCRIPTION	Circuit Number	TRIP	POLE	PHASE A (kVA)		PHASE B (kVA)		PHASE C (kVA)		POLE	TRIP	Circuit Number	DESCRIPTION
FUEL ISLAND POWER	LP3A-1	20 A	1	0.50	0.50					1	20 A	LP3A-2	FUEL ISLAND POWER
FUEL ISLAND POWER	LP3A-3	20 A	1			0.50	0.50			1	20 A	LP3A-4	FUEL ISLAND POWER
SALT BARN POWER	LP3A-5	20 A	1					0.18				LP3A-6	
	LP3A-7											LP3A-8	
	LP3A-9											LP3A-10	
	LP3A-11											LP3A-12	
	LP3A-13											LP3A-14	
	LP3A-15											LP3A-16	
	LP3A-17											LP3A-18	
	LP3A-19											LP3A-20	
	LP3A-21											LP3A-22	
	LP3A-23											LP3A-24	
	LP3A-25											LP3A-26	
	LP3A-27											LP3A-28	
	LP3A-29											LP3A-30	

PANEL: LP3

AMPS	PHASE	WIRE	VOLTAGE	MOUNTING	MAIN	REMARKS:
200 A	3	4	120/208 WYE	SURFACE	200 A	NEMA 1, BOLT ON BREAKERS, 10 KAIC, MCB

DESCRIPTION	Circuit Number	TRIP	POLE	A		B		C		POLE	TRIP	Circuit Number	DESCRIPTION
	LP3-1											LP3-2	
	LP3-3											LP3-4	
	LP3-5											LP3-6	
	LP3-7											LP3-8	
	LP3-9					0.00				1	20 A	LP3-10	RH
	LP3-11							0.00	1	20 A	LP3-12	RH	
RH	LP3-13	20 A	1	0.00	0.00					1	20 A	LP3-14	RH
RH	LP3-15	20 A	1			0.00	0.00			1	20 A	LP3-16	RH
RH	LP3-17	20 A	1					0.00	0.00	1	20 A	LP3-18	RH
MAINT RECEPT	LP3-19	20 A	1	0.36	0.18					1	20 A	LP3-20	MAINT RECEPT
MAINT RECEPT	LP3-21	20 A	1			0.18	0.18			1	20 A	LP3-22	MAINT RECEPT
MAINT RECEPT	LP3-23	20 A	1					0.54	0.18	1	20 A	LP3-24	MAU-1
MAINT RECEPT	LP3-25	20 A	1	0.36	0.36					1	20 A	LP3-26	MAINT RECEPT
MAINT RECEPT	LP3-27	20 A	1			0.18	0.18			1	20 A	LP3-28	MAINT RECEPT
MAINT RECEPT	LP3-29	20 A	1					0.18	0.18	1	20 A	LP3-30	MAINT RECEPT
MAINT RECEPT	LP3-31	20 A	1	0.36	0.36					1	20 A	LP3-32	MAINT RECEPT
MAINT RECEPT	LP3-33	20 A	1			0.36	0.36			1	20 A	LP3-34	MAINT RECEPT
MAINT RECEPT	LP3-35	20 A	1					0.36	0.36	1	20 A	LP3-36	MAINT RECEPT
FLUIDS RECEPT	LP3-37	20 A	1	0.36	0.36					1	20 A	LP3-38	PARTS RECEPT
PARTS RECEPT	LP3-39	20 A	1			1.08	0.54			1	20 A	LP3-40	SIGNS OFFICE RECPTS
PARTS ROLL DOOR	LP3-41	20 A	1					0.00	0.00	1	20 A	LP3-42	UH-3
CH	LP3-43	20 A	1	0.00	0.36					1	20 A	LP3-44	SIGNAGE RECEPT
RR RECEPT	LP3-45	20 A	1			0.18	0.36			1	20 A	LP3-46	SIGNAGE RECEPT
EF-7,8	LP3-47	20 A	1					0.00				LP3-48	
WH-2	LP3-49	20 A	1	0.00	0.00					2	20 A	LP3-50	AIR COMP
UH-2	LP3-51	20 A	1			0.00	0.00			--	--	LP3-52	--
MAPS RECEPTS	LP3-53	20 A	1					0.18	0.00	2	15 A	LP3-54	PTHP
SIGNAGE RECEPT	LP3-55	20 A	1	0.72	0.00					--	--	LP3-56	--
SIGNAGE RECEPT	LP3-57	20 A	1			0.72	0.72			1	20 A	LP3-58	SIGNAGE RECEPT
SIGNAGE RECEPT	LP3-59	20 A	1					0.72	0.54	1	20 A	LP3-60	WASH BAY RECEPT
RH	LP3-61	20 A	1	0.00	0.36					1	20 A	LP3-62	WASH BAY RECEPT
UH-5	LP3-63	20 A	1			0.00						LP3-64	
Spare	LP3-65	20 A	1					0.00	0.00	1	20 A	LP3-66	Spare
Spare	LP3-67	20 A	1	0.00	0.00					1	20 A	LP3-68	Spare
Spare	LP3-69	20 A	1			0.00	0.00			1	20 A	LP3-70	Spare
Spare	LP3-71	20 A	1					0.00	0.00	1	20 A	LP3-72	Spare
UH-4	LP3-73	20 A	1	0.00	0.00					1	20 A	LP3-74	EF-13
LIGHTS	LP3-75	20 A	1			0.09	1.00			1	20 A	LP3-76	IT RACK
EF-9	LP3-77	20 A	1					0.00	1.00	3	10...	LP3-78	LP3A, 120 V/208 V, Thre...
LIFT POWER	LP3-79	20 A	2	0.00	1.00					--	--	LP3-80	--
--	LP3-81	--	--			0.00	0.18			--	--	LP3-82	--
	LP3-83											LP3-84	

PANEL: LP4

AMPS	PHASE	WIRE	VOLTAGE	MOUNTING	MAIN	REMARKS:
100 A	3	4	120/208 WYE	SURFACE	60 A	NEMA 1, BOLT ON BREAKERS, 10 KAIC, MCB

DESCRIPTION	Circuit Number	TRIP	POLE	PHASE A (kVA)		PHASE B (kVA)		PHASE C (kVA)		POLE	TRIP	Circuit Number	DESCRIPTION
STORAGE RECEPT	LP4-1	20 A	1	0.36								LP4-2	
STORAGE RECEPT	LP4-3	20 A	1			0.36						LP4-4	
Power	LP4-5	20 A	1					0.36				LP4-6	
	LP4-7											LP4-8	
	LP4-9											LP4-10	
	LP4-11											LP4-12	
	LP4-13											LP4-14	
	LP4-15											LP4-16	
	LP4-17											LP4-18	
	LP4-19											LP4-20	
	LP4-21											LP4-22	
Spare	LP4-23	20 A	1					0.00	0.00	1	20 A	LP4-24	Spare
Spare	LP4-25	20 A	1	0.00	0.00					1	20 A	LP4-26	Spare
Spare	LP4-27	20 A	1			0.00	0.00			1	20 A	LP4-28	Spare
Spare	LP4-29	20 A	1					0.00	0.00	1	20 A	LP4-30	Spare

PANEL: LP2

AMPS	PHASE	WIRE	VOLTAGE	MOUNTING	MAIN	REMARKS:
100 A	3	4	120/208 WYE	SURFACE	100 A	NEMA 1, BOLT ON BREAKERS, 10 KAIC, MCB

DESCRIPTION	Circuit Number	TRIP	POLE	PHASE A (kVA)		PHASE B (kVA)		PHASE C (kVA)		POLE	TRIP	Circuit Number	DESCRIPTION
TRUCK PARKING RECPT	LP2-1	20 A	1	0.36	0.18					1	20 A	LP2-2	TRUCK PARKING RECPT
TRUCK PARKING RECPT	LP2-3	20 A	1			0.18	0.36			1	20 A	LP2-4	TRUCK PARKING RECPT
TRUCK PARKING RECPT	LP2-5	20 A	1					0.18	0.54	1	20 A	LP2-6	TRUCK PARKING RECPT
TRUCK PARKING RECPT	LP2-7	20 A	1	0.36	0.18					1	20 A	LP2-8	TRUCK PARKING RECPT
TRUCK PARKING RECPT	LP2-9	20 A	1			0.18	0.18			1	20 A	LP2-10	TRUCK PARKING RECPT
TRUCK PARKING RECPT	LP2-11	20 A	1					0.36	0.36	1	20 A	LP2-12	TRUCK PARKING RECPT
TRUCK PARKING RECPT	LP2-13	20 A	1	0.36	0.00					1	20 A	LP2-14	RH
ELEC RM & SPRINKLER RM...	LP2-15	20 A	1			0.00	0.00			1	20 A	LP2-16	RH
	LP2-17							0.00		1	20 A	LP2-18	RH
RH	LP2-19	20 A	1	0.00	0.00					1	20 A	LP2-20	EF
RH	LP2-21	20 A	1			0.00	0.00			1	20 A	LP2-22	EF
RH	LP2-23	20 A	1					0.00				LP2-24	
	LP2-25											LP2-26	
Spare	LP2-27	20 A	1			0.00	0.00			1	20 A	LP2-28	Spare
Spare	LP2-29	20 A	1					0.00	0.00	1	20 A	LP2-30	Spare

PANEL: LP1

AMPS	PHASE	WIRE	VOLTAGE	MOUNTING	MAIN	REMARKS:
200 A	3	4	120/208 WYE	SURFACE	200 A	NEMA 1, BOLT ON BREAKERS, 10 KAIC, MCB

DESCRIPTION	Circuit Number	TRIP	POLE	A		B		C		POLE	TRIP	Circuit Number	DESCRIPTION
MAIN OFF RECEPT	LP1-1	20 A	1	0.36	0.72					1	20 A	LP1-2	SUPER RECEPT
MAIN OFF RECEPT	LP1-3	20 A	1			0.36	0.72			1	20 A	LP1-4	ENG RECEPT
ASST SUPER RECEPT	LP1-5	20 A	1					0.72	0.90	1	20 A	LP1-6	HALLWAY RECEPT
FOREMAN RECEPT	LP1-7	20 A	1	0.54	0.54					1	20 A	LP1-8	CONFERENCE RECEPT
VESTIBULE RECEPT	LP1-9	20 A	1			0.18	0.36			1	20 A	LP1-10	RR RECEPT
CONFERENCE RECEPT	LP1-11	20 A	1					0.36	0.18	1	20 A	LP1-12	MECH/STORAGE RECEPT
MAPS RECEPTS	LP1-13	20 A	1	0.36	0.54					1	20 A	LP1-14	STORAGE RECEPT
WH-1	LP1-15	20 A	1			0.00	0.36			1	20 A	LP1-16	IT RECEPT
CIRC PUMP	LP1-17	20 A	1					0.18	0.18	1	20 A	LP1-18	IT RECEPT
TRAINING RECEPT	LP1-19	20 A	1	0.36	0.36					1	20 A	LP1-20	TRAINING RECEPT
TRAINING RECEPT	LP1-21	20 A	1			0.54	0.18			1	20 A	LP1-22	TRAINING DISHWASHER
TRAINING RECEPT	LP1-23	20 A	1					0.36	0.18	1	20 A	LP1-24	TRAINING RECEPT
TRAINING RECEPT	LP1-25	20 A	1	0.54	1.25					2	30 A	LP1-26	DRYER
WASHER	LP1-27	20 A	1			0.18	1.25			--	--	LP1-28	--
DRYER	LP1-29	30 A	2					1.25	0.18	1	20 A	LP1-30	WASHER
--	LP1-31	--	--	1.25	0.18					1	20 A	LP1-32	LOCKER RM RECEPT
LOCKER RM RECEPT	LP1-33	20 A	1			0.54	0.72			1	20 A	LP1-34	FOREMAN RECEPT
Spare	LP1-35	20 A	1					0.00	0.00	1	20 A	LP1-36	Spare
Spare	LP1-37	20 A	1	0.00	0.00					1	20 A	LP1-38	Spare
Spare	LP1-39	20 A	1			0.00	0.00			1	20 A	LP1-40	Spare
Spare	LP1-41	20 A	1					0.00	0.00	1	20 A	LP1-42	Spare
HALLWAY RECEPT	LP1-43	20 A	1	0.54	0.36					1	20 A	LP1-44	DRINKING FOUNTAINS
MS-1	LP1-45	20 A	2			0.50	0.18			1	20 A	LP1-46	ROOF RECEPT
--	LP1-47	--	--					0.00	0.50	1	20 A	LP1-48	EF-4
EF-15	LP1-49	30 A	1	0.50								LP1-50	
EF-14	LP1-51	30 A	1			0.50						LP1-52	
	LP1-53											LP1-54	
	LP1-55											LP1-56	
	LP1-57											LP1-58	
	LP1-59											LP1-60	

PANEL: HP4

AMPS	PHASE	WIRE	VOLTAGE	MOUNTING	MAIN	REMARKS:
100 A	3	4	480/277 WYE	SURFACE	100 A	NEMA 1, BOLT ON BREAKERS, 18 KAIC, MLO

DESCRIPTION	Circuit Number	TRIP	POLE	PHASE A (kVA)		PHASE B (kVA)		PHASE C (kVA)		POLE	TRIP	Circuit Number	DESCRIPTION
STORAGE LGTS	HP4-1	20 A	1	1.76	0.00					3	20 A	HP4-2	TRANS T4
STORAGE EXT LGTS	HP4-3	20 A	1			0.20	0.00			--	--	HP4-4	--
	HP4-5							0.00		--	--	HP4-6	--
	HP4-7											HP4-8	
	HP4-9											HP4-10	
	HP4-11											HP4-12	
	HP4-13											HP4-14	
	HP4-15											HP4-16	
	HP4-17											HP4-18	
	HP4-19											HP4-20	
	HP4-21											HP4-22	
Spare	HP4-23	20 A	1					0.00	0.00	1	20 A	HP4-24	Spare
Spare	HP4-25	20 A	1	0.00	0.00					1	20 A	HP4-26	Spare
Spare	HP4-27	20 A	1			0.00	0.00			1	20 A	HP4-28	Spare
Spare	HP4-29	20 A	1					0.00	0.00	1	20 A	HP4-30	Spare

PANEL: HP3

AMPS	PHASE	WIRE	VOLTAGE	MOUNTING	MAIN	REMARKS:
400 A	3	4	480/277 WYE	SURFACE	1 A	NEMA 1, BOLT ON BREAKERS, 18 KAIC, MLO

DESCRIPTION	Circuit Number	TRIP	POLE	A		B		C		POLE	TRIP	Circuit Number	DESCRIPTION
EF-7	HP3-1	20 A	3	0.00	2.17					1	20 A	HP3-2	MAINTENANCE LGTS
--	HP3-3	--	--			0.00	1.07			1	20 A	HP3-4	MAINTENANCE LGTS
--	HP3-5	--	--					0.00	2.17	1	20 A	HP3-6	MAINTENANCE LGTS
POWER WASHER	HP3-7	20 A	3	0.00	0.82					1	20 A	HP3-8	PARTS LGTS
--	HP3-9	--	--			0.00	0.46			1	20 A	HP3-10	EXT LIGHTS
--	HP3-11	--	--					0.00	2.06	1	20 A	HP3-12	SIGN, FLUIDS, OFFICE LGTS
EF-8	HP3-13	20 A	3	0.00	0.00					3	20 A	HP3-14	UH-1
--	HP3-15	--	--			0.00	0.00			--	--	HP3-16	--
--	HP3-17	--	--					0.00	0.00	--	--	HP3-18	--
UH-6	HP3-19	20 A	3	0.00	0.00					3	20 A	HP3-20	BRIDGE CRANE
--	HP3-21	--	--			0.00	0.00			--	--	HP3-22	--
--	HP3-23	--	--					0.00	0.00	--	--	HP3-24	--
JIB CRANE	HP3-25	20 A	3	0.00	1.15					1	20 A	HP3-26	WASH BAY LGTS
--	HP3-27	--	--			0.00	0.30			1	20 A	HP3-28	STORAGE, MECH LGTS
--	HP3-29	--	--					0.00	0.00	3	25 A	HP3-30	MUA-3
	HP3-31				0.00					--	--	HP3-32	--
LIGHTS	HP3-33	20 A	1			0.10	0.00			--	--	HP3-34	--
	HP3-35							0.00	3	90 A	HP3-36	TRANS T3	
	HP3-37				0.00					--	--	HP3-38	--
Spare	HP3-39	20 A	1			0.00	0.00			--	--	HP3-40	--
Spare	HP3-41	20 A	1					0.00	0.60	3	20 A	HP3-42	OHD
OHD	HP3-43	20 A	3	0.60	0.60					--	--	HP3-44	--
--	HP3-45	--	--			0.60	0.60			--	--	HP3-46	--
--	HP3-47	--	--					0.60	0.60	3	20 A	HP3-48	OHD
OHD	HP3-49	20 A	3	0.60	0.60					--	--	HP3-50	--
--	HP3-51	--	--			0.60	0.60			--	--	HP3-52	--
--	HP3-53	--	--					0.60	0.60	3	20 A	HP3-54	OHD
OHD	HP3-55	20 A	3	0.60	0.60					--	--	HP3-56	--
--	HP3-57	--	--			0.60	0.60			--	--	HP3-58	--
--	HP3-59	--	--					0.60	0.60	3	20 A	HP3-60	OHD
OHD	HP3-61	20 A	3	0.60	0.60					--	--	HP3-62	--
--	HP3-63	--	--			0.60	0.60			--	--	HP3-64	--
--	HP3-65	--	--					0.60	0.60	3	20 A	HP3-66	OHD
OHD	HP3-67	20 A	3	0.60	0.60					--	--	HP3-68	--
--	HP3-69	--	--			0.60	0.60			--	--	HP3-70	--
--	HP3-71	--	--					0.60	0.60	3	20 A	HP3-72	OHD
OHD	HP3-73	20 A	3	0.60	0.60					--	--	HP3-74	--
--	HP3-75	--	--			0.60	0.60			--	--	HP3-76	--
--	HP3-77	--	--					0.60				HP3-78	
	HP3-79											HP3-80	

PANEL: HP2

AMPS	PHASE	WIRE	VOLTAGE	MOUNTING	MAIN	REMARKS:
200 A	3	4	480/277 WYE	SURFACE	200 A	NEMA 1, BOLT ON BREAKERS, 18 KAIC, MLO

DESCRIPTION	Circuit Number	TRIP	POLE	PHASE A (kVA)		PHASE B (kVA)		PHASE C (kVA)		POLE	TRIP	Circuit Number	DESCRIPTION
MUA-1	HP2-1	20 A	3	0.00	0.00					3	20 A	HP2-2	MAU-2
--	HP2-3	--	--			0.00	0.00			--	--	HP2-4	--
--	HP2-5	--	--					0.00	0.00	--	--	HP2-6	--
EF-13	HP2-7	20 A	3	0.00	0.00					3	20 A	HP2-8	EF-14
--	HP2-9	--	--			0.00	0.00			--	--	HP2-10	--
--	HP2-11	--	--					0.00	0.00	--	--	HP2-12	--
TRUCK PARK LGTS	HP2-13	20 A	1	1.51	1.74					1	20 A	HP2-14	TRUCK PARK LGTS
TRUCK PARK LGTS	HP2-15	20 A	1			1.71	1.86			1	20 A	HP2-16	TRUCK PARK LGTS
TRUCK PARK LGTS	HP2-17	20 A	1					1.71				HP2-18	
FU-1	HP2-19	20 A	3	0.00	0.46					1	20 A	HP2-20	EXT LIGHTS
--	HP2-21	--	--			0.00	0.60			3	20 A	HP2-22	OHD
--	HP2-23	--	--					0.00	0.60	--	--	HP2-24	--
OHD	HP2-25	20 A	3	0.60	0.60					--	--	HP2-26	--
--	HP2-27	--	--		0.60							HP2-28	
--	HP2-29	--	--				0.60	0.00	3	50 A	HP2-30	TRANS T2	
	HP2-31				0.00					--	--	HP2-32	--
	HP2-33						0.00			--	--	HP2-34	--
Spare	HP2-35	20 A	1					0.00	0.00	1	20 A	HP2-36	Spare
Spare	HP2-37	20 A	1	0.00	0.00					1	20 A	HP2-38	Spare
Spare	HP2-39	20 A	1			0.00	0.00			1	20 A	HP2-40	Spare
Spare	HP2-41	20 A	1					0.00	0.00	1	20 A	HP2-42	Spare

PANEL: HP1

AMPS	PHASE	WIRE	VOLTAGE	MOUNTING	MAIN	REMARKS:
200 A	3	4	480/277 WYE	SURFACE	200 A	NEMA 1, BOLT ON BREAKERS, 18 KAIC, MLO

DESCRIPTION	Circuit Number	TRIP	POLE	PHASE A (kVA)		PHASE B (kVA)		PHASE C (kVA)		POLE	TRIP	Circuit Number	DESCRIPTION
UH-7	HP1-1	20 A	3	0.00	3.00					1	15 A	HP1-2	VAV-1
--	HP1-3	--	--			0.00	2.00			1	15 A	HP1-4	VAV-2
--	HP1-5	--	--					0.00	0.00	1	15 A	HP1-6	VAV-4
	HP1-7				1.50					1	15 A	HP1-8	VAV-7
VAV-5	HP1-9	15 A	1			2.00	0.84			1	20 A	HP1-10	LIGHTS
VAV-6	HP1-11	15 A	1					1.00	0.50	1	20 A	HP1-12	HALL LIGHTS
LIGHTS	HP1-13	20 A	1	1.25	0.00					3	20 A	HP1-14	VAV -3
LIGHTS	HP1-15	20 A	1			1.17	0.00			--	--	HP1-16	--
RTU-1	HP1-17	60 A	3					0.50	0.00	--	--	HP1-18	--
--	HP1-19	--	--	0.00								HP1-20	
--	HP1-21	--	--			0.00						HP1-22	
Spare	HP1-23	20 A	1					0.00				HP1-24	
Spare	HP1-25	20 A	1	0.00	0.00					3	90 A	HP1-26	TRANS T1
Spare	HP1-27	20 A	1			0.00	0.00			--	--	HP1-28	--
Spare	HP1-29	20 A	1					0.00	0.00	--	--	HP1-30	--

New Construction Work for :
Porter County Highway Department - Central Facility
1955 IN-2
Valparaiso, IN 46385

PORTER COUNTY Indiana

MARTIN RILEY architects • engineers
221 West Baker Street pho 260.422.7994
Fort Wayne, Indiana 46802 fax 260.426.2067

REVISION:		DATE:
1	ADDENDUM 1	2024-06-12

DRAWN BY: VRK
REVIEWED BY: RPS
COMMISSION NUMBER: F22146
DATE: 2024-05-24

E502

ELECTRICAL SCHEDULES & DETAILS

F22146 - Porter County Highway Department - Central Facility
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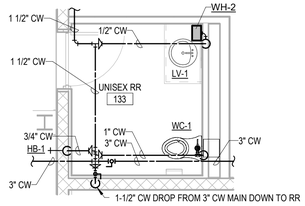
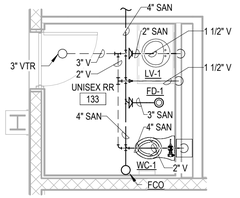
Project Status



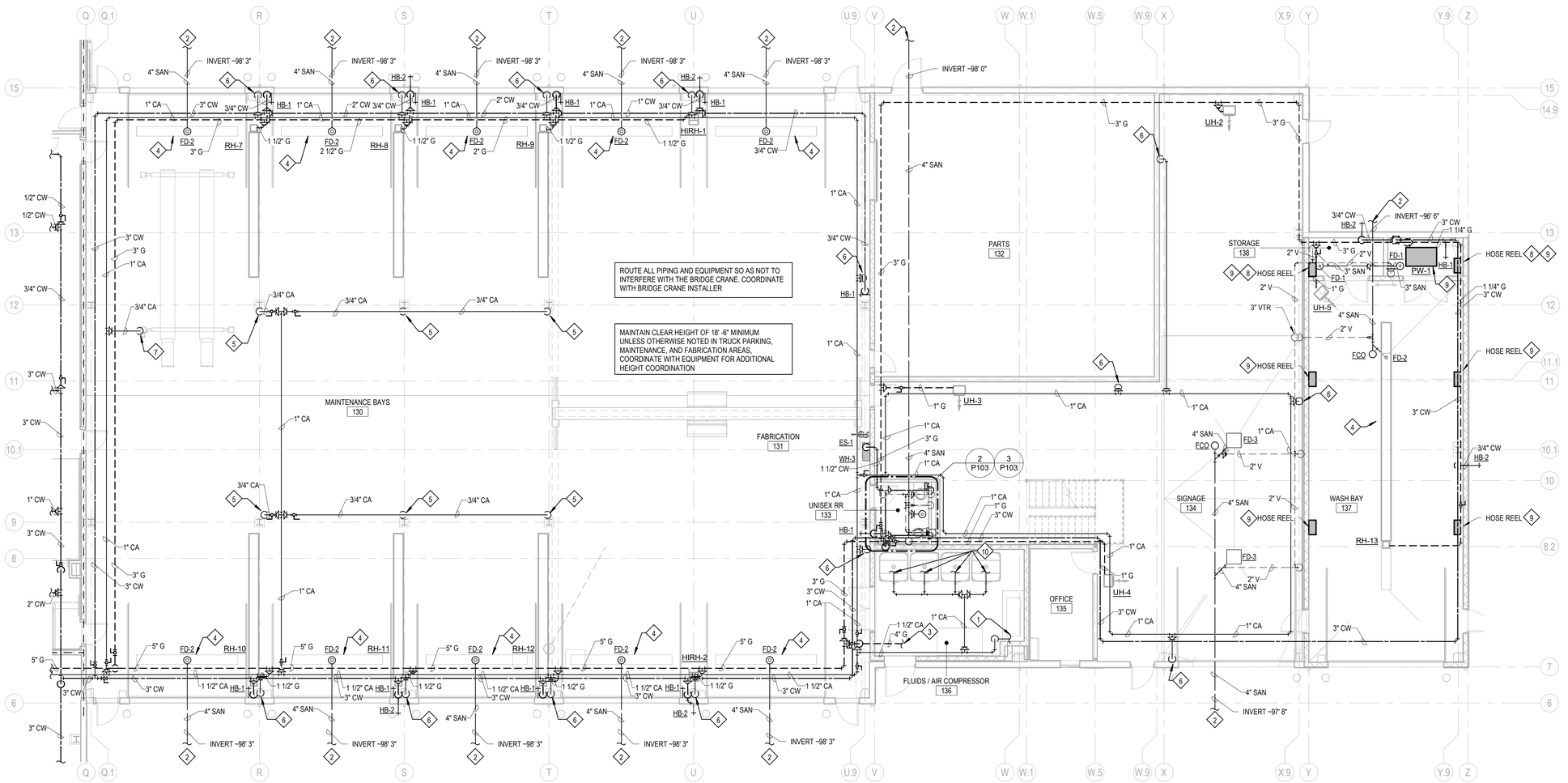


3 Enlarged Plumbing Plan - Unisex 133 - Dom Water

1/4" = 1'-0"

2 Enlarged Plumbing Plan - Unisex 133 - Sanitary

1/4" = 1'-0"

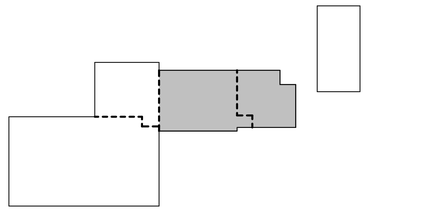


1 Plumbing Plan

1/8" = 1'-0"

Work Description Notes

1. CONNECT THE COMPRESSED AIR PIPING TO THE OWNER-SUPPLIED AIR COMPRESSOR. FURNISH AND INSTALL ALL NECESSARY APPURTENANCES SUCH AS FILTERS, AFTERCOOLERS, DRYERS, RECEIVERS, ETC. NECESSARY FOR THE OPERATION OF THE COMPRESSED AIR SYSTEM AS REQUIRED BY THE COMPRESSOR MANUFACTURER
2. REFER TO THE CIVIL SITE UTILITY PLAN FOR CONTINUATION
3. NATURAL GAS PIPE TO MAKEUP AIR UNIT MUA-3 IN MECHANICAL 143. REFER TO 2/M103 FOR LOCATION
4. THE DRAINAGE TRENCH IS FORMED INTO THE STRUCTURAL FLOOR SLAB. SEE THE STRUCTURAL FOUNDATION SHEETS FOR MORE INFORMATION
5. FURNISH AND INSTALL A COMPRESSED AIR HOSE REEL. COORDINATE THE LOCATION OF THE HOSE REEL WITH THE OTHER VEHICLE FLUID DISPENSING REELS AND VEHICLE EXHAUST CAPTURE REEL. REFER TO A302
6. 3/4" COMPRESSED AIR DROP TO OUTLET WITH QUICK CONNECT FITTING. SEE DETAIL 3/P301
7. 3/4" COMPRESSED AIR DROP TO VEHICLE LIFT. FURNISH AND INSTALL FILTER/REGULATOR/LUBRICATOR PER MANUFACTURER'S REQUIREMENTS
8. MOUNT HOSE REELS ON MEZZANINE LEVEL
9. FOR PRESSURE WASHER PIPING SEE DETAIL 4/P301
10. 3/4" COMPRESSED AIR DROP TO PNEUMATIC SYSTEM. SEE LUBE SYSTEM SCHEMATIC



KEY PLAN

New Construction Work for :

Porter County Highway Department - Central Facility

1955 IN-2
Valparaiso, IN 46385

PORTER COUNTY Indiana

MARTIN RILEY architects · engineers

221 West Baker Street
Fort Wayne, Indiana 46802

pho 260.422.7994
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REVISION:		DATE:
1	ADDENDUM 1	2024-06-12

DRAWN BY:	EB	REVIEWED BY:	JJN
COMMISSION NUMBER:	F22146	DATE:	2024-05-24

P103

PLUMBING PLAN - MAINTENANCE

F22146 - Porter County Highway
Department - Central Facility
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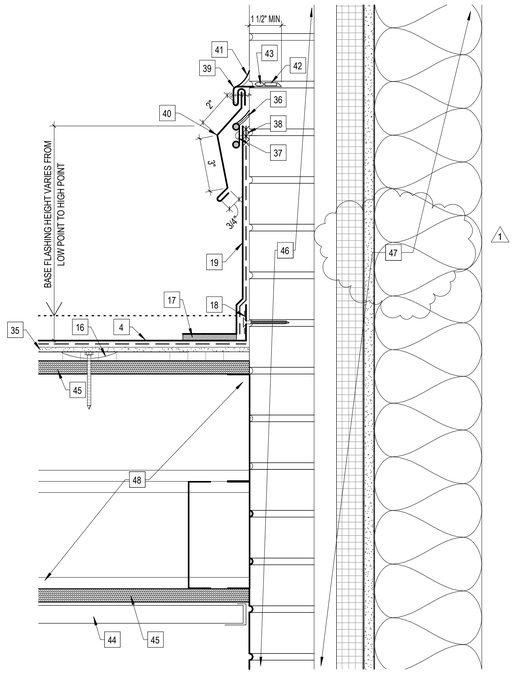
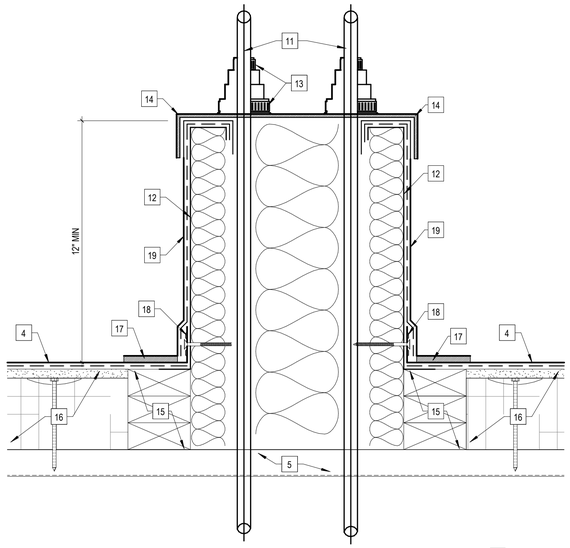
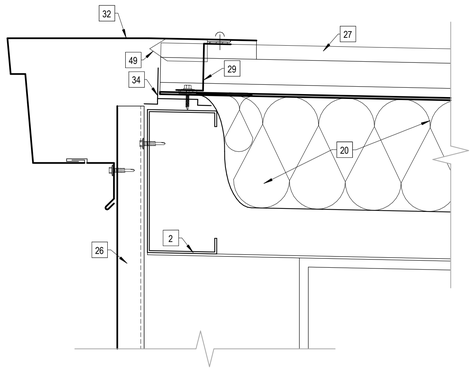
Project Status



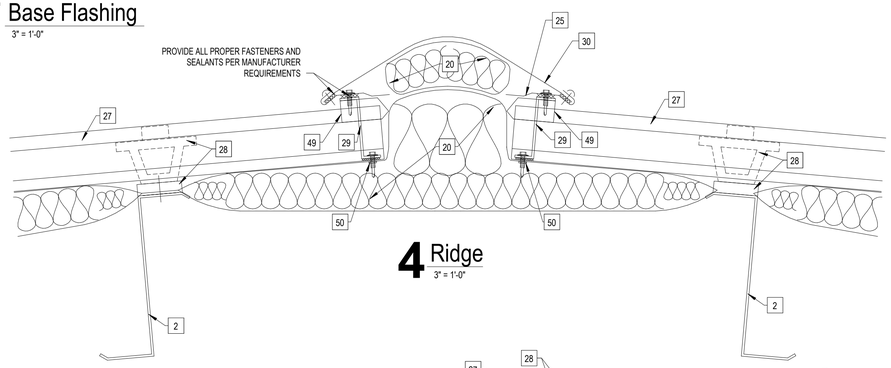
7 Base Flashing
3" = 1'-0"



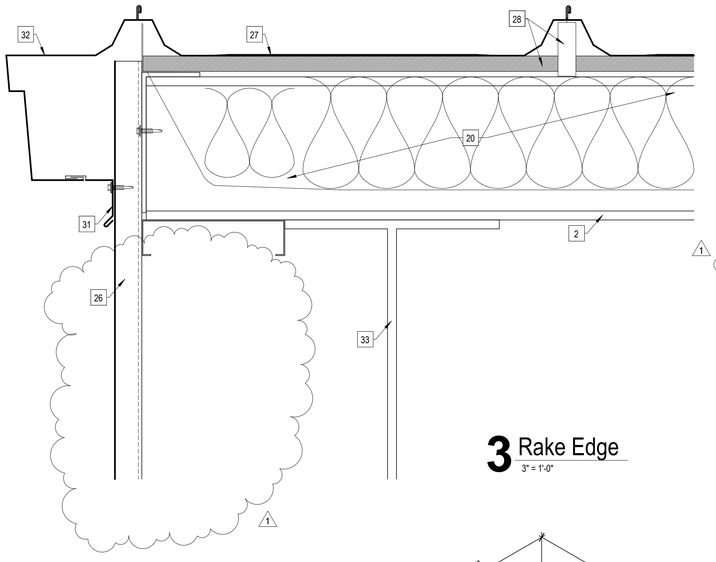
6 Multi Pipe Seal
3" = 1'-0"



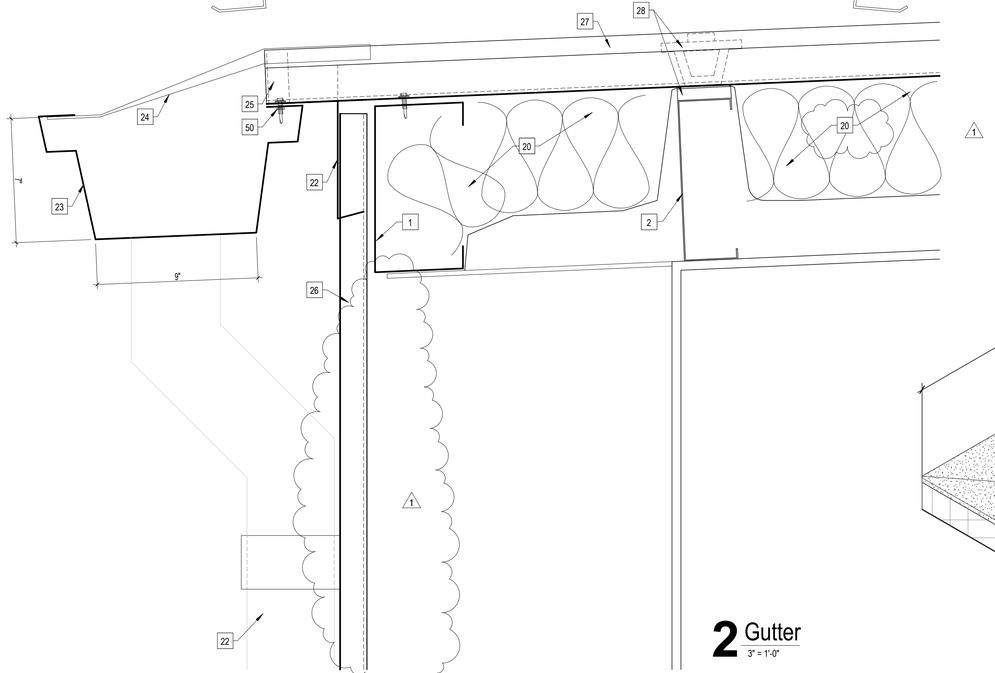
5 High Eave
3" = 1'-0"



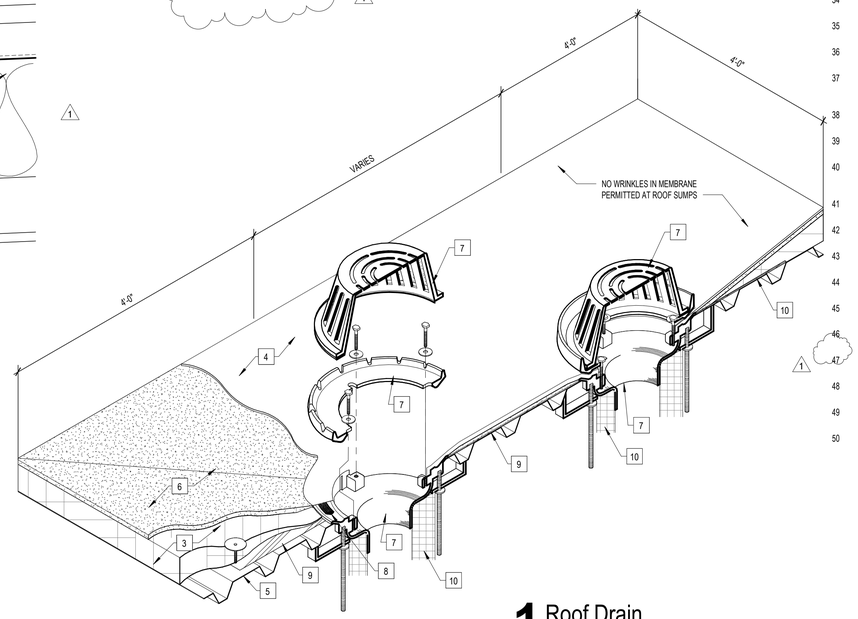
4 Ridge
3" = 1'-0"



3 Rake Edge
3" = 1'-0"



2 Gutter
3" = 1'-0"



1 Roof Drain
1 1/2" = 1'-0"

Detail Work Description Notes

1 NEW EAVE STRUT - SEE STRUCTURAL DRAWINGS
2 NEW ROOF PURLIN - SEE STRUCTURAL DRAWINGS
3 NEW TAPERED INSULATION SUMP, SHAVE FLUSH WITH ROOF SUMP DECK FLANGE
4 NEW FSR-FLEXIBLE SHEET ROOFING (FSR)
5 NEW 1 1/2" TYPE B METAL DECK
6 NEW ADHESIVELY ADHERED RECOVER BOARD INSULATION
7 PROVIDE NEW CAST IRON ROOF DRAIN BOWL AND OVERFLOW SUMP BOWL, CLAMPING RING, AND STRAINER. SET CLAMPING RING IN NEW LEAD FLASHING
8 NEW CONTINUOUS BEAD OF MANUFACTURER'S WATER CUT OFF MASTIC
9 NEW 20 GA STEEL PLATE MECHANICALLY ATTACHED TO DECK - EXTEND 2'-0" MIN. FROM CENTER OF ROOF DRAIN
10 INSULATE NEW DRAIN BOWL
11 NEW ROOF PENETRATION
12 NEW INSULATED METAL EQUIPMENT CURB
13 NEW STAINLESS STEEL COMPRESSION DRAW BAND
14 NEW MANUFACTURER'S FLEXIBLE EPDM MULTI-PENETRATION PIPE SEAL CAP
15 NEW WOOD BLOCKING MECHANICALLY ATTACHED TO SUBSTRATE
16 NEW MECHANICALLY ATTACHED RIGID INSULATION BOARD AND ADHESIVELY ADHERED COVER BOARD INSULATION
17 NEW HOT AIR WELD JOINT WITH TOOLED MANUFACTURERS RECOMMENDED SEALANT
18 NEW FLEXIBLE SHEET ROOFING SEAM PLATE WITH FASTENERS 12" C/C MAX
19 CLEAN AND PRIME SUBSTRATE, PROVIDE NEW FULLY ADHERED FLEXIBLE SHEET ROOFING (FSR) FLASHING
20 NEW R-19 BLANKET INSULATION WITH VAPOR RETARDER AT MAIN BUILDING. COLD STORAGE BUILDING DOES NOT REQUIRE INSULATION
21 NEW R-30 BLANKET INSULATION
22 NEW MANUFACTURERS EAVE FLASHING TRIM WITH CLOSURE AT NEW METAL WALL PANEL - EXTEND CLOSURE UP INTO PANEL RIBS
23 NEW PRE-MANUFACTURED GUTTER SYSTEM
24 NEW ROOFING MANUFACTURER GUTTER STRAP
25 NEW ROOFING MANUFACTURING CORRUGATION METAL PANEL PLUG
26 NEW MANUFACTURERS PREFINISHED GI CORRUGATED WALL PANEL OR INSULATED METAL WALL PANEL, REFER TO WALL SECTIONS AND SPECIFICATIONS
27 NEW MANUFACTURERS STRUCTURAL STANDING SEAM METAL ROOF PANEL WITH NEW WMP50 VAPOR RETARDER FACTORY APPLIED TO NEW R19 BLANKET INSULATION
28 NEW HIGH PANEL CLIPS AND THERMAL BLOCKS
29 NEW MANUFACTURERS "Z" PURLIN
30 NEW MANUFACTURERS RIDGE COVER
31 NEW MANUFACTURERS RAKE CLOSURE PIECE - INSTALL PER MANUFACTURER REQUIREMENTS
32 NEW MANUFACTURERS STANDARD 24 GA PREFINISHED GI RAKE EDGE FLASHING
33 NEW STRUCTURAL SYSTEM - SEE STRUCTURAL FOR MORE INFORMATION
34 NEW INSULATED WALL PANEL EAVE SUPPORT ANGLE
35 NEW MECHANICALLY ATTACHED BASE SHEET
36 NEW MANUFACTURERS APPROVED TOOLED SEALANT
37 NEW CONTINUOUS MANUFACTURER'S SURFACE MOUNTED TERMINATION BAR MECHANICALLY ATTACHED 6" C/C MAX. CAULK ALL VERTICAL TRANSITIONS
38 NEW WATER CUT OFF MASTIC
39 NEW 24 GA PREFINISHED GI REGLET RECEIVER
40 NEW 24 GA PREFINISHED GI COUNTERFLASHING MECHANICALLY ATTACHED TO RECEIVER AT 12" C/C MAX
41 NEW CONTINUOUS TOOLED URETHANE SEALANT
42 NEW LEAD WEDGES SPACED 5'-0" C/C MAX
43 PROVIDE NEW FOAM BACKER ROD SIZED 50% LARGER THAN JOINT
44 NEW METAL SOFFIT
45 NEW EXTERIOR GRADE PLYWOOD
46 NEW BRICK VENEER
47 REFER TO WALL SECTIONS FOR WALL COMPOSITION
48 NEW CANOPY FRAMING - SEE STRUCTURAL
49 NEW LOCK SEAM PLUG
50 NEW BACK UP STRAP

New Construction Work for :

Porter County Highway Department - Central Facility

1955 IN-2
Valparaiso, IN 46385

PORTER COUNTY Indiana

MARTIN RILEY
architects • engineers

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Fort Wayne, Indiana 46802

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JACK E. DANIEL REGISTERED No. AR01028 STATE OF INDIANA

REVISION:		DATE:
1	ADDENDUM 1	2024-06-12

DRAWN BY:	CLW	REVIEWED BY:	ALW
COMMISSION NUMBER:	F22146	DATE:	2024-05-24

R201

ROOF DETAILS

F22146 Porter County Highway Department - Central Facility
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Masonry Notes

1. THE DESIGN AND CONSTRUCTION SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES (ACI 530)," LATEST EDITION.

2. CMU SHALL BE HOLLOW CONCRETE MASONRY UNITS CONFORMING TO THE REQUIREMENTS OF THE LATEST EDITION OF ASTM C90, GRADE N, TYPE 1, IN NATURAL GRAY COLOR.

3. MINIMUM COMPRESSIVE STRENGTH OF MASONRY, f'_m = 2000 psi.
   a. NET AREA COMPRESSIVE STRENGTH OF CONCRETE MASONRY UNITS WITH TYPE M OR S MORTAR = 2800 psi.
   b. NETA AREA COMPRESSIVE STRENGTH OF CLAY MASONRY UNITS WITH TYPE M OR S MORTAR = 4950 psi.

4. MINIMUM COMPRESSIVE STRENGTH OF GROUT, AS DETERMINED IN ACCORDANCE WITH THE LATEST EDITION OF ASTM C1019, SHALL MEET OR EXCEED f'_m, BUT NOT LESS THAN 2000 psi. GROUT TYPE AND SPACING REQUIREMENTS SHALL CONFORM TO LATEST EDITION OF ACI 530.

5. MORTAR SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF ASTM C270.

6. JOINT REINFORCEMENT SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF ASTM A951.

7. ALL PLAIN WIRE REINFORCING STEEL SHALL COMPLY WITH THE REQUIREMENTS OF THE LATEST EDITION OF ASTM A82.

8. REINFORCING BARS SHALL BE DEFORMED BARS CONFORMING TO THE REQUIREMENTS OF THE LATEST EDITION OF ASTM A615, GRADE 60.

9. REINFORCING BARS SHALL HAVE A MASONRY COVER NOT LESS THAN THE FOLLOWING, UNLESS NOTED OTHERWISE:
   a. MASONRY FACE EXPOSED TO EARTH OR WEATHER
      - #6 BARS AND LARGER....................2"
      - #5 BARS AND SMALLER....................1-1/2"
   b. MASONRY NOT EXPOSED TO EARTH OR WEATHER....................1-1/2"

10. THE REQUIRED DEVELOPMENT LENGTH OF REINFORCING BARS SHALL NOT BE LESS THAN 12 INCHES, AND AS FOLLOWS (f_m' = 2000 psi, K = 2, f_y = 60,000 psi):
    a. #3 THROUGH #5....................$88d_b^2$
    b. #6 THROUGH #7....................$114d_b^2$
    c. #8 THROUGH #11....................$131d_b^2$

11. PLATE AND BENT BAR ANCHORS SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF ASTM A36.

12. ANCHOR BOLTS SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF ASTM A307, GRADE A.

13. ANCHOR BOLTS PLACED IN THE TOP OF GROUTED CELLS AND BOND BEAMS SHALL BE POSITIONED TO MAINTAIN A MINIMUM OF:
    a. 1/4-INCH OF FINE GROUT BETWEEN THE BOLTS AND THE MASONRY UNIT.
    b. 1/2-INCH OF COURSE GROUT BETWEEN THE BOLTS AND THE MASONRY UNIT.

14. ANCHOR BOLTS PLACED IN DRILLED HOLES IN THE FACE SHELLS OF HOLLOW MASONRY UNITS SHALL BE PERMITTED TO CONTACT THE MASONRY UNIT WHERE THE BOLT PASSES THROUGH THE FACE SHELL PROVIDED THE PORTION OF THE BOLT THAT IS WITHIN THE GROUTED CELL SHALL BE POSITIONED TO MAINTAIN A MINIMUM OF:
    a. 1/4-INCH OF FINE GROUT BETWEEN THE HEAD OR BENT LEG OF EACH BOLT AND THE MASONRY UNIT.
    b. 1/2-INCH OF COURSE GROUT BETWEEN THE HEAD OR BENT LEG OF EACH BOLT AND THE MASONRY UNIT.

15. THE CLEAR DISTANCE BETWEEN ANCHOR BOLTS SHALL NOT BE LESS THAN THE NOMINAL DIAMETER OF THE ANCHOR BOLT, NOR LESS THAN ONE INCH.

16. SLEEVE TYPE ANCHORS SHALL FEATURE A SPLIT EXPANSION SLEEVE OVER A THREADED STUD BOLT BODY AND INTEGRAL EXPANDER, NUT AND WASHER; SHALL BE ZINC-PLATED CARBON STEEL, UNLESS OTHERWISE SPECIFIED AS STAINLESS STEEL (TYPE 304); AND SHALL BE INSTALLED WITH CARBIDE TIPPED HAMMER DRILL BITS MADE IN ACCORDANCE TO ANSI B212.15-1994.
17. DETAILS OF REINFORCEMENT AND METAL ACCESSORIES AS WELL AS PROTECTION REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ACI 530.
18. MASONRY LINTEL TOP REINFORCEMENT SHALL EXTEND TWO INCHES BEYOND ROUGH OPENING AND BOTTOM REINFORCEMENT SHALL EXTEND EIGHT INCHES BEYOND ROUGH OPENING.
19. PROVIDE A MINIMUM BEARING LENGTH OF EIGHT INCHES AT EACH END OF REINFORCED MASONRY LINTELS.
20. ALL MASONRY WALLS SHALL BE PLACED IN A RUNNING-BOND PATTERN UNLESS SPECIFICALLY DETAILED OTHERWISE.
21. MESH WALL TIES (MWT) SHALL CONFORM TO THE REQUIREMENTS OF ASTM A185 AND SHALL BE COMPRISED OF MATERIALS CONFORMING TO THE FOLLOWING, AS SPECIFICALLY CALLED OUT IN THE DETAILS:
    a. COLD-DRAWN STEEL WIRE....................ASTM A1064/A1064M
    b. HARDWARE CLOTH....................ASTM A740
    c. HOT-DIP GALVANIZED....................ASTM A153/A153M-B2 CLASS B
    d. STAINLESS STEEL....................ASTM E2016, TYPE 304

Steel Joist Notes

1. STEEL JOIST CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE STEEL JOIST INSTITUTE'S "STANDARD SPECIFICATIONS, LOAD TABLES, & WEIGHT TABLES FOR STEEL JOISTS & JOIST GIRDERS".

2. HANDLING AND ERECTION OF STEEL JOISTS AND MATERIALS SHALL COMPLY WITH THE STEEL JOIST INSTITUTE'S TECHNICAL DIGEST 9, "HANDLING AND ERECTION OF STEEL JOISTS AND JOIST GIRDERS".

3. THE MAXIMUM SPACING OF STEEL JOISTS SHALL BE AS SHOWN ON THE STRUCTURAL PLANS. PROVIDE HEADERS AND DOUBLE JOISTS AS REQUIRED TO FRAME AROUND OPENINGS SHOWN ON THE STRUCTURAL PLANS. THIS WORK SHALL BE FULLY COORDINATED WITH ALL OTHER TRADES.

4. ENDS OF STEEL JOISTS SHALL BE ANCHORED TO THE SUPPORTING MEMBERS AS INDICATED BY TYPICAL DETAILS PROVIDED ON THE STRUCTURAL PLANS.

5. PROVIDE JOIST SUBSTITUTES CAPABLE OF CARRYING ALLOWABLE TOTAL SAFE LOADS IN LBS/ LINEAR FOOT AS CALLED FOR ON DRAWINGS.

6. BRIDGING AND BRIDGING ANCHORS SHALL BE IN ACCORDANCE WITH SECTION 2.7 OF THE SJI CODE OF STANDARD PRACTICE. BRIDGING, STANDARD WITH THE MANUFACTURER AND COMPLYING WITH THE STEEL JOIST INSTITUTE STANDARD SPECIFICATIONS LOAD TABLES & WEIGHT TABLES OF LATEST ADOPTION, SHALL BE USED FOR BRIDGING ALL JOISTS FURNISHED BY THE MANUFACTURER. POSITIVE ANCHORAGE SHALL BE PROVIDED AT THE ENDS OF EACH BRIDGING ROW AT BOTH TOP AND BOTTOM CHORDS.

7. MINIMUM 3/8 INCH DIAMETER A307 BOLTS TO BE USED IN ALL BOLTED BRIDGING CONNECTIONS. ALL BOLTS SHALL BE TIGHTENED TO A MINIMUM SNUG-TIGHT CONDITION AND WASHERS SHALL BE USED WITH SLOTTED OR OVERSIZED HOLES.

8. ADDITIONAL UPLIFT BRIDGING SHALL BE INSTALLED AS REQUIRED PER SJI STANDARD SPECIFICATIONS.

9. VERIFY SIZE AND LOCATION OF ANY INDICATED ROOF OPENINGS WITH MECHANICAL CONTRACTOR (SEE MECHANICAL PLANS FOR ROOF TOP UNIT, RTU, LOCATIONS).

10. JOIST MANUFACTURER SHALL DESIGN ROOF JOISTS, WHERE RTU'S ARE INDICATED, FOR A 500 LB ADD-LOAD (SEE ROOF PLAN). REINFORCE JOISTS AT CONCENTRATED LOAD LOCATIONS IN ACCORDANCE WITH FIELD REINFORCEMENT DETAIL PROVIDED.

Structural Steel Notes

1. STRUCTURAL STEEL TO BE FABRICATED AND ERECTED IN ACCORDANCE WITH AISC 360 "SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS", AND AISC 303 "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES."

2. DETERMINE, FURNISH AND INSTALL ALL TEMPORARY SUPPORTS, SUCH AS TEMPORARY GUYS, BEAMS, FALSEWORK, CRIBBING OR OTHER ELEMENTS REQUIRED FOR THE ERECTION OPERATION. THESE TEMPORARY SUPPORTS SHALL BE SUFFICIENT TO SECURE THE BARE STRUCTURAL STEEL FRAMING OR ANY PORTION THEREOF AGAINST LOADS THAT ARE LIKELY TO BE ENCOUNTERED DURING ERECTION, INCLUDING THOSE DUE TO WIND AND THOSE THAT RESULT FROM ERECTION OPERATIONS.

3. STRUCTURAL STEEL SHOP-STANDARD MATERIAL SHALL BE AS FOLLOWS:
   a. W AND WT-SHAPES TO BE ASTM A992
   b. M, S, MT, ST-SHAPES TO BE ASTM A36
   c. HP-SHAPES TO BE ASTM A36
   d. L-SHAPES TO BE ASTM A36
   e. C AND MC-SHAPES TO BE ASTM A36
   f. HSS-SHAPES TO BE ASTM A500, GRADE B
   g. PIPE TO BE ASTM A53, GRADE B
   h. PLATES AND BARS TO BE ASTM A36
   i. ALL-THREAD ROD TO BE ASTM A36
   j. ANCHOR RODS TO BE ASTM F1554, GRADE 36
   k. HEADED STUDS TO BE TYPE B WITH MINIMUM TENSILE STRENGTH, F_u = 65 ksi, AND MINIMUM YIELD STRENGTH, F_y = 51 ksi.

4. BAR GRATING TO BE 19-W-4, WELDED, 1-1/4" x 3/16" RECTANGULAR BAR, SERRATED SURFACE, HOT DIPPED, GALVANIZED STEEL.

5. STAIR TREADS TO BE 19-W-4, WELDED, 1-1/4" x 3/16" RECTANGULAR BAR, SERRATED SURFACE, HOT DIPPED, GALVANIZED STEEL W/ CHECKERED PLATE 90° ANGLE NOSING AND BAR GRATING STAIR TREAD CARRIER PLATES ATTACHED.

6. HIGH-STRENGTH BOLTS SHALL MEET THE MATERIAL STRENGTHS OF ANSI/AISC 360 SPECIFICATION GROUP A. DOCUMENTATION SHALL BE PROVIDED BY THE CONTRACTOR TO PROVE QUALITY OF THE BOLTS AND THREADED PARTS.

7. ALL WELDING SHALL BE IN ACCORDANCE WITH THE AWS D1.1 "STRUCTURAL WELDING CODE - STEEL" PUBLISHED BY THE AMERICAN WELDING SOCIETY. ELECTRODES FOR WELDED JOINTS SHALL COMPLY WITH THE REQUIREMENTS OF TABLE 3.1 OF AWS D1.1. ALL WELDING TO BE COMPLETED BY QUALIFIED WELDERS CONFORMING TO THE AMERICA WELDING SOCIETY STANDARDS.

8. THE STEEL FABRICATOR SHALL DESIGN AND SUPPLY APPROPRIATE PRODUCTS FOR ALL STEEL AND METAL ITEMS NOT SPECIFICALLY DETAILED ON DRAWINGS. ALL DESIGNS, METHODS, AND MATERIALS, SHALL COMPLY WITH THE AISC "STEEL CONSTRUCTION MANUAL", CURRENT EDITION.

9. FABRICATION "SHOP" DRAWINGS SHALL BE SUPPLIED BY THE CONTRACTOR. ALL SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.

10. ALL BOLTED CONNECTIONS TO BE SNUG-TIGHTENED JOINTS PER "THE SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS", UNLESS NOTED OTHERWISE.

11. BOLTED CONNECTIONS INDICATED AS PRE-TENSIONED SHALL BE FASTENED BY MEANS OF THE TURN-OF-NUT METHOD, UNLESS NOTED OTHERWISE.

12. SIMPLE SHEAR CONNECTIONS SHALL BE DESIGNED BY THE FABRICATOR'S ENGINEER FOR THE REACTION LISTED IN THE DRAWINGS. IF NO REACTION IS PROVIDED, THE FABRICATOR'S ENGINEER SHALL DESIGN THE CONNECTION FOR AT LEAST 50% OF THE SUPPORTED BEAM'S UNIFORM LOAD CONSTANT, W_c/Ω_b, DIVIDED BY THE SPAN LENGTH, L, AS TABULATED IN THE CURRENT EDITION OF THE AISC "STEEL CONSTRUCTION MANUAL", PART 3, "MAXIMUM TOTAL UNIFORM LOAD TABLES".

13. SIMPLE SHEAR CONNECTIONS, NOT SHOWN IN THE DRAWINGS, SHALL BE DETAILED BY THE STEEL FABRICATOR IN ACCORDANCE WITH THE CURRENT EDITION OF THE AISC "STEEL CONSTRUCTION MANUAL", PART 10, "DESIGN OF SIMPLE SHEAR CONNECTIONS".
    a. FOR SHEAR END-PLATE OR DOUBLE-ANGLE CONNECTIONS, OFFSET HOLES OR ADD ADDITIONAL ROWS OF BOLTS AS REQUIRED TO COMPLY WITH OSHA SAFETY BOLTING REQUIREMENTS.
    b. MINIMUM LENGTH OF CONNECTING ANGLES OR PLATES SHALL BE GREATER THAN THE SUPPORTED BEAM 'T' DIMENSION DIVIDED BY 2.

14. HORIZONTAL AND VERTICAL BRACING CONNECTIONS SHALL BE DESIGNED BY THE FABRICATOR'S ENGINEER FOR THE AXIAL LOAD (COMPRESSION OR TENSION) LISTED IN THE DRAWINGS. IF NO LOAD IS PROVIDED, THE FABRICATOR'S ENGINEER SHALL DESIGN THE BRACING CONNECTION FOR 100% OF THE BRACING MEMBER'S AVAILABLE STRENGTH IN AXIAL TENSION (ASD), AS GIVEN IN THE CURRENT EDITION OF THE AISC "STEEL CONSTRUCTION MANUAL", PART 5.

15. HORIZONTAL AND VERTICAL BRACING CONNECTIONS, NOT SHOWN IN THE DRAWINGS, SHALL BE DETAILED BY THE FABRICATOR IN ACCORDANCE WITH THE CURRENT EDITION OF AISC "STEEL CONSTRUCTION MANUAL", AND AISC 360, AS APPLICABLE.
    a. GUSSET PLATES SHALL BE SIZED TO ACCOMMODATE REQUIRED LOADS. AS A MINIMUM, GUSSETS SHALL BE 3/8 INCH THICK.
    b. AS A MINIMUM, THE WELD BETWEEN THE GUSSET PLATE AND THE SUPPORT SHALL BE SIZED AS $(5/8)t_p$.
    c. AS A MINIMUM, 3/4-INCH DIAMETER BOLTS SHALL BE UTILIZED FOR BOLTED CONNECTIONS. IF A BOLT IS CHOSEN WITH A NOMINAL DIAMETER GREATER THAN ONE INCH, INCREASE THE SPACING BETWEEN BOLTS TO A MINIMUM OF 3d.
    d. ACTUAL LOAD REQUIREMENTS MAY DICTATE THAT MORE BOLTS ARE REQUIRED. A MINIMUM OF TWO BOLTS SHALL BE UTILIZED.

16. FABRICATE AND ERECT ALL BEAMS WITH THE MILL CAMBER UP.

17. ALL STRUCTURAL STEEL SHALL BE CLEANED AND PREPARED FOR THE SPECIFIED COATING SYSTEM IN ACCORDANCE WITH THE REQUIREMENTS OF SSPC-SP2, UNLESS OTHERWISE SPECIFIED BY THE COATING SYSTEM MANUFACTURER.

18. STRUCTURAL STEEL MEMBERS COMPLETELY ENCLOSED IN THE BUILDING ENVELOPE SHALL BE SHOP COATED WITH THE FABRICATOR'S STANDARD SHOP PAINT APPLIED TO A MINIMUM DRY-FILM THICKNESS OF ONE MIL.

19. STRUCTURAL STEEL MEMBERS ON THE EXTERIOR OF THE BUILDING, EXPOSED TO SOIL, OR OTHERWISE EXPOSED TO CONDITIONS PROMOTING CORROSION SHALL BE, AT A MINIMUM, PROPERLY PRIMED WITH RUST INHIBITING PRIMER AND PAINTED. REFER TO ARCHITECTURAL DOCUMENTS FOR ADDITIONAL REQUIREMENTS OF EXPOSED STEEL.

20. THE CONTRACTOR THAT PERFORMS TOUCH-UP AND FIELD PAINTING IS RESPONSIBLE FOR ALL TOUCH-UP OF ABRASIONS CAUSED BY HANDLING AFTER PAINTING.

21. NON-SHRINK GROUT USED FOR SETTING AND FINISHING COLUMN BASE PLATES AND EQUIPMENT BASES SHALL BE A COMMERCIALLY PRE-MIXED AND BAGGED NON-METALLIC PRODUCT, AS APPROVED BY OWNER, CONTAINING, AS PART OF THE MIX, AN ADDITIVE TO COUNTERACT SHRINKAGE AND SETTLEMENT OF THE GROUT. NON-SHRINK GROUT SHALL REQUIRE ONLY THE ADDITION OF MIXING WATER FOR USE, AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 7000 psi AT 28 DAYS.

PEMB Structural Steel Notes

1. PRE-ENGINEERED METAL BUILDING (PEMB) STRUCTURAL COMPONENENTS TO BE DESIGNED AND DETAILED PER PEMB MANUFACTURER.

2. THE CONTRACTOR TO SUPPLY SEALED ENGINEERING DESIGN DATA AND DRAWINGS FOR PEMB MANUFACTURER SUPPLIED MATERIAL AS PART OF THE OVERALL PROJECT TO OBTAIN PERMITS, APPROVALS, AND COORDINATE OTHER TRADES.

Concrete Notes

1. THE DESIGN AND CONSTRUCTION SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318)", LATEST EDITION AND "CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES (ACI 350)", LATEST EDITION.

2. CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE "SPECIFICATIONS FOR STRUCTURAL CONCRETE (ACI 301)", LATEST EDITION AND "SPECIFICATION FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS (ACI 117)", LATEST EDITION.

3. WHEN CONDITIONS ARE SUCH THAT THE AMBIENT TEMPERATURE MAY BE EXPECTED TO BE 40°F OR LESS, WORK SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE "GUIDE TO COLD WEATHER CONCRETING (ACI 306R)," LATEST EDITION.

4. WHEN CONDITIONS ARE SUCH THAT THE AMBIENT TEMPERATURE MAY BE EXPECTED TO BE 80°F OR HIGHER, WORK SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE "GUIDE TO HOT WEATHER CONCRETING (ACI 305R)," LATEST EDITION.

5. CONCRETE SHALL BE NORMAL WEIGHT CONCRETE CONFORMING TO THE FOLLOWING REQUIREMENTS:
   a. FOUNDATIONS:
      - MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS, f'_c = 4000 psi
      - MAXIMUM WATER-CEMENTITIOUS MATERIAL RATIO, w/cm = 0.50
      - AIR-ENTRAINED WITH 5% AIR CONTENT (+/- 1.5%)
   b. EXTERIOR EXPOSED SLABS, WALLS, PIERS, PEDESTALS AND COLUMNS:
      - MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS, f'_c = 5000 psi
      - MAXIMUM WATER-CEMENTITIOUS MATERIAL RATIO, w/cm = 0.45
      - AIR-ENTRAINED WITH 5% AIR CONTENT (+/- 1.5%)
   c. INTERIOR SLABS, WALLS, PIERS, PEDESTALS AND COLUMNS:
      - MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS, f'_c = 4000 psi
      - MAXIMUM WATER-CEMENTITIOUS MATERIAL RATIO, w/cm = 0.50
      - AIR-ENTRAINED = N/A

6. THE CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGNS TO THE ENGINEER OF RECORD FOR APPROVAL PRIOR TO PLACEMENT OF ANY CONCRETE STRUCTURES.

7. THE CONTRACTOR SHALL TAKE SAMPLES FOR STRENGTH TESTS OF EACH CLASS OF CONCRETE PLACED EACH DAY. SAMPLES FOR STRENGTH TESTS SHALL BE TAKEN NOT LESS THAN ONCE PER DAY, NOR LESS THAN ONCE FOR EACH 150 yd³ OF CONCRETE, NOR LESS THAN ONCE FOR EACH 5000 ft² OF SURFACE AREA FOR SLABS OR WALLS. THREE 4x8-INCH CYLINDERS SHALL BE TESTED AT SEVEN DAYS AND 28 DAYS FOR EACH SAMPLE TAKEN.

8. REINFORCING BARS SHALL BE DEFORMED BARS CONFORMING TO THE REQUIREMENTS OF ASTM A615, LATEST EDITION, GRADE 60 (F_y = 60 ksi).

9. DETAILS AND DETAILING OF CONCRETE REINFORCEMENT SHALL BE IN ACCORDANCE WITH THE "ACI DETAILING MANUAL," REPORTED BY ACI COMMITTEE 315. THE CONTRACTOR SHALL SUBMIT REINFORCEMENT SHOP DRAWINGS TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL.

10. PLACEMENT OF REINFORCEMENT BARS IN FOOTINGS, WALLS AND COLUMNS SHALL BE EVENLY SPACED WITHIN THE STRUCTURE. DRIVING OR PUSHING DOWELS INTO WET CONCRETE IS PROHIBITED.

11. CONCRETE COVER FOR REINFORCEMENT SHALL NOT BE LESS THAN THE FOLLOWING:
    a. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH....................3"
    b. CONCRETE EXPOSED TO EARTH OR WEATHER:
       - #6 THROUGH #18 BARS....................2"
       - #5 BAR, W31 OR D31 WIRE, AND SMALLER....................1-1/2"
    c. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
       - SLABS, WALL, JOISTS:
       - #14 BAR AND #18 BARS....................1-1/2"
       - #11 BAR AND SMALLER....................3/4"
    d. BEAMS, COLUMNS:
       - PRIMARY REINFORCEMENT, TIES, STIRRUPS, SPIRALS....................1-1/2"

12. CONTINUOUS UNCOATED REINFORCEMENT OF DEFORMED BARS NOT LARGER THAN #11 MAY BE LAPPED AT SPLICES. THE MINIMUM LAP LENGTH SHALL BE AS REQUIRED FOR CLASS A OR CLASS B SPLICE, BUT NOT LESS THAN 12 INCHES (f_c' = 4000 psi).
    a. CLASS A SPLICE = $(1.0)l_d$
       - #6 AND SMALLER BARS AND DEFORMED WIRES....................$38d_b$
       - #7 AND LARGER BARS....................$47d_b$
    b. CLASS B SPLICE = $(1.3)l_d$
       - #6 AND SMALLER BARS AND DEFORMED WIRES....................$49d_b$
       - #7 AND LARGER BARS....................$62d_b$

13. CONCRETE FOUNDATIONS SHALL NOT BE PLACED ON FROZEN GROUND SURFACE OR PLACED IN WATER. THE CONTRACTOR SHALL USE A DEWATERING POINT SYSTEM, AS NECESSARY.

14. ALL NORMAL STRENGTH CONCRETE SHALL BE MAINTAINED ABOVE 50°F AND IN A MOIST CONDITION FOR A MINIMUM OF SEVEN DAYS AFTER PLACEMENT BEFORE ANY EXTERNAL LOADS CAN BE APPLIED.

15. CONCRETE NOTED AS HIGH-EARLY STRENGTH SHALL BE MAINTAINED ABOVE 50°F AND IN A MOIST CONDITION FOR A MINIMUM OF THREE DAYS AFTER PLACEMENT BEFORE ANY EXTERNAL LOADS CAN BE APPLIED.

16. THE CONTRACTOR SHALL BE RESPONSIBLE TO DESIGN, FURNISH AND PLACE ALL TEMPORARY OR PERMANENT SHORING AND/OR BRACING TO PROTECT EXCAVATIONS, EXISTING STRUCTURES, AND UTILITIES ADJACENT TO THE SITE. DETAILED INFORMATION ON FORMWORK FOR CONCRETE IS GIVEN IN THE "GUIDE TO FORMWORK FOR CONCRETE," REPORTED BY ACI COMMITTEE 347.

17. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY SHORING REQUIRED TO RETAIN THE STABILITY OF THE STRUCTURE WHILE REPAIRS AND REHABILITATION TAKE PLACE.

18. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY LABOR AND MATERIALS FOR UNDERPINNING REQUIREMENTS WHEN PLACING FOOTINGS NEXT TO OR BELOW EXISTING ADJACENT STRUCTURES, AS APPLICABLE.

19. NEATLY FORMED EARTH TRENCHES MAY BE PERMITTED FOR CASTING GRADE BEAMS WHERE SOIL CONDITIONS DO NOT REQUIRE FORMWORK. THE CONTRACTOR SHALL VERIFY SOIL CONDITIONS WITH A LICENSED GEOTECHNICAL ENGINEER AND OBTAIN APPROVAL BY THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL PLACE THESE STRUCTURES NEATLY WITHIN ACI 301 DIMENSION TOLERANCES, WITHOUT CONCRETE OVERPOUR SHELVES, AND SUCH THAT ALL REINFORCEMENT COVER AND SPACING REQUIREMENTS ARE PROVIDED.

20. EARTH FORMED SPREAD AND CONTINUOUS STRIP FOOTINGS ARE PROHIBITED.

21. SLOPE SLABS DOWN 1/4 INCH PER FOOT TO ALL FLOOR DRAINS.

22. PROVIDE 2 - #4 x 3'-0" TOP AND BOTTOM AT 45° ANGLE AT ALL REENTRANT CORNERS IN CONCRETE SLAB. PROVIDE THE BOTTOM LAYER OF REINFORCEMENT FOR SLABS GREATER THAN OR EQUAL TO SIX INCHES THICK.

23. PROVIDE 4 - #4 x 3'-0" AT ONE INCH CLEAR FROM TOP OF SLAB AT ALL DISCONTINUOUS CONTRACTION OR CONSTRUCTION JOINTS.

24. EXPANSION ANCHORS SHALL BE PLATED CARBON STEEL TORQUE CONTROLLED, WEDGE-TYPE MECHANICAL EXPANSION ANCHORS INSTALLED IN HARDENED CONCRETE, IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS, UNLESS NOTED OTHERWISE.

25. ADHESIVE ANCHORS SHALL BE AN ICC-ES APPROVED POST-INSTALLED SYSTEM FOR USE IN HARDENED, CRACKED AND UNCRACKED NORMAL WEIGHT CONCRETE HAVING A SPECIFIED COMPRESSIVE STRENGTH f_c', OF 2500 psi TO 8500 psi. THE SYSTEM SHALL CONSIST OF HIGH-STRENGTH STRUCTURAL ADHESIVE, ANCHOR ELEMENTS (CONTINUOUSLY THREADED RODS OR DEFORMED STEEL REINFORCING BARS), AND NORMAL WEIGHT CONCRETE. ADHESIVE ANCHORS SHALL BE INSTALLED PER MANUFACTURER SPECIFICATIONS UTILIZING THE ANCHOR ELEMENT SIZE AND MINIMUM EFFECTIVE EMBEDMENT INDICATED ON THE DRAWINGS. ADHESIVE ANCHORS SHALL BE INSTALLED IN CONCRETE HAVING A MINIMUM AGE OF 21 DAYS AT TIME OF ANCHOR INSTALLATION.

26. CONTRACTION JOINTS SHALL BE LOCATED ALONG COLUMN LINES, WITH INTERMEDIATE JOINTS LOCATED AT EQUAL SPACES BETWEEN COLUMN LINES, UNLESS OTHERWISE NOTED. CONTRACTION JOINT SPACING SHALL NOT EXCEED 30 TIMES THE SLAB THICKNESS, UNLESS OTHERWISE APPROVED BY THE ENGINEER OF RECORD.

27. ISOLATION JOINTS SHALL BE PLACED BETWEEN THE SLAB AND ADJOINING BUILDING ELEMENTS AS DETAILED AND OTHERWISE NOTED. ISOLATION JOINTS SHALL BE PLACED AT JUNCTIONS WITH WALLS, COLUMNS, EQUIPMENT FOUNDATIONS, FOOTINGS, OR OTHER POINTS OF RESTRAINT SUCH AS DRAINS, MANHOLES, SUMPS, AND STAIRWAYS.

28. EXPANSION AND ISOLATION JOINT MATERIAL TO BE PREFORMED, FLEXIBLE CLOSED CELL FOAM PLANK THE FULL THICKNESS OF THE SLAB.

29. VAPOR BARRIER TO BE ASTM E1745, CLASS A PLASTIC SHEET VAPOR BARRIER WITH A MINIMUM THICKNESS OF 10 MILS AND JOINT LAPPED NOT LESS THAN SIX INCHES, UNLESS OTHERWISE SPECIFIED BY ARCHITECTURAL SPECIFICATIONS.

General Notes

1. ALL CONSTRUCTION SHALL CONFORM WITH THE PROVISIONS OF THE CURRENTLY ADOPTED IBC, OSHA, AND ALL STATE AND LOCAL CODES AND THEIR SUPPLEMENTS. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL OR OTHER GOVERNING BODIES' CODES. ADDITIONALLY, ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH APPLICABLE INDUSTRY STANDARDS OR GUIDELINES AND CONFORM WITH AIA DOCUMENT A201 "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION".

2. THE CONTRACTOR SHALL SUPPLY ALL MATERIAL SAFETY DATA SHEETS (MSDS) FOR CHEMICALS BROUGHT ONTO THE SITE.

3. SHOP DRAWINGS, PRODUCT DATA, SAMPLES, AND SIMILAR SUBMITTALS ARE NOT PART OF THE CONTRACT DOCUMENTS. THE DESIGN PROFESSIONAL OF RECORD'S REVIEW AND APPROVAL OF SUCH SUBMITTALS IS STRICTLY FOR THE LIMITED PURPOSE OF CHECKING FOR CONFORMANCE WITH INFORMATION GIVEN AND THE DESIGN CONCEPT EXPRESSED IN THE CONTRACT DOCUMENTS. REVIEW OF SUCH SUBMITTALS IS NOT CONDUCTED FOR THE PURPOSE OF DETERMINING THE ACCURACY AND COMPLETENESS OF OTHER DETAILS SUCH AS DIMENSIONS AND QUANTITIES, OR FOR SUBSTANTIATING INSTRUCTIONS FOR INSTALLATION OR PERFORMANCE OF THE EQUIPMENT OR SYSTEMS, ALL OF WHICH REMAIN THE RESPONSIBILITY OF THE CONTRACTOR. THE DESIGN PROFESSIONAL OF RECORD'S REVIEW OF THE CONTRACTOR'S SUBMITTALS SHALL NOT RELIEVE THE CONTRACTOR OF THE OBLIGATIONS UNDER AIA DOCUMENT A201, SECTIONS 3.3, 3.5, AND 3.12 OF AIA A201. THE DESIGN PROFESSIONAL OF RECORD'S REVIEW SHALL NOT CONSTITUTE APPROVAL OF SAFETY PRECAUTIONS OR OF ANY CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES. THE DESIGN PROFESSIONAL OF RECORD'S APPROVAL OF A SPECIFIC ITEM SHALL NOT INDICATE APPROVAL OF AN ASSEMBLY OF WHICH THE ITEM IS A COMPONENT.

4. THE CONTRACTOR'S SUBMITTAL OF SHOP DRAWINGS, SAMPLES, AND SIMILAR SUBMITTALS REPRESENTS TO THE OWNER AND DESIGN PROFESSIONAL OF RECORD THAT THE CONTRACTOR HAS (1) REVIEWED AND APPROVED THEM, (2) DETERMINED AND VERIFIED MATERIALS, FIELD MEASUREMENTS AND FIELD CONSTRUCTION CRITERIA RELATED THERETO, OR WILL DO SO, AND (3) CHECKED AND COORDINATED THE INFORMATION CONTAINED WITHIN SUCH SUBMITTALS WITH THE REQUIREMENTS OF THE WORK AND OF THE CONTRACT DOCUMENTS.

5. THE CONTRACTOR SHALL FIELD CHECK AND VERIFY ALL DIMENSIONS AND ELEVATIONS OF EXISTING/PREVIOUSLY PHASED WORK PRIOR TO THE START OF FABRICATION AND CONSTRUCTION. NOTIFY DESIGN PROFESSIONAL OF RECORD OF ANY DISCREPANCIES.

6. ALL DIMENSIONS ARE TO FACE OF MASONRY, FACE OF CONCRETE, FACE OF EXISTING WALL AND/OR FACE OF NEW FRAMING. STRUCTURAL STEEL FRAMING DIMENSIONS ARE CENTER LINE DIMENSIONS.

7. INDICATED DIMENSIONS ARE TAKEN FROM CASUAL FIELD OBSERVATIONS AND EXISTING DRAWINGS. CONTRACTOR TO VERIFY ALL DIMENSIONS IN FIELD PRIOR TO CONSTRUCTION. CONTRACTOR TO NOTIFY DESIGN PROFESSIONAL OF RECORD OF ANY DISCREPANCIES. ALL CHANGES TO THE WORK SHALL BE APPROVED BY THE DESIGN PROFESSIONAL OF RECORD AND OWNER PRIOR TO PROCEEDING.

8. THE CONTRACTOR SHALL SECURE ALL NECESSARY LOCAL PERMITS REQUIRED FOR IT'S WORK.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE LOCATION OF ANY UTILITIES IN THE VICINITY OF THE CONSTRUCTION (UNDERGROUND OR OTHERWISE) AND SHALL COMPLETE THE CONSTRUCTION IN A MANNER WHICH WILL PREVENT DAMAGE TO THEM. SHOULD ANY DAMAGE TO SUCH UTILITIES OCCUR, THE CONTRACTOR SHALL REPAIR THE DAMAGE AT ITS OWN EXPENSE AND TO THE SATISFACTION OF THE OWNER.

10. COORDINATE ALL WORK WITH MECHANICAL, ELECTRICAL, CIVIL, STRUCTURAL, ARCHITECTURAL DRAWINGS AND TRADES. VERIFY EXACT SIZE AND LOCATION OF ALL WALL, FLOOR AND ROOF OPENINGS REQUIRED OF THESE AND OTHER TRADES.

11. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING CONSTRUCTION EFFORTS OF ALL SUB-CONTRACTORS. FAILURE TO ANTICIPATE CHANGES OR MODIFICATIONS SHALL NOT BE THE BASIS FOR ADDITIONAL COST REQUESTS.

12. CONTRACTORS SHALL COORDINATE THEIR WORK WITH THE OTHER TRADES. EXTRAS WILL NOT BE GIVEN FOR FORESEEABLE WORK COORDINATION.

13. REFER TO EQUIPMENT SCHEDULES AND SPECIFICATIONS FOR INSTALLATION REQUIREMENTS.

14. PROTECT ALL EQUIPMENT, BUILDING, AND PAVEMENTS, NEW AND EXISTING, FROM DEBRIS AND DAMAGE. FINAL CLEAN-UP OF ALL EQUIPMENT, BUILDINGS AND PAVEMENTS SHALL BE COMPLETED PRIOR TO SUBSTANTIAL COMPLETION.

Structural Design Criteria

1. RISK CATEGORY II: MAIN BUILDING AND COLD STORAGE
   a. SNOW IMPORTANCE FACTOR, I_s = 1.00
   b. ICE IMPORTANCE FACTOR - THICKNESS, I_i = 1.00
   c. ICE IMPORTANCE FACTOR - WIND, I_w = 1.00
   d. SEISMIC IMPORTANCE FACTOR, I_e = 1.00

2. RISK CATEGORY I: SALT BARN
   a. DESIGN ENGINEER TO DETERMINE MINIMUM UNIFORM SNOW LOAD AND OTHER CRITERIA

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3. FLOORS, ROOFS, AND OTHER SIMILAR SURFACES ARE DESIGNED TO SUPPORT SAFELY THE LISTED UNIFORMLY DISTRIBUTED LIVE LOAD (psf) OR THE CONCENTRATED LOAD (lb), WHICHEVER PRODUCES THE GREATER LOAD EFFECTS.

4. ROOF LIVE LOAD, L_r = 20 psf / 300 lb

5. FLOOR LIVE LOAD, L:
   a. IT ROOM/OFFICE = 50 psf / 2000 lb
   b. LOBBIES, MEETING ROOMS, CORRIDORS = 100 psf / 2000 lb
   c. MEZZANINE = 125 psf
   d. STAIRS = 100 psf / 300 lb
   e. PARTS AND SIGNAGE = 100 psf / 2000 lb
   f. MAINTENANCE AREA = 250 psf / 8,000 lb (4.5 in BY 4.5 in AREA)

6. CONCENTRATED LOADS ON FLOORS, ROOFS, AND SIMILAR SURFACES ARE ASSUMED TO BE UNIFORMLY DISTRIBUTED OVER AN AREA 2.5 ft BY 2.5 ft.

7. CONCENTRATED LOADS ON STAIR TREADS ARE ASSUMED TO BE UNIFORMLY DISTRIBUTED OVER AN AREA 2 in BY 2 in.

8. GROUND SNOW LOAD, p_g = 25 psf

9. MINIMUM UNIFORM SNOW LOAD, $p_m = I_s p_g$ = 20 psf

10. SNOW EXPOSURE FACTOR, C_e = 0.9

11. THERMAL FACTOR,
    ADMIN. /MAINT. /TRUCK PARKING: C_t = 1.0
    SALT BARN / COLD STORAGE: C_t = 1.2

12. FLAT ROOF SNOW LOAD, $p_f = (0.7)C_eC_tI_sp_g$
    ADMIN. /MAINT. /TRUCK PARKING: p_f = 16.8 psf
    SALT BARN / COLD STORAGE: p_f = 18.9 psf

13. ROOF SLOPE FACTOR, C_s = 1.0

14. SLOPED ROOF SNOW LOAD, $p_s = C_sp_f$
    ADMIN. /MAINT. /TRUCK PARKING: p_s = 16.8 psf
    SALT BARN / COLD STORAGE: p_s = 18.9 psf

15. UNBALANCED SNOW LOAD, DRIFTING SNOW LOAD, AND SLIDING SNOW LOAD PER ASCE 7.
    a. SURCHARGE LOAD DUE TO DRIFTING SHALL BE ADDED TO THE BALANCED SNOW LOAD, ps, AS A STRIP RUNNING PARALLEL TO THE EAVES WITH A MAXIMUM INTENSITY AT THE EVE EDGE AND TAPERING LINEARLY TO 0 psf ACROSS THE STRIP.
       - ADMIN. - NORTH EDGE: 38 psf MAX, OVER 8'-10" STRIP
       - ADMIN. - EAST EDGE: 78 psf MAX, OVER 18'-0" STRIP
       - ADMIN. - SOUTH EDGE: 65 psf MAX, OVER 15'-0" STRIP
       - ADMIN. - WEST EDGE: 42 psf MAX, OVER 9'-7" STRIP
       - SEE ASCE 7-10, FIGURE 7-8, "CONFIGURATION OF SNOW DRIFTS ON LOWER ROOFS".
    b. NO SLIDING SNOW LOADS APPLY.

16. RAIN-ON-SNOW SURCHARGE = 0 psf

17. DESIGN WIND SPEED, V = 115 mph

18. WIND EXPOSURE CATEGORY C

19. INTERNAL PRESSURE COEFFICIENT, GC_{pi} = +/- 0.18

20. MAPPED SPECTRAL RESPONSE ACCELERATION PARAMETERS:
    a. SHORT PERIODS, S_S = 0.117g
    b. 1-SECOND PERIODS, S_1 = 0.063g

21. SITE CLASS D

22. DESIGN SPECTRAL RESPONSE ACCELERATION PARAMETERS:
    a. SHORT PERIODS, S_{DS} = 0.124g
    b. 1-SECOND PERIODS, S_{D1} = 0.101g

23. SEISMIC DESIGN CATEGORY B

24. SEISMIC FORCE-RESISTING SYSTEM: STEEL SYSTEM NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE.

25. RESPONSE MODIFICATION COEFFICIENT, R = 3

26. SEISMIC ANALYSIS BY EQUIVALENT LATERAL FORCE PROCEDURE.

Soil Notes

1. BUILDING AREA FOUNDATIONS AND FLOOR SLABS ARE TO BE CONSTRUCTED BY CONVENTIONAL METHODS OVER SOILS IMPROVED BY THE INSTALLATION OF RAMMED AGGREGATE PIERS.

2. THE CONTRACTOR SHALL HIRE A SPECIALTY CONTRACTOR WITH A PROVEN RECORD OF PERFORMANCE THAT DELIVERS THEIR WORK ON A DESIGN-BUILD BASIS TO DESIGN AND INSTALL THE RAMMED AGGREGATE PIERS. THE SPECIALTY CONTRACTOR SHALL COORDINATE THE SIZE, DEPTH, AND SPACING OF THE PIERS WITH THE FOUNDATION PLANS AND LOADING SCHEDULES. SEALED RAMMED AGGREGATE PIER PLANS, DETAILS AND SUPPORTING CALCULATIONS SHALL BE SUBMITTED FOR REVIEW TO THE ENGINEER OF RECORD.

3. FOUNDATIONS ARE DESIGNED FOR A MINIMUM BEARING CAPACITY OF 2500 psf FOR SPREAD FOOTINGS AND 2000 psf FOR STRIP FOOTINGS. FLOOR SLABS ARE DESIGNED FOR A STIFFNESS RATIO, $R_s = k_g/k_m$ = 20.

4. THE CONTRACTOR SHALL HIRE A REGISTERED GEOTECHNICAL ENGINEER TO INSPECT AND APPROVE EXCAVATION SUBGRADE, BEARING SURFACES, BACKFILL MATERIAL, AND BACKFILL COMPACTION. THE REGISTERED GEOTECHNICAL ENGINEER SHALL VERIFY THAT THE BEARING CAPACITY AND MODULUS OF SUBGRADE REACTION OF THE SOIL MEETS OR EXCEEDS THE MINIMUM BEARING CAPACITY AND MODULUS OF SUBGRADE REACTION UTILIZED FOR THE FOUNDATION DESIGN. SHOULD CONDITIONS PROVE OTHERWISE, CONTACT THE ENGINEER OF RECORD AND PROCEED AS DIRECTED.

5. REFER TO THE GEOTECHNICAL REPORT FOR INFORMATION REGARDING SITE PREPARATION, FOUNDATION EXCAVATIONS, STRUCTURAL BACK FILL, COMPACTION REQUIREMENTS, SUITABLE BACK FILL MATERIAL, AND GROUNDWATER. THE GROUNDWATER LEVEL FOR THIS PROJECT IS HIGH.

6. EXTERIOR/UNHEATED AREA SLABS PLACED DIRECTLY UPON SOILS SUBJECT TO HEAVING AND SUBSEQUENT SETTLEMENT DUE TO FREEZE/THAW CYCLES SHALL BE LIMITEDLY UNDERCUT OF FROST SUSCEPTIBLE MATERIALS TO A DEPTH OF ONE TO TWO FEET BELOW THE SLAB, AND REPLACEMENT WITH WELL GRADED, PROPERLY PLACED AND COMPACTED GRANULAR SOILS.

7. DEWATERING WILL BE REQUIRED DURING CONSTRUCTION AND UNTIL THE CONCRETE FOUNDATIONS ARE SET. SEE GEOTECHNICAL REPORT.

8. THE CONTRACTOR SHALL PROVIDE ALL PROTECTION REQUIRED SO AS TO SAFEGUARD EXISTING UTILITIES.

9. LOCATE ALL UNDERGROUND UTILITIES PRIOR TO EXCAVATION.

10. UNLESS OTHERWISE SPECIFIED BY A LICENSED GEOTECHNICAL ENGINEER, THE CONTRACTOR SHALL COMPACT ALL STRUCTURAL FILL SUPPORTING FOUNDATIONS OR SLABS-ON-GRADE TO 100% OF THE MAXIMUM STANDARD PROCTOR DRY DENSITY (ASTM D-698) WITH MAXIMUM LIFTS OF 8 INCHES OR LESS. FILLS ADJACENT TO FOUNDATIONS AND OVER FOUNDATIONS SHALL BE COMPACTED TO 95% OF MAXIMUM STANDARD PROCTOR DRY DENSITY.

New Construction Work for :

Porter County Highway Department - Central Facility

1955 IN-2
Valparaiso, IN 46385

PORTER COUNTY Indiana

MARTIN RILEY
architects▪engineers

221 West Baker Street
Fort Wayne, Indiana 46802
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JEREMY L. BRICKEY
REGISTERED
No. 10809052
05/24/2024
STATE OF INDIANA
PROFESSIONAL ENGINEER

REVISION:		DATE:
1	ADDENDUM 1	2024-06-12

DRAWN BY:	NMS	REVIEWED BY:	JLB
COMMISSION NUMBER:	F22146	DATE:	2024-05-24

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STRUCTURAL SPECIFICATIONS