#2023-36 NVA Trucking
7013 Sands Road – Rezoning, Preliminary and Final Planned Unit Development and Special Use Permit for a Freight Terminal
Project Review for Planning and Zoning Commission

Meeting Date: July 19, 2023

Requests:

1. Rezoning from M and M-L to M PUD.
2. Preliminary and Final Planned Unit Development.
3. Special Use Permit for a Freight Terminal.
4. Variation from the maximum 8-foot height permitted for a fence to allow 12 feet, a variation of 4 feet.
5. Variation from the required landscape buffer between industrial and commercial properties to allow 20.5 feet, a variation of 9.5 feet.
6. Variation from the requirement to have a landscape island every 10 spaces to allow 13 spaces along the south parking area.

Location: 7013 Sands Road

Acreage: Approximately 22 acres

Existing Zoning: M Manufacturing and M-L Manufacturing Limited

Proposed Zoning: M PUD Manufacturing Planned Unit Development

Surrounding Properties:
North: B3V General Commercial and R1 Single-Family Residential uses (McHenry County)
South: (south of the railroad tracks) M PUD Manufacturing
East: M Manufacturing
West: (west of Route 31) R3 residential uses (McHenry County)

Staff Contact: Elizabeth Maxwell (815.356.3615)

Background:

- The property is vacant and zoned for industrial uses. The petitioner has performed tree removal on the site.
- The petitioner purchased the Smith Cartage property. Smith Cartage was annexed and zoned M PUD with approvals for a Freight Terminal and outside storage of commercial

vehicles in January 2015. The petitioner is expanding this operation to the surrounding property.

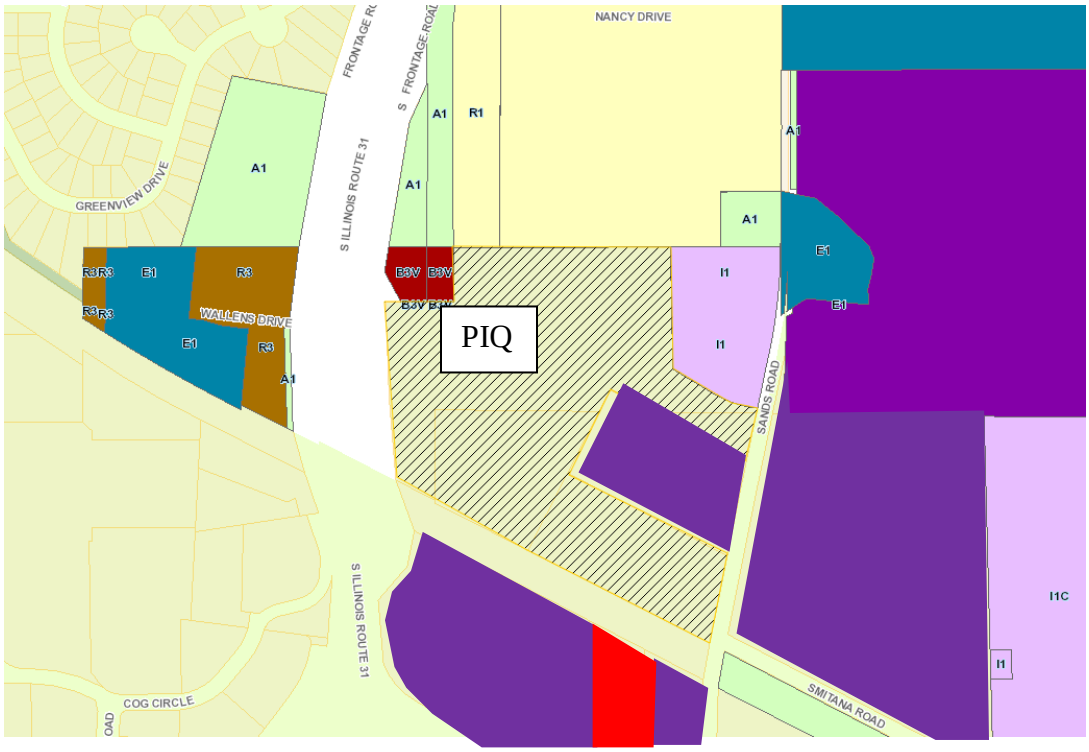
- The facility will act as a parking and storage area for trucks in between jobs or waiting for repairs. No one would be sleeping in the trucks and they will not idle.

Development Analysis:

General

- Requests:
    - Rezoning from Manufacturing and Manufacturing-Limited to Manufacturing PUD with a Special Use Permit to allow a Freight Terminal. A freight terminal is only allowed as a Special Use in the M zoning district. Outside storage is only allowed as an accessory use to a principal use. This requires the site to be rezoned to Manufacturing.
    - A Preliminary and Final Planned Unit Development to expand the existing operations of a freight terminal and ancillary outside storage. Although the current building is on a separate parcel, there is shared access through the site. To continue the continuity between the properties and expand the existing use the PUD approval has been requested.
    - Variation from the maximum height of a fence. Fences are permitted to be 8 feet high in Manufacturing zoning districts. The intent of the fence is to act as a screen wall between this use and the neighbors. Per the sight line drawings it has been determined the fence should be up to 12 feet high in certain instances to adequately screen the trucks.
    - Variation from the required 30-foot landscape buffer between commercial and industrial uses. The northwest corner of the site abuts B3V County zoned property. The setback varies between 29 feet to 20.5 feet.

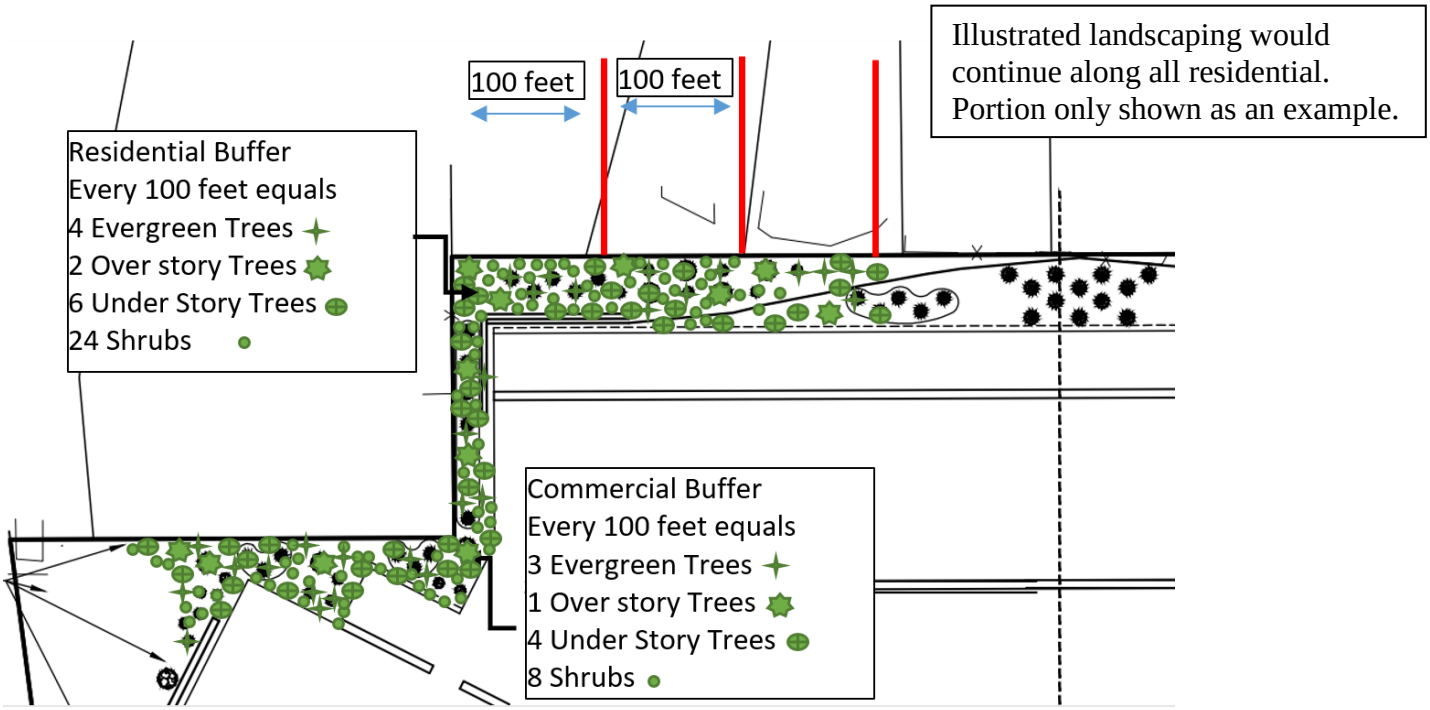
- Zoning: The site is zoned M Manufacturing and M-L Manufacturing Limited. The requested zoning is M PUD Manufacturing. This is an appropriate zoning for the freight terminal use.



- Land Use: The land use map shows the area as Industry. This land use designation is appropriate for this use.

- Site Plan:
  - The site has two access points, one utilizing the existing drive from Sands Road and a second drive farther north along Sands Road.
  - The new building will be located along the southern portion of the site to the west of the existing facility.
  - Parking for an industrial use is dependent on the number of employees. The total customer/employee parking provided is 22.
  - A solid fence is proposed along the north property line. The petitioner will present the fence style for review to ensure it is aesthetically pleasing and easy to maintain.

- Landscape Plan:
  - Per the tree removal permit, 159 trees are required to be replaced on the site.
  - Landscape is illustrated throughout the site, along the new entry drive, and as foundation base around the building.
  - Landscape islands are not required for storage areas.
  - Landscape buffers are required between different uses. A 50-foot landscape buffer is required between this use and the residential to the north. A 30-foot landscape buffer is required between this use and the commercial use to the west. A representation of the required landscape in that buffer is illustrated below. The landscape plan needs to be revised to illustrate the appropriate landscape.



- Elevations:
  - The building is a tilt up concrete panel exterior around a steel structure. The color palette is tans, browns and cream colors with a yellow accent.
  - Overhead doors fill the center section of the building allowing for trucks to enter and pull straight through as they receive maintenance.
  - The elevations **do not** meet the design standards. Staff has added conditions to the approval request so the building will meet the standards.

- Engineering Plans:
  - A significant amount of grading work is being proposed to create a large flat area for truck parking, as well as the required detention basins.
  - There is a significant slope along the north property line adjacent to the residential subdivision. On the west end, the slope increases about 16 feet higher for the truck parking over the residential lots. On the east end, the slope is about 10 feet lower for the truck parking area.
  - All engineering is reviewed by the City's storm water consultant and staff for compliance with the City Codes. Further engineering review is required to ensure compliance. This may affect the final layout and impervious coverage, which could result in a reduction in parking, but will not result in any new variations.

Findings of Fact:

Rezoning

- The property is currently zoned M-L Manufacturing Limited.
- The property would be rezoned to M PUD Manufacturing. The Manufacturing zoning criteria are:
  - ✓ General: This district is for "clean" (low environmental impact) industrial uses that are compatible with neighboring residential, office, and commercial districts.
  - ✓ Character: This district is characterized by large-scale buildings, exterior storage of materials, and/or exposed equipment. To mitigate impacts on the City's visual character and to ensure a high-quality industrial park setting, landscape buffers, architectural and design controls are established.
  - ✓ Uses: This district is intended to provide for heavy industrial uses with high nuisance potential.

Criteria for Rezoning

(a) The existing uses and zoning of nearby property.
☐ *Meets* ☐ *Does not meet*

(b) The extent to which property values are diminished by a particular zoning classification or restriction.
☐ *Meets* ☐ *Does not meet*

(c) The extent to which the destruction of property value of a petitioner property owner promotes the health, safety, morals or general welfare of the public.
☐ *Meets* ☐ *Does not meet*

(d) The relative gain to the public as opposed to the hardship imposed on a petitioning property owner.
☐ *Meets* ☐ *Does not meet*

(e) The suitability of the subject property for its zoned purposes.
☐ *Meets* ☐ *Does not meet*

(f) The length of time the property has been vacant as zoned, considered in the context of land development in the area.
☐ *Meets* ☐ *Does not meet*

(g) The Comprehensive Plan designation and the current applicability of that designation.
☐ *Meets* ☐ *Does not meet*

(h) The evidence or lack of evidence, of community need for the use proposed.
☐ *Meets* ☐ *Does not meet*

Preliminary/Final Planned Unit Development

The petitioner is requesting approval of a Preliminary/Final Planned Unit Development and Special Use Permit to allow a Freight Terminal with Outside Storage as an Accessory Use. A Planned Unit Development is a Special Use and Special Uses require separate review because of their potential to impact surrounding properties and the orderly development of the City.

Section 2-400 B General Standards for all special uses in the Unified Ordinance establishes standards for all special uses in Crystal Lake. Briefly, the criteria are as follows:

1. The use is necessary or desirable, at the proposed location, to provide a service or facility which will further the public convenience and general welfare.
   ☐ *Meets* ☐ *Does not meet*

2. The use will not be detrimental to area property values.
   ☐ *Meets* ☐ *Does not meet*

3. The use will comply with the zoning districts regulations.
   ☐ *Meets* ☐ *Does not meet*

4. The use will not negatively impact traffic circulation.
   ☐ *Meets* ☐ *Does not meet*

5. The use will not negatively impact public utilities or municipal service delivery systems. If required, the use will contribute financially to the upgrading of public utilities and municipal service delivery systems.
   ☐ *Meets* ☐ *Does not meet*
6. The use will not negatively impact the environment or be unsightly.
   ☐ *Meets* ☐ *Does not meet*

7. The use, where possible will preserve existing mature vegetation, and provide landscaping and architecture, which is aesthetically pleasing, compatible or complementary to surrounding properties and acceptable by community standards.
   ☐ *Meets* ☐ *Does not meet*

8. The use will meet requirements of all regulating governmental agencies.
   ☐ *Meets* ☐ *Does not meet*

9. The use will conform to any conditions approved as part of the issued Special Use Permit.
   ☐ *Meets* ☐ *Does not meet*

10. The use will conform to the regulations established for specific special uses, where applicable.
    ☐ *Meets* ☐ *Does not meet*

Planned Unit Development Variation
The purpose of Planned Unit Developments is to encourage and allow more creative and imaginative design of land developments than is possible under district zoning regulations. Planned Unit Developments are, in the form of relief from compliance with conventional zoning ordinance site and design therefore, intended to allow substantial flexibility in planning and designing a proposal. This flexibility is often requirements.

Ideally, this flexibility results in a development that is better planned, contains more amenities, and is ultimately more desirable than one that would have been produced through compliance with typical zoning ordinance and subdivision controls.

Therefore more lenient site requirements may be granted where the Planned Unit Development contains features not normally required of traditional developments. If the evidence is not found to justify such conditions, that fact shall be reported to the City Council with a recommendation that the variation request be lessened or denied.

NVA Transportation is requesting variations from:

1. Article 4-400 the requirement to have a landscape island every 10 spaces to allow 13 spaces along the south parking area.
2. Article 4-400 the required landscape buffer between industrial and commercial properties to allow 20.5 feet, a variation of 9.5 feet.
3. Article 4-700 the maximum 8-foot height permitted for a fence to allow 12 feet, a variation of 4 feet.

OUTDOOR SALES, SERVICE, STORAGE, OR DISPLAY
Outdoor sales, service, storage or display. All outdoor sales, service, storage or display must comply with the following standards:

1. General: An on-site circulation pedestrian and vehicle plan, illustrating the location of the sales, service, storage or display area shall be provided.

   ☐ Meets ☐ Does not meet

2. Site Design: Outdoor service or storage areas shall be located at the rear of the property. Special attention must be given to locate outdoor service or storage areas away from adjacent residential properties and at the least obtrusive location for adjacent commercial uses.

   ☐ Meets ☐ Does not meet

3. Screening: All outside service or storage areas shall be screened from view with solid wooden fencing or opaque landscaping, in accordance with the standards in Section 4-700, Fences, Walls and Screening. The height of the fencing shall be adequate to conceal the stock, equipment or materials from view of adjacent properties. In cases where the height of materials exceeds 15 feet in height making it difficult to screen with fencing of materials exceeds 15 feet in height making it difficult to screen with fencing and landscaping, consideration will be given to the type of materials being stored and the impact of the visibility on the adjacent and surrounding property owners.

   ☐ Meets ☐ Does not meet

4. Other applicable regulations: Written evidence, that applicable standards and requirements for health and safety protection and licensing by jurisdictions other than the City, as well as those required by the City ordinances, have been met shall be provided.

   ☐ Meets ☐ Does not meet

5. All outdoor sales, service, storage and display must meet the Guidelines for Outdoor Sales, Service, Storage and Display that are included in the Appendix.

   ☐ Meets ☐ Does not meet

Comprehensive Land Use Plan 2030 Vision Summary Review:

The Comprehensive Plan designates the subject property as Industry, which allows for existing and future manufacturing and service uses. The following goal is applicable to this request:

Land Use – Industry

Goal: Supporting manufacturing uses within the community, which contribute to the regional and local economy and Crystal Lake's live, work, play philosophy.

Recommended Conditions:

If a motion to recommend approval of the petitioner's request is made, it should be with the following conditions:

1. Approved plans, reflecting staff and advisory board recommendations, as approved by the City Council:
   A. Application (NVA Transportation, received 06/14/23)
   B. Architecture Plans (DDCA, dated 05/12/23, received 01/31/23)
   C. Landscape Plan (J. Condon & Associates dated 07/03/23, received 07/11/23)
   D. Engineering Plans (J. Condon & Associates, dated 05/19/23, received 06/14/23)

2. Architecture:
   A. No LED lighting is permitted on the exterior, outlining portions of the building, windows or doors, and not inside the windows. Remove the LED strips from the building.

   B. Create projections of at least two-feet in depth every 75 feet along the building. The two darker brown areas over the office windows shall project a minimum of two feet and a similar decorative projection shall be added around the two bay door area.

   C. Add a darker color base around the entire building to give the building a sense of weight along the bottom.

   D. Paint the top cap portion of the building the darkest brown from the color palette.

   E. Increase the height of the parapet walls in certain sections, for example over the front entry way and over the bay door area to break up the long expanse of the roof.

3. Landscape:
   A. The 50-foot residential landscape buffer along the north property line must contain 4 evergreen trees plus 2 over story trees plus 6 under story trees plus 24 shrubs every 100 lineal feet of the buffer.

B. The 30-foot commercial landscape buffer, which varies between 29 feet and 20.5 feet must contain 3 evergreen trees plus 1 over story tree plus 4 under story trees plus 8 shrubs every 100 lineal feet.

C. Increase the number of evergreen trees and over story trees along Route 31 to provide a landscape screen along the Route 31 corridor.

4. Provide a photometric plan that complies with the UDO requirements for staff review and approval.

5. All ground-mounted or roof-mounted mechanical equipment must be screened. Additional screen walls or parapet extensions to the roof may be necessary to screen roof-mounted equipment.

6. The petitioner shall address all of the review comments and requirements of the City Departments of Public Works, Fire Rescue, Engineering, and Community Development and the City's Stormwater Consultant.

PIQ Map

7013 Sands Road



City of Crystal Lake
Development Application

Office Use Only
File # _____

Project Title: NVA Trucking Facility

Action Requested

__ **Annexation**
__ **Comprehensive Plan Amendment**
__ **Conceptual PUD Review**
__ **Final PUD**
__ **Final PUD Amendment**
__ **Final Plat of Subdivision**
__ **Preliminary PUD**
__ **Preliminary Plat of Subdivision**
XX **Rezoning**
XX **Special Use Permit** Outside Storage Truck terminal Diesel repair
XX **Variation** Fence Height + commercial landscape buffer
__ **Other**

Petitioner Information

Name: NVA Transportation
Address: 7013 Sands Road
Crystal lake Il 60014
Phone: 224 335 7883
Fax: _____
E-mail: ivan@nvtrans.com

Owner Information (if different)

Name: Ivan Nartsev Owner
Address: 7013 Sands Road
Crystal Lake Il 60014
Phone: 224 335 7883
Fax: _____
E-mail: Ivan@nvatrans.com

Property Information

Project Description: Petitioner is the owner of the former Smith Cartage site and the surrounding acreage Petitioner intends to expand the trucking facility by constructing an additional building and truck parking.

The outside Truck parking requres landscaping approval and a special use for outdoor storage. and truck repair

The landscaping includes a variation for fence height to allow a twelve foot high fence + commercial landscape buffer

Project Address/Location: The common address is 7013 Sands Road and includes the area to the North and west of the former Smith Cartage facility

PIN Number(s): 19-03-453-001, 19-03-453-003. 19-03-451-021

Development Team

Please include address, phone, fax and e-mail

Developer: is the owner

Architect: Tim Larkin DDCA Architects 773 823 5232 Tlarkin@ddcaarchitects.com
3321 S Route 31, Prairie Grove Il 60012

Attorney: Joseph Gottemoller McHenry County Law 815 459 5152, joe@mchenrycountylaw.com
Law firm fax 815 459 0290 address 1 N Virginai street Crystal lake Il 60014

Engineer: James Condon of Condon & Associates 815 404 1356 jcondon@jcondoninc.com
5415 Business Parkway Ringwood Il 60072

Landscape Architect:

Planner:

Surveyor: Vanderstappen surveying Attn Art Gritmacher 815 337 8310 artg@vandersinc.com

Other:

Signatures

PETITIONER: Print and Sign name (*if different from owner*) **Date**

As owner of the property in question, I hereby authorize the seeking of the above requested action.

OWNER: Print and Sign name **Date**

NOTE: If the property is held in trust, the trust officer must sign this petition as owner. In addition, the trust officer must provide a letter that names all beneficiaries of the trust.

Certificate of the Publisher

Northwest Herald

Description:REZONE NVA PROPERTIES
2090514

GOTTEMOLLER & ASSOCIATES
1 N VIRGINIA ST
CRYSTAL LAKE IL 60014

Shaw Media certifies that it is the publisher of the Northwest Herald. The Northwest Herald is a secular newspaper, has been continuously published daily for more than fifty (50) weeks prior to the first publication of the attached notice, is published in the City of Crystal Lake, County of McHenry, State of Illinois, is of general circulation throughout that county and surrounding area, and is a newspaper as defined by 715 ILCS 5/5.

A notice, a true copy of which is attached, was published 1 time(s) in the Northwest Herald, namely one time per week for one successive week(s). Publication of the notice was made in the newspaper, dated and published on
06/29/2023

This notice was also placed on a statewide public notice website as required by 5 ILCS 5/2.1.
In witness, Shaw Media has signed this certificate by John Rung, its publisher, at Crystal Lake, Illinois, on
29th day of June, A.D. 2023

Shaw Media By:

John Rung, Publisher

Account Number 10154

Amount $132.08

PUBLIC NOTICE
BEFORE THE PLANNING AND ZONING COMMISSION OF THE CITY OF CRYSTAL LAKE, MCHENRY COUNTY, ILLINOIS

IN THE MATTER OF THE APPLICATION OF
NVA Prop II LLC and
Ivan Nartsev

LEGAL NOTICE

Notice is hereby given in compliance with the Unified Development Ordinance (UDO) of the City of Crystal Lake, Illinois, that a public hearing will be held before the Planning and Zoning Commission upon the application by Ivan Nartsev representing NVA Prop II LLC for approval of Rezoning, a Special Use Permit and a Variation at the following real estate known as 7013 Sands Road, Crystal Lake, Illinois 60014, **PIN:** 19-03-453-003, 19-03-401-021, 19-03-453-001. The property is generally located between Route 31 and Sands road north of the intersection of Sands Road and the Union Pacific rail line.

This application is filed for the purpose of seeking Rezoning from M Manufacturing and M-L Manufacturing Limited to M PUD with a Special Use Permit for a Freight Terminal and Outside storage along with a variation to allow a fence height up to 12 feet, and a variation to allow the reduction of the commercial landscape buffer between commercial and manufacturing districts, as well as any other variations as presented at the public hearing pursuant to Unified Development Ordinance pursuant to Article 1, Article 2, Article 4, and Article 5. Plans for this project can be viewed at the City of Crystal Lake Planning and Economic Development Department at City Hall.

A public hearing before the Planning and Zoning Commission on the request will be held at 7:00 p.m. on Wednesday, July 19, 2023, at the Crystal Lake City Hall, 100 West Woodstock Street, at which time and place any person determining to be heard may be present.

Jeff Greenman, Chairperson
Planning and Zoning Commission
City of Crystal Lake

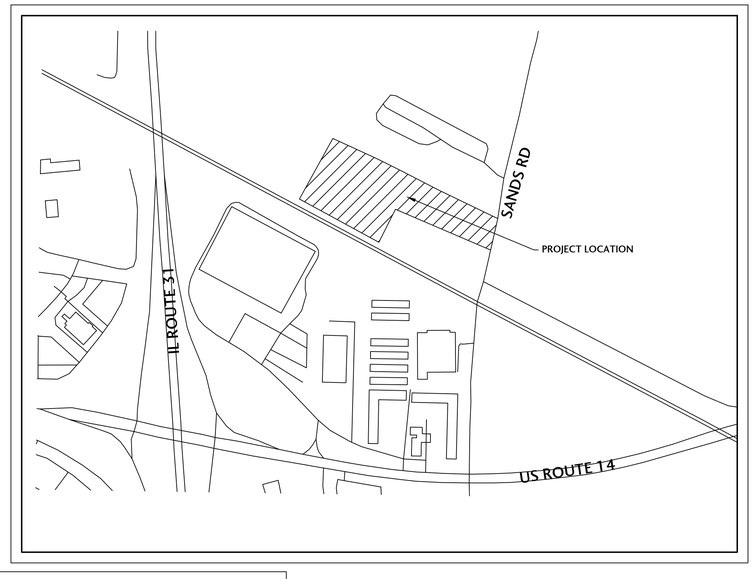
(Published in the Northwest Herald June 29, 2023) 2090514

PRELIMINARY
NOT FOR CONSTRUCTION

ENGINEERING PLANS
FOR
NVA TRUCKING FACILITY EXPANSION
SITE GRADING PERMIT PLANS
CRYSTAL LAKE, ILLINOIS

PLANS PREPARED FOR:

NVA PROP IL LLC
7013 SANDS RD
CRYSTAL LAKE, IL 60014



LOCATION MAP
N.T.S.

BENCHMARKS

SITE BENCHMARK:
BENCH TIE IN EAST FACE OF POWER POLE
ELEV= 916.76 NAVD88

PROJECT BENCHMARK:
MCHENRY COUNTY GEODETIC CONTROL
STATION DESIGNATION "CARY"
ELEV= 824.54 NAVD88

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COUNTY MCHENRY
CITY-TOWNSHIP CRYSTAL LAKE
SEC. & ¼SEC. NO.# SE 1/4 SEC 3, T43N, R8E
48 Hours Before You Dig.
EXCLUDING SAT., SUN., & HOLIDAYS

SHEET INDEX:

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C0.1 SPECIFICATIONS & TYPICAL SECTIONS
C0.2 STANDARD DETAILS
C0.3 STANDARD DETAILS
C0.4 STANDARD DETAILS
C0.5 STANDARD DETAILS
C1.0 EXISTING CONDITIONS
C2.0 OVERALL SITE PLAN
C2.1 SOUTHWEST GEOMETRIC & UTILITY PLAN
C2.2 NORTHWEST GEOMETRIC & UTILITY PLAN
C2.3 NORTHEAST GEOMETRIC & UTILITY PLAN
C2.4 SOUTHEAST GEOMETRIC & UTILITY PLAN
C3.0 SOUTHWEST GRADING & EROSION CONTROL PLAN
C3.1 NORTHWEST GRADING & EROSION CONTROL PLAN
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C4.2 WEST DETENTION BASIN PLAN AND DETAILS
C4.3 EAST TEMPORARY SEDIMENTATION BASIN & DETAILS
C4.4 CENTER & WEST TEMPORARY SEDIMENTATION BASINS & DETAILS
C5.0 EROSION CONTROL SPECIFICATIONS

LEGEND

EXISTING	DESCRIPTION	PROPOSED
	DOWN GUY	
	DRAIN	
	ELECTRIC TELEPHONE TV RISERS	
	UTILITY HANDHOLE MANHOLE	
	ELECTRIC GAS WATER METER	
	UTILITY MARKER	
	LIFT STATION	
SPGT	SPIGOT	
	TRAFFIC CONTROL BOX	
	TRAFFIC CONTROL SIGNAL	
	TRANSFORMER	
	WELL	
	SOIL BORING	
	A/C UNIT	
	FLAG POLE	
	CURB INLET	
	SANITARY MANHOLE	
	STORM MANHOLE	
	STORM CATCH BASIN	
	STORM INLET	
	FLARED END SECTION	
	VALVE VAULT	
	WATER VALVE	
	FIRE HYDRANT	
	SIGN POST	
	LIGHT POLE	
DS	DOWNSPOUT	DS
	BOLLARD	BOL
	UTILITY POLE	
	CLEANOUT	CO
	MAILBOX	
W	WATERMAIN	W
	SANITARY SEWER	
	STORM SEWER	
X	STORM UNDERDRAIN	
OE	FENCE	X
E	OVERHEAD ELECTRIC	OE
T	ELECTRIC SERVICE	E
GAS	TELEPHONE SERVICE	T
	GAS SERVICE	GAS
	COMBINED SEWER	
XXX	MAJOR CONTOUR	XXX
XXX	MINOR CONTOUR	XXX

PRELIMINARY
NOT FOR CONSTRUCTION

I HEREBY CERTIFY THAT THE PLANS WITH THE FIRM'S NAME LISTED BELOW WERE PREPARED UNDER MY DIRECT SUPERVISION. FURTHERMORE, THE PROPOSED PROJECT WILL NOT RESULT IN DRAINAGE, EROSION OR RUNOFF WHICH ADVERSELY IMPACTS ADJACENT PROPERTIES OR THE PUBLIC RIGHT-OF-WAY. THE PLANS PREPARED MEET THE MINIMUM REQUIREMENTS OF THE MCHENRY COUNTY STORMWATER MANAGEMENT ORDINANCE.
DATED AT RINGWOOD, ILLINOIS THIS 19th DAY OF MAY, 2023

JAMES E. CONDON, P. E. , J. CONDON & ASSOCIATES, INC.
ILLINOIS REG. PROF. ENGINEER No. 062-044555 EXPIRATION DATE 11-30-2023
ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION FIRM NUMBER: 184-006759

JAMES E. CONDON 062-044555 LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

J. CONDON & ASSOCIATES, INC.
CONSULTING ENGINEERS
5415 BUSINESS PARKWAY
RINGWOOD, ILLINOIS 60072
815.728.0068
IL DESIGN FIRM # 184-006759

NVA PROP IL LLC
CRYSTAL LAKE, ILLINOIS

N W E S

SCALE: N/A
ISSUE DATE: 02/21/2023
PROJECT MANAGER: JEC
DESIGNER: ERG
QUALITY CONTROL: MAM

NVA TRUCKING FACILITY EXPANSION
CRYSTAL LAKE, ILLINOIS

NO.	DATE	DESCRIPTION
1	5/19/23	REVISIONS PER CITY REVIEW

LIMITATION OF WARRANTY OF ENGINEER'S INSTRUMENTS OF SERVICE

THE ENGINEER AND HIS CONSULTANTS DO NOT WARRANT OR GUARANTEE THE ACCURACY AND COMPLETENESS OF THE DELIVERABLES HEREIN BEYOND A REASONABLE DILIGENCE. IF ANY MISTAKES, OMISSIONS, OR DISCREPANCIES ARE FOUND TO EXIST WITHIN THE DELIVERABLES, THE ENGINEER SHALL BE PROMPTLY NOTIFIED SO THAT HE MAY HAVE THE OPPORTUNITY TO TAKE WHATEVER STEPS NECESSARY TO RESOLVE THEM. FAILURE TO PROMPTLY NOTIFY THE ENGINEER OF SUCH CONDITIONS SHALL ABSOLVE THE ENGINEER FROM ANY RESPONSIBILITY FOR THE CONSEQUENCES OF SUCH FAILURE. ACTIONS TAKEN WITHOUT THE KNOWLEDGE AND CONSENT TO THE ENGINEER, OR IN CONTRADICTION TO THE ENGINEER'S DELIVERABLES FOR RECOMMENDATIONS, SHALL BECOME THE RESPONSIBILITY NOT OF THE ENGINEER BUT OF THE PARTIES RESPONSIBLE FOR TAKING SUCH ACTION.

PROJECT NUMBER: NART-22034-3

SHEET TITLE: COVER SHEET

SHEET NUMBER: C0.0

X:\2022\22034\cad\22034-3xrx specs dlls.dwg, 5/25/2023 11:49:45 AM, DWG To PDF.pc3, 1:1

Design Special Provisions

The Standard Specifications for Road and Bridge Construction prepared by the Department of Transportation of the State of Illinois (latest edition), Supplemental Specifications, the Standard Specifications for Water and Sewer Main Construction in Illinois (latest edition) and the Illinois Urban Manual (blue book) as published by the IEPA shall govern the construction of this project.

In addition, the following special provisions supplement the said specifications, and in case of conflict with any part or parts of said specifications, these special provisions shall take precedence and shall govern.

1. Scope of Work

The proposed improvement consists of supplying all the necessary labor, material and equipment to satisfactorily construct and install all improvements according to the plans designated "NVA TRUCKING FACILITY EXPANSION"

2. Construction Of Underground Utilities

A. Excavation: Where working conditions and right-of-way permit, pipe line trenches with sloping sides may be used.

The slopes shall not extend below the top of the pipe, and the trench excavations below this point shall be made with vertical sides with widths not exceeding those specified herein for the various sizes of pipe.

Open-cut trenches shall be sheeted and braced as required by the governing state, federal laws and municipal ordinances, and as may be necessary to protect life, property or the work.

Where firm foundation is not encountered at the grade established, due to unsuitable soil, all such unsuitable material shall be removed and replaced with approved compacted granular material.

B. Width of Trenches: The maximum width of the trench at the top of the pipe shall be as follows:

Nominal Pipe Sizes (inches)	Trench Widths (inches)
12 or smaller	30
14-18	36
20-24	42
27-30	48
33 and larger	1-1/3 times pipe O.D.

C. Removal of Water: Contractors shall, at all times during construction, provide and maintain ample means and devices with which to remove and properly dispose of all water entering the excavations. No sanitary sewer shall be used for disposal of trench water, unless specifically approved by the City Engineer and then only if the trench water does not ultimately arrive at existing pumping or sewage treatment facilities.

D. Bedding of Pipe: All pipe shall be installed on a bedding of approved, compacted granular material unless otherwise approved by the City Engineer. The bedding material shall be installed as per the typical trench backfill detail.

E. Trench Backfill: Whenever the excavation is in or within 2 feet of existing or proposed streets, parking areas, driveways, sidewalks or other paved areas, the trench shall be backfilled with approved selected granular material compacted in place. The granular material shall consist of CA-6 crushed aggregate and extend away from the back of curb or any edge of pavement at a 1 to 1 slope. The top 12 inches of the backfill shall be filled with road gravel or crushed stone and maintained as a temporary surface for the normal use of the area when the trench is in existing pavements.

F. Restoration of Drainage: As soon as possible after backfilling the trench, all ditching, grading and shaping necessary to restore the original drainage in the area of work shall be performed. Culverts removed during the course of the work shall be replaced as soon as practical after backfilling is complete.

G. Utilities: The contractor shall notify all utilities prior to the installation of any pipelines. Where conflicts exists between underground utilities and the proposed underground pipeline requiring a revision to the plans, such construction shall not be undertaken until such changes are approved by the Crystal Lake Engineer in writing.

3. Inspection

All improvements shall be subject to inspection by a duly authorized and qualified Owner's Representative both during the course of construction and after construction is complete. The Owner's Representative shall have authority over materials of construction, methods of construction and workmanship to ensure compliance with working drawings and specifications. The contractor shall provide for reasonable tests and proof of quality of materials as requested by the inspector. Upon due cause, which shall include weather conditions, workmanship or non-adherence to the approved plans and specifications, the inspector shall have the authority to stop construction.

4. Storm Sewer Frames And Grates

All frames not falling in the flow line of the curb and gutter shall be Neenah R-2535 in unpaved areas and Neenah R-1713 in paved areas with Type A grates of open lids (or approved equal). with the word "Storm" cast in all closed lids. All frames and grates in the curb shall be Neenah R3502-A and Neenah R-3010-L for vane frames (or approved equal). TIF OL SP shall be Neenah R-2557 (or approved equal).

5. Earth Excavation

This item shall include stripping and stockpiling of all topsoil in areas designated by the Owner's Representative. All material deposited in embankment areas shall be compacted under the direction of the municipal inspector. Topsoil shall be stripped in all fill areas before placement of material. All excess material shall be disposed of off-site at an approved facility by the contractor unless otherwise directed by the Owner.

6. Topsoil Placement

The contractor shall place topsoil to a minimum depth of 6 inches over all unpaved disturbed areas ready for landscaping. The surface of the topsoil shall be free from clods, stones, sticks and debris. Placement shall include spreading, cultivating, lightly compacting, dragging and grading. Topsoil, when placed, shall be dry enough so as not to puddle or bond. Topsoil shall not be placed when the subgrade is frozen, excessively wet, or in any other condition detrimental to proper grading. Remove all foreign matter and soil clods larger than 1" in diameter. If undesirable vegetation is present prior to seeding, the topsoil shall be disked until all vegetation has been removed

7. Seeding

All disturbed unpaved areas outside of detention basins and sloping areas exceedig 3 to 1 shall be seeded or sodded with Kentucky Bluegrass mixture or with another mixture approved by the owner's representative. All seeded areas shall be covered with the specified erosion control matting. All seeded areas shall have an adequate growth of grass before work is accepted. All seeded areas shall be stabilized within 24 hours after seeding operations have been completed. The owner's representative shall approve the seed bed prior to sowing any seeds. Prior to starting seed work, contractor shall submit the name of seed supplier for the project and labels from the bags. The seed shall be sown with a machine that mechanically places the seed in direct contact with the soil, packs, and covers the seed in one continuous operation. Broadcasting will be allowed as approved by owner's representative in inaccessible areas where the use of the equipment specified is physically impossible. Adequate growth will be defined as root depth into topsoil a minimum of 2" and dense, green, consistent turf void of any bare or patchy areas of more than 9 square inches. The contractor shall maintain the turf grass until final acceptance. Maintenance to include grade repair, reseeding, mowing, insect & weed control, trimming & edging. Each mowing shall occur when the grass has reached a height of 4 inches. Mow to a height of 3 inches, turf shall be mowed so as not to remove more than 1/3 of the total height. The cost of such maintenance shall be included in the turf grass installation cost. All seeded areas shall have an adequate growth of grass before work is accepted.

Areas with permanent slopes exceeding 3 to 1 shall be seeded with IDOT Class 3 - Northern Illinois Slope Mixture and blanketed with American Green SC150 Erosion Blanket or approved equal.

8. Bituminous Materials (Prime Coat)

Prime shall be MC-30 applied at a rate of 0.35 GAL/SY of pavement for all aggregate areas. Prime shall be SS-1 applied at a rate of 0.1 GAL/SY of pavement on all bituminous surfaces.

9. Curb Depressions

All curbs shall be depressed at all crosswalks to provide for wheelchair access ramps.

10. Traffic Control

The contractor shall obtain, erect, maintain and remove all signs, barricades, flagman, and other traffic control devices as may be necessary for the purpose of regulating, warning or guiding traffic. Placement and maintenance of all traffic control devices shall be as directed by the municipal inspector and in accordance with the applicable parts of Article 701 of the Standard Specifications for Road and Bridge Construction. All traffic protection will be considered incidental to the contract.

11. Engineer's Responsibility

The engineer shall be responsible for the following:

A. To visit the construction site in order to better carry out the duties and responsibilities assigned by the Owner and undertaken by the engineer;

B. The engineer shall not, during such visits or as a result of such observations of the contractor's work in progress, supervise, direct, have control over the contractor's work, nor shall the engineer have the authority over the responsibility for the means, methods, techniques, sequences, or procedures of construction selected by the contractor for safety precautions and programs incidental to the work of the contractor, or for any failure of the contractor to comply with the laws, rules, regulations, ordinances, codes or orders applicable to the contractor furnishing and performing his work. Accordingly, the engineer can neither guarantee the performance of the construction contracts by the contractor nor assume responsibility for the contractor's failure to furnish and perform his work in accordance with the contract documents.

12. Construction Drawings/Contractor's Responsibility

No construction plans shall be used for construction unless specifically marked "For Construction." Prior to commencement of construction, the contractor shall verify all dimensions and conditions affecting their work with the actual conditions at the job site. In addition, the contractor must verify the engineer's line and grade stakes. If there are any discrepancies from what is shown on the construction plans, he must immediately report same to the engineer before doing any work, otherwise, the contractor assumes full responsibility. In the event of disagreement between the construction plans, Standard Specifications and/or special details, the contractor shall secure written instructions from the engineer prior to proceeding with any part of the work effected by omissions or discrepancies. Failing to secure such instructions, the contractor will be considered to have proceeded at his own risk and expense. In the event of any doubt or question arising with respect to specifications, the decision of the engineer shall be final and conclusive.

13. Indemnification

The contractor shall indemnify and hold harmless the Owner and J. Condon & Associates, Inc. from and against all claims, damages, losses and expenses, including attorney's fees arising out of or resulting from the performance of the contractor's work. In any and all claims against the owner or J. Condon & Associates, Inc., by any employee of the contractor, or anyone directly or indirectly employed by the contractor, or anyone for whose acts the contractor may be liable, the indemnification obligation shall not be limited in any way by any limitation on the amount of damages, compensation or benefits payable by or for the contractor under Worker's Compensation acts, disability benefit acts or other employee benefit acts.

14. Preconstruction Conference

A preconstruction conference for representatives of the developer, municipality and contractor will be held before the contractor proceeds with construction, at a time and place convenient for all parties, for review of the contractor's construction schedules, to establish procedures for handling shop drawing and other submittals and to establish a working understanding among the parties to the contract work.

15. Project Quantities

The quantities given by the engineer are intended as a guide for the contractor in determining the scope of the completed project. It is the contractor's responsibility to determine all material quantities and appraise himself of all site conditions. The contract price submitted by the contractor shall be considered as lump sum for the completed project. No claims for extra work will be recognized unless ordered in writing by the Owner.

16. Insurance Requirements

The contractor shall purchase and maintain Comprehensive General Liability and other insurance set forth below which will provide protection from claims which may arise out of or resulting from the performance of work by anyone directly or indirectly employed by the contractor or by anyone for whose acts the contractor may be liable.

A. Worker's Compensation and Employer's Liability insurance in any amount not less than statutory limits required by law.

B. Comprehensive General Liability insurance including coverage in the amount of $500,000 per accident for property damage and $1,000,000 per person and $2,000,000 aggregate per accident for bodily injury, sickness or disease, or death of any person.

C. Comprehensive Automobile Liability insurance covering all automobiles, trucks, trailers and any other motorized equipment owned or leased by the contractor.

17. Certificate of Insurance

The contractor shall not commence work until he has filed with the Owner's Representative a certificate of insurance showing complete coverage of all insurance required, signed by the insurance companies or their authorized agents. Each certificate shall provide that coverage shall not be terminated or reduced without 30 days advance written notice to the Owner's Representative. The contractor shall name the Owner & J. Condon & Associates, Inc. as additional insureds on the Comprehensive General Liability and Automobile Liability policies.

18. Erosion Control

It shall be the contractor's responsibility to properly control erosion on the job site through the use of siltation ponds, filter fabrics, etc. Any siltation of conduits, structures, or ditches shall be cleaned and maintained by the contractor until the seeding has taken hold. All washouts, gullies, etc. will be regraded and reseeded by the contractor.

The contractor's responsibility for erosion control shall extend throughout the construction process. The contractor shall be responsible for clean-up of paved surfaces within and outside of the project.

All erosion control practices shall comply with the latest revision of the Illinois Urban Manual (Blue Book) as published by the IEPA.

19. Development Inspector

The developer shall supply a duly authorized and qualified inspector who shall provide the City with daily inspection logs of all public improvements being completed at the construction site.

20. Retaining Wall

All retaining walls shown shall be designed by others.

STANDARD SOIL EROSION AND SEDIMENT CONTROL

1. Control measures shall meet the minimum standards and specifications of the *Illinois Urban Manual* (www.aiswcd.org/IUM) unless stated otherwise.
2. Soil disturbance shall be conducted in such a manner as to minimize erosion. Areas of the development site that are not to be disturbed shall be protected from construction traffic or other disturbance until final stabilization is achieved.
3. Soil stabilization measures shall consider the time of year, development site conditions and the use of temporary or permanent measures.
4. Stabilization by seeding shall include topsoil placement and fertilization, as necessary.
5. Native seed mixtures shall include rapid-growing annual grasses or small grains to provide initial, temporary soil stabilization.
6. Offsite property shall be protected from erosion and sedimentation. Velocity dissipation devices shall be placed at concentrated discharge locations and along the length of any outfall channel, as necessary to prevent erosion.
7. Sediment control measures shall be installed prior to the disturbance of tributary areas.
8. Stabilization of disturbed areas shall be initiated immediately whenever any clearing, grading, excavating or other earth disturbing activities have permanently ceased on any portion of the development site, or temporarily ceased on any portion of the development site and will not resume for a period exceeding 14 calendar days. Stabilization of disturbed areas shall be initiated within 1 working day of permanent or temporary cessation of earth disturbing activities and shall be completed as soon as possible, but not later than 14 calendar days from the initiation of stabilization work in an area. Exceptions to these time frames are specified below:
   a. Where the initiation of stabilization measures is precluded by snow cover, stabilization measures shall be initiated as soon as practicable; and
   b. In areas where construction activity has temporarily ceased and will resume after 14 days, a temporary stabilization method may be used.
9. Disturbance of steep slopes shall be minimized. Areas or embankments having slopes steeper than 3:1 shall be stabilized with staked in place sod, erosion control blanket in combination with seeding, or an equivalent control measure.
10. Perimeter control measures shall be provided downslope and perpendicular to the flow of runoff from disturbed areas, where the tributary area is greater than 5,000 square feet, and where runoff will flow in a sheet flow manner. Perimeter erosion control shall also be provided at the base of soil stockpiles.
11. The stormwater management system shall be protected from erosion and sedimentation downslope from disturbed areas. Inlet protection that reduces sediment loading, while allowing runoff to enter the inlet shall be required for all storm sewers. Check dams, or an equivalent control measure, shall be required for all channels. Filter fabric inlet protection and straw bale ditch checks are not acceptable control measures.
12. If dewatering services are used, discharges shall be routed through an effective sediment control measure (e.g., sediment trap or an equivalent control measure). The Enforcement Officer shall be notified prior to the commencement of dewatering activities.
13. All temporary soil erosion and sediment control measures shall be removed within 30 days after final stabilization of the development site is achieved or after the temporary measures are no longer necessary. Trapped sediment shall be removed and disturbed areas shall be permanently stabilized.
14. Stockpiled soil and materials shall be removed from flood hazard areas at the end of each work day. Soil and materials stockpiled in IWMC or buffer areas shall be placed on timber mats, or an equivalent control measure.
15. Effective control measures shall be utilized to minimize the discharge of pollutants from the development site. At a minimum, control measures shall be implemented in order to:
   a. Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash water; and
   b. Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, vehicle fluids, sanitary waste, and other materials present on the development site to precipitation and to stormwater.
16. Adequate receptacles shall be provided for the depositing of all construction material debris generated during the development process. The applicant shall not cause or permit the dumping, depositing, dropping, throwing, discarding or leaving of construction material debris upon or into any development site, channel, or IWMC. The development site shall be maintained free of construction material debris.
17. The Enforcement Officer may require additional or alternate soil erosion and sediment control measures, based on development site specific considerations and the effectiveness of the installed control measures.

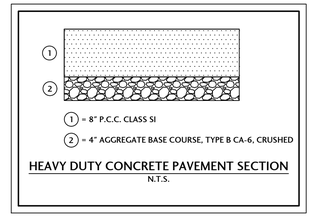
Standard Drain Tile Notes

1. Drain tiles disturbed during regulated development shall be reconnected by those responsible for their disturbance, unless the development plans specify abandonment of the drain tiles.
2. All abandoned drain tiles within disturbed areas shall be removed in their entirety.
3. Drain tiles within the disturbed area of a development site shall be replaced, bypassed around the development site or intercepted and connected to the stormwater management system for the development site. The size of the replaced or bypassed drain tile shall be equivalent to the existing drain tile.

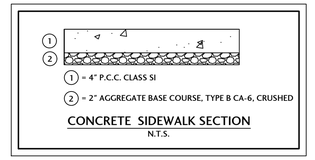
Seed Mixture	Moisture Regime	Sun Light	Salt Tolerance	Seeding Rates (PLS) lbs/ac	lbs/1000 SF
Kentucky blue grass use at least 3 varieties	dry-well drained	full-partial	moderate	88-130	2-3
Kentucky blue grass	dry-well drained	full	moderate	110	2.5
Red fescue				44	1
Tall fescue (turf type)	dry-wet	full-shade	moderate	220-260	5-6
Red Fescue	dry-well-drained	full-partial	moderate to	110	2.5
Kentucky blue grass			high	44	1
Kentucky blue grass	dry-well-drained	full-partial	moderate	86	2
Perennial ryegrass				43	1
Red fescue	wet-moist	full-partial	high to very	35	0.8
Alkali grass			high	35	0.8
Squirreltail grass				15	0.35

Seeding Dates

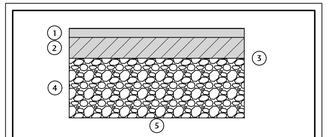
Spring		
	Northern IL	Early Spring to June 1
	Central IL	Early Spring to May 15
	Southern IL	Early Spring to May 15
Fall		
	Northern IL	August 1 to September 1
	Central IL	August 1 to September 10
	Southern IL	August 1 to September 20
Dormant		
	Northern IL	November 1 to March 15
	Central IL	November 15 to March 1
	Southern IL	November 15 to March 1



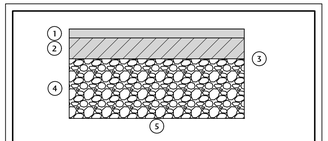
HEAVY DUTY CONCRETE PAVEMENT SECTION
N.T.S.



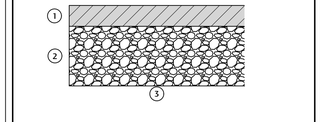
CONCRETE SIDEWALK SECTION
N.T.S.



PARKING LOT ASPHALT PAVEMENT SECTION
N.T.S.



HEAVY DUTY ASPHALT PAVEMENT SECTION
N.T.S.



HEAVY DUTY ASPHALT GRINDING PAVEMENT SECTION
N.T.S.

J. CONDON & ASSOCIATES, INC.
CONSULTING ENGINEERS
5415 BUSINESS PARKWAY
RINGWOOD, ILLINOIS 60072
815.728.0068
IL DESIGN FIRM # 184-006759

NVA PROP IL LLC

CRYSTAL LAKE, ILLINOIS

SCALE: N/A

ISSUE DATE: 02/21/2023

PROJECT MANAGER: JEC

DESIGNER: ERG

QUALITY CONTROL: MAM

NVA TRUCKING FACILITY EXPANSION

CRYSTAL LAKE, ILLINOIS

NO.	DATE	DESCRIPTION
1	5/19/23	REVISIONS PER CITY REVIEW

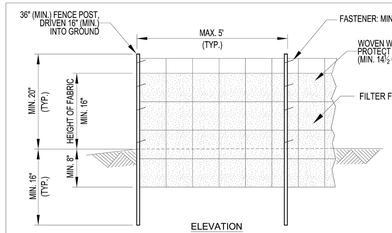
PROJECT NUMBER: NART-22034-3

SHEET TITLE: SPECIFICATIONS & TYPICAL SECTIONS

SHEET NUMBER: C0.1

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EC-01



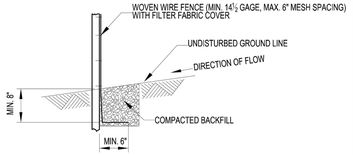
ELEVATION

MATERIAL SPECIFICATIONS:

POSTS: STEEL (EITHER "T" OR "U" TYPE) OR HARDWOOD WITH A MINIMUM CROSS-SECTIONAL AREA OF 3.0 SQ. IN.

FENCE: WOVEN WIRE (14½ GAGE) WITH 6" MAX. MESH OPENING

FILTER CLOTH: FILTER X, MIRAFI 100X, STABILINKA T 140N.



FABRIC ANCHOR DETAIL

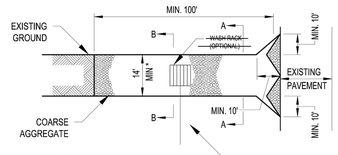
NOTES:

1. TEMPORARY SEDIMENT FENCE SHALL BE INSTALLED PRIOR TO ANY GRADING WORK IN THE AREA TO BE PROTECTED. THEY SHALL BE MAINTAINED, AS NEEDED, THROUGHOUT THE CONSTRUCTION PERIOD AND REMOVED IN CONJUNCTION WITH THE FINAL GRADING AND SITE STABILIZATION.
2. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POST WITH TIES OR STAPLES
3. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID-SECTION
4. WHEN TWO (2) SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX (6) INCHES AND FOLDED.
5. MATERIAL SHALL BE REMOVED WHEN BULGES DEVELOP IN THE SILT FENCE
6. DOUBLE ROWS OF SILT FENCE SPACED FIVE (5) FEET APART SHALL BE PLACED AROUND EXISTING STORMWATER MANAGEMENT FACILITIES OR WETLANDS AS ADDITIONAL PROTECTION WHEN REQUIRED BY CITY ENGINEER

Revised:	Drawing Name	Drawing Number	
1. 06/12/2015	SILT FENCE	EC-01	City of Crystal Lake Illinois
2.		Date: 12/4/2012	
3.		Drawn DD / Checked AW	
4.			

L:\ENGINEERING AND BUILDING ENGINEERING DETAILS AND STANDARDS\

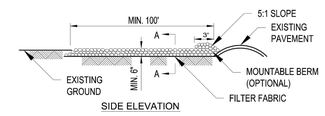
EC-02



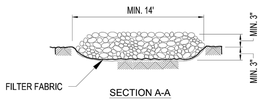
* MUST EXTEND FULL WIDTH OF INGRESS AND EGRESS OPERATION.

PLAN VIEW

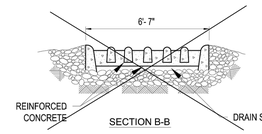
POSITIVE DRAINAGE TO SEDIMENT TRAPPING DEVICE



SIDE ELEVATION



SECTION A-A



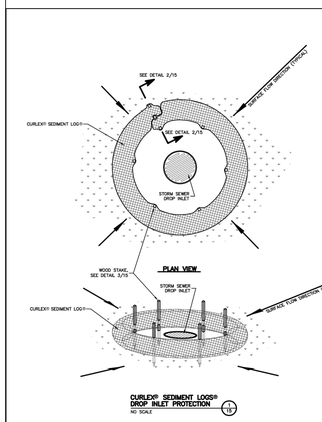
SECTION B-B

NOTES:

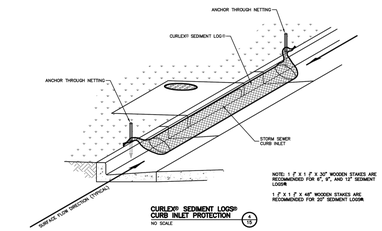
1. FILTER FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 282 OF THE IDOT STANDARD SPECIFICATIONS AND SHALL BE PLACED OVER THE CLEARED AREA PRIOR TO THE PLACEMENT OF ROCK.
2. ROCK OR RECLAIMED CONCRETE SHALL MEET ONE OF THE FOLLOWING IDOT COARSE AGGREGATE GRADATIONS, CA-1, CA-2, CA-3 OR CA-4.
3. ANY DRAINAGE FACILITIES REQUIRED BECAUSE OF WASHING SHALL BE CONSTRUCTED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
4. IF WASH RACKS ARE USED, THEY SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS.

Revised:	Drawing Name	Drawing Number	
1. 06/12/2015	CONSTRUCTION ENTRANCE	EC-02	City of Crystal Lake Illinois
2.		Date: 07/31/2012	
3.		Drawn DD / Checked AW	
4.			

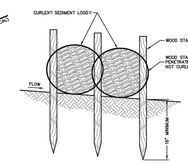
L:\ENGINEERING AND BUILDING ENGINEERING DETAILS AND STANDARDS\



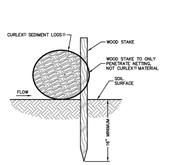
CURLEX® SEDIMENT LOGS® DROP INLET PROTECTION
NO SCALE



CURLEX® SEDIMENT LOGS® CURB INLET PROTECTION
NO SCALE



STAKE DETAIL
NO SCALE



STAKE DETAIL
NO SCALE

American Excelsior Company® Earth Science Division

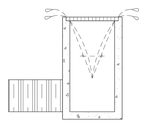
REV'D	DATE	DESCRIPTION	PROJECT MANAGER	CHECKED BY	APPROVED BY

AMERICAN EXCELSIOR COMPANY
ARLINGTON, TEXAS

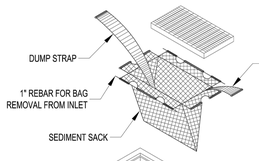
SHEET DESCRIPTION: CURLEX® SEDIMENT LOGS® INLET PROTECTION DETAILS

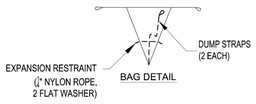
DATE: 8/14/23 | SCALE: NONE | DRAWN BY: | PROJECT NO.: | SHEET NO.: 1/1

EC-04

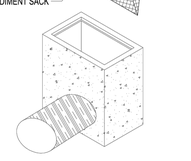


INSTALLATION DETAIL





BAG DETAIL



SEDIMENT CONTROL DEVICE

Revised:	Drawing Name	Drawing Number	
1. 06/12/2015	INLET SEDIMENT CONTROL DEVICE	EC-04	City of Crystal Lake Illinois
2.		Date: 11/2/2007	
3.		Drawn EM / Checked AW	
4.			

L:\ENGINEERING AND BUILDING ENGINEERING DETAILS AND STANDARDS\

GE-02b

TOPSOIL STOCKPILING:

1. Location of any on-site topsoil stockpiles shall be identified on the approved plans with silt fence installed around the perimeter of the stockpile.
2. Topsoil stockpiled for future use shall be relatively free from large roots, sticks, weeds, brush, stones larger than one (1) inch diameter, or other litter and waste products including other extraneous materials not conducive to plant growth.
3. Topsoil shall be stockpiled in sequence to eliminate any re-handling or double movements by the Contractor. Failure to properly sequence the stockpiling operations shall not constitute a claim for additional compensation. No material shall be stockpiled in front yards, in utility easements, or in the right-of-way lines.
4. If a stockpile is to remain in place for more than (14) calendar days, it is required that the stockpile meet the requirements as outlined in section 595 of the City Code.

UNDERGROUND UTILITY:

1. The Contractor shall coordinate water main, water service, sanitary and storm sewer inspections and testing with the Community Development at least 24 hours in advance.
2. All main line sanitary shall be cleaned and televised (provide DVD to the City's Engineering Division).
3. All manhole or valve covers shall be imprinted "City of Crystal Lake Sanitary", or "City of Crystal Lake Storm", or "City of Crystal Lake Water" as directed by the City.
4. Reference the latest edition of the Standard Specifications for Water and Sewer Main Construction in Illinois.
5. Existing manholes to be circular cored and booted.

EROSION CONTROL:

1. All specified erosion control measures shall be installed and maintained per the requirements of the Crystal Lake Stormwater Ordinance in accordance with the active NPDES permit.
2. All slopes 4:1 or steeper shall be sodded or blanketed immediately after mass earthwork.
3. All overland flow routes to be stabilized by sod or blanket.
4. Erosion control measures to be inspected and approved by City Engineering Division prior to additional work on site.
5. Continuous monitoring of erosion control measures is required. Maintain records of weekly reports per the City of Crystal Lake Stormwater Ordinance.
6. The Contractor shall implement any additional erosion control measures deemed necessary by the City per the standards of the City Of Crystal Lake Stormwater Ordinance.
7. All storm sewer catch basins, sumps and/or retention basins provided are to be cleaned at the end of construction of the project prior to final acceptance. Cleaning may also be required during the course of the construction of the project if it is determined that the silt and debris traps are not properly functioning and their performance is impaired.
8. Rip-rap material RR 2 (6") - RR4 (16") shall be in accordance with Article 281
9. Projects of 1 Acre or greater must obtain an NPDES permit prior to commencement of any construction activity.

Revised:	Drawing Name	Drawing Number	
1. 06/12/2015	STANDARD NOTES AND SPECIFICATIONS	GE-02b	City of Crystal Lake Illinois
2. 02/25/2020		Date: 01/30/15	
3.		Drawn DD / Checked AW	
4.			

L:\ENGINEERING AND BUILDING ENGINEERING DETAILS AND STANDARDS\

GE-02a

GENERAL SITE-WORK:

1. Pre-Construction meeting shall be conducted with City Staff and all Contractors prior to commencing any grading or underground utility construction activities (schedule meeting with the Community Development Department at 815-356-3605).
2. 24-hour Emergency contact numbers shall be provided to City Staff at the Pre-Construction meeting.
3. Working hours shall be limited to the hours of 7:00 a.m. and 7:00 p.m. on weekdays only (except in cases of emergency). Non-emergency work on weekends or holidays is not permitted per City Code except under written permission from the City Engineer. The owner is responsible for the City Inspector cost of overtime inspection beyond the normal eight (8) hour day, including weekends and holidays.
4. Public/private streets shall be kept free of dirt and debris with regular cleaning, sweeping, and scraping conducted by the Contractor. Junk and debris shall not be allowed to accumulate, blow, or scatter onto streets or adjacent properties.
5. J.U.L.I.E. shall be contacted for utility locations on-site and in the adjacent rights-of-way.
6. Contractor shall provide and maintain fencing, barricades, traffic control signs, and other safeguarding measures during the course of all work to protect the public from the construction operations.
7. Maintain access to adjacent streets during construction. No closing of streets unless approval is first obtained from the agency with jurisdiction (City of Crystal Lake, McHenry County Department of Transportation, Illinois Department of Transportation, etc).
8. Any damage to public right-of-way, public utilities, streets, curb, etc. shall be repaired/replaced as soon as possible and as directed by the City Engineer.
9. The contractor shall give the City of Crystal Lake, Illinois Department of Transportation, and any other governmental agency having jurisdiction, at least two (2) working days notice excluding Saturday and Sunday prior to the initiation of any phase of construction. Contractor shall immediately notify if construction has ceased and renew the two (2) working day notification thereafter.
10. The Contractor shall be responsible for obtaining all required permits for construction prior to commencement along or across existing streets or highways. The Contractor shall make arrangements for the proper bracing, shoring and other protection of all roadways before construction begins.

GRADING:

1. The grading and construction of the site improvements shall not cause ponding of storm sewer water. All areas adjacent to these improvements shall be graded to allow positive drainage.
2. The proposed grading elevations shown on the plans are finished grade. A minimum of six (6) inches of topsoil is to be placed before finished grade elevations are achieved.
3. Embankment material within parkway and open space areas shall be compacted to a minimum of ninety percent (90%) of maximum density in accordance with ASTM Specification D-1557 (modified proctor method), or to such other density as may be determined appropriate by the soils engineer.
4. All subgrade material shall have a minimum CBR (California Bearing Ratio) of 3.0 as determined by the soils engineer, or base replacement and pavement design revisions shall be provided which are adequate to obtain equivalent pavement strength.
5. Proposed pavement areas, building pads, driveways and sidewalks and yard/open space areas shall be excavated or filled to plus or minus 0.1 foot of design subgrade elevations by the Contractor.
6. Any borrow pit locations shall be identified by the Contractor on a copy of the approved site plans and forwarded to the Engineering Division at least 24-hours prior to excavation. Provide backfill compaction reports from a geotechnical engineer and as-built plans to the Engineering Division for any borrow pit area.
7. Backfill shall be monitored by a geotechnical engineer on-site with compaction reports forwarded to the Engineering Division for review.
8. Water truck shall be on-site at all times during mass-grading operations and be available as needed for the purposes of dust control or at the request of City Staff.
9. Use of City fire hydrants is not allowed unless approved (separate from this permit) by the Public Works Department and a hydrant meter and RPZ is obtained from the City of Crystal Lake Water Division (815-356-3614). Only the City of Crystal Lake Water Division may operate valves and hydrants.

Revised:	Drawing Name	Drawing Number	
1. 06/12/2015	STANDARD NOTES AND SPECIFICATIONS	GE-02a	City of Crystal Lake Illinois
2.		Date: 01/30/15	
3.		Drawn DD / Checked AW	
4.			

L:\ENGINEERING AND BUILDING ENGINEERING DETAILS AND STANDARDS\

J. CONDON & ASSOCIATES, INC.
CONSULTING ENGINEERS
5415 BUSINESS PARKWAY
RINGWOOD, ILLINOIS 60072
815.728.0068
IL DESIGN FIRM # 184-006759

NVA PROP IL LLC

CRYSTAL LAKE, ILLINOIS

N W E S

SCALE

ISSUE DATE
02/21/2023

PROJECT MANAGER
JEC

DESIGNER
ERG

QUALITY CONTROL
MAM

NVA TRUCKING FACILITY EXPANSION

CRYSTAL LAKE, ILLINOIS

NO.	DATE	DESCRIPTION
1	5/19/23	REVISIONS PER CITY REVIEW

PROJECT NUMBER
NART-22034-3

SHEET TITLE
STANDARD DETAILS

SHEET NUMBER
C0.2

X:\2022\22034\cad\22034-3xxx specs dtls.dwg, 5/25/2023 11:50:26 AM, DWG To PDF.pc3, 1:1

GE-02d

WATER MAIN:

1. Water main shall be Ductile Iron or Molecularly Oriented Polyvinyl Chloride (PVCO).
   a) Ductile Iron water main shall be Class 52 conforming to ANSI/AWWA C151/A21.51-09.
   b) Ductile iron fittings shall conform to ANSI/AWA C153/A21.53 with mechanical joint gaskets.
   c) PVCO - See City Detail UW-12 and UW-13.
2. All bolted connections shall be torqued to the manufacturer's specification. The Contractor shall verify the manufacturer's specification with an approved torque wrench.
3. Thrust blocking or Mega-Lugs with Mega-Bond coating or pre-approved equal shall be installed on water mains at all bends, tees, elbows, etc. except as noted below.
4. Thrust blocks not permitted with 45 degree vertical bends in water main (these shall be restrained with Mega-Lug or pre-approved equal.
5. When specified, ductile iron pipe shall be encased in polyethylene and shall conform with ANSI/AWWA C105/A21.10 - 10 and ASTM A674-10.
6. Minimum cover from finished grade to top of water main shall be six (6) feet; Maximum cover shall be eight (8) feet.
7. Water Main Taps: An Illinois licensed plumber is required for any water main tap.
8. All water mains shall be subjected to a pressure test and a separate leakage test at system pressure for 24 hours by the Contractor. Hydrostatic pressure test and leakage test shall be based on 125 PSI for two (2) hours. Water mains shall be chlorinated in accordance with the Standard Specifications.
9. The Underground Contractor shall consider incidental to the contract any chlorination and testing of existing water main where connections to and conclusion of such mains is indicated on the drawing.

PAVING:

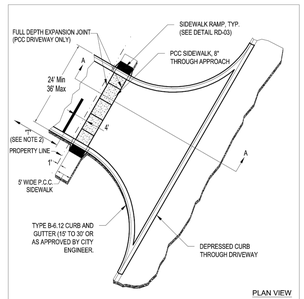
1. All subgrades and bases shall be proof-rolled and approved by the Engineering Division prior to base or binder installation.
2. Subgrade and proposed pavements shall be finished by the Excavation Contractor to within 0.1 foot plus or minus, of plan elevation.
3. The Paving Contractor shall ensure that the subgrade has been properly prepared and that the finished top of subgrade elevation has been graded within the tolerances allowed in these specifications. Unless the Paving Contractor advises the owner and engineer in writing prior to fine grading for base course construction, it is understood that the Contractor has approved and accepts responsibility for the subgrade.
4. For the purpose of providing handicap accessibility and complying with the American Disability Act and City Standards, curbs shall be depressed at locations where public walks or pedestrian paths intersect curb lines at street intersections and other locations as directed.
5. ¾ inch thick premolded fiber expansion joints with two (2) No. 4 plain round steel dowel bars shall be installed at designated intervals and at all P.C., P.T., curb returns and at the end of each pour. Alternate ends of the dowel bars shall be greased and fitted with metal expansion tubes.
6. ¾ inch thick fiber expansion joints shall be used in every case where the sidewalk coincides with the curb and gutter. Contraction joints shall be saw cut at designated intervals in the curb. The cost of these joints shall be considered as incidental to the cost of the contract.
7. All poured in place concrete curb and gutter shall incorporate two (2) No. 4 reinforcing bars installed wherever the curb and gutter crosses utility service lines, the cost of which shall be considered incidental to the cost of concrete curb and gutter.
8. Sidewalks (where required) shall be of the thickness and dimensions as shown in the construction plans. All sidewalk concrete shall be a minimum of 6.1 bag mix (or IDOT class SI concrete) and shall develop a minimum of 3,500 psi compressive strength at fourteen (14) days. Contraction joints shall be set at five (5) foot centers, and one-half inch (½ inch) premolded fiber expansion joints at fifty (50) foot centers and where the sidewalk meets the curb or another sidewalk, or at the end of each pour. All sidewalks constructed over utility trenches and/or abutting driveway aprons shall be reinforced with three (3) No. 4 reinforcing bars (10 foot minimum length).

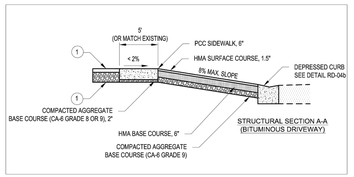
Revised:	Drawing Name	Drawing Number	
1. 06/12/2015	STANDARD NOTES AND SPECIFICATIONS	GE-02d	Date: 01/30/15
2. KL 01/25/2021 Torque Specification			Drawn DD / Checked AW
3.			
4.			

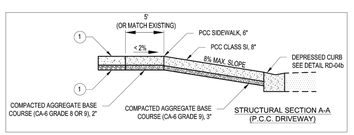
City of Crystal Lake Illinois

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RD-01a







NOTES:

1. MAX. APPROACH GRADE = 8%
2. FOR THICKNESS OF PAVEMENT "T", VERTICAL THICKNESS OF THE GUTTER FLAG SHALL BE A MINIMUM OF 9 INCHES. FOR HMA BASE COURSE PAVEMENT SECTIONS THE GUTTER FLAG SHALL BE SAME THICKNESS AS PAVEMENT STRUCTURE.
3. TRANSITION FROM FULL CURB TO DEPRESSED CURB IN 1 TO 1.5 LINEAL FEET.

LEGEND:

(1) FOR PARKING LOT SEE UNIFIED DEVELOPMENT ORDINANCE, APPENDIX SECTION A-700.

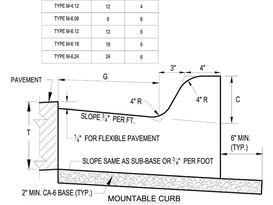
Revised:	Drawing Name	Drawing Number	
1. 06/12/2015	DRIVEWAY: COMMERCIAL APPROACH	RD-01a	Date: 01/30/15
2.			Drawn DD / Checked AW
3.			
4.			

City of Crystal Lake Illinois

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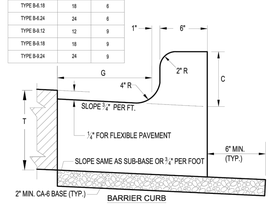
RD-05a

MOUNTABLE CURB DIMENSIONS FOR "G" AND "C"		
CURB TYPE	"G" (INCHES)	"C" (INCHES)
TYPE M-3.24	24	3
TYPE B-6.12	12	6
TYPE B-6.18	18	6
TYPE M-6.06	6	6
TYPE M-6.12	12	6
TYPE M-6.18	18	6
TYPE M-6.24	24	6



MOUNTABLE CURB

BARRIER CURB DIMENSIONS FOR "G" AND "C"		
CURB TYPE	"G" (INCHES)	"C" (INCHES)
TYPE B-6.12	12	6
TYPE B-6.18	18	6
TYPE B-6.24	24	6
TYPE B-9.12	12	9
TYPE B-9.18	18	9
TYPE B-9.24	24	9



BARRIER CURB

NOTES:

THICKNESS - T - THICKNESS OF PAVEMENT WHEN CURB AND GUTTER IS CONSTRUCTED ADJACENT TO FLEXIBLE OR RIGID PAVEMENT, THE VERTICAL THICKNESS OF THE GUTTER FLAG SHALL BE 9". ALSO, TIE BARS SHALL BE OMITTED.

DRAINAGE OPENINGS - AT ALL LOCATIONS WHERE METAL CASTINGS ARE TO BE INCORPORATED IN THE CURB AND GUTTER, A 1" THICK PRE-FORMED EXPANSION JOINT FILLER, CONFORMING TO THE CROSS SECTIONS OF THE CURB AND GUTTER, SHALL BE INSTALLED IN THE CURB AND GUTTER A DISTANCE OF 5 FT. FROM EACH SIDE OF THE METAL CASTING. WHEN THE WIDTH OF THE METAL CASTING IS LESS THAN THE WIDTH OF THE CURB AND GUTTER, 2 - NO. 4 REBARS, L = 12' + CASTING LENGTH + 12" SHALL BE INCORPORATED IN THE CONTINUOUS CP CONCRETE GUTTER IN FRONT OF THE CASTING.

TRANSITIONS - THE TRANSITION FROM FULL HEIGHT CURB TO DEPRESSED CURB SHALL BE MADE AT THE RATE OF 3" PER FOOT OF LENGTH OR FLATTER.

(2) - NO. 4 STEEL REINFORCING BARS SHALL BE INCORPORATED OVER TRENCH CROSSINGS IF REQUIRED BY THE CITY ENGINEER.

JOINTS - IN ADDITION TO THE REQUIREMENTS OF ARTICLE 606.05 OF THE STANDARD SPECIFICATIONS, JOINTS SHALL BE CONSTRUCTED AS FOLLOWS:

CONTRACTION JOINTS AND EXPANSION JOINTS SHALL BE INSTALLED IN THE CURB OR CURB AND GUTTER IN PROLONGATION WITH JOINTS IN ADJACENT P.C.C. PAVEMENT OR BASE COURSE.

WHEN CURB AND GUTTER IS CONSTRUCTED ADJACENT TO FLEXIBLE PAVEMENT, A 1" THICK PRE FORMED EXPANSION JOINT FILLER, CONFORMING TO THE CROSS SECTION OF THE CURB AND GUTTER, SHALL BE INSTALLED AT POINTS OF CURVATURE FOR SHORT RADIUS CURVES AND AT CONSTRUCTION JOINTS. CONTRACTION JOINTS SHALL BE PLACED BETWEEN EXPANSION JOINTS AT DISTANCES NOT TO EXCEED 15 FEET.

ALL EXPANSION JOINTS SHALL BE PROVIDED WITH A 1" / " DIA. X 18" COATED SMOOTH DOWEL BAR CONFORMING TO ARTICLE 1006.10 OF THE STANDARD SPECIFICATIONS. THE DOWEL BAR SHALL BE FITTED WITH A CAP HAVING A PINCHED STOP THAT WILL PROVIDE 1" OF EXPANSION.

ALL CONSTRUCTION JOINTS SHALL BE PROVIDED WITH ½" DIA. DEFORMED STEEL TIE BARS, 30" LONG CONFORMING TO AASHTO M-31 OR M-53. TIE BARS SHALL BE PLACED ON 9" CENTERS (MINIMUM 2 PER JOINT).

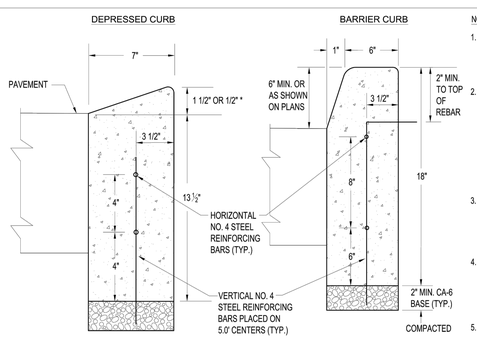
EXPANSION JOINTS SHALL BE PLACED AT INTERVALS NOT TO EXCEED 100 FEET.

Revised:	Drawing Name	Drawing Number	
1. 06/12/2015	CURB: CONCRETE CURB AND GUTTER	RD-05a	Date: 08/21/2018
2. KL 1/25/2021 M-4.12 ADDED			Drawn DD / Checked AW
3.			
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City of Crystal Lake Illinois

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RD-05b



BARS TO BE SET AND TIED PRIOR TO CONCRETE POUR. BAR PLACEMENT DURING POUR WILL NOT BE PERMITTED.

* ADJACENT TO CURB RAMP ACCESSIBLE TO THE DISABLED

NOTES:

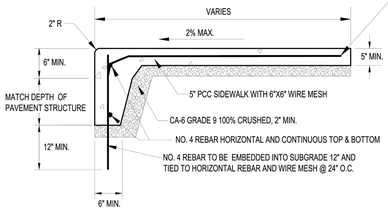
1. CONTRACTION JOINTS AND EXPANSION JOINTS SHALL BE INSTALLED IN THE CURB OR CURB AND GUTTER IN PROLONGATION WITH JOINTS IN ADJACENT P.C.C. PAVEMENT OR BASE COURSE.
2. WHEN CURB AND GUTTER IS CONSTRUCTED ADJACENT TO FLEXIBLE PAVEMENT, A 1" THICK PREFORMED EXPANSION JOINT FILLER, CONFORMING TO THE CROSS SECTION OF THE CURB AND GUTTER, SHALL BE INSTALLED AT POINTS OF CURVATURE FOR SHORT-RADIUS CURVES AND CONTRACTION JOINTS SHALL BE PLACED BETWEEN EXPANSION JOINTS AT DISTANCES NOT TO EXCEED 15 FEET.
3. ALL EXPANSION JOINTS SHALL BE INSTALLED WITH A NO. 4 OR 5 BAR x 18" COATED SMOOTH DOWEL BAR. THE DOWEL BAR SHALL BE FITTED WITH A CAP HAVING A PINCHED STOP THAT WILL PROVIDE 1" OF EXPANSION.
4. ALL CONSTRUCTION JOINTS SHALL BE PROVIDED WITH 1/2" DIAMETER BAR CONFORMING TO AASHTO M-31 OR M-53. TIE BARS SHALL BE PLACED ON 9" CENTERS (MINIMUM 2 PER JOINT).
5. TRANSITIONS- THE TRANSITIONS FROM FULL HEIGHT CURB TO DEPRESSED CURB SHALL BE MADE AT THE RATE OF 3" PER FOOT OF LENGTH OR FLATTER.
6. EXPANSION JOINTS SHALL BE PLACED AT INTERVALS NOT TO EXCEED 100 FEET.

Revised:	Drawing Name	Drawing Number	
1. 06/12/2015	CURB: CONCRETE CURB TYPE B	RD-05b	Date: 01/15/2015
2. 08/21/2018			Drawn DD / Checked AW
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City of Crystal Lake Illinois

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RD-05c



NOTES:

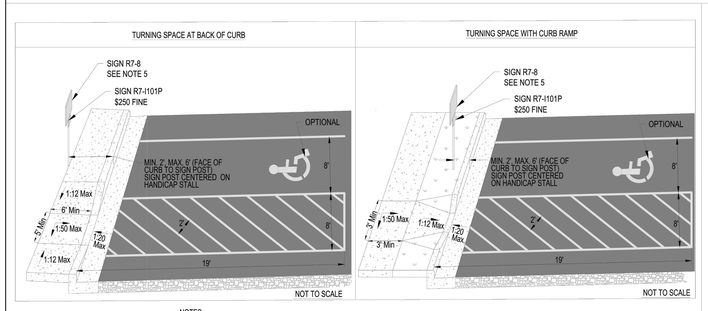
1. CLASS SI CONCRETE SHALL BE USED THROUGHOUT (UNLESS OTHERWISE NOTED)
2. ALL REBAR AND WIRE MESH SHALL BE SURROUNDED BY 2" MINIMUM THICKNESS OF CONCRETE
3. REBAR AND WIRE MESH TO BE INSPECTED PRIOR TO CONCRETE POUR

Revised:	Drawing Name	Drawing Number	
1. 06/12/2015	CURB: SIDEWALK WITH INTEGRAL CURB	RD-05c	Date: 05/19/2015
2. 4/30/2021 KL 5" PCC THICKNESS			Drawn JH / Checked AW
3.			
4.			

City of Crystal Lake Illinois

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TR-06



NOTES:

1. CONCRETE PARKING BUMPERS REQUIRED IF BARRIER CURB NOT PRESENT
2. REFER TO CURRENT EDITION OF THE ILLINOIS ACCESSIBILITY CODE, SECTION 502 PARKING SPACES
3. IF DEPRESSED CURB OPENING IS GREATER THAN 3.0 FEET, THE LANDING SHALL BE AS WIDE THE DEPRESSED OPENING.
4. MOUNT SIGNS SO BOTTOM OF R7-8 SIGN IS BETWEEN 5 FEET - 9 FEET ABOVE FINISH GRADE. MOUNT R7-1101P DIRECTLY BELOW.
5. TWO PARKING SPACES ARE PERMITTED TO SHARE A COMMON ACCESS AISLE IN PERPENDICULAR PARKING ONLY
6. PAVEMENT MARKINGS SHALL BE HIGH QUALITY YELLOW PAINT OR THERMOPLASTIC PER ILLINOIS ACCESSIBILITY CODE AND MUTCD.

Revised:	Drawing Name	Drawing Number	
1. 06/12/2015	TYPICAL HANDICAP ACCESSIBLE PARKING STALL	TR-06	Date: 06/01/2007
2. 3/22/2022 KL - Center sign, height, landing options specified.			Drawn EM / Checked AW
3.			
4.			

City of Crystal Lake Illinois

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J. CONDON & ASSOCIATES, INC.
CONSULTING ENGINEERS
5415 BUSINESS PARKWAY
RINGWOOD, ILLINOIS 60072
815.728.0068
IL DESIGN FIRM # 184-006759

NVA PROP IL LLC

CRYSTAL LAKE, ILLINOIS

N W E S

SCALE

ISSUE DATE
02/21/2023

PROJECT MANAGER
JEC

DESIGNER
ERG

QUALITY CONTROL
MAM

NVA TRUCKING FACILITY EXPANSION

CRYSTAL LAKE, ILLINOIS

NO.	DATE	DESCRIPTION
1	5/19/23	REVISIONS PER CITY REVIEW

PROJECT NUMBER
NART-22034-3

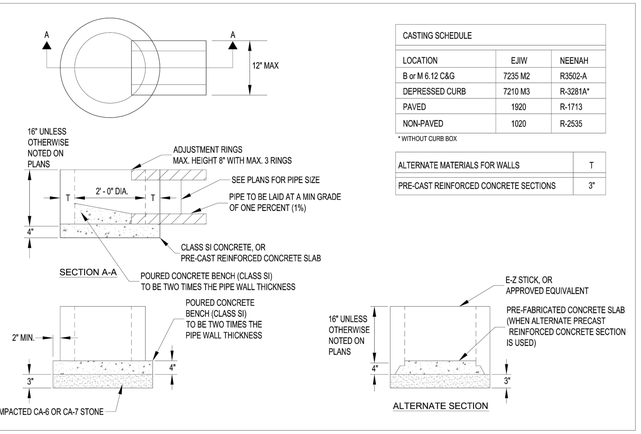
SHEET TITLE
STANDARD DETAILS

SHEET NUMBER
C0.3

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ALL 4' CB SHALL ALSO HAVE A DEBRIS HOOD SEE C0.5

UD-01a



CASTING SCHEDULE		
LOCATION	EJIW	NEENAH
B or M 6.12 C&G	7235 M2	R3502-A
DEPRESSED CURB	7210 M3	R-3281A*
PAVED	1920	R-1713
NON-PAVED	1020	R-2535

* WITHOUT CURB BOX

ALTERNATE MATERIALS FOR WALLS	T
PRE-CAST REINFORCED CONCRETE SECTIONS	3"

Revised:
1. 06/12/2015
2.
3.
4.

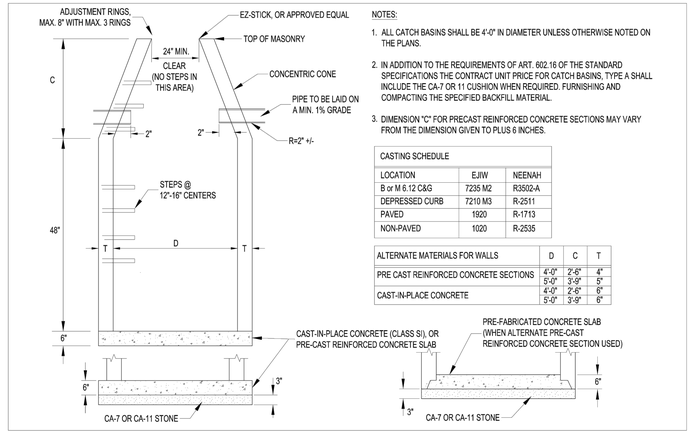
Drawing Name: DRAINAGE STRUCTURES: INLET, TYPE A

Drawing Number: UD-01a
Date: 05/28/2015
Drawn: JH Checked: AW

City of Crystal Lake Illinois

L:\ENGINEERING AND BUILDING ENGINEERING\DETAILS AND STANDARDS\

UD-01b



NOTES:
1. ALL CATCH BASINS SHALL BE 4'-0" IN DIAMETER UNLESS OTHERWISE NOTED ON THE PLANS.
2. IN ADDITION TO THE REQUIREMENTS OF ART. 602.16 OF THE STANDARD SPECIFICATIONS THE CONTRACT UNIT PRICE FOR CATCH BASINS, TYPE A SHALL INCLUDE THE CA-7 OR 11 CUSHION WHEN REQUIRED. FURNISHING AND COMPACTING THE SPECIFIED BACKFILL MATERIAL.
3. DIMENSION "C" FOR PRECAST REINFORCED CONCRETE SECTIONS MAY VARY FROM THE DIMENSION GIVEN TO PLUS 6 INCHES.

CASTING SCHEDULE		
LOCATION	EJIW	NEENAH
B or M 6.12 C&G	7235 M2	R3502-A
DEPRESSED CURB	7210 M3	R-2511
PAVED	1920	R-1713
NON-PAVED	1020	R-2535

ALTERNATE MATERIALS FOR WALLS	D	C	T
PRE CAST REINFORCED CONCRETE SECTIONS	4'-0"	2'-6"	4"
	5'-0"	3'-9"	5"
CAST-IN-PLACE CONCRETE	4'-0"	2'-6"	6"
	5'-0"	3'-9"	6"

Revised:
1. 06/12/2015
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4.

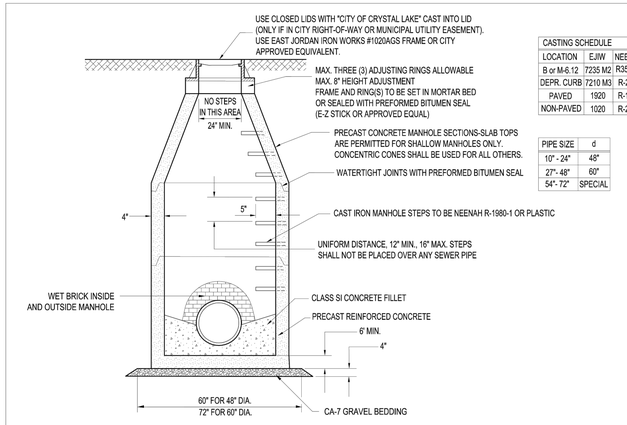
Drawing Name: CATCH BASIN TYPE A

Drawing Number: UD-01b
Date: 09/18/2012
Drawn: DD Checked: AW

City of Crystal Lake Illinois

L:\ENGINEERING AND BUILDING ENGINEERING\DETAILS AND STANDARDS\

UD-01d



CASTING SCHEDULE		
LOCATION	EJIW	NEENAH
B or M-6.12	7235 M2	R3502-A
DEPR. CURB	7210 M3	R-2511
PAVED	1920	R-1713
NON-PAVED	1020	R-2535

PIPE SIZE	d
10" - 24"	48"
27"- 48"	60"
54"- 72"	SPECIAL

Revised:
1. 06/12/2015
2.
3.
4.

Drawing Name: STORM MANHOLE TYPE A

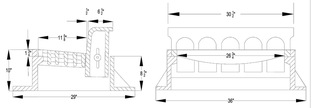
Drawing Number: UD-01d
Date: 05/19/2015
Drawn: JH Checked: AW

City of Crystal Lake Illinois

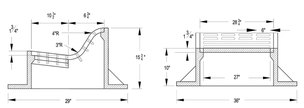
L:\ENGINEERING AND BUILDING ENGINEERING\DETAILS AND STANDARDS\

UD-02a

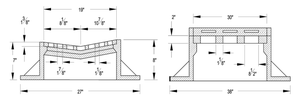
BARRIER CURB
NEENAH FOUNDRY COMPANY: R-3281-A
EJIW: 7210Z2 / T2 / M1 SET



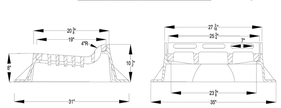
M6.12 MOUNTABLE CURB
NEENAH FOUNDRY COMPANY: R-3503-B
EJIW: 7180Z / M1 SET



DEPRESSED CURB
NEENAH FOUNDRY COMPANY: R-3511



M4.12 MOUNTABLE CURB
NEENAH FOUNDRY COMPANY: R-3501-P
EJIW: 7250Z / 7250M GRATE



CITY REQUIREMENTS
1) CONCRETE MUST BE POURED A MINIMUM OF 6" AROUND THE CIRCUMFERENCE OF THE FRAME AND AT LEAST 6" BELOW THE FRAME TO ENSURE THAT THERE WILL BE NO INFILTRATION BETWEEN THE FRAME AND STRUCTURE.
2) FRAMES SHALL BE SET IN LINE WITH THE EDGE OF PAVEMENT.

Revised:
1. 06/12/2015
2. 01/25/2021 KL ADDED R-3281-A, R-3503-B, AND R3501-P
3.
4.

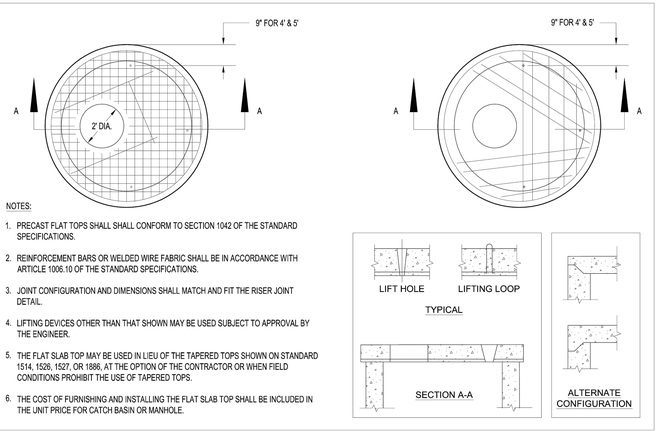
Drawing Name: CURB INLET FRAME AND GRATE

Drawing Number: UD-02a
Date: 5/28/2015
Drawn: JH Checked: AW

City of Crystal Lake Illinois

L:\ENGINEERING AND BUILDING ENGINEERING\DETAILS AND STANDARDS\

UD-02b



NOTES:
1. PRECAST FLAT TOPS SHALL SHALL CONFORM TO SECTION 1042 OF THE STANDARD SPECIFICATIONS.
2. REINFORCEMENT BARS OR WELDED WIRE FABRIC SHALL BE IN ACCORDANCE WITH ARTICLE 1006.10 OF THE STANDARD SPECIFICATIONS.
3. JOINT CONFIGURATION AND DIMENSIONS SHALL MATCH AND FIT THE RISER JOINT DETAIL.
4. LIFTING DEVICES OTHER THAN THAT SHOWN MAY BE USED SUBJECT TO APPROVAL BY THE ENGINEER.
5. THE FLAT SLAB TOP MAY BE USED IN LIEU OF THE TAPERED TOPS SHOWN ON STANDARD 1514, 1526, 1527, OR 1886, AT THE OPTION OF THE CONTRACTOR OR WHEN FIELD CONDITIONS PROHIBIT THE USE OF TAPERED TOPS.
6. THE COST OF FURNISHING AND INSTALLING THE FLAT SLAB TOP SHALL BE INCLUDED IN THE UNIT PRICE FOR CATCH BASIN OR MANHOLE.

Revised:
1. 06/12/2015
2.
3.
4.

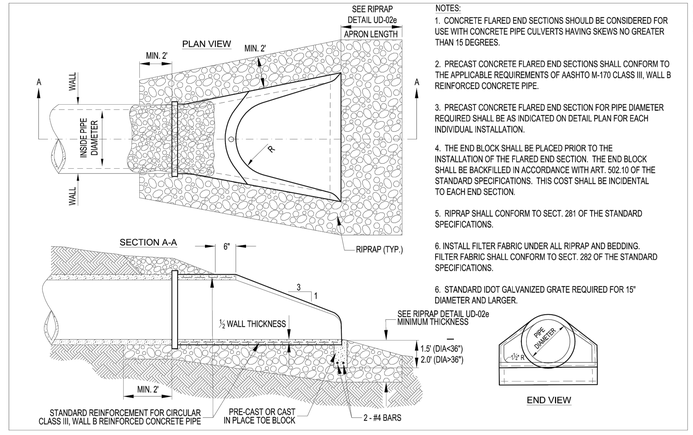
Drawing Name: ECCENTRIC FLAT TOPS FOR CURB INLET STORM MANHOLES

Drawing Number: UD-02b
Date: 01/30/15
Drawn: DD Checked: AW

City of Crystal Lake Illinois

L:\ENGINEERING AND BUILDING ENGINEERING\DETAILS AND STANDARDS\

UD-02d



NOTES:
1. CONCRETE FLARED END SECTIONS SHOULD BE CONSIDERED FOR USE WITH CONCRETE PIPE CULVERTS HAVING SKEWS NO GREATER THAN 15 DEGREES.
2. PRECAST CONCRETE FLARED END SECTIONS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M-170 CLASS III, WALL B REINFORCED CONCRETE PIPE.
3. PRECAST CONCRETE FLARED END SECTION FOR PIPE DIAMETER REQUIRED SHALL BE AS INDICATED ON DETAIL PLAN FOR EACH INDIVIDUAL INSTALLATION.
4. THE END BLOCK SHALL BE PLACED PRIOR TO THE INSTALLATION OF THE FLARED END SECTION. THE END BLOCK SHALL BE BACKFILLED IN ACCORDANCE WITH ART. 502.10 OF THE STANDARD SPECIFICATIONS. THIS COST SHALL BE INCIDENTAL TO EACH END SECTION.
5. RIPRAP SHALL CONFORM TO SECT. 281 OF THE STANDARD SPECIFICATIONS.
6. INSTALL FILTER FABRIC UNDER ALL RIPRAP AND BEDDING. FILTER FABRIC SHALL CONFORM TO SECT. 282 OF THE STANDARD SPECIFICATIONS.
6. STANDARD IDOT GALVANIZED GRATE REQUIRED FOR 15" DIAMETER AND LARGER.

Revised:
1. 06/12/2015
2. 8/27/2015
3.
4.

Drawing Name: FLARED END SECTION (PRECAST CONCRETE PIPE)

Drawing Number: UD-02d
Date: 04/15/2007
Drawn: DD Checked: AW

City of Crystal Lake Illinois

L:\ENGINEERING AND BUILDING ENGINEERING\DETAILS AND STANDARDS\

J. Condon & Associates, Inc.
CONSULTING ENGINEERS
5415 BUSINESS PARKWAY
RINGWOOD, ILLINOIS 60072
815.728.0068
IL DESIGN FIRM # 184-006759

NVA PROP IL LLC

CRYSTAL LAKE, ILLINOIS

N W E S

SCALE

ISSUE DATE: 02/21/2023

PROJECT MANAGER: JEC

DESIGNER: ERG

QUALITY CONTROL: MAM

NVA TRUCKING FACILITY EXPANSION

CRYSTAL LAKE, ILLINOIS

NO.	DATE	DESCRIPTION
1	5/19/23	REVISIONS PER CITY REVIEW

PROJECT NUMBER: NART-22034-3

SHEET TITLE: STANDARD DETAILS

SHEET NUMBER: C0.4

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UD-02e

ROCK RIPRAP SPECIFICATIONS AND BEDDING

IDOT GRADATION	MAXIMUM ROCK SIZE (lb)*	EQUIVALENT DIAMETER (SPHERICAL)(in)*	MINIMUM BEDDING THICKNESS (in)	MINIMUM THICKNESS (in)
RR-3	50	10	-	8
RR-4	150	15	6	16
RR-5	400	21	8	22
RR-6	600	24	10	26
RR-7	1000	28	12	30

*ASSUMES A MINIMUM SPECIFIC GRAVITY OF 2.450 AND A MINIMUM UNIT WEIGHT OF 153 lb/cf

NOTES:

1. RIPRAP SHALL CONFORM TO SECT. 281 OF THE STANDARD SPECIFICATIONS.

2. INSTALL FILTER FABRIC UNDER ALL RIPRAP AND BEDDING. FILTER FABRIC SHALL CONFORM TO SECT. 282 OF THE STANDARD SPECIFICATIONS.

ROCK RIPRAP SIZE REQUIREMENTS AND THICKNESS

CULVERT DIAMETER (in)	MINIMUM TAILWATER				MAXIMUM TAILWATER			
	MAX CONDUIT VELOCITY = 5 fps		MAX CONDUIT VELOCITY = 10 fps		MAX CONDUIT VELOCITY = 5 fps		MAX CONDUIT VELOCITY = 10 fps	
	IDOT GRADATION	APRON LENGTH (ft)	IDOT GRADATION	APRON LENGTH (ft)	IDOT GRADATION	APRON LENGTH (ft)	IDOT GRADATION	APRON LENGTH (ft)
12	RR-3	10	RR-3	12	RR-3	12	RR-3	15
18	RR-3	14	RR-4	16	RR-3	12	RR-3	16
24	RR-3	16	RR-4	20	RR-3	14	RR-4	17
30	RR-3	18	RR-4	22	RR-3	16	RR-4	20
36	RR-4	20	RR-5	24	RR-3	16	RR-4	22
48	RR-4	24	RR-6	28	RR-4	20	RR-4	24
60	RR-5	32	RR-6	36	RR-4	22	RR-5	26
72	RR-6	40	RR-6	44	RR-5	24	RR-5	29
96	RR-7	50	RR-7	54	RR-5	26	RR-5	32

NOTES:

1. IF TAILWATER DEPTH FROM THE PIPE INVERT IS LESS THAN HALF THE DIAMETER OF THE PIPE, THEN MINIMUM TAILWATER CONDITIONS EXIST.

2. ADAPTED FROM THE ILLINOIS URBAN MANUAL

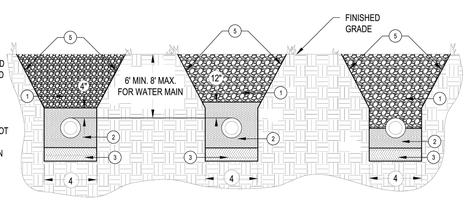
Revised:	Drawing Name	Drawing Number	
1.	RIPRAP DETAILS	UD-02e	
2.		Date: 08/27/2015	
3.		Drawn: DD	Checked: AW
4.		City of Crystal Lake Illinois	

L:\ENGINEERING AND BUILDING ENGINEERING\DETAILS AND STANDARDS\

UG-03

LEGEND:

1. TRENCH BACKFILL TO SUBGRADE AND WITHIN 2 FEET OF PROPOSED PAVEMENT, DRIVEWAY, CURB AND GUTTER OR SIDEWALK. TRENCH BACKFILL MATERIALS SHALL BE IDOT APPROVED GRADATION CA-6, GRADE 7, 8, OR 9 COMPACTED TO 90% OF MODIFIED PROCTOR DENSITY. IN NON-STRUCTURAL AREAS BACKFILL WITH APPROVED EXCAVATED MATERIALS.
2. PIPE BEDDING SHALL BE WASHED MATERIAL IDOT GRADATION CA-7 OR CA-11 FROM 4 INCHES BELOW BOTTOM OF PIPE TO HEIGHT SHOWN ON EACH SECTION
3. UNSUITABLE MATERIAL TO BE REMOVED WHERE DIRECTED BY THE ENGINEER AND REPLACED WITH COMPACTED SUITABLE MATERIAL.
4. TRENCH WIDTH:
   PIPE O.D. + 12 INCHES MINIMUM
   PIPE I.D. + 18 INCHES MAXIMUM
5. CONTRACTORS SHALL COMPLY WITH ALL CURRENT OSHA STANDARDS.



SECTION A:
WATER MAIN DIP
FORCE MAIN DIP
SANITARY SEWER MAIN & SERVICES DIP

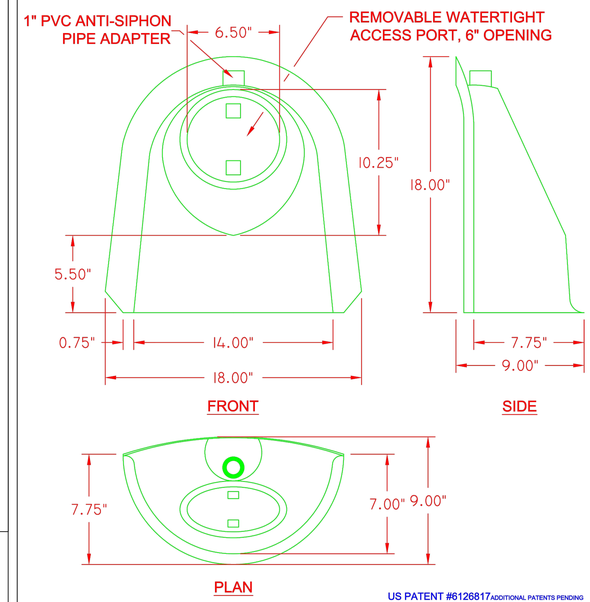
SECTION B:
SANITARY SEWER MAIN & SERVICES (PVC)
STORM SEWER (PVC)
WATER MAIN, C909 FORCE MAIN (PVC) (HDPE)

SECTION C:
STORM SEWER (RCP)

* NOTE: ALL DUCTILE IRON SHALL BE WRAPPED WITH APPROVED POLYETHYLENE PIPE WRAP

Revised:	Drawing Name	Drawing Number	
1. 06/12/2015	TYPICAL TRENCH CROSS SECTION	UG-03	
2. 02/04/2021 KL CA-7 WASHED STONE		Date: 05/29/2015	
3.		Drawn: JH	Checked: AW
4.		City of Crystal Lake Illinois	

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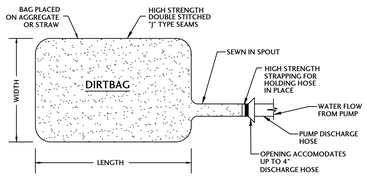
US PATENT #6126817 ADDITIONAL PATENTS PENDING

DESIGNED TO FIT 36"-48" DIAM. STRUCTURES

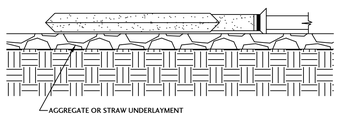
BMP, INC.
53 MT. ARCHER ROAD, LYME, CT. 06371
(800) 504-8008 FAX: (860)434-3195

DESCRIPTION	DATE	SCALE
12R SNOUT OIL & DEBRIS STOP	09/09/99	NONE
	DRAWING NUMBER	12R

E-3



TOP VIEW



SIDE VIEW

Dirtbag Style	Test Method	Test Method
Dirtbag S3	ASTM D-4884	60 lbs/in
Dirtbag S5	ASTM D-4884	100 lbs/in

Property	Test Method	Units	Test Results Style S3	Style S5
Weight	ASTM D-5776	oz/yd	8	10
Grab Tensile	ASTM D-4632	lbs.	205	250
Puncture	ASTM D-4833	lbs.	110	150
Flow Rate	ASTM D-4491	gal/min/ft62	110	85
Permitivity	ASTM D-4491	sec(-1)	1.3	1.2
Mullen Burst	ASTM D-3786	lbs.	350	460
UV Resistant	ASTM D-4355	%	70	70
AOS % Retained	ASTM D-4751	US Sieve	80	100

Dirtbag® Specification:
Control of Sediment In Pumped Water

1.0 **Description**

1.1 This work shall consist of furnishing, placing and removing Dirtbag® pumped sediment control device as directed by the design engineer or as shown on the contract drawings. Dirtbag® pumped-silt control system is marketed by The BMP Store.

2.0 **Materials**

2.1 Dirtbag®

2.1.1 Dirtbag® shall be manufactured using a polypropylene nonwoven geotextile from SI Geosolutions, then sewn into a bag with a double needle matching using a high strength thread.
2.1.2 Each standard Dirtbag® has a fill spout large enough to accommodate a 4" discharge hose. Straps are attached to secure the hose and prevent pumped water from escaping without being filtered.

2.1.3 Dirtbag® seams shall have an average wide width strength per ASTM D-4884 as follows:

All properties are Minimum Average Roll Value (MARV) except the weight of the fabric which is given for information only. Depending on soil conditions and filtration requirements, additional geotextile options are available. Please call our engineering staff for solutions.

3.0 **Construction Sequence**

3.1.1 To install Dirtbag® on a slope so incoming water flows downhill through Dirtbag® without creating more erosion. Strap the neck of Dirtbag® tightly to the discharge hose. To increase the efficiency of filtration, place the bag on an aggregate or haybale bed to maximize water flow through the surface area of the bag.

3.1.2 Dirtbag® is full when it no longer can efficiently filter sediment or allow water to pass at a reasonable rate. Flow rates will vary depending on the size of Dirtbag®, the type and amount of sediment discharged into Dirtbag®, the type of ground, rock or other substance under the bag and the degree of the slope on which the bag lies. Under most circumstances Dirtbag® will accommodate flow rates of 1100 gallons per minute. Use of excessive flow rates or overfilling Dirtbag® with sediment will cause the bag to rupture or failure of the hose attachment straps.

3.1.3 Dispose Dirtbag® as directed by the site engineer. If allowed, Dirtbag® may be cut open and the contents seeded after removing visible fabric. Dirtbag® is strong enough to be lifted with optional straps if it must be hauled away. Off-site disposal may be facilitated by placing Dirtbag® in the back of a dump truck or flatbed prior to use and allowing the water to drain from the bag while in place, thereby eliminating the need to lift Dirtbag®.

4.0 **Basis of Payment**

4.1 The payment for any Dirtbag® used during construction is to be included in the bid of overall erosion and sediment control plan unless a unit price is requested.

DIRTBAG
N.T.S.

J. Condon & Associates, Inc.
CONSULTING ENGINEERS
5415 BUSINESS PARKWAY
RINGWOOD, ILLINOIS 60072
815.728.0068
IL DESIGN FIRM # 184-006759

NVA PROP IL LLC

CRYSTAL LAKE, ILLINOIS

SCALE

ISSUE DATE
02/21/2023

PROJECT MANAGER
JEC

DESIGNER
ERG

QUALITY CONTROL
MAM

NVA TRUCKING FACILITY EXPANSION

CRYSTAL LAKE, ILLINOIS

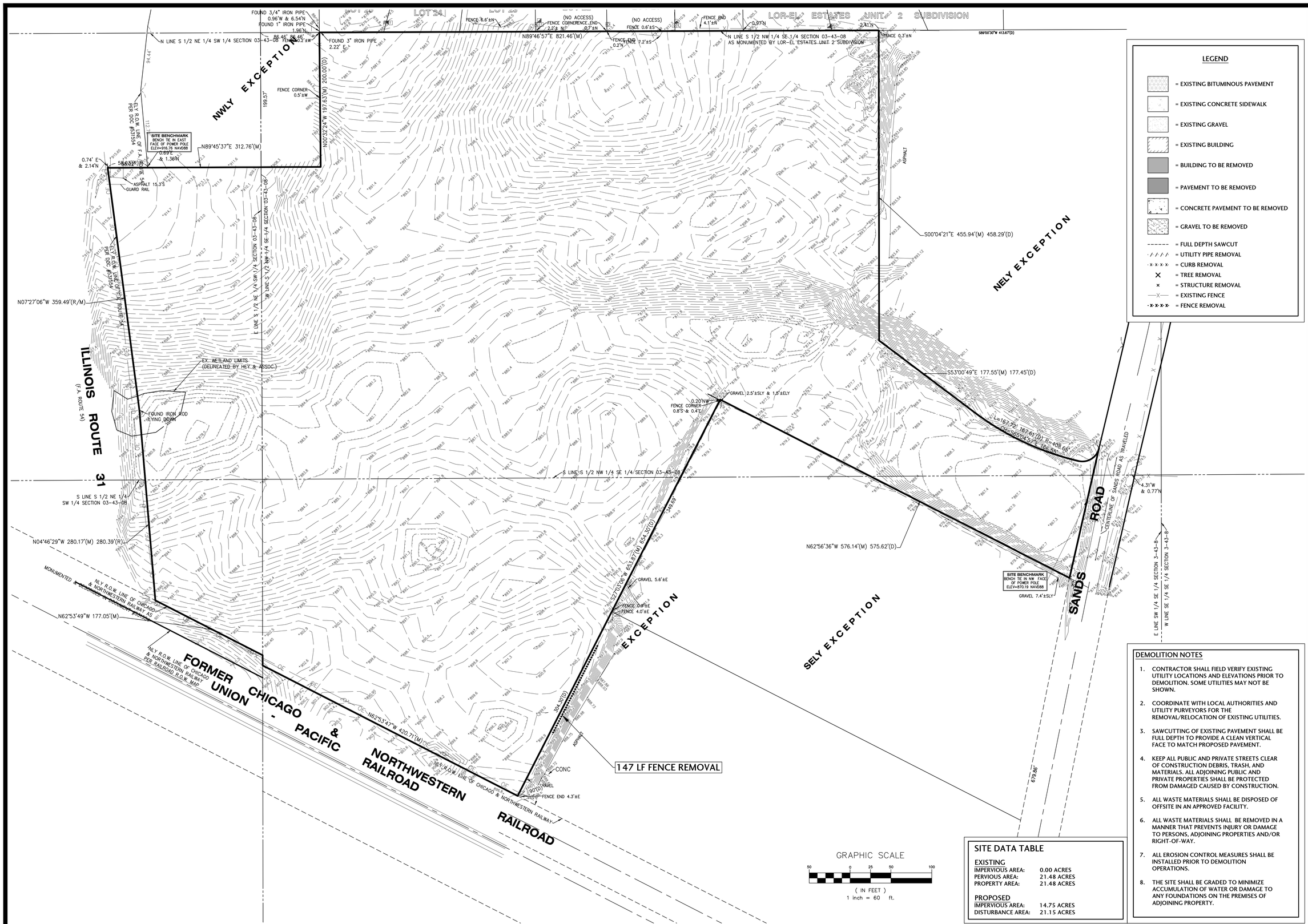
NO.	DATE	DESCRIPTION
1	5/19/23	REVISIONS PER CITY REVIEW

PROJECT NUMBER
NART-22034-3

SHEET TITLE
STANDARD DETAILS

SHEET NUMBER
C0.5

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SITE DATA TABLE

EXISTING	
IMPERVIOUS AREA:	0.00 ACRES
PERVIOUS AREA:	21.48 ACRES
PROPERTY AREA:	21.48 ACRES
PROPOSED	
IMPERVIOUS AREA:	14.75 ACRES
DISTURBANCE AREA:	21.15 ACRES

DEMOLITION NOTES

1. CONTRACTOR SHALL FIELD VERIFY EXISTING UTILITY LOCATIONS AND ELEVATIONS PRIOR TO DEMOLITION. SOME UTILITIES MAY NOT BE SHOWN.
2. COORDINATE WITH LOCAL AUTHORITIES AND UTILITY PURVEYORS FOR THE REMOVAL/RELOCATION OF EXISTING UTILITIES.
3. SAWCUTTING OF EXISTING PAVEMENT SHALL BE FULL DEPTH TO PROVIDE A CLEAN VERTICAL FACE TO MATCH PROPOSED PAVEMENT.
4. KEEP ALL PUBLIC AND PRIVATE STREETS CLEAR OF CONSTRUCTION DEBRIS, TRASH, AND MATERIALS. ALL ADJOINING PUBLIC AND PRIVATE PROPERTIES SHALL BE PROTECTED FROM DAMAGED CAUSED BY CONSTRUCTION.
5. ALL WASTE MATERIALS SHALL BE DISPOSED OF OFFSITE IN AN APPROVED FACILITY.
6. ALL WASTE MATERIALS SHALL BE REMOVED IN A MANNER THAT PREVENTS INJURY OR DAMAGE TO PERSONS, ADJOINING PROPERTIES AND/OR RIGHT-OF-WAY.
7. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO DEMOLITION OPERATIONS.
8. THE SITE SHALL BE GRADED TO MINIMIZE ACCUMULATION OF WATER OR DAMAGE TO ANY FOUNDATIONS ON THE PREMISES OF ADJOINING PROPERTY.

J. CONDON & ASSOCIATES, INC
CONSULTING ENGINEERS
5415 BUSINESS PARKWAY
RINGWOOD, ILLINOIS 60072
815.728.0068
IL DESIGN FIRM # 184-006759

NVA PROP IL LLC

CRYSTAL LAKE, ILLINOIS

N W E S

NO.	DATE	DESCRIPTION
1	5/19/23	REVISIONS PER CITY REVIEW

SCALE: 1"=60'
ISSUE DATE: 02/21/2023
PROJECT MANAGER: JEC
DESIGNER: ERG
QUALITY CONTROL: MAM

NVA TRUCKING FACILITY EXPANSION

CRYSTAL LAKE, ILLINOIS

PROJECT NUMBER: NART-22034-3

SHEET TITLE: EXISTING CONDITIONS

SHEET NUMBER: C1.0

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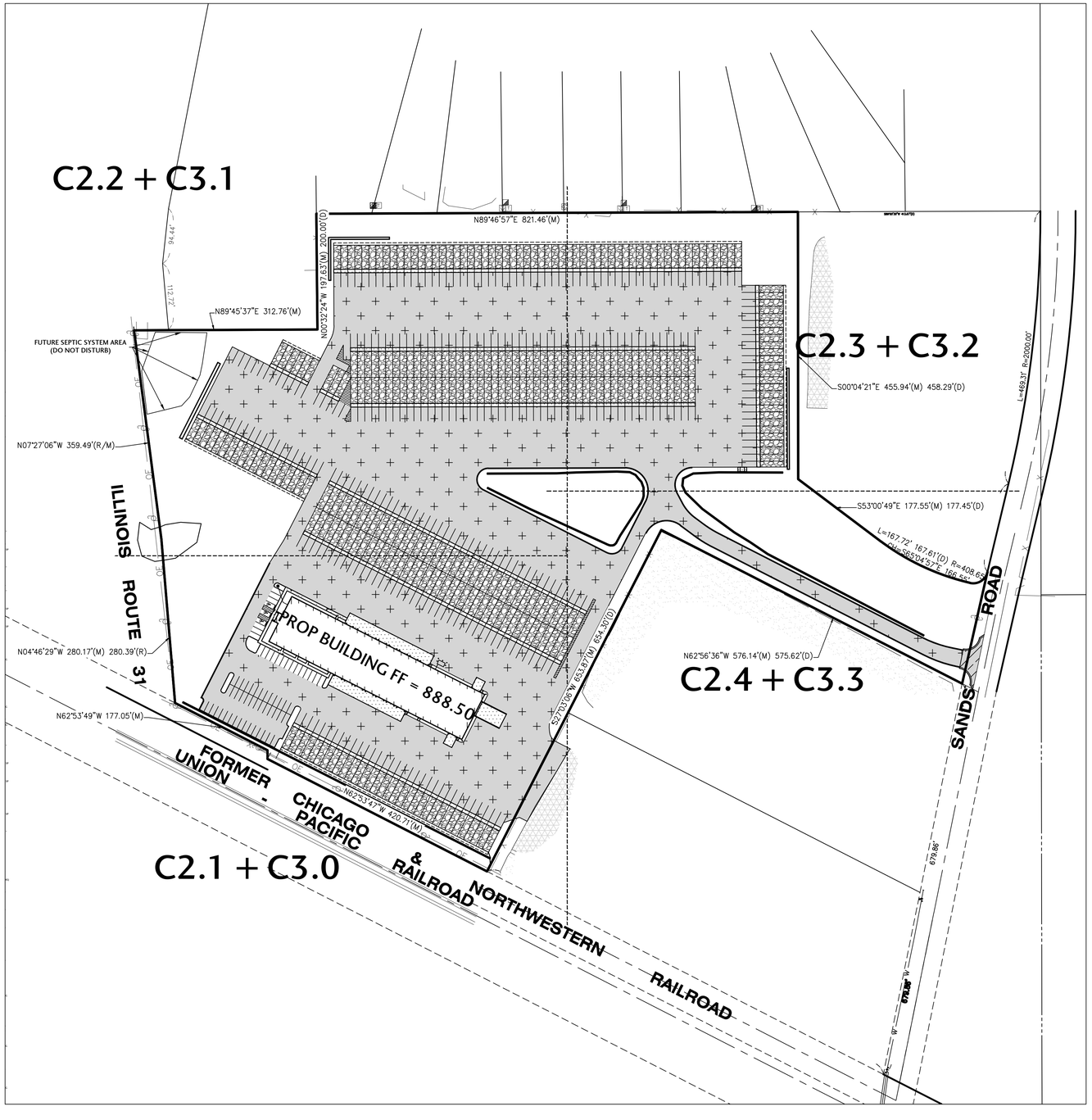
OVERALL NOTES

1. ALL SIGNING AND PAVEMENT MARKINGS SHALL MEET MUTCD STANDARDS.
2. PAVEMENT MARKINGS TO BE 4" WIDE PAINT UNLESS OTHERWISE NOTED.
3. ALL ACCESSIBLE PARKING SIGNS (R7-8) SHALL BE PLACED AT THE CENTER OR THE PARKING SPACE AND WITHIN 5' OF THE SPACE.
4. ALL DIMENSIONS ARE TO BACK OF CURB, EDGE OF PAVEMENT, AND OUTSIDE OF BUILDING FOUNDATION UNLESS OTHERWISE NOTED.
5. STRIPING DIMENSIONS ARE FROM CENTER TO CENTER OF PAVEMENT MARKING.
6. ALL ONSITE CURB SHOWN IS B6.12 CURB & GUTTER UNLESS OTHERWISE NOTED.
7. SEE C2.1-2.4 FOR STORM SEWER INFORMATION
8. ALL CATCH BASINS 4' DIA OR LARGER SHALL HAVE A DEBRIS HOOD INSTALLED.

LEGEND

- = EXISTING BITUMINOUS PAVEMENT
- = EXISTING CONCRETE PAVEMENT
- = EXISTING CONCRETE SIDEWALK
- = EXISTING GRAVEL
- = EXISTING BUILDING
- = PROPOSED BUILDING
- = PROPOSED PARKING LOT PAVEMENT
- = PROPOSED HEAVY DUTY PAVEMENT
- = PROPOSED UTILITY TRENCH PAVEMENT
- = PROPOSED CONCRETE PAVEMENT
- = PROPOSED CONCRETE SIDEWALK
- = PROPOSED ASPHALT GRINDINGS
- = PROPOSED COMMERCIAL ENTRANCE
- = B6.12 CURB & GUTTER
- = BARRIER CURB
- = BARRIER CURB
- = RETAINING WALL * (DESIGNED BY OTHERS)

* ALL AREAS REQUIRING RETAINER WALLS SHALL BE GRADED AT 2.5 TO 1 SLOPES AND STABILIZED DURING PROJECT PRELINIMARY GRADING PHASE.



GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 100 ft.

SITE DATA

TRUCK/TRAILER PARKING:

TRAILER STALLS (12' X 75') = 325
BOBTAIL STALLS (12' X 25') = 10

TOTAL TRUCK STALLS= 335

CAR PARKING:

CAR SPACES (9' X 19') = 62
H.C. SPACES (SEE PLAN) = 3
TOTAL CAR SPACES = 65

ZONING DISTRICTS:
(M) MANUFACTURING (SOUTH)
(M-L) MANUFACTURING LIMITED (NORTH)

BUILDING FOOTPRINT: 31867 SF (0.73 ACRES)

REQUIRED SETBACKS:

FRONT:	30 FT
SIDE:	15 FT
REAR:	20 FT

YARD ABUTTING RES. DIST: 50 FT

F.A.R.: 1.0 MAX. (ACTUAL 0.034)

LOT AREA:
21.48 ACRES

GREEN SPACE:
6.69 ACRES - 31.15%

GRINDING AREA:
3.87 ACRES

ASPHALT AREA:
9.43 ACRES

CONCRETE AREA:
0.76 ACRES

IMPERVIOUS COVERAGE:
14.79 ACRES - 68.85% (<MAX 70%)

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CONSULTING ENGINEERS
5415 BUSINESS PARKWAY
RINGWOOD, ILLINOIS 60072
815.728.0068
IL DESIGN FIRM # 184-006759

NVA PROP IL LLC

CRYSTAL LAKE, ILLINOIS

SCALE: 1"=100'
ISSUE DATE: 02/21/2023
PROJECT MANAGER: JEC
DESIGNER: ERG
QUALITY CONTROL: MAM

NVA TRUCKING FACILITY EXPANSION

CRYSTAL LAKE, ILLINOIS

NO.	DATE	DESCRIPTION
1	5/19/23	REVISIONS PER CITY REVIEW

PROJECT NUMBER: NART-22034-3

SHEET TITLE: OVERALL SITE PLAN

SHEET NUMBER: C2.0

X:\2022\22034.cad\220343-FINAL DESIGN.dwg, 5/25/2023 1:59:58 PM, DWG To PDF.pc3, 1:1

MATCHLINE C2.2

MATCHLINE C2.4

PROP BUILDING FF = 888.50

2,000 GAL HOLDING TANK

PROPOSED WELL

87.8 RESERVED PARKING $320 FINE 87-0101

PIPE SIZE CHANGE

BOLLARD (TYP.)

PROPOSED RETAINING WALL (DESIGNED BY OTHERS) TYP.

FORMER CHICAGO & NORTHWESTERN RAILROAD - UNION PACIFIC RAILROAD

STORM SEWER

1. PROP INLET TA 2' DIA T1F OL
   RIM = 886.50
   INV = 884.00
2. PROP 125 LF 12" SS @ 0.40%
3. PROP CB TA 4' DIA T1F OL *
   RIM = 886.50
   INV = 883.50 N & S
   INV = 881.25 NW
   INV = 881.05 W
4. PROP 85 LF 12" SS @ 059%
5. PROP INLET TA 2' DIA T1F OL
   RIM = 884.25
   INV = 881.75
6. PROP 115 LF 21" SS @ 0.22%
7. PROP CB TA 4' DIA T1F OL *
   RIM = 886.45
   INV = 883.45 S
   INV = 880.80 E
   INV = 880.55 W
8. PROP 270 LF 27" SS @ 0.26%
9. PROP CB TA 4' DIA T1F OL *
   RIM = 886.50
   INV = 883.50 SW
   INV = 879.85 E+W
10. PROP 130 LF 27" SS @ 0.25%
11. PROP INLET TA 2' DIA TIF OL
    RIM = 886.50
    INV = 883.60
12. PROP 5 LF 12" SS @ 2.00%
13. PROP INLET TA 2' DIA T1F OL
    RIM = 886.45
    INV = 883.55
14. PROP 5 LF 12" SS @ 2.00%
15. PROP INLET TA 2' DIA TIF OL
    RIM = 886.50
    INV = 883.60
16. PROP 5 LF 12" SS @ 2.00%
17. PROP 27" FES W/ GRATE
    INV = 879.50
18. PROP CB TC 2' DIAT12 F&G *
    TOC = 886.65
    INV = 883.00
19. PROP 15 LF 12" SS @ 4.00%
20. PROP 12" FES
    INV = 882.50
55. PROP 12" FES
    INV = 882.50
56. PROP 50 LF 12" SS @ O.OO%
57. PROP CB TL 2' DIA T1F CL
    W/ 6" RESTRICTOR (SEE DETAIL)
    RIM = 885.00
    INV = 882.50
58. PROP 275 LF 12" SS @ 0.55%
59. PROP MH TA T1F CL
    RIM = 885.90
    INV = 881.00
60. PROP 272 LF 12" SS @ 0.55%
85. PROP 180 LF 8" SS @ 1.36%
    INV = 885.00 BLDG MIDDLE
    INV = 886.00
86. PROP 325 LF 12" SS @ 1.77%
    INV = 879.25 PIPE JOINT
    INV = 885.00 BLDG MIDDLE
87. PROP 180 LF 8" SS @ 1.36%
    INV = 885.00 BLDG MIDDLE
    INV = 886.00 BLDG E END
88. PROP 245 LF 12" SS @ 2.35%
    INV = 879.25 PIPE JOINT
    INV = 885.00 BLDG MIDDLE
89. PROP 45 LF 12" SS @ 0.56%
    INV = 879.00 BASIN OUTLET
    INV = 879.25 PIPE JOINT

NOTE:

* INDICATES CATCH BASIN SHALL HAVE A DEBRIS HOOD INSTALLED. SEE C0.5 FOR DETAIL

GRAPHIC SCALE

30 0 15 30 60

(IN FEET)
1 inch = 30 ft.

J. CONDON & ASSOCIATES, INC
CONSULTING ENGINEERS
5415 BUSINESS PARKWAY
RINGWOOD, ILLINOIS 60072
815.728.0068
IL DESIGN FIRM # 184-006759

NVA PROP IL LLC

CRYSTAL LAKE, ILLINOIS

NO.	DATE	DESCRIPTION
1	5/19/23	REVISIONS PER CITY REVIEW

SCALE: 1"=30'
ISSUE DATE: 02/21/2023
PROJECT MANAGER: JEC
DESIGNER: ERG
QUALITY CONTROL: MAM

NVA TRUCKING FACILITY EXPANSION

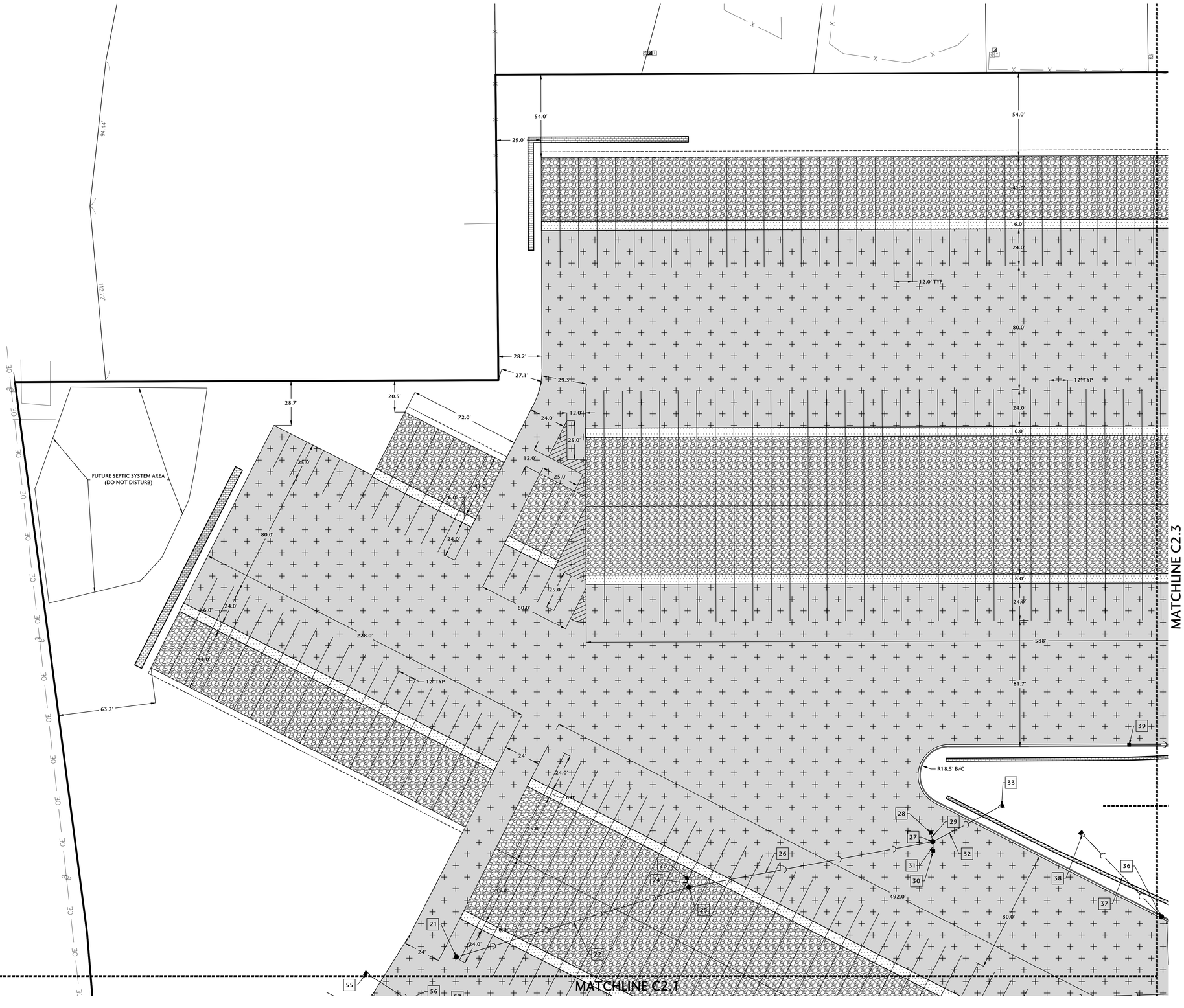
CRYSTAL LAKE, ILLINOIS

PROJECT NUMBER: NART-22034-3

SHEET TITLE: SOUTHWEST GEOMETRIC & UTILITY PLAN

SHEET NUMBER: C2.1

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STORM SEWER

21. PROP CB TA 4' DIA T1F OL SP *
RIM = 884.00
INV = 880.65

22. PROP 155 LF 12" SS @ 0.26%

23. PROP INLET TA 3' DIA T1F OL SP
RIM = 883.00
INV = 879.75

24. PROP 5 LF 15" SS @ 1.0%

25. PROP CB TA 4' DIA T1F OL SP *
RIM = 883.00
INV = 879.70 N
INV = 880.25 W
INV = 878.00 E

26. PROP 155 LF 21" SS @ 0.26%

27. PROP CB TA 4' DIA T1F OL SP *
RIM = 882.75
INV = 879.65 N & S
INV = 877.60 SW
INV = 874.60 NW

28. PROP INLET TA 3' DIA T1F OL SP
RIM = 882.80
INV = 879.65

29. PROP 5 LF 12" SS @ 1.00%

30. PROP INLET TA 3' DIA T1F OL SP
RIM = 882.80
INV = 879.70

31. PROP 5 LF 12" SS @ 1.00%

32. PROP 45 LF 27" SS @ 0.22%

33. PROP 27" FES W/GRATE
INV = 874.50

36. PROP CB TA 4' DIA T12 F&G *
TOC = 883.95
INV = 880.30 E
INV = 873.25 NW

37. PROP 75 LF 15" SS @ 0.53%

38. PROP 15" FES
INV = 872.00

39. PROP INLET TA 2' DIA T12 F&G
TOC = 884.40
INV = 881.40

NOTE:

* INDICATES CATCH BASIN SHALL HAVE A DEBRIS HOOD INSTALLED. SEE C0.5 FOR DETAIL

GRAPHIC SCALE

30 0 15 30 60

(IN FEET)
1 inch = 30 ft.

J. CONDON & ASSOCIATES, INC
CONSULTING ENGINEERS
5415 BUSINESS PARKWAY
RINGWOOD, ILLINOIS 60072
815.728.0068
IL DESIGN FIRM # 184-006759

NVA PROP IL LLC

CRYSTAL LAKE, ILLINOIS

N W E S

SCALE
1"=30'

ISSUE DATE
02/21/2023

PROJECT MANAGER
JEC

DESIGNER
ERG

QUALITY CONTROL
MAM

NVA TRUCKING FACILITY EXPANSION

CRYSTAL LAKE, ILLINOIS

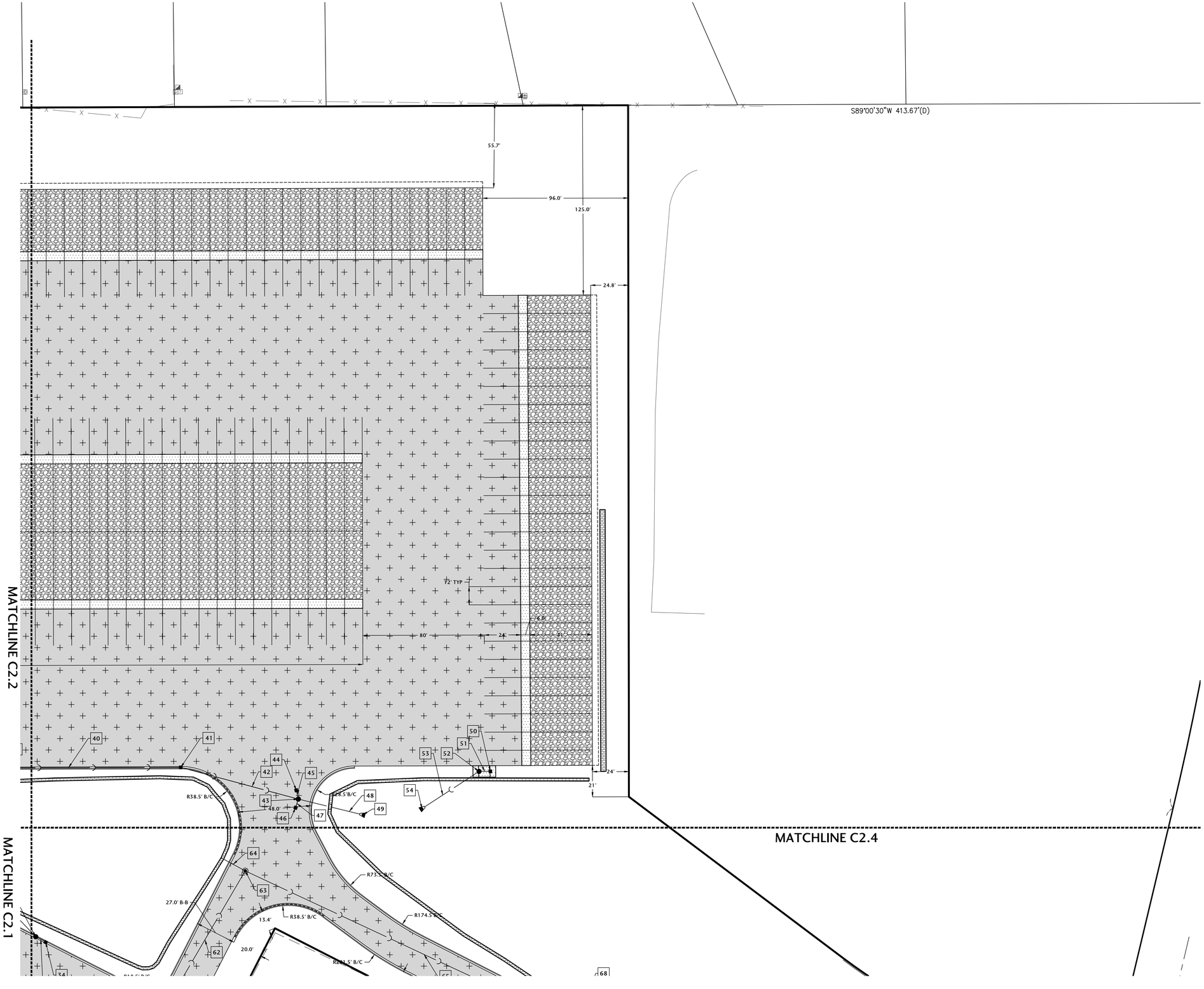
NO.	DATE	DESCRIPTION
1	5/19/23	REVISIONS PER CITY REVIEW

PROJECT NUMBER
NART-22034-3

SHEET TITLE
NORTHWEST GEOMETRIC & UTILITY PLAN

SHEET NUMBER
C2.2

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STORM SEWER

40. PROP 115 LF 12" SS @ 1.22%

41. PROP INLET TA 3' DIA T12 F&G
TOC = 883.65
INV = 880.00 W
INV = 879.75 E

42. PROP 75 LF 15" SS @ 2.33%

43. PROP CB TA 4' DIA T1F OL SP *
RIM = 881.25
INV = 878.25 N&S
INV = 878.00 W
INV = 866.40 E

44. PROP INLET TA 3' DIA T1F OL SP
RIM = 881.30
INV = 878.30

45. PROP 5 LF 12" SS @ 1.00%

46. PROP INLET TA 3' DIA T1F OL SP
RIM = 881.30
INV = 878.30

47. PROP 5 LF 12" SS @ 1.00%

48. PROP 40 LF 12" SS @ 1.00%

49. PROP 12" FES W/ GRATE
INV = 866.00

50. PROP INLET TA 3' DIA T1F OL SP
RIM = 879.25
INV = 876.25

51. PROP 5 LF 15" SS @ 1.00%

52. PROP CB TA 4' DIA T1F OL SP *
RIM = 879.25
INV = 876.50 E
INV = 865.50 SW

53. PROP 40 LF 18" SS @ 1.25%

54. PROP 18" FES W/ GRATE
INV = 865.00

NOTE:

* INDICATES CATCH BASIN SHALL HAVE A DEBRIS HOOD INSTALLED. SEE C0.5 FOR DETAIL

GRAPHIC SCALE

30 0 15 30 60

(IN FEET)
1 inch = 30 ft.

J. CONDON & ASSOCIATES, INC
CONSULTING ENGINEERS
5415 BUSINESS PARKWAY
RINGWOOD, ILLINOIS 60072
815.728.0068
IL DESIGN FIRM # 184-006759

NVA PROP IL LLC

CRYSTAL LAKE, ILLINOIS

N W E S

SCALE
1"=30'

ISSUE DATE
02/21/2023

PROJECT MANAGER
JEC

DESIGNER
ERG

QUALITY CONTROL
MAM

NVA TRUCKING FACILITY EXPANSION

CRYSTAL LAKE, ILLINOIS

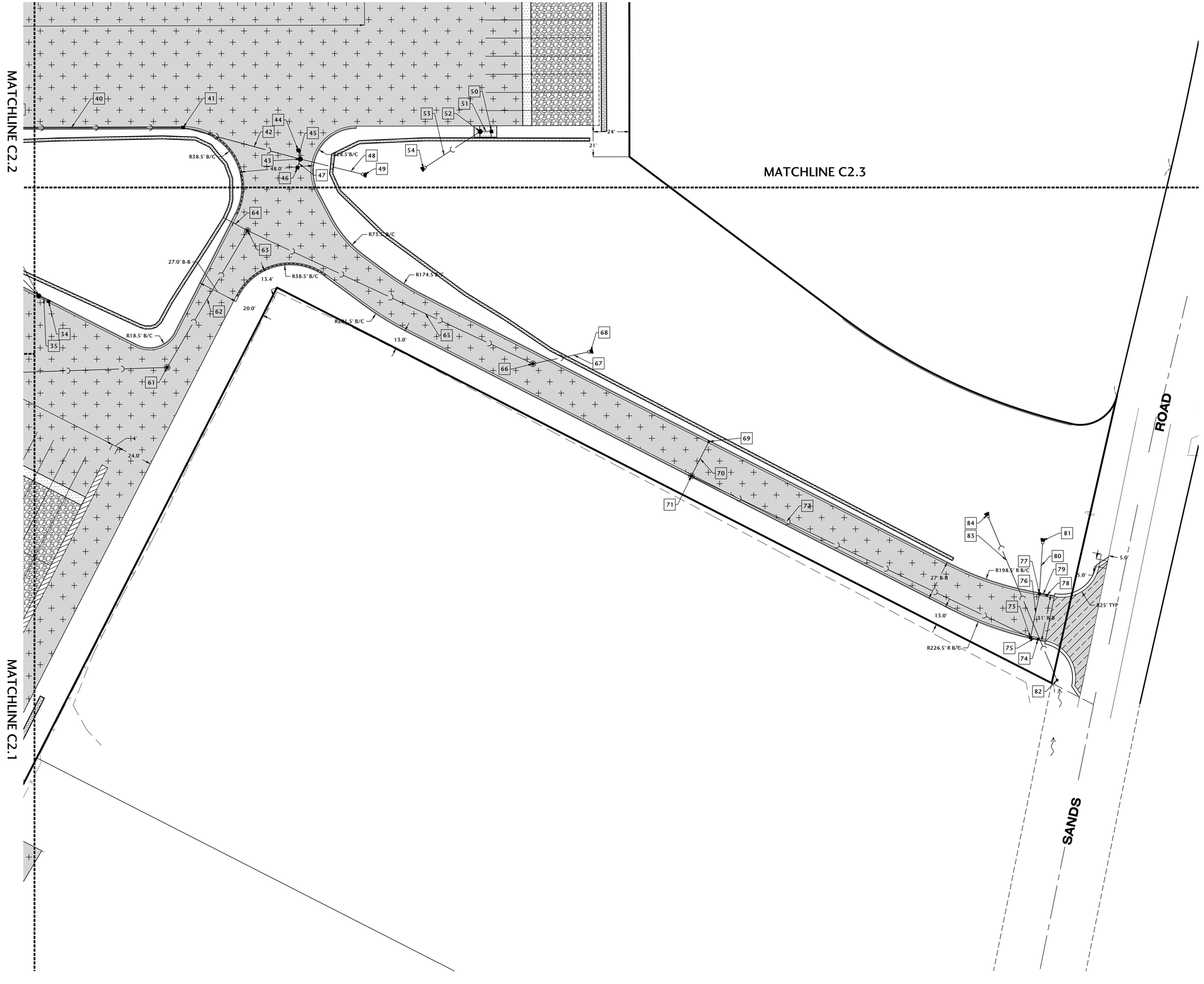
NO.	DATE	DESCRIPTION
1	5/19/23	REVISIONS PER CITY REVIEW

PROJECT NUMBER
NART-22034-3

SHEET TITLE
NORTHEAST GEOMETRIC & UTILITY PLAN

SHEET NUMBER
C2.3

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STORM SEWER

34. PROP INLET TA 2' DIA T12 F&G
TOC = 883.90
INV = 880.35

35. PROP 5 LF 12" SS @ 1.00%

61. PROP MH 4' DIA T1F CL
RIM = 885.20
INV = 879.50

62. PROP 100 LF 12" SS @ 0.50%

63. PROP MH TA 4' DIA
RIM = 883.40
INV = 879.70 NW
INV = 879.00 SW
INV = 878.50 SW

64. PROP 15 LF 15" SS @ 0.00%
INV = 879.70 W

65. PROP 205 LF 18" SS @ 1.80%

66. PROP MH TA 4' DIA T1F CL
RIM = 880.95
INV = 876.00 NW
INV = 867.00 NE

67. PROP 35 LF 18" SS @ 0.00%

68. PROP 18" FES W/ GRATE
INV = 867.00

69. PROP INLET TA 2' DIA T12 F&G
TOC = 877.75
INV = 874.75

70. PROP 25 LF 12" SS @ 3.0%

71. PROP MH TA 4' DIA T12 F&G
TOC = 877.75
INV = 874.00

72. PROP 245 LF 12" SS @ 1.37%

73. PROP CB TA 4' DIA T12 F&G *
TOC = 874.30
INV = 870.65 E & NW
INV = 870.00 N

74. PROP INLET TA 2' DIA T12 F&G
TOC = 874.35
INV = 870.70

75. PROP 5 LF 12" SS 2 1.00%

76. PROP 25 LF 15" SS @ 1.00%

77. PROP CB TA 4' DIA T12 F&G *
TOC = 874.30
INV = 870.60 E
INV = 869.75 S
INV = 866.10 N

78. PROP INLET TA 2' DIA T12 F&G
TOC = 874.35
INV = 870.65

79. PROP 5 LF 12" SS @ 1.00%

80. PROP 30 LF 15" SS @ 0.33%

81. PROP 15" FES
INV = 866.00

82. PROP CB TA 4' DIA
NEENAH R=4342 GRATE *
RIM = 871.50
INV = 865.25

83. PROP 115 LF 21" SS @ 0.22%

84. PROP 21" FES
RIM = 865.00

NOTE:
* INDICATES CATCH BASIN SHALL HAVE A DEBRIS HOOD INSTALLED. SEE C0.5 FOR DETAIL

CONT. ON LEFT

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30 ft.

J. CONDON & ASSOCIATES, INC
CONSULTING ENGINEERS
5415 BUSINESS PARKWAY
RINGWOOD, ILLINOIS 60072
815.728.0068
IL DESIGN FIRM # 184-006759

NVA PROP IL LLC

CRYSTAL LAKE, ILLINOIS

SCALE: 1"=30'
ISSUE DATE: 02/21/2023
PROJECT MANAGER: JEC
DESIGNER: ERG
QUALITY CONTROL: MAM

NVA TRUCKING FACILITY EXPANSION

CRYSTAL LAKE, ILLINOIS

NO.	DATE	DESCRIPTION
1	5/19/23	REVISIONS PER CITY REVIEW

PROJECT NUMBER: NART-22034-3

SHEET TITLE: SOUTHEAST GEOMETRIC & UTILITY PLAN

SHEET NUMBER: C2.4

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MATCHLINE C3.1

MATCHLINE C3.3

: WETLAND LIMITS BY HEY & ASSOC.)

PROP BUILDING FF = 888.50

2,000 GAL HOLDING TANK

SEE ENLARGED HANDICAP PARKING DETAIL BELOW

FORMER CHICAGO & NORTHWESTERN RAILROAD - UNION PACIFIC RAILROAD

= 2.5 : 1 SLOPE

Northern Illinois Slope Mixture 1/	*Elymus canadensis* (Canada Wild Rye) 5/	5 (5)
	Perennial Ryegrass	20 (20)
*ALL OTHER DISTURBED AREAS W/ SLOPES STEEPER THAN 3 TO 1	Alsike Clover 5/	5 (5)
	Dalea purpurea (Purple Prairie Clover) 4/ 5/	2 (2)
	Ratibida pinnata (Yellow Coneflower) 4/ 5/	
	Schizachyrium scoparium (Little Bluestem) 5/	12 (12)
	Bouteloua curtipendula (Side-Oats Grama) 5/	10 (10)
	Pucciniellia distans (Fults Saltgrass or Salty Alkaligrass)	30 (35)
	Oats, Spring	50 (55)
	Slender Wheat Grass 5/	15 (15)
	Buffalo Grass 5/ 7/	5 (5)

NOTE:

ALL AREAS SHOWING RETAINING WALLS SHALL BE GRADED TO 2.5 TO 1 SLOPE FOR INITIAL SITE GRADING. SLOPES SHALL BE SEEDED WITH COVER CROP AND COVERED WITH EROSION CONTROL BLANKET.

GRADING & EROSION CONTROL NOTES:

1. ALL DISTURBED AREAS SHALL BE STABILIZED WITH NA GREEN DS75 EROSION BLANKET OR APPROVED EQUAL OR HYDROSEEDED UNLESS OTHERWISE NOTED WITHIN THE PLAN SET.
2. CONTRACTOR RESPONSIBLE FOR MAINTENANCE/REPAIR OF EROSION CONTROL MEASURES UNTIL ADEQUATE VEGETATION GROWTH HAS OCCURRED. MAINTENANCE/REPAIR WORK SHALL BE INCIDENTAL TO THE INSTALLATION COSTS.
3. CONTRACTOR RESPONSIBLE FOR ADDITIONAL EROSION CONTROL MEASURES AS RECOMMENDED BY THE ENFORCEMENT OFFICER OR THE DESIGNATED EROSION INSPECTOR AS SITE CONDITIONS WARRANT.
4. ALL TRAPPED SEDIMENT IS TO BE PROPERLY STABILIZED OR DISPOSED OF.
5. IF CONTRACTOR NEEDS TO DEWATER WHEN EXCAVATING, THEY MUST PUMP TO A "DIRT BAG" OR APPROVED EQUAL.
6. WHERE THE USE OF TREE PROTECTION FENCING DOES NOT PROVIDE AMPLE ROOM FOR CONSTRUCTION, TREE TRUNK PROTECTION SHALL BE USED.
7. TEMPORARY SEEDING SHALL BE REQUIRED TO TEMPORARILY STABILIZE DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE OR ON WHICH CONSTRUCTION WILL BE STOPPED FOR A PERIOD OF MORE THAN 14 DAYS. THE COVER CROP SEED MIX SHALL BE UTILIZED FOR TEMPORARY SEEDING.
8. CONTRACTOR IS RESPONSIBLE TO EMPLOY DUST CONTROL METHODS TO REDUCE & PREVENT THE SURFACE AND AIR TRANSPORT OF DUST DURING CONSTRUCTION. IN ADDITION TO MINIMIZATION OF SOIL DISTURBANCE, CONTRACTOR SHALL UTILIZE MULCHING METHODS (IDOT 251.03 OR 251.04), IRRIGATION AND BARRIERS.

E-28

EROSION CONTROL
SEQUENCE OF CONSTRUCTION/EROSION CONTROL MEASURES

1. Installation of sedimentation and erosion control measures.
2. Construction of detention basins and sediment traps.
3. Site clearing and topsoil stripping.
4. Excavation and grading.
5. Placement of topsoil on disturbed areas.
6. Seeding, landscaping and final stabilization. Seeding to be completed within 7 days of final grading.
7. All temporary erosion control measures shall be removed and disposed of within 30 days of final stabilization. All trapped sediment is required to be stabilized or disposed.

HANDICAPPED PARKING DETAIL (1:10)

EROSION CONTROL NOTES

1. Construction on this site shall comply with all City ordinances pertaining to erosion control.
2. All disturbed areas shall be stabilized within 7 days of active disturbance.
3. All roadways shall be cleaned at the end of each day.
4. Silt Sack/approved equal measure shall be placed between all open frame and grates.
5. All erosion and sediment control practices shall be maintained and repaired as needed to ensure effective performance of the required erosion control measures.
6. All temporary erosion control measures shall be removed and disposed of within 30 days of final stabilization. All trapped sediment is required to be stabilized or disposed.
7. All erosion and sediment control work shall conform to the Illinois Urban Manual for erosion control.

GRADING & EROSION CONTROL LEGEND

DRAINAGE ARROW	
OVERLAND OVERFLOW ROUTE	
SILT FENCE	SF
OPEN-LID INLET PROTECTION	IP
SEDIMENT LOG (CURLEX SEDIMENT LOG 6")	SL
STABILIZED CONSTRUCTION ENTRANCE W = 20.0', L = 70.0'	CE
PERMIT DISPLAY BOARD	DB
PORTABLE CONCRETE WASHOUT AREA	CW
ONSITE TRASH DUMPSTER	TD
BIO-RETENTION BASIN	

PROPOSED ELEVATIONS:

TOP OF CONCRETE CURB EDGE OF CONCRETE/BITUMINOUS PAVEMENT	C XXX.XX P XXX.XX
EDGE OF CONCRETE SIDEWALK	W XXX.XX
TOP OF WALL	T/W XXX.XX
BOTTOM OF WALL	B/W XXX.XX
FIRST FLOOR ELEVATION	FF XXX.XX
FINISHED GRADE	XXX.XX

GRAPHIC SCALE

30 0 15 30 60

(IN FEET)
1 inch = 30 ft.

J. CONDON & ASSOCIATES, INC
CONSULTING ENGINEERS
5415 BUSINESS PARKWAY
RINGWOOD, ILLINOIS 60072
815.728.0068
IL DESIGN FIRM # 184-006759

NVA PROP IL LLC

CRYSTAL LAKE, ILLINOIS

N W E S

SCALE: 1"=30'

ISSUE DATE: 02/21/2023

PROJECT MANAGER: JEC

DESIGNER: ERG

QUALITY CONTROL: MAM

NVA TRUCKING FACILITY EXPANSION

CRYSTAL LAKE, ILLINOIS

NO.	DATE	DESCRIPTION
1	5/19/23	REVISIONS PER CITY REVIEW

PROJECT NUMBER: NART-22034-3

SHEET TITLE: SOUTHWEST GRADING & EROSION CONTROL

SHEET NUMBER: C3.0

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E-28

EROSION CONTROL
SEQUENCE OF CONSTRUCTION/EROSION CONTROL MEASURES

1. Installation of sedimentation and erosion control measures.
2. Construction of detention basins and sediment traps.
3. Site clearing and topsoil stripping.
4. Excavation and grading.
5. Placement of topsoil on disturbed areas.
6. Seeding, landscaping and final stabilization. Seeding to be completed within 7 days of final grading.
7. All temporary erosion control measures shall be removed and disposed of within 30 days of final stabilization. All trapped sediment is required to be stabilized or disposed.

EROSION CONTROL NOTES

1. Construction on this site shall comply with all City ordinances pertaining to erosion control.
2. All disturbed areas shall be stabilized within 7 days of active disturbance.
3. All roadways shall be cleaned at the end of each day.
4. Silt Sack/approved equal measure shall be placed between all open frame and grates.
5. All erosion and sediment control practices shall be maintained and repaired as needed to ensure effective performance of the required erosion control measures.
6. All temporary erosion control measures shall be removed and disposed of within 30 days of final stabilization. All trapped sediment is required to be stabilized or disposed.
7. All erosion and sediment control work shall conform to the Illinois Urban Manual for erosion control.

SITE BENCHMARK
BENCH TIE IN EAST
FACE OF POWER POLE
ELEV=916.76 NAVD88

SNOW FENCE

FUTURE SEPTIC SYSTEM AREA
(DO NOT DISTURB)

RETAINING WALL

PERMITTED WETLAND DISTURBANCE AREA

WETLAND LIMITS

ROUTE 31

MATCHLINE C3.2

MATCHLINE C3.0

= 2.5 : 1 SLOPE

Northern Illinois Slope Mixture 1/	*Elymus canadensis* (Canada Wild Rye) 5/	5 (5)
	Perennial Ryegrass	20 (20)
*ALL OTHER DISTURBED AREAS NOT LISTED ELSEWHERE THAN 5 TO 1	Ashke Clover 4/	5 (5)
	Desmanthus illinoensis (Illinois Bundleflower) 4/ 5/	2 (2)
	Schizachyrium scoparium (Little Bluestem) 5/	12 (12)
	Boutelloua curtipendula (Side-Oats Grama) 5/	10 (10)
	Puccinellia distans (Fults Saltgrass or Salty Alkaligrass)	30 (35)
	Oats, Spring	50 (55)
	Slender Wheat Grass 5/	15 (15)
	Buffalo Grass 5/ 7/	5 (5)

NOTE:

ALL AREAS SHOWING RETAINING WALLS SHALL BE GRADED TO 2.5 TO 1 SLOPE FOR INITIAL SITE GRADING. SLOPES SHALL BE SEEDED WITH COVER CROP AND COVERED WITH EROSION CONTROL BLANKET.

GRADING & EROSION CONTROL NOTES:

1. ALL DISTURBED AREAS SHALL BE STABILIZED WITH NA GREEN DS75 EROSION BLANKET OR APPROVED EQUAL OR HYDROSEEDED UNLESS OTHERWISE NOTED WITHIN THE PLAN SET.
2. CONTRACTOR RESPONSIBLE FOR MAINTENANCE/REPAIR OF EROSION CONTROL MEASURES UNTIL ADEQUATE VEGETATION GROWTH HAS OCCURRED. MAINTENANCE/REPAIR WORK SHALL BE INCIDENTAL TO THE INSTALLATION COSTS.
3. CONTRACTOR RESPONSIBLE FOR ADDITIONAL EROSION CONTROL MEASURES AS RECOMMENDED BY THE ENFORCEMENT OFFICER OR THE DESIGNATED EROSION INSPECTOR AS SITE CONDITIONS WARRANT.
4. ALL TRAPPED SEDIMENT IS TO BE PROPERLY STABILIZED OR DISPOSED OF.
5. IF CONTRACTOR NEEDS TO DEWATER WHEN EXCAVATING, THEY MUST PUMP TO A "DIRT BAG" OR APPROVED EQUAL.
6. WHERE THE USE OF TREE PROTECTION FENCING DOES NOT PROVIDE AMPLE ROOM FOR CONSTRUCTION, TREE TRUNK PROTECTION SHALL BE USED.
7. TEMPORARY SEEDING SHALL BE REQUIRED TO TEMPORARILY STABILIZE DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE OR ON WHICH CONSTRUCTION WILL BE STOPPED FOR A PERIOD OF MORE THAN 14 DAYS. THE COVER CROP SEED MIX SHALL BE UTILIZED FOR TEMPORARY SEEDING.
8. CONTRACTOR IS RESPONSIBLE TO EMPLOY DUST CONTROL METHODS TO REDUCE & PREVENT THE SURFACE AND AIR TRANSPORT OF DUST DURING CONSTRUCTION. IN ADDITION TO MINIMIZATION OF SOIL DISTURBANCE, CONTRACTOR SHALL UTILIZE MULCHING METHODS (IDOT 251.03 OR 251.04), IRRIGATION AND BARRIERS.

GRADING & EROSION CONTROL LEGEND

DRAINAGE ARROW	
OVERLAND OVERFLOW ROUTE	100 YR FLOWLINE
SILT FENCE	SF
OPEN-LID INLET PROTECTION	IP
SEDIMENT LOG (CURLEX SEDIMENT LOG 6")	SL
STABILIZED CONSTRUCTION ENTRANCE W = 20.0', L = 70.0'	CE
PERMIT DISPLAY BOARD	DB
PORTABLE CONCRETE WASHOUT AREA	CW
TEMPORARY RISER FOR SEDIMENTATION	TR
ONSITE TRASH DUMPSTER	TD
BIO-RETENTION BASIN	

PROPOSED ELEVATIONS:

TOP OF CONCRETE CURB EDGE OF CONCRETE/BITUMINOUS PAVEMENT	C XXX.XX P XXX.XX
EDGE OF CONCRETE SIDEWALK	W XXX.XX
TOP OF WALL	T/W XXX.XX
BOTTOM OF WALL	B/W XXX.XX
FIRST FLOOR ELEVATION	FF XXX.XX
FINISHED GRADE	XXX.XX

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30 ft.

J. CONDON & ASSOCIATES, INC
CONSULTING ENGINEERS
5415 BUSINESS PARKWAY
RINGWOOD, ILLINOIS 60072
815.728.0068
IL DESIGN FIRM # 184-006759

NVA PROP IL LLC

CRYSTAL LAKE, ILLINOIS

N W E S

SCALE
1"=30'

ISSUE DATE
02/21/2023

PROJECT MANAGER
JEC

DESIGNER
ERG

QUALITY CONTROL
MAM

NVA TRUCKING FACILITY EXPANSION

CRYSTAL LAKE, ILLINOIS

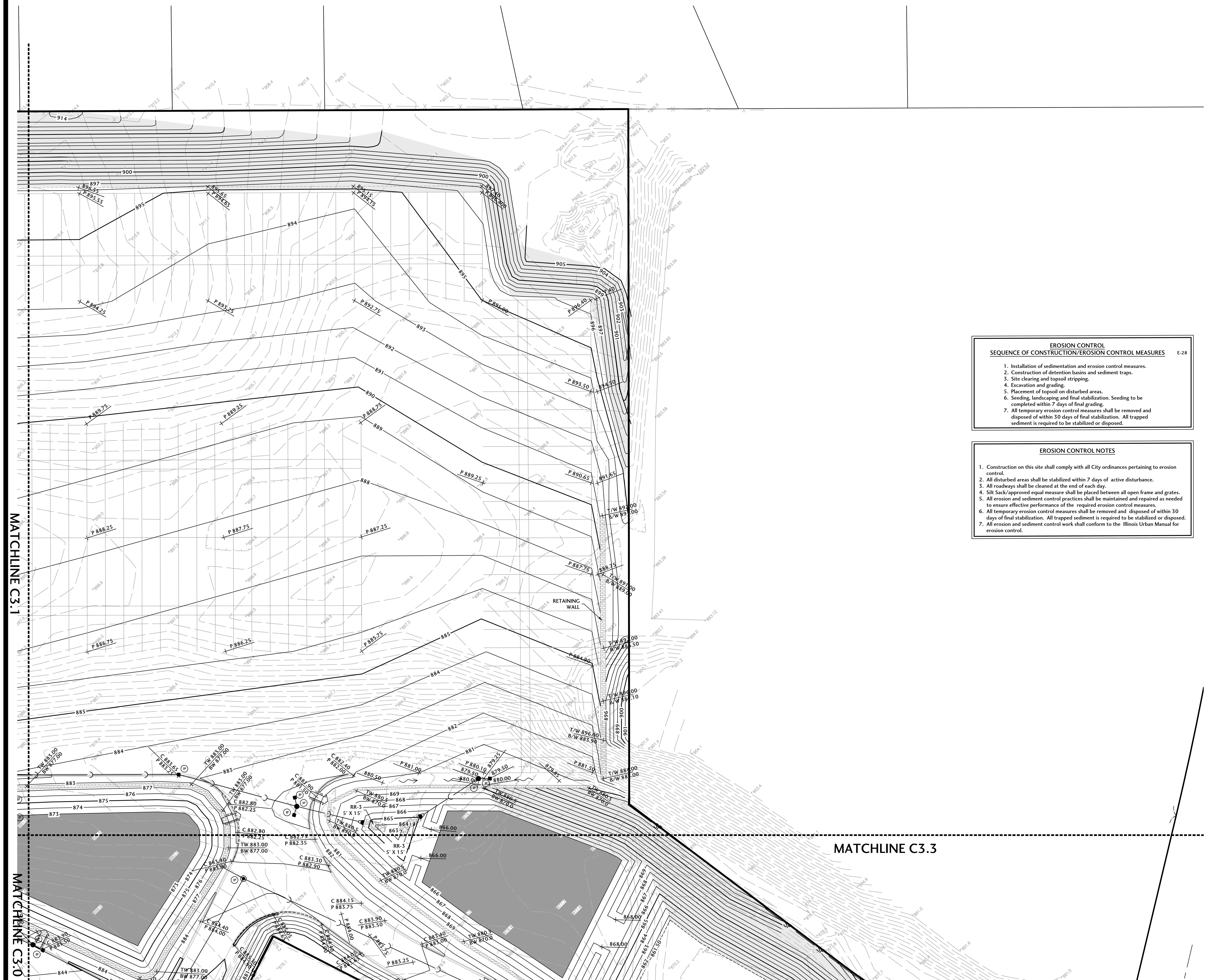
NO.	DATE	DESCRIPTION
1	5/19/23	REVISIONS PER CITY REVIEW

PROJECT NUMBER
NART-22034-3

SHEET TITLE
NORTHWEST GRADING & EROSION CONTROL

SHEET NUMBER
C3.1

X:\2022\22034\cad\22034-3 FINAL DESIGN.dwg, 5/25/2023 1:47:43 PM, DWG To PDF.pc3, 1:1



= 2.5 : 1 SLOPE

Northern Illinois Slope Mixture 1/ *ALL OTHER DISTURBED AREAS w/ SLOPES STEEPER THAN 3 TO 1	*Elymus canadensis* (Canada Wild Rye) 5/	5 (5)
	Perennial Ryegrass	20 (20)
	Alsike Clover 4/	5 (5)
	Desmanthus illinoensis (Illinois Bundleflower) 4/ 5/	2 (2)
	Schizachyrium scoparium (Little Bluestem) 5/	12 (12)
	Bouteloua curtipendula (Side-Oats Grama) 5/	10 (10)
	Puccinellia distans (Fults Saltgrass or Salty Alkaligrass)	30 (35)
	Oats, Spring	50 (55)
	Slender Wheat Grass 5/	15 (15)
	Buffalo Grass 5/ 7/	5 (5)

NOTE:

ALL AREAS SHOWING RETAINING WALLS SHALL BE GRADED TO 2.5 TO 1 SLOPE FOR INITIAL SITE GRADING. SLOPES SHALL BE SEEDED WITH COVER CROP AND COVERED WITH EROSION CONTROL BLANKET.

EROSION CONTROL
SEQUENCE OF CONSTRUCTION/EROSION CONTROL MEASURES

E-28

1. Installation of sedimentation and erosion control measures.
2. Construction of detention basins and sediment traps.
3. Site clearing and topsoil stripping.
4. Excavation and grading.
5. Placement of topsoil on disturbed areas.
6. Seeding, landscaping and final stabilization. Seeding to be completed within 7 days of final grading.
7. All temporary erosion control measures shall be removed and disposed of within 30 days of final stabilization. All trapped sediment is required to be stabilized or disposed.

EROSION CONTROL NOTES

1. Construction on this site shall comply with all City ordinances pertaining to erosion control.
2. All disturbed areas shall be stabilized within 7 days of active disturbance.
3. All roadways shall be cleaned at the end of each day.
4. Silt Sack/approved equal measure shall be placed between all open frame and grates.
5. All erosion and sediment control practices shall be maintained and repaired as needed to ensure effective performance of the required erosion control measures.
6. All temporary erosion control measures shall be removed and disposed of within 30 days of final stabilization. All trapped sediment is required to be stabilized or disposed.
7. All erosion and sediment control work shall conform to the Illinois Urban Manual for erosion control.

GRADING & EROSION CONTROL NOTES:

1. ALL DISTURBED AREAS SHALL BE STABILIZED WITH NA GREEN DS75 EROSION BLANKET OR APPROVED EQUAL OR HYDROSEEDED UNLESS OTHERWISE NOTED WITHIN THE PLAN SET.
2. CONTRACTOR RESPONSIBLE FOR MAINTENANCE/REPAIR OF EROSION CONTROL MEASURES UNTIL ADEQUATE VEGETATION GROWTH HAS OCCURRED. MAINTENANCE/REPAIR WORK SHALL BE INCIDENTAL TO THE INSTALLATION COSTS.
3. CONTRACTOR RESPONSIBLE FOR ADDITIONAL EROSION CONTROL MEASURES AS RECOMMENDED BY THE ENFORCEMENT OFFICER OR THE DESIGNATED EROSION INSPECTOR AS SITE CONDITIONS WARRANT.
4. ALL TRAPPED SEDIMENT IS TO BE PROPERLY STABILIZED OR DISPOSED OF.
5. IF CONTRACTOR NEEDS TO DEWATER WHEN EXCAVATING, THEY MUST PUMP TO A "DIRT BAG" OR APPROVED EQUAL.
6. WHERE THE USE OF TREE PROTECTION FENCING DOES NOT PROVIDE AMPLE ROOM FOR CONSTRUCTION, TREE TRUNK PROTECTION SHALL BE USED.
7. TEMPORARY SEEDING SHALL BE REQUIRED TO TEMPORARILY STABILIZE DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE OR ON WHICH CONSTRUCTION WILL BE STOPPED FOR A PERIOD OF MORE THAN 14 DAYS. THE COVER CROP SEED MIX SHALL BE UTILIZED FOR TEMPORARY SEEDING.
8. CONTRACTOR IS RESPONSIBLE TO EMPLOY DUST CONTROL METHODS TO REDUCE & PREVENT THE SURFACE AND AIR TRANSPORT OF DUST DURING CONSTRUCTION. IN ADDITION TO MINIMIZATION OF SOIL DISTURBANCE, CONTRACTOR SHALL UTILIZE MULCHING METHODS (IDOT 251.03 OR 251.04), IRRIGATION AND BARRIERS.

GRADING & EROSION CONTROL LEGEND

DRAINAGE ARROW	(arrow)
OVERLAND OVERFLOW ROUTE	100 YR OVERFLOW
SILT FENCE	SF
OPEN-LID INLET PROTECTION	IP
SEDIMENT LOG (CURLEX SEDIMENT LOG 6")	SL
STABILIZED CONSTRUCTION ENTRANCE W = 20.0', L = 70.0'	CE
PERMIT DISPLAY BOARD	DB
PORTABLE CONCRETE WASHOUT AREA	CW
ONSITE TRASH DUMPSTER	TD
BIO-RETENTION BASIN	(shaded)

PROPOSED ELEVATIONS:

TOP OF CONCRETE CURB	C XXX.XX
EDGE OF CONCRETE/BITUMINOUS PAVEMENT	P XXX.XX
EDGE OF CONCRETE SIDEWALK	W XXX.XX
TOP OF WALL	T/W XXX.XX
BOTTOM OF WALL	B/W XXX.XX
FIRST FLOOR ELEVATION	FF XXX.XX
FINISHED GRADE	XXX.XX

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30 ft.

ENGINEERING YOUR SUCCESS
J. CONDON & ASSOCIATES, INC.
CONSULTING ENGINEERS
5415 BUSINESS PARKWAY
RINGWOOD, ILLINOIS 60072
815.728.0068
IL DESIGN FIRM # 184-006759

NVA PROP IL LLC

CRYSTAL LAKE, ILLINOIS

N W E S

SCALE	1"=30'
ISSUE DATE	02/21/2023
PROJECT MANAGER	JEC
DESIGNER	ERG
QUALITY CONTROL	MAM

NVA TRUCKING FACILITY EXPANSION

CRYSTAL LAKE, ILLINOIS

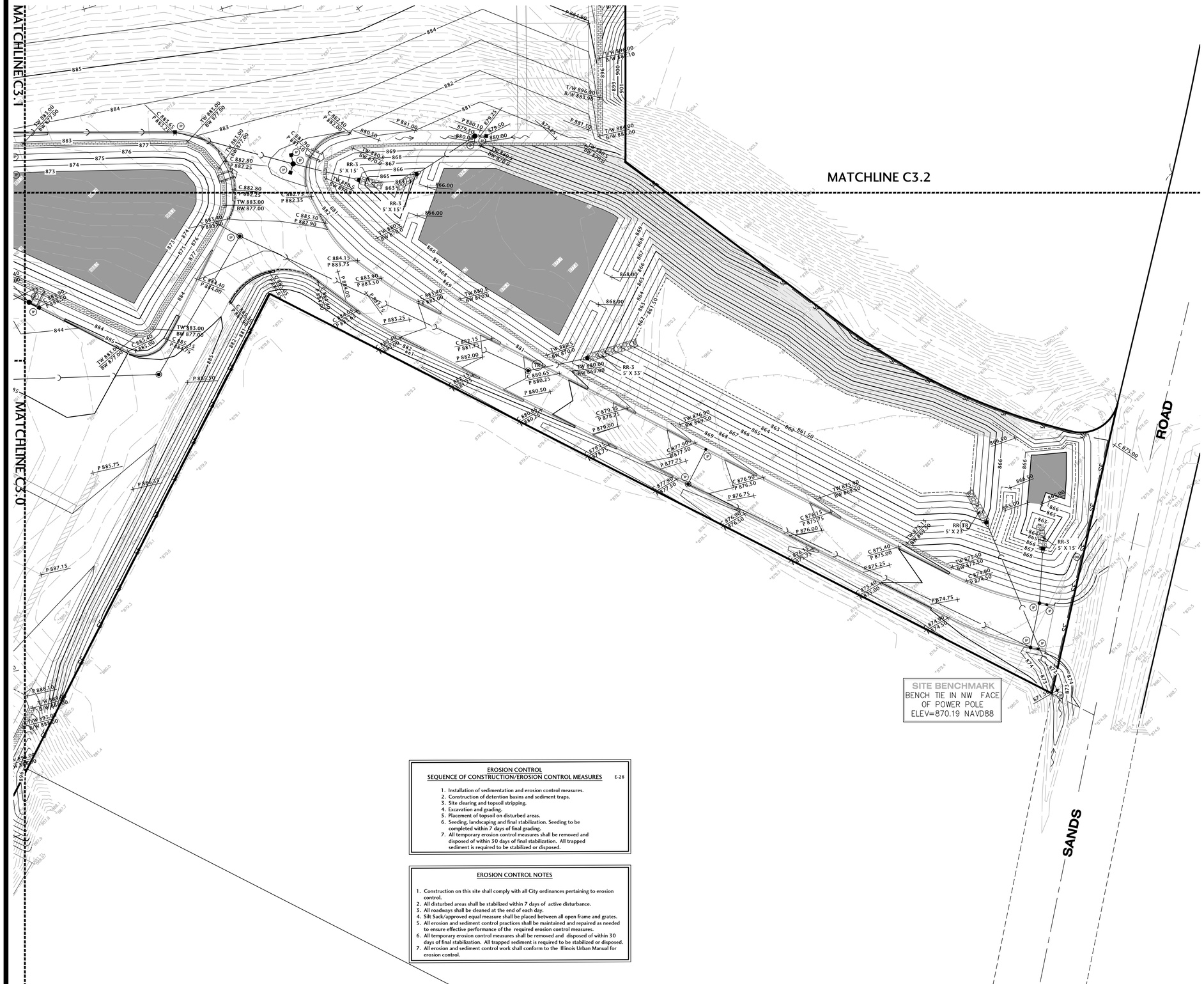
NO.	DATE	DESCRIPTION
1	5/19/23	REVISIONS PER CITY REVIEW

PROJECT NUMBER
NART-22034-3

SHEET TITLE
NORTHEAST GRADING & EROSION CONTROL

SHEET NUMBER
C3.2

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= 2.5 : 1 SLOPE

Northern Illinois Slope Mixture 1/	*Elymus canadensis* (Canada Wild Rye) 5/	5 (5)
	Perennial Ryegrass	20 (20)
*ALL OTHER DISTURBED AREAS w/ SLOPES STEEPER THAN 3 TO 1	Annual Ryegrass	5 (5)
	Zizaniathus illinoensis (Illinois Bundleflower) 4/ 5/	2 (2)
	Schizachyrium scoparium (Little Bluestem) 5/	12 (12)
	Bouteloua curtipendula (Side-Oats Grama) 5/	10 (10)
	Puccinellia distans (Fults Saltgrass or Salty Alkaligrass)	30 (35)
	Oats, Spring	50 (55)
	Slender Wheat Grass 5/	15 (15)
	Buffalo Grass 5/ 7/	5 (5)

NOTE:

ALL AREAS SHOWING RETAINING WALLS SHALL BE GRADED TO 2.5 TO 1 SLOPE FOR INITIAL SITE GRADING. SLOPES SHALL BE SEEDED WITH COVER CROP AND COVERED WITH EROSION CONTROL BLANKET.

GRADING & EROSION CONTROL NOTES:

1. ALL DISTURBED AREAS SHALL BE STABILIZED WITH NA GREEN DS75 EROSION BLANKET OR APPROVED EQUAL OR HYDROSEEDED UNLESS OTHERWISE NOTED WITHIN THE PLAN SET.
2. CONTRACTOR RESPONSIBLE FOR MAINTENANCE/REPAIR OF EROSION CONTROL MEASURES UNTIL ADEQUATE VEGETATION GROWTH HAS OCCURRED. MAINTENANCE/REPAIR WORK SHALL BE INCIDENTAL TO THE INSTALLATION COSTS.
3. CONTRACTOR RESPONSIBLE FOR ADDITIONAL EROSION CONTROL MEASURES AS RECOMMENDED BY THE ENFORCEMENT OFFICER OR THE DESIGNATED EROSION INSPECTOR AS SITE CONDITIONS WARRANT.
4. ALL TRAPPED SEDIMENT IS TO BE PROPERLY STABILIZED OR DISPOSED OF.
5. IF CONTRACTOR NEEDS TO DEWATER WHEN EXCAVATING, THEY MUST PUMP TO A "DIRT BAG" OR APPROVED EQUAL.
6. WHERE THE USE OF TREE PROTECTION FENCING DOES NOT PROVIDE AMPLE ROOM FOR CONSTRUCTION, TREE TRUNK PROTECTION SHALL BE USED.
7. TEMPORARY SEEDING SHALL BE REQUIRED TO TEMPORARILY STABILIZE DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE OR ON WHICH CONSTRUCTION WILL BE STOPPED FOR A PERIOD OF MORE THAN 14 DAYS. THE COVER CROP SEED MIX SHALL BE UTILIZED FOR TEMPORARY SEEDING.
8. CONTRACTOR IS RESPONSIBLE TO EMPLOY DUST CONTROL METHODS TO REDUCE & PREVENT THE SURFACE AND AIR TRANSPORT OF DUST DURING CONSTRUCTION. IN ADDITION TO MINIMIZATION OF SOIL DISTURBANCE, CONTRACTOR SHALL UTILIZE MULCHING METHODS (IDOT 251.03 OR 251.04), IRRIGATION AND BARRIERS.

EROSION CONTROL
SEQUENCE OF CONSTRUCTION/EROSION CONTROL MEASURES E-28

1. Installation of sedimentation and erosion control measures.
2. Construction of detention basins and sediment traps.
3. Site clearing and topsoil stripping.
4. Excavation and grading.
5. Placement of topsoil on disturbed areas.
6. Seeding, landscaping and final stabilization. Seeding to be completed within 7 days of final grading.
7. All temporary erosion control measures shall be removed and disposed of within 30 days of final stabilization. All trapped sediment is required to be stabilized or disposed.

EROSION CONTROL NOTES

1. Construction on this site shall comply with all City ordinances pertaining to erosion control.
2. All disturbed areas shall be stabilized within 7 days of active disturbance.
3. All roadways shall be cleaned at the end of each day.
4. Silt Sack/approved equal measure shall be placed between all open frame and grates.
5. All erosion and sediment control practices shall be maintained and repaired as needed to ensure effective performance of the required erosion control measures.
6. All temporary erosion control measures shall be removed and disposed of within 30 days of final stabilization. All trapped sediment is required to be stabilized or disposed.
7. All erosion and sediment control work shall conform to the Illinois Urban Manual for erosion control.

GRADING & EROSION CONTROL LEGEND

DRAINAGE ARROW	
OVERLAND OVERFLOW ROUTE	
SILT FENCE	SF
OPEN-LID INLET PROTECTION	IP
SEDIMENT LOG (CURLEX SEDIMENT LOG 6")	SL
STABILIZED CONSTRUCTION ENTRANCE W = 20.0', L = 70.0'	CE
PERMIT DISPLAY BOARD	DB
PORTABLE CONCRETE WASHOUT AREA	CW
TEMPORARY RISER FOR SEDIMENTATION	TR
ONSITE TRASH DUMPSTER	TD
BIO-RETENTION BASIN	

PROPOSED ELEVATIONS:

TOP OF CONCRETE CURB	C XXX.XX
EDGE OF CONCRETE/BITUMINOUS PAVEMENT	P XXX.XX
EDGE OF CONCRETE SIDEWALK	W XXX.XX
TOP OF WALL	T/W XXX.XX
BOTTOM OF WALL	B/W XXX.XX
FIRST FLOOR ELEVATION	FF XXX.XX
FINISHED GRADE	XXX.XX

GRAPHIC SCALE

30 0 15 30 60

(IN FEET)
1 inch = 30 ft.

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CRYSTAL LAKE, ILLINOIS

N W E S

SCALE
1"=30'

ISSUE DATE
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PROJECT MANAGER
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DESIGNER
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QUALITY CONTROL
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NVA TRUCKING FACILITY EXPANSION

CRYSTAL LAKE, ILLINOIS

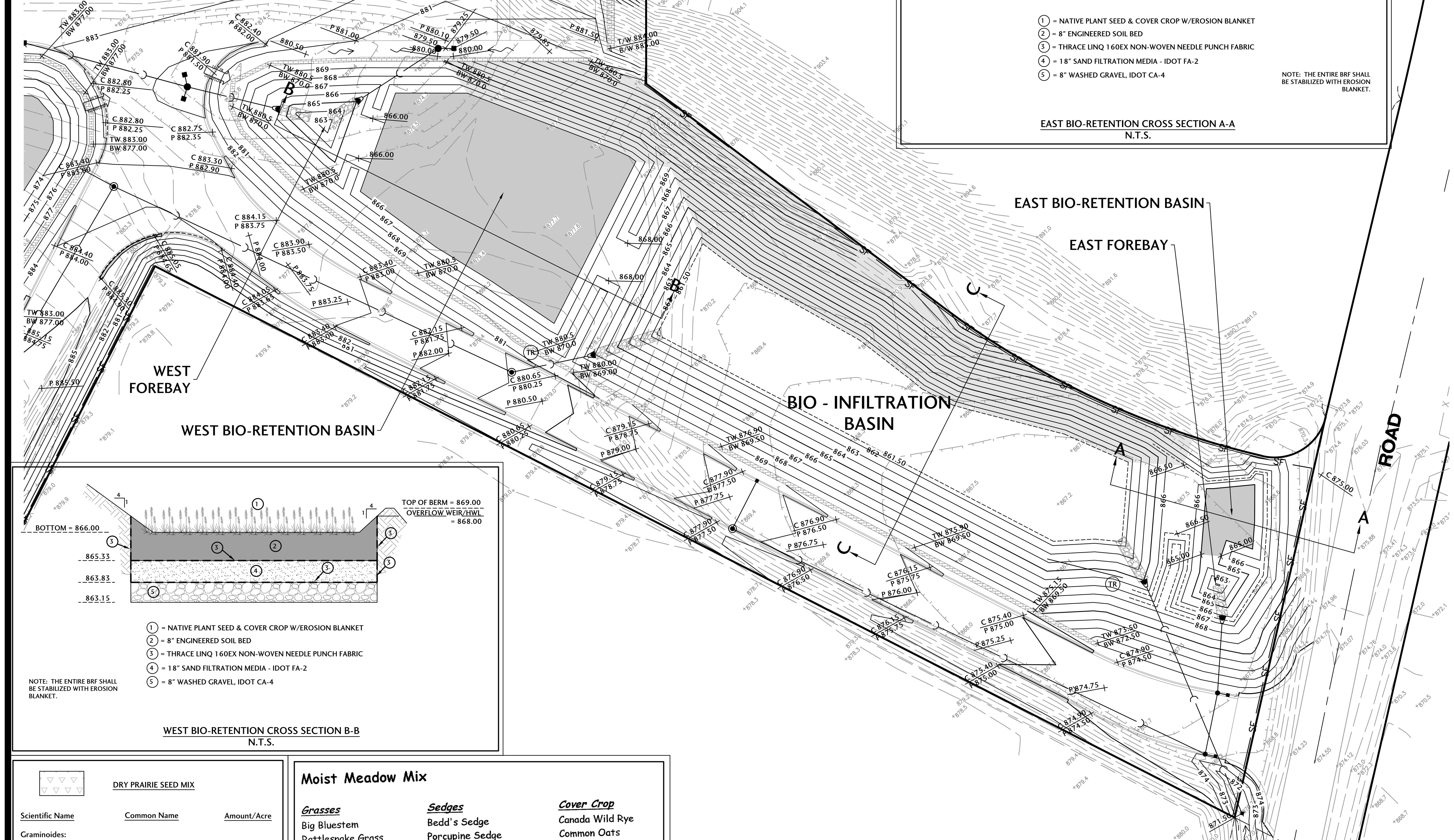
NO.	DATE	DESCRIPTION
1	5/19/23	REVISIONS PER CITY REVIEW

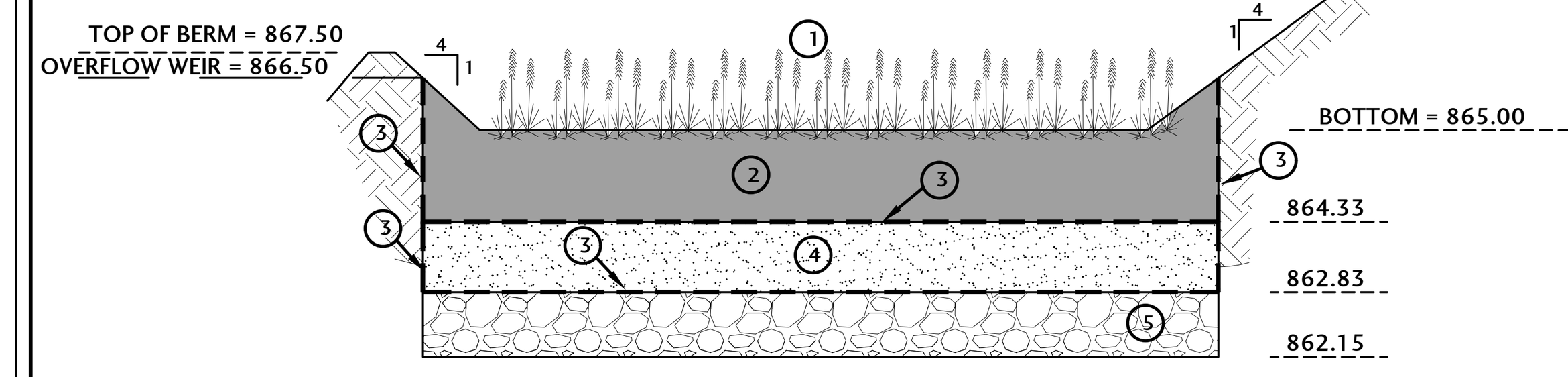
PROJECT NUMBER
NART-22034-3

SHEET TITLE
SOUTHEAST GRADING & EROSION CONTROL

SHEET NUMBER
C3.3

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1 = NATIVE PLANT SEED & COVER CROP W/EROSION BLANKET
2 = 8" ENGINEERED SOIL BED
3 = THRACE LINQ 160EX NON-WOVEN NEEDLE PUNCH FABRIC
4 = 18" SAND FILTRATION MEDIA - IDOT FA-2
5 = 8" WASHED GRAVEL, IDOT CA-4

NOTE: THE ENTIRE BRF SHALL BE STABILIZED WITH EROSION BLANKET.

EAST BIO-RETENTION CROSS SECTION A-A
N.T.S.

NOTE:
DETENTION BASIN SHALL BE SEEDED WITH MOIST MEADOW MIX SEED & CROP COVER WITH EROSION BLANKET

BIO-INFILTRATION/BIO-RETENTION CONSTRUCTION GUIDELINES:

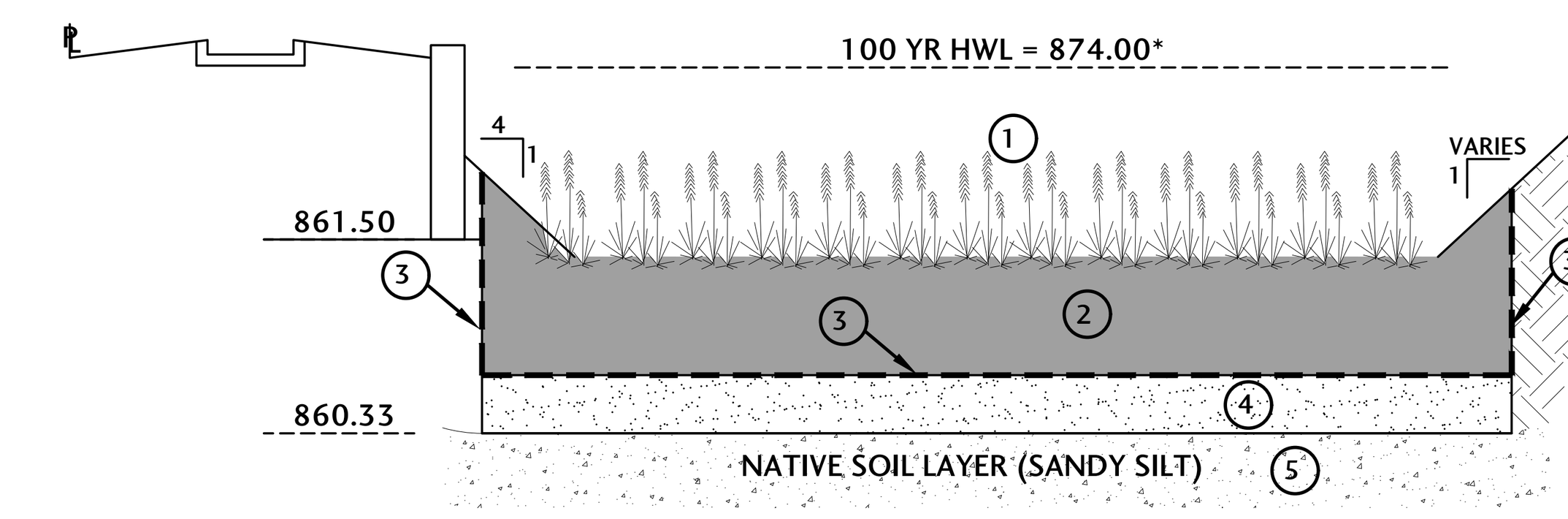
1. BIO-RETENTION AREA USED AS SEDIMENTATION BASINS FOR EROSION CONTROL SHALL BE OVER EXCAVATED BY 6" MIN. AND TOPSOIL PLACED TO PREVENT THE CLOGGING OF SUBSURFACE SOILS BY THE SILT REMOVAL PROCESS. TOPSOIL AND SEDIMENT SHALL BE REMOVED PRIOR TO FINAL GRADING AND INSTALLTION OF BIO-RETENTION MATERIALS.
2. THE PARKING LOT AGGREGATE BASE COURSE SHOUD BE IN PLACE PRIOR TO THE BIF AND BRF CONSTRUCTION. CONSTRUCTION TRAFFIC SHOULD BE DIVERTED AWAY FROM THE BRF AND BIF FOOTPRINTS TO THE MAXIMUM EXTENT AS POSSIBLE.
3. EXCAVATE THE BIF AND BRF DURING DRY PERIODS USING A BACKHOE OR OTHER EQUIPMENT THAT CAN BE STAGED OUTSIDE THE BIF AND BRF DURING EXCAVATION OPERATIONS. THE BRF AND BIF SHOULD BE DEEP TILLED AND LEVELED AFTER EXCAVATION.
4. STABILIZE THE SIDESLOPES IMMEDIATELY AFTER CONSTRUCTION WITH SPECIFIED BLANKET AND SEEDING.
5. THE FINAL SOIL LAYER CONSTRUCTION FOR THE BIF SHOULD NOT BEGIN UNTIL THE UPLAND SLOPES ARE STABILIZED.
6. FOLLOWING THE UPLAND STABILIZATION, EXCAVATE THE LAST 2 FEET OF THE BIF USING A BACKHOE OR OTHER EQUIPMENT THAT CAN BE STAGED OUTSIDE THE BIF TO PREVENT COMPACTION. DO NOT USE BULLDOZERS OR FRONT END LOADERS.
7. AFTER THE FINAL BASIN BOTTOM IS GRADED, ROUGHEN OR SCARIFY THE BOTTOMS AND SIDES TO RESTORE INFILTRATION CAPACITY THAT MAY HAVE BEEN COMPROMISED BY RAINFALL OR SMEARING OF THE SOIL SURFACE DURING DIGGING.
8. PERFORM THE INFILTROMETER TESTS TO DOCUMENT THE INFILTRATION IS WORKING.
9. PLACE THE GEOTEXTILE FILTER FABRIC ON THE BOTTOM, OVERLAPPING IT AT THE SEAMS TO PREVENT SOIL FINES FROM ENTERING THE STONE AGGREGATE AND SAND LAYER. THE FABRIC SHOULD BE FLUSH WITH THE WALLS.
10. PLACE THE SAND LAYER IN THE BASIN. USING THE UNWASHED SAND MAY RESULT IN PREMATURE CLOGGING FROM THE ATTACHED SEDIMENT.
11. PLACE ENGINEERED SOIL AFTER CITY APPROVAL.

TOP OF BERM = 869.00
OVERFLOW WEIR/HWL = 868.00
BOTTOM = 866.00
865.33
863.83
863.15

1 = NATIVE PLANT SEED & COVER CROP W/EROSION BLANKET
2 = 8" ENGINEERED SOIL BED
3 = THRACE LINQ 160EX NON-WOVEN NEEDLE PUNCH FABRIC
4 = 18" SAND FILTRATION MEDIA - IDOT FA-2
5 = 8" WASHED GRAVEL, IDOT CA-4

NOTE: THE ENTIRE BRF SHALL BE STABILIZED WITH EROSION BLANKET.

WEST BIO-RETENTION CROSS SECTION B-B
N.T.S.

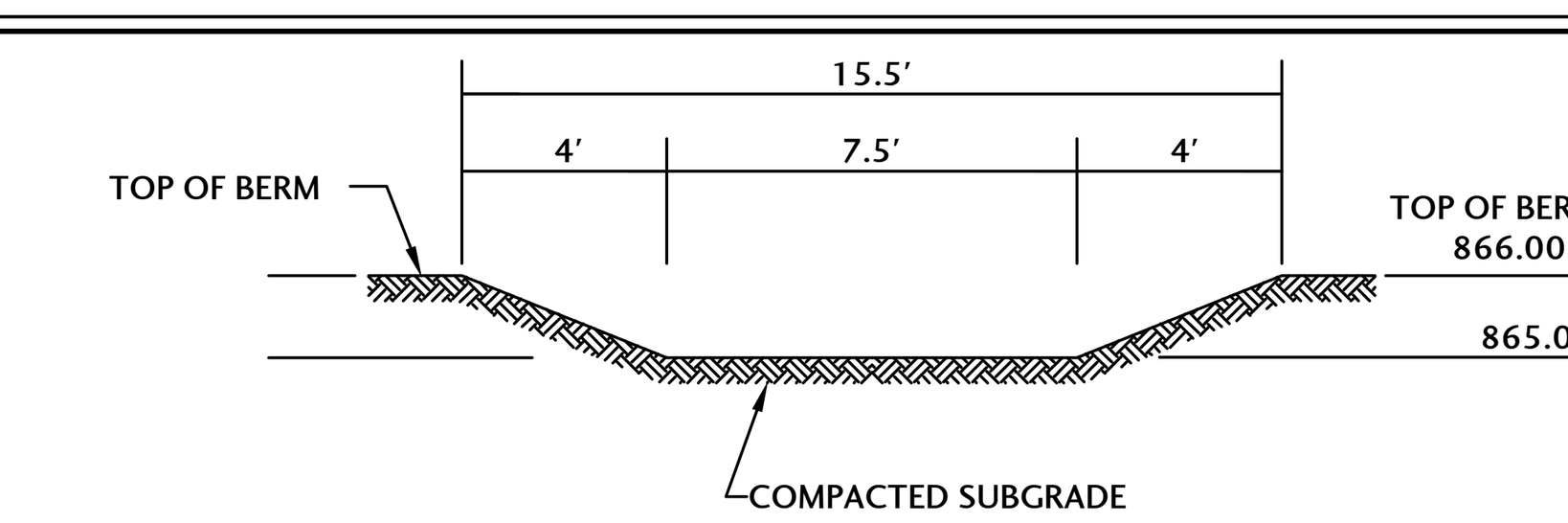


1 = MOIST MEADOW MIX SEED & COVER CROP W/EROSION BLANKET
2 = 8" ENGINEERED SOIL BED
3 = THRACE LINQ 160EX NON-WOVEN NEEDLE PUNCH FABRIC
4 = 12" SAND FILTRATION MEDIA - IDOT FA-2
5 = NATIVE SUBGRADE TO BE TILLED (12") TO MITIGATE COMPACTION

NOTE: THE ENTIRE BIF SHALL BE STABILIZED WITH EROSION BLANKET.

BIO-INFILTRATION CROSS SECTION C-C

* INCLUDES 4.34 AC-FT COMP. STORAGE



EAST FOREBAY
100 YEAR OVERFLOW WEIR SECTION

DRY PRAIRIE SEED MIX

Scientific Name	Common Name	Amount/Acre
Graminoides:		
Andropogon scoparius	Little Bluestem Grass	2 lbs 4 oz
Bouteloua curtipendula	Side-Oats Grama	5 lbs 11 oz
Sporobolus heterolepis	Prairie Dropseed	2 lbs 1 oz
3 Total Graminoides		10 lbs
Forbs:		
Amorpha canesens	Lead Plant	1 oz
Anemone clindrica	Thimbleweed	2 oz
Asclepias verticillata	Whorled Milkweed	4 oz
Aster azureus	Sky Blue Aster	1 oz
Aster ptarmicoides	Stiff Aster	1 oz
Baptista leucantha	White Wild Indigo	13 oz
Coreopsis palmata	Prairie Coreopsis	4 oz
Desmodium illinoense	Illinois Tick Trefoil	10 oz
Echinacea pallida	Pale Purple Coneflower	8 oz
Eryngium yuccifolium	Rattlesnake Master	6 oz
Helianthus occidentalis	Western Sunflower	3 oz
Liatris aspera	Rough Blazing Star	3 oz
Petalostemum candidum	White Prairie Clover	6 oz
Petalostemum purpureum	Purple Prairie Clover	8 oz
Potentilla arguta	Prairie Cinquefoil	1 oz
Rudbeckia hirta	Black-Eyed Susan	1 oz
Silphium laciniatum	Compass Plant	1lb 1 oz
Solidago speciosa	Showy Goldenrod	1 oz
18 Total Forbs		5 lbs 10 oz
Cover Crops:		
Avena sativa	Oats	65 lbs*
Lolium multiforum	Annual Ryegrass	25 lbs

*The Oats shall be applied at 130 lbs/ac for fall seeding

Moist Meadow Mix

Grasses
Big Bluestem
Rattlesnake Grass
Reed Mana Grass
Switch Grass
Prairie Cord Grass

Sedges
Bedd's Sedge
Porcupine Sedge
Awl-fruited Sedge
Fox Sedge
Dark-green Bulrush
Wool Grass

Cover Crop
Canada Wild Rye
Common Oats
Vermiculite

Wildflowers
Great Angelica
Red Milkweed
Pink Milkweed
New England Aster
Wild Senna
Bicolor Thistle
Boneset
Joe-pye Weed
Sneezeweed
Tall St. John's Wort
Prairie Blazing Star
Cardinal Flower
Water Horehound
Winged Loostrife
Glade Mallow
Ditch Stonecrop
Obedient Plant
Mountain Mint
Wild Golden Glow
Sweet Black-eyed Susan
Cupplant
Prairie Dock
Grass-leaved Goldenrod
Ohio Goldenrod
Riddellii's Goldenrod
Ironweed
Culver's Root
Golden Alexander
Prairie Loostrife
Blue Vervain
Purple Meadow Rue

ENGINEERED SOIL

Particle Size	98% passing 0.75 inch screw
Physical Contaminants	No glass, metal or plastic
Mixture	50% Compost 40% Sand (ASTM-C033) 10% Topsoil
pH	6-8
Moisture Content	No more than 40% by weight
Compost	Resistant to further degradation
Fecal Coliform	<1000 Most Probable number/gram of total solids
Metals	As < 40ppm Cd < 40 ppm Pb < 1000ppm Hg <300ppm Zn < 2800ppm Fe < 20,000-40,000ppm

BIO-INFILTRATION BASIN
HWL 100 YR = 874.00*
BASIN VOL @ HWL, 100 YR = 10.43 ac-ft
*INCLUDES 4.34 Ac-ft COMP. STORAGE

EAST BIO-RETENTION BASIN
HWL = 867.65
BASIN VOLUME = 0.14 ACRE

WEST BIO-RETENTION BASIN
HWL = 867.25
BASIN VOLUME = 1.18 ACRE

TABLE 3.8 – FILTER FABRIC MATERIAL REQUIREMENTS

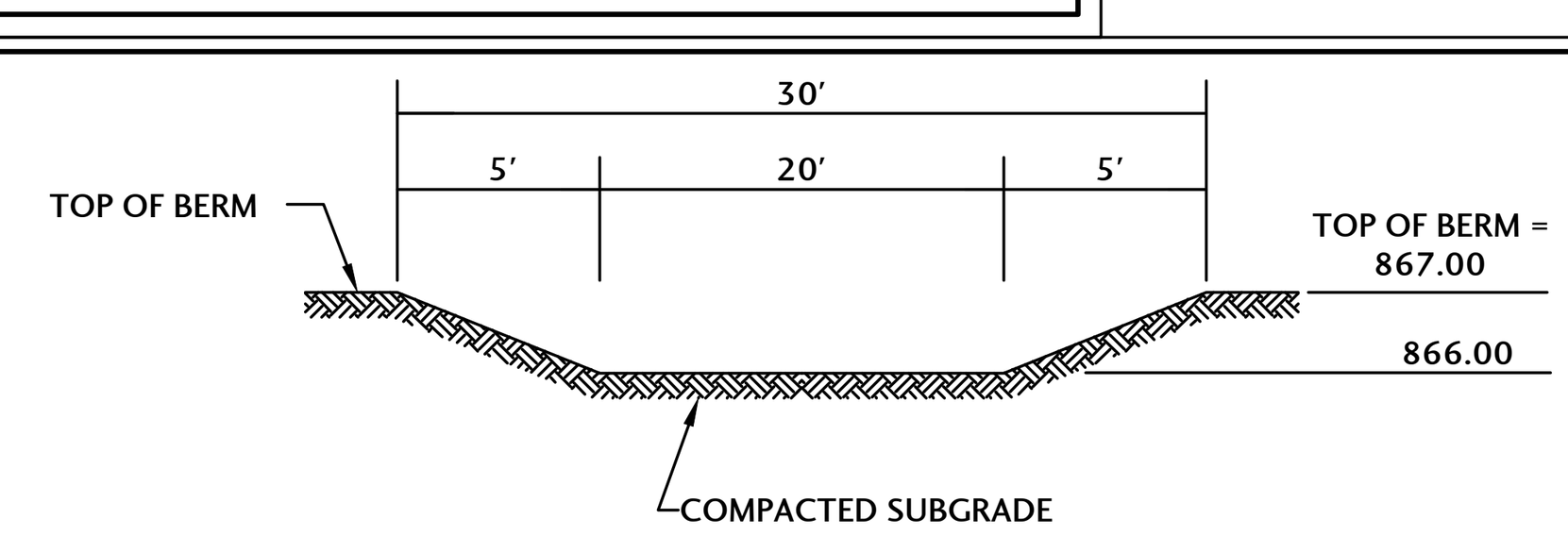
Geotextile Property	Value	Test Method
Grab Tensile Strength, N	800 min.	ASTM D4632
Puncture Strength, N	300 min.	ASTM D4833
Apparent Breaking Elongation, Percent	30 min.	ASTM D4632
Apparent Opening Size, µm	300 max.	ASTM D4751
Permittivity, S-1	1.35 min.	ASTM D4491

NOTES:

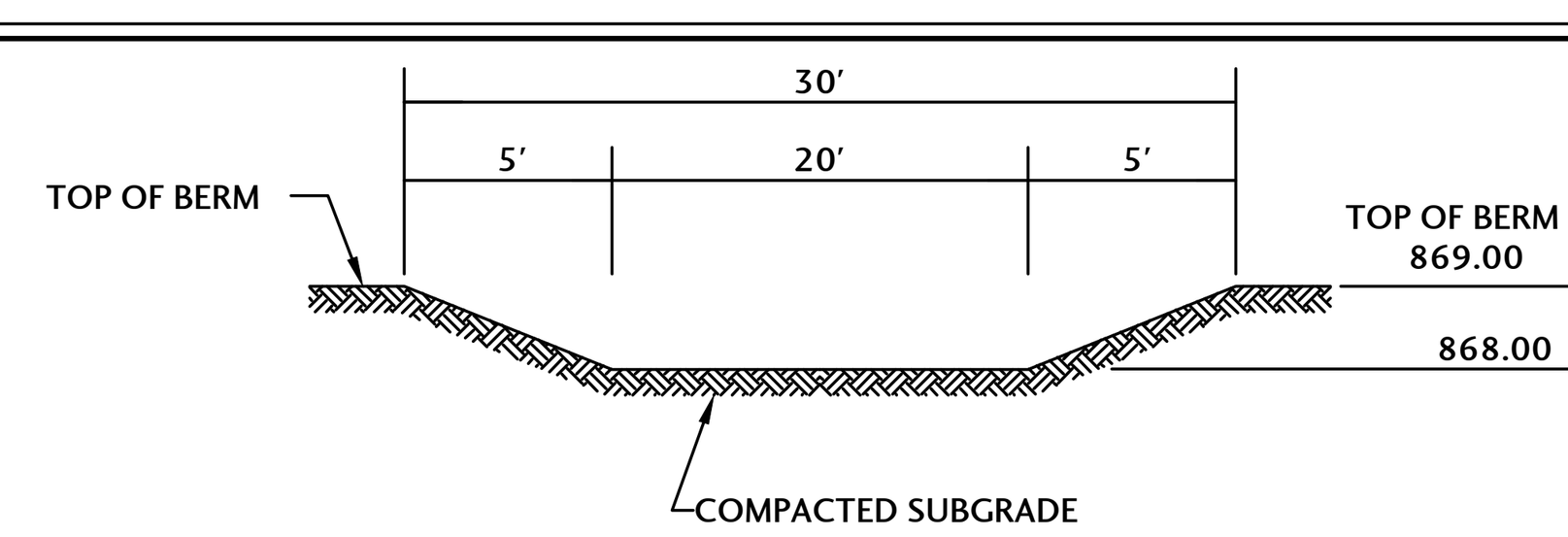
1. DEVELOPER TO NOTIFY ENFORCEMENT OFFICER WITHIN 2 WORKING DAYS OF THE COMPLETION OF THE CONSTRUCTION STAGES SPECIFIED BELOW:

a) UPON COMPLETION OF INSTALLATION OF SEDIMENT & RUNOFF CONTROL PRIOR TO PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
b) AFTER STRIPPING & CLEARING.
c) AFTER ROUGH GRADING.
d) AFTER FINAL GRADING.
e) AFTER SEEDING & LANDSCAPING DEADLINES
f) AFTER FINAL STABILIZATION & LANDSCAPING, PRIOR TO REMOVAL OF SEDIMENT CONTROLS.

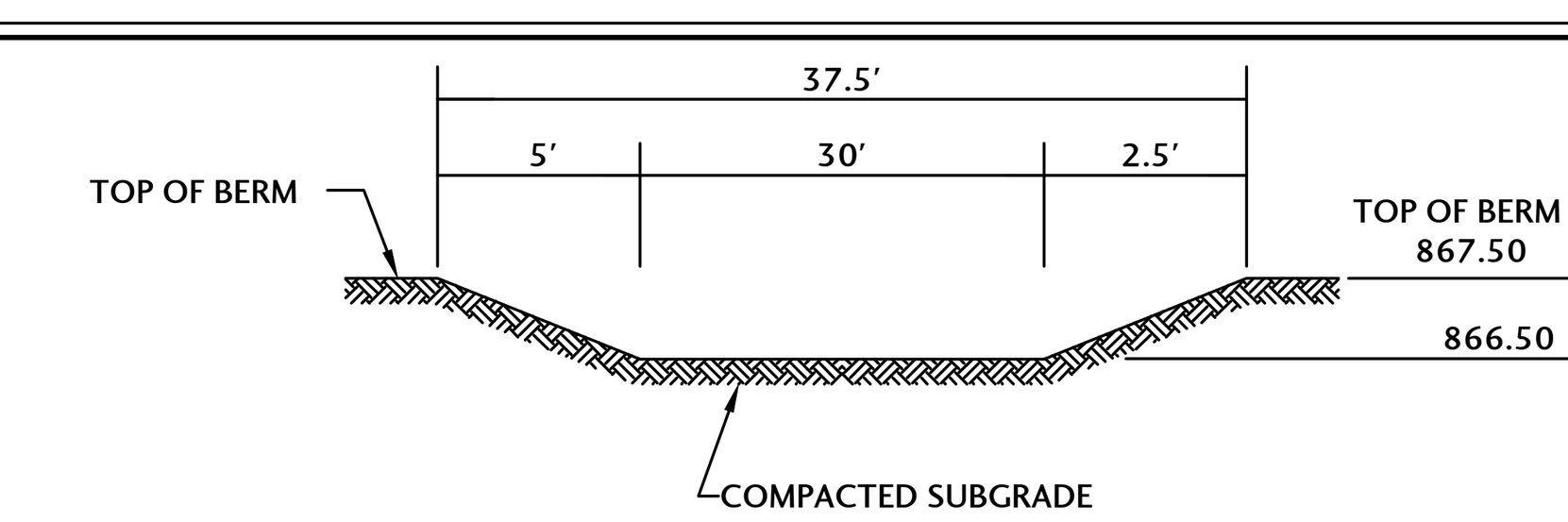
2. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE ONSET OF CONSTRUCTION.
3. SEDIMENT CONTROL MEASURES SHALL BE REPAIRED, REPLACED AND MAINTAINED AFTER A SINGULAR OR CUMULATIVE RAINFALL EVENT(S) OF 0.5 INCHES OR MORE OVER A 24-HOUR PERIOD.
4. INSPECTION AND MAINTENANCE RECORDS FOR THE EROSION AND SEDIMENT CONTROL MEASURES ARE REQUIRED TO BE KEPT ON-SITE. COPIES OF THE INSPECTION RECORDS ARE REQUIRED TO BE SUBMITTED TO THE VILLAGE IN A MONTHLY INSPECTION REPORT.



WEST FOREBAY
100 YEAR OVERFLOW WEIR SECTION



WEST BIO-RETENTION BASIN
100 YEAR OVERFLOW WEIR SECTION



EAST BIO-RETENTION BASIN
OVERFLOW

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30 ft.

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IL DESIGN FIRM # 184-006759

NVA PROP IL LLC
CRYSTAL LAKE, ILLINOIS

N W E S

SCALE: 1"=30'
ISSUE DATE: 02/21/2023
PROJECT MANAGER: JEC
DESIGNER: ERG
QUALITY CONTROL: MAM

NVA TRUCKING FACILITY EXPANSION
CRYSTAL LAKE, ILLINOIS

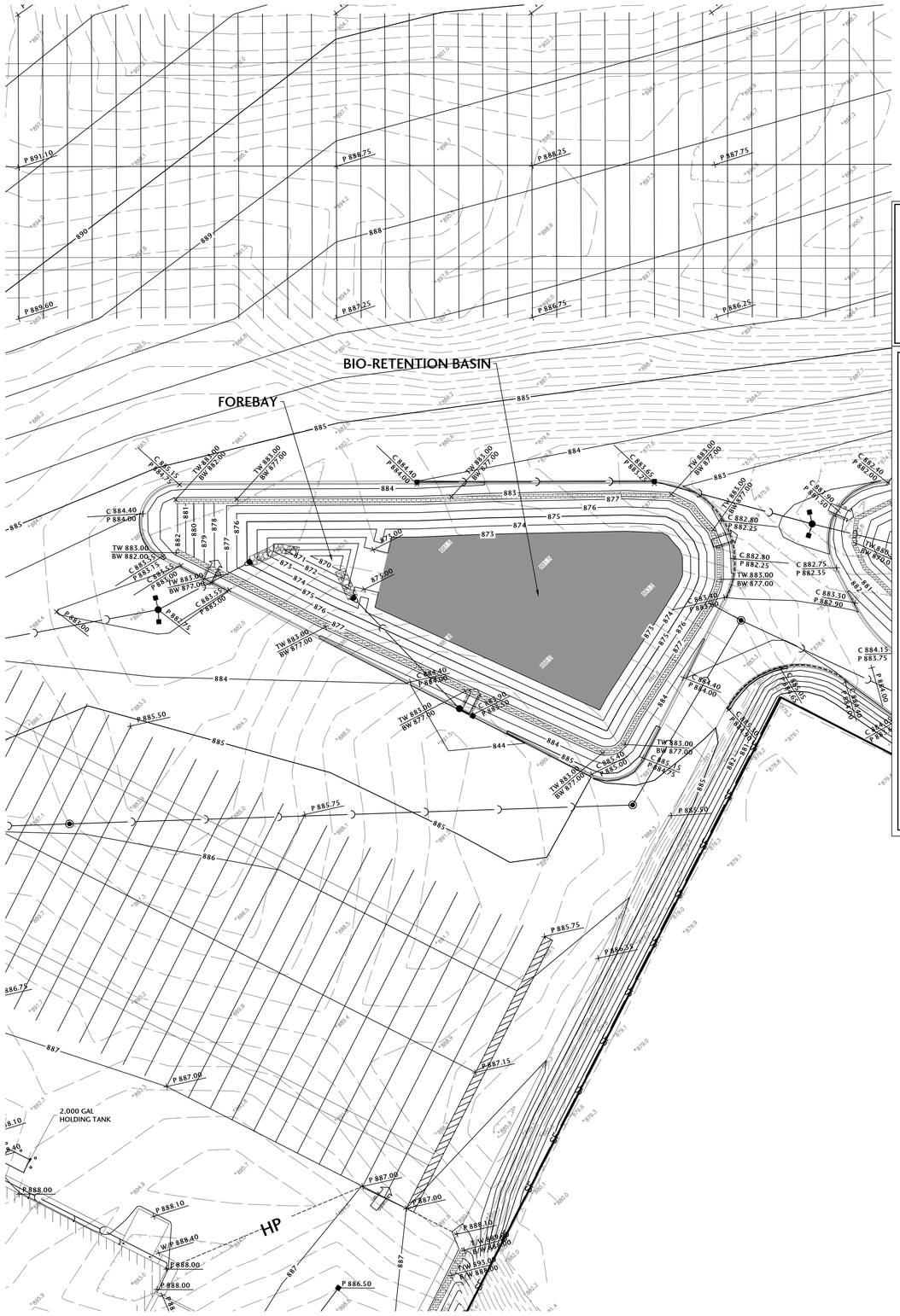
NO.	DATE	DESCRIPTION
1	5/19/23	REVISIONS PER CITY REVIEW

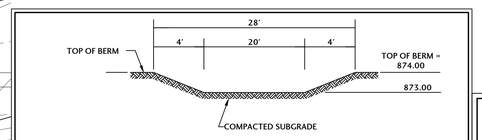
PROJECT NUMBER: NART-22034-3

SHEET TITLE: EAST DETENTION BASIN PLANS & DETAILS

SHEET NUMBER: C4.0

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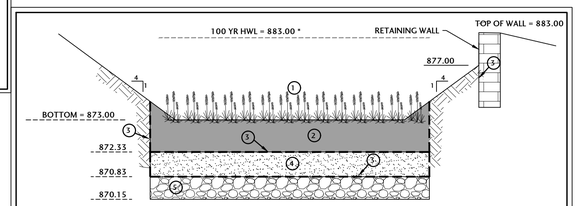


FOREBAY BASIN
100 YEAR OVERFLOW SECTION

BIO-INFILTRATION/BIO-RETENTION CONSTRUCTION GUIDELINES:

1. BIO-RETENTION AREA USED AS SEDIMENTATION BASINS FOR EROSION CONTROL SHALL BE OVER EXCAVATED BY 6" MIN. AND TOPSOIL PLACED TO PREVENT THE CLOGGING OF SUBSURFACE SOILS BY THE SILT REMOVAL PROCESS. TOPSOIL AND SEDIMENT SHALL BE REMOVED PRIOR TO FINAL GRADING AND INSTALLTION OF BIO-RETENTION MATERIALS.
2. THE PARKING LOT AGGREGATE BASE COURSE SHOUD BE IN PLACE PRIOR TO THE BIF AND BRF CONSTRUCTION. CONSTRUCTION TRAFFIC SHOULD BE DIVERTED AWAY FROM THE BRF AND BIF FOOTPRINTS TO THE MAXIMUM EXTENT AS POSSIBLE.
3. EXCAVATE THE BIF AND BRF DURING DRY PERIODS USING A BACKHOE OR OTHER EQUIPMENT THAT CAN BE STAGED OUTSIDE THE BIF AND BRF DURING EXCAVATION OPERATIONS. THE BRF AND BIF SHOULD BE DEEP TILLED AND LEVELED AFTER EXCAVATION.
4. STABILIZE THE SIDESLOPES IMMEDIATELY AFTER CONSTRUCTION WITH SPECIFIED BLANKET AND SEEDING.
5. THE FINAL SOIL LAYER CONSTRUCTION FOR THE BIF SHOULD NOT BEGIN UNTIL THE UPLAND SLOPES ARE STABILIZED.
6. FOLLOWING THE UPLAND STABILIZATION, EXCAVATE THE LAST 2 FEET OF THE BIF USING A BACKHOE OR OTHER EQUIPMENT THAT CAN BE STAGED OUTSIDE THE BIF TO PREVENT COMPACTION. DO NOT USE BULLDOZERS OR FRONT END LOADERS.
7. AFTER THE FINAL BASIN BOTTOM IS GRADED, ROUGHEN OR SCARIFY THE BOTTOMS AND SIDES TO RESTORE INFILTRATION CAPACITY THAT MAY HAVE BEEN COMPROMISED BY RAINFALL OR SMEARING OF THE SOIL SURFACE DURING DIGGING.
8. PERFORM THE INFILTROMETER TESTS TO DOCUMENT THE INFILTRATION IS WORKING.
9. PLACE THE GEOTEXTILE FILTER FABRIC ON THE BOTTOM, OVERLAPPING IT AT THE SEAMS TO PREVENT SOIL FINES FROM ENTERING THE STONE AGGREGATE AND SAND LAYER. THE FABRIC SHOULD BE FLUSH WITH THE WALLS.
10. PLACE THE SAND LAYER IN THE BASIN. USING THE UNWASHED SAND MAY RESULT IN PREMATURE CLOGGING FROM THE ATTACHED SEDIMENT.
11. PLACE ENGINEERED SOIL AFTER CITY APPROVAL.

DETENTION BASIN
HWL 100 YR = 883.00*
BASIN VOL @ HWL, 100 YR = 4.01 ac-ft
100 YR PEAK RELEASE = 9.63 cfs
*INCLUDES 2.50 ac-ft COMP. STORAGE



NOTE: THE ENTIRE BRF SHALL BE STABILIZED WITH EROSION BLANKET.

BIO-RETENTION CROSS SECTION C-C
N.T.S.

* INCLUDES 2.80 AC-FT COMP. STORAGE

NOTES:

1. DEVELOPER TO NOTIFY ENFORCEMENT OFFICER WITHIN 2 WORKING DAYS OF THE COMPLETION OF THE CONSTRUCTION STAGES SPECIFIED BELOW:

a) UPON COMPLETION OF INSTALLATION OF SEDIMENT & RUNOFF CONTROL PRIOR TO PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.

b) AFTER STRIPPING & CLEARING.

c) AFTER ROUGH GRADING.

d) AFTER FINAL GRADING.

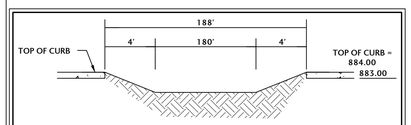
e) AFTER SEEDING & LANDSCAPING DEADLINES

f) AFTER FINAL STABILIZATION & LANDSCAPING, PRIOR TO REMOVAL OF SEDIMENT CONTROLS.

2. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE ONSET OF CONSTRUCTION.

3. SEDIMENT CONTROL MEASURES SHALL BE REPAIRED, REPLACED AND MAINTAINED AFTER A SINGULAR OR CUMULATIVE RAINFALL EVENT(S) OF 0.5 INCHES OR MORE OVER A 24-HOUR PERIOD.

4. INSPECTION AND MAINTENANCE RECORDS FOR THE EROSION AND SEDIMENT CONTROL MEASURES ARE REQUIRED TO BE KEPT ON-SITE. COPIES OF THE INSPECTION RECORDS ARE REQUIRED TO BE SUBMITTED TO THE VILLAGE IN A MONTHLY INSPECTION REPORT.



BIO-RETENTION BASIN
100 YEAR OVERFLOW WEIR SECTION

NOTE:
FOREBAY & BIO-RETENTION BASIN SHALL BE SEEDED WITH MOIST MEADOW MIX SEED & CROP COVER WITH EROSION BLANKET & SIDE SLOPES SHALL BE SEEDED WITH DRY PRAIRIE SEED MIX(SEE C4.0)

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30 ft.

J. CONDON & ASSOCIATES, INC
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RINGWOOD, ILLINOIS 60072
815.728.0068
IL DESIGN FIRM # 184-006759

NVA PROP IL LLC

CRYSTAL LAKE, ILLINOIS

N W E S

SCALE
1"=30'

ISSUE DATE
02/21/2023

PROJECT MANAGER
JEC

DESIGNER
ERG

QUALITY CONTROL
MAM

NVA TRUCKING FACILITY EXPANSION

CRYSTAL LAKE, ILLINOIS

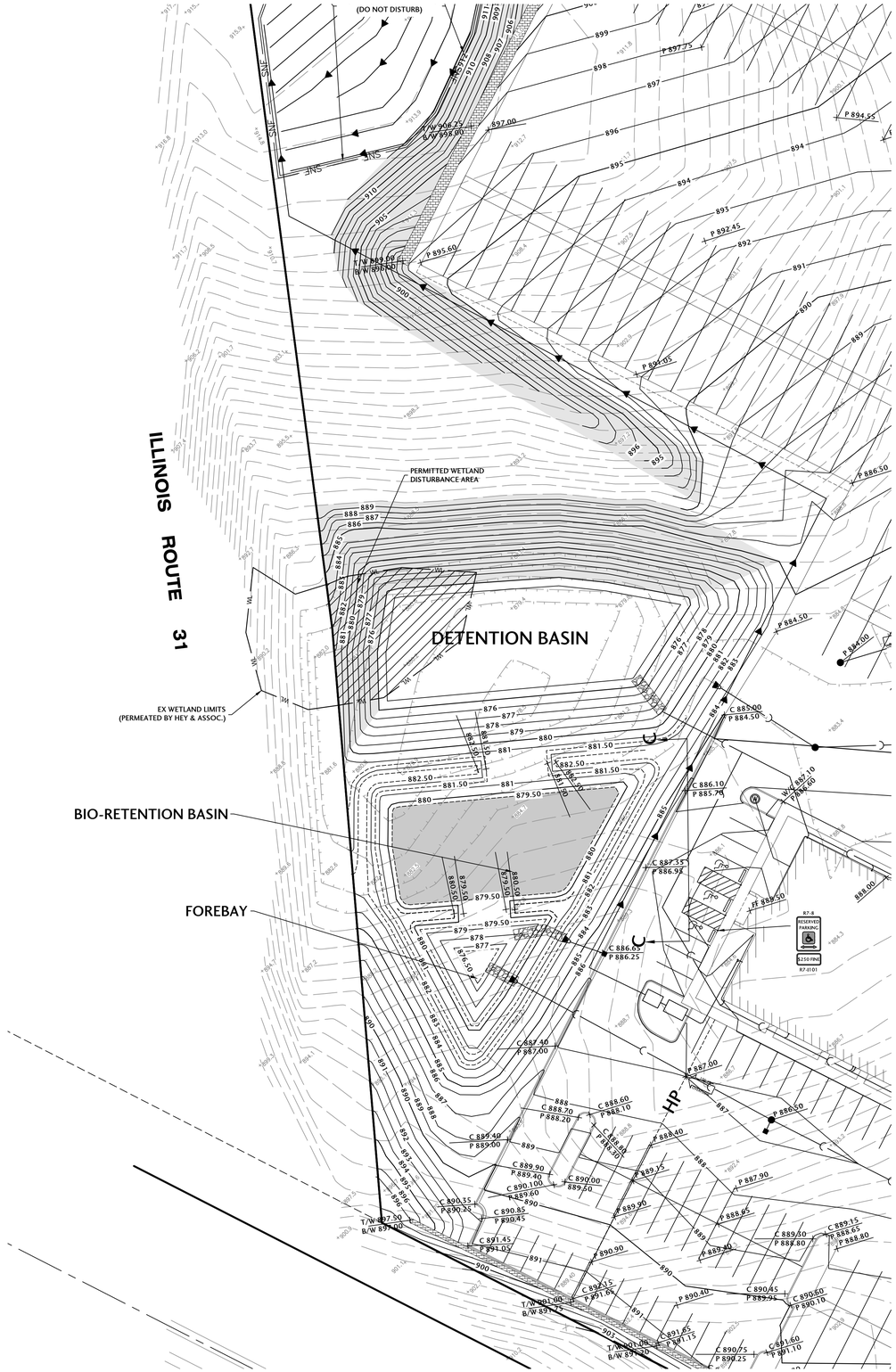
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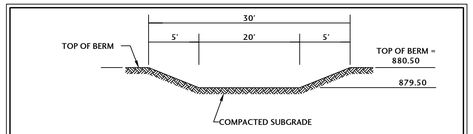
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NART-22034-3

SHEET TITLE
CENTER DETENTION BASIN PLANS & DETAILS

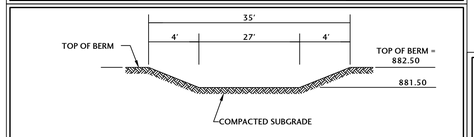
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FOREBAY BASIN
100 YEAR OVERFLOW SECTION



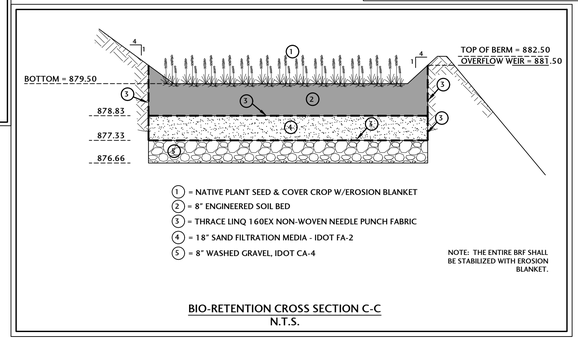
BIO-RETENTION BASIN
100 YEAR OVERFLOW WEIR SECTION

BIO-INFILTRATION/BIO-RETENTION CONSTRUCTION GUIDELINES:

1. BIO-RETENTION AREA USED AS SEDIMENTATION BASINS FOR EROSION CONTROL SHALL BE OVER EXCAVATED BY 6" MIN. AND TOPSOIL PLACED TO PREVENT THE CLOGGING OF SUBSURFACE SOILS BY THE SILT REMOVAL PROCESS. TOPSOIL AND SEDIMENT SHALL BE REMOVED PRIOR TO FINAL GRADING AND INSTALLTION OF BIO-RETENTION MATERIALS.
2. THE PARKING LOT AGGREGATE BASE COURSE SHOUD BE IN PLACE PRIOR TO THE BIF AND BRF CONSTRUCTION. CONSTRUCTION TRAFFIC SHOULD BE DIVERTED AWAY FROM THE BRF AND BIF FOOTPRINTS TO THE MAXIMUM EXTENT AS POSSIBLE.
3. EXCAVATE THE BIF AND BRF DURING DRY PERIODS USING A BACKHOE OR OTHER EQUIPMENT THAT CAN BE STAGED OUTSIDE THE BIF AND BRF DURING EXCAVATION OPERATIONS. THE BRF AND BIF SHOULD BE DEEP TILLED AND LEVELED AFTER EXCAVATION.
4. STABILIZE THE SIDESLOPES IMMEDIATELY AFTER CONSTRUCTION WITH SPECIFIED BLANKET AND SEEDING.
5. THE FINAL SOIL LAYER CONSTRUCTION FOR THE BIF SHOULD NOT BEGIN UNTIL THE UPLAND SLOPES ARE STABILIZED.
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11. PLACE ENGINEERED SOIL AFTER CITY APPROVAL.

DETENTION BASIN
HWL 100 YR 24 HR = 884.50*
BASIN VOL @ HWL, 100 YR = 4.92 ac-ft
100 YR PEAK RELEASE = 0.23 cfs
*INCLUDES 2.33 ac-ft COMP. STORAGE

BIO-RETENTION BASIN
HWL = 882.25
VOLUME = 0.25 ac-ft



BIO-RETENTION CROSS SECTION C-C
N.T.S.

NOTES:

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d) AFTER FINAL GRADING.

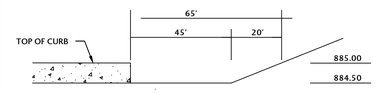
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DETENTION BASIN
100 YEAR OVERFLOW WEIR SECTION

NOTE:
DETENTION BASIN SHALL BE SEEDED WITH MOIST MEADOW MIX SEED & CROP COVER WITH EROSION BLANKET (SEE C4.0)

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30 ft.

J. CONDON & ASSOCIATES, INC
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5415 BUSINESS PARKWAY
RINGWOOD, ILLINOIS 60072
815.728.0068
IL DESIGN FIRM # 184-006759

NVA PROP IL LLC

CRYSTAL LAKE, ILLINOIS

SCALE
1"=30'

ISSUE DATE
02/21/2023

PROJECT MANAGER
JEC

DESIGNER
ERG

QUALITY CONTROL
MAM

NVA TRUCKING FACILITY EXPANSION

CRYSTAL LAKE, ILLINOIS

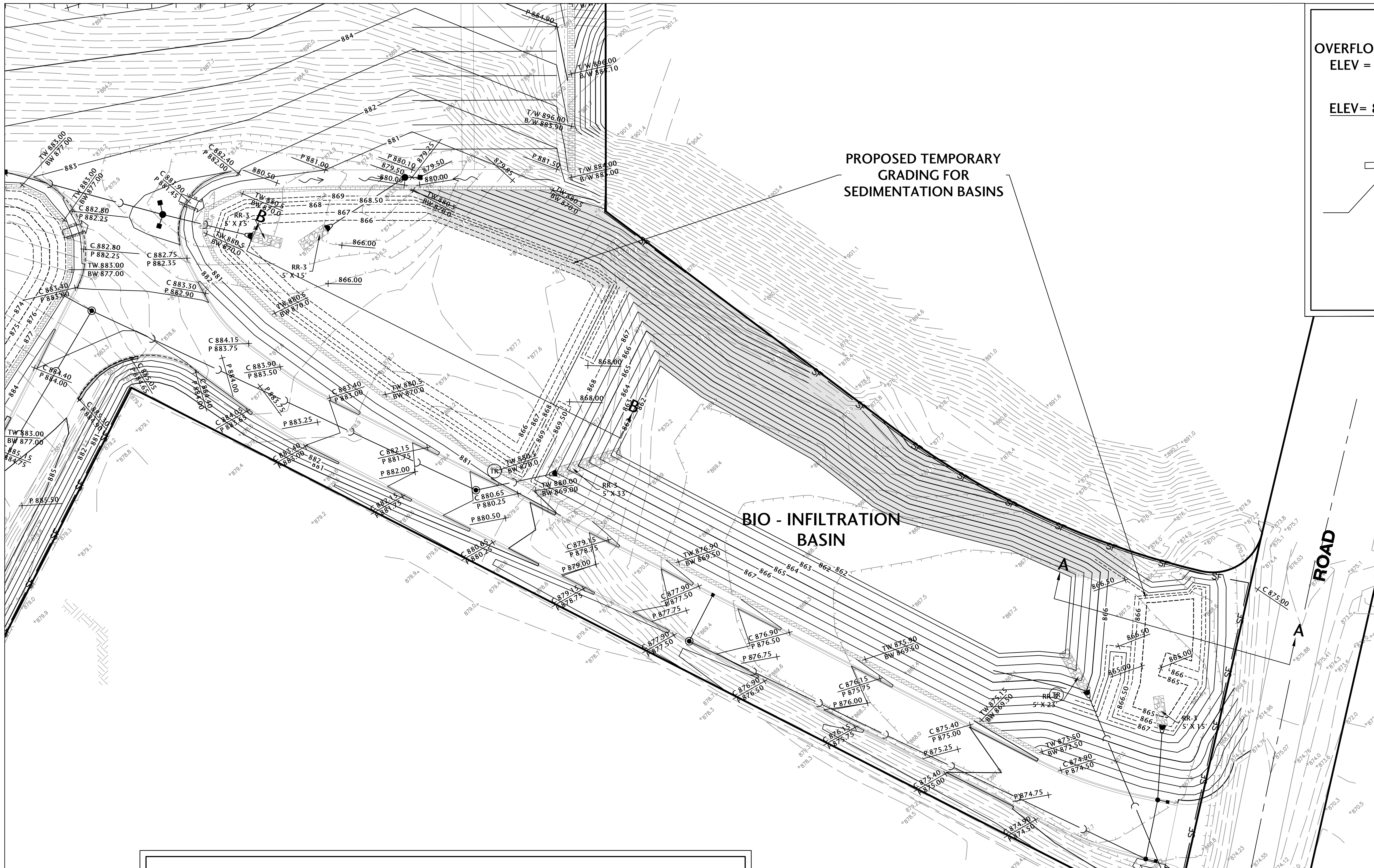
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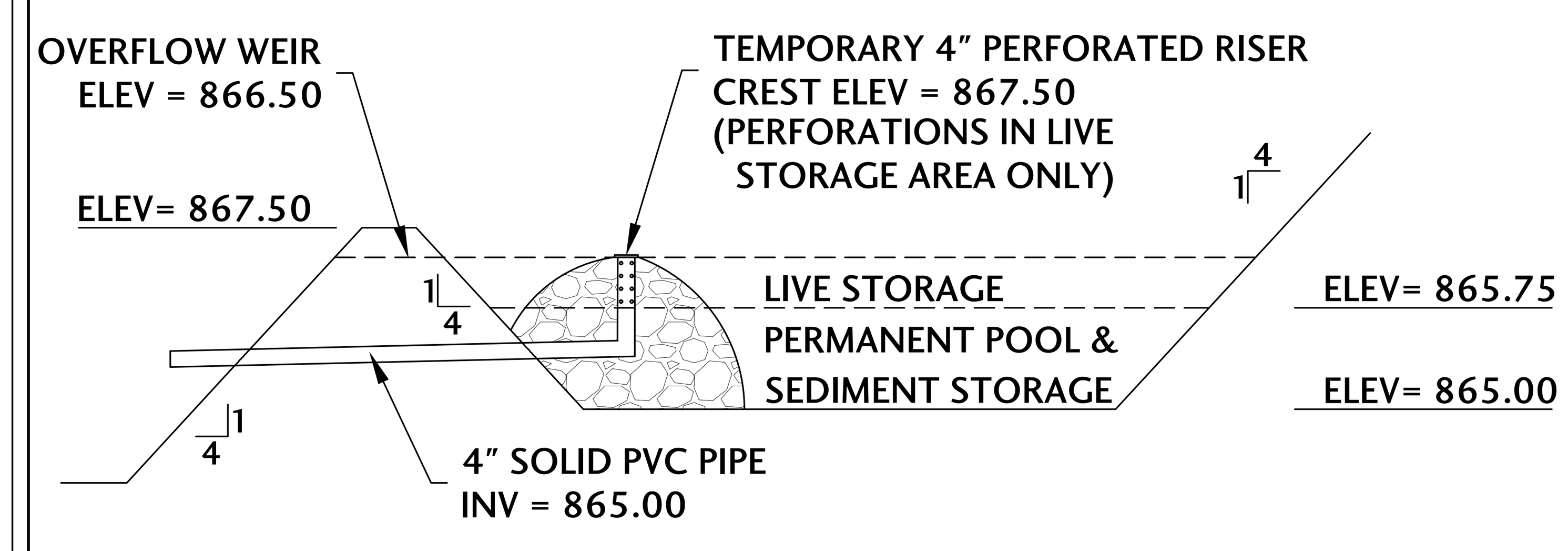
PROJECT NUMBER
NART-22034-3

SHEET TITLE
WEST DETENTION BASIN PLANS & DETAILS

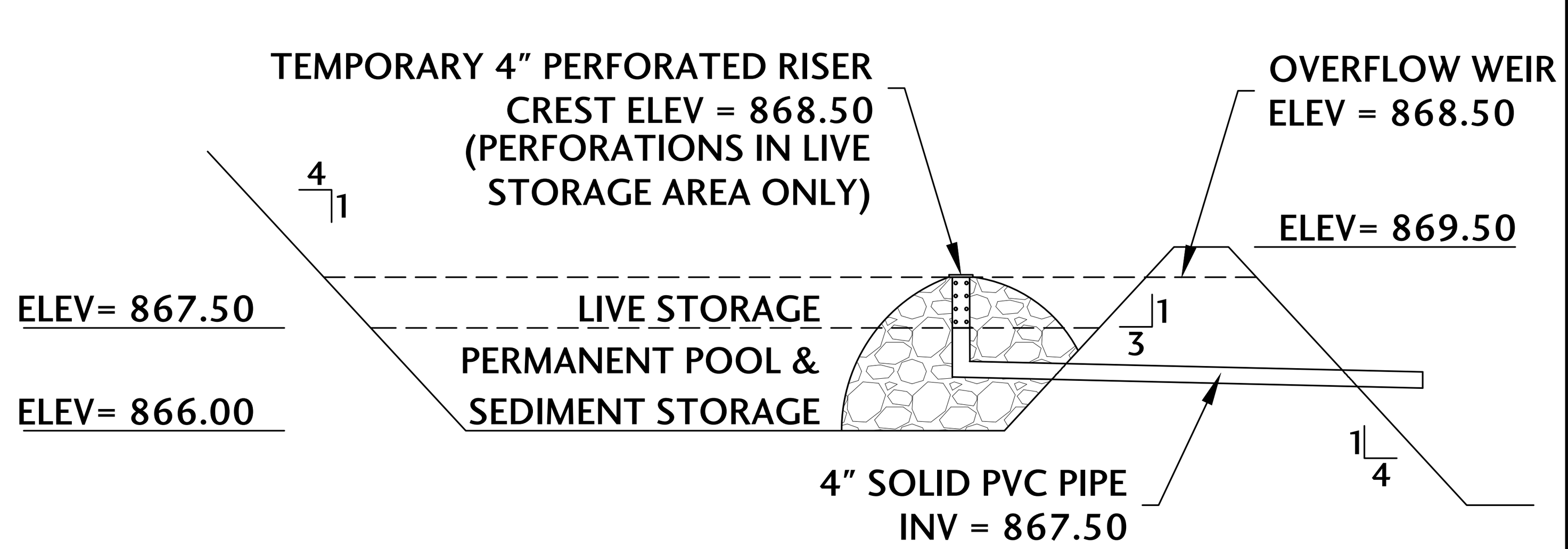
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EAST TEMPORARY SEDIMENTATION BASIN CROSS SECTION A-A



WEST TEMPORARY SEDIMENTATION BASIN CROSS SECTION B-B

GRAPHIC SCALE

(IN FEET)
1 inch = 30 ft.

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IL DESIGN FIRM # 184-006759

NVA PROP IL LLC

CRYSTAL LAKE, ILLINOIS

SCALE: 1"=30'
ISSUE DATE: 02/21/2023
PROJECT MANAGER: JEC
DESIGNER: ERG
QUALITY CONTROL: MAM

NVA TRUCKING FACILITY EXPANSION

CRYSTAL LAKE, ILLINOIS

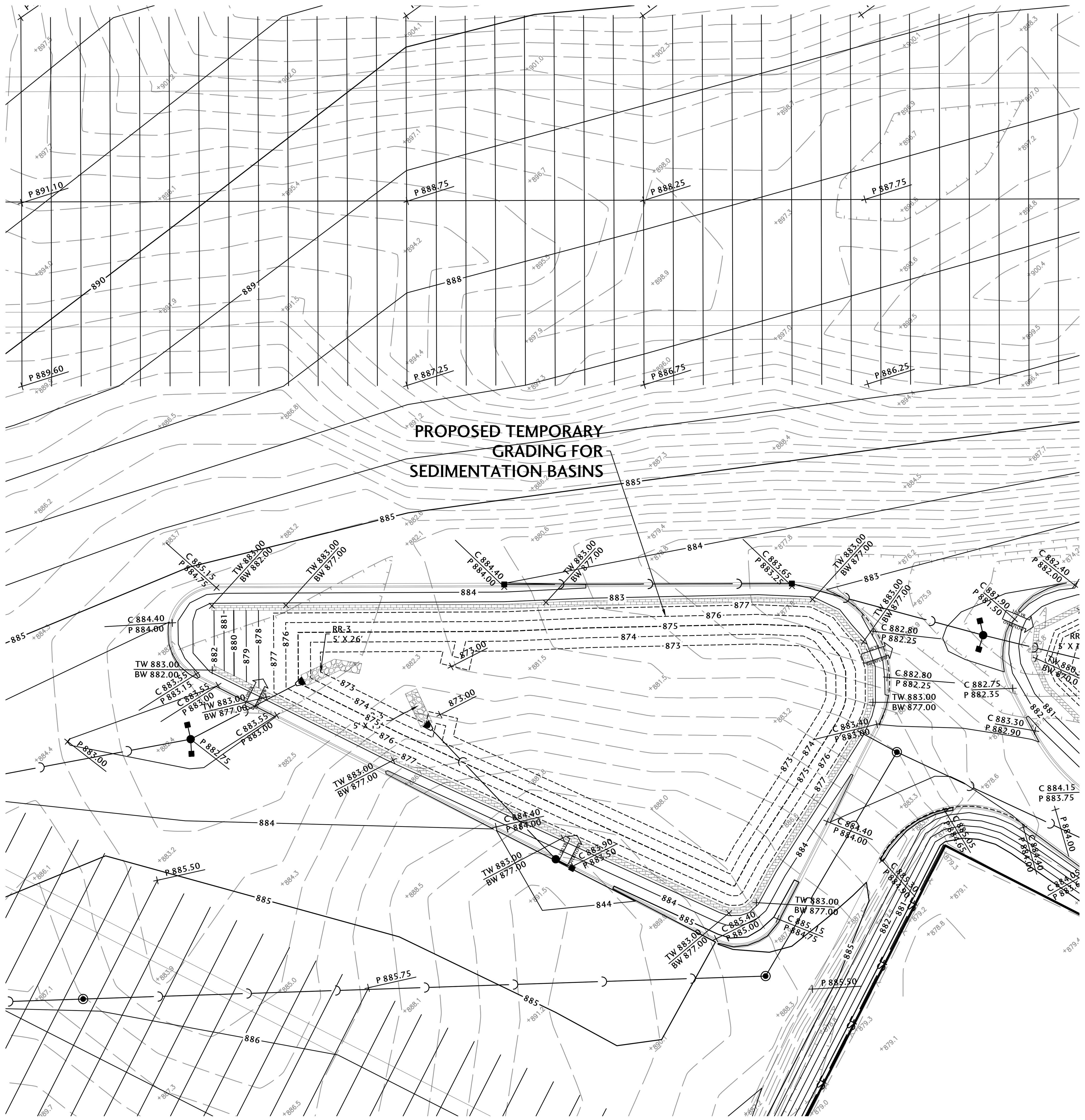
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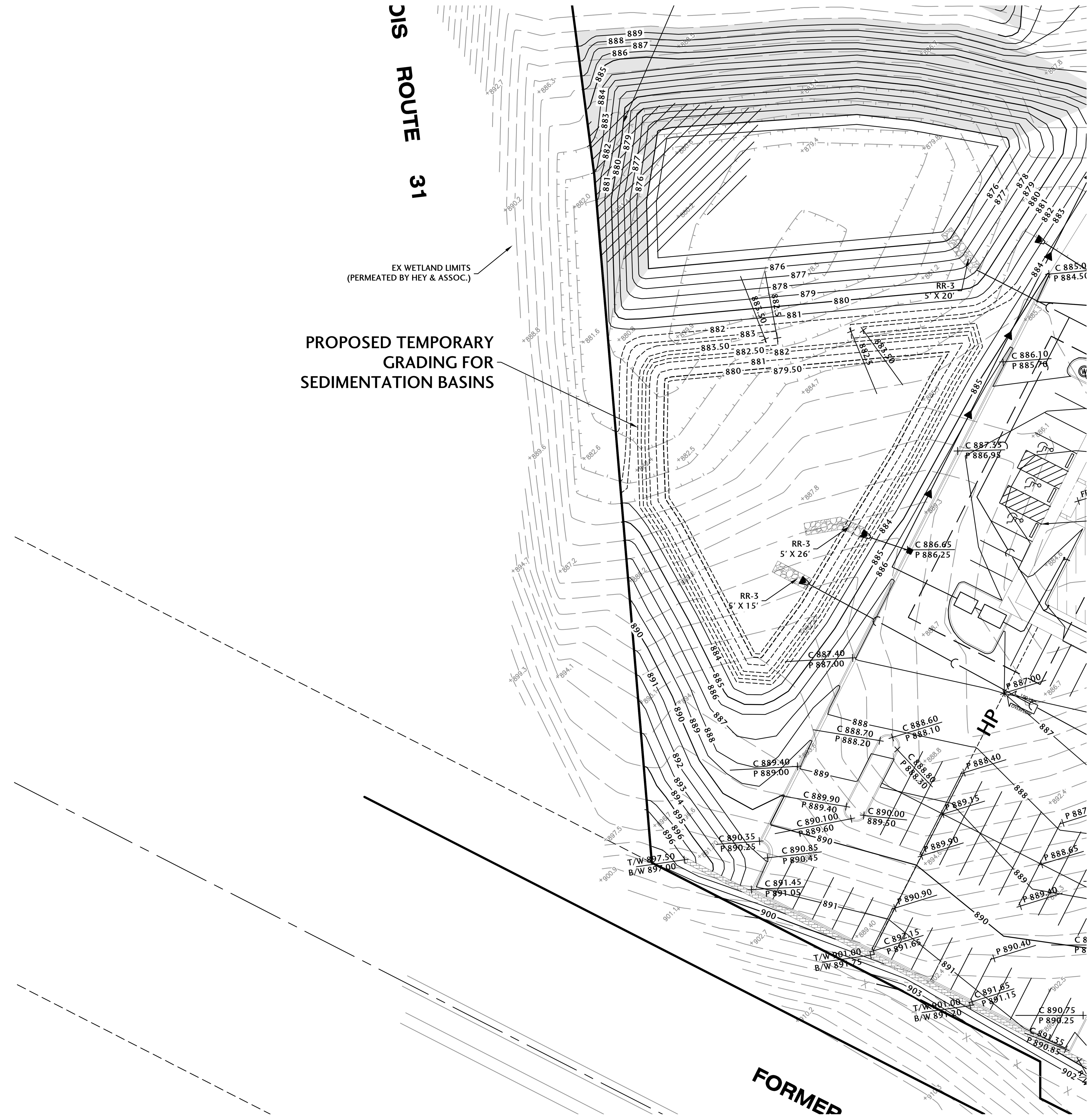
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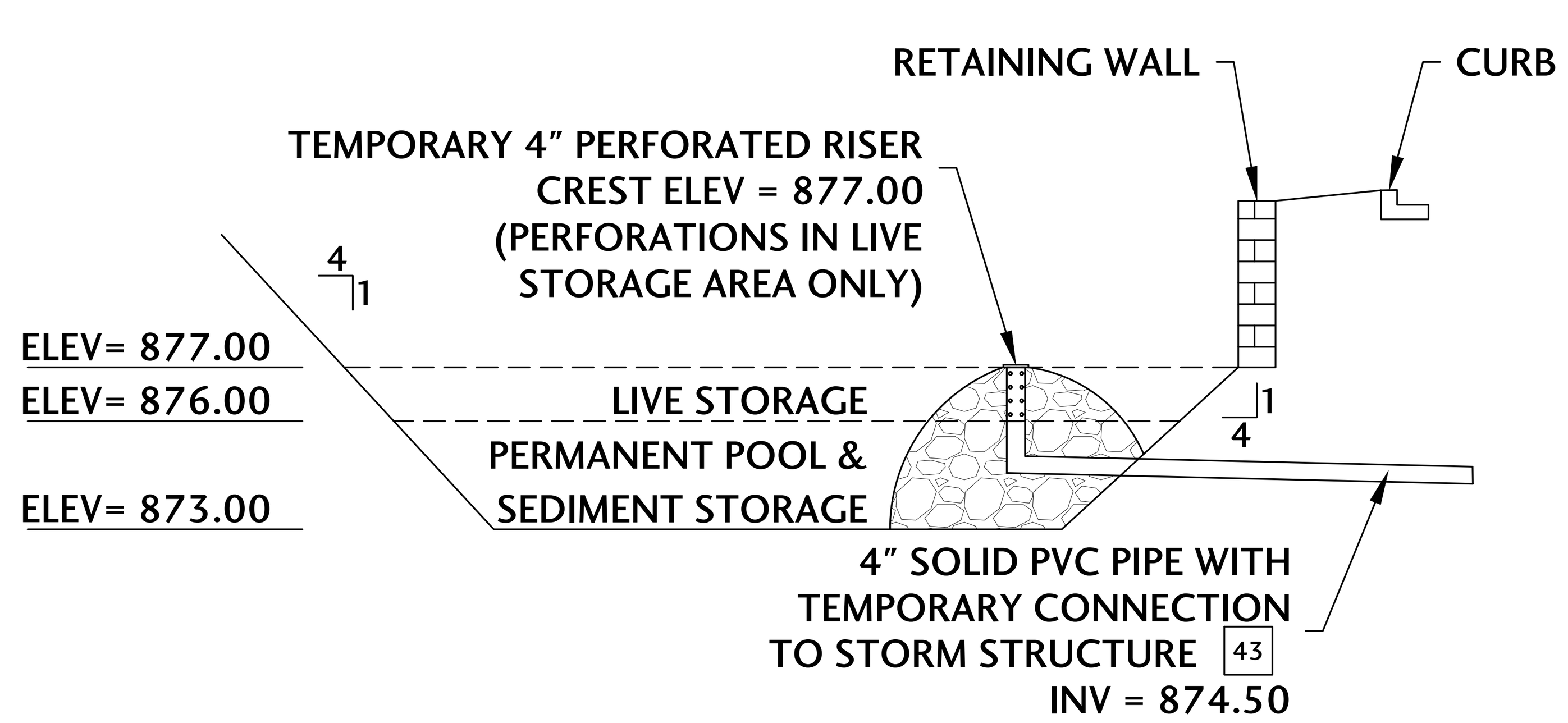
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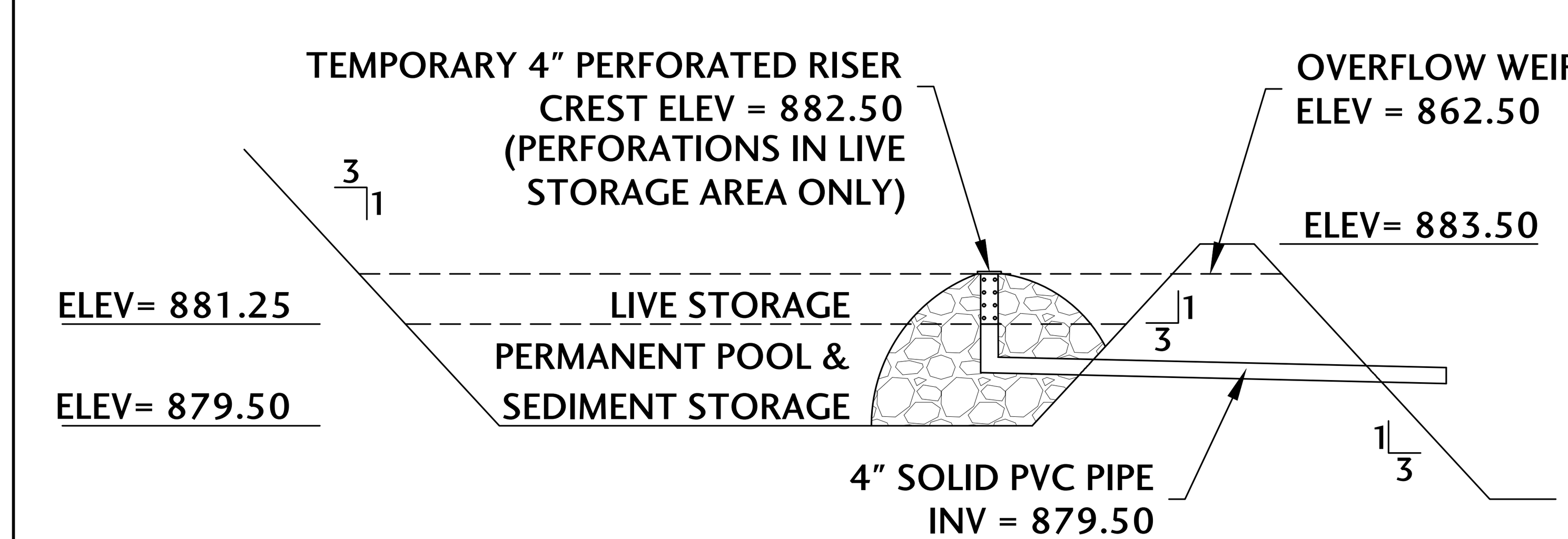
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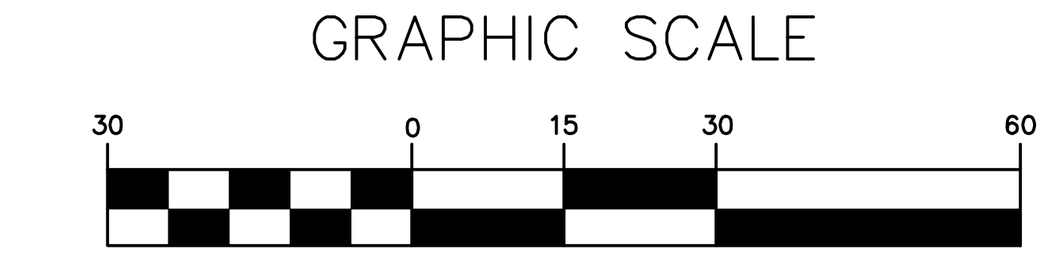


CENTER TEMPORARY SEDIMENTATION BASIN CROSS SECTION



WEST TEMPORARY SEDIMENTATION BASIN CROSS SECTION

GRAPHIC SCALE



(IN FEET)
1 inch = 30 ft.

J. CONDON & ASSOCIATES, INC.
CONSULTING ENGINEERS
5415 BUSINESS PARKWAY
RINGWOOD, ILLINOIS 60072
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NVA PROP IL LLC

CRYSTAL LAKE, ILLINOIS

N S E W

SCALE
1"=30'

ISSUE DATE
02/21/2023

PROJECT MANAGER
JEC

DESIGNER
ERG

QUALITY CONTROL
MAM

NVA TRUCKING FACILITY EXPANSION

CRYSTAL LAKE, ILLINOIS

NO.	DATE	DESCRIPTION
1	5/19/23	REVISIONS PER CITY REVIEW

PROJECT NUMBER
NART-22034-3

SHEET TITLE
CENTER & WEST TEMPORARY SEDIMENTATION BASIN PLANS & DETAILS

SHEET NUMBER
C4.4

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CONTROL MEASURE GROUP	CONTROL MEASURE	URBAN MANUAL CODE	APPLIED	CONTROL MEASURE DESCRIPTION	PERM.	TEMP.
SOIL STABILIZATION	CONSTRUCTION ROAD STABILIZATION	806		The stabilization of temporary construction access routes, subdivision roads, on-site vehicle transportation routes, and construction parking areas with stone immediately after grading.		
	EROSION BLANKET	830	X	A preformed protective blanket of straw or other plant residue, or plastic fibers formed into a mat, usually with a plastic mesh on one or both sides.		X
	LAND GRADING	865	X	Reshaping the ground surface to planned grades as determined by the engineering plans.	X	
	MULCHING	875	X	The application of plant residues and other suitable materials to the soil.	X	
	PERMANENT VEGETATION	880	X	Establishing permanent vegetative cover to stabilize disturbed or exposed areas.	X	
	ROCK OUTLET PROTECTION	910	X	A section of rock protection placed at the outlet end of culverts, conduits, or channels.	X	
	SODDING	925		Stabilization of fine-graded disturbed areas by laying a continuous cover of grass sod.		
	SURFACE ROUGHENING	953		A rough soil surface with horizontal grooves running across the slope on the contour, stair stepping, or tracking with construction equipment.		
	TEMPORARY SEEDING	965	X	Planting rapid-growing annual grasses or small grains, to provide initial, temporary cover for erosion control on disturbed areas.		X
	TOPSOILING	981	X	Methods of preserving and using topsoil to enhance final site stabilization with vegetation.	X	
RUNOFF CONTROL	DIVERSION	815		A channel and supporting ridge constructed across the slope to collect and divert runoff.		
	DIVERSION DIKE	820		A dike or dike and channel constructed along the perimeter of a disturbed construction area.		
	RIGHT-OF-WAY DIVERSION	900		A ridge or ridge and channel constructed diagonally across a sloping road or utility right-of-way that is subject to erosion.		
	ROCK CHECK DAM / SEDIMENT LOGS	905	X	A dam constructed across a grassed swale or road ditch.		X
	TEMPORARY DIVERSION	955		A temporary ridge or excavated channel or combination ridge and channel constructed across sloping land on a predetermined grade.		
	TEMPORARY SLOPE DRAIN	970		A flexible tubing or rigid conduit extending temporarily from the top to the bottom of a cut or fill slope.		
	TEMPORARY SLOPE DRAIN	970		A flexible tubing or rigid conduit extending temporarily from the top to the bottom of a cut or fill slope.		
	TEMPORARY SWALE	980		A temporary excavated drainageway.		
SEDIMENT CONTROL	CULVERT INLET PROTECTION	808		A temporary sediment filter located at the inlet to storm sewer culverts.		
	INLET PROTECTION - BLOCK & GRAVEL	850		A temporary sediment control barrier formed around a storm drain inlet by the use of standard concrete blocks and gravel.		
	INLET PROTECTION - EXCAVATED DRAIN	855		An excavated area in the approach to a storm drain drop inlet or curb inlet.		
	INLET PROTECTION - FABRIC DROP	860	X	A temporary fabric barrier placed around a drop inlet.		X
	INLET PROTECTION - GRAVEL &WIRE MESH	861		A temporary sediment control barrier formed around a storm drain inlet by the use of gravel and wire mesh.		
	INLET PROTECTION - SOD FILTER	862		A sediment filter formed around a storm drain drop inlet by the use of sod.		
	INLET PROTECTION - STRAW BALE BARRIER	863		A temporary sediment control barrier formed around a storm drain drop inlet consisting of a row of entrenched and anchored straw bales.		
	PORTABLE SEDIMENT TANK	895	X	A compartment container through which sediment-laden water is pumped to trap and retain the sediment.		X
	SILT FENCE	920	X	A temporary barrier of entrenched geotextile fabric (filter fabric) stretched across and attached to supporting posts used to intercept sediment laden runoff from small drainage areas of disturbed soil.		X
	STABILIZED CONSTRUCTION ENTRANCE	930	X	A stabilized pad of aggregate underlain with filter fabric located at any point where traffic will be entering or leaving a construction site to or from a public right-of-way, street, alley, sidewalk, or parking area.		X
	STRAW BALE BARRIER	935		A temporary barrier consisting of a row of entrenched and anchored straw bales or similar material used to intercept sediment-laden runoff from small drainage areas of disturbed soil.		
	SUMP PIT	950		A temporary pit which is constructed to trap and filter water for pumping into a suitable discharge area.		
	TEMPORARY SEDIMENT TRAP	960	X	A small, temporary ponding basin formed by construction of an embankment or excavated basin.		X
MISC.	DUST CONTROL	825		Control of dust blowing and movement on construction sites and roads.		
	TEMPORARY STREAM CROSSING (wetland consultant to provide detail)	975		A bridge, ford, or temporary structure installed across a stream or watercourse for short-term use by construction vehicles or heavy equipment.		
STORMWATER MANAGEMENT	FILTER STRIP	835	X	A created or preserved area of vegetation designed to remove sediment and other pollutants and to enhance the infiltration or surface water runoff.	X	
	GRASS-LINED CHANNEL	840	X	A natural or constructed channel that is shaped or graded to required dimensions and established with suitable vegetation for stable conveyance of runoff.	X	
	INFILTRATION TRENCH	847		An excavated trench filled with coarse granular material in which stormwater runoff is collected for temporary storage and infiltration.		
	LEVEL SPREADER	870		A device used to disperse concentrated runoff uniformly over the ground surface as sheet flow.		
	PERMEABLE PAVEMENT	890	X	A pavement consisting of structural materials having regularly interspersed void areas. The voids are filled with pervious materials, such as vegetated soil, gravel or sand.	X	
	SUBSURFACE DRAIN	945	X	A conduit installed beneath the ground surface to collect and/or convey drainage water.	X	
	URBAN STORMWATER WETLAND	800		A constructed system of shallow pools that create growing conditions suitable for emergent and riparian wetland plants explicitly designed to lessen the impacts of stormwater quality in urban areas.		
	IMPOUNDMENT STRUCTURE - FULL FLOW	841		A dam or excavation which creates an impoundment to collect and store debris, sediment, or water.		
	IMPOUNDMENT STRUCTURE - ROUTED	841		A dam or excavation which creates an impoundment to collect and store debris, sediment, or water.		
SPECIAL AREA PROTECTION	STRUCTURAL STREAMBANK STABILIZATION	940		Stabilization of eroding streambanks by use of designed structural measures.		
	VEGETATIVE STREAMBANK STABILIZATION	995		The stabilization and protection of eroding streambanks with selected vegetation.		
	WELL DECOMMISSIONING	996		The sealing and permanent closure of a water well, boring, or monitoring well.		
	TREE & FOREST ECOSYSTEM PRESERVATION	984	X	The preservation of contiguous stands of trees from damaging during construction.	X	
	TREE & SHRUB PLANTING	985	X	Planting of selected trees and shrubs.	X	
	TREE PROTECTION	990	X	The protection of individual trees from damage during construction.		X
	TREE PROTECTION - AUGERING	991	X	Underground construction such as utility work by augering though an individual tree's Critical Root Zone.	X	

SOIL PROTECTION CHART

STABILIZATION TYPE	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
PERMANENT SEEDING			A			*	*					
						A'				A'		
DORMANT SEEDING	B										B	
TEMPORARY SEEDING			C				D					
SODDING			E									
MULCHING PLUS ANIONIC PAM	F											

A TURF GRASS MIX

A' NATIVE SEEDING

B KENTUCKY BLUEGRASS 135 LBS/AC MIXED W/ PERENNIAL RYE GRASS 45 LBS/AC PLUS 2 TONS STRAW MULCH/AC

C SPRING OATS 100 LBS/AC

D WHEAT OR CEREAL RYE 150 LBS/AC

E SOD

F STRAW MULCH 2 TONS/AC PLUS ANIONIC POLYACRYLAMIDE 18 LBS/ AC

* IRRIGATION NEEDED DURING JUNE & JULY

** IRRIGATION NEEDED FOR 2-3 WEEKS AFTER APPLYING SOD

EROSION CONTROL SPECS

NOTES:

This plan has been prepared to comply with the provisions of the NPDES Permit No. ILR10, which is issued by the Illinois Environmental Protection Agency for Stormwater Discharges from Construction Site Activities.

1. Site Description.

a. The following is a description of the construction activity which is the subject of this plan:

The proposed development consists of mass grading to elevate the existing property. The construction activities will include: grading, soil erosion and sedimentation control measures.

b. The following is a description of the intended sequence of major activities which will disturb soils for major portions of the construction site such as site clearing, excavation and grading:

The sequence of the construction activities may be as follows: 1) install silt barrier filter fence and stabilized construction entrance, 2) site clearing and 3) grading.

The soil erosion and sedimentation control items will be constructed as needed during the above construction activities.

c. The site contains approximately 21.5 acres. Approximately 21 acres will be disturbed by construction & restoration activities.

d. The existing site is comprised of woodlands and rolling open spaces. The site contains soils from the B hydrologic soil group.

e. Refer to the grading plan for drainage patterns and slopes.

f. The site does not drain to any receiving waters.

2. Controls.

This plan addresses the various controls that will be implemented for each of the major construction activities described in 1.b above. For each measure discussed, the contractor will be responsible for its implementation as indicated. The contractor has signed the required certification on forms which are attached to, and are a part of, this plan.

a. Erosion and Sediment Controls.

(i) STABILIZATION PRACTICES. Provided below is a description of interim and permanent stabilization practices, including site-specific scheduling of the implementation of the practices. Site plans will ensure that existing vegetation is preserved where attainable and disturbed portions of the site will be stabilized. Except as provided in 2.a (i) (A) and 2.b. stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 10 days after the construction activity in that portions of the site where construction activity will not occur for a period of 14 or more calendar days.

(A) Where the initiation of stabilization measures by the 14th day after construction activity temporarily or permanently ceases is precluded by snow cover, stabilization measures shall be initiated as soon as practicable thereafter.

The following interim and permanent stabilization practices, as a minimum will be implemented to stabilize the disturbed area of the site:

1. Permanent/Temporary seeding
2. Erosion control blanket
3. Mulching, geotextiles

(B). Erosion control structures must be inspected weekly and after every rain storm of one-half inch of rainfall or greater. Any repairs or replacement needed to ensure adequate erosion control must be made immediately. Items D-I will be repeated for each phase. Construction shall be scheduled in the following order:

A. Install stabilized construction access and silt fence
B. Tree removal where necessary (clear & grub), tree root pruning
C. Strip topsoil to stockpile
D. Grade the site
E. Install storm sewer
F. Temporary stabilize all areas that have reached temporary grade
G. Install roadways, paths and parking lots.
H. Fine grade site topsoil/ topsoil respread
G Permanently stabilize all areas
H. Remove all temporary soil erosion/sediment control measures after the site is stabilized with vegetation.

Any siltation of conduits, structures, or ditches shall be cleaned and maintained by the Contractor on a weekly basis, until the seeding has taken hold. All washouts, gullies, etc. will be regraded and reseeded by the Contractor, at the Contractor's expense. Sediment on public roads from the site shall not be flushed off with water. The Contractor's responsibility for erosion control shall extend throughout the construction process. The Contractor shall be responsible for cleanup of paved surfaces within and adjacent to the project. The contractor shall be responsible for any additional erosion control measures suggested by the Enforcement Officer if any erosion is found to be taking place.

All erosion control practices shall be in compliance with the latest revision of the "Standard Specifications for Road and Bridge Construction," by the Illinois Department of Transportation and with the Illinois Environmental Protection Agency's "Illinois Urban Manual."

(ii) STRUCTURAL PRACTICES. Provided below is a description of structural practices that will be implemented, to the degree attainable, to divert flows from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from exposed area of the site. The installation of these devices may be subject to Section 404 of the Clean Water Act.

1. Silt fence
2. Stabilized construction entrance
3. Rock outlet protection
4. Inlet protection

b. Stormwater Management.

(i) Provided below is a description of measures that will be installed during the construction process to control pollutants in stormwater discharges that will occur after construction operations have been completed. The installation of these devices may be subject to Section 404 of the Clean Water Act.

The practices selected for implantation were determined on the basis of the technical guidance contained in IEPA's Standard Specifications for Soil Erosion and Sedimentation Control, and other ordinances listed in the Construction Specifications. The stormwater pollutant control measures shall include:

1. Forebays
2. Native vegetated areas
3. Bioretention

S75 EROSION BLANKET

LONGEVITY: 12 months
MESH SIZE: .50 inch x .50 inch mesh sewn 1.5 inches on center
MATRIX: 100% straw fiber (0.50 lbs/ sy)
THREAD: Degradable
MD TENSILE STRENGTH: ASTM D5035 115.20 lbs/ft
MD ELONGATION: ASTM D5035 11.90%
TD TENSILE STRENGTH: ASTM D5035 93.60 lbs/ft
TD TENSILE STRENGTH: ASTM D5035 9.60%

(ii) Velocity dissipation devices will be placed at discharge locations and along the length of any outfall channel as necessary to provide a non-erosive velocity flow from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g., maintenance of hydrologic conditions, such as the hydroperiod and hydrodynamics present prior to the initiation of construction activities).

Stormwater Management Control includes:

1. Vegetative channels
2. Outlet protection using rip-rap
3. Inlet protection using filter fabric

(iii) The stormwater pollution prevention plan shall be designed for a storm event equal to or greater than a 25-year 24-hour rainfall event.

c. Other Controls.

(i) Waste Disposal. The solid waste materials including trash, construction debris, excess construction materials, machinery, tools and other items will be collected and disposed off-site by the contractor. The contractor is responsible to acquire any permit required for such disposal. Burning on the site will not be permitted. No solid materials, including building materials, shall be discharged into Waters of the State, except as authorized by a Section 404 permit.

(ii) Concrete Waste Management. The solid materials generated from concrete truck washout shall be deposited only in the designated washout areas. The contractor shall collect and dispose the contaminants offsite. The contractor is responsible to acquire any permits required for such disposal.

(iii) The provisions of this plan shall ensure and demonstrate compliance with applicable State and/or local waste disposal, sanitary sewer or septic system regulations.

d. Approved State or Local Plans.

(i) The management practices, controls and other provisions contained in this plan are at least as protective as the requirements contained in the Illinois Environmental Protection Agency's Illinois Urban Manual 2002. Requirements specified in sediment and erosion control site plans or site permits or stormwater management site plans or site permits approved by local officials that are applicable to protecting surface water resources, upon submittal of an NOI to be authorized to discharge under this permit, incorporated by reference and are enforceable under this permit.

3. Maintenance.

The following is a description of procedures that will be used to maintain, in good and effective operating conditions, vegetation, erosion and sediment control measures and other protective measures identified in this plan and Standard Specifications.

Vegetative erosion control measures: The vegetative growth of temporary and permanent seeding, sodding, vegetative channels, vegetative filter, etc. shall be maintained periodically and supply adequate watering. The vegetative cover shall be reseeded as necessary.

Silt filter fence: The damaged silt filter fence shall be restored to meet the standards or removed and replaced as needed.

Sediment Logs: The sediment logs shall be inspected frequently and shall be repaired or removed and replaced as needed.

Rip-rap outlet protection: It shall be inspected after high flows for any scour beneath the rip-rap or for stones that have been dislodged. It shall be repaired immediately.

4. Inspections

Qualified personnel (provided by the permittee) shall inspect disturbed areas of the construction site that have not been finally stabilized, structural control measures, and locations where vehicles enter or exit the site at least once every seven calendar days and within 24 hours of the end of a storm that is 0.50 inches or greater of rain or equivalent snowfall. Qualified personnel means a person knowledgeable in the principles and practices of erosion and sediment control measures, such as a licensed Professional Engineer (P.E.),a Certified Professional in Erosion and Sediment Control (CPESC), a Certified Erosion and Sediment and Storm Water Inspector (CESSWI) or other knowledgeable person who possesses the skills to assess conditions at the construction site that could impact storm water quality and to assess the effectiveness of any sediment and erosion control measures selected to control the quality of storm water dischares from the construction activities.

a. Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of offsite sediment tracking.

b. Based on the results of the inspection, the description of potential pollutant sources identified in the plan in accordance with the Site Description of this permit and pollution prevention measures identified in the plan shall be revised as appropriate as soon as practicable after such inspection. Such modifications shall provide for timely implementation of any changes to the plan within 7 calendar days following the inspection.

c. A report summarizing the scope of the inspection, the name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the storm water pollution prevention plan, and actions taken in accordance with paragraph b above shall be made and retained as part of the storm water pollution prevention plan for at least 3 years after the date of inspection. The report shall be signed in accordance with the Signatory Requirements of this permit.

d. The permitee shall notify the appropriate Agency Field Operations Section office by email at: epa.swnoncomp@illinois.com, telephone or fax within 24 hours of any incidence of noncompliance for any violation of the storm water pollution prevention plan observed during any inpsection conducted, or for violations of any condition of this permit. The permittee shall complete and submit within 5 days an "Incidence of Noncompliance" (ION) report for any violation of the storm water pollution prevention plan observed during an inspection conducted, including those not required by the Plan. Submission shall be on forms provided by the Agency and include specific information on the cause of noncompliance, actions which were taken to prevent any further causes of noncompliance, and a statement detailing any environment impact which may have resulted from the noncompliance.

e. All reports of noncompliance shall be signed by a responsible authority as defined in Part VI.G (Signatory Requirements).

f. After the initial contact has been made with the approriate Agency Field Operations Section Office, all reports of noncompliance shall be mailed to the Agency at the following address:

Illinois Environmental Protection Agency
Division of Water Pollution Control
Compliance Assurance Section
1021 North Grand East
Post Office Box 19276
Springfield, IL 62794-9276

5. Non-Stormwater Discharges.

Except for flows from fire fighting activities, sources of non-stormwater that may be combined with stormwater discharges associated with the construction activity addressed in this plan are described below:

1. Watering for dust control
2. Irrigation drainage for vegetative growth for seeding, etc.

The pollution prevention measures, as described below, will be implemented for non-stormwater components of the discharge. The erosion due to irrigation of seeding shall be considered minor. Contractor to provide the above non-stormwater discharges control to the standard specification required by the Village or the approved equal.

6. End of construction season/winter construction:

The condition of the construction site for winter shutdown shall be addressed early in the Fall growing season so that slopes and other bare earth areas may be stabilized with temporary and/or permanent vegetative cover for proper erosion and sediment control. All open areas that are to remain idle throughout the winter shall receive temporary erosion control measures including temporary seeding, mulching or erosion blanket prior to the end of the fall growing season. The areas to be worked beyond the end of the growing season must incorporate cover such as erosion blanket and heavy mulching.

In general, unless altered by unseasonably warm or cold conditions, no seeding shall be placed between October 15 and November 15. Dormant seeding shall be placed on any unstabilized areas remaining after November 15 (where active grading has ceased). Dormant seeding shall be of the appropriate mixture for temporary or permanent seeding, but shall be placed at 150% of the normal rate. Dormant seeding shall also be covered with erosion blanket (where specified on the erosion control sheet) or with straw mulch at a rate of 2 ton/acre. If straw is placed, it shall be crimped into the soil by running over it with a tractor/bulldozer or similar tracked machine.

Underground utility work may continue at the contractor's discretion. After November 15, once a portion of a trench is backfilled, it shall immediately be treated with dormant seeding & stabilized as described above. Any grading that continues past November 15, shall be phased to minimize the amount of area being actively disturbed. Ongoing grading and stockpiles shall be surrounded with silt fence on the downhill edge and along curbs until areas are stabilized with erosion blanket.

7. Records

The permitee shall retain copies of the plan and all reports and notices required by the General Permit, and records of all data used to complete the Notice of Intent (NOI) to be covered by the General Permit, for a period of at least 3 years from the date that the site is finally stabilized. The period may be extended by the request of the IEPA at any time.

The permitee shall retain a copy of the plan required by the General Permit at the construction site from the date of the project initiation to the date of final stabilization.

Owner Certification Statement

"I certify under the penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature Date

Title

Name of Firm

Address

City State Zip Code

Phone Number

Contractor Certification Statement

"I certify under the penalty of law that I understand the terms of the general National Pollutant Discharge Elimination System (NPDES) permit (ILR10) that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification."

Signature Date

Title

Name of Firm

Address

City State Zip Code

Phone Number

Contractor Certification Statement

"I certify under the penalty of law that I understand the terms of the general National Pollutant Discharge Elimination System (NPDES) permit (ILR10) that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification."

Signature Date

Title

Name of Firm

Address

City State Zip Code

Phone Number

EROSION BLANKET NOTES:

1. CONTRACTOR TO REQUEST STAPLE PATTERN TO BE SPRAYED ONTO BLANKETS WHEN ORDERING MATERIALS.
2. THE FAILURE CRITERIA FOR EACH BLANKET IS 1/2" SOIL LOSS.
3. A SUBSTITUTED BLANKET MUST MEET THE MINIMUM REQUIREMENTS OF THE PROVIDED SPECIFICATIONS.

FAILURE TO COMPLY:

IN THE EVENT A NOTICE OF VIOLATION IS ISSUED ON THIS PROJECT, ANY AND ALL FINES WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE OWNER, OWNER'S REPRESENTATIVE, OR OTHER OWNER'S AGENTS WILL NOT PARTICIPATE IN ANY PAYMENT OR REIMBURSEMENT FOR FINES AND WILL NOT AUTHORIZE TIME EXTENSIONS DUE TO DELAYS IN PROJECT PROGRESS FOR WORK STOPPAGE REQUIRED TO REMEDY THE VIOLATIONS.

J. CONDON & ASSOCIATES, INC.
CONSULTING ENGINEERS
5415 BUSINESS PARKWAY
RINGWOOD, ILLINOIS 60072
815.728.0068
ILL DESIGN FIRM # 184-006759

NVA PROP IL LLC

CRYSTAL LAKE, ILLINOIS

N W E S

SCALE

ISSUE DATE
02/21/2023

PROJECT MANAGER
JEC

DESIGNER
ERG

QUALITY CONTROL
MAM

NVA TRUCKING FACILITY EXPANSION

CRYSTAL LAKE, ILLINOIS

NO.	DATE	DESCRIPTION
1	5/19/23	REVISIONS PER CITY REVIEW

PROJECT NUMBER
NART-22034-3

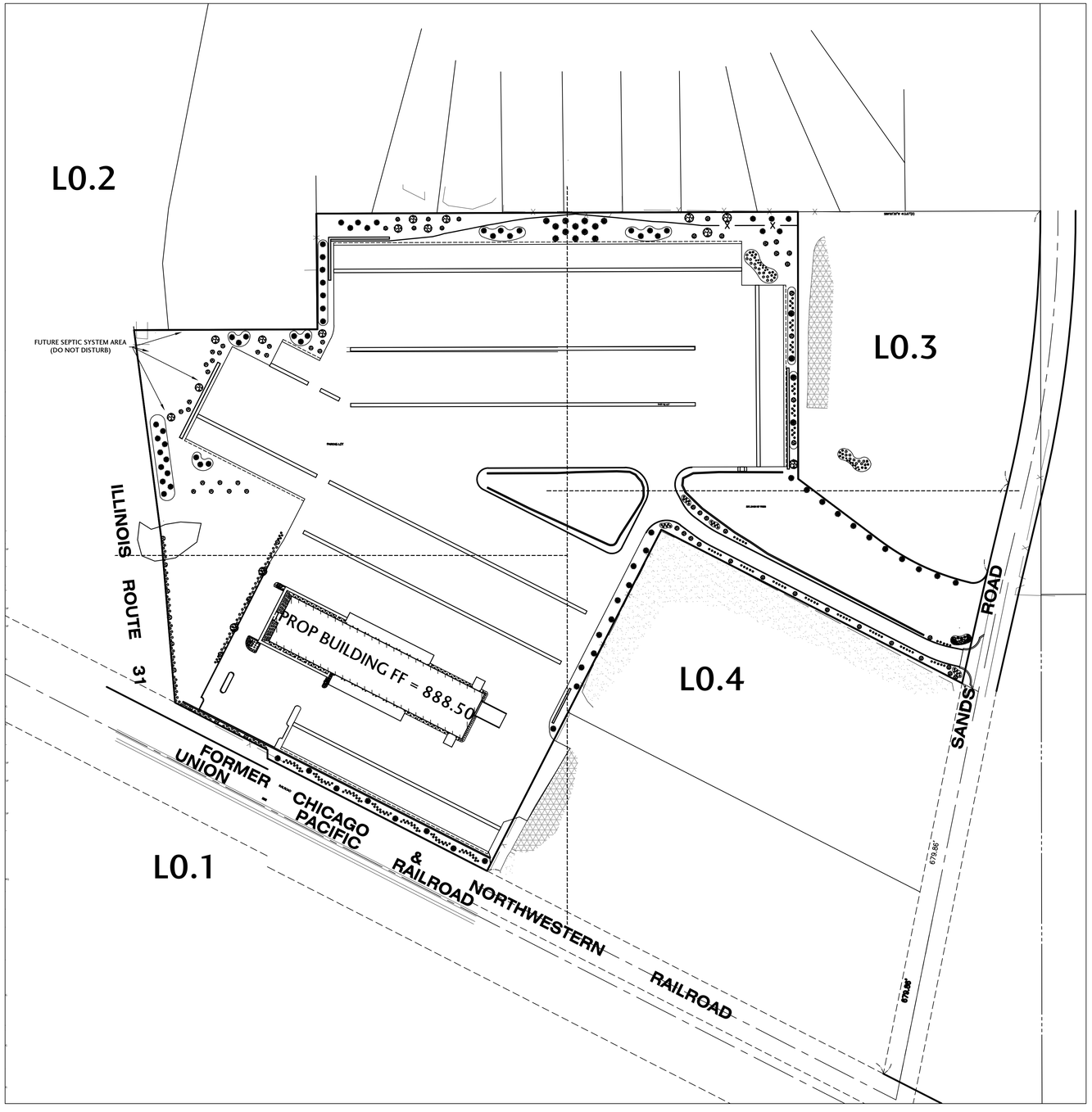
SHEET TITLE

EROSION CONTROL SPECIFICATIONS

SHEET NUMBER

C5.0

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96	EVERGREEN TREES (SPRUCE, PINE)
16	SHADE TREES (MAPLE, OAK, ELM)
74	ORNA CRABAPPLE
3	2.5" RED JEWEL CRABAPPLE
148	AUTUMN JAZZ VIBURNUM
142	DENSI YEW
7	GREEN VELVET BOXWOOD
10	RUDBECKIA
238	KARL FOERSTER GRASS
30	GOLDFLAME SPIREA
96	JUNIOR WALKER CATMINT
64	STELLA DORO DAYLILY
28	HAPPY RETURNS DAYLILY
10	LITTLE QUICKFIRE HYDRANGEA
10	FLATS OF ANNUAL BEGONIA 6" SPACING

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)

1 inch = 100 ft.

J. Condon & Associates, Inc
CONSULTING ENGINEERS
5415 BUSINESS PARKWAY
RINGWOOD, ILLINOIS 60072
815.728.0068
IL DESIGN FIRM # 184-006759

NVA PROP IL LLC

CRYSTAL LAKE, ILLINOIS

N W E S

SCALE
1"=100'

ISSUE DATE
05/30/2023

PROJECT MANAGER
JEC

DESIGNER
LRT

QUALITY CONTROL
MAM

NVA TRUCKING FACILITY EXPANSION

CRYSTAL LAKE, ILLINOIS

NO.	DATE	DESCRIPTION
1	07/03/23	REVISED PLAN PER CITY REVIEW

PROJECT NUMBER
NART-22034-3

SHEET TITLE
OVERALL LANDSCAPE PLAN

SHEET NUMBER
L0.0

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MATCHLINE L0.2

MATCHLINE L0.4

9 ORNA CRABAPPLE

69 AUTUMN JAZZ VIBURNUM

3 ORNA CRABAPPLE

38 AUTUMN JAZZ VIBURNUM

2 SHADE TREE (MAPLE, OAK, ELM)

2.5" RED JEWEL CRABAPPLE
10 DENSI YEW
16 GOLDFLAME SPIREA
24 STELLA DORO DAYLILY
20 KARL FOERSTER GRASS

NOTE:
PLANTING TO BE LOCATED TO AVOID
INTERFERRENCE WITH WELL.

1- 2.5" RED JEWEL CRABAPPLE
7 GOLDFLAME SPIREA
20 STELLA DORO DAYLILY

23 DENSI YEW

14 AUTUMN JAZZ VIBURNUM

48 JUNIOR WALKER CATMINT

14 AUTUMN JAZZ VIBURNUM

48 JUNIOR WALKER CATMINT

24 DENSI YEW

NOTE:
PLANTING TO BE LOCATED TO AVOID
INTERFERRENCE WITHSEPTIC TANK AND DOSING TANK.
(SEE SEPTIC SYSTEM DESIGN)

PROP BUILDING FF = 888.50

2,000 GAL
HOLDING TANK

20 DENSI YEW

3 KARL FOERSTER GRASS
1- 2.5" RED JEWEL CRABAPPLE
7 GOLDFLAME SPIREA
20 STELLA DORO DAYLILY

17 DENSI YEW

24 KARL FOERSTER GRASS

PROPOSED RETAINING WALL
(DESIGNED BY OTHERS)
TYP.

84 KARL FOERSTER GRASS

8 EVERGREEN (SPRUCE, PINE)

FORMER CHICAGO & NORTHWESTERN RAILROAD
UNION - PACIFIC RAILROAD

GRAPHIC SCALE

30 0 15 30 60

(IN FEET)
1 inch = 30 ft.

J. CONDON & ASSOCIATES, INC
CONSULTING ENGINEERS
5415 BUSINESS PARKWAY
RINGWOOD, ILLINOIS 60072
815.728.0068
IL DESIGN FIRM # 184-006759

NVA PROP IL LLC

CRYSTAL LAKE,
ILLINOIS

SCALE
1"=30'

ISSUE DATE
05/30/2023

PROJECT MANAGER
JEC

DESIGNER
LRT

QUALITY CONTROL
MAM

NVA TRUCKING
FACILITY
EXPANSION

CRYSTAL LAKE,
ILLINOIS

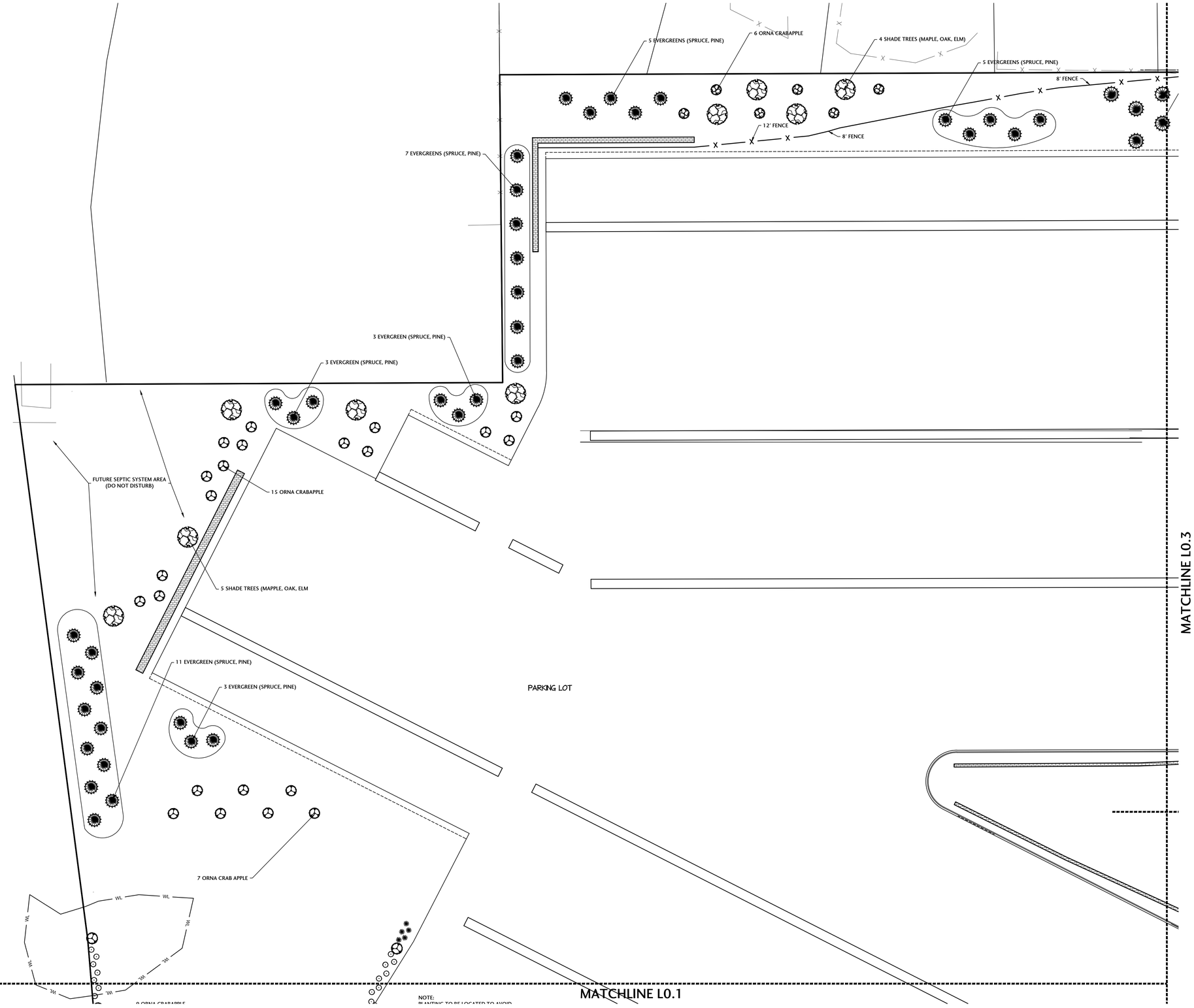
NO.	DATE	DESCRIPTION
1	07/03/23	REVISED PLAN PER CITY REVIEW

PROJECT NUMBER
NART-22034-3

SHEET TITLE
LANDSCAPE PLAN

SHEET NUMBER
L0.1

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GRAPHIC SCALE

30 0 15 30 60

(IN FEET)

1 inch = 30 ft.

J. CONDON & ASSOCIATES, INC
CONSULTING ENGINEERS
5415 BUSINESS PARKWAY
RINGWOOD, ILLINOIS 60072
815.728.0068
IL DESIGN FIRM # 184-006759

NVA PROP IL LLC

CRYSTAL LAKE, ILLINOIS

N W E S

SCALE
1"=30'

ISSUE DATE
05/30/2023

PROJECT MANAGER
JEC

DESIGNER
LRT

QUALITY CONTROL
MAM

NVA TRUCKING FACILITY EXPANSION

CRYSTAL LAKE, ILLINOIS

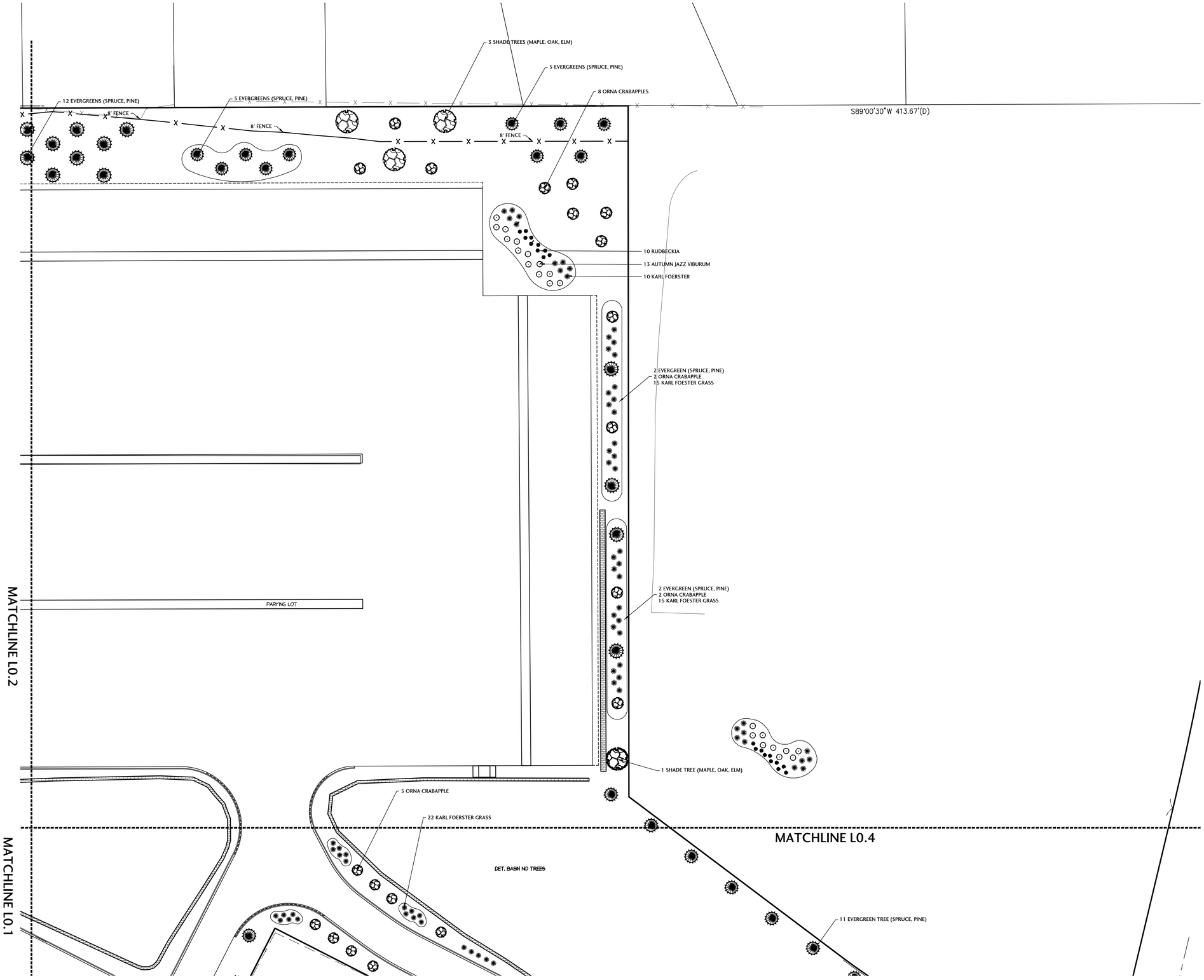
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PROJECT NUMBER
NART-22034-3

SHEET TITLE
LANDSCAPE PLAN

SHEET NUMBER
L0.2

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J. CONDON & ASSOCIATES, INC
CONSULTING ENGINEERS
5415 BUSINESS PARKWAY
RINGWOOD, ILLINOIS 60072
815.728.0068
IL DESIGN FIRM # 184-006759

NVA PROP IL LLC

CRYSTAL LAKE, ILLINOIS

N W E S

SCALE
1"=30'

ISSUE DATE
05/30/2023

PROJECT MANAGER
JEC

DESIGNER
LRT

QUALITY CONTROL
MAM

NVA TRUCKING FACILITY EXPANSION

CRYSTAL LAKE, ILLINOIS

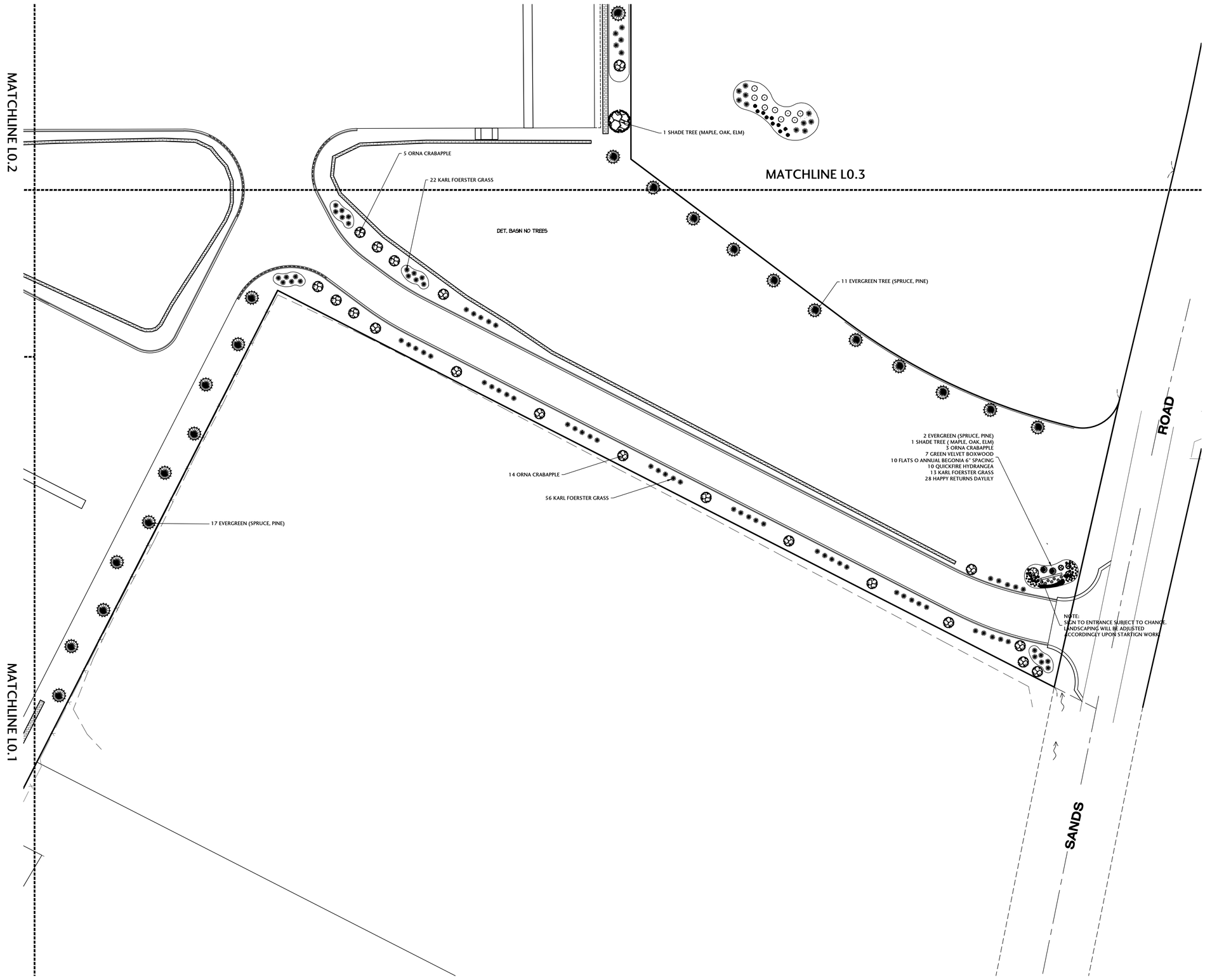
NO.	DATE	DESCRIPTION
1	07/03/23	REVISED PLAN PER CITY REVIEW

PROJECT NUMBER
NART-22034-3

SHEET TITLE
LANDSCAPE PLAN

SHEET NUMBER
L0.3

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GRAPHIC SCALE

30 0 15 30 60

(IN FEET)

1 inch = 30 ft.

J. Condon & Associates, Inc
CONSULTING ENGINEERS
5415 BUSINESS PARKWAY
RINGWOOD, ILLINOIS 60072
815.728.0068
IL DESIGN FIRM # 184-006759

NVA PROP IL LLC

CRYSTAL LAKE, ILLINOIS

N W E S

SCALE
1"=30'

ISSUE DATE
05/30/2023

PROJECT MANAGER
JEC

DESIGNER
LRT

QUALITY CONTROL
MAM

NVA TRUCKING FACILITY EXPANSION

CRYSTAL LAKE, ILLINOIS

NO.	DATE	DESCRIPTION
1	07/03/23	REVISED PLAN PER CITY REVIEW

PROJECT NUMBER
NART-22034-3

SHEET TITLE
LANDSCAPE PLAN

SHEET NUMBER
L0.4

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NVA
TRANSPORTATION

OLYMPUS
DESIGN & DEVELOPMENT

DDCA
architects

JULY 03, 2023

NVA

NVA

NVA TRANSPORTATION

NVA TRANSPORTATION

MAIN ENTRANCE FROM ACROSS PARKING LOT

DDCA architects

OLYMPUS DESIGN & DEVELOPMENT



NVA TRANSPORTATION

NVA TRANSPORTATION

CORNER PERSPECTIVE FROM PARKING LOT

DDCA architects

OLYMPUS DESIGN & DEVELOPMENT



NVA TRANSPORTATION

SITE AERIAL FROM NORTHWEST

NVA TRANSPORTATION

DDCA architects

OLYMPUS DESIGN & DEVELOPMENT



NVA TRANSPORTATION

(DAYTIME)



NVA TRANSPORTATION

NVA TRANSPORTATION

(CORNER PERSPECTIVE FROM SOUTHWEST)

DDCA architects

OLYMPUS DESIGN & DEVELOPMENT



NVA TRANSPORTATION

(DUSK)

DDCA architects

OLYMPUS DESIGN & DEVELOPMENT

NVA TRANSPORTATION & NORTHWEST TRUCK & TRAILER REPAIR SERVICE

7013 SANDS RD
CRYSTAL LAKE, IL



RENDERING SHOWN FOR REFERENCE ONLY

RENDERING SHOWN FOR REFERENCE ONLY

DRAWING INDEX

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T1.1	TITLE SHEET	•
T1.2	LIFE SAFETY PLAN	•
A1.0	ARCHITECTURAL SITE PLAN & PHOTOMETRIC	•
A1.1	EXTERIOR ELEVATIONS	•
A1.2	PRECAST PANEL ELEVATIONS	•
A1.3	PRECAST PANEL & WINDOW DETAILS	•
A2.1	FLOOR PLAN	•
A2.2	OFFICE AREA PLAN	•
A2.3	MEZZANINE, LOFT, & STAIR PLANS	•
A2.4	TOILET PLANS AND ELEVATIONS	•
A2.5	ENLARGED PLANS AND ELEVATIONS	•
A3.1	REFLECTED CEILING PLAN	•
A4.1	ROOF PLAN	•
A5.1	WALL TYPES, LADDER, AND BOLLARD DETAILS	•
A6.1	WALL SECTIONS	•
A6.2	WALL SECTIONS	•
A6.3	BUILDING SECTIONS	•
A8.1	DOOR SCHEDULE	•
A8.2	DOOR DETAILS & ROOM FINISH SCHEDULE	•
A9.1	SPECIFICATIONS	•
A9.2	SPECIFICATIONS	•
S0.1	STRUCTURAL GENERAL NOTES	•
S1.0	STRUCTURAL SPECIAL INSPECTIONS	•
S1.1	FOUNDATION PLAN & DETAILS	•
S1.2	FOUNDATION DETAILS	•
S1.3	REPAIR PIT DETAILS	•
S1.4	DOCK, RAMP, AND STEPPED FOOTING DETAILS	•
S2.1	ROOF FRAMING PLAN & SECTIONS	•
S2.2	MEZZANINE & LOFT FRAMING PLAN	•
S2.3	STRUCTURAL DETAILS	•
S2.4	STRUCTURAL DETAILS	•
S2.5	STRUCTURAL DETAILS	•
S3.1	STRUCTURAL 3D VIEWS FOR REFERENCE ONLY	•
M1.0	MECHANICAL SPECIFICATIONS AND SCHEDULES	•
M1.1	MECHANICAL SCHEDULES	•
M2.0	MECHANICAL PLAN - OVERALL	•
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E1.0	ELECTRICAL SPECIFICATIONS	•
E2.0	ELECTRICAL POWER PLAN - OVERALL	•
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E4.0	ELECTRICAL PANELS AND RISER	•
P1.0	PLUMBING SPECIFICATIONS	•
P2.0	PLUMBING WASTE AND VENT PLAN - OVERALL	•
P2.1	PLUMBING WASTE AND VENT PLAN - OFFICE	•
P2.2	PLUMBING WASTE AND VENT PLAN - LOFT	•
P3.0	PLUMBING WATER PLAN - OVERALL	•
P3.1	PLUMBING WATER PLAN - OFFICE	•
P3.2	PLUMBING WATER PLAN - LOFT	•
P4.0	PLUMBING RISERS	•

SPECIAL INSPECTIONS & TESTS

THE OWNER SHALL HAVE THE FOLLOWING SPECIAL INSPECTIONS PERFORMED BY A ILLINOIS CERTIFIED TESTING LABORATORY.

SOILS:

ALL WORK SHALL CONFORM TO THE SOIL BORINGS REPORT
DATED: SEPTEMBER 9, 2022
PREPARED BY: MIDLAND STANDARD ENGINEERING & TESTING

CONCRETE:

-REINFORCING STEEL PLACEMENT (PERIODIC)
-CONCRETE SLUMP AND CYLINDER TESTING
-CONCRETE PLACING

STRUCTURAL STEEL:

-FABRICATED LOAD BEARING MEMBERS AND ASSEMBLIES.
-STEEL ELEMENTS INCLUDING FABRICATED ITEMS (BOLTS, WELDINGS, ETC.)

THE NAMES OF THE INDIVIDUALS, APPROVED AGENCIES, OR FIRMS INTENDED TO BE RETAINED FOR CONDUCTING THESE SPECIAL INSPECTIONS SHALL BE ON FILE WITH THE VILLAGE OF WAUCONDA BUILDING DEPARTMENT PRIOR TO COMMENCING CONSTRUCTION.

* Terracon Testing Engineers & Consultants, Inc. - www.terracon.com - Tel: 815.873.0990 is the recomended Illinois Certified Testing Agency

LOCATION MAP

PROJECT SITE LOCATION



GENERAL NOTES

1. ALL CONTRACTORS SHALL VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND INCLUDE ALL WORK REQUIRED TO COMPLETE THEIR SCOPE OF WORK READY FOR OCCUPANCY. NO CHANGE ORDERS SHALL BE ACCEPTED FOR FAILURE TO VISIT THE SITE PRIOR TO SUBMITTING YOUR BID.
2. PLANS ARE DIAGRAMMATIC; ALL CONTRACTORS MUST INCLUDE ALL LABOR, MATERIALS AND EQUIPMENT TO COMPLETE THEIR SCOPE OF WORK. NO CHANGE ORDERS SHALL BE ACCEPTED FOR FAILURE TO INCLUDE ALL REQUIRED LABOR, MATERIALS AND EQUIPMENT TO COMPLETE YOUR SCOPE OF WORK AS SHOWN ON THE PLANS.
3. ALL APPLICABLE LOCAL, STATE AND NATIONAL CODES MUST BE MET BY ALL CONTRACTORS WHETHER SPECIFIED AND DETAILED IN THE DRAWINGS OR NOT.
4. ALL CONTRACTORS SHALL FIELD VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES PRIOR TO START OF WORK.
5. ALL CONTRACTORS MUST COORDINATE THEIR WORK WITH OTHER TRADES. CONTRACTORS MUST NOT CAUSE UNNECESSARY WORK FOR OTHER TRADES DUE TO LACK OF COORDINATION.
6. ALL WORK TO CONFORM WITH MANUFACTURERS INSTALLATION REQUIREMENTS. ALL CONTRACTORS MUST PROVIDE MANUFACTURES WRITTEN INSTALLATION INSTRUCTIONS FOR ALL MATERIALS AND EQUIPMENT SUPPLIED.
7. ALL CONTRACTORS SHALL PROVIDE A LETTER OF WORK GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER SUBSTANTIAL COMPLETION IS VERIFIED IN WRITING BY THE OWNER.
8. ALL CONTRACTORS SHALL SUBMIT ALL WARRANTIES, GUARANTEES, OPERATION MANUALS, AND CARE AND MAINTENANCE MANUALS TO OWNER PRIOR TO RECEIVING FINAL PAYMENT.
9. ALL CONTRACTORS SHALL SUPPLY SHOP DRAWINGS, AS-BUILT DRAWINGS, ENGINEERING DRAWINGS, PERMITS AND INSPECTION CERTIFICATES PRIOR TO FINAL PAYMENT.
10. ALL SHOP DRAWINGS SHALL BE SUPPLIED FOR REVIEW PRIOR TO FABRICATION.
11. ALL CONTRACTORS ARE RESPONSIBLE FOR DAILY REMOVAL OF CONSTRUCTION DEBRIS TO AN ONSITE DUMPSTER. ALL TRADES SHALL LEAVE THEIR WORK FOR THE DAY COMPLETELY FINISHED AND THE PREMISES BROOM CLEAN.
12. ALL CONTRACTORS SHALL COMPLY WITH OSHA STANDARDS.

CONSTRUCTION & CODE DATA

CITY OF CRYSTAL LAKE AMENDMENTS
2018 INTERNATIONAL BUILDING CODE
2018 INTERNATIONAL MECHANICAL CODE
2014 ILLINOIS STATE PLUMBING CODE, LATEST EDITION
2018 INTERNATIONAL FIRE CODE
2018 INTERNATIONAL ENERGY CONSERVATION CODE
2017 NATIONAL ELECTRICAL CODE (NFPA 70)
2018 INTERNATIONAL FUEL AND GAS CODE
2018 ILLINOIS ACCESSIBILITY CODE

BUILDING USE GROUP: B / S-1 NON-SEPARATED, NO RATED SEPARATION REQ.

CONSTRUCTION TYPE: 2B

FIRE SPRINKLER: YES, FULLY SPRINKLERED WITH STORAGE TANK. SYSTEM DESIGN & PERMIT DRAWINGS BY SPRINKLER CONTRACTOR.

AREA OF BUILDING: 31,851 S.F. FIRST FLOOR
886 S.F. LOFT
3,470 S.F. MEZZANINE
36,207 S.F. TOTAL

OCCUPANT LOAD (EGRESS): 152

FOUNDATION DESIGN CRITERIA:
REFERENCE THE SOILS REPORT FOUNDATION RECOMENDATIONS PERFORMED BY MIDLAND STANDARD ENGINEERING & TESTING (MSET), FILE NO. 22354 ON 2022.09.09

PLUMBING FIXTURE CALCULTATION

PER ILLINOIS PLUMBING CODE 2014

(7) SERVICE BAYS W/(1) PERSON EACH	= 7 OCC.
WAREHOUSE (8) PERSONS	= 8 OCC.
OFFICE AREA 5,001 SF/200	= 25 OCC.
PARTS AREAS 2,283 SF/400	= 7 OCC.
TOTAL OFFICE PERSONS	**25 (13 M, 13 F)**
TOTAL SERVICE PERSONS	**22 (11 M, 11 F)**

NOTE: ACTUAL FIXTURE COUNTS MEET OR EXCEED REQUIRED FIXTURES, SEE FLOOR PLAN

REQUIRED FIXTURES:
OFFICE: 1 WC (M), 1 WC (F), 1 LAV (M), 1 LAV (F), 1 BOTTLED WATER DISPENSER
SERVICE: 1 WC (M), 1 WC (F), 1 LAV (M), 1 LAV (F), 1 BOTTLED WATER DISPENSER
BUILDING: 1 SERVICE SINK

COMPLIANCE STATEMENT

I HAVE PREPARED, OR CAUSED TO BE PREPARED UNDER MY DIRECT SUPERVISION, THE ATTACHED PLANS AND SPECIFICATIONS AND STATE THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND TO THE EXTENT OF MY CONTRACTUAL OBLIGATION, THEY ARE IN COMPLIANCE WITH ENVIRONMENTAL BARRIERS ACT (410 ILCS 25) AND THE ILLINOIS ACCESSIBILITY CODE (71 ILL. ADMIN. CODE 400), EFFECTIVE OCTOBER 23, 2018.

SIGNED:

ILLINOIS REGISTRATION No.: 001-012383

DATE: 5/12/2023

ILLINOIS PROFESSIONAL DESIGN FIRM REGISTRATION NO. 184-002823

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JOHN F. SWIERK
001-012383
LICENSED ARCHITECT
Signature
5/12/2023
Date
11.30.24
Expires

PROJECT NO.	122148
PROJECT MGR.	TPL

TITLE SHEET

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LIFE-SAFETY PLAN LEGEND

- XX' — TRAVEL DISTANCE (T.D.)
- EGRESS PATH
- EXIT SIGN
- EMERGENCY LIGHT
- MIN. 1-HR FIRE SEPARATION
- S1 — EXIT SIGN - SEE BELOW FOR DETAILS
  - ES1 ADA SIGN: "EXIT"
  - ES2 ADA SIGN: "EXIT ROUTE"
  - ES3 ADA SIGN: "EXIT STAIR UP"
- S2 — STAIR SIGN - SEE #3/A2.0 FOR DETAILS
- FEB — FIRE EXTINGUISHER BRACKET
- KB — KNOX BOX
- EXTERIOR EMERGENCY LIGHT W/ INTERIOR BATTERY BACKUP

LIFE SAFETY PLAN NOTES

1. FINAL NUMBER AND LOCATION OF FIRE EXTINGUISHERS TO BE VERIFIED IN FIELD WITH THE LOCAL FIRE AUTHORITY.

2. BUILDING IS FULLY SPRINKLED.

3. MAXIMUM ALLOWABLE TRAVEL DISTANCE = 250'.

4. MAXIMUM DEAD END CORRIDOR LENGTH = 50'.

5. SEE ELECTRICAL PLANS FOR LIFE SAFETY DEVICES.

6. ENTRANCE DOOR KEYS ARE REQUIRED AT FINAL INSPECTION FOR PLACEMENT IN THE KNOX BOXES.

7. LABEL "SPRINKLER CONTROLS" AND "FACP" ON EXTERIOR SIDE OF SPRINKLER ROOM DOOR. 4" HIGH LETTERS.

8. LABEL "ELECTRICAL ROOM" DOOR AND "ROOF ACCESS" DOOR.

9. FIRE EXTINGUISHERS SHALL BE INSTALLED PER NFPA 10 AND HAVE CURRENT CERTIFICATION TAGS AND SHALL BE PROVIDED SO THAT THE TRAVEL DISTANCE FROM ANYWHERE IN THE BUILDING DOES NOT EXCEED 75 FEET TO THE EXTINGUISHER. THEY SHALL BE LOCATED ALONG THE NORMAL PATH OF TRAVEL AND IN A READILY VISIBLE AND ACCESSIBLE LOCATION, WITH THE BOTTOM OF THE EXTINGUISHER AT LEAST 4" ABOVE THE FLOOR.

10. LOCATION AND CLASSIFICATION OF EXTINGUISHERS SHALL BE IN ACCORDANCE WITH LOCAL FIRE AUTHORITY.

11. DURING CONSTRUCTION, AT LEAST ONE EXTINGUISHER SHALL BE PROVIDED ON EACH FLOOR LEVEL AT EACH STAIRWAY, IN ALL STORAGE AND CONSTRUCTION SHEDS, IN LOCATIONS WHERE FLAMMABLE OR COMBUSTIBLE LIQUIDS ARE STORED OR USED, AND WHERE OTHER SPECIAL HAZARDS ARE PRESENT PER CFC SECTION 3315.1

12. IN BUILDINGS REQUIRING STANDPIPES, STANDPIPES SHALL BE PROVIDED DURING CONSTRUCTION WHEN THE HEIGHT REACHES 40 FEET ABOVE THE LOWEST LEVEL OF FIRE DEPARTMENT VEHICLE ACCESS. A FIRE DEPARTMENT CONNECTION SHALL BE NO MORE THAT 100 FT. FROM AVAILABLE FIRE DEPARTMENT VEDHICLE ACCESS ROADWAYS.

13. EXITS, EXIT SIGNS, FIRE ALARM PANELS, HOSE CABINETS, FIRE EXTINGUISHER LOCATIONS AND STANDPIPE CONNECTIONS SHALL NOT BE CONCEALED BY CURTAINS, MIRRORS, OR OTHER DECORATIVE MATERIAL

14. OCCUPANCY - SEE BELOW

15. STAIRWAY EGRESS - SEE BELOW

16. FIRE RESISTIVE RATING FOR BUILDING ELEMENTS PER TABLE 601 0 HOURS. NONE REQUIRED

BUILDING CODE CALCS

CODE: 2018 IBC W/ CRYSTAL LAKE AMENDMENTS

CHAPTER 3 USE AND OCCUPANCY
SECTION 304 (B) BUSINESS USE GROUP
SECTION 307.1.1 HAZARDOUS MATERIALS AMOUNTS AND STORAGE MUST NOT BE ENOUGH TO QUALIFY AS A HAZARD USE GROUP.
SECTION 311.2 (S-1) MODERATE HAZARD STORAGE (REPAIR GARAGE)

CHAPTER 4 SPECIAL USE
406.2.8 MIXED USE OCCUPANCY IS ALLOWED IN ACCORDANCE WITH SECTION 508.1
SECTION 406.8.2 A GAS DETECTION SYSEM SHALL BE PROVIDED
SECTION 406.8.3 A REPAIR GARAGE SHALL HAVE AN AUTOMATIC SPRINKLER SYSTEM

CHAPTER 5 HEIGHT AND AREA
SECTION 505.2.1 MEZZANINE ALLOWABLE LIMITATION
THE MEZZANINE AREA SHALL BE LESS THAN 1/2 OF THE ROOM IT IS LOCATED. 13,280/2= 6,640 S.F. MAXIMUM ALLOWED.

PER 2018 ILLINOIS ACCESSIBILITY CODE 206.2.3 EX.8: **SPACES** GREATER THAN 1,000 SQUARE FEET BUT LESS THAN 3,000 SQUARE FEET IN AREA THAT ARE USED EXCLUSIVELY FOR PRODUCT STORAGE IN A BUSINESS OCCUPANCY SHALL NOT BE REQUIRED TO BE ON AN ACCESSIBLE ROUTE. (THUS **SPACE** TO **MEZZANINE** ACCESSED BY STAIR IS NOT REQUIRED TO BE ON AN ACCESSIBLE ROUTE.)

TABLE 506.2 BUILDING AREA:
ALLOWABLE AREA FOR 2B: 3-STORY, 69,000 S.F.
ACTUAL TOTAL AREA: 2-STORY, 36,207 S.F.

CHAPTER 6 TYPES OF CONSTRUCTION
TABLE 601: TYPE 2B

CHAPTER 10: MEANS OF EGRESS

TABLE 1004.5 - OCCUPANT LOAD
WAREHOUSE 500 GROSS S.F. 8,098/500 = 17 PEOPLE
REPAIR GARAGE 200 GROSS S.F. 14,713/200 = 74 PEOPLE
PARTS STORAGE ROOM 1,450 S.F./300 = 5 PEOPLE
MEZZANINE STORAGE 3,000/300 = 10 PEOPLE

BUSINESS AREAS 150 GROSS S.F. - OFFICE AREA 6,924 S.F./150 = 51

TOTAL PEOPLE = 152 PEOPLE

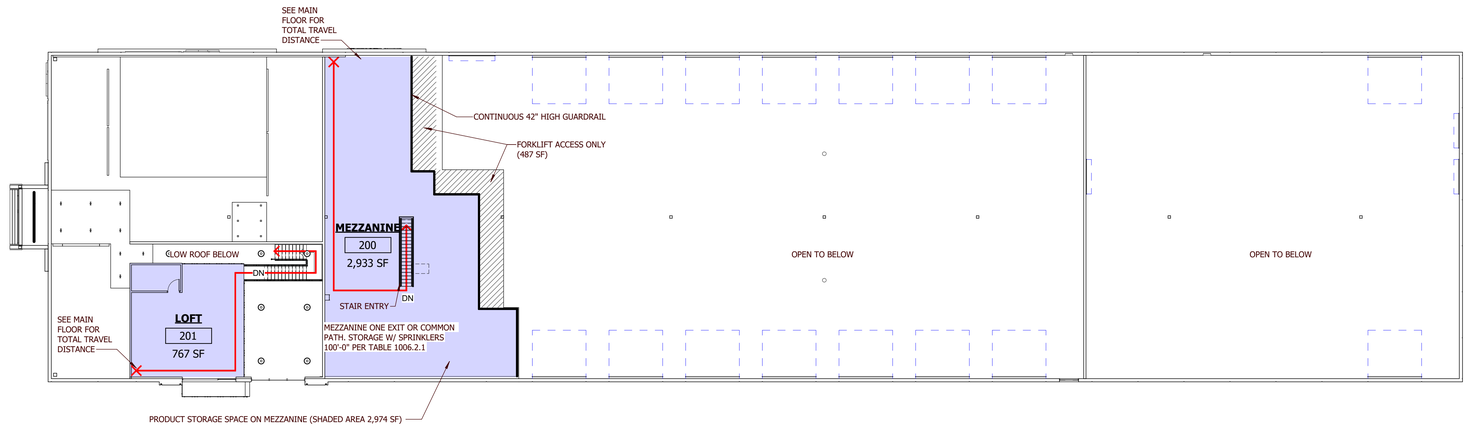
SECTION 1005.3.1 EXCEPTION 1
EGRESS STAIR WIDTH 0.2" x 10 = 2" REQUIRED
1011.2 expt.1 MINIMUM STAIR WIDTH 36" W/ OCCUPANT LOAD <50.
SECTION 1005.3.2 EXCEPTION 1
EGRESS WIDTH 0.15 x 151 = 23" REQUIRED
(FIRE ALARM FIRE DETECTOR IS REQUIRED PER SECTION 907.5.2.2
SEE ELECTRICAL AND SPRINKLERS PER 903.1.1 OR 903.3.1.2)

PER TABLE 1006.2.1 SPACES WITH ONE EXIT OR EXIT ACCESS
MEZZ. - STORAGE S OCCUPANT LOAD <29, W/ SPRINKLER = 100 FEET.
MEZZANINE TRAVEL DISTANCE TO B/STAIR TO BE 100 FEET MAX.

1007.1.1 E2 TWO OR MORE EXIT ACCESS DOORWAYS (REMOTENESS)
SEPARATION DISTANCE TO BE NOT < 1/3 MAX DIAGONAL DISTANCE WITH SPRINKLERS.

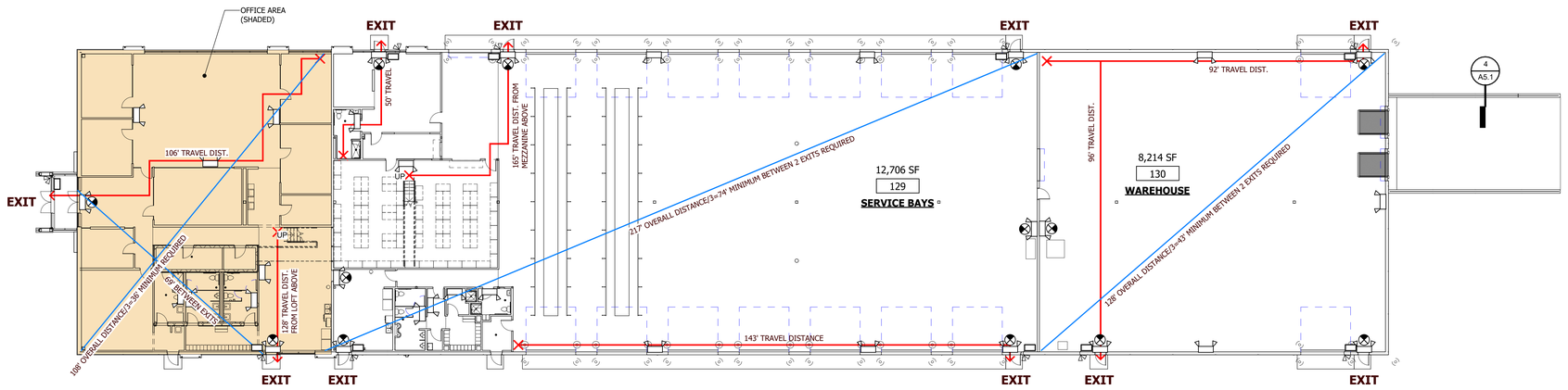
1011.2 E1 STAIRWAYS SERVING AN OCCUPANT LOAD LESS THAN 50 SHALL NOT HAVE A WIDTH LESS THEN 36".

EXIT TRAVEL DISTANCE PER TABLE 1017.2.
S-1= 250' WITH SPRINKLER
1020.4.2 MAXIMUM ALLOWBALE DEAD END CORRIDOR : 50'



2 LOFT & MEZZANINE LIFE SAFETY PLAN
1/16" = 1'-0"

NORTH TRUE



1 MAIN FLOOR LIFE SAFETY PLAN
1/16" = 1'-0"

NORTH TRUE

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LIFE SAFETY PLAN	

T1.2

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SITE DATA

ZONING DISTRICTS:
(M) MANUFACTURING

LOT AREA:
935,562 (21.48 ACRES)

BUILDING FOOTPRINT: 31,851 SF
BUILDING AREA: 36,207 SF

REQUIRED SETBACKS:

FRONT:	30 FT
SIDE:	15 FT
REAR:	20 FT
YARD ABUTTING RES. DIST:	50 FT

F.A.R.: 1.0 MAX. (ACTUAL 0.034)

PARKING

TRUCK / TRAILER PARKING:

TRAILER STALLS (12' x 75') = 325

BOBTAIL STALLS (12' x 25') = 9

TOTAL TRUCK STALLS 334

CAR PARKING

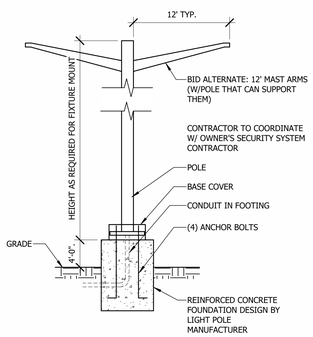
REQUIRED CAR PARKING PER ORD. SECTION 4-200:
COMMERCIAL VEHICLE AND PARTS:
- (3) PER SERVICE BAY
- (1) PER EMPLOYEE DURING BUSIEST TIME
- (5) PER 1000 SF OF SALES AREA

CALCULATION:

3 X 7 BAYS =	21
27 EMPLOYEES =	27
600 SF SALES =	3
TOTAL REQUIRED =	51

ACTUAL CAR SPACES:

CAR SPACES (9' X 19') =	48
H.C. SPACES (SEE PLAN) =	3
TOTAL	51



2 POLE DETAIL

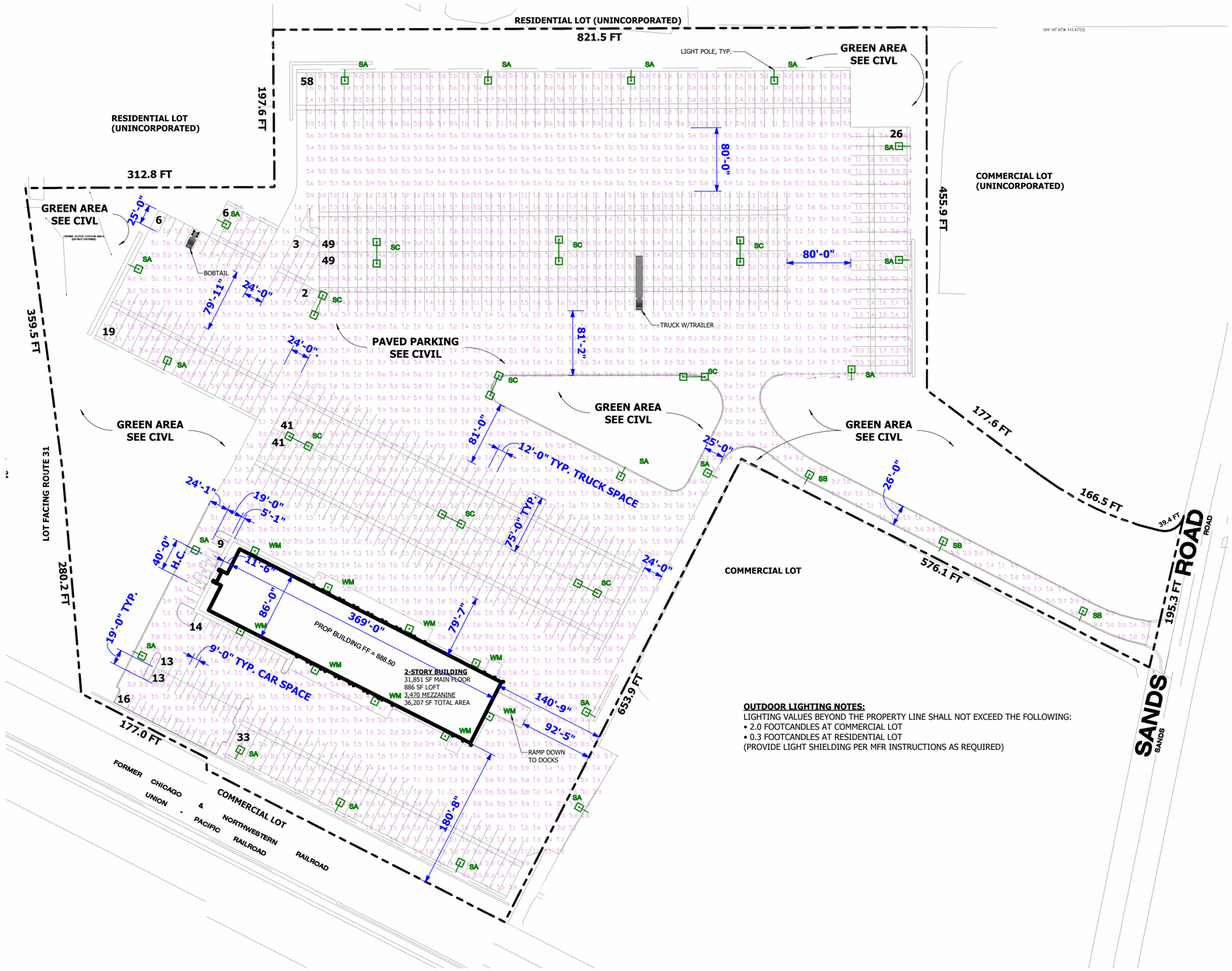


MOUNT TO POLE OR TO WALL
SEE LUMINAIRE SCHEDULE FOR MOUNTING HEIGHT
(GC TO VERIFY COLOR W/OWNER)

BID ALTERNATE: MAST ARMS
12' MAST ARMS AT EACH POLE MOUNTED LIGHT
(USE SLIP-FITTER MODEL WITH THIS ALTERNATE,
USE ALTERNATE POLE IF REQUIRED FOR MAST ARMS)

3 LIGHT FIXTURE IMAGE (POLE OR WALL MOUNT)

12" = 1'-0"



OUTDOOR LIGHTING NOTES:
LIGHTING VALUES BEYOND THE PROPERTY LINE SHALL NOT EXCEED THE FOLLOWING:
- 2.0 FOOTCANDLES AT COMMERCIAL LOT
- 0.3 FOOTCANDLES AT RESIDENTIAL LOT

(PROVIDE LIGHT SHIELDING PER MFR INSTRUCTIONS AS REQUIRED)

1 ARCHITECTURAL SITE PLAN & PHOTOMETRIC

1" = 60'-0"

NORTH

Luminaire Schedule						
Symbol	Qty*	Label	Description	Lum. Watts	LLF	Lum. Lumens
	19	SA	GARDCO#: ECF-L-80L-1A-NW-G2-4-HIS / MTD AT 30' AFG	264.9	0.900	27730
	3	SB	GARDCO#: ECF-S-64L-1A-NW-G2-2-HIS / MTD AT 30' AFG	205.9	0.900	20575
	9	SC	GARDCO#: (2) ECF-L-80L-1A-NW-G2-5W / MTD AT 30' AFG	264.9	0.900	34246
	9	WM	GARDCO#: ECF-S-48L-1A-NW-G2-4 / WALL MTD AT 24' AFG	158.7	0.900	20880

*GC TO VERIFY QUANTITY W/ OWNER

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
SERVICE CENTER	Illuminance	Fc	1.71	4.9	0.3	5.70	16.33

SERVICE CENTER
MCHENRY COUNTY, ILLINOIS

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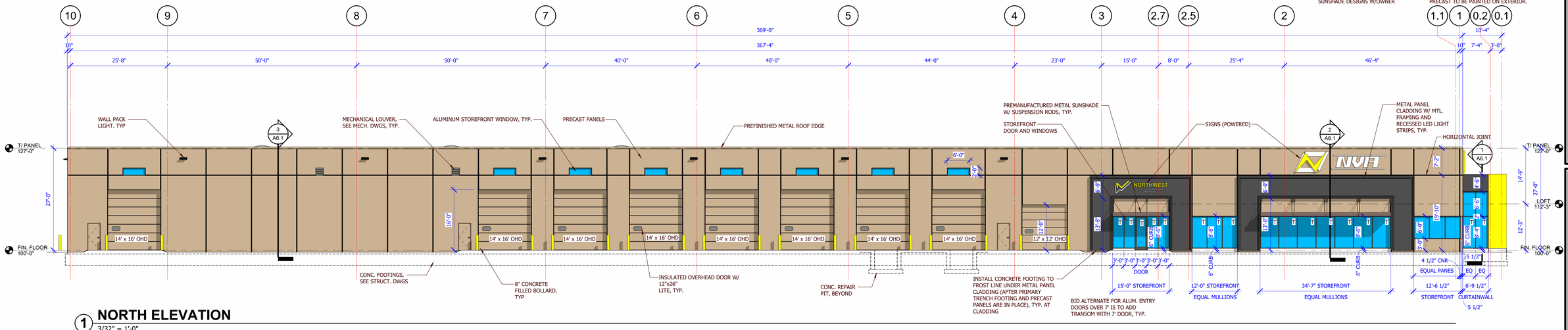
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ARCHITECTURAL SITE PLAN & PHOTOMETRIC	
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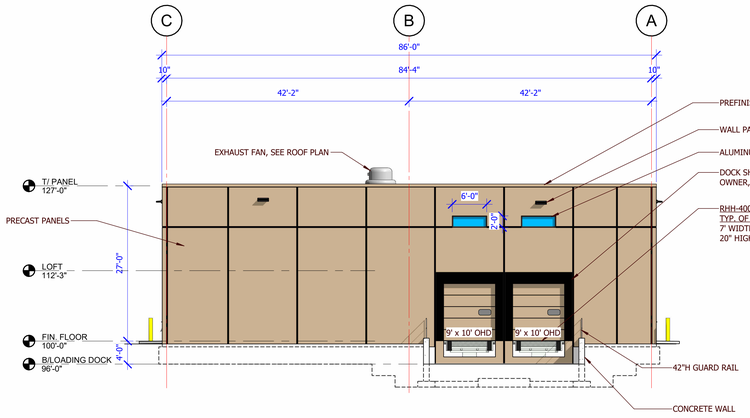
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NOTE: G.C. TO COORDINATE ALL EXTERIOR CLADDING AND SUNSHADE DESIGNS W/OWNER

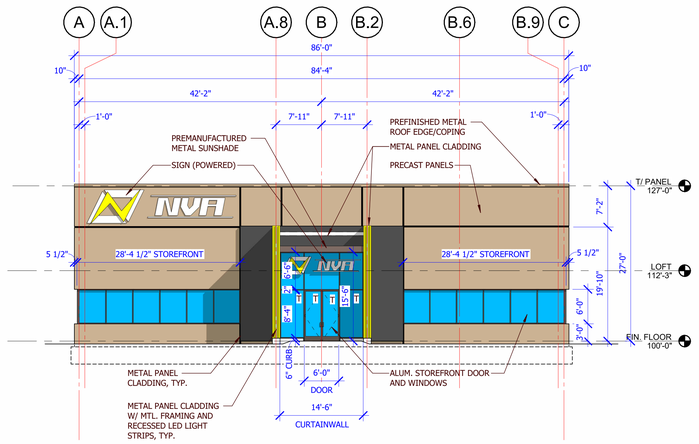
COLOR NOTE: COLORS AS SELECTED BY OWNER. COLORS SHOWN ARE FOR REFERENCE ONLY. ALL PRECAST TO BE PAINTED ON EXTERIOR.



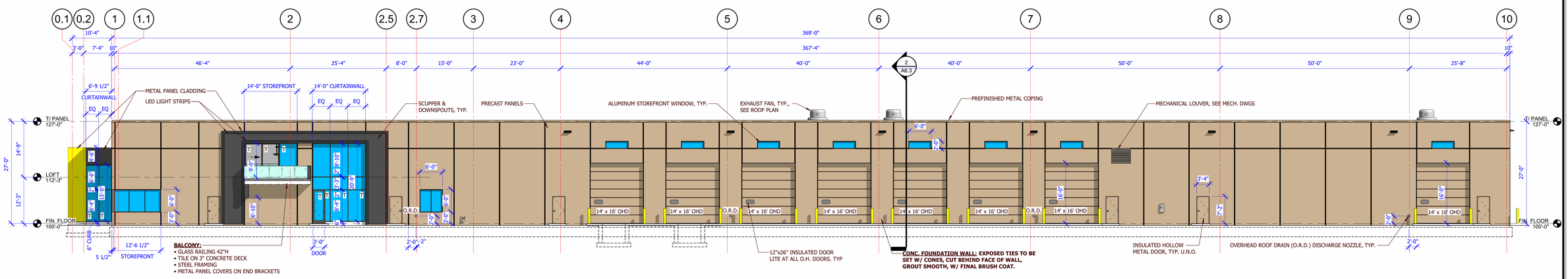
1 NORTH ELEVATION
3/32" = 1'-0"



2 EAST ELEVATION
3/32" = 1'-0"



3 WEST ELEVATION
3/32" = 1'-0"



BALCONY:
- GLASS RAILING 42"H
- TILE ON 3" CONCRETE DECK
- STEEL FRAMING
- METAL PANEL COVERS ON END BRACKETS

CONC. FOUNDATION WALL: EXPOSED TIES TO BE SET W/ CONES, CUT BEHIND FACE OF WALL, GROUT SMOOTH, W/ FINAL BRUSH COAT.

4 SOUTH ELEVATION
3/32" = 1'-0"

EXTERIOR GLASS LEGEND*

EXTERIOR INSULATED GLASS: CLEAR
1" INSULATED UNIT OF 1/4" OUTBOARD CLEAR FLOAT GLASS, 1/2" ARGON-FILLED AIR SPACE, 1/4" INBOARD CLEAR FLOAT GLASS. LOW-E COATING

EXTERIOR TEMPERED (T): CLEAR TEMPERED
1" INSULATED UNIT OF 1/4" OUTBOARD CLEAR **TEMPERED** SAFETY GLASS, 1/2" ARGON-FILLED AIR SPACE, 1/4" INBOARD CLEAR **TEMPERED** SAFETY GLASS. LOW-E COATING

BALCONY RAILING (42" HIGH):
SAFETY GLAZING PER IBC 2018 SECTION 2407

*NOTES:

1. ALL GLAZING TO MEET OR EXCEED THE FOLLOWING ENERGY CODE VALUES: **U-VALUE 0.37, SHGC 0.38**
2. GLASS MARKED WITH 'T' DENOTES 'TEMPERED'
3. STOREFRONT IS 2" X 4 1/2" THERMALLY BROKEN. MAX HEIGHT 10'-0".
4. CURTAINWALL (HEIGHT > 10'-0") IS TO BE SIZED BY MFR WITH STEEL REINFORCING AS REQUIRED FOR WIND LOADS. HEAVY DUTY STOREFRONT MAY BE USED IF ALLOWED PER MFR STANDARDS.

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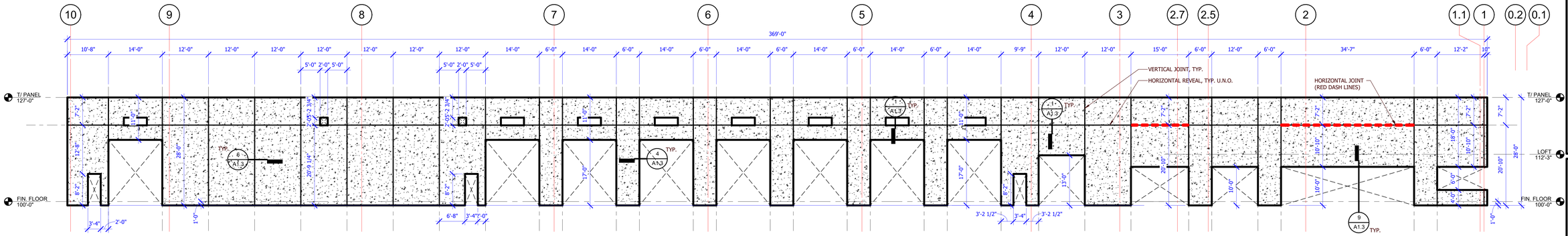
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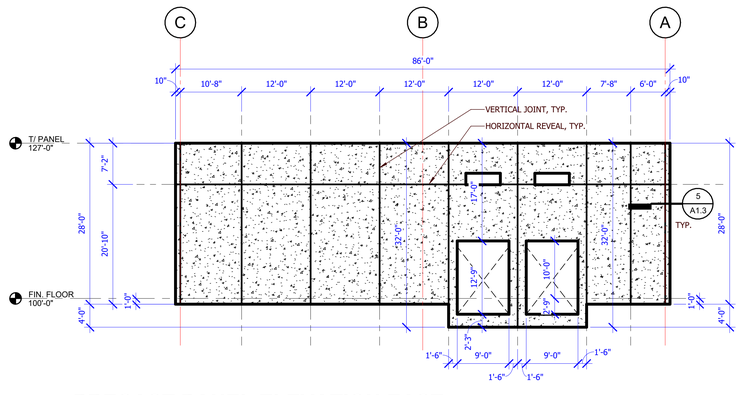
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EXTERIOR ELEVATIONS	
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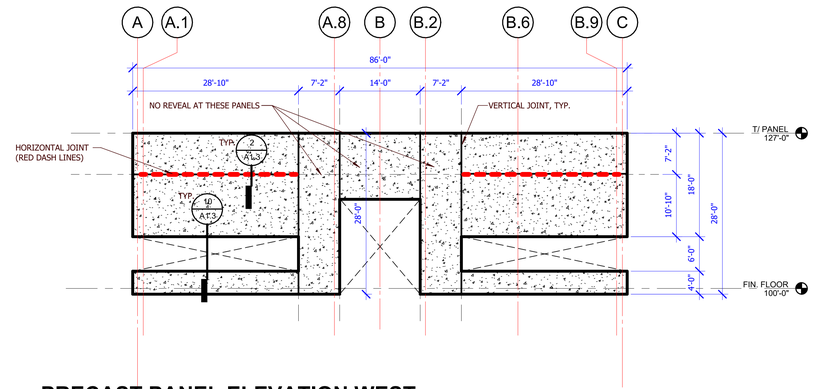
PRECAST PANEL NOTES:
1. ALL OPENING DIMENSIONS ARE NOMINAL, ADJUST AS REQUIRED FOR ROUGH OPENINGS
2. SHIM SPACE AT FOUNDATION PER PANEL MFR STANDARDS



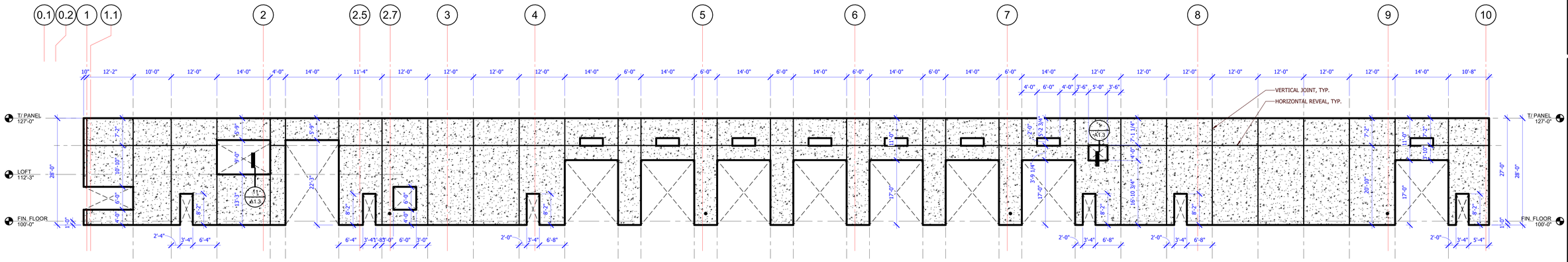
1 PRECAST PANEL ELEVATION NORTH
3/32" = 1'-0"



2 PRECAST PANEL ELEVATION EAST
3/32" = 1'-0"



3 PRECAST PANEL ELEVATION WEST
3/32" = 1'-0"



4 PRECAST PANEL ELEVATION SOUTH
3/32" = 1'-0"

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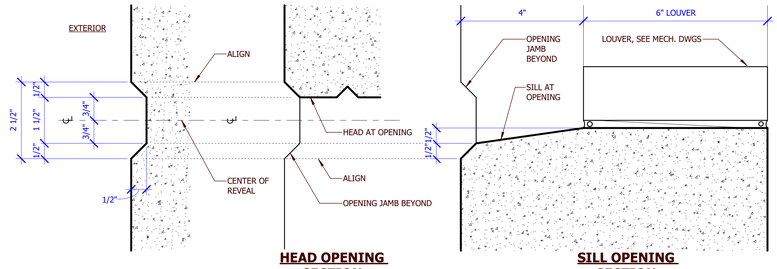
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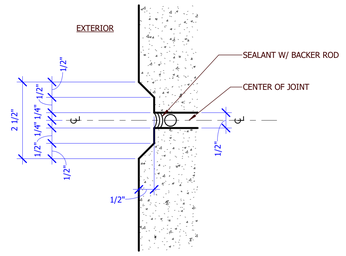
PRECAST PANEL ELEVATIONS

A1.2

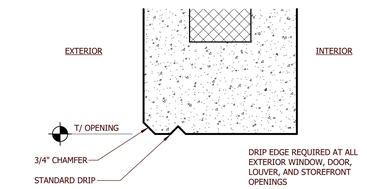
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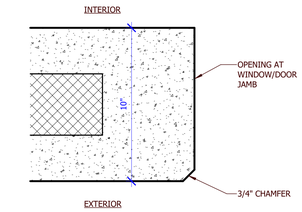
1 PANEL REVEAL (HORIZONTAL)
6" = 1'-0"



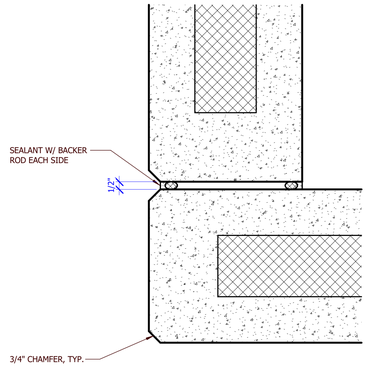
2 PANEL JOINT (HORIZONTAL)
6" = 1'-0"



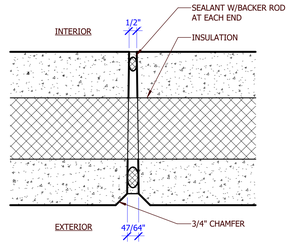
3 PANEL DRIP EDGE @ HEAD
3" = 1'-0"



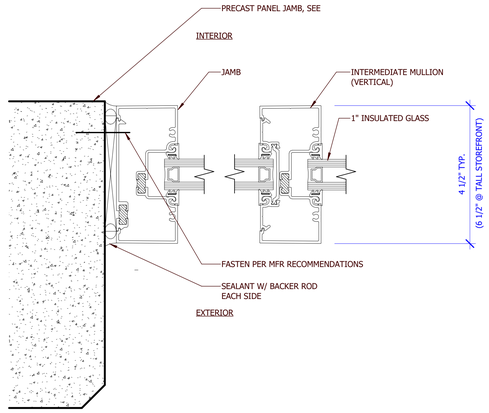
4 PANEL JAMB
3" = 1'-0"



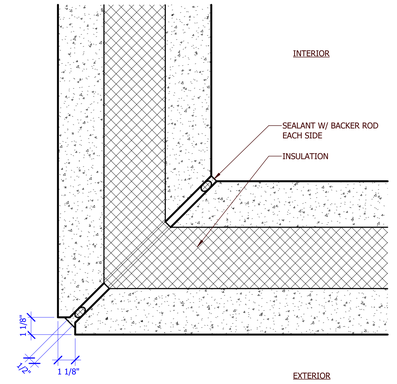
5 SQUARE CORNER DETAIL
3" = 1'-0"



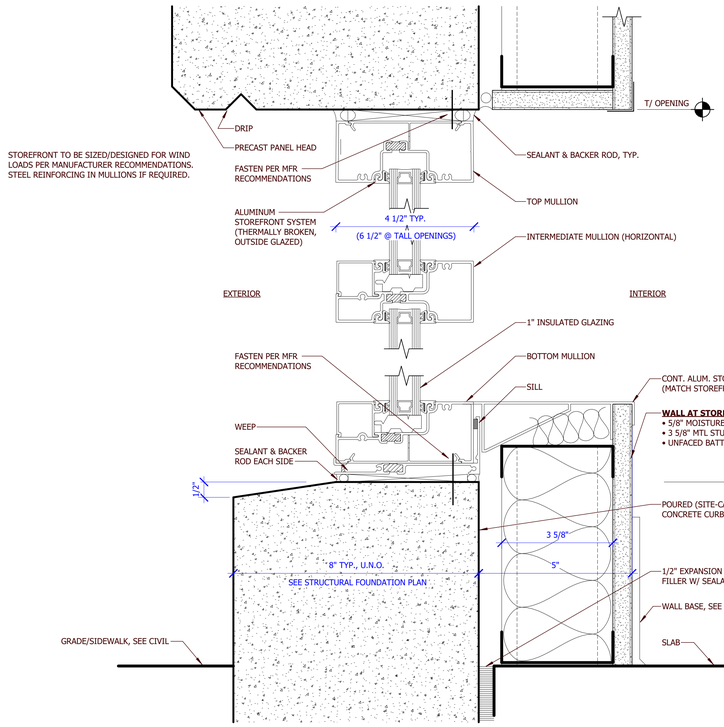
6 VERTICAL PANEL JOINT
3" = 1'-0"



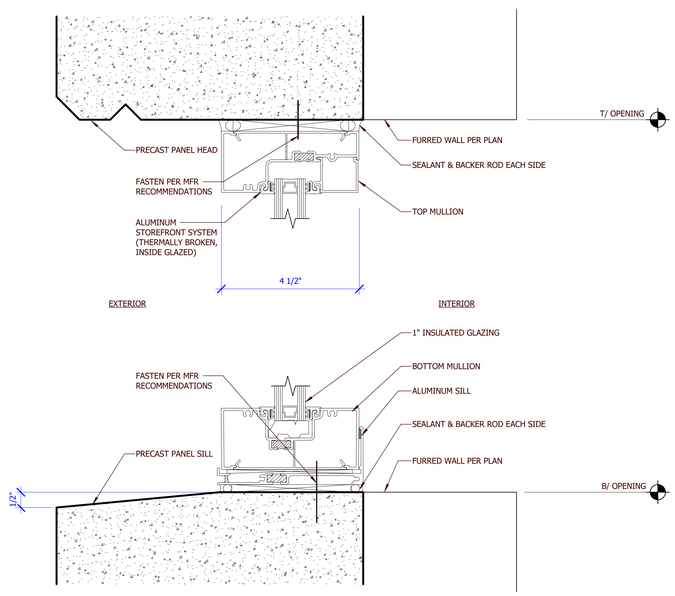
7 STOREFRONT/WINDOW JAMB DETAIL
6" = 1'-0"



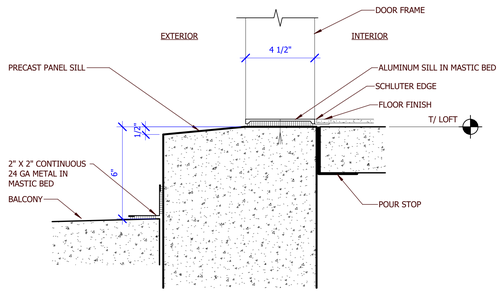
8 MITERED CORNER DETAIL
3" = 1'-0"



9 STOREFRONT SECTION DETAIL
6" = 1'-0"



10 WINDOW SECTION
6" = 1'-0"



11 BALCONY SILL
3" = 1'-0"

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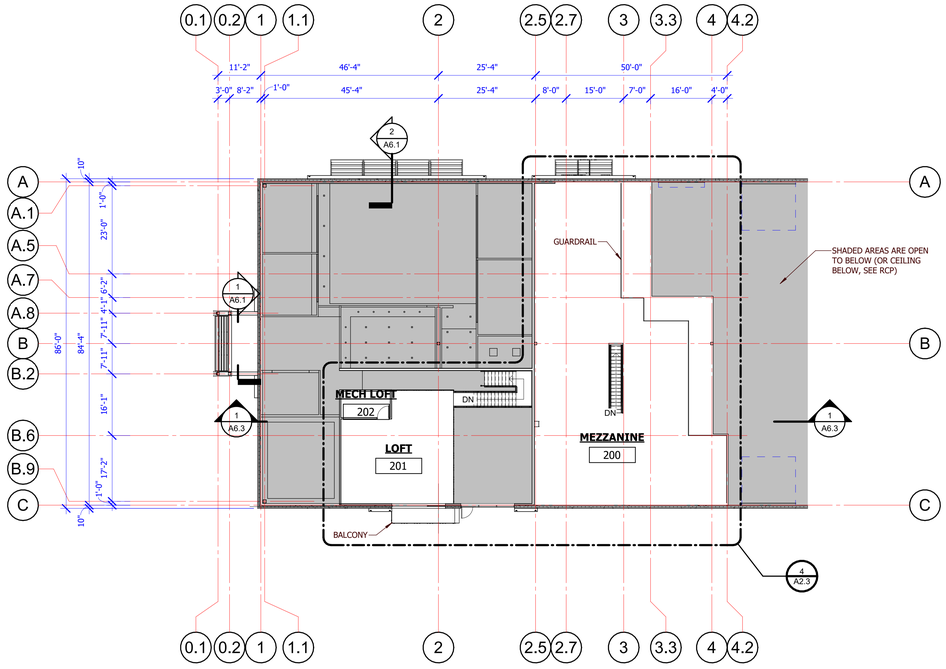
STATE OF ILLINOIS
JOHN F. SWIERK
001-012383
LICENSED ARCHITECT
5/12/2023
Date
11.30.24
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PROJECT MGR.	TPL

PRECAST PANEL & WINDOW DETAILS

A1.3

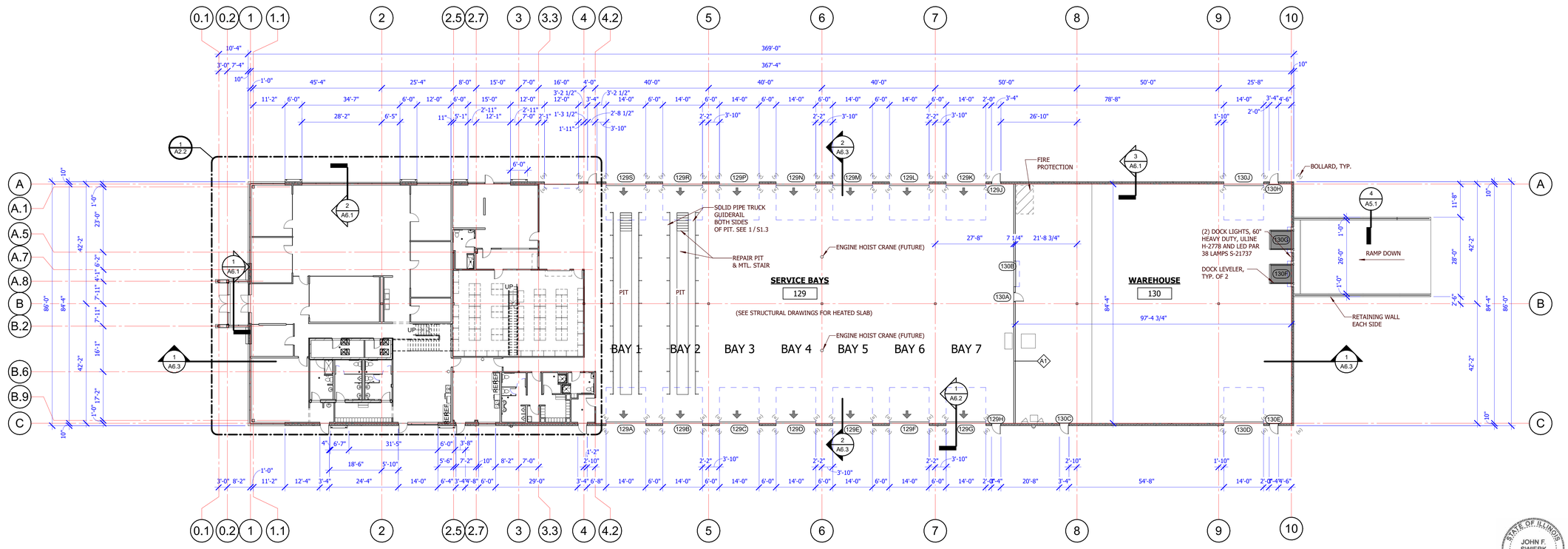
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1 LOFT AND MEZZANINE PLAN

1/16" = 1'-0"





2 FLOOR PLAN

1/16" = 1'-0"



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Signature Date

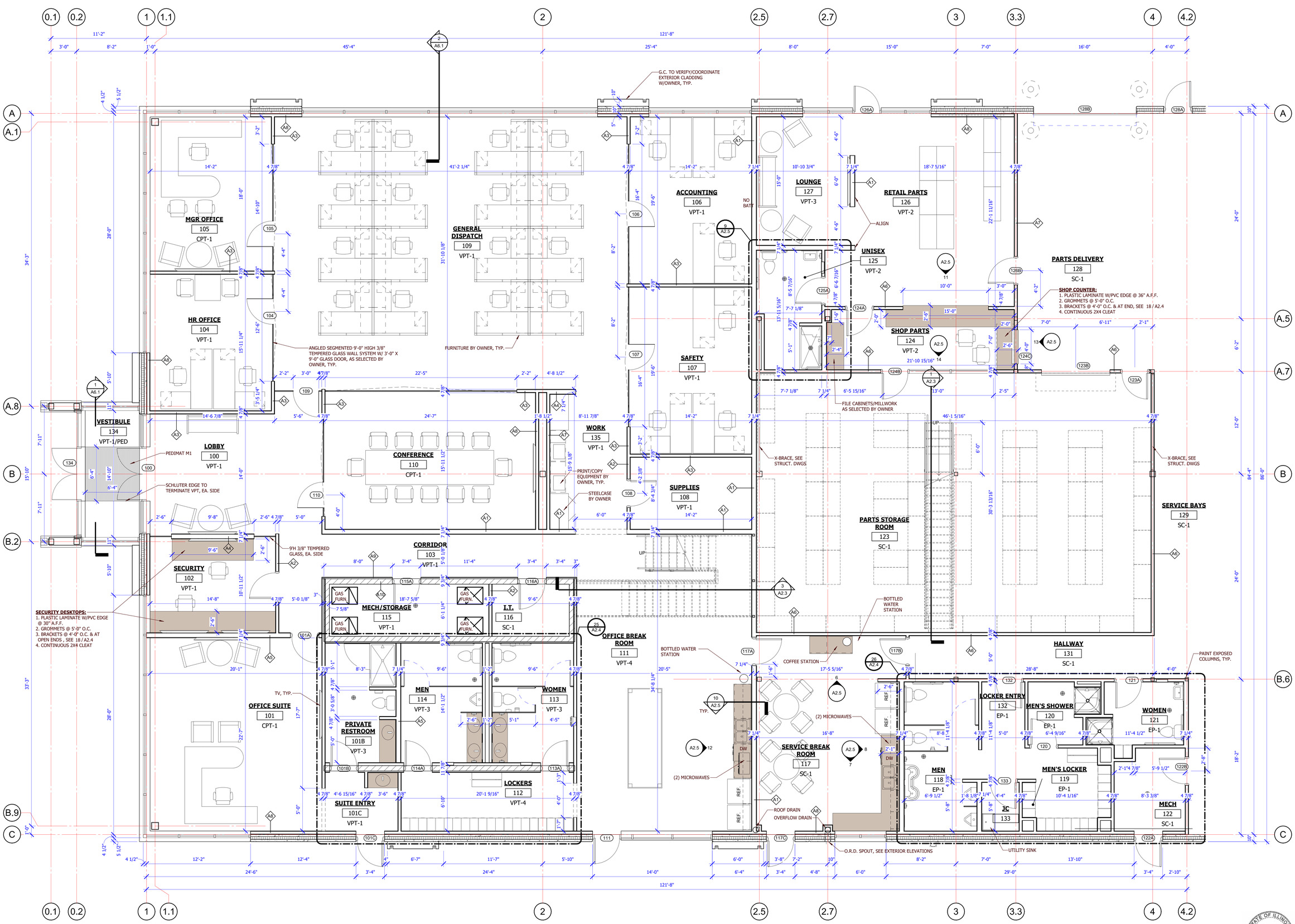
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FLOOR PLAN

A2.1

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1 OFFICE AREA PLAN

1/4" = 1'-0"

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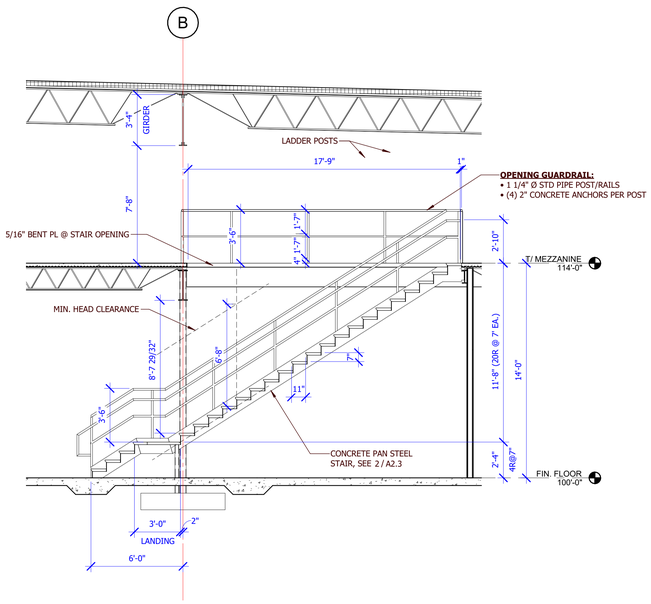
JOHN F. SWIERK 001-012383 LICENSED ARCHITECT
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5/12/2023 Signature Date
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PROJECT NO.	122148
PROJECT MGR.	TPL

OFFICE AREA PLAN

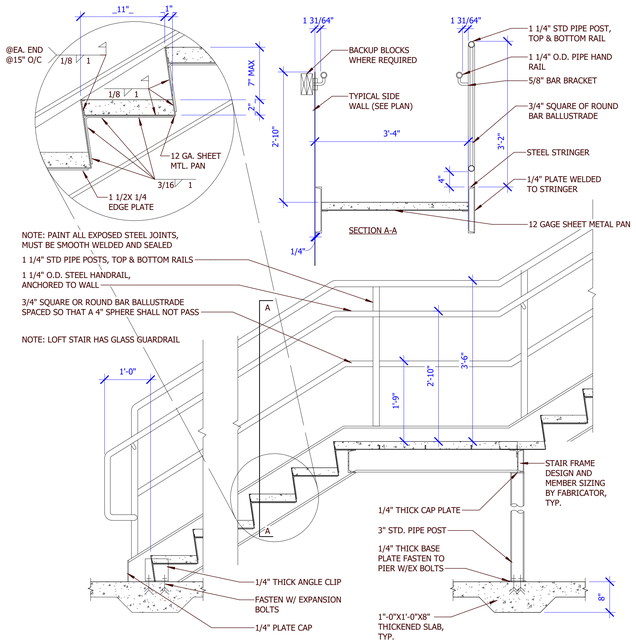
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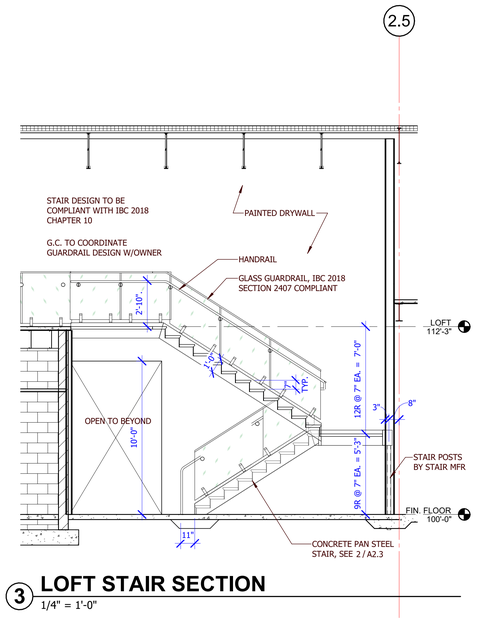
1 MEZZANINE STAIR SECTION

1/4" = 1'-0"



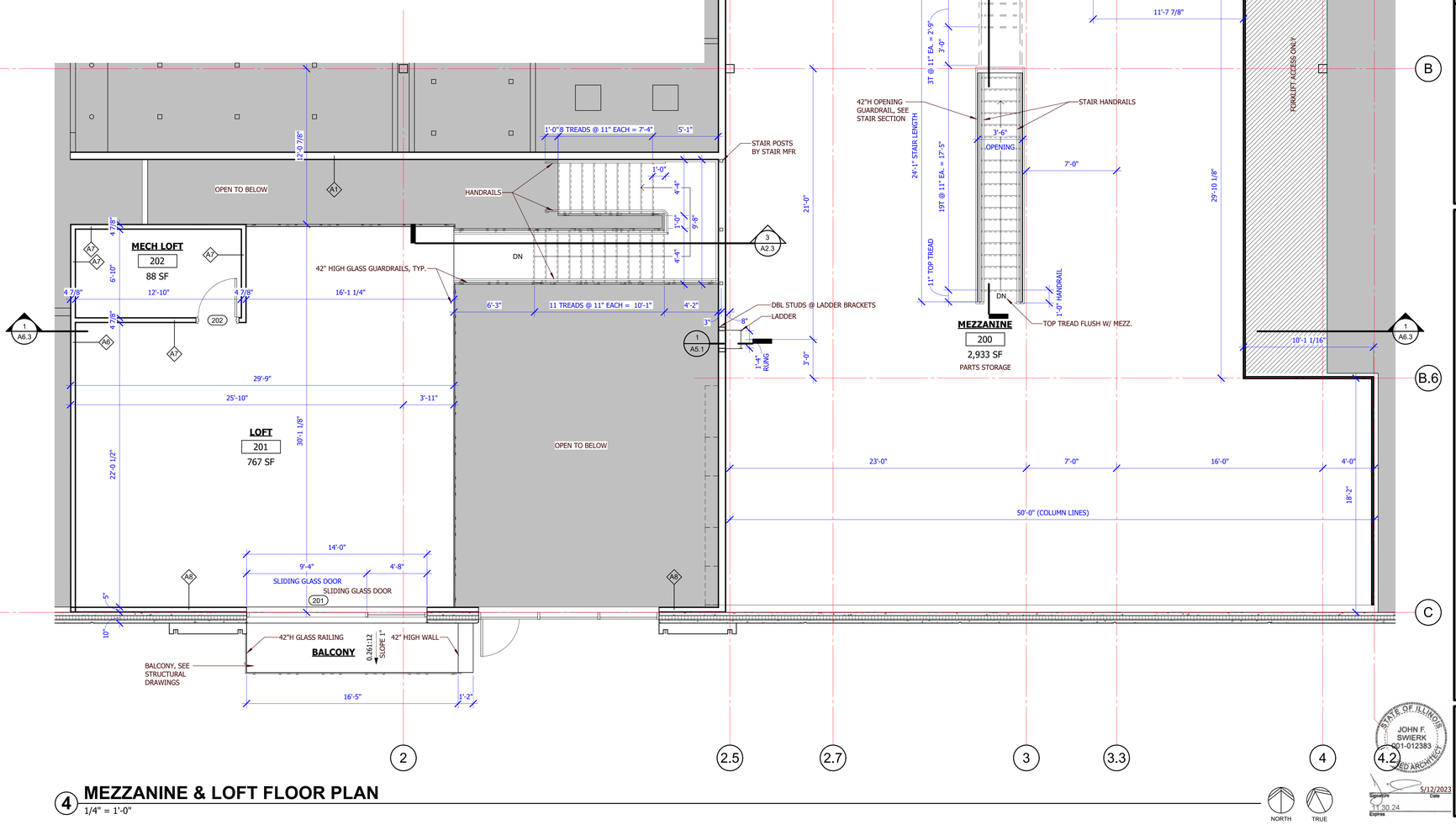
2 CONCRETE PAN STEEL STAIR DETAILS

3/4" = 1'-0"



3 LOFT STAIR SECTION

1/4" = 1'-0"



4 MEZZANINE & LOFT FLOOR PLAN

1/4" = 1'-0"

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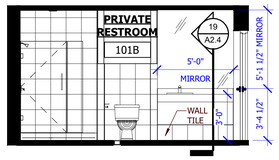
PROJECT NO.	122148
PROJECT MGR.	TPL

MEZZANINE, LOFT, & STAIR PLANS

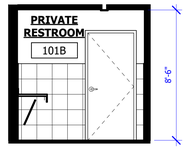
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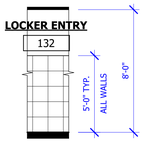
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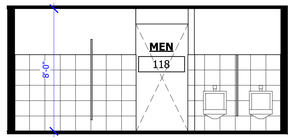
1 PRIV. RR 101B EAST
1/4" = 1'-0"



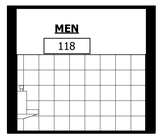
2 PRIV. RR 101B SOUTH
1/4" = 1'-0"



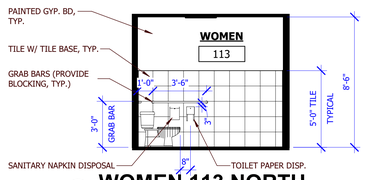
3 LOCKER ENT. 121
1/4" = 1'-0"



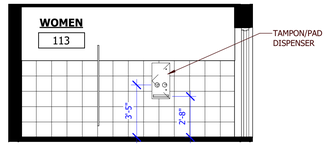
4 MEN 118 EAST
1/4" = 1'-0"



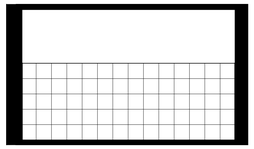
5 MEN 118 SOUTH
1/4" = 1'-0"



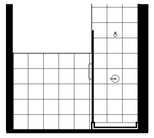
6 WOMEN 113 NORTH
1/4" = 1'-0"



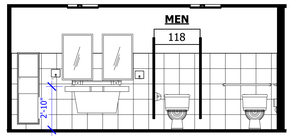
7 WOMEN 113 EAST
1/4" = 1'-0"



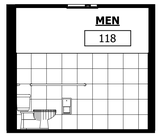
8 PRIV. RR 101B WEST
1/4" = 1'-0"



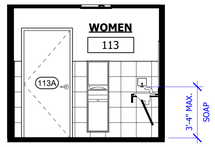
9 PRIV. RR 101B NORTH
1/4" = 1'-0"



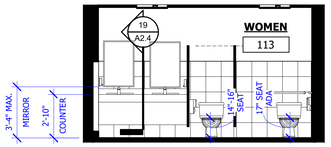
10 MEN 118 WEST
1/4" = 1'-0"



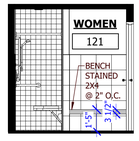
11 MEN 118 NORTH
1/4" = 1'-0"



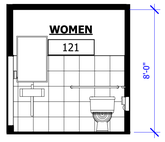
12 WOMEN 113 SOUTH
1/4" = 1'-0"



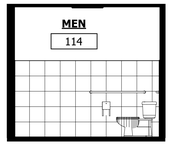
13 WOMEN 113 WEST
1/4" = 1'-0"



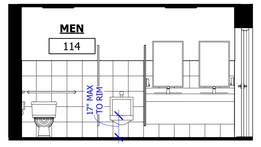
14 WOMEN 123 WEST
1/4" = 1'-0"



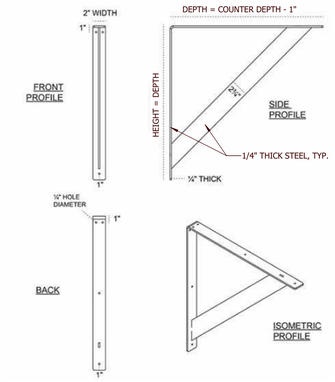
15 WOMEN 123 EAST
1/4" = 1'-0"



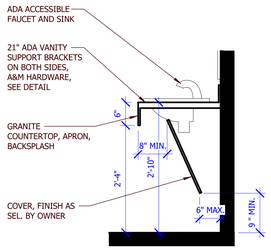
16 MEN 114 NORTH
1/4" = 1'-0"



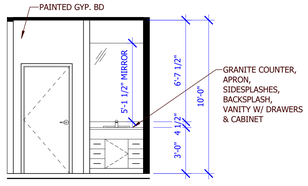
17 MEN 114 EAST
1/4" = 1'-0"



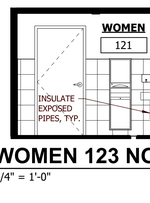
18 COUNTERTOP BRACKET DETAIL
12" = 1'-0"



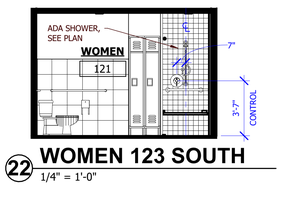
19 LAV SECTION
3/4" = 1'-0"



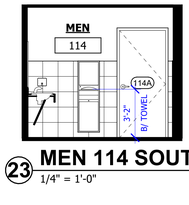
20 PRIVATE SUITE ENTRY
1/4" = 1'-0"



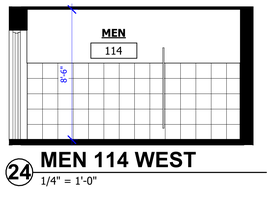
21 WOMEN 123 NORTH
1/4" = 1'-0"



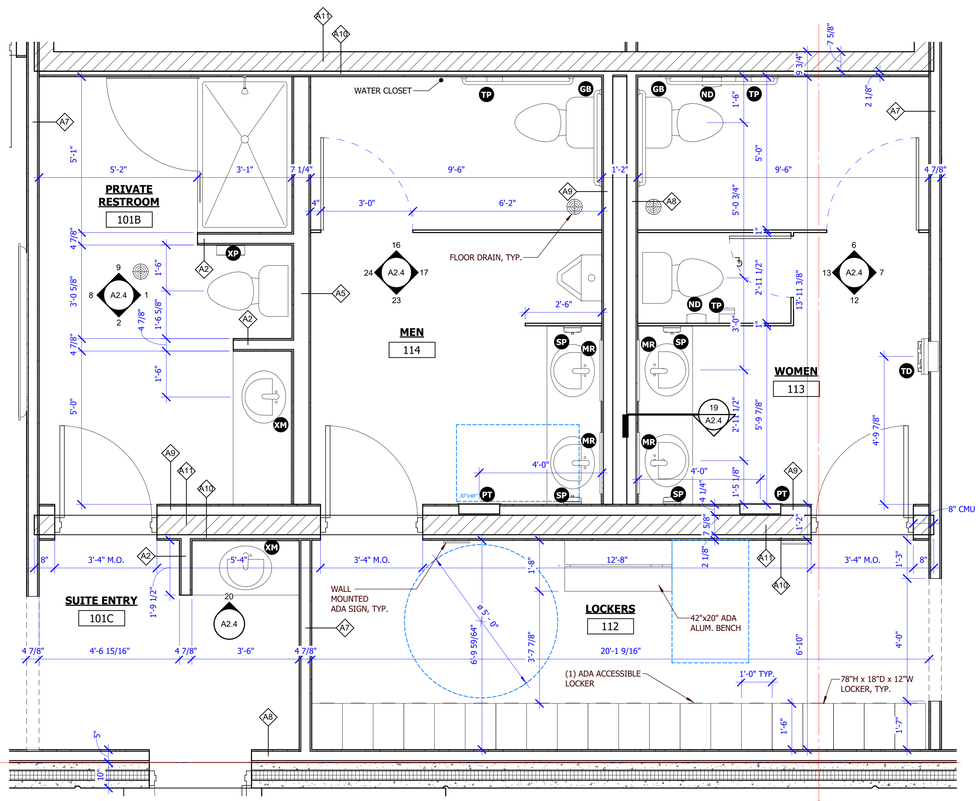
22 WOMEN 123 SOUTH
1/4" = 1'-0"



23 MEN 114 SOUTH
1/4" = 1'-0"

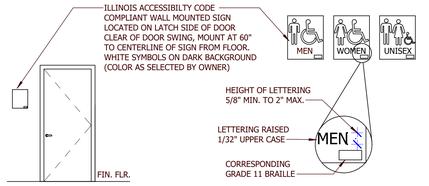


24 MEN 114 WEST
1/4" = 1'-0"



25 OFFICE RESTROOM PLAN
1/2" = 1'-0"

2



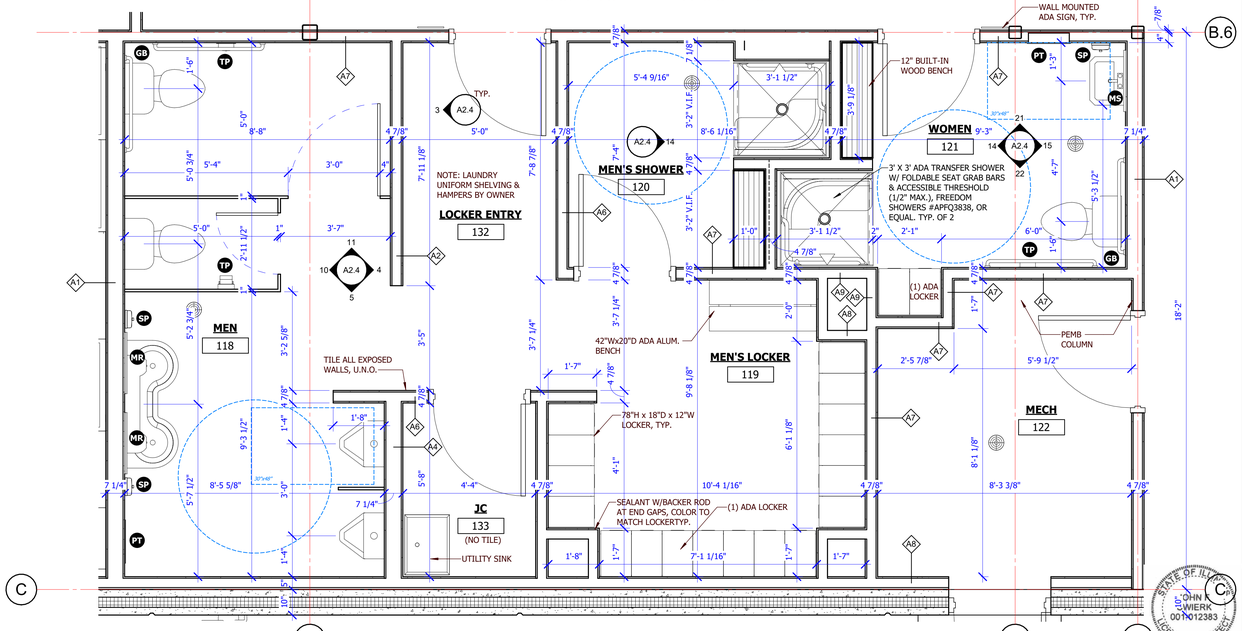
RESTROOM SIGN DETAIL

TOILET ACCESSORIES LEGEND*

- PT — TOWEL DISPENSER W/WASTE RECEPTACLE (BOBRICK B-3940 RECESSED)
- TP — TOILET PAPER DISPENSER (WALLS: BOBRICK B-4388 RECESSED) (PARTITIONS: BOBRICK B-2888 SURFACE MOUNT)
- XP — TOILET PAPER DISPENSER (BOBRICK B-540 SURFACE MOUNT)
- ND — SANITARY NAPKIN DISPOSAL (BOBRICK B-270 SURFACE MOUNT)
- SP — SOAP DISPENSER (BOBRICK B-4112 SURFACE MOUNT)
- TD — TAMPON-PAD DISPENSER SEMI-RECESSED (BOBRICK B-370634 25 CENTS)
- MR — MIRROR 24X36 (BOBRICK B-2908)
- MS — MIRROR W/ SHELF 24X36 (BOBRICK B-292 2436)
- XM — CUSTOM MIRROR 1/4" SAFETY GLASS, FULL WIDTH AND HEIGHT, SEE INT. ELEVATIONS
- GB — 3-PC GRAB BARS W/ CONCEALED FASTENERS (BOBRICK B-5806 X 18", 36", & 42")

*ALL ACCESSORIES ARE STAINLESS STEEL UNLESS NOTED OTHERWISE. INSTALLED ACCESSORIES TO COMPLY WITH ILLINOIS ACCESSIBILITY CODE.

RESTROOM NOTES:
1. FINISHES ARE TYPICAL, U.N.O.
2. MOUNTING HEIGHTS ARE TYPICAL FOR ALL FIXTURES/ACCESSORIES, U.N.O
3. COLORS SELECTED BY OWNER, U.N.O.
4. INSTALL BACKER BOARDS AND BLOCKING AS REQUIRED FOR FIXTURES, GRAB BARS, AND SHOWERS, TYP.



3 4 4.2

26 SERVICE RESTROOM PLAN
1/2" = 1'-0"

NORTH TRUE

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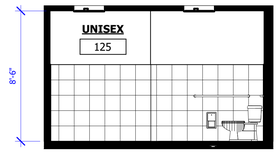
PROJECT NO.	122148
PROJECT MGR.	TPL

TOILET PLANS AND ELEVATIONS

A2.4

STATE OF ILLINOIS — JOHN WIERK 001012383 — LICENSED ARCHITECT
5/12/2023 (Signature / Date)
11.30.24 (Expires)

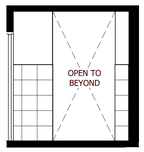
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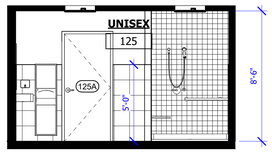
1 UNISEX WEST
1/4" = 1'-0"



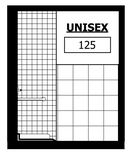
2 UNISEX NORTH
1/4" = 1'-0"



3 UNISEX SOUTH WING WALL
1/4" = 1'-0"

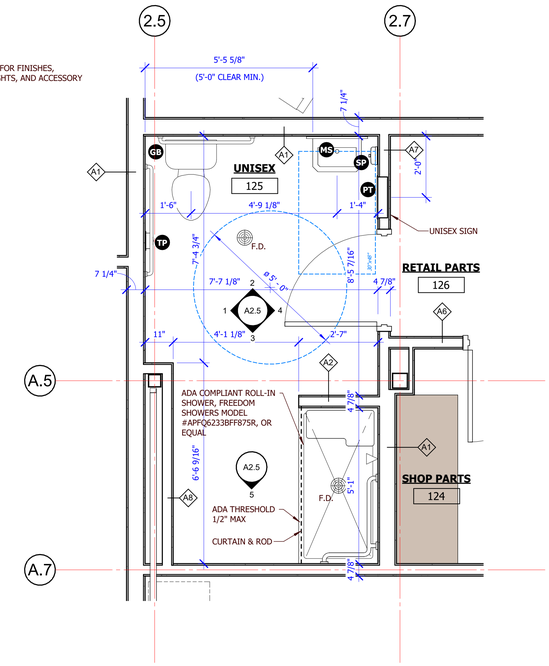


4 UNISEX EAST
1/4" = 1'-0"



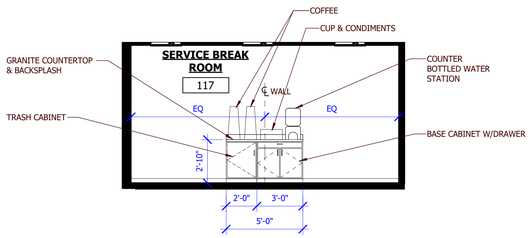
5 UNISEX SOUTH
1/4" = 1'-0"

NOTE:
SEE SHEET A2.4 FOR FINISHES, MOUNTING HEIGHTS, AND ACCESSORY SCHEDULE

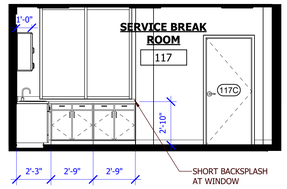


9 UNISEX RESTROOM PLAN
1/2" = 1'-0"

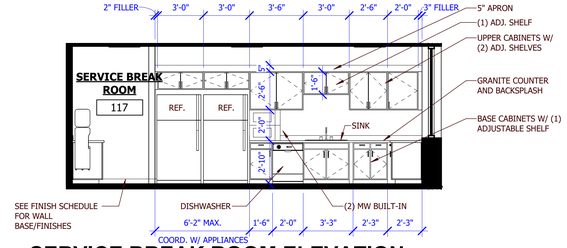
NORTH TRUE



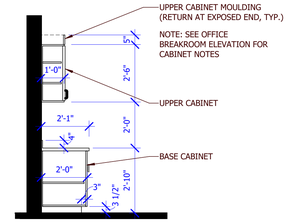
6 SERVICE BREAK ROOM NORTH
1/4" = 1'-0"



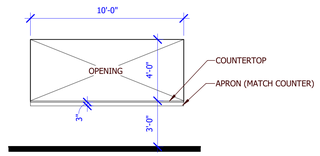
7 SERVICE BREAK ROOM SOUTH
1/4" = 1'-0"



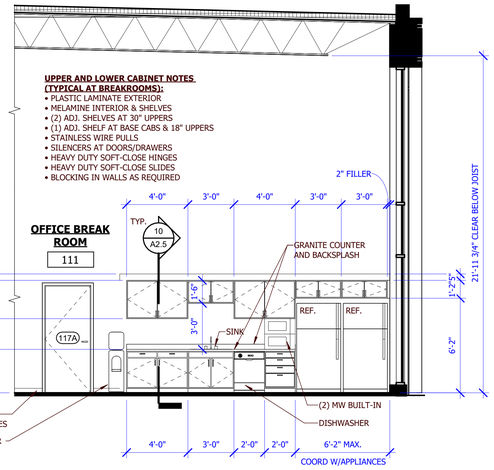
8 SERVICE BREAK ROOM ELEVATION
1/4" = 1'-0"



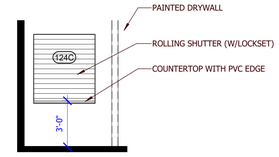
10 TYPICAL CABINET SECTION
3/8" = 1'-0"



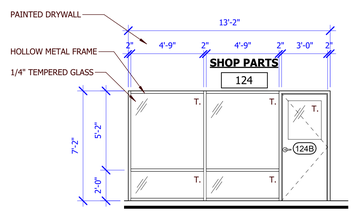
11 RETAIL PARTS OPENING
1/4" = 1'-0"



12 OFFICE BREAK ROOM ELEVATION
1/4" = 1'-0"



13 SHOP PARTS SHUTTER
1/4" = 1'-0"



14 SHOP PARTS WINDOW
1/4" = 1'-0"

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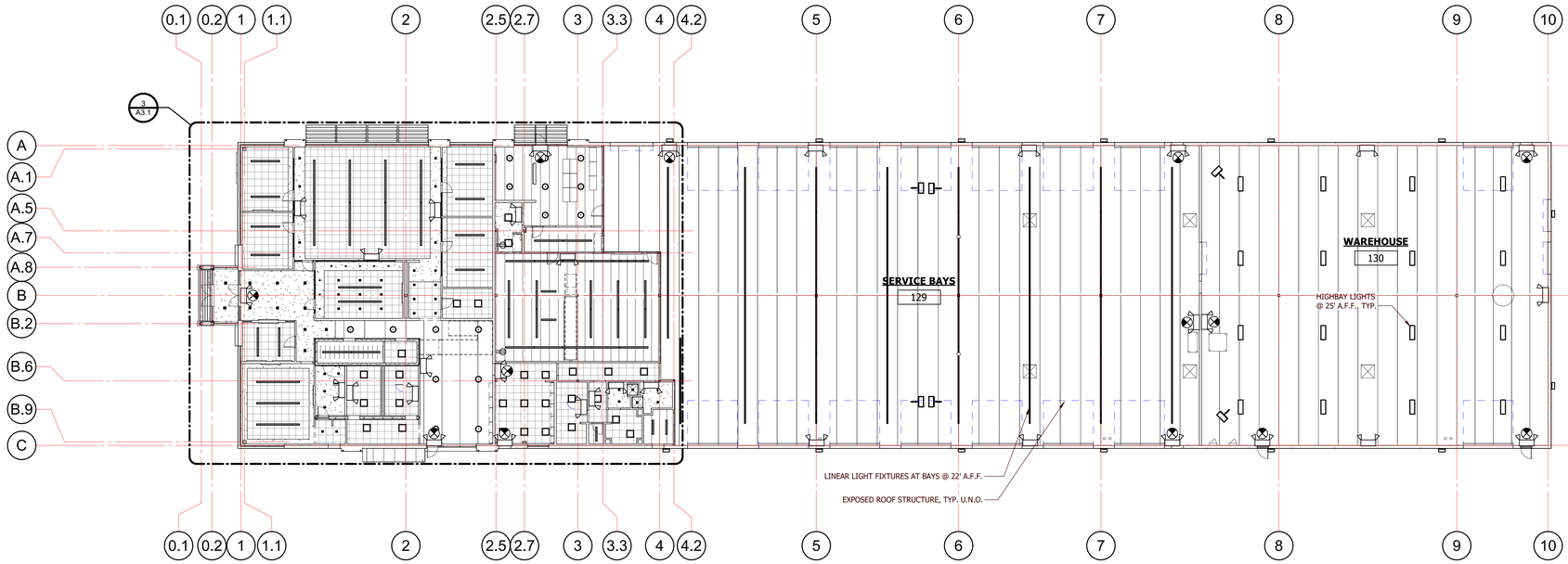
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ENLARGED PLANS AND ELEVATIONS	
A2.5	

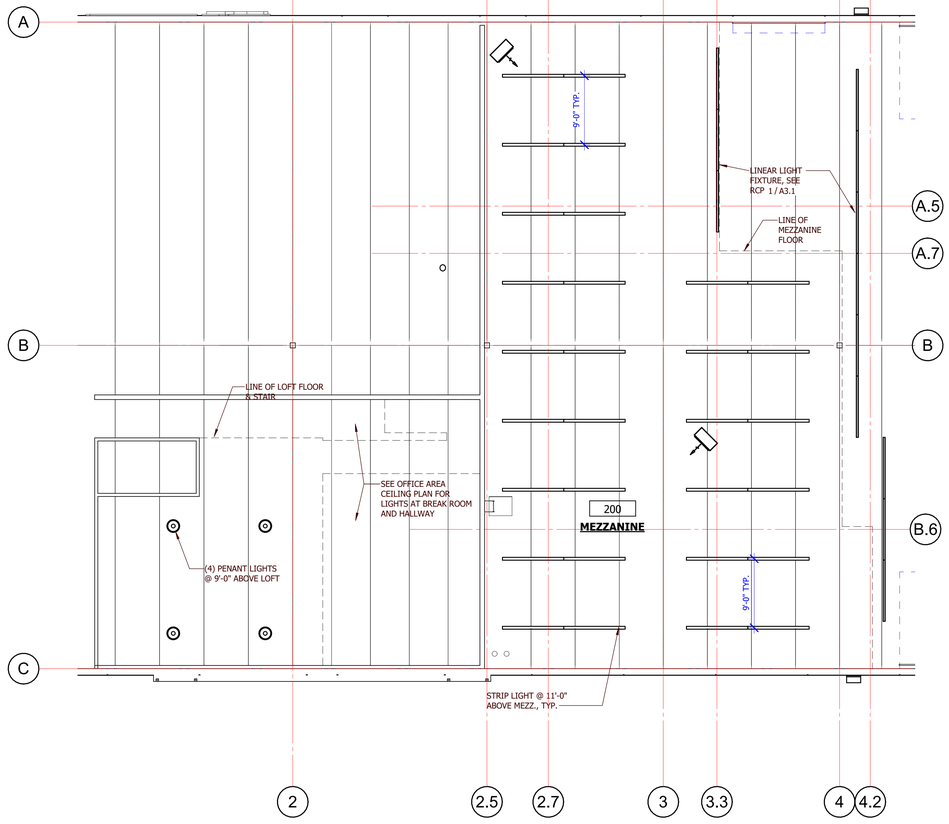
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NOTES:
- SEE ELECTRICAL DRAWINGS FOR LIGHT FIXTURES, LIGHT FIXTURE SELECTION IS BY OWNER, GC TO VERIFY SELECTION W/OWNER.
- SEE FINISH SCHEDULE FOR CEILING FINISHES.

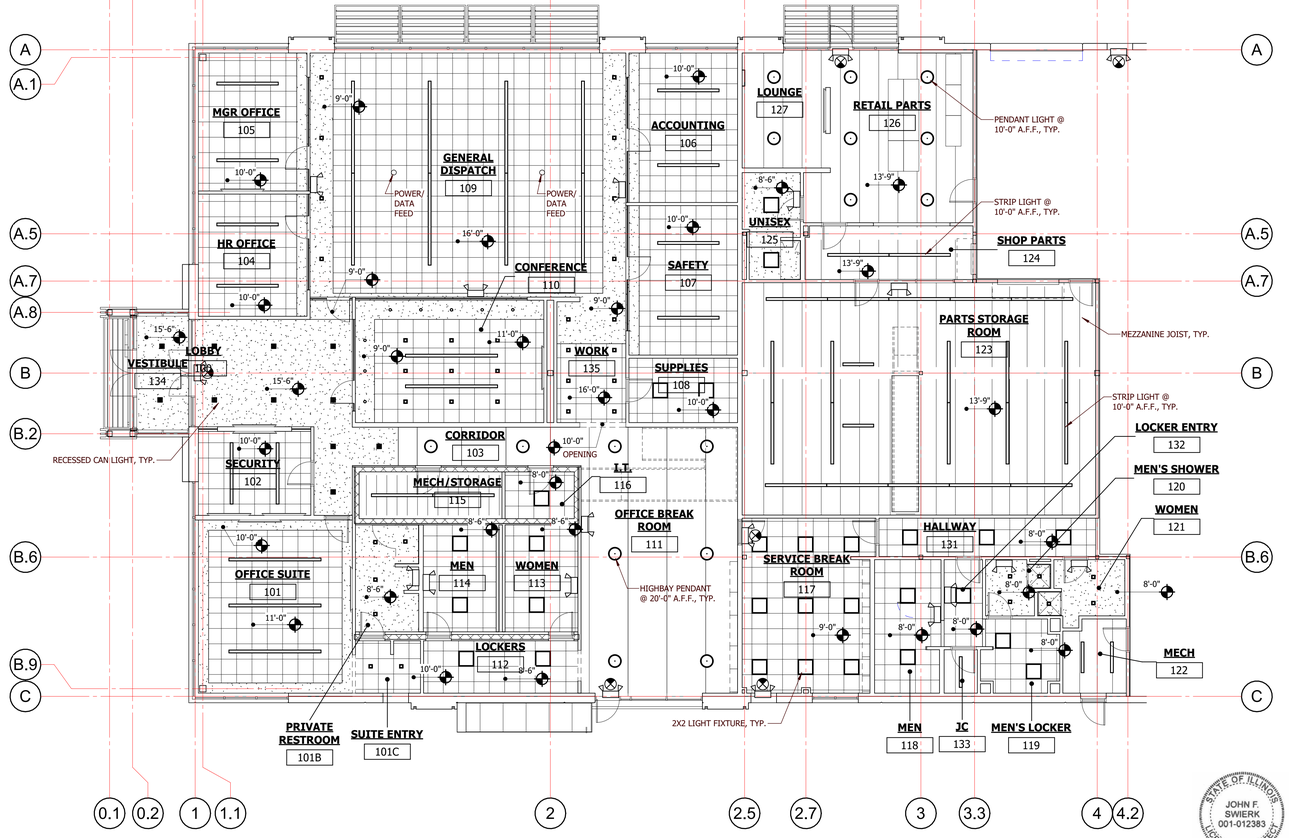


1 REFLECTED CEILING PLAN
1/16" = 1'-0"

NORTH TRUE NORTH



2 MEZZANINE CEILING PLAN
1/8" = 1'-0"



3 OFFICE AREA CEILING PLAN
1/8" = 1'-0"

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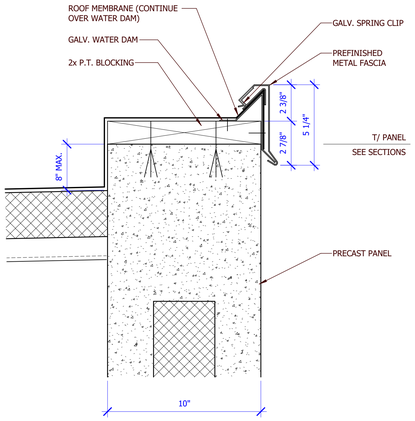
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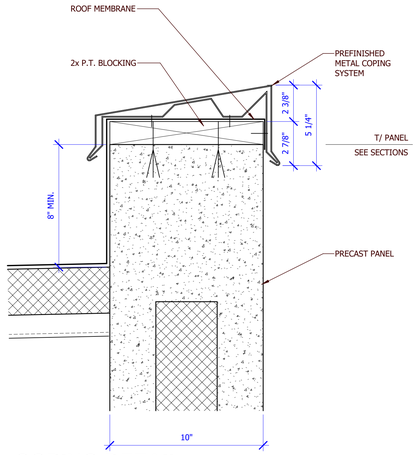
PROJECT NO.	122148
PROJECT MGR.	TPL
REFLECTED CEILING PLAN	

A3.1

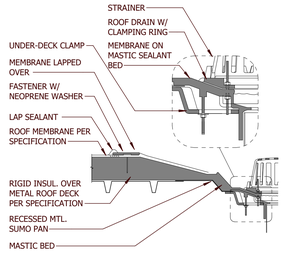
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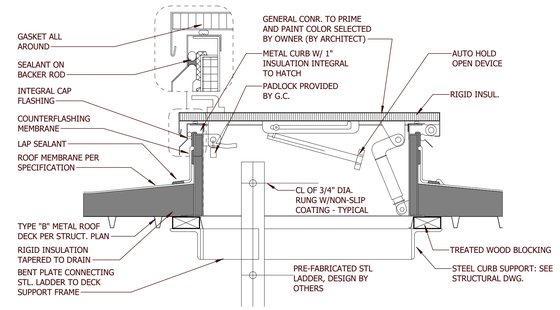
1 ROOF EDGE DETAIL
3" = 1'-0"



2 COPING DETAIL
3" = 1'-0"

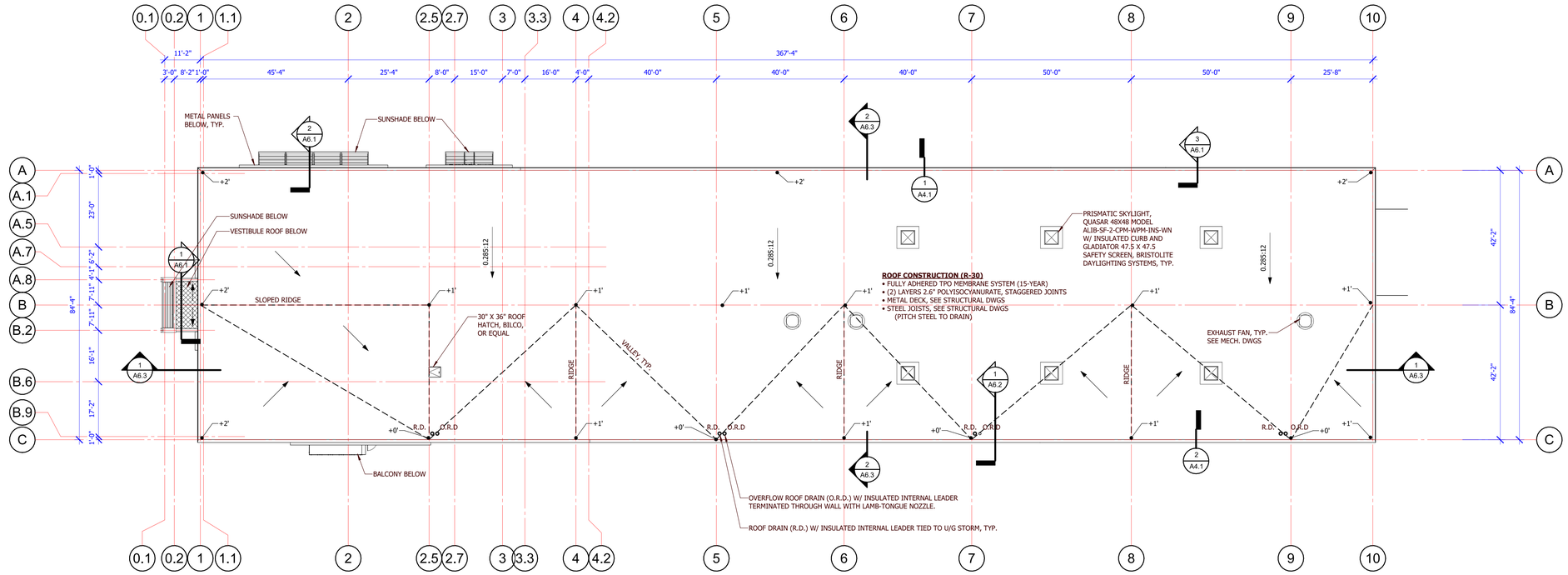


3 ROOF DRAIN DETAIL
1 1/2" = 1'-0"



4 ROOF HATCH FLASHING DETAIL
1 1/2" = 1'-0"

ROOF DRAIN CALCULATION
2018 IBC (REF. IPC)
3.25" PER HOUR
10,500 SF PER DRAIN
1/12 FT X 10,500 SF = 875 CU FT (FOR 1")
875 CU FT X 3.25" = 2844 CU FT PER HOUR = 48 CU FT PER MIN
48 CU FT X 7.48 GAL PER CU FT = 360 GPM
8" ROOF DRAIN REQUIRED



5 ROOF PLAN
1/16" = 1'-0"

NORTH TRUE

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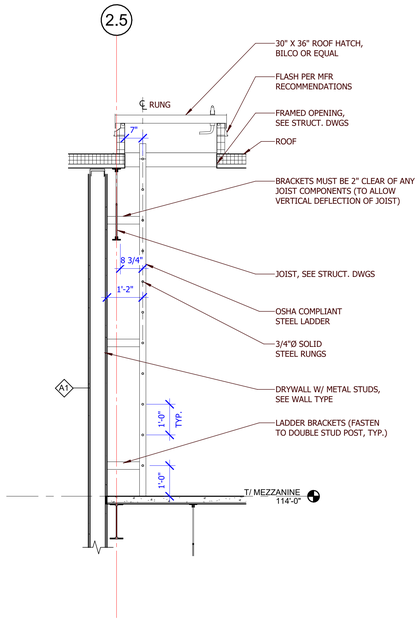
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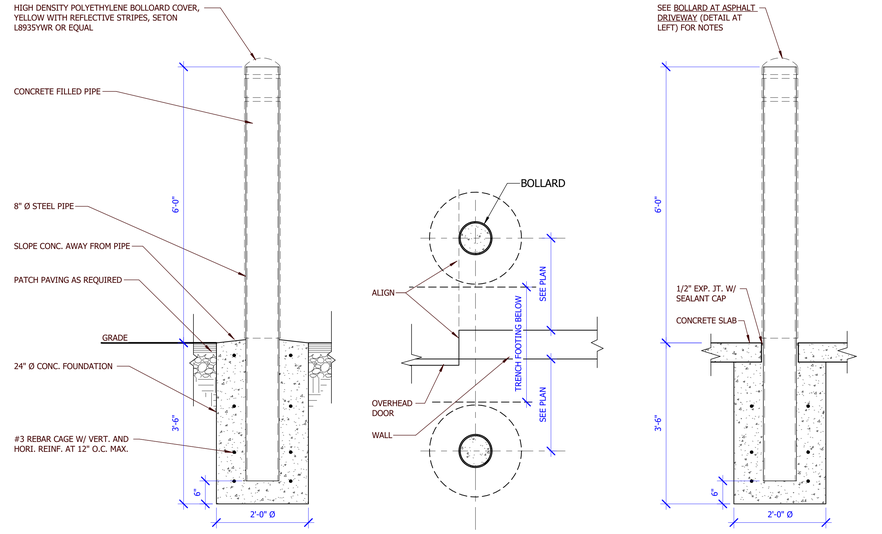
ROOF PLAN

A4.1

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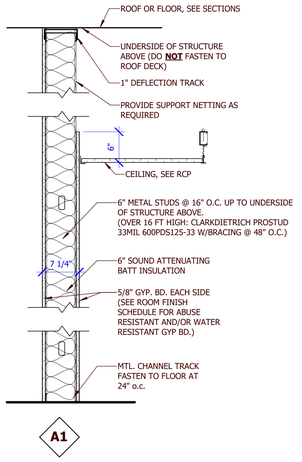


1 LADDER SECTION
1/2" = 1'-0"

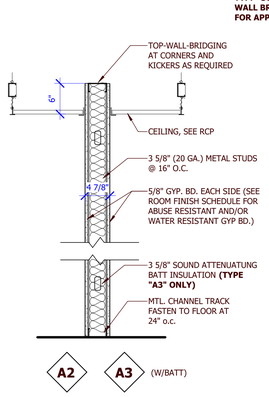


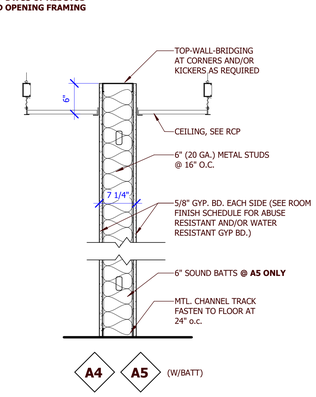
BOLLARD AT ASPHALT DRIVEWAY | **PLAN VIEW AT O.H. DOOR** | **BOLLARD AT CONCRETE SLAB**

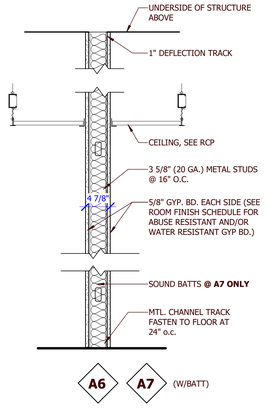
2 BOLLARD DETAILS
3/4" = 1'-0"

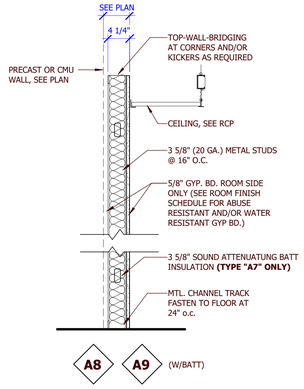


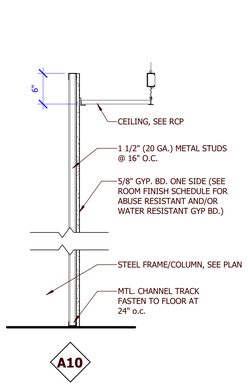
NOTE: BOX HEADERS AND LT GA. POSTS AT ALL OPENINGS GREATER THAN 6 FT., TYP. - SUBMIT SHOP DWGS OF ALL STUD WALL BRACING AND OPENING FRAMING FOR APPROVAL

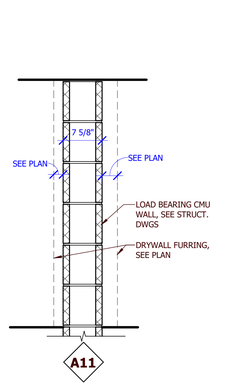




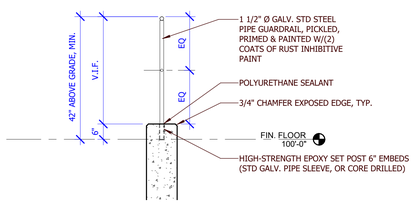




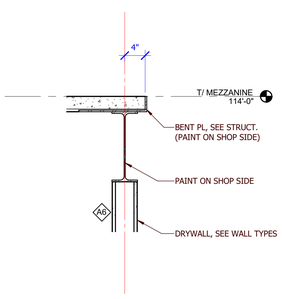




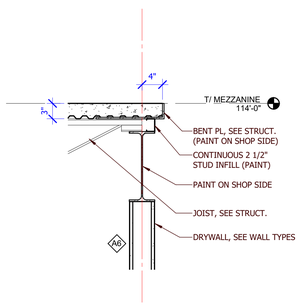
3 WALL TYPES
1" = 1'-0"



4 RAMP GUARDRAIL DETAIL
1/2" = 1'-0"



5 MEZZ. EDGE DETAIL
1" = 1'-0"



6 MEZZ EDGE JOIST INFILL DETAIL
1" = 1'-0"

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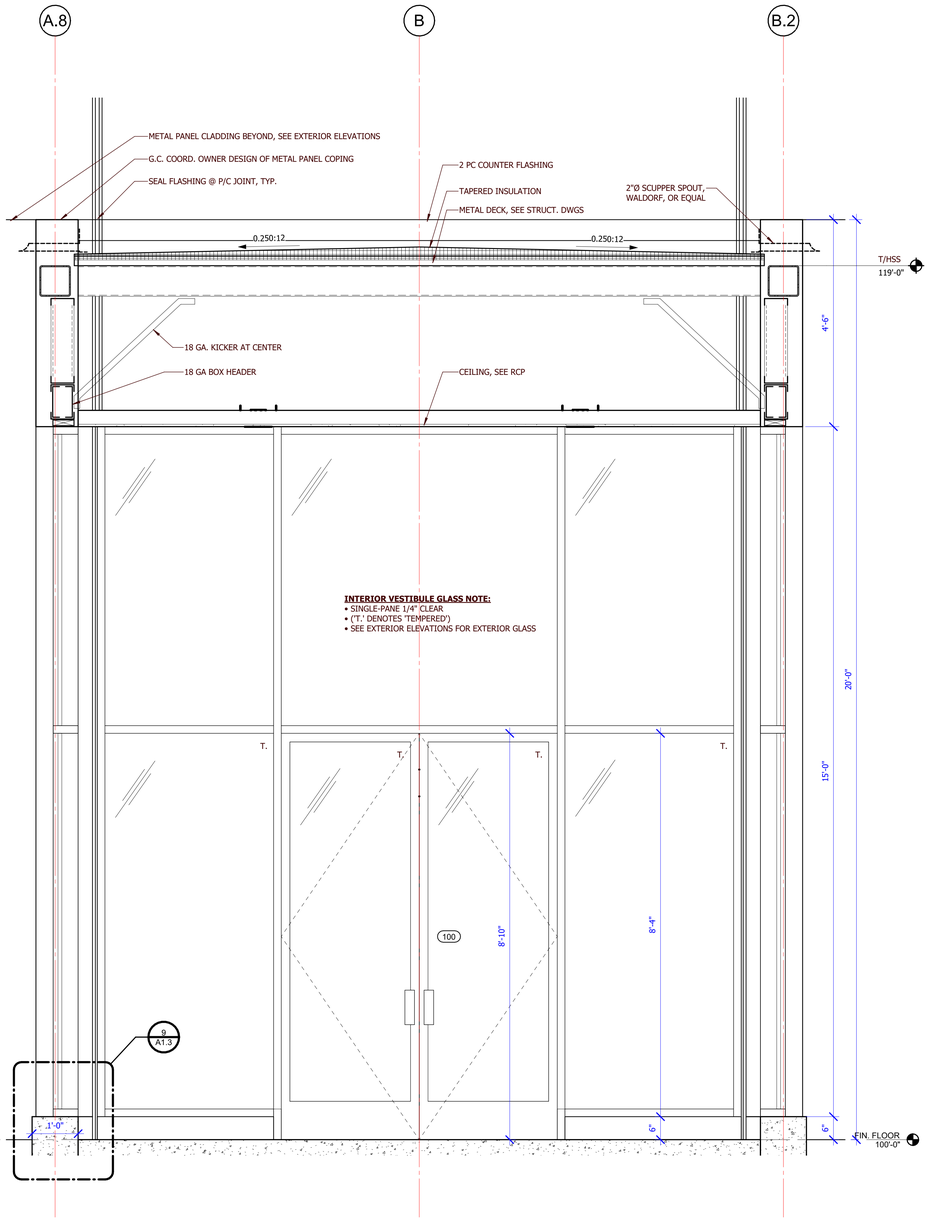
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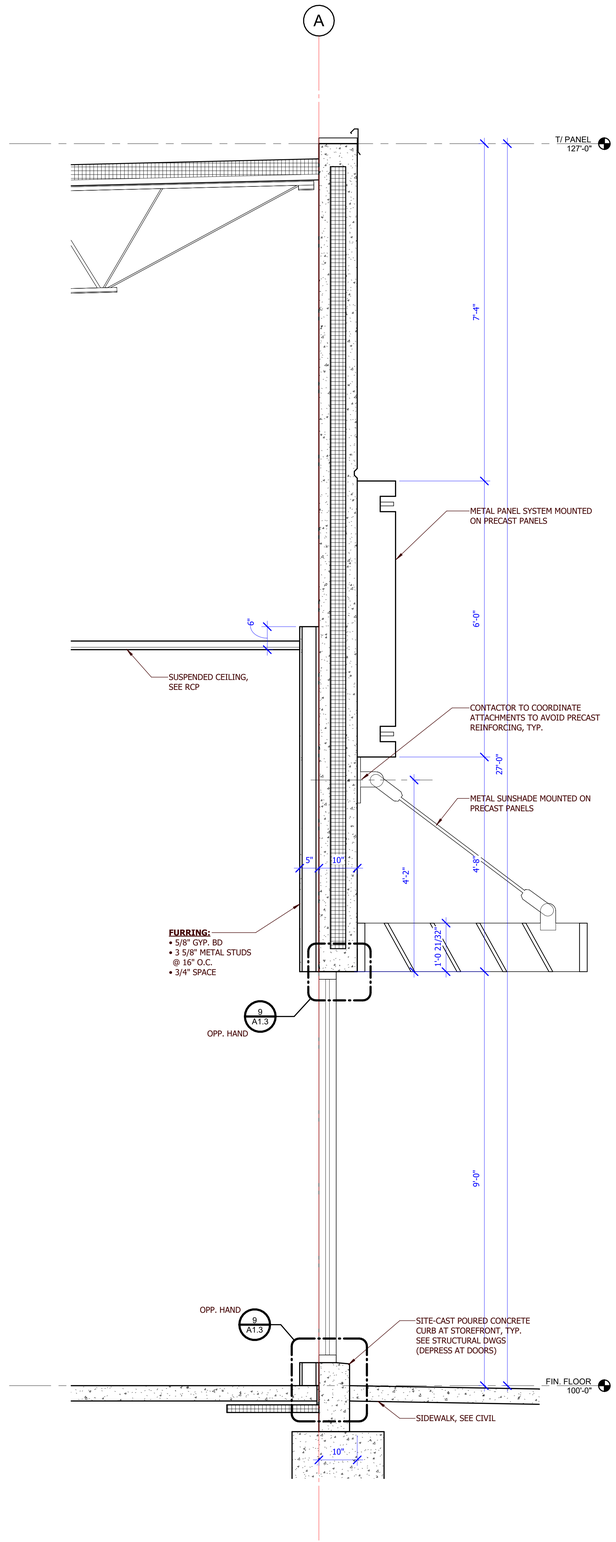
WALL TYPES, LADDER, AND BOLLARD DETAILS

A5.1

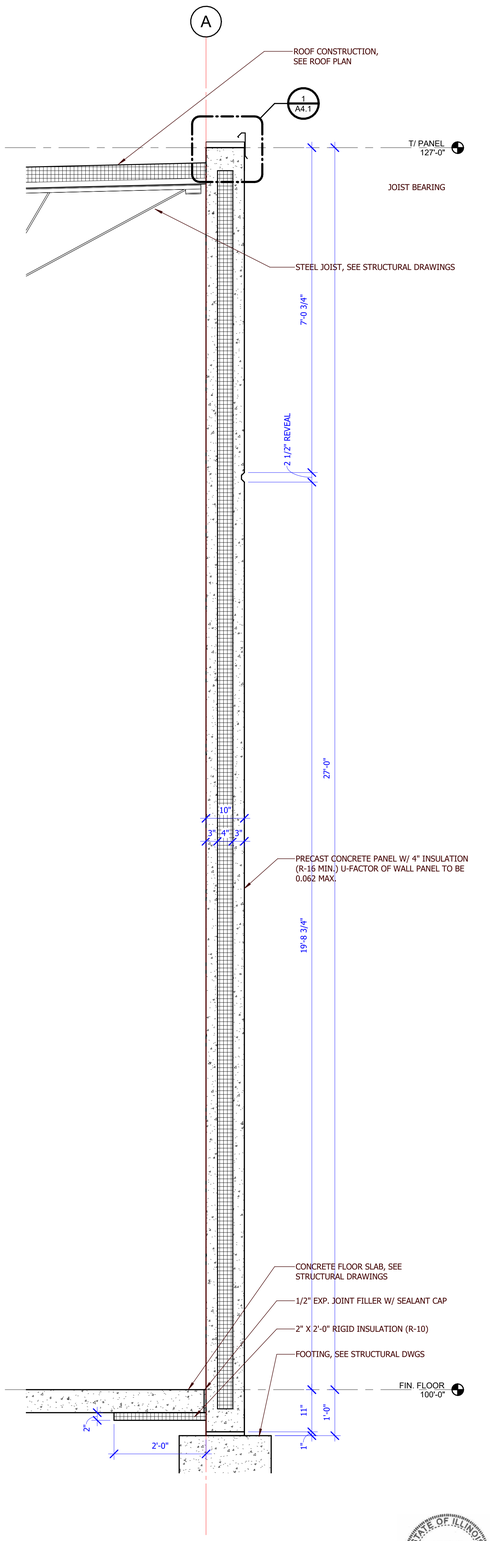
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1 VESTIBULE SECTION
3/4" = 1'-0"



2 STOREFRONT WALL SECTION
3/4" = 1'-0"



3 TYPICAL WALL SECTION
3/4" = 1'-0"

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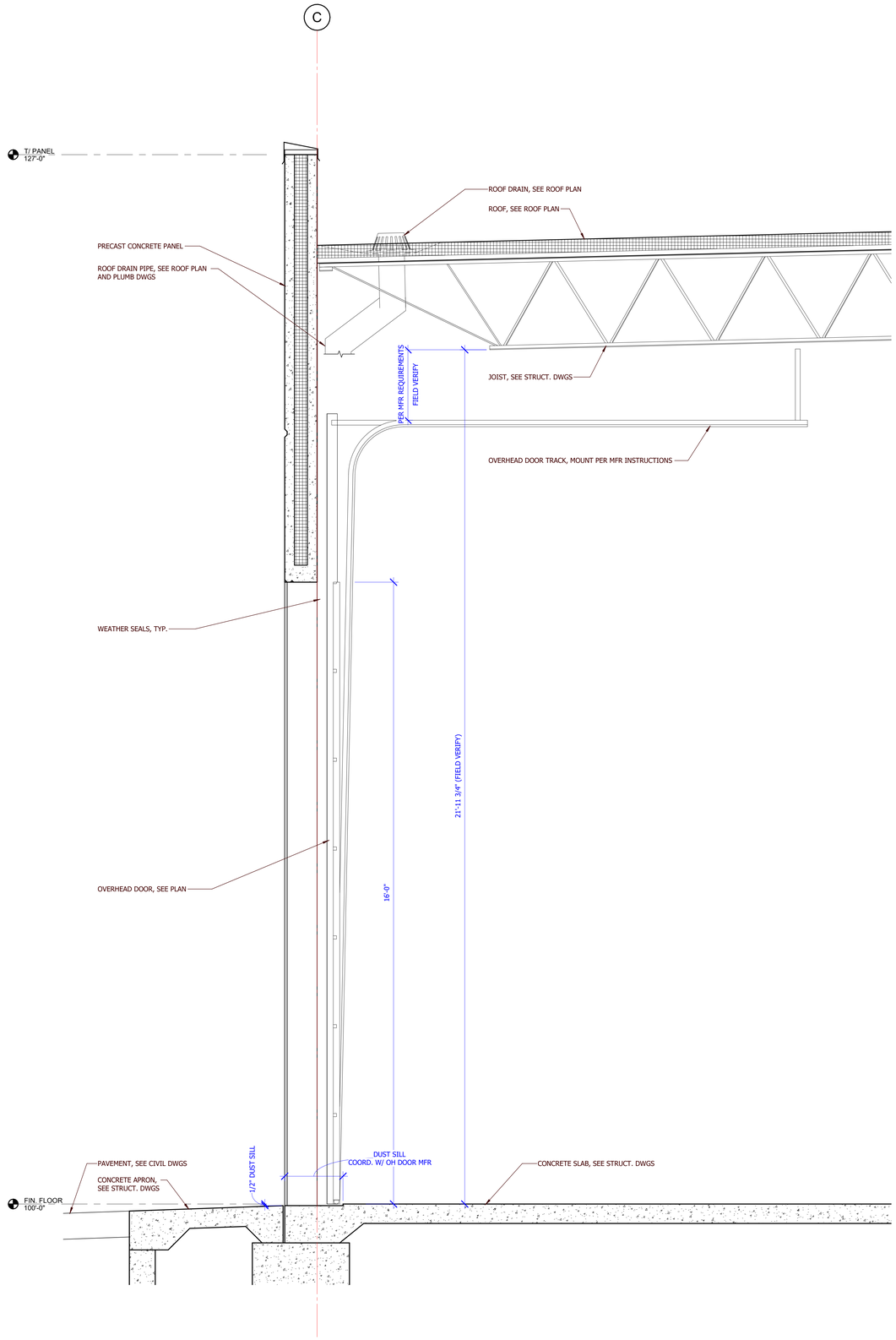
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WALL SECTIONS

A6.1

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1 WALL SECTION @ OVERHEAD DOOR

3/4" = 1'-0"

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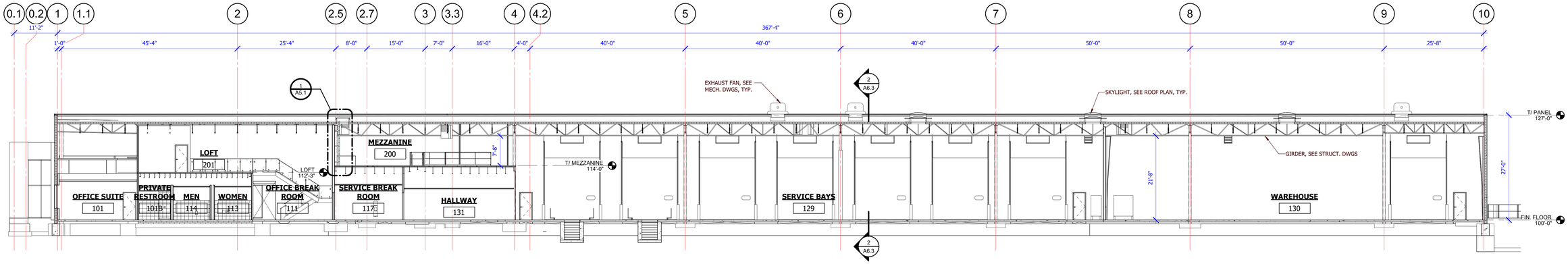
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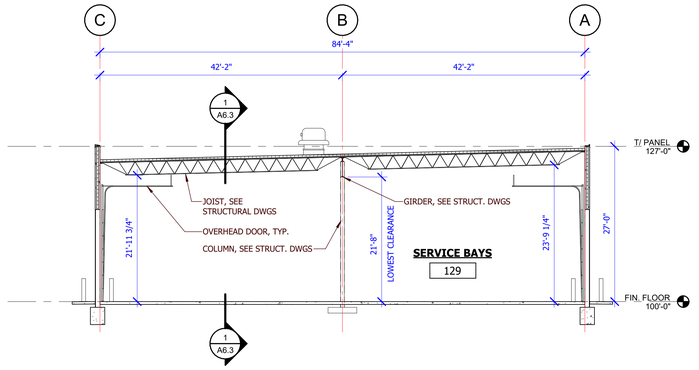
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PROJECT MGR.	TPL
WALL SECTIONS	
A6.2	

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1 BUILDING SECTION 1

3/32" = 1'-0"



2 BUILDING SECTION 2

3/32" = 1'-0"

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BUILDING SECTIONS	
A6.3	

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DOOR NOTES

1. PROVIDE DETECTABLE WARNING (KNURLED HARDWARE) AT ALL DOORS TO HAZARDOUS AREAS INCLUDING BUT NOT LIMITED TO JANITOR CLOSET, MECHANICAL & ELECTRICAL ROOMS, IN ACCORDANCE WITH ANSI.

2. DOOR HANDLES, PULLS, LATCHES, LOCKS AND OTHER DEVICES SHALL BE AT A MIN. HEIGHT OF 34" AND A MAX. OF 48" ABOVE FINISHED FLOOR. THE OPERATING DEVICE SHALL BE CAPABLE OF OPERATION WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, TIGHT PINCHING, OR TWISTING OF THE WRIST TO OPERATE.

3. PER IBC 2018 1010.1.3: THE FORCE FOR PUSHING OR PULLING OPEN INTERIOR SWINGING DOORS, OTHER THAN FIRE DOORS, SHALL NOT EXCEED 5 POUNDS (22 N). FOR OTHER SWINGING DOORS, AS WELL AS SLIDING AND FOLDING DOORS, THE DOOR LATCH SHALL RELEASE WHEN SUBJECTED TO A 15-POUND (67 N) FORCE. THE DOOR SHALL BE SET IN MOTION WHEN SUBJECTED TO A 30-POUND (133 N) FORCE. THE DOOR SHALL SWING TO A FULL-OPEN POSITION WHEN SUBJECTED TO A 15-POUND (67 N) FORCE.

4. GLAZING IN DOORS SHALL BE TEMPERED.

5. ALL EXTERIOR HOLLOW METAL DOORS AND FRAMES ARE TO BE GALVANIZED.

6. ALL DOORS ARE TO HAVE REMOVABLE CYLINDERS IN ORDER TO BE KEYED TO OWNER'S EXISTING MASTER KEY SET.

7. ALL DOORS TO HAVE 10" VERTICAL SMOOTH SURFACE AT BOTTOM ON PUSH SIDE PER ANSI 117.1 404.2.9

8. PROVIDE GLASS SAFETY STICKERS OR OTHER SUCH PATTERNS ON FRAMELESS GLASS TO MAKE GLASS VISIBLE AS RECOMMEDED BY THE FRAMELESS GLASS MFR.

FRAME TYPES

NOTE: SEE DOOR SCHEDULE FOR OVERALL DOOR DIMENSIONS



DOOR SCHEDULE

		DOOR					FRAME								ELECTRIC STRIKE		
3D	QTY	TYPE	WIDTH	HEIGHT	THICKNESS	MAT'L.	TYPE	JAMB	HEAD	SILL	MAT'L.	FUNCTION	FROM ROOM	TO ROOM	HDW. SET	READER INSIDE	READER OUTSIDE	REMARKS
100	1	C	6'-0"	8'-10"	1 3/4"	ALUM	PER MFR	-	-	S3	ALUM	INT	LOBBY	VESTIBULE	11	No	No	
101A	1	A	3'-0"	7'-0"	1 3/4"	SC	F1	A	B	S1	HM	INT	LOBBY	OFFICE SUITE	6	No	Yes	
101B	1	A	3'-0"	7'-0"	1 3/4"	SC	F1	A	B	S1	HM	INT	SUITE ENTRY	PRIVATE RESTROOM	4	No	No	
101C	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	-	-	S3	HM	EXTERIOR		SUITE ENTRY	5	No	Yes	U-FACTOR 0.400
102	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S1	HM	INT	LOBBY	SECURITY	6	No	Yes	
104	1	A	3'-0"	9'-0"	3/8"	GLASS	PER MFR	-	-	S5	PER MFR	INT	GENERAL DISPATCH	HR OFFICE	PER MFR	No	No	NO LOCK
105	1	A	3'-0"	9'-0"	3/8"	GLASS	PER MFR	-	-	S5	PER MFR	INT	MGR OFFICE	GENERAL DISPATCH	PER MFR	No	Yes	LOCKSET (OFFICE FUNCTION)
106	1	A	3'-0"	9'-0"	3/8"	GLASS	PER MFR	-	-	S5	PER MFR	INT	ACCOUNTING	GENERAL DISPATCH	PER MFR	No	No	NO LOCK
107	1	A	3'-0"	9'-0"	3/8"	GLASS	PER MFR	-	-	S5	PER MFR	INT	SAFETY	GENERAL DISPATCH	PER MFR	No	No	NO LOCK
108	1	C	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S1	HM	INT	WORK	SUPPLIES	6	No	Yes	
109	1	A	3'-0"	9'-0"	3/8"	GLASS	PER MFR	-	-	S5	PER MFR	INT	GENERAL DISPATCH	LOBBY	PER MFR	No	No	NO LOCK
110	1	A	3'-0"	9'-0"	3/8"	GLASS	PER MFR	-	-	S5	PER MFR	INT	CONFERENCE	LOBBY	PER MFR	No	No	NO LOCK
111	1	C	3'-0"	8'-10"	1 3/4"	ALUM	PER MFR	-	-	S3	ALUM	EXTERIOR		OFFICE BREAK ROOM	5	No	Yes	U-FACTOR 0.400
113A	1	A	3'-0"	7'-0"	1 3/4"	SC	F1	A	B	S4	HM	INT	LOCKERS	WOMEN	2	No	No	
114A	1	A	3'-0"	7'-0"	1 3/4"	SC	F1	A	B	S4	HM	INT	LOCKERS	MEN	2	No	No	
115A	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S5	HM	INT	CORRIDOR	MECH/STORAGE	6	No	No	
116A	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S5	HM	INT	CORRIDOR	I.T.	6	No	No	
117A	1	E	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S5	HM	INT	SERVICE BREAK ROOM	OFFICE BREAK ROOM	3	Yes	Yes	
117B	1	E	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S1	HM	INT	HALLWAY	SERVICE BREAK ROOM	2	No	No	
117C	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	-	-	S3	HM	EXTERIOR		SERVICE BREAK ROOM	5	No	Yes	U-FACTOR 0.400
120	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S1	HM	INT	MEN'S SHOWER	MEN'S LOCKER	4	No	No	
121	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S5	HM	INT	WOMEN	HALLWAY	4	No	No	
122A	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	-	-	S3	HM	EXTERIOR		MECH	7	No	No	U-FACTOR 0.400
122B	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S1	HM	INT	SERVICE BAYS	MECH	6	No	Yes	
123A	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S1	HM	INT	PARTS STORAGE ROOM	PARTS DELIVERY	6	No	No	
123B	1	D	8'-0"	8'-0"	2"	PER MFR	PER MFR	J	K	---	PER MFR	INT	PARTS STORAGE ROOM	PARTS DELIVERY	PER MFR	No	No	ROLLING SHUTTER W/LOCKSET
124A	1	E	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S1	HM	INT	SHOP PARTS	RETAIL PARTS	8	No	No	
124B	1	E	3'-0"	7'-0"	1 3/4"	HM	SEE ELEV	A	B	S5	HM	INT	SHOP PARTS	PARTS STORAGE ROOM	6	No	No	
124C	1	D	4'-0"	4'-6"	2"	PER MFR	PER MFR	J	K	---	PER MFR	INT	PARTS DELIVERY	SHOP PARTS	PER MFR	No	No	ROLLING SHUTTER COUNTERTOP W/LOCKSET
125A	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S1	HM	INT	RETAIL PARTS	UNISEX	2	No	No	
126A	1	C	3'-0"	8'-10"	1 3/4"	ALUM	PER MFR	-	-	S3	ALUM	EXTERIOR	RETAIL PARTS		1	No	Yes	U-FACTOR 0380, SGHC 0.38
126B	1	E	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S1	HM	INT	PARTS DELIVERY	RETAIL PARTS	9	No	No	
128A	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	C	D	S3	HM	EXTERIOR		SERVICE BAYS	5	No	Yes	U-FACTOR 0.400
128B	1	B	12'-0"	12'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	PARTS DELIVERY		PER MFR	No	No	U-FACTOR 0.102
129A	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	SERVICE BAYS		PER MFR	No	No	U-FACTOR 0.102
129B	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	SERVICE BAYS		PER MFR	No	No	U-FACTOR 0.102
129C	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	SERVICE BAYS		PER MFR	No	No	U-FACTOR 0.102
129D	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	SERVICE BAYS		PER MFR	No	No	U-FACTOR 0.102
129E	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	SERVICE BAYS		PER MFR	No	No	U-FACTOR 0.102
129F	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	SERVICE BAYS		PER MFR	No	No	U-FACTOR 0.102
129G	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	SERVICE BAYS		PER MFR	No	No	U-FACTOR 0.102
129H	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	C	D	S3	HM	EXTERIOR	SERVICE BAYS		5	No	Yes	U-FACTOR 0.400
129J	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	C	D	S3	HM	EXTERIOR		SERVICE BAYS	5	No	Yes	U-FACTOR 0.400
129K	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	SERVICE BAYS		PER MFR	No	No	U-FACTOR 0.102
129L	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	SERVICE BAYS		PER MFR	No	No	U-FACTOR 0.102
129M	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	SERVICE BAYS		PER MFR	No	No	U-FACTOR 0.102
129N	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	SERVICE BAYS		PER MFR	No	No	U-FACTOR 0.102
129P	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	SERVICE BAYS		PER MFR	No	No	U-FACTOR 0.102
129R	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	SERVICE BAYS		PER MFR	No	No	U-FACTOR 0.102
129S	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	SERVICE BAYS		PER MFR	No	No	U-FACTOR 0.102
130A	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	C	D	S1	HM	INT	SERVICE BAYS	WAREHOUSE	5	No	No	
130B	1	B	9'-0"	10'-0"	2"	PER MFR	PER MFR	E	F	---	PER MFR	INT	WAREHOUSE	SERVICE BAYS	PER MFR	No	No	
130C	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	C	D	S3	HM	EXTERIOR	WAREHOUSE		5	No	Yes	U-FACTOR 0.400
130D	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	WAREHOUSE		PER MFR	No	No	U-FACTOR 0.102
130E	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	C	D	S3	HM	EXTERIOR	WAREHOUSE		5	No	Yes	U-FACTOR 0.400
130F	1	B	9'-0"	10'-0"	2"	PER MFR	PER MFR	E	F	---	PER MFR	EXTERIOR	WAREHOUSE		PER MFR	No	No	DOCK, U-FACTOR 0.102
130G	1	B	9'-0"	10'-0"	2"	PER MFR	PER MFR	E	F	---	PER MFR	EXTERIOR	WAREHOUSE		PER MFR	No	No	DOCK, U-FACTOR 0.102
130H	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	C	D	S3	HM	EXTERIOR		WAREHOUSE	5	No	Yes	U-FACTOR 0.400
130J	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	WAREHOUSE		PER MFR	No	No	U-FACTOR 0.102
132	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S5	HM	INT	LOCKER ENTRY	HALLWAY	2	No	No	
133	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S5	HM	INT	LOCKER ENTRY	JC	6	No	No	
134	1	C	6'-0"	8'-10"	1 3/4"	ALUM	PER MFR	-	-	S3	ALUM	EXTERIOR	VESTIBULE		10	No	Yes	U-FACTOR 0380, SGHC 0.38 (PAIR DOORS)
201	1	C	9'-1"	8'-10"		ALUM	PER MFR	-	-	S4	ALUM	EXTERIOR		LOFT	12	No	No	BALCONY SLIDING GLASS DOOR
202	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S5	HM	INT	LOFT	MECH LOFT	6	No	No	

HARDWARE SCHEDULE*

HDW SET 1 (EGRESS)

1 CONTINUOUS HINGE
1 PANIC BAR / PULL HANDLE / KEYED OUT
3 SILENCERS
1 SET WEATHERSTRIPPING
1 CLOSER - SURFACE MOUNTED W/ HOLD OPEN
1 THRESHOLD W/ SWEEP

HDW SET 2

3 BUTT HINGES
1 PUSH PLATE/PULL HANDLE
1 WALL BUMPER
3 SILENCERS
1 KICKPLATE
1 CLOSER - SURFACE MOUNTED W/ HOLD OPEN

HDW SET 3

3 BUTT HINGES
1 LEVER LOCKSET - OFFICE FUNCTION
1 WALL BUMPER
3 SILENCERS

HDW SET 4

3 BUTT HINGES
1 LEVER LOCKSET - PRIVACY FUNCTION
1 WALL BUMPER
3 SILENCERS

HDW SET 5 (EGRESS)

3 BUTT HINGES
1 DEADLATCH PUSH PADDLE / PULL HANDLE / KEYED OUT
3 SILENCERS
1 SET WEATHERSTRIPPING
1 CLOSER - SURFACE MOUNTED W/ HOLD OPEN
1 THRESHOLD W/ SWEEP

HDW SET 6

3 BUTT HINGES
1 LEVER LOCKSET - STOREROOM FUNCTION
1 WALL BUMPER
3 SILENCERS

NOTE: OFFICES WITH ELECTRIC STRIKES USE STOREROOM FUNCTION LEVERS.

HDW SET 7

3 BUTT HINGES
1 LEVER LOCKSET - STOREROOM FUNCTION
1 WALL BUMPER
3 SILENCERS
1 SET WEATHERSTRIPPING
1 CLOSER - SURFACE MOUNTED
1 THRESHOLD W/ SWEEP

HDW SET 8

3 BUTT HINGES
1 LEVER LOCKSET - OFFICE FUNCTION
1 DEADBOLT W/THUMBTURN
1 FLOOR STOP
3 SILENCERS

HDW SET 9

3 BUTT HINGES
1 LEVER LOCKSET - OFFICE FUNCTION
1 WALL BUMPER
3 SILENCERS
1 CLOSER - SURFACE MOUNTED W/ HOLD OPEN

HDW SET 10 (EGRESS) FOR PAIR OF DOORS

2 CONTINUOUS HINGES
2 PANIC BARS / PULL HANDLES / KEYED OUT
2 SET WEATHERSTRIPPING
2 CLOSER - SURFACE MOUNTED W/ HOLD OPEN
1 THRESHOLD W/ 2 SWEEPS

HDW SET 11 (EGRESS) FOR PAIR OF DOORS

2 CONTINUOUS HINGES
2 PUSH BARS / PULL HANDLES
2 SET WEATHERSTRIPPING
2 CLOSER - SURFACE MOUNTED W/ HOLD OPEN
1 THRESHOLD W/ 2 SWEEPS

HDW SET 12 (SLIDING GLASS DOOR AT BALCONY)

1 LOCKSET
2 SLIDER HANDLES
1 SET WEATHERSTRIPPING

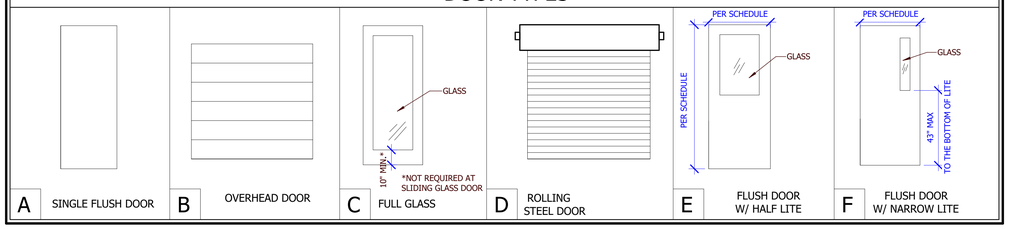
1 THRESHOLD

MANUFACTURER & FINISHES

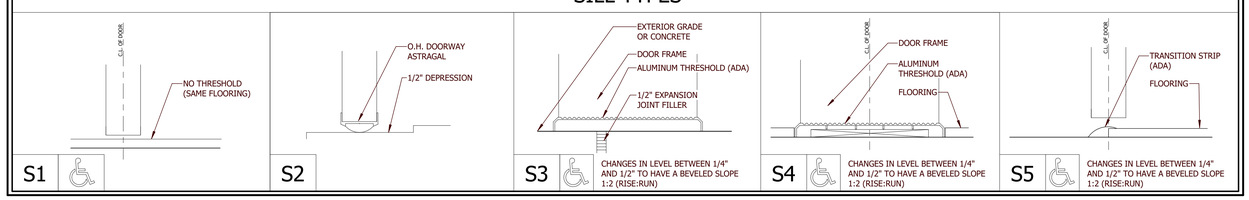
ITEM	MFR.	MODEL	FINISH
BUTTS	STANLEY	BALL BEARING 5 KNUCKLE	626 or 605 VERIFY W/ OWNER
LOCKSET	SCHLAGE	D-SERIES W/ RHODES LEVER	626 or 605 VERIFY W/ OWNER
DEADBOLT	SCHLAGE		626 or 605 VERIFY W/ OWNER
PADDLE	ADAMS RITE		626 or 605 VERIFY W/ OWNER
CLOSER	LCN	SURFACE MOUNTED	626 or 605 VERIFY W/ OWNER
THRESHOLD	REESE	VARIES	ALUMINUM
BUMPER	HAGER	232W	SATIN
H.M. FRAME	---	16ga. WELDED (GALV., A60)	PAINTED
H.M. DOOR	---	18ga. FACES (GALV., A60)	PAINTED

*NOTE: SEE DOOR SCHEDULE FOR ELECTRIC STRIKES

DOOR TYPES



SILL TYPES



NVA TRANSPORTATION
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STATE OF ILLINOIS
JOHN F. SWIERK
001-012383
LICENSED ARCHITECT
5/12/2023
Signature Date
11.30.24
Expires

PROJECT NO.	122148
PROJECT MGR.	TPL
DOOR SCHEDULE	

A8.1

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ROOM FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	FLOOR		WALL		CEILING		HEIGHT A.F.F.	REMARKS
		FINISH	WALL BASE	MATERIAL	FINISH	MATERIAL	FINISH		
100	LOBBY	VPT-1	VB-1	GYP	P-1	ACT-1	ACT-1	15'-6"	
101	OFFICE SUITE	CPT-1	VB-1	GYP	P-1	ACT-1/GYP	ACT-1/P-2	10'-0" & 11'-0"	
101B	PRIVATE RESTROOM	VPT-3	CTB-1	MR-GYP*/CEM*	CT-2 / P-1	MR-GYP*	P-2	8'-6"	*MOLD RESISTANT GYP: 5/8" Gold Bond XP Fire-Shield OR EQUAL (WALLS & CEILING), CEMENT BOARD TILE BACKER: 5/8" PermaBase Cement Board TILE BACKER AT SHOWER WALLS
101C	SUITE ENTRY	VPT-1	VB-1	GYP	P-1	ACT-1	ACT-1	10'-0"	
102	SECURITY	VPT-1	VB-1	GYP	P-1	ACT-1	ACT-1	10'-0"	
103	CORRIDOR	VPT-1	VB-1	GYP	P-1	GYP/EXP	P-2/P-4	15'-6" & ROOF	
104	HR OFFICE	VPT-1	VB-1	GYP	P-1	ACT-1/GYP	ACT-1/P-2	9'-0" & 10'-0"	
105	MGR OFFICE	CPT-1	VB-1	GYP	P-1	ACT-1/GYP	ACT-1/P-2	9'-0" & 10'-0"	
106	ACCOUNTING	VPT-1	VB-1	GYP	P-1	ACT-1/GYP	ACT-1/P-2	9'-0" & 10'-0"	
107	SAFETY	VPT-1	VB-1	GYP	P-1	ACT-1/GYP	ACT-1/P-2	9'-0" & 10'-0"	
108	SUPPLIES	VPT-1	VB-1	GYP	P-1	ACT-1	ACT-1	10'-0"	
109	GENERAL DISPATCH	VPT-1	VB-1	GYP	P-1	ACT-1/GYP	ACT-1/P-2	9'-0" & 16'-0"	
110	CONFERENCE	CPT-1	VB-1	GYP	P-1	ACT-1/GYP	ACT-1/P-2	9'-0" & 11'-0"	
111	OFFICE BREAK ROOM	VPT-4	VB-1	GYP	P-1	EXP	P-4	ROOF	
112	LOCKERS	VPT-4	VB-1	GYP	P-1	ACT-1	ACT-1	8'-6"	
113	WOMEN	VPT-3	CTB-1	GYP	CT-2 / P-1	ACT-1	ACT-1	8'-6"	
114	MEN	VPT-3	CTB-1	GYP	CT-2 / P-1	ACT-1	ACT-1	8'-6"	
115	MECH/STORAGE	VPT-1	VB-1	GYP/CMU	P-1	EXP	EXP	12'-0"	
116	I.T.	SC-1	VB-1	GYP/CMU	P-1	ACT-1	ACT-1	8'-0"	
117	SERVICE BREAK ROOM	SC-1	VB-1	GYP	P-1	ACT-1	ACT-1	9'-0"	
118	MEN	EP-1	EB-1	GYP	CT-2 / P-1	ACT-1	ACT-1	8'-0"	
119	MEN'S LOCKER	EP-1	EB-1	GYP	CT-2 / P-1	ACT-1	ACT-1	8'-0"	
120	MEN'S SHOWER	EP-1	EB-1	MR-GYP*	CT-2 / P-1	MR-GYP*	P-2	8'-0"	*MOLD RESISTANT GYP: 5/8" Gold Bond XP Fire-Shield OR EQUAL (WALLS & CEILING)
121	WOMEN	EP-1	EB-1	MR-GYP*	CT-2 / P-1	MR-GYP*	P-2	8'-0"	*MOLD RESISTANT GYP: 5/8" Gold Bond XP Fire-Shield OR EQUAL (WALLS & CEILING)
122	MECH	SC-1	VB-1	GYP	P-1	EXP	EXP	13'-9"	
123	PARTS STORAGE ROOM	SC-1	VB-1	GYP	P-1	EXP	EXP	13'-9"	
124	SHOP PARTS	VPT-2	VB-1	GYP	P-1	EXP	P-3	13'-9"	CEILING NOTE: PAINT EXPOSED STEEL STRUCTURE, DECK, MECHANICAL DUCTWORK, AND CONDUITS
125	UNISEX	VPT-2	VB-1	MR-GYP*	P-1	MR-GYP*	P-2	8'-6"	*MOLD RESISTANT GYP: 5/8" Gold Bond XP Fire-Shield OR EQUAL (WALLS & CEILING)
126	RETAIL PARTS	VPT-2	VB-1	GYP	P-1	EXP	P-3	13'-9"	CEILING NOTE: PAINT EXPOSED STEEL STRUCTURE, DECK, MECHANICAL DUCTWORK, AND CONDUITS
127	LOUNGE	VPT-3	VB-1	GYP	P-1	EXP	P-3	13'-9"	*MOLD RESISTANT GYP: 5/8" Gold Bond XP Fire-Shield OR EQUAL (WALLS & CEILING)
128	PARTS DELIVERY	SC-1	VB-1	EXP / AR-GYP†	EXP / P-1	EXP	EXP	ROOF	†ABUSE RESISTANT GYP TO 8'-0" A.F.F.: 5/8" Gold Bond eXP Interior Extreme AR Gyp (REGULAR 5/8" GYP ABOVE)
129	SERVICE BAYS	SC-1	VB-1	EXP / AR-GYP†	EXP / P-1	EXP	EXP	ROOF	†ABUSE RESISTANT GYP TO 8'-0" A.F.F.: 5/8" Gold Bond eXP Interior Extreme AR Gyp (REGULAR 5/8" GYP ABOVE)
130	WAREHOUSE	SC-1	NONE	EXP	EXP	EXP	EXP	ROOF	
131	HALLWAY	SC-1	VB-1	GYP	P-1	ACT-1	ACT-1	8'-0"	
132	LOCKER ENTRY	EP-1	EB-1	GYP	CT-2 / P-1	ACT-1	ACT-1	8'-0"	
133	JC	SC-1	VB-1	GYP	FRP/P-1	EXP	EXP	ROOF	*MOLD RESISTANT GYP: 5/8" Gold Bond XP Fire-Shield OR EQUAL (WALLS) & 4' FRP WAINSCOT
134	VESTIBULE	VPT-1/PED	VB-1	GYP	P-1	GYP	P-2	15'-6"	WALLS MOSTLY STOREFRONT, STOREFRONT SECTION DETAIL FOR DRYWALL
135	WORK	VPT-1	VB-1	GYP	P-1	ACT-1/GYP	ACT/P-2	9'-0" & 16'-0"	
200	MEZZANINE	SC-1	NONE	EXP / GYP	EXP / P-1	EXP	EXP	ROOF	
201	LOFT	VPT-1	VB-1	GYP	P-1	EXP	P-4	ROOF	
202	MECH LOFT	SC-1	VB-1	GYP	P-1	EXP	EXP	ROOF	

ROOM FINISH NOTES

1. ALL FINISHES ARE TO HAVE 25 MAX. FLAME SPREAD RATING & 50 MAX. SMOKE DEVELOPED RATING.

2. FINISHED AND COLORS AS SELECTED BY OWNER, G.C. TO GET APPROVAL FROM OWNER ON ALL FINISHES AND COLORS PRIOR TO CONSTRUCTION.

3. ALL FLOORING SHALL BE OF A STABLE, FIRM AND SLIP-RESISTANT MATERIAL - C.O.F. GREATER THAN .6. CHANGES IN LEVEL NO GREATER THAN 1/4" AND SLOPE OF NO MORE THEN 1:20

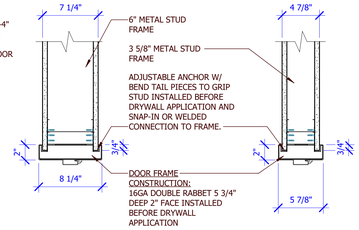
4. SEE INTERIOR ELEVATIONS FOR MISC. ITEMS SUCH AS BATHROOM MIRRORS, WALL FINISHES, AND ACCESSORIES.

ROOM FINISH LEGEND

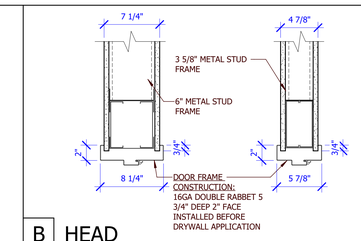
MARK	DESCRIPTION	MANUFACTURER	COLOR/STYLE
FLOORING			
CT-1	CERAMIC OR PORCELAIN TILE	DALTILE OR EQUAL	SEL. BY OWNER
EP-1	EPOXY (ANTI-SLIP)	FLOROCK - FLOROQUARTZ TL	SEL. BY OWNER
SC-1	SEALED CONCRETE FLOOR		SEL. BY OWNER
VPT-1	VINYL PLANK TILE	ARMSTRONG	SEL. BY OWNER
VPT-2	VINYL PLANK TILE	ARMSTRONG	SEL. BY OWNER
BASE			
CTB-1	TILE BASE 4" HIGH w/COVE	DALTILE	SEL. BY OWNER
EB-1	EPOXY COVE BASE 6" HIGH INTEGRAL W/FLOOR	FLOROCK - FLOROQUARTZ	SEL. BY OWNER
VB-1	VINYL BASE 4" HIGH w/COVE	ARMSTRONG	SEL. BY OWNER
WALLS			
CT-2	CERAMIC OR PORCELAIN WALL TILE	DALTILE	SEL. BY OWNER
EXP	EXPOSED CONSTRUCTION	---	---
P-1	PAINTED GWB (LATEX EGGSHELL/SATIN FINISH)	SHERWIN WILLIAMS	WHITE - SW 7005
CEILINGS			
ACT-1	2 X 2 ACOUSTICAL TILE (9/16" TEGULAR)	ARMSTRONG	WHITE
EXP	EXPOSED CONSTRUCTION	---	---
P-2	PAINTED GWB CEILING (LATEX FLAT FINISH)	SHERWIN WILLIAMS	WHITE - SW 7005
P-3	PAINTED GWB CEILING (LATEX FLAT FINISH)	SHERWIN WILLIAMS	SEL. BY OWNER
P-4	PAINTED GWB CEILING (LATEX FLAT FINISH)	SHERWIN WILLIAMS	SEL. BY OWNER

DOOR DETAILS

JAMB ANCHOR QUANTITY:
3 PER JAMB FOR HEIGHT UP TO 7'-4" AND 4 PER JAMB FROM 7'-5" THRU 9'-0". ONE ADDITIONAL JAMB ANCHOR NEAR FLOOR OR ONE FLOOR ANCHOR WHEN NOT GROUTED.

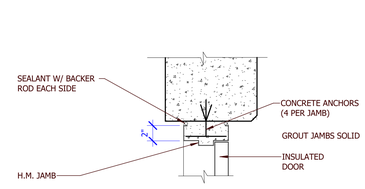


A JAMB

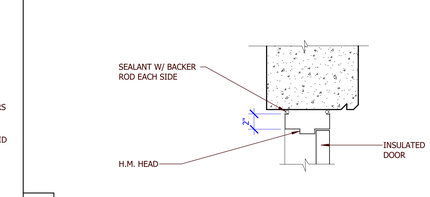


FRAME APPLICATION:
- METAL STUD FRAME. SEE PARTITION SCHEDULE FOR WALL COMPOSITION
- IF BEARING WALL, SEE FRAMING PLAN FOR HEADER DETAILS

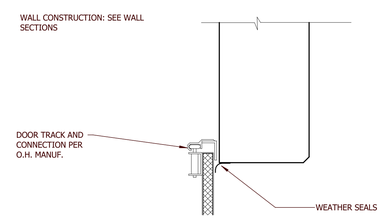
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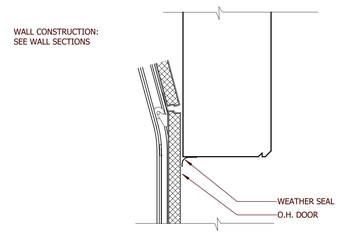
C JAMB



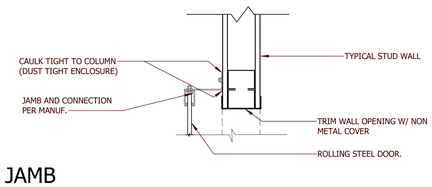
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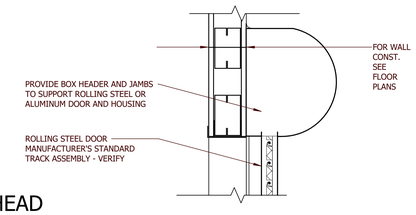
E JAMB



F HEAD



J JAMB



K HEAD

NOTE: SEE DOOR SCHEDULE FOR HEAD AND JAMB DESIGNATIONS

NVA TRANSPORTATION
7013 SANDS RD
CRYSTAL LAKE, IL

2023.05.12 ISSUED FOR PERMIT

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STATE OF ILLINOIS
JOHN F. SWIERK
001-012383
LICENSED ARCHITECT

5/12/2023
Signature Date

11.30.24
Expires

PROJECT NO.	122148
PROJECT MGR.	TPL

DOOR DETAILS & ROOM FINISH SCHEDULE

A8.2

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SECTION 01 30 00
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

A. ADMINISTRATION OF CONTRACT: PROVIDE ADMINISTRATIVE REQUIREMENTS FOR THE PROPER COORDINATION AND COMPLETION OF WORK INCLUDING THE FOLLOWING:
1. SUPERVISORY PERSONNEL.
2. PRECONSTRUCTION CONFERENCE.
3. PROJECT MEETINGS, MINIMUM OF TWO PER MONTH; PREPARE AND DISTRIBUTE MINUTES.

B. REPORTS: SUBMIT DAILY AND SPECIAL REPORTS.

C. WORK SCHEDULE: SUBMIT PROGRESS SCHEDULE, UPDATED MONTHLY.

D. SUBMITTAL SCHEDULE: PREPARE SUBMITTAL SCHEDULE; COORDINATE WITH PROGRESS SCHEDULE.

E. SCHEDULE OF VALUES: SUBMIT SCHEDULE OF VALUES.

F. SCHEDULE OF TESTS: SUBMIT SCHEDULE OF REQUIRED TESTS INCLUDING PAYMENT AND RESPONSIBILITY.

G. PERFORM SURVEYS: LAY OUT THE WORK AND VERIFYING LOCATIONS DURING CONSTRUCTION. PERFORM FINAL SITE SURVEY.

H. EMERGENCY CONTACTS: SUBMIT AND POST A LIST OF EMERGENCY TELEPHONE NUMBERS AND ADDRESS FOR INDIVIDUALS TO BE CONTACTED IN CASE OF EMERGENCY.

I. RECORD DOCUMENTS: SUBMIT RECORD DRAWINGS AND SPECIFICATIONS; TO BE MAINTAINED AND ANNOTATED BY CONTRACTOR AS WORK PROGRESSES.

1.2 SUBMITTALS

A. TYPES OF SUBMITTALS: PDF FORMAT PREFERRED OVER PHYSICAL COPIES. PROVIDE TYPES OF SUBMITTALS LISTED IN INDIVIDUAL SECTIONS AND NUMBER OF COPIES REQUIRED BELOW IF PDF IS NOT POSSIBLE .
1. SHOP DRAWINGS, REVIEWED AND ANNOTATED BY THE CONTRACTOR - 4 COPIES.
2. PRODUCT DATA - 4 COPIES
3. SAMPLES - 2, PLUS EXTRA SAMPLES AS REQUIRED TO INDICATE RANGE OF COLOR, FINISH, AND TEXTURE TO BE EXPECTED.
4. INSPECTION AND TEST REPORTS - 4 COPIES.
5. WARRANTIES - 4 COPIES.
6. SURVEY DATA - 4 COPIES.
7. CLOSEOUT SUBMITTALS - 4 COPIES.
8. PROJECT PHOTOGRAPHS - 12 DIGITAL IMAGES EACH MONTH.

B. SUBMITTAL PROCEDURES: COMPLY WITH PROJECT FORMAT FOR SUBMITTALS. COMPLY WITH SUBMITTAL PROCEDURES ESTABLISHED BY ARCHITECT INCLUDING ARCHITECT'S SUBMITTAL AND SHOP DRAWING STAMP. PROVIDE REQUIRED RESUBMITTALS IF ORIGINAL SUBMITTALS ARE NOT APPROVED. PROVIDE DISTRIBUTION OF APPROVED COPIES INCLUDING MODIFICATIONS AFTER SUBMITTALS HAVE BEEN APPROVED.

C. SAMPLES AND SHOP DRAWINGS: SAMPLES AND SHOP DRAWINGS SHALL BE PREPARED SPECIFICALLY FOR THIS PROJECT. SHOP DRAWINGS SHALL INCLUDE DIMENSIONS AND DETAILS, INCLUDING ADJACENT CONSTRUCTION AND RELATED WORK. NOTE SPECIAL COORDINATION REQUIRED. NOTE ANY DEVIATIONS FROM REQUIREMENTS OF THE CONTRACT DOCUMENTS.

D. WARRANTIES: PROVIDE WARRANTIES AS SPECIFIED; WARRANTIES SHALL NOT LIMIT LENGTH OF TIME FOR REMEDY OF DAMAGES OWNER MAY HAVE BY LEGAL STATUTE. CONTRACTOR, SUPPLIER OR INSTALLER RESPONSIBLE FOR PERFORMANCE OF WARRANTY SHALL SIGN WARRANTIES.

END OF SECTION

SECTION 01 40 00
QUALITY REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

A. QUALITY MONITORING: MONITOR QUALITY CONTROL OVER SUPPLIERS, MANUFACTURERS, PRODUCTS, SERVICES, SITE CONDITIONS, AND WORKMANSHIP, TO PRODUCE WORK OF SPECIFIED QUALITY. PERFORM QUALITY CONTROL PROCEDURES AND INSPECTIONS DURING INSTALLATION.

B. STANDARDS: COMPLY WITH SPECIFIED STANDARDS AS MINIMUM QUALITY FOR THE WORK EXCEPT WHERE MORE STRINGENT TOLERANCES, CODES, OR SPECIFIED REQUIREMENTS INDICATE HIGHER STANDARDS OR MORE PRECISE WORKMANSHIP.

C. TOLERANCES: MONITOR FABRICATION AND INSTALLATION TOLERANCE CONTROL OF PRODUCTS TO PRODUCE ACCEPTABLE WORK. DO NOT PERMIT TOLERANCES TO ACCUMULATE. COMPLY WITH MANUFACTURERS' TOLERANCES.

D. REFERENCE STANDARDS: FOR PRODUCTS OR WORKMANSHIP SPECIFIED BY ASSOCIATION, TRADE, OR OTHER CONSENSUS STANDARDS, COMPLY WITH REQUIREMENTS OF THE STANDARD, EXCEPT WHEN MORE RIGID REQUIREMENTS ARE SPECIFIED OR ARE REQUIRED BY APPLICABLE CODES.

E. MANUFACTURER'S FIELD SERVICES: WHEN SPECIFIED IN INDIVIDUAL SPECIFICATION SECTIONS, REQUIRE MATERIAL OR PRODUCT SUPPLIERS OR MANUFACTURERS TO PROVIDE QUALIFIED STAFF PERSONNEL TO PERFORM THE FOLLOWING AS APPLICABLE, AND TO INITIATE INSTRUCTIONS WHEN NECESSARY.
1. OBSERVE SITE CONDITIONS.
2. CONDITIONS OF SURFACES AND INSTALLATION.
3. QUALITY OF WORKMANSHIP.
4. START-UP OF EQUIPMENT.
5. TEST, ADJUST AND BALANCE OF EQUIPMENT.

END OF SECTION

SECTION 01 41 00
REGULATORY REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY OF REFERENCE STANDARDS

A. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND NATIONAL CODES AND ORDINANCES UNDER ALL AUTHORITIES HAVING JURISDICTION.

B. 29 CFR 1910 - OCCUPATIONAL SAFETY AND HEALTH STANDARDS.

SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SUMMARY

A. TEMPORARY SERVICES: PROVIDE TEMPORARY SERVICES AND UTILITIES, INCLUDING PAYMENT OF UTILITY COSTS INCLUDING THE FOLLOWING.
1. WATER (POTABLE AND NON-POTABLE).
2. LIGHTING AND POWER.
3. METERING.
4. TELEPHONE.
5. TOILET FACILITIES.
6. MATERIALS STORAGE.

B. CONSTRUCTION FACILITIES: PROVIDE CONSTRUCTION FACILITIES, INCLUDING PAYMENT OF UTILITY COSTS INCLUDING THE FOLLOWING.
1. CONSTRUCTION EQUIPMENT.
2. DEWATERING AND PUMPING.
3. ENCLOSURES.
4. HEATING.
5. LIGHTING.
6. ELEVATOR.
7. ACCESS.
8. ROADS.

C. SECURITY AND PROTECTION: PROVIDE SECURITY AND PROTECTION REQUIREMENTS INCLUDING THE FOLLOWING.
1. FIRE EXTINGUISHERS.
2. SITE ENCLOSURE FENCE, BARRICADES, WARNING SIGNS, AND LIGHTS.
3. BUILDING ENCLOSURE AND LOCK-UP.
4. TEMPORARY JOBSITE PROTECTION.
5. ENVIRONMENTAL PROTECTION.
6. PEST CONTROL DURING AND AT THE END OF CONSTRUCTION.
7. SNOW AND ICE REMOVAL IF APPLICABLE.

D. PERSONNEL SUPPORT: PROVIDE PERSONNEL SUPPORT FACILITIES INCLUDING THE FOLLOWING.
1. SANITARY FACILITIES.
2. DRINKING WATER.
3. PROJECT IDENTIFICATION SIGN.
4. CLEANING.

PART 2 PRODUCTS

2.1 TEMPORARY JOBSITE PROTECTION

A. TEMPORARY JOBSITE PROTECTION OF THE FOLLOWING TYPES:
1. MANUFACTURER: REFER TO SURFACE SHIELDS INC. ARMORLON, DIVISION OF REEF INDUSTRIES, INC. .
2. HARD SURFACE PROTECTION.
3. DUST CONTAINMENT.

END OF SECTION

SECTION 01 60 00
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

A. MANUFACTURES: PROVIDE PRODUCTS FROM ONE MANUFACTURER FOR EACH TYPE OR KIND AS APPLICABLE. PROVIDE SECONDARY MATERIALS AS ACCEPTABLE TO MANUFACTURERS OF PRIMARY MATERIALS.

B. PRODUCT SELECTION: PROVIDE PRODUCTS SELECTED OR EQUAL APPROVED BY ARCHITECT. PRODUCTS SUBMITTED FOR SUBSTITUTION SHALL BE SUBMITTED WITH COMPLETE DOCUMENTATION, AND INCLUDE CONSTRUCTION COSTS OF SUBSTITUTION INCLUDING RELATED WORK.

C. SUBSTITUTIONS: REQUEST FOR SUBSTITUTION MUST BE IN WRITING. CONDITIONS FOR SUBSTITUTION INCLUDE:
1. AN 'OR EQUAL' PHRASE IN THE SPECIFICATIONS OR DRAWINGS .
2. SPECIFIED MATERIAL CANNOT BE COORDINATED WITH OTHER WORK.
3. SPECIFIED MATERIAL IS NOT ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
4. SUBSTANTIAL ADVANTAGE IS OFFERED TO THE OWNER IN TERMS OF COST, TIME, OR OTHER VALUABLE CONSIDERATION.

D. SUBSTITUTION REQUESTS: SUBSTITUTIONS SHALL BE SUBMITTED PRIOR TO AWARD OF CONTRACT, UNLESS OTHERWISE ACCEPTABLE. APPROVAL OF SHOP DRAWINGS, PRODUCT DATA, OR SAMPLES CONTAINING SUBSTITUTIONS IS NOT AN APPROVAL OF A SUBSTITUTION UNLESS AN ITEM IS CLEARLY PRESENTED AS A SUBSTITUTION AT THE TIME OF SUBMITTAL.

END OF SECTION

SECTION 01 70 00
EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

A. SUBSTANTIAL COMPLETION: THE FOLLOWING ARE PREREQUISITES TO SUBSTANTIAL COMPLETION. PROVIDE THE FOLLOWING.
1. PUNCH LIST PREPARED BY CONTRACTOR AND SUBCONTRACTORS AS APPLICABLE.
2. SUPPORTING DOCUMENTATION.
3. WARRANTIES.
4. CERTIFICATIONS.
5. OCCUPANCY PERMIT.
6. START-UP AND TESTING OF BUILDING SYSTEMS.
7. CHANGE OVER OF LOCKS.
8. METER READINGS.
9. COMMISSIONING DOCUMENTATION.

B. FINAL ACCEPTANCE: PROVIDE THE FOLLOWING PREREQUISITES TO FINAL ACCEPTANCE.
1. FINAL PAYMENT REQUEST WITH SUPPORTING AFFIDAVITS.
2. COMPLETED PUNCH LIST.

C. AS-BUILT DRAWINGS: PROVIDE A MARKED-UP SET OF DRAWINGS INCLUDING CHANGES, WHICH OCCURRED DURING CONSTRUCTION.

D. PROJECT CLOSEOUT: PROVIDE THE FOLLOWING DURING PROJECT CLOSEOUT.
1. SUBMISSION OF RECORD DOCUMENTS.
2. SUBMISSION OF MAINTENANCE MANUALS.
3. TRAINING AND TURNOVER TO OWNER'S PERSONNEL.
4. FINAL CLEANING AND TOUCH-UP.
5. REMOVAL OF TEMPORARY FACILITIES.

PART 2 EXECUTION

2.1 CUTTING AND PATCHING

A. CUTTING AND PATCHING: PROVIDE CUTTING AND PATCHING WORK TO PROPERLY COMPLETE THE WORK OF THE PROJECT, COMPLYING WITH PROJECT REQUIREMENTS FOR:
1. STRUCTURAL WORK.
2. MECHANICAL/ELECTRICAL SYSTEMS.
3. VISUAL REQUIREMENTS, INCLUDING DETAILING AND TOLERANCES.
4. OPERATIONAL AND SAFETY LIMITATIONS.
5. FIRE RESISTANCE RATINGS.
6. INSPECTION, PREPARATION, AND PERFORMANCE.
7. CLEANING.

B. MEANS AND METHODS: DO NOT CUT AND PATCH IN A MANNER THAT WOULD RESULT IN A FAILURE OF THE WORK TO PERFORM AS INTENDED, DECREASE ENERGY PERFORMANCE, INCREASE MAINTENANCE, DECREASE OPERATIONAL LIFE, OR DECREASE SAFETY PERFORMANCE.

C. INSPECTION: INSPECT CONDITIONS PRIOR TO WORK TO IDENTIFY SCOPE AND TYPE OF WORK REQUIRED. PROTECT ADJACENT WORK. NOTIFY OWNER OF WORK REQUIRING INTERRUPTION TO BUILDING SERVICES OR OWNER'S OPERATIONS.

D. PERFORMANCE OF OPERATIONS: PERFORM WORK WITH WORKMEN SKILLED IN THE TRADES INVOLVED. PREPARE SAMPLE AREA OF EACH TYPE OF WORK FOR APPROVAL.

E. CUTTING: USE CUTTING TOOLS, NOT CHOPPING TOOLS. MAKE NEAT HOLES. MINIMIZE DAMAGE TO ADJACENT WORK. INSPECT FOR CONCEALED UTILITIES AND STRUCTURE BEFORE CUTTING.

F. PATCHING: MAKE PATCHES, SEAMS, AND JOINTS DURABLE AND INCONSPICUOUS. COMPLY WITH TOLERANCES FOR NEW WORK.

G. CLEANING: CLEAN WORK AREA AND AREAS AFFECTED BY CUTTING AND PATCHING OPERATIONS.

END OF SECTION

SECTION 02 30 00
SUBSURFACE INVESTIGATION

PART 1 GENERAL

1.1 SUMMARY

A. GEOTECHNICAL REPORT: A COPY OF THE GEOTECHNICAL REPORT AND BORING LOGS ARE AVAILABLE FROM THE ARCHITECT AND OWNER.

B. INFORMATION NOT GUARANTEED: INFORMATION ON THE DRAWINGS AND IN THE PROJECT MANUAL RELATING TO SUBSURFACE CONDITIONS AND EXISTING UTILITIES AND STRUCTURES IS FROM INFORMATION AVAILABLE FROM SOURCES AVAILABLE TO THE OWNER'S ENGINEERING CONSULTANTS. SUCH INFORMATION IS FURNISHED ONLY FOR THE INFORMATION AND CONVENIENCE OF THE CONTRACTOR, AND THE ACCURACY OR COMPLETENESS OF THIS INFORMATION IS NOT GUARANTEED.

END OF SECTION

SECTION 03 30 00
CAST-IN-PLACE-CONCRETE

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE CAST-IN-PLACE CONCRETE, REINFORCING AND ACCESSORIES.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SHOP DRAWINGS: SUBMIT SHOP DRAWINGS INDICATING MATERIAL CHARACTERISTICS, DETAILS OF CONSTRUCTION, CONNECTIONS, AND RELATIONSHIP WITH ADJACENT CONSTRUCTION.
1. SHOP DRAWINGS SHALL BE PREPARED AND STAMPED BY A QUALIFIED ENGINEER LICENSED IN THE JURISDICTION OF THE PROJECT.

C. MIX DESIGN: SUBMIT FOR APPROVAL MIX DESIGN PROPOSED FOR USE.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. TESTING: EMPLOY AN INDEPENDENT TESTING AGENCY ACCEPTABLE TO OWNER TO DESIGN CONCRETE MIXES AND TO PERFORM MATERIAL EVALUATION TESTS. PROVIDE 7 AND 28 DAY CYLINDER TESTS. COMPLY WITH ASTM C 143, C 173, C 31 AND C 39.

C. STANDARDS:
1. ACI 301, SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS.
2. ACI 318, BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, AND CRSI MANUAL OF STANDARD PRACTICE.

D. FLOOR FLATNESS AND LEVELNESS TOLERANCES:
1. SUBFLOORS UNDER MATERIALS SUCH AS CONCRETE TOPPINGS, CERAMIC TILE, AND SAND BED TERRAZZO: ACI 302.1R AND ASTM E 1155, FLOOR FLATNESS (FF) OF 15, FLOOR LEVELNESS (FL) OF 13.
2. SUBFLOORS UNDER MATERIALS SUCH AS VINYL TILE, EPOXY TOPPINGS, PAINT, AND CARPET: ACI 302.1R AND ASTM E 1155, FLOOR FLATNESS (FF) OF 20, FLOOR LEVELNESS (FL) OF 17.

PART 2 PRODUCTS

2.1 MATERIALS

A. CAST-IN-PLACE CONCRETE:
1. MANUFACTURERS: CONCRETE CURING, SEALING AND HARDENING: ASHFORD FORMULA, BY CURECRETE ;ISE LOGIK INDUSTRIES ;RETROPLATE CONCRETE POLISHING SYSTEM .
2. APPLICATION: FOUNDATIONS AND FOOTINGS.
3. APPLICATION: EXTERIOR SITE CONCRETE AND PADS.
4. FINISH FOR VERTICAL SURFACES EXPOSED TO VIEW: SMOOTH RUBBED FINISH.
5. MECHANICALLY APPLIED FINISH FOR VERTICAL SURFACES EXPOSED TO VIEW: BUSHHAMMER FINISH.
6. FINISH FOR VERTICAL SURFACES NOT EXPOSED TO VIEW: AS-CAST FORM FINISH.
7. FINISH FOR HORIZONTAL SURFACES TO RECEIVE CONCRETE OR MORTAR SETTING BED: SCRATCH FINISH.
8. FINISH FOR SURFACES TO BE EXPOSED TO VIEW OR COVERED WITH RESILIENT FLOORING, CARPET TILE OR OTHER THIN FINISH SYSTEM: TROWEL FINISH.
9. FINISH FOR EXTERIOR CONCRETE PLATFORMS, STEPS, RAMPS AND SLOPED WALLS: NON-SLIP BROOM FINISH.
10. CAST-IN-PLACE CONCRETE REINFORCING AND ACCESSORIES:
a. CONCRETE DESIGN MIXES: ASTM C 94, 28 DAY COMPRESSIVE STRENGTH SUITABLE FOR PROJECT REQUIREMENTS AND SITE CONDITIONS.
b. FORMWORK: PLYWOOD OR METAL PANEL FORMWORK SUFFICIENT FOR STRUCTURAL AND VISUAL REQUIREMENTS.
c. REINFORCING BARS: ASTM A 767, CLASS II, GALVANIZED.
d. STEEL WIRE: ASTM A 82.
e. STEEL WIRE FABRIC: ASTM A 497, WELDED, DEFORMED.
f. CONCRETE MATERIALS: ASTM C 150, TYPE I, PORTLAND CEMENT; POTABLE WATER.
g. CONCRETE ADMIXTURES: CONTAINING LESS THAN 0.1 PERCENT CHLORIDE IONS.
h. REGLETS: GALVANIZED SHEET STEEL REGLETS, MINIMUM 26 GAUGE (.018 INCH).
i. WATERSTOPS: RUBBER, PVC OR SELF EXPANDING BUTYL/BENTONITE WATERSTOPS.
j. VAPOR RETARDER: ASTM D 4397 POLYETHYLENE SHEET, 10 MILS.
k. LIQUID MEMBRANE-FORMING CURING COMPOUND: ASTM C 309, TYPE 1, CLASS A.
l. UNDERLAYMENT COMPOUND: FREE-FLOWING, SELF-LEVELING CEMENT-BASED COMPOUND.
m. BONDING COMPOUND: POLYVINYL ACETATE OR ACRYLIC BASE.
n. EPOXY ADHESIVE: ASTM C 881, TWO-COMPONENT MATERIAL.

PART 3 EXECUTION

3.1 INSTALLATION

A. COMPLY WITH ASTM C 94. DO NOT CHANGE MIX DESIGN WITHOUT APPROVAL. CALCIUM CHLORIDE ADMIXTURES ARE NOT PERMITTED.

B. CHAMFER EXPOSED EDGES/CORNERS TO PROVIDE STRAIGHT LINES.

C. TOLERANCE: PLUS 1/8" IN 10" FOR GRADE, ALIGNMENT, AND STRAIGHTNESS.

D. CONSTRUCTION JOINTS: USE KEYWAYS, CONTINUE REINFORCEMENT THROUGH JOINT.

E. EXPANSION JOINTS: FOR EXTERIOR WORK LOCATE 30' O.C. AT APPROVED LOCATIONS. PROVIDE SMOOTH DOWELS ACROSS JOINT WHICH PERMIT 1" HORIZONTAL MOVEMENT AND NO VERTICAL SHEAR MOVEMENT.

F. ISOLATION JOINTS: PROVIDE BETWEEN SLABS AND VERTICAL ELEMENTS SUCH AS COLUMNS AND STRUCTURAL WALLS.

G. CONTROL JOINTS: PROVIDE SAWN OR TOOLED JOINTS OR REMOVEABLE INSERT STRIPS; DEPTH EQUAL TO 1/4 SLAB THICKNESS. SPACING AS REQUIRED AND APPROVED.

H. WALL FINISHES: AS-CAST AND PATCHED FOR CONCEALED WORK; RUBBED SMOOTH, FILLED AND CEMENT PASTE COATED FOR EXPOSED WORK.

I. SLAB FINISHES: OBTAIN SAMPLE APPROVAL BEFORE BEGINNING WORK.
1. SCRATCH: FOR SURFACES TO RECEIVE MORTAR SETTING BEDS OR CEMENTITIOUS FLOORING MATERIALS.
2. TROWEL: HARD, SMOOTH, UNIFORM SURFACE FOR AREAS TO RECEIVE RESILIENT FLOORING, CARPET, OR OTHER THIN FINISH MATERIAL.
3. BROOM: AFTER TROWEL FINISHING, ROUGHEN SURFACE BY FINE BROOMING PERPENDICULAR TO TRAFFIC DIRECTION FOR EXPOSED EXTERIOR WALKS, STEPS AND RAMPS.
4. NON-SLIP AGGREGATE: AFTER TROWEL FINISHING, UNIFORMLY TROWEL 25-LBS./100 S. F. OF DAMP NON-SLIP AGGREGATE INTO SURFACE. CURE, THEN RUB LIGHTLY TO EXPOSE AGGREGATE. USE FOR INTERIOR EXPOSED CONCRETE STAIRS AND RAMPS.
5. EXPOSED AGGREGATE: USE CHEMICAL RETARDER OR TAMP AGGREGATE INTO WET CONCRETE AND EXPOSE BY BRUSHING WITH WATER. USE WHERE INDICATED.
6. HARDENER FINISH: FOR EXPOSED INTERIOR CONCRETE FLOORS. FOLLOW MANUFACTURER'S DIRECTIONS.

J. CURE AND PROTECT WORK. REPORT DEFECTIVE WORK IN WRITING.

END OF SECTION

SECTION 03 35 00
CONCRETE FINISHING

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE FINISHING MATERIALS AND OPERATIONS FOR CAST-IN-PLACE CONCRETE..

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

PART 2 PRODUCTS

2.1 MATERIALS

A. CAST-IN-PLACE CONCRETE:
1. MANUFACTURERS: CONCRETE CURING, SEALING AND HARDENING: ASHFORD FORMULA, BY CURECRETE ;CONCRETE SEALERS USA ;RETROPLATE CONCRETE POLISHING SYSTEM .
2. APPLICATION: SLABS ON GRADE.
3. APPLICATION: EXTERIOR SITE CONCRETE AND PADS.
4. SEALED CONCRETE MATERIALS: CONCRETE HARDENER/DENSIFIER.

PART 3 EXECUTION

3.1 INSTALLATION

A. SLAB FINISHES: OBTAIN SAMPLE APPROVAL BEFORE BEGINNING WORK.
1. SEALED CONCRETE: NATURAL FINISH, SLIGHT DARKENING ACCEPTABLE.

B. PROTECT WORK WITH SUITABLE COVERING FOR THE DURATION OF THE CONSTRUCTION PERIOD. REPORT DEFECTIVE WORK IN WRITING.

END OF SECTION

SECTION 04 20 00
UNIT MASONRY

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE UNIT MASONRY CONSTRUCTION.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SHOP DRAWINGS: SUBMIT SHOP DRAWINGS INDICATING MATERIAL CHARACTERISTICS, DETAILS OF CONSTRUCTION, CONNECTIONS, AND RELATIONSHIP WITH ADJACENT CONSTRUCTION.
1. SHOP DRAWINGS SHALL BE PREPARED AND STAMPED BY A QUALIFIED ENGINEER LICENSED IN THE JURISDICTION OF THE PROJECT.

C. SAMPLES: SUBMIT TWO REPRESENTATIVE SAMPLES OF EACH MATERIAL SPECIFIED INDICATING VISUAL CHARACTERISTICS AND FINISH. INCLUDE RANGE SAMPLES IF VARIATION OF FINISH IS ANTICIPATED.

1.3 QUALITY ASSURANCE

A. TESTING: INDEPENDENT TESTING LABORATORY.

B. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

PART 2 PRODUCTS

2.1 MATERIALS

A. CONCRETE MASONRY UNITS:
1. APPLICATION: CONCRETE MASONRY PER DRAWINGS.
2. BOND PATTERN: RUNNING BOND.
3. STRUCTURAL DRAWINGS SUPERSEDE THIS SECTION. REFER TO STRUCTURAL DRAWINGS FOR LOAD-BEARING WALLS.

B. MORTAR AND GROUT FOR BRICK AND CONCRETE MASONRY UNIT ASSEMBLIES:
1. MANUFACTURERS: SOLOMON COLORS .
2. MORTAR MIX: ASTM C 270, TYPE S, FOR REINFORCED MASONRY, MASONRY BELOW GRADE AND MASONRY IN CONTACT WITH EARTH AND ASTM C 270, TYPE N, FOR ABOVE-GRADE LOADBEARING AND NONLOADBEARING WALLS AND PARAPET WALLS AND FOR INTERIOR LOADBEARING AND NONLOADBEARING PARTITIONS.
3. MORTAR MATERIALS: PORTLAND CEMENT, ASTM C 150, TYPE I OR II.
4. MORTAR MATERIALS: MASONRY CEMENT, ASTM C 91.
5. MORTAR MATERIALS: READY MIXED, ASTM C 207, TYPE S.
6. GROUT AGGREGATE: ASTM C 404.
7. HYDRATED LIME: ASTM C 207, TYPE S.

C. REINFORCING: WELDED WIRE WITH DEFORMED SIDE RODS.
1. STEEL WIRE: 9 GAUGE (.1875 INCH) GALVANIZED STEEL.
2. TYPE: LADDER OR TRUSS TYPE.

D. TIES AND ANCHORS:
1. MANUFACTURERS: TRUFAST WALLS .
2. BENT WIRE TIES: GALVANIZED STEEL.
3. RIGID ANCHORS: GALVANIZED STEEL STRAPS.
4. MASONRY TO STEEL FRAME: ANCHOR WITH CRIMPED WIRE ANCHOR SECTION FOR WELDING TO STEEL.
5. ADJUSTABLE MASONRY VENEER ANCHORS: SCREW-ATTACHED TWO-PIECE GALVANIZED TRIANGULAR OR RECTANGULAR WIRE TIE AND METAL ANCHOR.
6. SCREWS FOR STEEL STUDS: ASTM C 954 STAINLESS STEEL.
7. UNIT TYPE MASONRY INSERTS IN CONCRETE: MALLEABLE IRON.
8. DOVETAIL SLOTS: GALVANIZED SHEET METAL.
9. ANCHOR BOLTS: ASTM A 307, GRADE A, GALVANIZED.
10. POST-INSTALLED ANCHORS: CHEMICAL OR EXPANSION ANCHORS.

PART 3 EXECUTION

3.1 INSTALLATION

A. INSTALLATION OF MASONRY ASSEMBLIES:
1. COMPLY WITH PCA RECOMMENDED PRACTICES FOR LAYING CONCRETE BLOCK, BRICK INSTITUTE OF AMERICA BIA TECH NOTES, AND NCMA TEK BULLETINS.
2. COMPLY WITH COLD WEATHER AND WARM WEATHER PROTECTION PROCEDURES AS RECOMMENDED IN BIA TECH NOTES.
3. PROVIDE FIRE-RATED ASSEMBLIES COMPLYING WITH ASTM E 119.
4. SAWCUT UNITS WHEN REQUIRED. MAINTAIN UNIFORM JOINT WIDTH. PROVIDE FULL BED, HEAD AND COLLAR JOINTS EXCEPT AT WEEPHOLES.
5. INSTALL LINTELS AND ACCESSORIES IN MASONRY CONSTRUCTION.
6. COORDINATE INSTALLATION OF FLASHINGS.
7. COMPLY WITH APPLICABLE CODES AND REGULATIONS FOR SPACING OF TIES AND HORIZONTAL REINFORCING.
8. PROVIDE EXPANSION AND CONTROL JOINTS IN ACCORDANCE WITH BIA AND NCMA RECOMMENDATIONS.
9. REMOVE AND REPLACE DAMAGED UNITS.
10. CLEAN BRICK USING BUCKET AND BRUSH METHOD, BIA TECH NOTE 20.
11. CLEAN CONCRETE MASONRY PER MANUFACTURER RECOMMENDATIONS.

END OF SECTION

SECTION 03 45 00
PRECAST ARCHITECTURAL CONCRETE

PART 4 GENERAL

4.1 SUMMARY

A. PROVIDE ARCHITECTURAL PRECAST CONCRETE.

4.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SHOP DRAWINGS: SUBMIT SHOP DRAWINGS INDICATING MATERIAL CHARACTERISTICS, DETAILS OF CONSTRUCTION, CONNECTIONS, AND RELATIONSHIP WITH ADJACENT CONSTRUCTION.
1. SHOP DRAWINGS SHALL BE PREPARED AND STAMPED BY A QUALIFIED ENGINEER LICENSED IN THE JURISDICTION OF THE PROJECT.

C. SAMPLES: SUBMIT TWO REPRESENTATIVE SAMPLES OF EACH MATERIAL SPECIFIED INDICATING VISUAL CHARACTERISTICS AND FINISH. INCLUDE RANGE SAMPLES IF VARIATION OF FINISH IS ANTICIPATED.

4.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. STANDARDS: ACI 318, BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE; CRSI MANUAL OF STANDARD PRACTICE; PCI MNL 117, MANUAL FOR QUALITY CONTROL FOR PLANTS AND PRODUCTION OF ARCHITECTURAL PRECAST CONCRETE PRODUCTS.

C. TESTING: INDEPENDENT TESTING LABORATORY.

D. FABRICATION AND ERECTION TOLERANCE LIMITS: PCI MNL 117.

PART 5 PRODUCTS

5.1 MATERIALS

A. ARCHITECTURAL PRECAST CONCRETE:
1. MANUFACTURERS: ATMI OR DUKANE PRECAST OR EQUAL
2. APPLICATION: EXTERIOR WALL PANELS.
3. SURFACE FINISH: SMOOTH FINISH.
4. SURFACE FEATURES: REVEALS.
5. DESIGN MIX: 5000 PSI, 28 DAY COMPRESSIVE STRENGTH, 4 TO 6 PERCENT TOTAL AIR CONTENT.
6. FORMWORK: PLYWOOD OR METAL PANEL FORMWORK SUFFICIENT FOR STRUCTURAL AND VISUAL REQUIREMENTS.
7. COMPONENTS:
a. REINFORCING BARS: ASTM A 767, CLASS II, GALVANIZED.
b. STEEL WIRE: ASTM A 82.
c. STEEL WIRE FABRIC: ASTM A 497, WELDED, DEFORMED.
d. SUPPORTS FOR REINFORCEMENT FOR EXPOSED TO VIEW CONCRETE: CRSI CLASS 2, STAINLESS STEEL PROTECTED LEGS.
e. PRESTRESSING TENDONS: ASTM A 416, GRADE 250, 7-WIRE STRESS-RELIEVED STRAND.
f. FINE AGGREGATE FOR FACING MIXES: ASTM C 33.
g. COARSE AGGREGATE FOR FACING MIX: ASTM C 33.
h. PIGMENTS: NONFADING LIME RESISTANT PIGMENTS.
i. CONCRETE ADMIXTURES: CONTAINING LESS THAN 0.1 PERCENT CHLORIDE IONS.
j. STEEL PLATE: ASTM A 283, GRADE C.
k. STEEL SHAPES: ASTM A 36.
l. STAINLESS STEEL SHAPES: AISI TYPE 302/304.
8. ANCHOR BOLTS: ASTM A 307.
a. STEEL FINISH: ASTM A 153, GALVANIZING FOR EXPOSED STEEL; PRIMED FOR NON-EXPOSED STEEL.
b. NONMETALLIC SHRINKAGE-RESISTANT GROUT, ASTM C 1107.

PART 6 EXECUTION

6.1 INSTALLATION

A. INSTALL MATERIALS AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SUBMITTALS. INSTALL MATERIALS AND SYSTEMS IN PROPER RELATION WITH ADJACENT CONSTRUCTION AND WITH UNIFORM APPEARANCE. COORDINATE WITH WORK OF OTHER SECTIONS.

B. TOLERANCE: 1/4' IN 20' FOR PLUMB AND LOCATION. 1/8" AT ADJACENT UNITS AND REGLETS.

C. RESTORE DAMAGED FINISHES. CLEAN AND PROTECT WORK FROM DAMAGE.

END OF SECTION

SECTION 05 12 00
STRUCTURAL STEEL FRAMING

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE STRUCTURAL STEEL ASSEMBLIES AND ACCESSORIES.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SHOP DRAWINGS: SUBMIT SHOP DRAWINGS INDICATING MATERIAL CHARACTERISTICS, DETAILS OF CONSTRUCTION, CONNECTIONS, AND RELATIONSHIP WITH ADJACENT CONSTRUCTION.
1. SHOP DRAWINGS SHALL BE PREPARED AND STAMPED BY A QUALIFIED ENGINEER LICENSED IN THE JURISDICTION OF THE PROJECT.

C. SUBMIT FOR APPROVAL TEST REPORTS.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. STANDARDS: AISC, CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES, AND APPLICABLE REGULATIONS.

C. ARCHITECTURALLY EXPOSED STRUCTURAL STEEL: COMPLY WITH FABRICATION REQUIREMENTS, INCLUDING TOLERANCE LIMITS, AND INSTALLATION TOLERANCES OF AISC'S "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" FOR STRUCTURAL STEEL IDENTIFIED AS ARCHITECTURALLY EXPOSED STRUCTURAL STEEL.

D. TESTING: INDEPENDENT TESTING LABORATORY.

E. ERECTION TOLERANCES: AISC STANDARDS.

PART 2 PRODUCTS

2.1 MATERIALS

A. STRUCTURAL STEEL:
1. APPLICATION: BUILDING STRUCTURE.

PART 3 EXECUTION

3.1 INSTALLATION

A. COMPLY WITH AISC CODES AND SPECIFICATIONS, AND WITH AWS "STRUCTURAL WELDING CODE".

B. EMPLOY A REGISTERED ENGINEER TO CHECK ELEVATIONS AND PLUMB AND LEVEL TOLERANCES; CERTIFY THAT INSTALLED WORK IS WITHIN AISC STANDARDS. OWNER MAY ENGAGE TESTING/INSPECTION AGENCY TO INSPECT WELDED AND BOLTED CONNECTIONS.

C. TOUCH-UP FIELD WELDS AND ABRADED AREAS WITH SHOP PRIMER.

END OF SECTION

SECTION 05 50 00
METAL FABRICATIONS

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE METAL FABRICATIONS.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SHOP DRAWINGS: SUBMIT SHOP DRAWINGS INDICATING MATERIAL CHARACTERISTICS, DETAILS OF CONSTRUCTION, CONNECTIONS, AND RELATIONSHIP WITH ADJACENT CONSTRUCTION.
1. SHOP DRAWINGS SHALL BE PREPARED AND STAMPED BY A QUALIFIED ENGINEER LICENSED IN THE JURISDICTION OF THE PROJECT.

C. SAMPLES: SUBMIT TWO REPRESENTATIVE SAMPLES OF EACH MATERIAL SPECIFIED INDICATING VISUAL CHARACTERISTICS AND FINISH. INCLUDE RANGE SAMPLES IF VARIATION OF FINISH IS ANTICIPATED.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

PART 2 PRODUCTS

2.1 MATERIALS

A. MANUFACTURERS:
1. METAL FASTENINGS: CENTERLINE BRACKETS ;STEEL DESIGN SOLUTIONS ;TRUFAST WALLS .
2. METAL LADDERS: ALACO LADDER CO. ;FIXFAST USA ;O\'KEEFFE\'S, INC. ;PRECISION LADDERS, LLC .

B. METAL FABRICATION APPLICATIONS:
1. APPLICATION: ROOFTOP LADDERS.
2. APPLICATION: LADDER SAFETY CAGES.
3. APPLICATION: LOOSE STEEL LINTELS.
4. APPLICATION: MISCELLANEOUS FRAMING AND SUPPORTS FOR OVERHEAD DOORS AND GRILLES.
5. APPLICATION: LOADING DOCK EDGE ANGLES.
6. APPLICATION: PIPE BOLLARDS.

C. FERROUS MATERIALS:
1. STEEL PLATES, SHAPES AND BARS: ASTM A 36.
2. ROLLED STEEL FLOOR PLATES: ASTM A 786.
3. STEEL TUBING: ASTM A 500 OR A 501.
4. UNCOATED STRUCTURAL STEEL SHEET: ASTM A 611 OR A 570.
5. UNCOATED STEEL SHEET: ASTM A 366 OR A 569.
6. GALVANIZED STEEL SHEET: ASTM A 653, G90.
7. STEEL PIPE, BLACK FINISH: ASTM A 53.
8. STEEL PIPE, GALVANIZED FINISH: ASTM A 53.
9. GRAY IRON CASTINGS: ASTM A 48, CLASS 30.
10. MALLEABLE IRON CASTINGS: ASTM A 47, GRADE 32510.
11. REINFORCING BARS: ASTM A 615, GRADE 60.
12. BRACKETS, FLANGES, AND ANCHORS: CAST OR FORMED METAL.
13. CONCRETE INSERTS: THREADED OR WEDGE TYPE.
14. WELDING RODS AND BARE ELECTRODES: AWS SPECIFICATIONS.
15. ZINC-COATING: HOT-DIP GALVANIZED COATING FOR MATERIALS IN EXTERIOR ASSEMBLIES OR EXTERIOR WALLS.

D. FASTENERS:
1. BOLTS AND NUTS: HEXAGON HEAD TYPE, ASTM A 307, GRADE A.
2. LAG BOLTS: SQUARE HEAD, FS FF-B-561.
3. MACHINE SCREWS: CADMIUM PLATED STEEL, FS FF-S-92.
4. WOOD SCREWS: FLAT HEAD CARBON STEEL, FS FF-S-111.
5. PLAIN WASHERS: ROUND CARBON STEEL, FS FF-W-92.
6. DRILLED-IN EXPANSION ANCHORS: FS FF-S-325.
7. TOGGLE BOLTS: TUMBLE-WING TYPE, FS FF-B-588.
8. LOCK WASHERS: SPRING TYPE CARBON STEEL, FS FF-W-84.
9. ZINC-COATING: FASTENERS IN EXTERIOR ASSEMBLIES OR EXTERIOR WALLS.

E. AUXILIARY MATERIALS:
1. NONSHRINK METALLIC GROUT: ASTM C 1107.
2. NONSHRINK NONMETALLIC GROUT: ASTM C 1107.
3. INTERIOR ANCHORING CEMENT: HYDRAULIC EXPANSION CEMENT.
4. EXTERIOR/INTERIOR ANCHORING CEMENT: EROSION-RESISTANT HYDRAULIC EXPANSION CEMENT.
5. SHOP PRIMER: FAST CURING, LEAD- AND CHROMATE-FREE, UNIVERSAL MODIFIED-ALKYD PRIMER COMPLYING WITH MPI#79, COMPATIBLE WITH TOPCOATS.
6. ZINC-RICH PRIMER: COMPLYING WITH SSPC-PAINT 20 OR SSPC-PAINT 29 AND COMPATIBLE WITH TOPCOAT.
7. GALVANIZING REPAIR PAINT: SSPC - PAINT 20.
8. BITUMINOUS PAINT: ASPHALT MASTIC, SSPC - PAINT 12.

PART 3 EXECUTION

3.1 INSTALLATION

A. TAKE FIELD MEASUREMENTS PRIOR TO PREPARATION OF SHOP DRAWINGS AND FABRICATION. DO NOT DELAY JOB; ALLOW FOR CUTTING AND FITTING IF FIELD MEASUREMENT NOT PRACTICAL.

B. FORM WORK TRUE TO LINE WITH SHARP ANGLES AND EDGES. WELD CONTINUOUSLY, GRIND FLUSH AND MAKE SMOOTH ON EXPOSED SURFACES.

C. INSTALL WORK PLUMB AND LEVEL WITH HAIRLINE JOINTS AND GROUND FLUSH WELDS.

D. LINTELS: PROVIDE SIZES INDICATED WITH 8" BEARING AT EACH END.

E. TOUCH-UP DAMAGED COATINGS WITH SHOP PRIMER AND GALVANIZE REPAIR PAINT.

F. PAINT ITEMS SCHEDULED IN ACCORDANCE WITH PAINTING SECTION.

END OF SECTION

SECTION 05 52 00
METAL RAILINGS

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE PIPE AND TUBE HANDRAILS AND RAILING SYSTEMS.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SHOP DRAWINGS: SUBMIT SHOP DRAWINGS INDICATING MATERIAL CHARACTERISTICS, DETAILS OF CONSTRUCTION, CONNECTIONS, AND RELATIONSHIP WITH ADJACENT CONSTRUCTION.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. HANDRAIL AND RAILING STRUCTURAL PERFORMANCE: IN ACCORDANCE WITH APPLICABLE BUILDING CODE.

PART 2 PRODUCTS

2.1 MATERIALS

A. METAL RAILINGS:
1. MANUFACTURERS, HANDRAILS AND RAILINGS: AMERICAN ACCESS, INC. ;FEENEY INC. (CABLERAIL, DESIGNRAIL) ;FIXFAST USA ;INKAN LTD. ;LEADING EDGE SAFETY, LLC ;PRL GLASS SYSTEMS, INC. ;SAFETY RAIL COMPANY ;TRACTEL LTD. .
2. APPLICATION: EXTERIOR METAL RAILINGS.
3. APPLICATION: INTERIOR METAL RAILINGS.
4. STEEL PIPE AND TUBE RAILING SYSTEMS:
a. STEEL PIPE, BLACK FINISH: ASTM A 53.
b. STEEL PIPE, GALVANIZED FINISH: ASTM A 53.
c. STEEL TUBING: ASTM A 500 OR A 501.
d. STEEL PLATES, SHAPES AND BARS: ASTM A 36.
e. GRAY IRON CASTINGS: ASTM A 48, CLASS 30.
f. MALLEABLE IRON CASTINGS: ASTM A 47, GRADE 32510.
5. STEEL FINISH: GALVANIZED AND SHOP PRIMED.
6. AUXILIARY MATERIALS:
a. NONSHRINK NONMETALLIC GROUT: CE CRD-C621.
b. INTERIOR ANCHORING CEMENT: HYDRAULIC EXPANSION CEMENT.
c. EXTERIOR/INTERIOR ANCHORING CEMENT: EROSION-RESISTANT HYDRAULIC EXPANSION CEMENT.
d. SHOP PRIMER: FAST-CURING, LEAD- AND CHROMATE-FREE, UNIVERSAL MODIFIED-ALKYD PRIMER COMPLYING WITH MPI#79, COMPATIBLE WITH TOPCOATS.
e. ZINC-RICH PRIMER: COMPLYING WITH SSPC-PAINT 20 OR SSPC-PAINT 29 AND COMPATIBLE WITH TOPCOAT.
f. GALVANIZING REPAIR PAINT: SSPC - PAINT 20.
g. BITUMINOUS PAINT: ASPHALT MASTIC, SSPC - PAINT 12.

PART 3 EXECUTION

3.1 INSTALLATION

A. TAKE FIELD MEASUREMENTS PRIOR TO FABRICATION, WHERE POSSIBLE. FORM TO REQUIRED SHAPES AND SIZES WITH TRUE, STRAIGHT EDGES, LINES AND ANGLES. PROVIDE LIGHT-TIGHT, HAIRLINE JOINTS.

B. INSTALL MATERIALS AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SUBMITTALS. INSTALL MATERIALS AND SYSTEMS IN PROPER RELATION WITH ADJACENT CONSTRUCTION. COORDINATE WITH WORK OF OTHER SECTIONS.

C. COORDINATE WITH WORK OF OTHER SECTIONS; PROVIDE INSERTS AND TEMPLATES AS NEEDED. INSTALL WORK PLUMB AND LEVEL WITH UNIFORM APPEARANCE.

D. RESTORE DAMAGED FINISHES AND PROTECT WORK.

END OF SECTION

SECTION 06 10 00
ROUGH CARPENTRY

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE ROUGH CARPENTRY.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. LUMBER STANDARDS AND GRADE STAMPS: DOC PS 20, AMERICAN SOFTWOOD LUMBER STANDARD AND INSPECTION AGENCY GRADE STAMPS.

C. CONSTRUCTION PANEL STANDARDS: DOC PS 1, U.S. PRODUCT STANDARD FOR CONSTRUCTION AND INDUSTRIAL PLYWOOD; APA PRP-108.

D. WOOD FRAMING STANDARDS: NFPA HOUSE FRAMING MANUAL.

E. PRESERVATIVE TREATMENT: AWPA C2 FOR LUMBER AND AWPA C9 FOR PLYWOOD; WATERBORNE PRESSURE TREATMENT. PROVIDE FOR WOOD IN CONTACT WITH SOIL, CONCRETE, MASONRY, ROOFING, FLASHING, DAMPPROOFING AND WATERPROOFING.

F. FIRE-RETARDANT TREATMENT: AWPA C20 FOR LUMBER AND AWPA C27 FOR PLYWOOD; NONCORROSIVE TYPE. PROVIDE AT BUILDING INTERIOR WHERE REQUIRED BY CODE.

PART 2 PRODUCTS

2.1 MATERIALS

A. ROUGH CARPENTRY APPLICATIONS:
1. APPLICATION: WOOD GROUNDS, NAILERS, AND BLOCKING.

PART 3 EXECUTION

3.1 INSTALLATION

A. SECURELY ATTACH ROUGH CARPENTRY WORK TO SUBSTRATE BY ANCHORING AND FASTENING AS INDICATED.

B. PLYWOOD: COMPLY WITH APPLICABLE RECOMMENDATIONS CONTAINED IN APA FORM NO. E30K, "APA DESIGN/CONSTRUCTION GUIDE: RESIDENTIAL & COMMERCIAL"

C. PROVIDE NAILERS, BLOCKING AND GROUNDS WHERE REQUIRED. SET WORK PLUMB, LEVEL AND ACCURATELY CUT.

D. INSTALL MATERIALS AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SUBMITTALS. INSTALL MATERIALS AND SYSTEMS IN PROPER RELATION WITH ADJACENT CONSTRUCTION. COORDINATE WITH OTHER WORK.

E. COMPLY WITH MANUFACTURER'S REQUIREMENTS FOR CUTTING, HANDLING, FASTENING AND WORKING TREATED MATERIALS.

F. RESTORE DAMAGED COMPONENTS. PROTECT WORK FROM DAMAGE.

END OF SECTION

SECTION 07 21 00
INSULATION

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE THERMAL INSULATION.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SUBMIT FOR APPROVAL TEST REPORTS.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

PART 2 PRODUCTS

2.1 MATERIALS

A. BOARD INSULATION:
1. APPLICATION: FOUNDATION WALLS

B. BATT INSULATION:
1. APPLICATION: EXTERIOR WALLS (KRAFT FACED OR ADD VAPOR BARRIER)

C. SOUND BATTS:
1. APPLICATION: INTERIOR WALLS

D. POLYISO INSULATION:
1. APPLICATION: ROOF

PART 3 EXECUTION

3.1 INSTALLATION

A. INSTALL MATERIALS AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SUBMITTALS. INSTALL MATERIALS AND SYSTEMS IN PROPER RELATION WITH ADJACENT CONSTRUCTION. COORDINATE WITH WORK OF OTHER SECTIONS. PROVIDE FULL THICKNESS IN ONE LAYER OVER ENTIRE AREA, TIGHTLY FITTING AROUND PENETRATIONS.

END OF SECTION

SECTION 07 54 00
THERMOPLASTIC MEMBRANE ROOFING

PART 4 GENERAL

4.1 SUMMARY

A. PROVIDE THERMOPLASTIC MEMBRANE ROOFING.

4.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. WARRANTY: SUBMIT MANUFACTURERS STANDARD WARRANTY. INCLUDE LABOR AND MATERIALS TO REPAIR OR REPLACE DEFECTIVE MATERIALS.
1. WARRANTY PERIOD: 15 YEARS.

4.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. LISTING: UL CLASS A EXTERNAL FIRE EXPOSURE:

C. LISTING: FM CLASS I CONSTRUCTION.

PART 5 PRODUCTS

5.1 MATERIALS

A. THERMOPLASTIC POLYOLEFIN SHEET (TPO) ROOFING:
1. MANUFACTURERS: CARLISLE SYNTEC SYSTEMS ;FIBERTITE, SEAMAN CORPORATION ;GAF COMMERCIAL ROOFING PRODUCTS ;VERSICO ROOFING SYSTEMS .
2. TYPE: FULLY ADHERED.
3. MEMBRANE: TPO, 60 MILS, FABRIC REINFORCED.
4. WALKWAYS: WALKWAY BOARD.
5. INSULATION: POLYISOCYANURATE BOARD.
6. INSULATION PROFILE: TAPERED. (ONLY AT VESTIBULE ROOF)
7. INSULATION PROFILE: FLAT.

PART 6 EXECUTION

6.1 INSTALLATION

A. INSPECT SUBSTRATE AND REPORT UNSATISFACTORY CONDITIONS IN WRITING. BEGINNING WORK MEANS ACCEPTANCE OF SUBSTRATE.

B. COMPLY WITH ROOF SYSTEM MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS; CLEAN, PRIME AND PREPARE SUBSTRATE.

C. INSTALL INSULATION WITH TIGHTLY BUTTED JOINTS AND NEATLY FITTED AROUND PENETRATIONS.

D. BEGIN ROOF INSTALLATION ONLY IN PRESENCE OF MANUFACTURER'S REPRESENTATIVE. MINIMIZE SEAMS AND SHINGLE OVERLAPS TO SHED WATER.

E. WHERE APPLICABLE, DISTRIBUTE BALLAST UNIFORMLY TO 10 POUNDS PER SQUARE FOOT OR MORE AS REQUIRED BY FM. OBTAIN APPROVAL OF BALLAST WEIGHT BEFORE LOADING ROOF.

F. INSTALL WALKWAY PROTECTION OVER AN ADDITIONAL LAYER OF MEMBRANE AT LOCATIONS INDICATED AND WHERE REQUIRED TO PROVIDE ACCESS TO ROOF MOUNTED EQUIPMENT.

G. RESTORE OR REPLACE DAMAGED COMPONENTS. PROTECT WORK FROM DAMAGE.

END OF SECTION

SECTION 07 62 00
SHEET METAL FLASHING AND TRIM

PART 7 GENERAL

7.1 SUMMARY

A. PROVIDE FLASHING AND SHEET METAL.

7.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

7.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

PART 8 PRODUCTS

8.1 MATERIALS

A. FLASHING AND SHEET METAL:
1. MANUFACTURERS: ARCHITECTURAL METAL SPECIALTIES INC. ;PETERSEN ALUMINUM CORP. ;TYPAR .
2. APPLICATION: METAL COUNTERFLASHING.
3. APPLICATION: EXPOSED METAL TRIM, ROOF EDGE, AND COPINGS.
4. METAL: ZINC-COATED STEEL.
a. STANDARD: ASTM A 653, G90 HOT-DIP GALVANIZED, 2-COAT 70% FLUOROPOLYMER, 24-GAUGE MIN.
5. METAL: SHEET ALUMINUM.
a. STANDARD: ASTM B 209, ALLOY 3003, PREFINISHED 2-COAT 70% FLUOROPOLYMER, 24 GAUGE MIN.

PART 9 EXECUTION

9.1 INSTALLATION

A. FOLLOW RECOMMENDATIONS OF SMACNA SHEET METAL MANUAL OR MANUFACTURER'S RECOMMENDATIONS FOR PREMANUFACTURED COMPONENTS. ALLOW FOR EXPANSION. ISOLATE DISSIMILAR MATERIALS.

B. INSTALL MATERIALS AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SUBMITTALS. INSTALL MATERIALS AND SYSTEMS IN PROPER RELATION WITH ADJACENT CONSTRUCTION AND WITH UNIFORM APPEARANCE. COORDINATE WITH WORK OF OTHER SECTIONS.

C. RESTORE DAMAGED COMPONENTS AND FINISHES. CLEAN AND PROTECT WORK FROM DAMAGE.

END OF SECTION

SECTION 07 92 00
JOINT SEALANTS

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE JOINT SEALERS AND FILLERS.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SAMPLES: SUBMIT TWO REPRESENTATIVE SAMPLES OF EACH MATERIAL SPECIFIED INDICATING VISUAL CHARACTERISTICS AND FINISH. INCLUDE RANGE SAMPLES IF VARIATION OF FINISH IS ANTICIPATED.
1. INCLUDE MANUFACTURERS FULL RANGE OF COLOR AND FINISH OPTIONS IF ADDITIONAL SELECTION IS REQUIRED.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

PART 2 PRODUCTS

2.1 MATERIALS

A. EXTERIOR JOINTS IN VERTICAL SURFACES, SILICONE:
1. MANUFACTURERS: TOWER SEALANTS .
2. MATERIALS: TWO COMPONENT SILICONE SEALANT.

B. EXTERIOR JOINTS IN VERTICAL SURFACES, URETHANE:
1. MANUFACTURERS: BACKER ROD MFG. INC. ;SHERWIN-WILLIAMS ;TOWER SEALANTS .
2. MATERIALS: TWO-COMPONENT URETHANE SEALANT.

C. EXTERIOR JOINTS IN VERTICAL SURFACES, PREFORMED COMPRESSION SEALS:
1. MATERIALS: PREFORMED PRECOMPRESSED FOAM SEALANT.

D. EXTERIOR JOINTS IN HORIZONTAL SURFACES, URETHANE:
1. MANUFACTURERS: SHERWIN-WILLIAMS ;TOWER SEALANTS .
2. MATERIALS: SELF-LEVELING URETHANE SEALANT, ASTM C 920.

E. EXTERIOR PAVING JOINT FILLERS, BITUMINOUS:
1. MATERIALS: BITUMINOUS FIBER.

F. INTERIOR JOINTS, LIMITED MOVEMENT, ACRYLIC:
1. MANUFACTURERS: TOWER SEALANTS .
2. MATERIALS: ACRYLIC-EMULSION, ASTM C 834.

G. INTERIOR JOINTS, SANITARY SILICONE:
1. MANUFACTURERS: GE SILICONES .
2. MATERIALS: ONE-PART MILDEW-RESISTANT SILICONE SEALANT, ASTM C 920.

PART 3 EXECUTION

3.1 INSTALLATION

A. EXAMINE SUBSTRATE; REPORT UNSATISFACTORY CONDITIONS IN WRITING. BEGINNING WORK MEANS ACCEPTANCE OF SUBSTRATES.

B. PROVIDE SEALANTS IN COLORS AS SELECTED FROM MANUFACTURER'S STANDARDS.

C. INSTALL MATERIALS AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SUBMITTALS. INSTALL MATERIALS AND SYSTEMS IN PROPER RELATION WITH ADJACENT CONSTRUCTION AND WITH UNIFORM APPEARANCE. COORDINATE WITH WORK OF OTHER SECTIONS. CLEAN AND PRIME JOINTS, AND INSTALL BOND BREAKERS, BACKER RODS AND SEALANT AS RECOMMENDED BY MANUFACTURE

D. DEPTH SHALL EQUAL WIDTH UP TO 1/2 INCH WIDE; DEPTH SHALL EQUAL 1/2 JOINTS OVER 1/2 INCH WIDE.

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PROJECT MGR. TPL
SPECIFICATIONS

A9.1

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E. CURE AND PROTECT SEALANTS AS DIRECTED BY MANUFACTURERS. REPLACE OR RESTORE DAMAGED SEALANTS. CLEAN ADJACENT SURFACES TO REMOVE SPILLAGE.

END OF SECTION

SECTION 08 11 13
HOLLOW METAL DOORS AND FRAMES

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE STEEL DOORS AND FRAMES.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SHOP DRAWINGS: SUBMIT SHOP DRAWINGS INDICATING MATERIAL CHARACTERISTICS, DETAILS OF CONSTRUCTION, CONNECTIONS, AND RELATIONSHIP WITH ADJACENT CONSTRUCTION.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. STANDARDS: ANSI/SDI-100, RECOMMENDED SPECIFICATIONS FOR STANDARD STEEL DOORS AND FRAMES.

C. PERFORMANCE STANDARDS:
1. FIRE-RATED ASSEMBLIES: NFPA 80, AND ACCEPTABLE TESTING AGENCY LISTING.
2. THERMAL-RATED ASSEMBLIES AT EXTERIOR: ASTM C 236 OR ASTM C 976.
3. SOUND-RATED ASSEMBLIES AT MECHANICAL ROOMS: ASTM E 1408, AND ASTM E 413.

PART 2 PRODUCTS

2.1 MATERIALS

A. STEEL DOORS:
1. MANUFACTURERS: AMBICO LIMITED ;DOOR SYSTEMS ;GALAXY METAL PRODUCTS .
2. MATERIAL: MINIMUM 20 GAUGE STEEL SHEET.
3. THICKNESS: 1-3/4 INCHES.
4. FINISH: FACTORY PRIMED AND FIELD PAINTED.

B. INTERIOR STEEL FRAMES:
1. TYPE: 18 GA., WELDED.
2. FINISH: FACTORY PRIMED AND FIELD PAINTED.

C. EXTERIOR STEEL FRAMES:
1. TYPE: 16 GA., WELDED.
2. FINISH: FACTORY PRIMED AND FIELD PAINTED.

PART 3 EXECUTION

3.1 INSTALLATION

A. FABRICATE WORK TO BE RIGID, NEAT AND FREE FROM SEAMS, DEFECTS, DENTS, WARP, BUCKLE, AND EXPOSED FASTENERS. INSTALL DOORS AND FRAMES IN COMPLIANCE WITH SDI-100, NFPA 80, AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.

B. PROVIDE THERMALLY IMPROVED DOORS AS INDICATED (ASTM C 236) FOR ALL EXTERIOR DOORS AND ELSEWHERE AS NOTED.

C. PROVIDE ACOUSTICALLY IMPROVED DOORS WITH MINIMUM STC OF 33 (ASTM E 90 AND ASTM E 413) WHERE INDICATED.

D. HARDWARE: PREPARE DOORS AND FRAMES TO RECEIVE HARDWARE ON FINAL SCHEDULE. PROVIDE FOR 3 SILENCERS ON SINGLE DOORFRAMES; 2 ON DOUBLE DOORFRAMES.

E. SHOP FINISH: CLEAN, TREAT AND PRIME PAINT ALL WORK WITH RUST-INHIBITING PRIMER COMPARABLE WITH FINISH PAINT SPECIFIED IN DIVISION 9 SECTION. PROVIDE ASPHALT EMULSION SOUND DEADENING COATING ON CONCEALED FRAME INTERIORS.

F. TOUCH-UP DAMAGED COATINGS READY TO RECEIVE FINISH PAINTING.

END OF SECTION

SECTION 08 36 00
PANEL DOORS

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE SECTIONAL OVERHEAD DOORS.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SHOP DRAWINGS: SUBMIT SHOP DRAWINGS INDICATING MATERIAL CHARACTERISTICS, DETAILS OF CONSTRUCTION, CONNECTIONS, AND RELATIONSHIP WITH ADJACENT CONSTRUCTION.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

PART 2 PRODUCTS

2.1 MATERIALS

A. SECTIONAL OVERHEAD DOORS:
1. FRAME AND PANELS: GALVANIZED STEEL FRAME AND STEEL INSULATED PANELS.
2. PANEL PROFILE: FLAT.
3. TRACK TYPE: STANDARD TRACK.
4. OPERATION: ELECTRIC DOOR OPERATOR.
5. SERVICE: COMMERCIAL.
6. STEEL FINISH: FACTORY FINISHED.
7. AUXILIARY MATERIALS:
a. ELECTRIC OPERATORS AND CONTROLS.
b. LIFTING HANDLES AND LOCKING BARS.
c. VISION PANELS.
d. PASS DOORS.
e. AUTOMATIC REVERSING CONTROL FOR BOTTOM BAR FOR ELECTRICALLY OPERATED DOORS.

PART 3 EXECUTION

3.1 INSTALLATION

A. INSTALL MATERIALS AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SUBMITTALS. INSTALL MATERIALS AND SYSTEMS IN PROPER RELATION WITH ADJACENT CONSTRUCTION AND WITH UNIFORM APPEARANCE. COORDINATE WITH WORK OF OTHER SECTIONS.

B. INSTALL ASSEMBLIES COMPLETE WITH ALL HARDWARE, ANCHORS, INSERTS, SUPPORTS AND ACCESSORIES. RESTORE DAMAGED FINISHES AND TEST FOR PROPER OPERATION. CLEAN AND PROTECT WORK FROM DAMAGE.

END OF SECTION

SECTION 08 41 13
ENTRANCES AND STOREFRONTS

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE ENTRANCES AND STOREFRONT AT EXTERIOR AND INTERIOR.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SHOP DRAWINGS: SUBMIT SHOP DRAWINGS INDICATING MATERIAL CHARACTERISTICS, DETAILS OF CONSTRUCTION, CONNECTIONS, AND RELATIONSHIP WITH ADJACENT CONSTRUCTION.

C. WARRANTY: SUBMIT MANUFACTURER'S STANDARD WARRANTY. INCLUDE LABOR AND MATERIALS TO REPAIR OR REPLACE DEFECTIVE MATERIALS.
1. WARRANTY PERIOD: 5 YEARS.

D. OPERATION AND MAINTENANCE DATA: SUBMIT MANUFACTURER'S OPERATION AND MAINTENANCE DATA, INCLUDING OPERATING INSTRUCTIONS, LIST OF SPARE PARTS AND MAINTENANCE SCHEDULE.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

PART 2 PRODUCTS

2.1 MATERIALS

A. ALUMINUM ENTRANCES AND STOREFRONT:
1. STOREFRONT STYLE: ALUMINUM FRAMED.
a. EXTERIOR: THERMALLY BROKEN.
b. INTERIOR: NO THERMAL BREAKS.
2. GLASS AND GLAZING:
a. EXTERIOR: INSULATING GLAZING, TEMPERED WHERE REQUIRED BY CODE.
b. INTERIOR: SINGLE PANE, TEMPERED WHERE REQUIRED BY CODE.
3. GLAZING COLOR: CLEAR.
4. WIDTH AND REINFORCING AS REQUIRED FOR HEIGHTS OVER 10'-0".

PART 3 EXECUTION

3.1 INSTALLATION

A. TAKE FIELD MEASUREMENTS BEFORE FABRICATION WHERE POSSIBLE; DO NOT DELAY JOB PROGRESS.

B. INSTALL MATERIALS AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SUBMITTALS. INSTALL MATERIALS AND SYSTEMS IN PROPER RELATION WITH ADJACENT CONSTRUCTION AND WITH UNIFORM APPEARANCE. COORDINATE WITH WORK OF OTHER SECTIONS.

C. ANCHOR SECURELY IN PLACE; INSTALL PLUMB, LEVEL AND IN TRUE ALIGNMENT. ISOLATE DISSIMILAR MATERIALS TO PREVENT CORROSION.

D. COORDINATE WITH GLASS AND GLAZING WORK; INSTALL HARDWARE AND ADJUST FOR SMOOTH, PROPER OPERATION.

E. CLEAN AND PROTECT COMPLETED SYSTEM; REPAIR DAMAGE.

END OF SECTION

SECTION 08 71 00
DOOR HARDWARE

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE DOOR HARDWARE.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SAMPLES: SUBMIT TWO REPRESENTATIVE SAMPLES OF EACH MATERIAL SPECIFIED INDICATING VISUAL CHARACTERISTICS AND FINISH. INCLUDE RANGE SAMPLES IF VARIATION OF FINISH IS ANTICIPATED.

C. SUBMIT FOR APPROVAL HARDWARE SCHEDULE PROPOSED FOR USE BASED ON OWNER'S REQUIREMENTS.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. HARDWARE FOR FIRE-RATED OPENINGS: NFPA 80, AND LOCAL REQUIREMENTS.

C. MATERIALS AND APPLICATION: ANSI A156 SERIES STANDARDS.

PART 2 PRODUCTS

2.1 MATERIALS

A. DOOR HARDWARE:
1. QUALITY LEVEL: HEAVY DUTY COMMERCIAL.
2. LOCKSETS AND LATCHSETS: MORTISE TYPE.
3. LOCK CYLINDERS: INTERCHANGEABLE.
4. KEYING: OWNER'S REQUIREMENTS.
5. CLOSERS, DOOR CONTROL, AND EXIT DEVICES: HIGH FREQUENCY.
6. HARDWARE FINISHES: SATIN CHROME FINISH ON EXPOSED SURFACES.
7. AUXILIARY MATERIALS:
a. DOOR TRIM UNITS: KICKPLATES, EDGE TRIM, VIEWERS, KNOCKERS, AND MAIL DROPS. AND RELATED TRIM.
b. STOPS AND OVERHEAD DOOR HOLDERS.
c. WEATHERSTRIPPING AND THRESHOLDS.
d. CARD-OPERATED OPENING DEVICES.
e. KNOX BOX FOR FIRE EMERGENCY KEYS.
8. COORDINATE WITH SECURITY CONTRACTOR FOR ELECTRIC STRIKES.

PART 3 EXECUTION

3.1 INSTALLATION

A. FOLLOW GUIDELINES OF DHI 'RECOMMENDED LOCATIONS FOR BUILDER'S HARDWARE AND HARDWARE MANUFACTURERS' INSTRUCTIONS.

B. INSTALL MATERIALS AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SUBMITTALS. INSTALL MATERIALS AND SYSTEMS IN PROPER RELATION WITH ADJACENT CONSTRUCTION AND WITH UNIFORM APPEARANCE. COORDINATE WITH WORK OF OTHER SECTIONS.

C. ADJUST OPERATION, CLEAN AND PROTECT.

END OF SECTION

SECTION 09 21 16
GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE GYPSUM BOARD ASSEMBLIES.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. TOLERANCES: NOT MORE THAN 1/16-INCH DIFFERENCE IN TRUE PLANE AT JOINTS BETWEEN ADJACENT BOARDS BEFORE FINISHING. AFTER FINISHING, JOINTS SHALL BE NOT BE VISIBLE. NOT MORE THAN 1/8 INCH IN 10 FEET DEVIATION FROM TRUE PLANE, PLUMB, LEVEL AND PROPER RELATION TO ADJACENT SURFACES IN FINISHED WORK.

C. FIRE RESISTANCE FOR FIRE-RATED ASSEMBLIES: ASTM E 119.

D. MOCK-UPS: PROVIDE MOCK-UP AS REQUIRED TO DEMONSTRATE QUALITY OF WORKMANSHIP AND LEVEL OF FINISH.

E. PERFORMANCE: FIRE, STRUCTURAL, AND SEISMIC PERFORMANCE MEETING REQUIREMENTS OF BUILDING CODE AND LOCAL AUTHORITIES.

PART 2 PRODUCTS

2.1 MATERIALS

A. GYPSUM BOARD:
1. APPLICATION: INTERIOR WALLS, PARTITIONS, AND CEILINGS WITH TAPE AND JOINT COMPOUND FINISH.
2. APPLICATION: ABUSE-RESISTANT BOARD AT AS INDICATED IN THE DRAWINGS
3. TYPE: BOARD FOR TAPE AND JOINT COMPOUND FINISH.
a. TYPE: REGULAR, MOISTURE-RESISTANT AND FIRE-RATED TYPES AS REQUIRED.
b. TYPICAL THICKNESS: 5/8 INCH.
4. TYPE: ABUSE-RESISTANT BOARD.
a. TYPICAL THICKNESS: 5/8 INCH.

B. MOLD RESISTANT GYPSUM BOARD:
1. APPLICATION: ROOMS WITH SHOWERS AT WALL AND CEILINGS.
2. MANUFACTURERS: NATIONAL GYPSUM
3. TYPE: XP FIRE SHIELD
a. TYPICAL THICKNESS: 5/8 INCH.

C. GLASS-MAT WATER-RESISTANT GYPSUM BACKING BOARD:
1. APPLICATION: TILE BACKER AT TILED SHOWERS.
2. MANUFACTURERS: NATIONAL GYPSUM
3. TYPE: PERMABASE CEMENT BOARD
a. TYPICAL THICKNESS: 5/8 INCH.

PART 3 EXECUTION

3.1 INSTALLATION

A. INSTALL GYPSUM BOARD FOR TAPE AND 3-COAT JOINT COMPOUND FINISH IN COMPLIANCE WITH ASTM C 840 AND GA 216, LEVEL 4 FINISH. INSTALL GYPSUM BOARD ASSEMBLIES TRUE, PLUMB, LEVEL AND IN PROPER RELATION TO ADJACENT SURFACES.

B. PROVIDE FIRE-RATED SYSTEMS WHERE INDICATED AND WHERE REQUIRED BY AUTHORITIES HAVING JURISDICTION.

C. INSTALL BOARDS VERTICALLY. DO NOT ALLOW BUTT-TO-BUTT JOINTS AND JOINTS THAT DO NOT FALL OVER FRAMING MEMBERS.

D. WHERE NEW PARTITIONS MEET EXISTING CONSTRUCTION, REMOVE EXISTING CORNERBEADS TO PROVIDE A SMOOTH TRANSITION.

E. PROVIDE INSULATION FULL HEIGHT AND THICKNESS IN PARTITIONS AT CONFERENCE ROOMS, TOILET ROOMS, BETWEEN DIFFERENT OCCUPANCIES, AND WHERE REQUIRED.

F. PROVIDE ACOUSTICAL SEALANT AT BOTH FACES AT TOP AND BOTTOM RUNNER TRACKS, WALL PERIMETERS, OPENINGS, EXPANSION AND CONTROL JOINTS.

G. INSTALL TRIM IN STRICT COMPLIANCE WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

H. REPAIR SURFACE DEFECTS. LEAVE READY FOR FINISH PAINTING OR WALL TREATMENT.

END OF SECTION

SECTION 09 22 16
NON-STRUCTURAL METAL FRAMING

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE NON-STRUCTURAL METAL FRAMING FOR GYPSUM BOARD ASSEMBLIES.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. TOLERANCES: NOT MORE THAN 1/8 INCH IN 10 FEET DEVIATION FROM TRUE PLANE, PLUMB, LEVEL AND PROPER RELATION TO ADJACENT SURFACES IN FINISHED WORK.

C. FIRE RESISTANCE FOR FIRE-RATED ASSEMBLIES: ASTM E 119.

D. PERFORMANCE: FIRE, STRUCTURAL, AND SEISMIC PERFORMANCE MEETING REQUIREMENTS OF BUILDING CODE AND LOCAL AUTHORITIES.

PART 2 PRODUCTS

2.1 MATERIALS

A. STEEL FRAMING FOR WALLS AND PARTITIONS:
1. STUD THICKNESS: PER DRAWINGS.
2. FURRING CHANNEL THICKNESS: 20 GAUGE (.0329 INCH).

B. STEEL FRAMING FOR SUSPENDED AND FURRED CEILINGS:
1. ATTACHMENT: STANDARD.
2. STUD THICKNESS: 20 GAUGE (.0329 INCH).

PART 3 EXECUTION

3.1 INSTALLATION

A. PROVIDE FIRE-RATED SYSTEMS WHERE INDICATED AND WHERE REQUIRED BY AUTHORITIES HAVING JURISDICTION.

B. WHERE NEW PARTITIONS MEET EXISTING CONSTRUCTION, REMOVE EXISTING CORNERBEADS TO PROVIDE A SMOOTH TRANSITION.

C. PROVIDE ACOUSTICAL SEALANT AT BOTH FACES AT TOP AND BOTTOM RUNNER TRACKS, WALL PERIMETERS, OPENINGS, EXPANSION AND CONTROL JOINTS.

END OF SECTION

SECTION 09 30 00
TILING

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE TILE.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SAMPLES: SUBMIT TWO REPRESENTATIVE SAMPLES OF EACH MATERIAL SPECIFIED INDICATING VISUAL CHARACTERISTICS AND FINISH. INCLUDE RANGE SAMPLES IF VARIATION OF FINISH IS ANTICIPATED.
1. INCLUDE MANUFACTURERS FULL RANGE OF COLOR AND FINISH OPTIONS IF ADDITIONAL SELECTION IS REQUIRED.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. TILE: ANSI A 137.1.

C. TILE SETTING MATERIALS: ANSI A 118 SERIES STANDARD SPECIFICATIONS.

D. TILE INSTALLATION: ANSI 108 SERIES STANDARD SPECIFICATIONS AND TILE COUNCIL OF AMERICA, HANDBOOK FOR CERAMIC TILE INSTALLATION.

PART 2 PRODUCTS

2.1 MATERIALS

A. TILE:
1. APPLICATION: INTERIOR WALL TILE OVER GYPSUM WALLBOARD.
2. APPLICATION: INTERIOR WALL TILE OVER TILE BACKER BOARD AT WET AREAS.

B. SETTING MATERIALS:
1. MANUFACTURERS: CUSTOM BUILDING PRODUCTS ;FUTURA TRANSITIONS ;LATICRETE INTERNATIONAL, INC. ;MAPEI ;NORTH AMERICAN ADHESIVES ;PROFLEX® PRODUCTS, INC. ;SCHLUTER SYSTEMS LP ;SGM, INC. .
2. MORTAR SETTING BED.
a. LATEX ADDITIVE.
3. THIN-SET MORTAR.
4. GROUT.
5. WATERPROOFING MEMBRANE UNDER TILE.
a. ANSI A 118.10.
6. ELASTOMERIC SEALANTS.

PART 3 EXECUTION

3.1 INSTALLATION

A. COMPLY WITH TILE COUNCIL OF AMERICA AND ANSI STANDARD SPECIFICATIONS FOR INSTALLATION FOR SUBSTRATE AND INSTALLATION REQUIRED. COMPLY WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

B. INSTALL WATERPROOF MEMBRANE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

C. LAY TILE IN GRID PATTERN WITH ALIGNMENT GRIDS. LAYOUT TILE TO PROVIDE UNIFORM JOINT WIDTHS AND TO MINIMIZE CUTTING; DO NOT USE LESS THAN 1/2 TILE UNITS.

D. PROVIDE SEALANT JOINTS WHERE RECOMMENDED BY TCA AND APPROVED BY ARCHITECT.

E. GROUT AND CURE, CLEAN AND PROTECT.

END OF SECTION

SECTION 09 51 00
ACOUSTICAL CEILINGS

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE ACOUSTICAL CEILINGS AND SUSPENSION SYSTEMS.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SAMPLES: SUBMIT TWO REPRESENTATIVE SAMPLES OF EACH MATERIAL SPECIFIED INDICATING VISUAL CHARACTERISTICS AND FINISH. INCLUDE RANGE SAMPLES IF VARIATION OF FINISH IS ANTICIPATED.

C. EXTRA STOCK: SUBMIT EXTRA STOCK EQUAL TO 2 PERCENT OF AMOUNT INSTALLED.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. PERFORMANCE: FIRE, STRUCTURAL, AND SEISMIC PERFORMANCE MEETING REQUIREMENTS OF BUILDING CODE AND LOCAL AUTHORITIES. ACOUSTICAL PERFORMANCE BASED ON PROJECT REQUIREMENTS.

PART 2 PRODUCTS

2.1 MATERIALS

A. MINERAL FIBER ACOUSTICAL CEILINGS:
1. PANEL EDGE: PER DRAWINGS
2. GRID: EXPOSED GRID PER DRAWINGS.
3. SUSPENSION SYSTEM: INTERMEDIATE DUTY.

PART 3 EXECUTION

3.1 INSTALLATION

A. INSTALL MATERIALS AND SUSPENSION SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS, AND ASTM C 636. COORDINATE INSTALLATION WITH LOCATION OF MECHANICAL AND ELECTRICAL WORK TO ENSURE PROPER LOCATIONS AND ANCHORAGE.

B. LEVEL CEILING TO WITHIN 1/8 INCH IN 10 FEET IN BOTH DIRECTIONS. SCRIBE AND CUT PANELS TO FIT ACCURATELY. MEASURE AND LAYOUT TO AVOID LESS THAN HALF PANEL UNITS.

C. REMOVAL AND REINSTALLATION AT EXISTING CEILINGS: REMOVE AND STORE MATERIALS FOR REUSE WHEN ALLOWED. HANDLE WITH WHITE GLOVES AND AVOID DAMAGING CORNERS AND EDGES. CLEAN TILES AND GRID SYSTEM, WHICH HAVE BEEN REMOVED. PROVIDE ADDITIONAL MATERIALS TO COMPLETE THE WORK AND TO REPLACE DAMAGED EXISTING MATERIALS. NEW MATERIALS SHALL MATCH EXISTING MATERIALS AS APPROVED.

D. ADJUST, CLEAN, AND TOUCH-UP ALL SYSTEM COMPONENTS.

END OF SECTION

SECTION 09 91 00
PAINTING

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE PAINTING AND SURFACE PREPARATION.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SAMPLES: SUBMIT TWO REPRESENTATIVE SAMPLES OF EACH MATERIAL SPECIFIED INDICATING VISUAL CHARACTERISTICS AND FINISH. INCLUDE RANGE SAMPLES IF VARIATION OF FINISH IS ANTICIPATED.
1. INCLUDE MANUFACTURERS FULL RANGE OF COLOR AND FINISH OPTIONS IF ADDITIONAL SELECTION IS REQUIRED.

C. EXTRA STOCK: SUBMIT 2 UNOPENED GALLONS OF EACH PAINT AND COLOR USED IN THE PROJECT.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. REGULATIONS: COMPLIANCE WITH VOC AND ENVIRONMENTAL REGULATIONS.

PART 2 PRODUCTS

2.1 MATERIALS

A. PAINTING:
1. APPLICATION: INTERIOR UNFINISHED SURFACES.
2. PRIMARY COATING TYPE: LATEX BASED PAINTS.
3. PRIMARY PAINT SYSTEMS: PRIMER PLUS TWO FINISH COATS.

PART 3 EXECUTION

3.1 INSTALLATION

A. INSPECT SURFACES, REPORT UNSATISFACTORY CONDITIONS IN WRITING; BEGINNING WORK MEANS ACCEPTANCE OF SUBSTRATE.

B. COMPLY WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS FOR PREPARATION, PRIMING AND COATING WORK. COORDINATE WITH WORK OF OTHER SECTIONS.

C. AT EXISTING AREAS TO BE REPAINTED, REMOVE BLISTERED OR PEELING PAINT TO SOUND SUBSTRATES. REMOVE CHALK DEPOSITS AND MILDEW AND WASH ALL SURFACES WITH MILD DETERGENT. PERFORM RELATED MINOR PREPARATION INCLUDING CAULK AND GLAZING COMPOUNDS. SPOT PRIME BARE AREAS BEFORE PRIMING AND PAINTING AS SPECIFIED.

D. MATCH APPROVED MOCK-UPS FOR COLOR, TEXTURE, AND PATTERN. RE-COAT OR REMOVE AND REPLACE WORK WHICH DOES NOT MATCH OR SHOWS LOSS OF ADHESION. CLEAN UP, TOUCH UP AND PROTECT WORK.

3.2 PAINT SCHEDULE

A. GYPSUM DRYWALL WALLS:
1. GLOSS:
a. FLAT
2. SYSTEM:
a. 1 COAT LATEX PRIMER
b. 2 COATS LATEX FINISH

B. GYPSUM DRYWALL WALLS AND CEILINGS IN BATHROOMS, KITCHENS AND WET AREAS:
1. GLOSS:
a. SEMI
2. SYSTEM:
a. 1 COAT LATEX PRIMER
b. 2 COATS LATEX FINISH

C. GYPSUM DRYWALL CEILINGS:
1. GLOSS:
a. FLAT
2. SYSTEM:
a. 1 COAT LATEX PRIMER
b. 2 COATS LATEX FINISH

D. FERROUS METALS:
1. GLOSS:
a. HIGH
2. SYSTEM:
a. 1 COAT RUST-INHIBITING PRIMER
b. 1 COAT LATEX ENAMEL
c. 2 COATS LATEX ENAMEL

E. GALVANIZED METAL:
1. GLOSS:
a. HIGH
2. SYSTEM:
a. 1 COAT GALVANIZED METAL PRIMER
b. 2 COATS ALKYD ENAMEL

END OF SECTION

SECTION 10 21 13
TOILET COMPARTMENTS

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE TOILET PARTITIONS AND SCREENS.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SHOP DRAWINGS: SUBMIT SHOP DRAWINGS INDICATING MATERIAL CHARACTERISTICS, DETAILS OF CONSTRUCTION, CONNECTIONS, AND RELATIONSHIP WITH ADJACENT CONSTRUCTION.

C. SAMPLES: SUBMIT TWO REPRESENTATIVE SAMPLES OF EACH MATERIAL SPECIFIED INDICATING VISUAL CHARACTERISTICS AND FINISH. INCLUDE RANGE SAMPLES IF VARIATION OF FINISH IS ANTICIPATED.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

PART 2 PRODUCTS

2.1 MATERIALS

A. TOILET COMPARTMENTS:
1. COMPARTMENTS: FLOOR-ANCHORED.
2. SCREENS: WALL-HUNG.
3. MATERIAL: SOLID PHENOLIC.

PART 3 EXECUTION

3.1 INSTALLATION

A. INSTALL MATERIALS AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SUBMITTALS. INSTALL MATERIALS AND SYSTEMS IN PROPER RELATION WITH ADJACENT CONSTRUCTION AND WITH UNIFORM APPEARANCE. COORDINATE WITH WORK OF OTHER SECTIONS.

B. LIMIT OPENINGS BETWEEN PANELS, DOORS AND PILASTERS TO LESS THAN 1/2".

C. ADJUST HARDWARE, CLEAN, AND PROTECT WORK.

END OF SECTION

SECTION 10 28 13
TOILET ACCESSORIES

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE TOILET, BATH AND LAUNDRY ACCESSORIES.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

PART 2 PRODUCTS

2.1 MATERIALS

A. TOILET AND BATH ACCESSORIES:
1. ACCESSORY: PAPER TOWEL DISPENSERS.
2. ACCESSORY: TOILET TISSUE DISPENSERS, DOUBLE ROLL.
3. ACCESSORY: COMBINATION TOWEL DISPENSER/WASTE RECEPTACLE UNITS.
4. ACCESSORY: GRAB BARS.
5. ACCESSORY: SANITARY NAPKIN DISPOSAL UNITS.
6. ACCESSORY: SOAP DISPENSERS, WALL MOUNTED.
7. FINISH: STAINLESS STEEL.

PART 3 EXECUTION

3.1 INSTALLATION

A. INSTALL MATERIALS AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SUBMITTALS. INSTALL MATERIALS AND SYSTEMS IN PROPER RELATION WITH ADJACENT CONSTRUCTION AND WITH UNIFORM APPEARANCE. COORDINATE WITH WORK OF OTHER SECTIONS.

B. RESTORE DAMAGED FINISHES AND TEST FOR PROPER OPERATION. CLEAN AND PROTECT WORK FROM DAMAGE.

END OF SECTION

SECTION 10 44 00
FIRE PROTECTION SPECIALTIES

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE FIRE EXTINGUISHERS, CABINETS AND ACCESSORIES.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. STANDARDS: UL AND FM LISTED PRODUCTS, NFPA 10.

C. REGULATIONS: ADAAG.

PART 2 PRODUCTS

2.1 MATERIALS

A. FIRE EXTINGUISHERS:
1. TYPE: MULTIPURPOSE DRY CHEMICAL TYPE.

B. CABINETS:
1. MOUNTING: SEMI-RECESSED.

PART 3 EXECUTION

3.1 INSTALLATION

A. INSTALL MATERIALS AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SUBMITTALS. INSTALL MATERIALS AND SYSTEMS IN PROPER RELATION WITH ADJACENT CONSTRUCTION AND WITH UNIFORM APPEARANCE. COORDINATE WITH WORK OF OTHER SECTIONS.

B. INSTALL FIRE EXTINGUISHERS IN MECHANICAL AND SERVICE AREAS WITH WALL-HUNG BRACKETS AT LOCATIONS AND HEIGHTS INDICATED AND ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.

C. INSTALL FIRE EXTINGUISHERS IN CABINETS IN PUBLIC AREAS PLUMB AND LEVEL AT HEIGHTS ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.

D. RESTORE DAMAGED FINISHES. CLEAN AND PROTECT WORK FROM DAMAGE.

END OF SECTION

SECTION 11 13 00
LOADING DOCK EQUIPMENT

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE LOADING DOCK EQUIPMENT.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SHOP DRAWINGS: SUBMIT SHOP DRAWINGS INDICATING MATERIAL CHARACTERISTICS, DETAILS OF CONSTRUCTION, CONNECTIONS, AND RELATIONSHIP WITH ADJACENT CONSTRUCTION.

C. OPERATION AND MAINTENANCE DATA: SUBMIT MANUFACTURER'S OPERATION AND MAINTENANCE DATA, INCLUDING OPERATING INSTRUCTIONS, LIST OF SPARE PARTS AND MAINTENANCE SCHEDULE.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. CONFORM TO THE LOADING DOCK EQUIPMENT MANUFACTURERS' PRODUCT SECTION OF THE MATERIAL HANDLING INDUSTRY OF AMERICA (MHIA) STANDARD MH 30.1.

PART 2 PRODUCTS

2.1 MATERIALS

A. DOCK BUMPERS:
1. TYPE: LAMINATED TREAD.
2. MOUNTING: VERTICAL.

B. RECESSED DOCK LEVELERS:
1. TYPE: MECHANICAL OPERATING SYSTEM.

C. DOCK SHELTERS:
1. RITE-HITE OR EQUAL

PART 3 EXECUTION

3.1 INSTALLATION

A. COMPLY WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. COORDINATE INSTALLATION AND CONSTRUCTION OF RELATED WORK TO ENSURE PROPER FIT AND FUNCTION OF UNITS. PROVIDE TEMPLATES FOR WORK TO BE BUILT-IN BY OTHER TRADES.

B. INSPECT, TEST, AND ADJUST OPERATION TO PROVIDE SAFE AND EFFICIENT USE. RESTORE DAMAGED SURFACES.

END OF SECTION

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11.30.24 Expires

PROJECT NO. 122148
PROJECT MGR. TPL
SPECIFICATIONS
A9.2

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GENERAL STRUCTURAL NOTES

DESIGN AND LOADING:

STRUCTURAL DESIGN OF THIS BUILDING IS IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE, 2018 EDITION.

DEAD LOADS USED IN DESIGN ARE AS FOLLOWS:

ROOF (MEMBRANE/: MECH FASTEN)	STONE BALLAST	-	0 PSF
	MEMBRANE	-	1 PSF
	INSULATION	-	3 PSF
	METAL DECK	-	2 PSF
	BAR JOISTS	-	3 PSF
	MISC/MECH	-	6 PSF
			-------
			15 PSF

MEZZANINE	-	47	PSF
OFFICE LOFT	-	47	PSF

LIVE LOADS USED IN DESIGN ARE AS FOLLOWS:

GROUND SNOW	-	30	PSF
DESIGN ROOF LOAD	-	25	PSF
WIND	-	110	MPH (EXPOSURE B)
UPLIFT	-	40	PSF (@ EXPOSED CANOPY)
UPLIFT	-	18	PSF (NET @ MAIN ROOF)
STAIRS	-	100	PSF
STORAGE MEZZANINE	-	125	PSF
OFFICE LOFT	-	100	PSF

SEE ROOF PLAN FOR ADDITIONAL CONCENTRATED LOADS

ROOF DESIGN NOTE: THE STRUCTURAL DESIGN OF THE ROOF FRAMING SYSTEM IS BASED ON A CODE COMPLIANT PRIMARY AND SECONDARY (OVERFLOW) DRAINAGE SYSTEM THAT HAS BEEN DESIGNED AND FURNISHED BY OTHERS. AS SUCH, NO ADDITIONAL AND /OR EXCEPTIONAL PONDING LOADS, IN EXCESS OF THE ROOF LOADS NOTED ABOVE, WERE CONSIDERED.

SEISMIC DESIGN DATA :

SEISMIC IMPORTANCE FACTOR	I = 1.0
SEISMIC USE GROUP	= II
MAPPED SPECTRAL RESPONSE ACCL'NS	SS = 0.113
	S1 = 0.059
	SDS= 0.121
	Sd1 = 0.095
SITE CLASS	= D (VERIFY W/ SOIL ENGINEER)
SEISMIC DESIGN CATEGORY	SDC=B
SEISMIC RESPONSE COEFFICIENT	Cs = 0.0
RESPONSE MODIFICATION FACTOR	R = 3
SEISMIC BASE SHEAR	N-S, V = 85 K
	E-W, V = 55 K

EQUIVALENT LATERAL FORCE PROCEDURE.

FOUNDATIONS:

ALL FOOTINGS SHALL BEAR ON UNDISTURBED SOIL OR COMPACTED FILL HAVING A MINIMUM ALLOWABLE BEARING CAPACITY OF 4000 P.S.F., AS RECOMMENDED BY MIDLAND STANDARDENGINEERING AND TESTING IN THEIR REPORT No. 22354, DATED SEPTEMBER 9, 2022.

ALL FOOTING ELEVATIONS SHOWN ON THE DRAWINGS PROVIDE MINIMUM DEPTHS FOR FROST PROTECTION. ANY LOCALIZED SOFT SOIL AND / OR FILL ZONES ENCOUNTERED AT THE BEARING LEVELS SHOULD BE FURTHER EXCAVATED TO ADEQUATE SUPPORT SOILS AND THE CAVITY BACKFILLED WITH LEAN CONCRETE, STONE OR APPROVED STRUCTURAL FILL OR THE FOOTING MAY BE POURED AT THE EXCAVATED DEPTH. THE CONTRACTORS BID SHALL PROVIDE FOR ALL WORK REQUIRED TO FOUND THE BUILDING AT THE BEARING ELEVATIONS NOTED IN THE REFERENCED SOILS REPORT. CONTRACTOR SHALL ALSO PROVIDE UNIT COSTS FOR ADDITIONAL WORK SHOULD THE ACTUAL BEARING LEVELS ENCOUNTERED BE FOUND TO BE BELOW THOSE NOTED IN THE SOILS REPORT. CONVERSELY, UNIT COSTS SHALL APPLY TO LESS WORK, SHOULD THE BEARING ELEVATIONS BE FOUND TO BE ABOVE THOSE NOTED IN THE SOILS REPORT. BEARING ELEVATIONS USED AS A BASIS FOR THE CONTRACTORS BID SHALL BE SPECIFIED IN THE BIDS.

ALL BEARING ELEVATIONS, EXCAVATIONS AND MATERIALS SHALL BE INSPECTED BY A QUALIFIED GEOTECH ENGINEER PRIOR TO PLACEMENT OF CONCRETE. THE GEOTECH ENGINEER SHALL BE THE SOLE JUDGE AS TO THE SUITABILITY OF THE BEARING MATERIAL. FOOTING ELEVATIONS SHALL BE ADJUSTED AS REQUIRED.

FOOTINGS OR SLABS SHALL NOT BE PLACED INTO OR AGAINST SUBRADE CONTAINING FREE WATER, FROST OR ICE. ALL BEARING STRATA MUST BE PROTECTED FROM FREEZING. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MEASURES TO PREVENT FROST OR ICE FROM PENETRATING ANY FOOTING OR SLAB SUB-GRADE BEFORE AND AFTER PLACING OF CONCRETE AND UNTIL SUCH SUB-GRADES ARE FULLY PROTECTED BY THE PERMANENT BUILDING STRUCTURE.

ALL EXTERIOR FOOTINGS SHALL BEAR A MINIMUM OF 3'-6" BELOW FINISHED GRADE.

NO PIPING, PLUMBING, ETC. SHALL BE LOCATED BELOW THE FOOTINGS. IF PIPING DOES PASS BELOW, THE FOOTINGS SHALL BE STEPPED DOWN TO THE PIPING LEVEL. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE STEPPED FOOTING DEPTHS AND CONFIGURATIONS WITH THE FINAL MECHANICAL, PIPING, CIVIL, ETC. DRAWINGS. PROVIDE COMPRESSIBLE MATERIAL AROUND ALL PIPES PASSING THROUGH FOUNDATION WALLS AND FOOTINGS.

LATERAL SOIL PRESSURE USED IN THE DESIGN OF RETAINING WALLS (EQUIVALENT FLUID PRESSURE) = 40 PCF.

MODULUS OF SUBGRADE REACTION = 200 PCI (ASSUMED). FINAL SLAB LOADING AND/ OR RACK LAYOUT SHALL BE CHECKED WHEN ACTUAL MODULUS IS KNOWN. ARCHITECT/OWNER SHALL FURNISH MODULUS, LOADINGS, RACK LAYOUTS AND DETAILS, PROPOSED JOINTS, Etc. FOR ANALYSIS PRIOR TO CASTING THE FLOOR SLABS.

ALL COMPACTED FILL MATERIAL SHALL BE INSPECTED AND APPROVED BY THE PROJECT SOILS ENGINEER. DEPTHS OF LIFTS, COMPACTION DENSITIES, MOISTURE CONTENTS, ETC. SHALL BE AS SPECIFIED BY THE PROJECT SOILS ENGINEER, SEE THE REFERENCED SOIL REPORT FOR ADDITIONAL INFORMATION.

ALL SLAB-ON-GRADE AREAS SHALL BE PROOF ROLLED. ALL SOFT SPOTS ENCOUNTERED SHALL BE REMOVED AND REPLACED TO FINISHED GRADE WITH APPROVED FILL MATERIAL. INSPECTION, REVIEW AND COMPACTED FILL REQUIREMENTS SHALL BE BY THE PROJECT SOILS ENGINEER. CONSULT THE PROJECT SOILS ENGINEER FOR ADDITIONAL INFORMATION AND / OR REQUIREMENTS.

GENERAL CONTRACTOR SHALL COORDINATE FINAL STEP FOOTING LOCATIONS WITH THE PRECAST CONCRETE MANUFACTURER'S WALL PANEL LAYOUT, AS WELL AS THE FINAL GRADE ELEVATIONS ESTABLISHED (MAINTAIN A MINIMUM FROST COVER TO BOTTOM OF FOOTINGS OF 42 INCHES.

ALL LOCAL, STATE AND FEDERAL REGULATIONS AND PROCEDURES REGARDING SAFETY ARE THE RESPONSIBILITY OF THE CONTRACTOR.

CONTRACTOR SHALL NOTIFY ARCHITECT IMMEDIATELY SHOULD THE SOILS CONDITIONS ENCOUNTERED VARY FROM THOSE SHOWN ON THE BORING LOGS.

CONCRETE AND REINFORCING:

ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318) AND WITH "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI 301), LATEST EDITIONS.

ALL NORMAL WEIGHT CONCRETE (145 P.C.F.) SHALL OBTAIN A MINIMUM 28 DAY COMPRESSIVE STRENGTH AS FOLLOWS:

SPREAD FOOTINGS	-	3000	PSI
FOUNDATION WALLS	-	3000	PSI
SLABS-ON-GRADE	-	4000	PSI
NON-COMPOSITE DECK	-	4000	PSI

THE COMPRESSIVE STRENGTH OF ALL GROUT USED TO PROVIDE LEVEL BEARING OF COLUMN BASE PLATES SHALL MATCH THE COMPRESSIVE STRENGTH OF THE SUPPORTING CONCRETE SUBSTRUCTURE.

CALCIUM CHLORIDE AND/OR ADMIXTURES CONTAINING CALCIUM CHLORIDE SHALL NOT BE USED IN ANY CONCRETE, INCLUDING THAT TO BE PLACED ON METAL DECKS AND/OR PRECAST CONCRETE DECKS.

ALL CONCRETE SUBJECT TO EXTERIOR EXPOSURE, SHALL BE AIR ENTRAINED 6%, WITH A TOLERANCE OF ±1.5%, AS DELIVERED, UNLESS THEY HAVE A SPECIFIED STRENGTH 5000 PSI OR GREATER.

FLY ASH, IF UTILIZED AND APPROVED, SHALL BE LIMITED TO 25% OF THE CEMENT CONTENT.

ALL CONCRETE SHALL BE THOROUGHLY CONSOLIDATED BY SUITABLE MEANS DURING PLACING. IF VIBRATORS ARE USED, DO NOT OVER-VIBRATE OR TRANSPORT CONCRETE ALONG THE FORMS BY VIBRATING.

TEST CYLINDERS SHALL BE MADE AND TESTED AS OUTLINED IN CHAPTER 16 OF ACI-301 SPECIFICATION OR PER ARCHITECTURAL SPECIFICATIONS.

COLD WEATHER CONCRETING SHALL BE DONE IN ACCORDANCE WITH ACI-306. HOT WEATHER CONCRETING SHALL BE DONE IN ACCORDANCE WITH ACI-305.

REINFORCING BARS SHALL BE DEFORMED BARS OF NEW BILLET STEEL CONFORMING TO ASTM SPECIFICATION A-615, GRADE 60. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185. ALL REINFORCING AND ACCESSORIES SHALL BE DETAILED AND PLACED IN ACCORDANCE WITH ACI STANDARDS 315 AND 315R. PROVIDE SHOP DRAWINGS FOR ALL FABRICATED ITEMS FOR REVIEW.

WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185. ALL REINFORCING AND ACCESSORIES SHALL BE DETAILED AND PLACED IN ACCORDANCE WITH ACI STANDARDS 315-80 AND 315R-80.

WELDING OF REINFORCING BARS WILL ONLY BE ALLOWED WHEN SHOWN ON THE STRUCTURAL DRAWINGS. IN NO INSTANCE SHALL WELDING BE DONE AT THE BEND OF A BAR, NOR SHALL THERE BE ANY TACK WELDING DONE BETWEEN CROSSING BARS. WHEN WELDING IS SHOWN, PROCEDURES SHALL BE IN ACCORDANCE WITH "RECOMMENDED PRACTICE FOR WELDING REINFORCEMENT STEEL, METAL INSERTS AND CONNECTIONS IN REINFORCED CONCRETE CONSTRUCTION", AWS D12 1.

THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR THE REINFORCEMENT IN ALL CAST-IN-PLACE CONCRETE WORK:

FOOTINGS AND CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH		-	3"
FORMED SURFACES PERMANENTLY EXPOSED TO EARTH OR WEATHER	(#5 BARS OR SMALLER)	-	1 1/2"
	(#6 BARS OR LARGER)	-	2"
FORMED SURFACES NOT EXPOSED TO WEATHER OR EARTH	SLABS, WALLS, JOISTS	-	3/4"
	BEAMS, COLUMNS	-	1 1/2"

SEE DETAILS FOR ADDITIONAL REQUIREMENTS.

THE MAXIMUM LENGTH OF WALL POURS SHALL BE 100 FEET. THE VERTICAL ENDS OF WALLS SHALL BE BULK-HEADED AND PROVIDED WITH KEYWAYS AND DOWELS TO ENGAGE SUCCEEDING CONCRETE POURS. AT EXPOSED WALLS, PROVIDE CONTROL JOINTS UNIFORMLY AT SPACINGS NOT TO EXCEED 20 FEET CENTERS.

PROVIDE ALL ACCESSORIES NECESSARY TO SUPPORT REINFORCEMENT AT POSITIONS SHOWN ON THE PLANS AND DETAILS. PLASTIC COATED ACCESSORIES SHALL BE USED IN ALL EXPOSED CONCRETE WORK.

REINFORCEMENT SHALL BE CONTINUOUS ACROSS JOINTS AND AROUND CORNERS OR SPLICE BARS SHALL BE PROVIDED IN ACCORDANCE WITH ACI STANDARDS 315 AND 315R. CORNER BARS SHALL BE PROVIDED AT ALL WALL CORNERS, EQUAL TO THE HORIZONTAL WALL REINFORCEMENT. HEATING OF THE REINFORCING BARS FOR BENDING WILL NOT BE PERMITTED.

WHERE REQUIRED, DOWELS SHALL MATCH SIZE AND QUANTITY OF MAIN REINFORCING, UNLESS OTHERWISE NOTED.

LAP SPLICES SHALL BE IN ACCORDANCE WITH ACI 318, LATEST EDITION, OR 40 DIAMETERS, WHICHEVER IS GREATER.

FOUNDATION WALLS AND GRADE BEAMS SHALL HAVE A MINIMUM OF TWO (2) - #5 BARS TOP AND BOTTOM CONTINUOUS, UNLESS OTHERWISE SHOWN OR NOTED.

PLACE TWO (2) - #5 BARS (EACH FACE) WITH 2'-0" PROJECTION AROUND ALL OPENINGS IN CONCRETE, UNLESS OTHERWISE SHOWN OR NOTED.

CONTROL JOINTS FOR SLABS-ON-GRADE SHALL BE IN A RECTANGULAR PATTERN AND SHALL BE SPACED NOT MORE THAN THREE (3) TIMES THE SLAB THICKNESS (IN FEET) OR 16 FT. ON CENTER, WHICHEVER IS LESS, UNLESS NOTED OTHERWISE ON PLAN. ASPECT RATIO OF UNJOINTED SLABS SHALL BE AS CLOSE TO 1:1 AS POSSIBLE, REDUCE MAXIMUM SPACING, AS REQUIRED. COORDINATE FINAL LOCATIONS WITH ARCHITECTURAL, MECHANICAL, ETC.

VAPOR BARRIER, IF REQUIRED (SEE ARCHITECTURAL DRAWINGS) SHALL BE 6 MIL, MINIMUM, AND BE INSTALLED IN MAXIMUM SHEET SIZE AND A MINIMUM JOINTS, PROVIDE A MINIMUM OF 6" LAPS BETWEEN ADJACENT SHEETS. CARE SHALL BE EXERCISED TO PREVENT DAMAGE OR RUPTURE DURING CONSTRUCTION. LOCATION OF VAPOR BARRIER BELOW THE SLABS SHALL BE DETERMINED ON A CASE BY CASE BASIS; CONTRACTOR SHALL CONSULT ACI 302, APPLICABLE EDITION, FOR ADDITIONAL INFORMATION. SEE THE PROJECT SOILS REPORT FOR ADDITIONAL INFORMATION.

GENERAL CONTRACTOR SHALL CHECK WITH ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS AND CONTRACTORS FOR OPENINGS, SLEEVES, ANCHORS, HANGERS, INSERTS, SLAB DEPRESSIONS AND OTHER ITEMS RELATED TO THE CONCRETE WORK, AND SHALL ASSUME FULL RESPONSIBILITY FOR THEIR PROPER LOCATION BEFORE PLACING CONCRETE. PITCH CONCRETE SLABS AS REQUIRED TO ALL FLOOR DRAINS.

NO STRUCTURAL CONCRETE SHALL BE POURED UNTIL THE CONCRETE DESIGN MIXES, THE CONCRETE PLACEMENT PROCEDURE, THE LOCATION OF CONSTRUCTION JOINTS AND THE SETTING OF REINFORCING STEEL IS REVIEWED BY THE ENGINEER.

ALL ADHESIVE TYPE ANCHORS MUST BE INSTALLED BY QUALIFIED INSTALLERS AND IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS (MPII). NO ADHESIVE TYPE ANCHORS CAN BE INSTALLED IN CONCRETE LESS THAT 21 DAYS OLD.

NO ALUMINUM OF ANY TYPE SHALL BE ALLOWED IN THE CONCRETE WORK, UNLESS COATED TO PREVENT ALUMINUM-CONCRETE REACTION. THIS INCLUDES PUMPING THROUGH ALUMINUM PIPE.

ELECTRICAL CONDUIT MUST BE PLACED ABOVE THE BOTTOM REINFORCEMENT AND BELOW THE TOP REINFORCEMENT. ELECTRICAL CONDUIT EMBEDDED IN SLABS SHALL NOT BE LARGER THAN 1/3 OF THE SLAB THICKNESS AND SHALL NOT BE SPACED CLOSER THAN THREE CONDUIT DIAMETERS.

PRECAST CONCRETE PANELS:

THE PRECAST CONCRETE MANUFACTURER SHALL BE RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF ALL PRECAST PANELS, INCLUDING REINFORCING, INSERTS AND CONNECTIONS TO THE STRUCTURE NOT SPECIFICALLY CALLED OUT ON THE DRAWINGS. PANELS SHALL BE DESIGNED FOR ALL LOADING CONDITIONS REQUIRED BY THE GOVERNING BUILDING CODES IN ADDITION TO ANY SPECIFIC LOADINGS SHOWN ON THE DRAWINGS. THE DESIGN AND INSTALLATION OF ALL PANELS SHALL BE IN ACCORDANCE WITH A.C.I. 318 AND 301, LATEST EDITION.

WALL PANELS SHALL BE DESIGNED TO RESIST WIND LOADS IMPARTED BY THE ROOF DIAPHRAGM. ADDITIONAL CONSIDERATION MUST BE GIVEN TO PANEL SHRINKAGE, THERMAL BOWING, ECCENTRIC LOADING DUE TO BOWING AND/OR ERECTION, LATERAL EARTH PRESSURES, PROJECT SPECIFICATIONS AND TOLERANCES, ETC., WHEN DESIGNING THE PANELS.

THE PRECAST CONCRETE MANUFACTURER SHALL FOLLOW ALL DETAILS AS NOTED ON THE CONTRACT DOCUMENTS, UNLESS SPECIFIC WRITTEN REQUESTS FOR ALTERNATE DETAILS ARE SUBMITTED. THE GENERAL CONTRACTOR, IN CONJUNCTION WITH THE PRECAST CONCRETE CONTRACTOR, SHALL COORDINATE WITH THE STRUCTURAL STEEL AND OTHER AFFECTED TRADES TO ACCOMMODATE ALTERNATE DETAILS.

PROVIDE SLOTTED / SLIP CONNECTIONS AT ALL STEEL TO PRECAST PANEL DETAILS AT RE-ENTRANT CORNERS AND WHERE NOTED. PROVIDE FOR 1.5" HORIZONTAL MOVEMENT UNLESS OTHERWISE NOTED ON THE PLANS AND DETAILS.

PRECAST PANELS SHALL BE ERECTED AFTER CONCRETE FLOORS AND METAL ROOF DECKS ARE IN PLACE, UNLESS ADEQUATE TEMPORARY BRACING/SHORING IS UTILIZED.

ALL PRECAST PANEL CONNECTIONS TO THE STRUCTURAL FRAME SHALL MAKE ALLOWANCE FOR EXPANSION AND CONTRACTION OF THE PANELS.

NO PRE-STRESSING STRAND MAY BE CUT WITHOUT PRIOR APPROVAL OF THE MANUFACTURER.

PRECAST CONTRACTOR SHALL DESIGN, FURNISH, AND INSTALL ALL REQUIRED STEEL HEADERS AND/OR CONNECTIONS AT OVERHEAD DOOR OPENING LOCATIONS, UNLESS NOTED OTHERWISE, FOR ALL OPENINGS NOT SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS.

SUBMIT THE SHOP DRAWINGS AND DESIGN CALCULATIONS STAMPED BY A LICENSED STRUCTURAL ENGINEER IN THE STATE OF ILLINOIS, RESPONSIBLE FOR THE DESIGN, FOR ALL CONNECTIONS AND MEMBERS FURNISHED BY THE PRECAST CONCRETE SUBCONTRACTOR. CERTIFICATION OF THE DOCUMENTS BY THE SUBCONTRACTOR IMPLIES ACCEPTANCE OF DESIGN RESPONSIBILITY.

THE BUILDING / STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL TEMPORARY BRACING AND/OR SUPPORT THAT MAY BE REQUIRED TO SUPPORT THE PRECAST PANELS AS THE RESULT OF THE CONTRACTOR'S CONSTRUCTION METHODS AND/OR SEQUENCES. ALL OF THE BRACING, AS DESIGNED AND FURNISHED BY THE PRECAST SUPPLIER MUST BE LEFT IN PLACE UNTIL THE STRUCTURE HAS BEEN ERECTED AND COMPLETED (INCLUDING: FRAMING, DECKING, CONNECTIONS, ETC.) THE GENERAL CONTRACTOR, AT HIS EXPENSE, SHALL ENGAGE PROPERLY QUALIFIED PERSONS TO DETERMINE WHERE AND HOW TEMPORARY PRECAUTIONARY MEASURES SHALL BE USED AND / OR REMOVED, PRIOR TO THE COMPLETION OF THE PROJECT.

ALL LOCAL, STATE AND FEDERAL REGULATIONS AND PROCEDURES REGARDING SAFETY ARE THE RESPONSIBILITY OF THE CONTRACTOR.

STRUCTURAL STEEL:

STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS, ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN", 9TH EDITION AND THE AISC "CODE OF STANDARD PRACTICE", 2000 EDITION.

STEEL SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATIONS (UNLESS OTHERWISE NOTED).

W SHAPES	ASTM A992
MISC PLATES AND SHAPES	ASTM A36
STRUCTURAL TUBING (HSS)	A-500 GRADE B
STRUCTURAL PIPE	A-53
ANCHOR RODS	F-1554 GR 36
STRUCTURAL BOLTS	A-325-N
EXPANSION ANCHORS	STUD TYPE, BY HILTI, OR EQUIV
ADHESIVE ANCHOR SYSTEM	AC-100 PLUS, BY POWER OR EQUIV - CONCRETE MUST BE CURED A MINIMUM OF 21 DAYS HILTI HY 150 MAX-SD & RE 500-SD-SD
PRECAST ANCHORS	WEDGEBOLTS, BY POWERS OR EQUIV

ALL BEAMS SHALL BE DETAILED AND INSTALLED WITH NATURAL CAMBER UP. ALL SHOP AND FIELD WELDING SHALL BE MADE IN ACCORDANCE WITH A.W.S. D1.1 "CODE FOR WELDING IN BUILDING CONSTRUCTION," AND SHALL BE MADE BY QUALIFIED "CERTIFIED" WELDERS. PROVIDE MINIMUM WELD SIZE PER AISC J2.1 AND J2.2.

TYPICAL BEAM CONNECTIONS SHALL BE STANDARD AISC FRAMED BEAM CONNECTIONS, UNLESS OTHERWISE SHOWN. ALL FIELD CONNECTIONS, EXCEPT WHERE SHOWN WELDED, SHALL BE BOLTED WITH 3/4" DIAMETER HIGH STRENGTH BOLTS, UNLESS OTHERWISE NOTED. CONNECTIONS SHALL BE DESIGNED FOR 50% OF THE TOTAL ALLOWABLE UNIFORM LOAD (IN KIPS) DERIVED FROM THE AISC MANUAL'S TABLE OF "UNIFORM LOAD CONSTANTS" FOR NON-COMPOSITE BEAMS. THE MINIMUM NUMBER OF BOLTS PER CONNECTION SHALL BE TWO (2).

MOMENT CONNECTIONS NOTED ON DRAWINGS SHALL BE DESIGNED TO DEVELOP FULL CAPACITY OF MEMBER SPECIFIED, UNLESS DESIGN MOMENTS AND SHEARS ARE NOTED ON THE DRAWINGS. AT THE STEEL SUBCONTRACTORS OPTION, BOLTED OR WELDED CONNECTIONS CAN BE UTILIZED, PROVIDED THAT THEY ARE ABLE TO RESIST THE ABOVE-MENTIONED LOADS. CONNECTIONS WILL BE REVIEWED FOR COMPLIANCE; SUBSTANTIATING DESIGNS / CALCULATIONS SHALL BE PREPARED BY A LICENSED STRUCTURAL ENGINEER REGISTERED IN THE STATE OF ILLINOIS.

BRACING CONNECTIONS FOR BRACED FRAMES INDICATED ON THE DRAWINGS SHALL BE DESIGNED FOR THE MAXIMUM TOTAL LOADS (ASD) SHOWN ON THE BRACING DETAILS AND ELEVATIONS. CONNECTIONS SHALL BE REVIEWED FOR COMPLIANCE. SUBSTANTIATING DESIGNS / CALCULATIONS SHALL BE PREPARED BY A LICENSED STRUCTURAL ENGINEER REGISTERED IN THE STATE OF ILLINOIS.

STEEL CONNECTIONS ARE TO BE DESIGNED BY THE STEEL SUBCONTRACTOR IN ACCORDANCE WITH AISC SPECIFICATIONS (16.3-9) AND AS APPROPRIATE FOR THE FABRICATOR'S STANDARD SHOP PRACTICES, UNLESS NOTED OTHERWISE. DESIGNS SHALL BE PREPARED BY A LICENSED STRUCTURAL ENGINEER REGISTERED IN THE STATE OF ILLINOIS AND STAMPED CALCULATIONS SUBMITTED. DRAWINGS AND CALCULATIONS MUST BE SUBMITTED CONCURRENTLY.

ALL BOLTED JOINTS ARE CONSIDERED SNUG TIGHT UNLESS NOTED OTHERWISE. ALL BOLTED JOINTS THAT ARE SLIP-CRITICAL JOINTS, INCLUDE BUT ARE NOT LIMITED TO: MOMENT RESISTING JOINTS, JOINTS UTILIZING A490 BOLTS, JOINTS UTILIZING A COMBINATION OF BOLTS AND WELDS. NO LESS THAN TWO BOLTS SHALL BE USED IN ALL CONNECTIONS.

ALL WELDING SHALL COMPLY WITH AWS D1.1 USING E70XX ELECTRODES. ALL WELDING TO BE DONE BY AWS PRE-QUALIFIED WELDERS, CERTIFIED FOR WELDS MADE. PROVIDE CONTINUOUS MINIMUM SIZED WELDS PER AISC REQUIREMENTS, UNLESS NOTED OTHERWISE.

THE MINIMUM SIZE OF FILLET WELDS SHALL BE AS SPECIFIED IN TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION".

ALL STRUTS, HANGERS, AND BRACES SHALL HAVE CONNECTIONS DESIGNED TO DEVELOP THE FULL ALLOWABLE TENSILE STRENGTH OF THE MEMBER UNLESS THE DESIGN FORCE IS INDICATED ON THE DRAWINGS, IN WHICH CASE THE CONNECTIONS SHALL BE DESIGNED FOR THE FORCE INDICATED.

ALL HSS COLUMNS SHALL HAVE CAP PLATES, WITH A MINIMUM PLATE THICKNESS OF 1/4", OR AS REQUIRED. SEE DETAILS FOR ADDITIONAL INFORMATION. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL MISCELLANEOUS STEEL.

ALL COPED BEAMS TO BE DESIGNED IN ACCORDANCE WITH APPENDIX "B" OF THE AISC MANUAL "ENGINEERING FOR STEEL CONSTRUCTION." PROVIDE REINFORCING AS REQUIRED. ALL RE-ENTRANT CORNERS TO BE SHAPED, NOTCH-FREE, TO A RADIUS OF AT LEAST 1/2 INCH.

ALL STEEL TO STEEL CONNECTIONS SHALL BE BOLTED OR WELDED.

ALL STRUCTURAL STEEL SHALL RECEIVE ONE COAT OF APPROVED SHOP PAINT, AS SPECIFIED IN THE ARCHITECTURAL SPECIFICATIONS.

THIS BUILDING'S FRAME IS A NON-SELF-SUPPORTING STEEL FRAME AS DEFINED IN THE AISC CODE OF STANDARD PRACTICE, SECTION 7.9.3 (NINTH EDITION). CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORTS FOR THE FRAME UNTIL ALL THE DESIGN SUPPORTS (FLOORS AND/OR ROOF) ARE IN PLACE.

ALL BEAM SPLICES, NOT INDICATED ON THE CONTRACT DOCUMENTS, SHALL BE FULL PENETRATION WELDED TO RESTORE FULL CAPACITIES OF THE ORIGINAL BEAM, BOLTED CONNECTIONS SHALL BE USED FOR ERECTION PURPOSES ONLY, UNLESS APPROVED IN WRITING BY THE ENGINEER OF RECORD. IF SPLICES ARE REQUIRED FOR CONSTRUCTION PURPOSES, CONTRACTOR SHALL COORDINATE ALL SPLICE LOCATIONS WITH THE ARCHITECT AND THE VARIOUS PROJECT CONSULTANTS TO AVOID ANY INTERFERENCE/CONFLICTS WITH OTHER TRADES.

OPENINGS 1'-4" AND OR LESS ON A SIDE ARE GENERALLY NOT SHOWN ON THE STRUCTURAL DRAWINGS. REFER TO THE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR SUCH OPENINGS.

UNLESS NOTED OTHERWISE ON THE PLANS, PROVIDE WT 4 X 5 UNDER ALL ROOF TOP MECHANICAL EQUIPMENT CURBS.

THE ASSEMBLY SHALL BE CONSIDERED UNRESTRAINED FOR THE PURPOSES OF FIRE-RESISTANCE.

THE STAIR DESIGN, CONNECTIONS, CONNECTION TO THE STRUCTURE AND SUPPORT OF THE INTERMEDIATE LANDINGS ARE BY THE STAIR CONTRACTOR. CONTRACTOR TO SUPPLY ALL APPLIED REACTIONS/ LOADS FOR A/E REVIEW, etc.

STAIR DESIGN CALCULATIONS, PREPARED AND SEALED BY A LICENSED STRUCTURAL ENGINEER SHALL BE SUBMITTED FOR REVIEW ALONG WITH THE NECESSARY SHOP DRAWINGS. SUBMITTALS WILL BE REVIEW FOR INFLUENCE AND/OR LOAD APPLICATION TO THE SUPPORTING STRUCTURE, ONLY.

SHOP DRAWINGS FOR ALL STRUCTURAL STEEL ITEMS SHALL BE SUBMITTED FOR TO THE PROFESSIONAL OF RECORD FOR REVIEW.

THE FABRICATOR SHALL SUBMIT FOR REVIEW, ENGINEERED AND CHECKED SHOP DRAWINGS SHOWING FABRICATION DETAILS, FIELD ASSEMBLY DETAILS AND ERECTION DIAGRAMS FOR ALL STRUCTURAL STEEL. SHOP DDRAWINGS SHALL BE PREPARED UNDER THE DIRECTION OF AN ILLINOIS LICENSED STRUCTURAL ENGINEER.

COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS WHICH GOVERN SAFETY REQUIREMENTS FOR STEEL ERECTION. TEMPORARY BRACING AND SUPPORTS SHALL BE PROVIDED, AS REQUIRED, TO ADEQUATELY PROTECT ALL PERSONS AND PROPERTY AND TO ENSURE PROPER ALIGNMENT.

STORAGE OF FABRICATED STEEL AT THE JOB SITE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. STORED MATERIAL SHALL NOT EXCEED THE DESIGN LOADS OF THE EXISTING STRUCTURE, SO THAT MEMBERS WILL NOT BE DISTORTED, OR OTHERWISE DAMAGED. MATERIALS SHALL BE PROTECTED AGAINST CORROSION AND DETERIORATION.

STEEL JOISTS:

THE STEEL JOIST MANUFACTURER SHALL BE RESPONSIBLE FOR THE DESIGN, MANUFACTURE, AND INSTALLATION OF THEIR PRODUCT, INCLUDING ALL BRIDGING, ACCESSORIES AND CONNECTIONS, NECESSARY FOR THE COMPLETE INSTALLATION. JOISTS SHALL BE DESIGNED FOR ALL LOADING CONDITIONS REQUIRED BY THE GOVERNING BUILDING CODES IN ADDITION TO ANY SPECIFIC LOADINGS SHOWN ON THE DRAWINGS. THE DESIGN, MANUFACTURE AND INSTALLATION OF ALL JOISTS, BRIDGING, ACCESSORIES, ETC. SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS, INCLUDING LOAD TABLES (STANDARD JOIST ONLY), OF THE STEEL JOIST INSTITUTE, LATEST EDITION.

THE STEEL JOIST GIRDER MANUFACTURER SHALL BE RESPONSIBLE FOR THE DESIGN, MANUFACTURE, AND INSTALLATION OF THEIR PRODUCT, INCLUDING ALL ACCESSORIES AND CONNECTIONS, NECESSARY FOR THE COMPLETE INSTALLATION. JOISTS GIRDERS SHALL BE DESIGNED FOR ALL LOADING CONDITIONS REQUIRED BY THE GOVERNING BUILDING CODES IN ADDITION TO ANY SPECIFIC LOADINGS SHOWN ON THE DRAWINGS. THE DESIGN, MANUFACTURE AND INSTALLATION OF ALL JOISTS GIRDERS AND ACCESSORIES SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS, INCLUDING LOAD TABLES, OF THE STEEL JOIST INSTITUTE, LATEST EDITION.

WHERE CONCENTRATED OR NON-UNIFORM LOADS OCCUR, THE JOISTS MUST BE DESIGNED TO CARRY THE FULL COMBINATION OF UNIFORM AND NON-UNIFORM LOADS. THE NON-UNIFORM LOADS ARE SPECIFIED ON THE PLANS AND/OR LOADING DIAGRAMS SHOWN. THE JOIST MANUFACTURER SHALL BE RESPONSIBLE FOR THE JOIST DESIGNS BASED ON THE GIVEN LOADINGS, ADDITIONALLY, THEY SHALL BE RESPONSIBLE FOR ANY INTERNAL FORCES THAT ARE THE RESULT OF SLOPES AND PITCHES. THE MANUFACTURER SHALL SUBMIT CALCULATIONS FOR ALL SPECIAL JOISTS, PREPARED UNDER THE SUPERVISION OF A LICENSED ENGINEER.

HANGING LOADS SHALL BE AVOIDED BETWEEN PANEL POINTS. IF HANGING LOADS DO OCCUR BETWEEN PANEL POINTS, SECONDARY FRAMING SHALL BE UTILIZED TO FRAME TO JOIST PANEL POINTS. NO LOADS SHALL BE SUPPORTED FROM BRIDGING LINES.

PIPE SUPPORT GUIDELINES (ACTUAL LAYOUTS AND LOADINGS MUST BE REVIEWED PRIOR TO INSTALLATION:

CONCENTRATED LOADS (PIPING, ETC.): LOADS MUST BE POSITIONED WITHIN 4" OF JOIST PANEL POINT OR PROVIDE STIFFENER ANGLES AS SHOWN ON THE DRAWINGS.

PIPING PERPENDICULAR TO JOISTS - FOR PIPING EXCEEDING 20 PLF, OR EQUAL GROUPINGS, ENGINEERING MUST BE NOTIFIED PRIOR TO INSTALLATION.

PIPING PARALLEL TO JOISTS - FOR PIPING LESS THAN 10 PLF, ONE PIPE CAN BE SUPPORTED ALONG ONE JOIST; FOR PIPING EXCEEDING 10 PLF, PIPING SHALL BE CENTERED BETWEEN TWO JOISTS AND A SPREADER MEMBER / TRAPEZE INSTALLED; FOR PIPING EXCEEDING 20 PLF, ENGINEER MUST BE NOTIFIED PRIOR TO INSTALLATION.

NO OTHER CONCENTRATED LOADS (MECH, ETC.) ARE SUPPORTED FROM THE PIPE SUPPORT JOISTS; TRAPEZE CONNECTIONS SHALL NOT INDUCE TORSION IN THE SUPPORTING JOISTS.

MANUFACTURER SHALL FURNISH DESIGN CALCULATIONS WITH THE APPROPRIATE SHOP DRAWINGS FOR ALL SPECIAL JOISTS RESISTING MOMENTS, CONCENTRATED LOADS OR VARYING LOADS, AS SHOWN ON THE PLANS AND/OR DIAGRAMS. AT JOIST CONTRACTORS OPTION, MULTIPLE JOISTS MAY BE USED IN LIEU OF SINGLE JOISTS TO SUPPORT LOADS SHOWN ON THE DIAGRAMS. GENERAL CONTRACTOR SHALL COORDINATE WITH THE STRUCTURAL STEEL CONTRACTOR TO PROVIDE ADDITIONAL ANCHORS AND BEARING PLATES, AS REQUIRED.

JOIST BRIDGING SHOWN IS IN ACCORDANCE WITH SJI RECOMMENDATIONS AND GUIDELINES AND IS FOR INFORMATION ONLY. FINAL SPECIFICATIONS AND DESIGN OF BRIDGING IS BY THE JOIST CONTRACTOR AND DEPENDENT ON FINAL JOISTS DESIGNS.

ALL JOISTS SHALL BE WELDED TO THEIR STEEL SUPPORT MEMBERS, PER S.J.I. SPEC'S., UNLESS NOTED OTHERWISE OR IF EXPANSION IS REQUIRED.

JOIST ENDS AT THE BUILDING PERIMETER SHALL BE DESIGNED TO TRANSFER AN ADDITIONAL HORIZONTAL FORCE OF 1,900 LBS. TO THE SUPPORTING MEMBER. THIS LOAD SHALL BE APPLIED AT THE TOP OF THE TOP CHORD, ABOVE THE BEARING SEAT AND PERPENDICULAR TO THE JOIST SPAN.

JOISTS NOTED SHALL BE DESIGNED FOR THE NET UPLIFT FORCES INDICATED ON THE DRAWINGS. PROVIDE ADDITIONAL BOTTOM CHORD BRIDGING NEAR THE FIRST BOTTOM CHORD PANEL POINTS AND WHERE REQUIRED.

JOISTS SHALL BE DESIGNED FOR A NET UPLIFT FORCE OF 14 PSF, OR AS INDICATED ON THE DRAWINGS. PROVIDE ADDITIONAL BOTTOM CHORD BRIDGING NEAR THE FIRST BOTTOM CHORD PANEL POINTS AND WHERE REQUIRED.

THE STEEL JOIST MANUFACTURER SHALL BE RESPONSIBLE FOR THE DESIGN OF THE JOISTS BASED ON THE LOADS INDICATED. THE DESIGN SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND STANDARDS OF THE STEEL JOIST INSTITUTE. ALLOWABLE LIVE LOAD DEFLECTION = L/360.

CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF DETAILS AND CLEARANCES BETWEEN THE JOIST MANUFACTURER AND SUBTRADES, INCLUDING: MECHANICAL, FIREPROOFING, PLUMBING, ELECTRIC, PRECAST CONCRETE, ETC.

METAL DECK:

ALL METAL DECK SHALL BE DETAILED, FABRICATED, AND INSTALLED IN ACCORDANCE WITH THE STEEL DECK INSTITUTE SPECIFICATIONS, LATEST EDITION.

ALL METAL DECK SHALL BE CONTINUOUS OVER THREE OR MORE SUPPORTS, EXCEPT WHERE THE STEEL LAYOUT DOES NOT PERMIT.

METAL DECK SHALL CONFORM TO THE FOLLOWING:

ROOF DECK	22 GA / 20GA., 1-1/2" DEEP, TYPE B, METAL DECK
MTL FORM DECK	26 GA., 9/16" DEEP, GALVANIZED METAL CENTERING

STRUCTURAL DIAPHRAGM ACTION SHALL BE PROVIDED BY THE METAL ROOF DECK. THE DECK AND ITS ATTACHMENTS TO THE STRUCTURE SHALL BE CAPABLE OF RESISTING A HORIZONTAL SHEAR FORCE OF 655 POUNDS PER FOOT, U.N.O. ON PLAN, OR MINIMUM DECK CONNECTION REQUIREMENTS, WHICHEVER IS GREATER. MINIMUM ATTACHMENT OF THE METAL DECK SHALL BE WITH 5/8" PUDDLE WELDS AT 12" O.C. TO ALL SUPPORTS IN THE FIELD; WELDS AT 6" O.C. ALONG THE PERIMETER; WELDS AT 6" O.C. AT THE CORNERS; PERIMETER AND CORNER WELDS SHOULD EXTEND 6'-0" OR TWO (2) PANELS FROM THE EXTERIOR WALL OR EXPANSION JOINTS. SCREWED SIDE LAP CONNECTIONS, #10 TEKS, SHALL BE PROVIDE, AS REQUIRED, TO PROVIDE THE DESIGN FORCE NOTED. PROVIDE A MINIMUM OF ONE SIDE LAP CONNECTION; FOR DECK SPANS GREATER THAN 5'-0", PROVIDE SIDE LAP CONNECTIONS AT A MAXIMUM SPACING OF 36". SEE THE ROOF PLANS FOR ADDITIONAL DESIGN INFORMATION.

METAL DECK SHALL BE WELDED TO ALL SUPPORTS AT 12" O.C.. PROVIDE SCREWED SIDE LAP CONNECTIONS AS INDICATED ON PLAN. PROVIDE A MINIMUM OF ONE SCREWED SIDE LAP CONNECTION FOR ALL ROOF DECK UNLESS NOTED OTHERWISE ON PLAN; FOR DECK SPANS GREATER THAN 5'-0", PROVIDE SIDE LAP CONNECTIONS AT A MAXIMUM SPACING OF 36". WELDING WASHERS SHALL BE USED FOR ALL METAL DECK WITH GAUGES GREATER THAN 22.

CONDUIT, PIPING, FIXTURES OR ANY OTHER ITEMS SHALL NOT BE SUPPORTED FROM THE METAL DECK.

UNLESS OTHERWISE NOTED, DECK SUPPORT ANGLE SHOULD BE LOCATED AS NOTED ON THE ARCH / STRUCTURAL DRAWINGS. AT LONGSPAN JOIST CONDITIONS, OR AS NOTED, THE CONTRACTOR SHOULD PROVIDE FOR INCREASED CAMBERS AND COORDINATE FINAL ELEVATION OF ANGLE WITH JOIST CONTRACTOR.

UNLESS OTHERWISE NOTED, DECK SUPPORT ANGLES SHOULD BE PROVIDED AS REQUIRED AT ALL COLUMN PENETRATIONS (FLOOR AND / OR ROOF) IN THE METAL DECK. UNLESS DETAILED OTHERWISE ON THE STRUCTURAL DRAWINGS, PROVIDE L 2 ½ X 2 ½ X 1/4; WELD TO COLUMNS ALL SIDES.

METAL FLOOR DECK SHALL BE WELDED TO ALL SUPPORTS AT 12" O.C.. WELDING WASHERS SHALL BE USED FOR ALL METAL DECK WITH GAUGES GREATER THAN 22. FOR ALL DECK SPANS GREATER THAN 5'-0", SIDE LAPS SHALL BE PROVIDED AT MID-SPAN OR 36" INTERVALS, WHICHEVER IS SMALLER.

THICKNESS OF CONCRETE SLABS ON METAL FORMS SHALL BE VARIED TO COMPENSATE FOR DEAD LOAD DEFLECTION OF ALL SUPPORTING MEMBERS. SLABS SHALL BE PLACED DEAD LEVEL WITH A MINIMUM THICKNESS AS SHOWN ON THE FRAMING PLAN.

CONSTRUCTION JOINTS IN THE CONCRETE SLABS ON METAL CENTERING SHALL BE LOCATED AS NOT TO IMPAIR THE STRENGTH OF THE STRUCTURE. JOINTS SHALL BE MADE AT THE CENTER LINES OF THE SUPPORT STEEL.

ALL EXTERIOR EXPOSURE METAL DECK SHALL BE GALVANIZED.

LIGHT-GAGE STEEL STUDS AND JOISTS:

LIGHT GAGE STEEL FRAMING BE DESIGNED, DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE AISI PUBLICATION: "DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS, LATEST EDITION."

STEEL JOISTS AND STUDS SHALL BE FORMED FROM STEEL MEETING THE REQUIREMENTS OF ASTM A-570 (12, 14, AND 16ga. MATERIAL WITH A MINIMUM YIELD STRENGTH OF 50,000 PSI) AND ASTM A-611 (18 AND 20ga. MATERIAL WITH A MINIMUM YIELD STRENGTH OF 33,000 PSI).

PROVIDE WEB STIFFENERS AT ALL JOIST BEARING LOCATIONS, AS REQUIRED BY ANALYSIS, TO DEVELOP ADEQUATE BEARING STRENGTH FOR THE LOADS SHOWN IN THE DESIGN LOAD TABLES, AS PUBLISHED BY THE REFERENCED MANUFACTURER.

PROVIDE ALL ACCESSORIES, INCLUDING BUT NOT LIMITED TO BEARING STIFFENERS, WEB STIFFENERS, BRIDGING, END BLOCKING, JACK STUDS, CRIPPLES AND TEMPORARY BRACING, AS REQUIRED BY CODE AND/OR ANALYSIS AND SHOWN ON THE SHOP DRAWINGS. NOTE: WAIVER OF SHOP DRAWING SUBMITTAL BY THE ARCHITECT DOES NOT RELIEVE THE CONTRACTOR OR MANUFACTURER FROM THE RESPONSIBILITY OF SUPPLYING OR INSTALLING THE NECESSARY ACCESSORIES.

FASTENING OF COMPONENTS SHALL BE WITH SELF-DRILLING SCREWS OR WELDING. SCREWS OR WELDS SHALL BE OF SUFFICIENT SIZE TO INSURE THE STRENGTH OF THE CONNECTION. ALL WELDS OF GALVANIZED STEEL SHALL BE TOUCHED UP WITH ZINC-RICH PAINT; ALL WELDS OF CARBON STEEL SHALL BE TOUCHED UP WITH PAINT.

MISCELLANEOUS

STRUCTURAL DRAWINGS ARE INTENDED TO BE USED WITH ARCHITECTURAL, MECHANICAL, PLUMBING, FIRE PROTECTION, ETC. DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR COORDINATING SUCH REQUIREMENTS INTO THEIR SHOP DRAWINGS AND WORK. THE INFORMATION CONTAINED IN THE STRUCTURAL DRAWINGS IS IN ITSELF INCOMPLETE AND VOID UNLESS IT IS USED IN CONJUNCTION WITH ALL CONTRACT DOCUMENTS AND ALL SPECIFICATIONS, STANDARD PRACTICES, CODES, ETC.

ALL NON-STRUCTURAL ITEMS SHOWN ON THE STRUCTURAL DRAWINGS (ROOF DRAIN, PIPING, MECHANICAL UNITS, ETC.) IS SCHEMATIC IN NATURE AND FOR INFORMATIONAL PURPOSES ONLY. REFER TO THE APPROPRIATE CONSULTANT / SUB-CONTRACTOR DRAWINGS (THOSE RESPONSIBLE FOR THAT SPECIFIC DESIGN / SPECIFICATION) FOR EXACT DESIGN INFORMATION, LAYOUT, DIMENSIONS AND DETAIL.

THE DESIGN, MANUFACTURE AND ERECTION OR INSTALLATION OF ALL MANUFACTURED ITEMS (JOISTS, JOIST GIRDERS, TRUSSES, PRECAST CONCRETE MEMBERS, STAIRS, CURTAIN WALL SYSTEMS, MECHANICAL EQUIPMENT, OTHER EQUIPMENT AND ACCESSORIES, ETC.) AND THEIR CONNECTIONS TO THE PRIMARY STRUCTURAL FRAMING ELEMENTS, SHALL BE PROMULGATED BY AND IN ACCORDANCE WITH ALL APPLICABLE CODES, SPECIFICATIONS, LOCAL ORDINANCES, INDUSTRY STANDARDS AND/OR SPECIFIC CRITERIA NOTED ON THE DRAWINGS. THE COMPLIANCE WITH THESE CONTINGENCIES IS SOLELY THE RESPONSIBILITY OF THE ITEM MANUFACTURER.

SHOP DRAWINGS FOR ALL PRE-FABRICATED, PRE-ENGINEERED, ETC. ITEMS SHALL BE SUBMITTED FOR TO THE PROFESSIONAL OF RECORD FOR REVIEW. IN ACCORDANCE WITH STANDARD PRACTICE AND THE SPECIFICATIONS, THE SHOP DRAWING MUST BE REVIEWED BY THE GENERAL CONTRACTOR (GC/CM) AND ALL AFFECTED CONSULTANTS AND CONTRACTORS. SUBCONTRACTORS TO SUBMIT A MINIMUM OF ONE (1) HARD COPY FOR REVIEW. COMMENTS WILL BE RETURNED ON EITHER HARD COPIES PROVIDED, OR IN PDF FORMAT, AS NOTED IN THE PROJECT SPECIFICATIONS. WHEN REQUIRED, CALCULATIONS MUST BE SUBMITTED CONCURRENTLY WITH THE SHOP DRAWINGS.

THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL TEMPORARY BRACING AND/OR SUPPORT THAT MAY BE REQUIRED AS THE RESULT OF THE CONTRACTOR'S CONSTRUCTION METHODS AND/OR SEQUENCES.

THESE DOCUMENTS ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR REUSE ON EXTENSIONS OF THE PROJECT OR ANY OTHER PROJECT. ANY REUSE WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY **ALTA ENGINEERING, LTD.** IS PROHIBITED AND WILL BE AT THE SOLE RISK OF OTHERS AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO **ALTA ENGINEERING, LTD.**

CONTRACTORS SHALL ASSUME FULL RESPONSIBILITY, UNRELIEVED BY REVIEW OF SHOP DRAWINGS AND DOCUMENTS, FOR: DIMENSIONS; COORDINATION OF VARIOUS TRADES; FABRICATION PROCESSES; CONSTRUCTION TECHNIQUES; SAFETY CONDITIONS.

ALTA ENGINEERING, LTD. SHALL NOT SUPERVISE, DIRECT OR HAVE CONTROL OVER THE CONSTRUCTION WORK NOR SHALL IT HAVE AUTHORITY OVER OR RESPONSIBILITY FOR THE MEANS, METHODS, TECHNIQUES OR PROCEDURES OF CONSTRUCTION SELECTED BY THE CONTRACTORS.

THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES. AS PART OF HIS RESPONSIBILITY, THE CONTRACTOR SHALL RETAIN THE SERVICES OF A LICENSED STRUCTURAL ENGINEER TO DESIGN AND SUPERVISE ANY SCAFFOLDING FOR WORKMEN AND ALL SHORING OF FORMS AND ELEMENTS OF CONSTRUCTION.

THE CONTRACTOR, AT HIS EXPENSE, SHALL ENGAGE PROPERLY QUALIFIED PERSONS TO DETERMINE WHERE AND HOW TEMPORARY PRECAUTIONARY MEASURES SHALL BE USED AND INSPECT THE SAME IN THE FIELD. ANY OBSERVATION VISITS BY THE FIELD REPRESENTATIVE (ARCHITECT OR ENGINEER) SHALL NOT INCLUDE THE INSPECTION OF THE ITEMS.

ALL LOCAL, STATE AND FEDERAL REGULATIONS AND PROCEDURES REGARDING SAFETY ARE THE RESPONSIBILITY OF THE CONTRACTOR.

USE THE PROJECT SPECIFICATIONS IN CONJUNCTION WITH THE STRUCTURAL ENGINEERING CONTRACT DOCUMENTS; UNLESS NOTED OTHERWISE, THE PROJECT SPECIFICATIONS SHALL GOVERN IN ANY DISCREPANCY OR INCONSISTENCY WHICH ARE NOTED BETWEEN THE SPECIFICATIONS AND THE CONTRACT DOCUMENTS.

ALL ALTERNATE DETAIL, MATERIALS, ETC., AS WELL AS FIELD MODIFICATIONS AND / OR DEVIATIONS PROPOSED AND PROVIDED BY THE CONTRACTOR ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR MUST PROVIDE FOR A FULLY ENGINEERED SOLUTION, INCLUDING BACK-UP CALCULATIONS AND CERTIFICATION BY A LICENSED STRUCTURAL ENGINEER. THE BACK-UP INFORMATION SHALL BE FORWARDED TO ALTA FOR REVIEW AND EVALUATION OF IMPACT ON THE STRUCTURAL SYSTEM.

ALL ALTERNATE DETAILS, MATERIALS, ETC., AS WELL AS FIELD MODIFICATIONS AND / OR DEVIATIONS PROPOSED AND PROVIDED BY THE CONTRACTOR ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR MUST PROVIDE FOR A FULLY ENGINEERED SOLUTION, INCLUDING BACK-UP CALCULATIONS AND CERTIFICATION BY A LICENSED STRUCTURAL ENGINEER. THE BACKUP INFORMATION SHALL BE FORWARDED TO ALTA FOR REVIEW AND EVALUATION OF IMPACT ON THE STRUCTURE.

DO NOT SCALE DRAWINGS.

SHOP DRAWING SUBMITTAL & REVIEW:

REPRODUCTION OF THE STRUCTURAL DOCUMENTS BY ANY PHOTOGRAPHIC, XEROGRAPHIC, ETC., PROCESS OR TECHNIQUE FOR DIRECT INCORPORATION OF THE PLANS, DETAILS, NOTES, ETC., HEREIN CONTAINED INTO A SHOP DRAWING IS STRICTLY PROHIBITED.

ANY SHOP DRAWING OR SUBMITTAL, RECEIVED BY THE STRUCTURAL ENGINEER, WHICH HAS BEEN PRODUCED IN WHOLE, OR IN PART, BY THE ABOVE MENTIONED TECHNIQUES, SHALL BE REJECTED.

SHOP DRAWINGS OF THE STRUCTURAL ITEMS SHALL BE SUBMITTED BEFORE FABRICATION, FOR REVIEW BY THE STRUCTURAL ENGINEER. SHOULD IT BECOME EVIDENT THAT THE SHOP DRAWINGS ARE BEING SUBMITTED WITH THE APPEARANCE OF NOT HAVING BEEN PROPERLY CHECKED BY THE DETAILER, OR COMPLETED, PRIOR TO SUBMISSION, THEY WILL BE RETURNED BY THE STRUCTURAL ENGINEER, WITHOUT REVIEW, AND THE TRANSMITTAL WILL INDICATE A "NON-SUBMITTAL".

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STATE OF ILLINOIS
JOHN F. SWIERK
001-012383
LICENSED ARCHITECT
Signature 5/12/2023 Date
11.30.24 Expires

PROJECT NO.	122148
PROJECT MGR.	TPL

STRUCTURAL GENERAL NOTES

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STATEMENT OF SPECIAL INSPECTIONS

1. SPECIAL INSPECTIONS, STRUCTURAL OBSERVATIONS, AND TESTS OF STRUCTURAL ELEMENTS SHALL BE PERFORMED IN ACCORDANCE WITH CHAPTER 17 OF IBC 2018.
2. THE FOLLOWING TABLES REPRESENT THE MINIMUM REQUIRED LEVEL OF TESTING AND INSPECTION PER IBC 2018, CHAPTER 17 AND SHALL BE USED IN CONJUCTION WITH THE APPLICABLE MATERIAL STANDARDS WHERE REFERENCED. WHERE THE LOCAL AUTHORITY HAVING JURSIDICTION REQUIRES A GREATER LEVEL OF INSPECTION THAN LISTED, THOSE REQUIREMENTS SHALL BE FOLLOWED.

STRUCTURAL OBSERVATIONS (IBC 1704.6)

OBSERVATIONS	*OBSERVATION REQUIREMENTS*	*APPLICABLE*
STRUCTURAL OBSERVATIONS FOR SEISMIC RESISTANCE	FOR SDC D OR HIGHER, WHERE ONE OF THE FOLLOWING CONDITIONS EXIST: 1. RISK CATEGORY III OR IV. 2. HEIGHT OF STRUCTURE IS GREATER THAN 75 FT. 3. SDC E, RISK CATEGORY I OR II, AND GREATER THAN 2 STORIES. 4. WHEN SO DESIGNATED BY THE SEOR. 5. WHEN SUCH OBSERVATION IS SPECIFICALLY REQUIRED BY THE BUILDING OFFICIAL.	N
STRUCTURAL OBSERVATIONS FOR WIND REQUIREMENTS	FOR Vasd GREATER THAN 110 MPH, WHERE ONE OF THE FOLLOWING CONDITIONS EXIST: 1. RISK CATEGORY III OR IV. 2. HEIGHT OF STRUCTURE IS GREATER THAN 75 FT. 3. WHEN SO DESIGNATED BY THE SEOR. 4. WHEN SUCH OBSERVATION IS SPECIFICALLY REQUIRD BY THE BUILDING OFFICIAL.	N

STRUCTURAL STEEL WELDING: REFERENCED STANDARD AISC360-16	QC	QA
INSPECTION TASKS PRIOR TO WELDING		
WELDER QUALIFICATION RECORDS AND CONTINUITY RECORDS	P	O
WELDING PROCEDURE SPECIFICATIONS (WPSs) AVAILABLE	P	P
MANUFACTURER CERIFICATIONS FOR WELDING CONSUMABLES AVAILABLE	P	P
MATERIAL IDENTIFICATION (TYPE/GRADE)	O	O
WELDER IDENTIFICATION SYSTEM [a]	O	O
FIT-UP OF GROOVE WELDS (INCLUDING JOINT GEOMETRY) • JOINT PREPARATION • DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL) • CLEANLINESS (CONDITION OF STEEL SURFACES) • TACKING (TACK WELD QUALITY AND LOCATION) • BACKING TYPE AND FIT (IF APPLICABLE)	O	O
FIT-UP OF CJP GROOVE WELDS OF HSS T-, Y-, AND K-JOINTS WITHOUT BACKING (INCLUDING JOINT GEOMETRY) • JOINT PREPARATIONS • DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL) • CLEANLINESS (CONDITION OF STEEL SURFACES) • TACKING (TACK WELD QUALITY AND LOCATION)	P	O
CONFIGURATION AND FINISH OF ACCESS HOLES	O	O
FIT-UP OF FILLET WELDS • DIMENSION (ALIGNMENT, GAPS AT ROOT) • CLEANLINESS (CONDITION OF STEEL SURFACES) • TACKING (TACK WELD QUALITY AND LOCATION)	O	O
CHECK WELDING EQUIPMENT	O	-
[a] THE FABRICATOR OR ERECTOR, AS APPLICABLE, SHALL MAINTAIN A SYSTEM BY WHICH A WELDER WHO HAS WELDED A JOINT OR MEMBER CAN BE IDENTIFIED. STAMPS, IF USED SHALL BE THE LOW-STRESS TYPE.		
INSPECTION TASKS DURING WELDING		
CONTROL AND HANDLING OF WELDING CONSUMABLE • PACKAGING • EXPOSURE CONTROL	O	O
NO WELDING OVER CRACKED TACK WELDS	O	O
ENVIRONMENTAL CONDITIONS • WIND SPEED WITHIN LIMITS • PRECIPITATION AND TEMPERATURE	O	O
WPS FOLLOWED • SETTINGS ON WELDING EQUIPMENT • TRAVEL SPEED • SELECTED WELDING MATERIALS • SHIELDING GAS TYPE/FLOW RATE • PREHEAT APPLIED • INTERPASS TEMPERATURE MAINTAINED (MIN./MAX.) • PROPER POSITION (F, V, H, OH)	O	O
WELDING TECHNIQUES • INTERPASS AND FINAL CLEANING • EACH PASS WITHIN PROFILE LIMITATIONS • EACH PASS MEETS QUALITY REQUIREMENTS	O	O
PLACEMENT AND INSTALLATION OF STEEL HEADED STUD ANCHORS	P	P
INSPECTION TASKS AFTER WELDING		
WELDS CLEANED	O	O
SIZE, LENGTH AND LOCATION OF WELDS	P	P
WEDS MEET VISUAL ACCEPTANCE CRITERIA • CRACK PROHIBITION • WELD/BASE-METAL FUSION • CRATER CROSS SECTION • WELD PROFILES • WELD SIZE • UNDERCUT • POROSITY	P	P
ARC STRIKES	P	P

K-AREA [a]	P	P
WELD ACCESS HOLES IN ROLLED HEAVY SHAPES AND BUIT-UP HEAVY SHAPES [b]	P	P
BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED)	P	P
REPAIR ACTIVITIES	P	P
DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER	P	P
NO PROHIBITED WELDS HAVE BEEN ADDED WITHOUT THE APPROVAL OF THE EOR	P	P
* WHEN WELDING OF DOUBLERS PLATES, CONTINUITY PLATES OR STIFFENERS HAS BEEN PERFORMED IN THE K-AREA, INSPECT THE WEB K-AREA FOR CRACKS WITHIN 3IN OF THE WELD.	VISUALLY	
** AFTER ROLLED HEAVY SHAPES AND BUILT-UP HEAVY SHAPES ARE WELDED, VISUALLY INSPECT THE WELD ACCESS HOLE FOR CRACKS.		
NONDESTRUCTIVE TESTING OF CJP JOINTS	TYPE OF QA TEST	
BUILDING RISK CATEGORY iii OR iv • ALL CJP GROVE WELD JOINTS SUBJECT TO TRANSVERSELY APPLIED TENSION IN BUTT, T AND CORNER JOINTS IN MATERIALS 5/16" THICK OR GREATER	ULTRASONIC TEST	
BUILDING RISK CATEGORY ii • MIN 10% OF CJP GROVE WELD JOINTS SUBJECT TO TRANSVERSELY APPLIED TENSION IN BUTT, T AND CORNER JOINTS IN MATERIALS 5/16" THICK OR GREATER	ULTRASONIC TEST	

STRUCTURAL STEEL BOLTING: REFERENCED STANDARD AISC360-16	QC	QA
INSPECTION TASKS PRIOR TO BOLTING (PRETENSIONED AND SLIP-CRITICAL JOINTS)		
MANUFACTURER'S CERTIFICATION AVAILABLE FOR FASTENER MATERIALS	O	P
FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS	O	O
CORRECT FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM SHEAR PLANE	O	O
CORRECT BOLTING PROCEDURE SELECTED FOR JOINT DETAIL	O	O
CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPACIFIED, MEET APPLICABLE REQUIREMENTS	O	O
PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED	P	O
PROTECTED STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS AND OTHER FASTENER COMPONENTS	O	O
INSPECTION TASKS DURING BOLTING (PRETENSIONED AND SLIP-CRITICAL JOINTS)		
FASTENER ASSEMBLIES PLACED IN ALL HOLES AND WASHERS AND NUTS ARE POSITIONED AS REQUIRED	O	O
JOINT BROUGHT TO THE SNUG-TIGHT CONDITION PRIOR TO THE PRETENSIONING OPERATION	O	O
FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING	O	O
FASTENER ARE PRETENSIONED IN ACCORDANCE WITH THE RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES	O	O
INSPECTION TASKS AFTER BOLTING		
DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	P	P

OBSERVE (O): THE INSPECTOR SHALL OBSERVE THESE ITEMS ON A RANDOM BASIS.
OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS.
PERFORM (P): THESE TASKS SHALL BE PERFORMED FOR EACH WELDED CONNECTION

SOILS AND FOUNDATIONS (IBC 1705.6, 1705.7, 1705.8, 1705.9)

ITEM	*INSPECTION TASK*	*REFERENCE*	*FREQUENCY*	*APPLICABLE*
EXCAVATIONS	VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	GEOTECHNICAL REPORT	PERIODIC	Y
FILL PLACEMENT	PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	GEOTECHNICAL REPORT	PERIODIC	Y
	VERIFY USE OF PROPER MATERIALS, DENSITIES, AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	GEOTECHNICAL REPORT	CONTINUOUS	Y
	PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT THE SITE HAS BEEN PREPARED PROPERLY	GEOTECHNICAL REPORT	PERIODIC	Y
SHALLOW FOUNDATIONS	VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	GEOTECHNICAL REPORT	PERIODIC	Y

1705.3 CONCRETE CONSTRUCTION TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD[a]	IBC REFERENCE	APPLICABLE TO THIS PROJECT Y/N
1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	-	X	ACI 318: CH. 20, 25.2, 25.3, 26.6.1-26.6.3	1908.4	Y
2. REINFORCING BAR WELDING: a. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706; b. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"; AND c. INSPECT ALL OTHER WELDS.	- x	X X	SWS D1.4 ACI 318: 26.6.4	-	Y
3. INSPECT ANCHORS CAST IN CONCRETE	-	X	ACI 318: 17.8.2	1908.4	Y
4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS.[b] a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORINETATIONS TO RESIST SUSTAINED TENSION LOADS. b. MECHANICAL ANCHORS AND ADHESIVE NOT DEFINED IN 4.a	X	 X	 ACI 318: 17.8.2.4 ACI 318: 17.8.2	-	Y
5. VERIFY USE OF REQUIRED DESIGN MIX.	-	X	ACI 318: CH 19, 26.4.3, 26.4.4	1908.1, 1904.2, 1908.2, 1908.3	Y
6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	-	ASTM C172 ASTM C31 ACI 31: 26.5, 26.12	1908.10	Y
7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	X	-	ACI 318: 26.5	1908.6, 1908.7, 1908.8	Y
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	-	X	ACI 318: 26.5.3-26.5.5	1908.9	Y
9. INSPECT PRESTRESSED CONCRETE FOR: a. APPLICATION OF PRESTRESSING FORCES; AND b. GROUTING OF BONDED PRESTRESSING TENDONS.	X X	- -	ACI 318: 26.10	-	N
10. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS.	-	X	ACI 318: 26.9	-	Y
11. VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.	-	X	ACI 318: 26.11.2	-	N
12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED	-	X	ACI 318: 26.11.2(b)	-	Y

[a] WHERE APPLICABLE SEE SECTION 1705.12, SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE
[b] SPECIFIC REQUIREMENTS FOR SPECIAL INSPECTION SHALL BE INCLUDED IN THE RESEARCH REPORT FOR THE ANCHOR ISSUED BY AN APPROVED SOURCE IN ACCORDANCE WITH 17.8.2 IN ACI318, OR OTHER QUALIFICATION PROCEDURES.

OPEN-WEB STEEL JOISTS AND JOIST GIRDERS	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD
1. INSTALLATION OF OPEN-WEB STEEL JOISTS AND JOIST GIRDERS			
a. END CONNECTIONS - WELDING OR BOLTED	-	Y	SJI SPECIFICATIONS LISTED IN SECTION 2207.1
b. BRIDGING - HORIZONTAL OR DIAGONAL	-	-	-
1. STANDARD BRIDGING	-	Y	SJI SPECIFICATIONS LISTED IN SECTION 2207.1
2. BRIDGING THAT DIFFERS FROM THE SJI SPECIFICATIONS LISTED IN SECTION 2207.1	-	Y	-

SPECIAL INSPECTION GENERAL NOTES:

SPECIAL INSPECTORS (SI) SHALL BE RETAINED AND PAID BY CONTRACTOR.
THE SI SHALL BE FULLY QUALIFIED, APPROVED BY THE BUILDING OFFICIALS, REGISTERED BY APPLICABLE REGISTRATION BOARD IF REQUIRED AND ACCEPTABLE TO THE ARCHITECT.

THE DUTIES OF THE SI SHALL INCLUDE, BUT NOT LIMITED TO: VERIFICATION OF CONSTRUCTION QUALITY CONTROL TESTING, COMPLIANCE WITH CONSTRUCTION DOCUMENTS, BUILDING CODE REQUIREMENTS, AND LOCAL BUILDING DEPARTMENT REQUIREMENTS.

IT IS THE CONTRACTOR'S RESPONSIBLITY TO PROVIDE PROPER NOTIFICATION TO THE SI AND PROCEED WITH THE CONSTRUCITON ONLY AFTER THE SI'S REVIEW AND APPROVAL.

SI SHALL KEEP RECORD OF ALL INSPECTION AND TESTING. THE SI SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, ARCHITECT AND ENGINEER OF RECORD. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENSION OF THE CONTRACTOR FOR CORRECTION. IF THE DISCREPANCIES ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND THE DESIGN PROFESSIONAL PRIOR TO THE COMPLETION OF THAT PHASE OF THE WORK. A FINAL REPORT DOCUEMNTING THE REQUIRED SPECIAL INSPECTION SHALL BE SUBMITTED TO AGREED UPON BY THE PERMIT APPLICANT AND THE BUILDING OFFICIAL. INTRIM REPORTS SHALL BE SUBMITTED PERIODICALLY WITH A MINIMUM FREQUENCY OF THE WEEKS.

OBSERVATIONS BY STRUCTURAL ENGINEER OF RECORD (SER) IS NOT REQUIRED. IF STRUCTURAL OBSERVATION IS REQUIRED BY THE BUILDING AUTHORITY, IT SHALL BE AS DIRECTED BY THE OWNER TO COMPLY WITH THE REQUIREMENTS OF THE GOVERNING BUILDING CODE.

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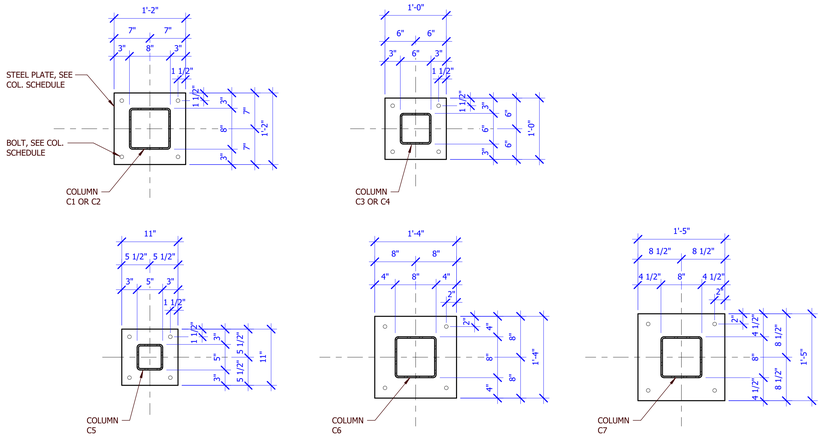
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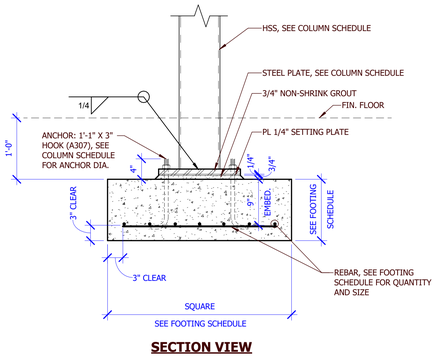
STRUCTURAL SPECIAL INSPECTIONS

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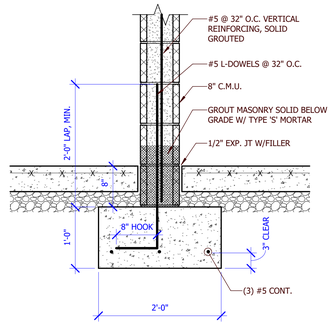


BASE PLATE PLAN VIEWS

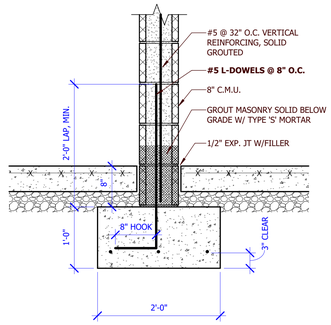


SECTION VIEW

1 COLUMN FOOTING DETAILS
1" = 1'-0"



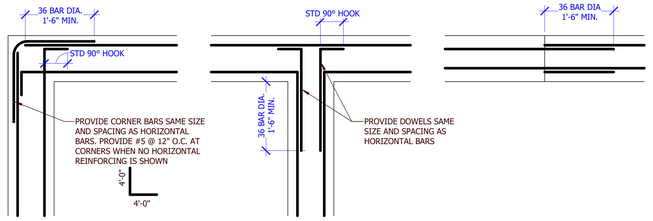
2 LOFT WALL FOUNDATION DETAIL
1" = 1'-0"



3 SW-1 SHEAR WALL FOUNDATION DETAIL
1" = 1'-0"

COLUMN SCHEDULE

ELEVATION	MARK						
	C1	C2	C3	C4	C5	C6	C7
ROOF / VESTIBULE / MEZZ / F.F.	HSS 8X8X1/4 (SEE PLAN)	HSS 8X8X5/16"	HSS 6X6X5/16"	HSS 6X6X1/4"	HSS 2X5X1/4"	HSS 8X8X3/8"	HSS 10X10X3/8"
BASE PLATE	PL 1" X 14" X 1'-2"	PL 1" X 14" X 1'-2"	PL 1" X 12" X 1'-0"	PL 1" X 12" X 1'-0"	PL 1" X 11" X 0'-11"	PL 1" X 16" X 1'-4"	PL 1" X 17" X 1'-5"
ANCHORS	(4) 3/4" Ø F1554 GR 36	(4) 3/4" Ø F1554 GR 36	(4) 3/4" Ø F1554 GR 36	(4) 3/4" Ø F1554 GR 36	(4) 3/4" Ø F1554 GR 36	(4) 1" Ø F1554 GR 36	(4) 1" Ø F1554 GR 36
DETAIL	1 / S1.1	1 / S1.1	1 / S1.1	1 / S1.1	1 / S1.1	9 / S1.2	1 / S1.1
REMARKS							



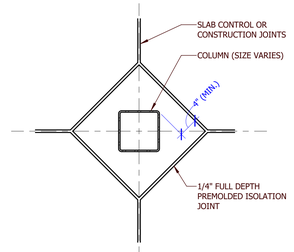
CORNER **INTERSECTION** **CONSTRUCTION JOINT**

4 CONCRETE WALL DETAILS
3/4" = 1'-0"

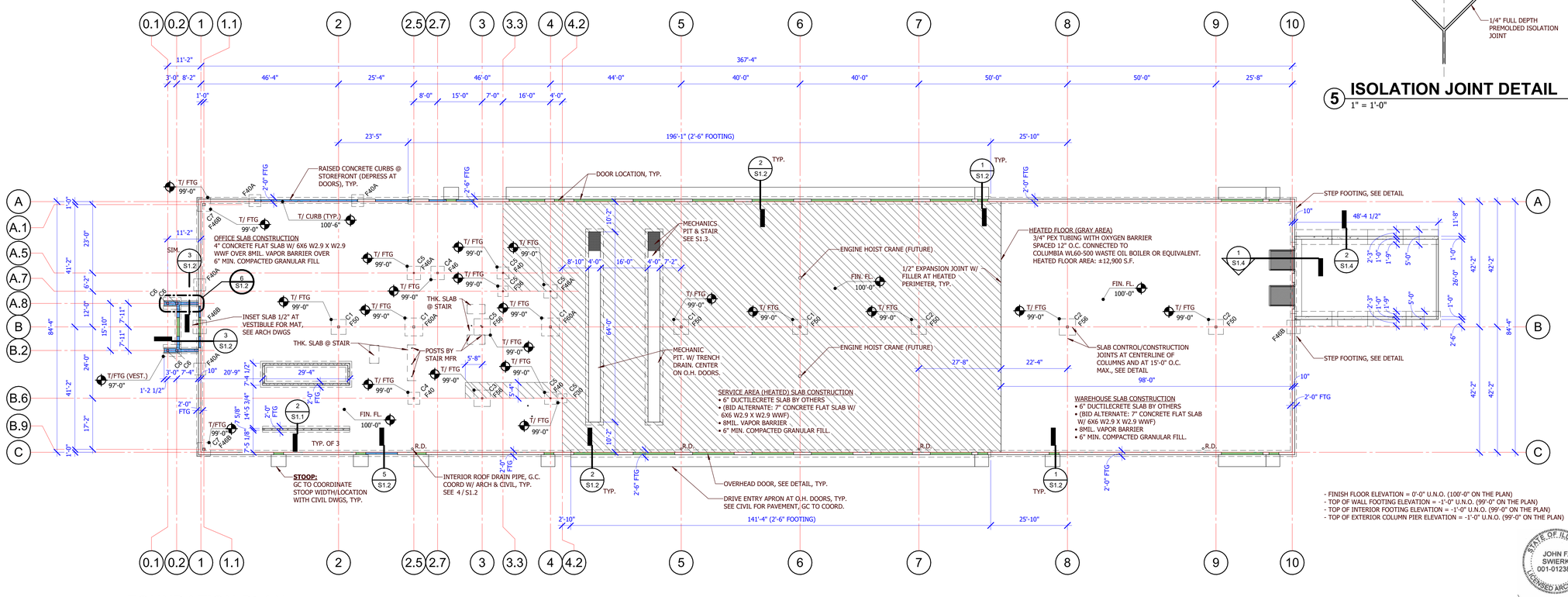
FOOTING SCHEDULE

MARK	SIZE	REINFORCEMENT	UNFACTORED DESIGN LOADS DOWN	UP	HORZ.	DETAIL	NOTES
F30	3'-0" x 3'-0" x 1'-0"	(4) #5 BARS EACH WAY				1 / S1.1	
F36	3'-6" x 3'-6" x 1'-0"	(4) #5 BARS EACH WAY				1 / S1.1	
F40	4'-0" x 4'-0" x 1'-0"	(4) #5 BARS EACH WAY				1 / S1.1	
F40A	4'-0" x 4'-0" x 3'-0"	(4) #5 BARS EACH WAY				1 / S1.1	
F46	4'-6" x 4'-6" x 1'-0"	(5) #5 BARS EACH WAY				1 / S1.1	
F46A	4'-6" x 4'-6" x 2'-0"	(5) #5 BARS EACH WAY				1 / S1.1	
F46B	4'-6" x 4'-6" x 3'-0"*	(5) #5 BARS EACH WAY				1 / S1.1	*MATCH DEPTH WITH TRENCH FOOTING
F50	5'-0" x 5'-0" x 1'-0"	(5) #5 BARS EACH WAY				1 / S1.1	
F56	5'-6" x 5'-6" x 1'-1"	(6) #5 BARS EACH WAY				1 / S1.1	
F60	6'-0" x 6'-0" x 1'-2"	(7) #5 BARS EACH WAY				1 / S1.1	
F60A	6'-0" x 6'-0" x 2'-0"	(7) #5 BARS EACH WAY				1 / S1.1	

NOTE: 4.000 PSF ALLOWABLE NET SOIL BEARING PRESSURE.



5 ISOLATION JOINT DETAIL
1" = 1'-0"



6 FOUNDATION PLAN
1/16" = 1'-0"

NORTH TRUE

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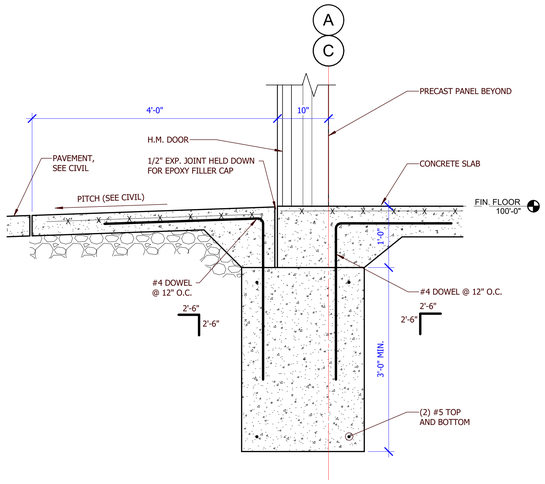
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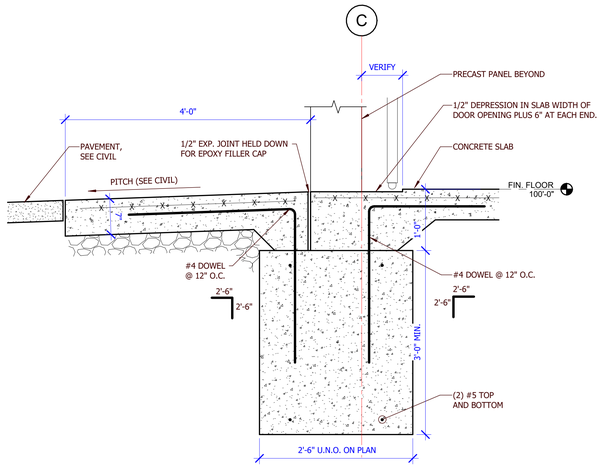
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PROJECT MGR.	TPL
FOUNDATION PLAN & DETAILS	
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Signature 5/12/2023 Date
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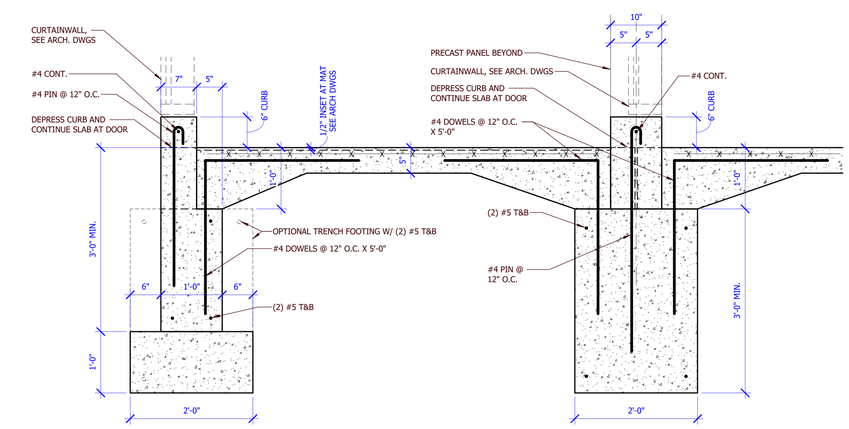
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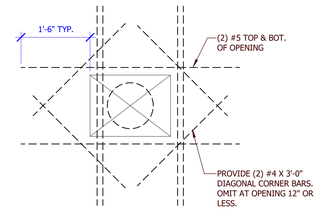
1 H.M. DOOR FOUNDATION SECTION
1" = 1'-0"



2 O.H. DOOR FOUNDATION SECTION
1" = 1'-0"



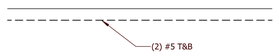
3 VESTIBULE FOUNDATION SECTION
1" = 1'-0"

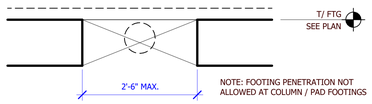


WALL/TRENCH FTG PENETRATION

NOTE:
CONTRACTOR TO COORDINATE STEPPED FOOTING DEPTHS & LENGTHS AS REQUIRED WITH THE FINAL MECHANICAL, PLUMBING, & CIVIL DRAWINGS.
NO PIPING, PLUMBING, ETC., TO BE LOCATED BELOW THE BOTTOM / FOOTING ELEVATIONS (TYPICAL)

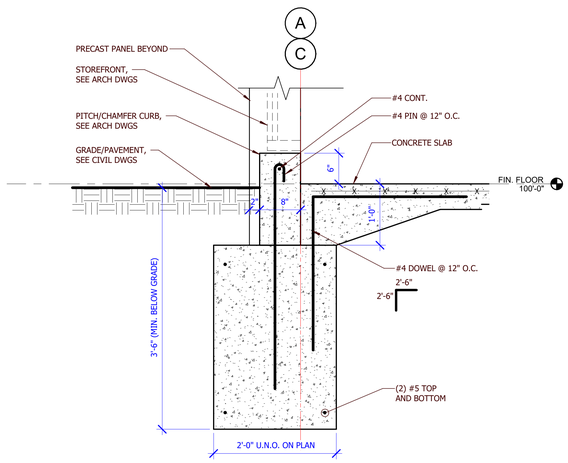
CONTRACTOR NOTE: PROVIDE 2" MINIMUM RIGID INSULATION AROUND ALL PIPES PASSING THROUGH FOOTINGS/WALLS, TYP.



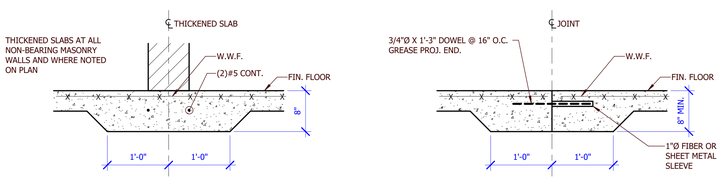


FOOTING PENETRATION

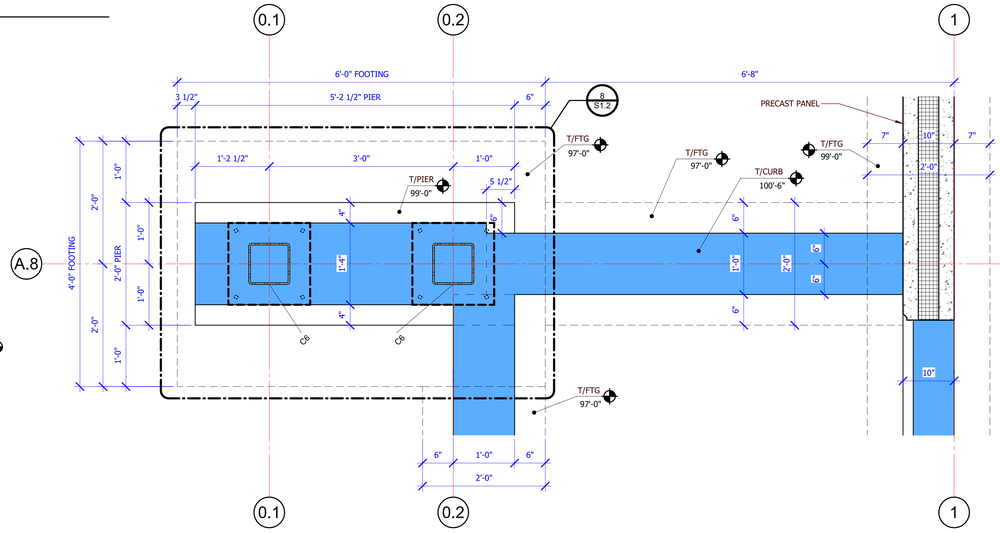
4 TYPICAL PENETRATION DETAILS
3/4" = 1'-0"



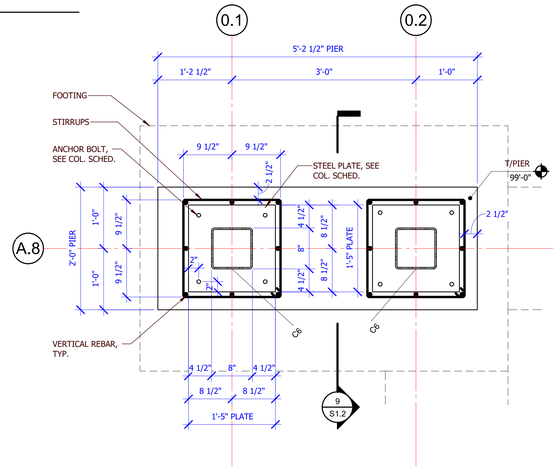
5 STOREFRONT CURB DETAIL
1" = 1'-0"



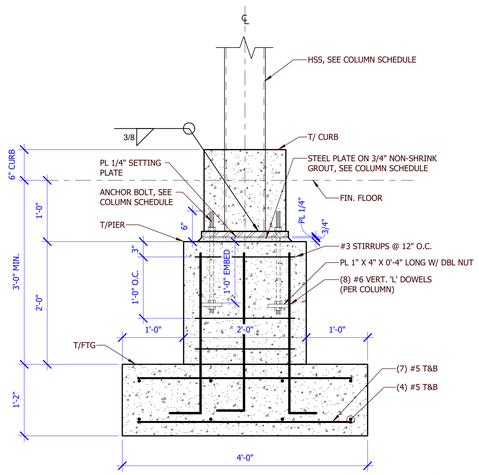
7 SLAB ON GRADE DETAILS



6 VESTIBULE FOUNDATION PLAN DETAIL
1" = 1'-0"



8 PIER P1 PLAN DETAIL
1" = 1'-0"



9 PIER P1 SECTION
1" = 1'-0"

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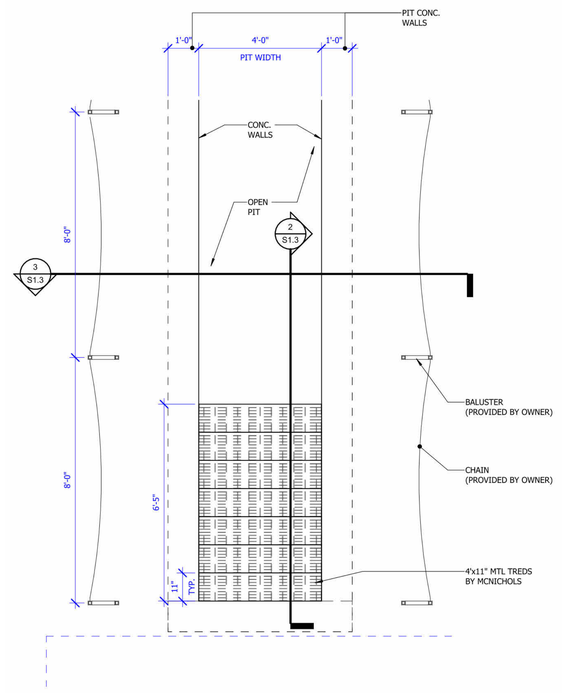
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FOUNDATION DETAILS	
S1.2	

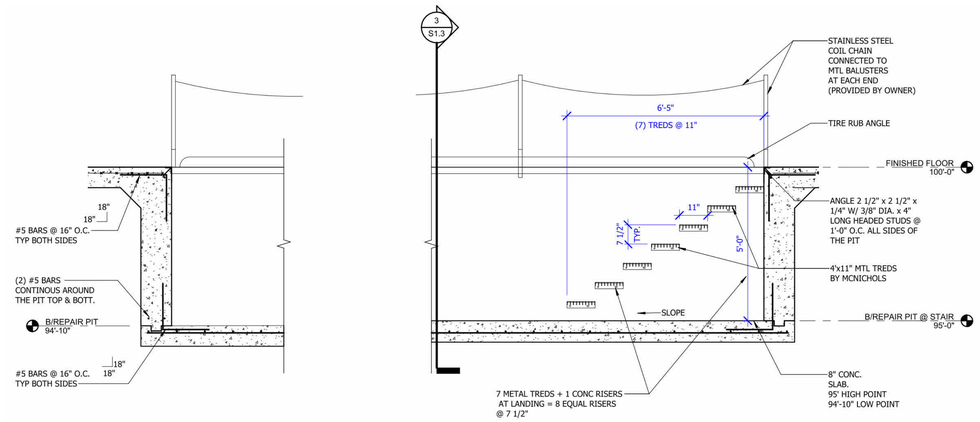
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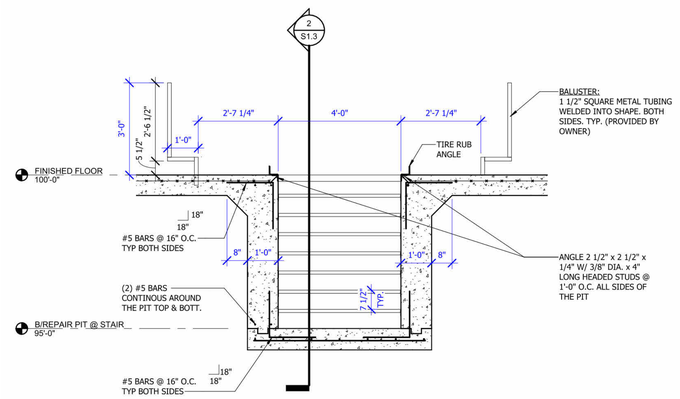


1 REPAIR PIT STAIR PLAN

12" = 1'-0"



2 REPAIR PIT STAIR SECTION



3 REPAIR PIT SECTION

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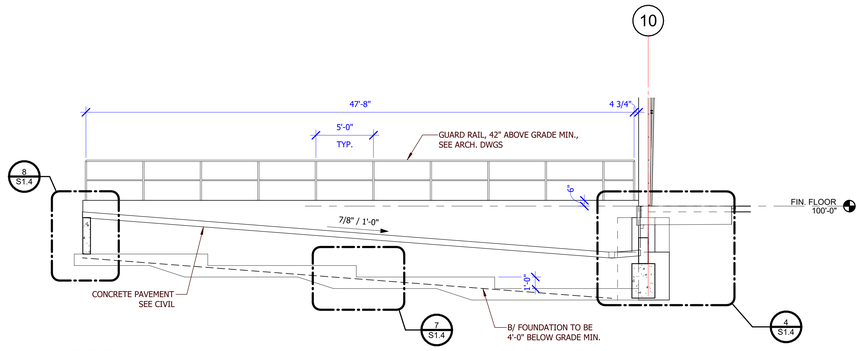
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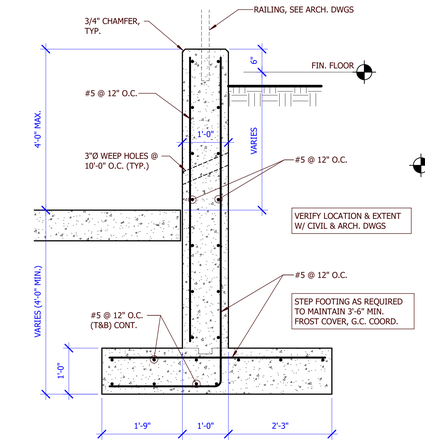
REPAIR PIT DETAILS

S1.3

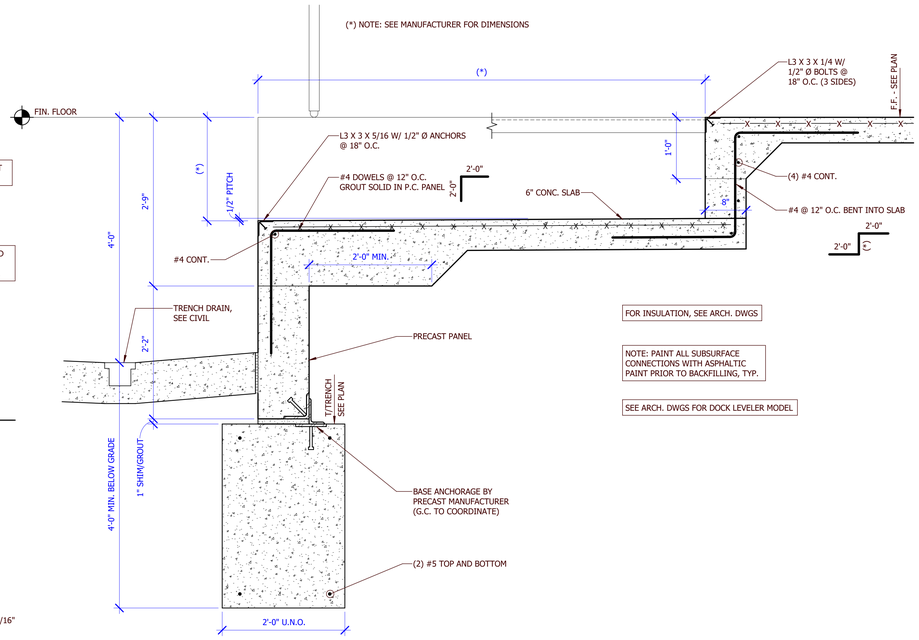
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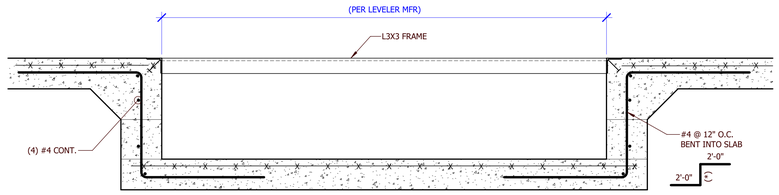
1 DOCK SECTION
3/16" = 1'-0"



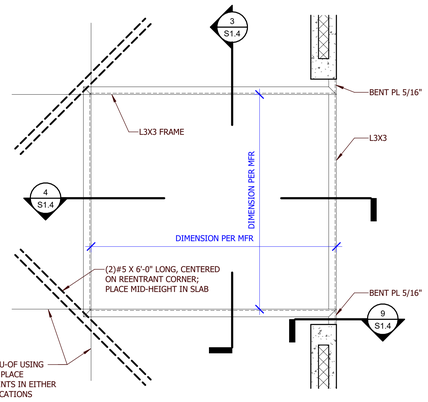
2 RAMP RETAINING WALL SECTION
3/4" = 1'-0"



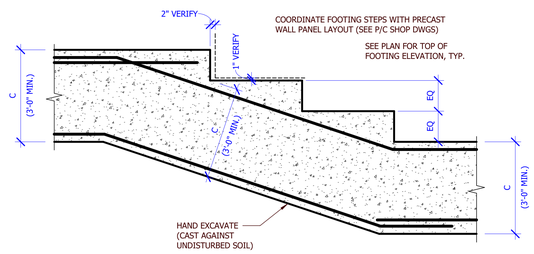
4 DOCK LEVELER SECTION
1" = 1'-0"



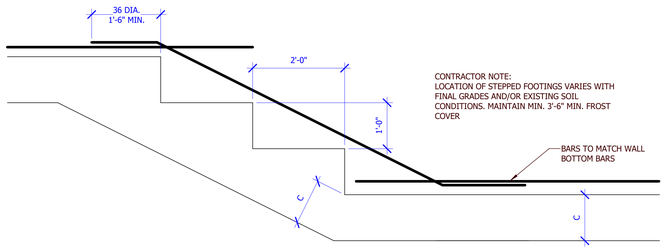
3 DOCK LEVELER PIT SECTION
1" = 1'-0"



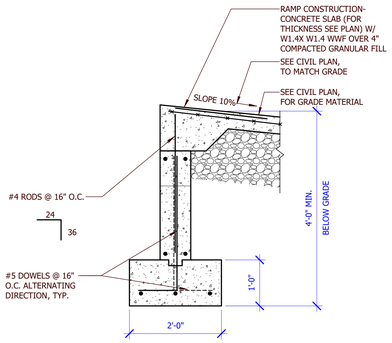
6 DOCK LEVELER PIT PLAN
1/2" = 1'-0"



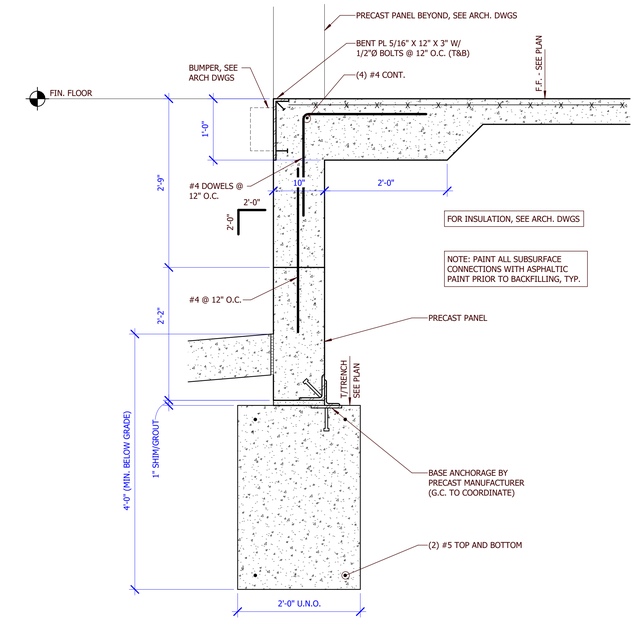
5 PRECAST WALL STEPPED FOOTING DETAIL
1/2" = 1'-0"



7 RAMP RETAINING WALL STEPPED FOOTING
3/4" = 1'-0"



8 FOUNDATION DETAIL @ RAMP
3/4" = 1'-0"



9 DOCK END SECTION DETAIL
1" = 1'-0"

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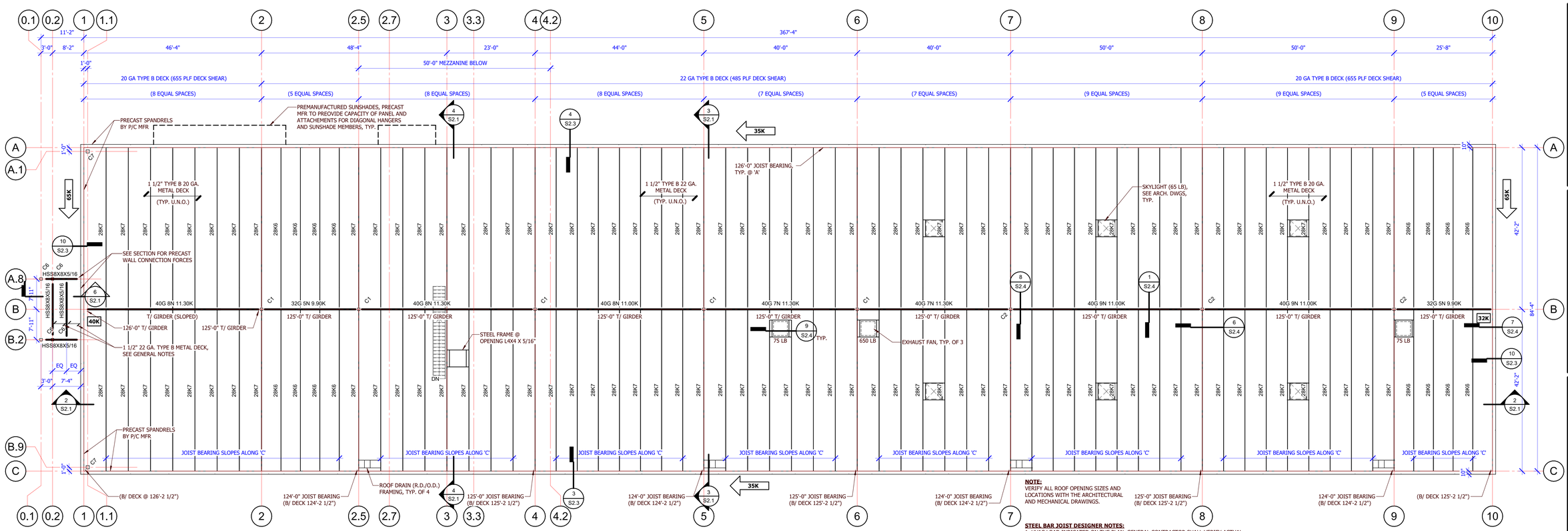
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DOCK, RAMP, AND STEPPED FOOTING DETAILS

S1.4

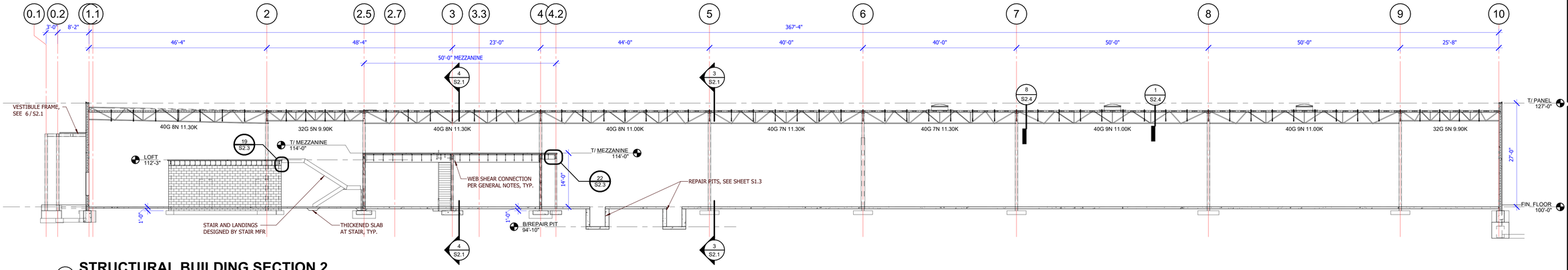
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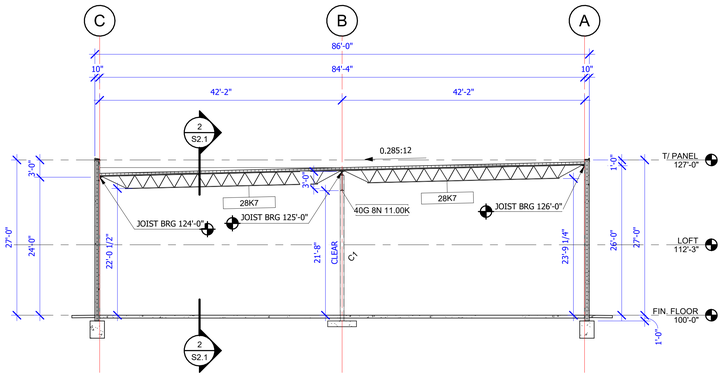
1 ROOF FRAMING PLAN
3/32" = 1'-0"

NOTE:
VERIFY ALL ROOF OPENING SIZES AND LOCATIONS WITH THE ARCHITECTURAL AND MECHANICAL DRAWINGS.

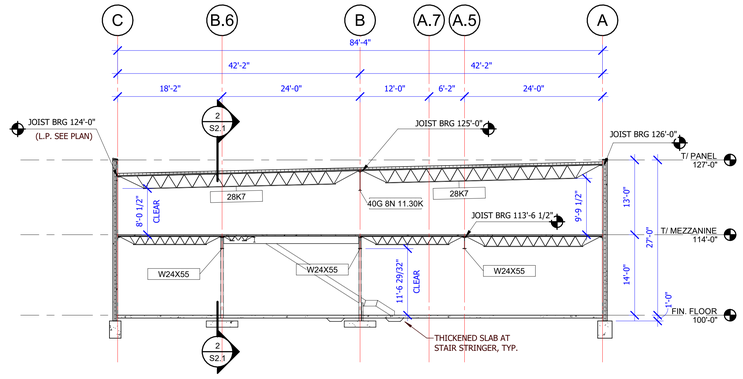
STEEL BAR JOIST DESIGNER NOTES:
1. HVAC LOAD INDICATED ON THE PLAN. GENERAL CONTRACTOR SHALL VERIFY ACTUAL LOCATIONS WITH THE MECHANICAL CONTRACTOR AND/OR DRAWINGS.
2. JOISTS MARKED SPECIAL (SP) SHALL BE DESIGNED TO SUPPORT ADDITIONAL CONCENTRATED LOADS, AT EACH CORNER OF THE UNIT, EQUAL TO 30% OF THE TOTAL UNIT LOAD NOTED ON THE PLAN. FOR JOIST REINFORCEMENT REQUIREMENTS SEE DETAILS



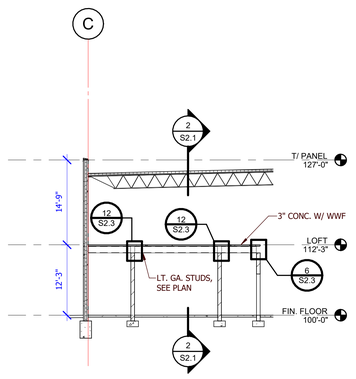
2 STRUCTURAL BUILDING SECTION 2
3/32" = 1'-0"



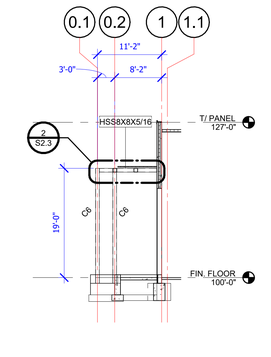
3 STRUCTURAL BUILDING SECTION 3
3/32" = 1'-0"



4 STRUCTURAL BUILDING SECTION 4
3/32" = 1'-0"



5 STRUCT. LOFT SECTION
3/32" = 1'-0"



6 STRUCT. VEST. SECT.
3/32" = 1'-0"

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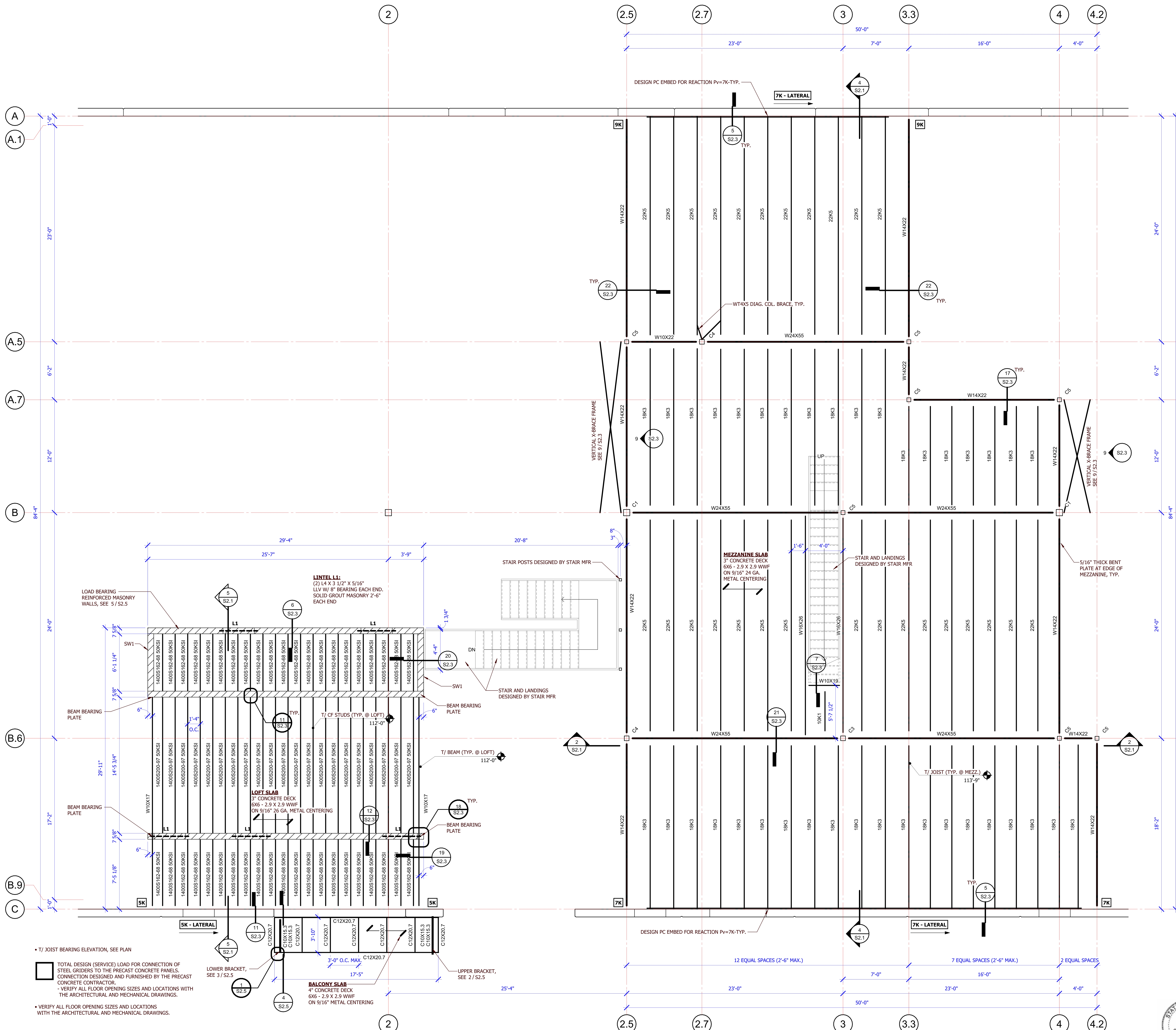
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PROJECT MGR.	TPL

ROOF FRAMING PLAN & SECTIONS

S2.1

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- T/ JOIST BEARING ELEVATION, SEE PLAN

☐ TOTAL DESIGN (SERVICE) LOAD FOR CONNECTION OF STEEL GRIDERS TO THE PRECAST CONCRETE PANELS. CONNECTION DESIGNED AND FURNISHED BY THE PRECAST CONCRETE CONTRACTOR.
- VERIFY ALL FLOOR OPENING SIZES AND LOCATIONS WITH THE ARCHITECTURAL AND MECHANICAL DRAWINGS.

- VERIFY ALL FLOOR OPENING SIZES AND LOCATIONS WITH THE ARCHITECTURAL AND MECHANICAL DRAWINGS.

1 MEZZANINE AND LOFT FRAMING PLAN

1/4" = 1'-0"

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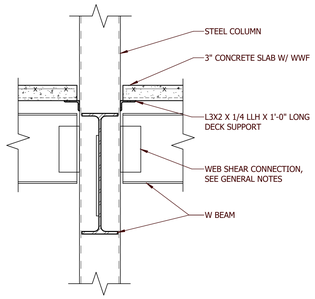
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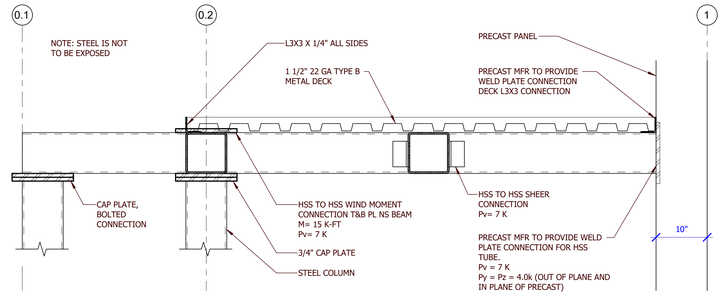
MEZZANINE & LOFT FRAMING PLAN

S2.2

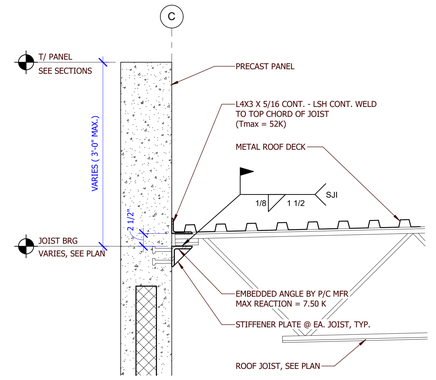
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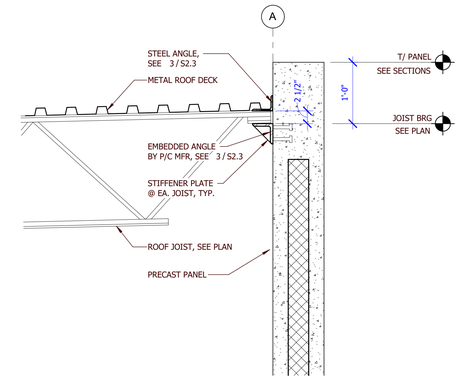
1 MEZZ. COLUMN CONNECTION DETAIL
1" = 1'-0"



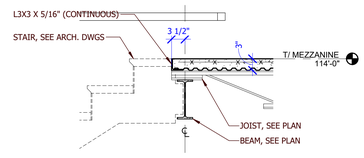
2 VESTIBULE ROOF CONNECTION DETAILS
1" = 1'-0"



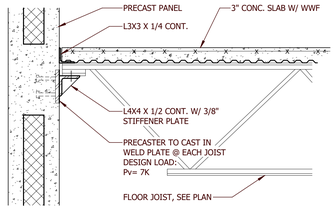
3 ROOF JOIST BEARING ALONG 'C'
1" = 1'-0"



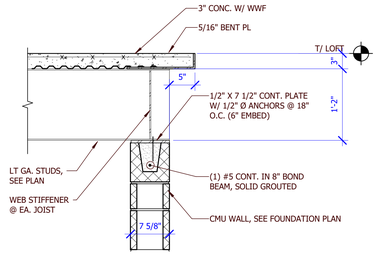
4 ROOF JOIST BEARING ALONG 'A'
1" = 1'-0"



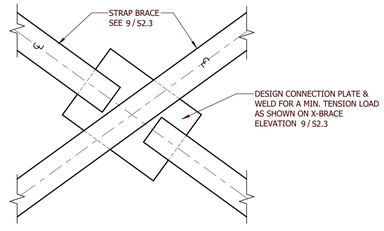
7 MEZZ. STAIR OPENING DETAIL
3/4" = 1'-0"



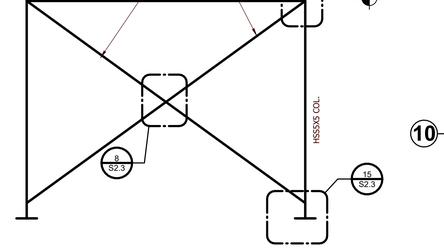
5 MEZZ. JOIST BRG DETAIL
1" = 1'-0"



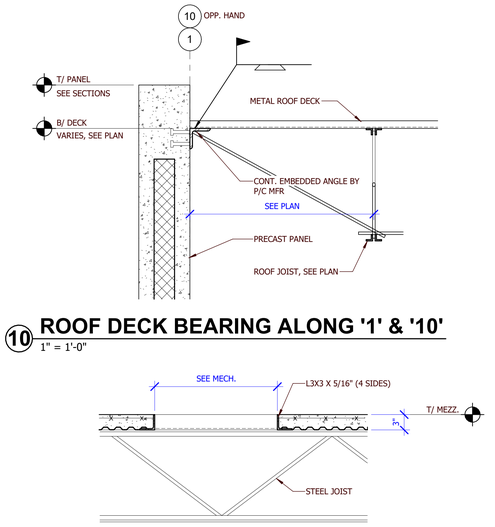
6 LOFT LT GA. BRG AT END
1" = 1'-0"



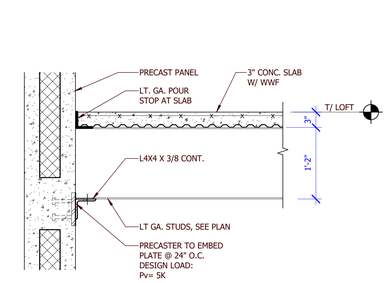
8 X-BRACE CENTER CONNECTION
1" = 1'-0"



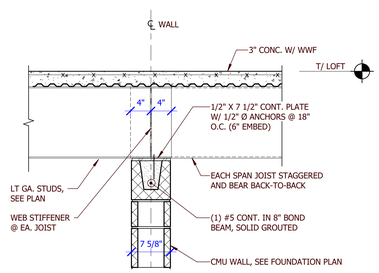
9 X-BRACE ELEVATION
1" = 1'-0"



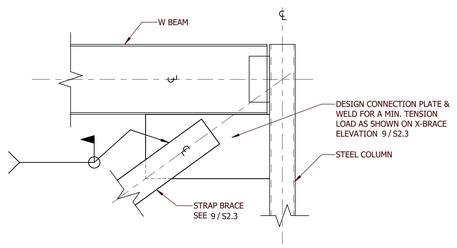
10 ROOF DECK BEARING ALONG '1' & '10'
1" = 1'-0"



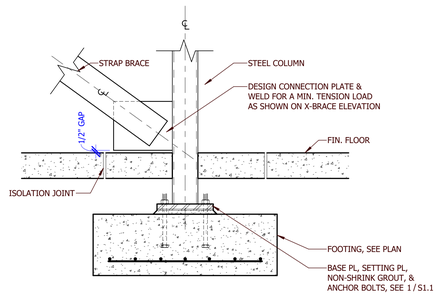
11 LOFT LT GA. BRG AT PANEL
1" = 1'-0"



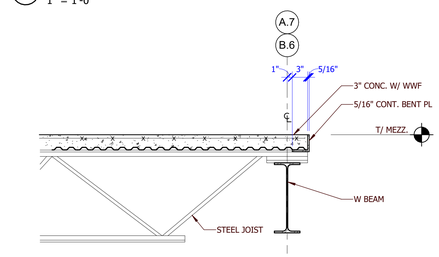
12 LOFT LT GA. BRG AT CMU
1" = 1'-0"



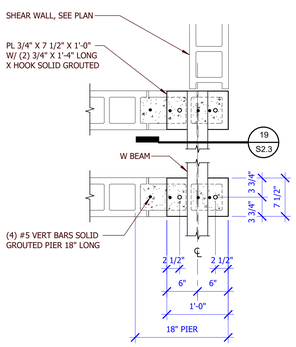
14 X-BRACE TOP CONNECTION
1" = 1'-0"



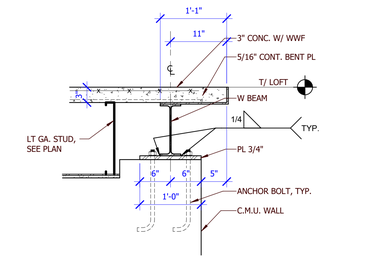
15 X-BRACE BOTTOM CONNECTION
1" = 1'-0"



17 MEZZ. EDGE DETAIL A
1" = 1'-0"

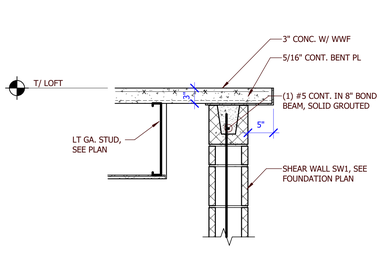


18 LOFT WF BRG AT PLAN DETAIL
1" = 1'-0"

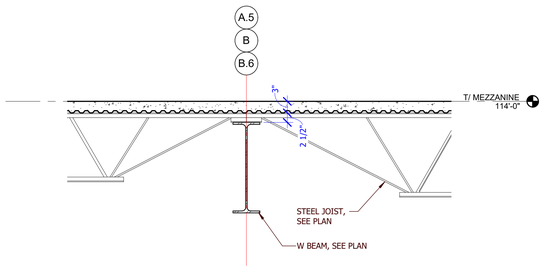


13 LT GA BEARING PLAN DETAIL
1" = 1'-0"

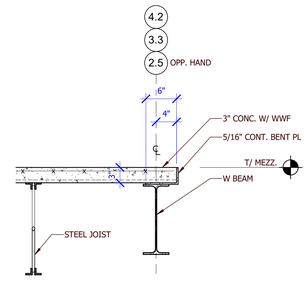
19 LOFT WF BRG SECTION
1" = 1'-0"



20 LOFT SHEAR WALL SECTION
1" = 1'-0"



21 MEZZANINE JOIST BEARING ON BEAM
3/4" = 1'-0"



22 MEZZ. EDGE DETAIL B
1" = 1'-0"

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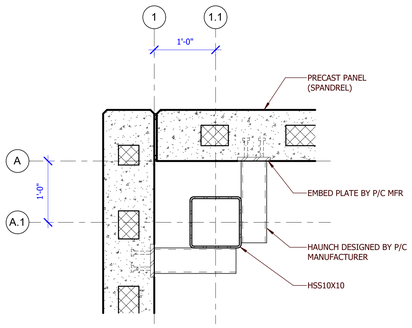
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Date
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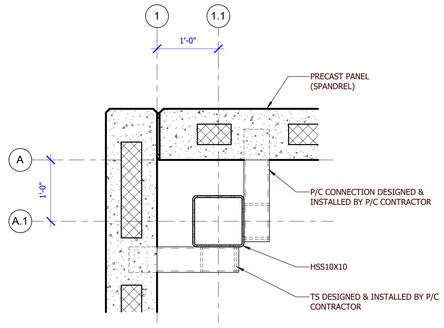
STRUCTURAL DETAILS

S2.3

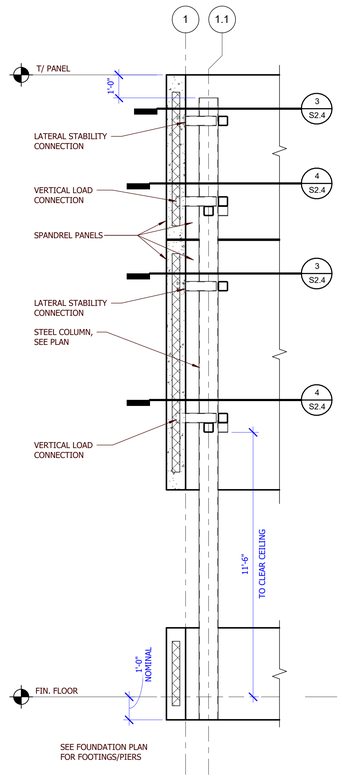
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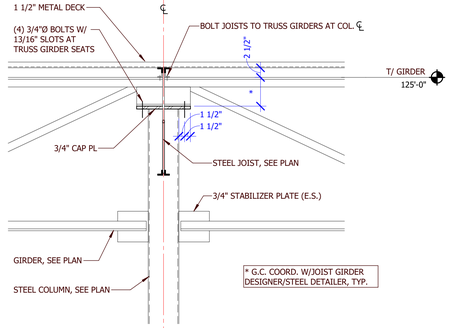
3 LATERAL CONNECTION PLAN DETAIL
1" = 1'-0"



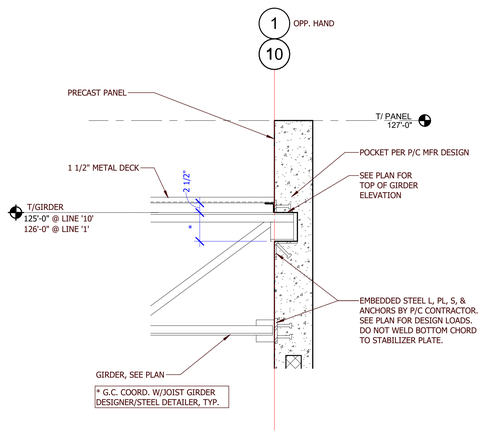
4 SUPPORT CONNECTION PLAN DETAIL
1" = 1'-0"



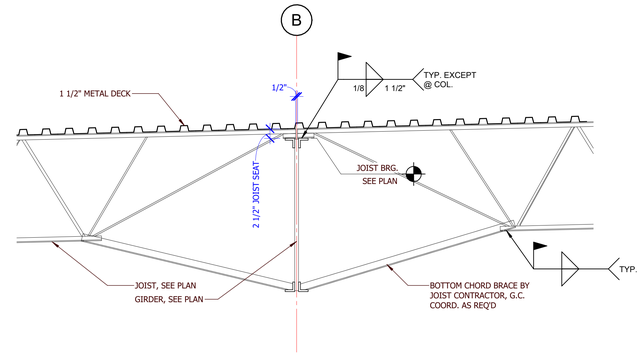
5 SPANDREL PANEL CONNECTIONS
3/8" = 1'-0"



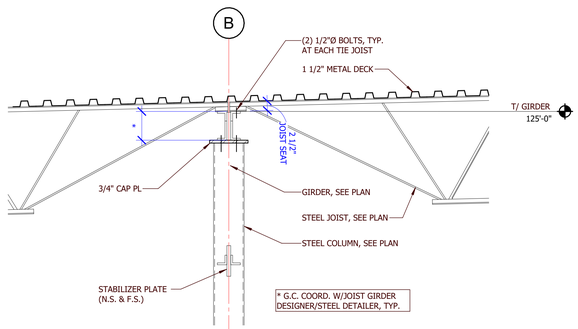
6 GIRDER CONNECTION TO COLUMN
3/4" = 1'-0"



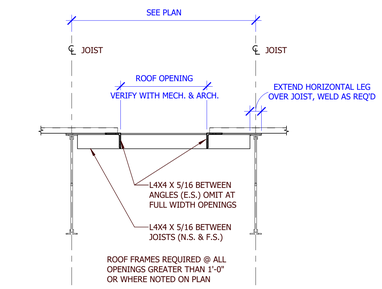
7 GIRDER BEARING AT PANEL
3/4" = 1'-0"



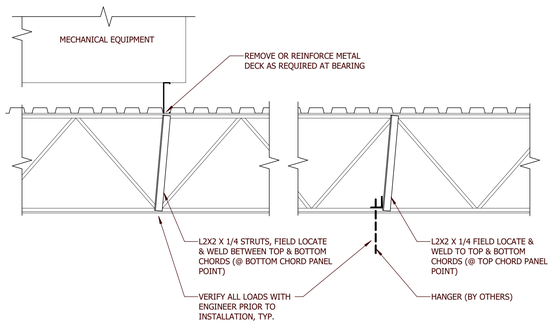
1 JOIST BEARING AT GIRDER
3/4" = 1'-0"



8 JOIST CONNECTION TO COLUMN
3/4" = 1'-0"



9 FRAMED OPENING DETAIL
3/4" = 1'-0"



10 JOIST REINFORCEMENT DETAILS
3/4" = 1'-0"

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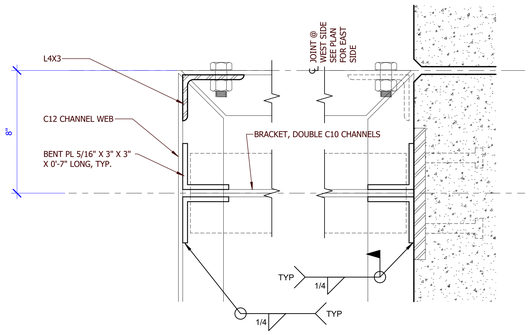
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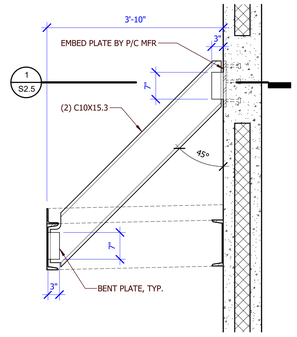
STRUCTURAL DETAILS

S2.4

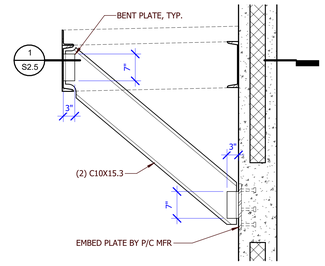
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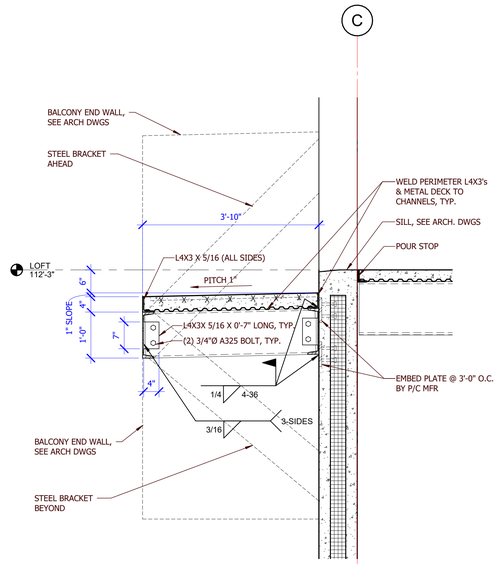
1 BALCONY CORNER PLAN DETAIL
3" = 1'-0"



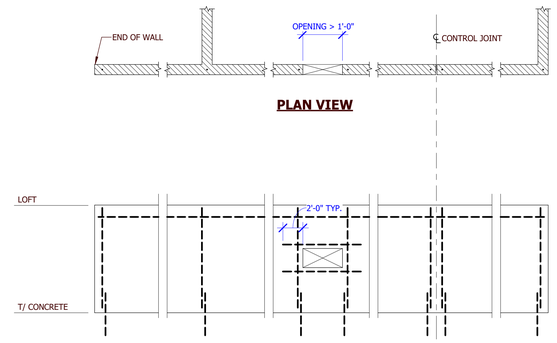
2 BALCONY UPPER BRACKET
3/4" = 1'-0"



3 BALCONY LOWER BRACKET
3/4" = 1'-0"



4 STRUCTURAL BALCONY SECTION
3/4" = 1'-0"



TYPICAL REINFORCED MASONRY NOTES

TYPICAL HORIZONTAL AND VERTICAL REINFORCING BARS SHALL BE AS NOTED ON THE PLAN SHEET. ADDITIONAL REINFORCING SHALL BE AS FOLLOWS:

1. (2) #5 VERTICAL REINFORCING BARS SHALL BE PROVIDED CONTINUOUSLY FROM SUPPORT TO SUPPORT (FINISHED FLOOR TO LOFT) AT:
   A. EACH END OF WALL
   B. EACH WALL INTERSECTION
   C. EACH SIDE OF MSY OPENING > 1'-0" IN WIDTH
   D. EACH SIDE OF MSY CONTROL OR EXPANSION JOINT
   E. EACH CORNER
2. (2) #5 HORIZONTAL REINFORCING BARS SHALL BE PROVIDED AT:
   A. TOP AND BOTTOM OF MASONRY OPENINGS
   B. FLOOR LEVELS, CONTINUOUS
   C. TOP OF MASONRY WALLS, CONTINUOUS
   D. BOTTOM OF MASONRY WALLS, CONTINUOUS
3. FOR LARGE OPENINGS, PROVIDE SAME NUMBER OF BARS, EACH SIDE OF OPENING AS THE NUMBER OF BARS INTERRUPTED BY OPENING.

5 MASONRY REINFORCING DETAIL
1/4" = 1'-0"

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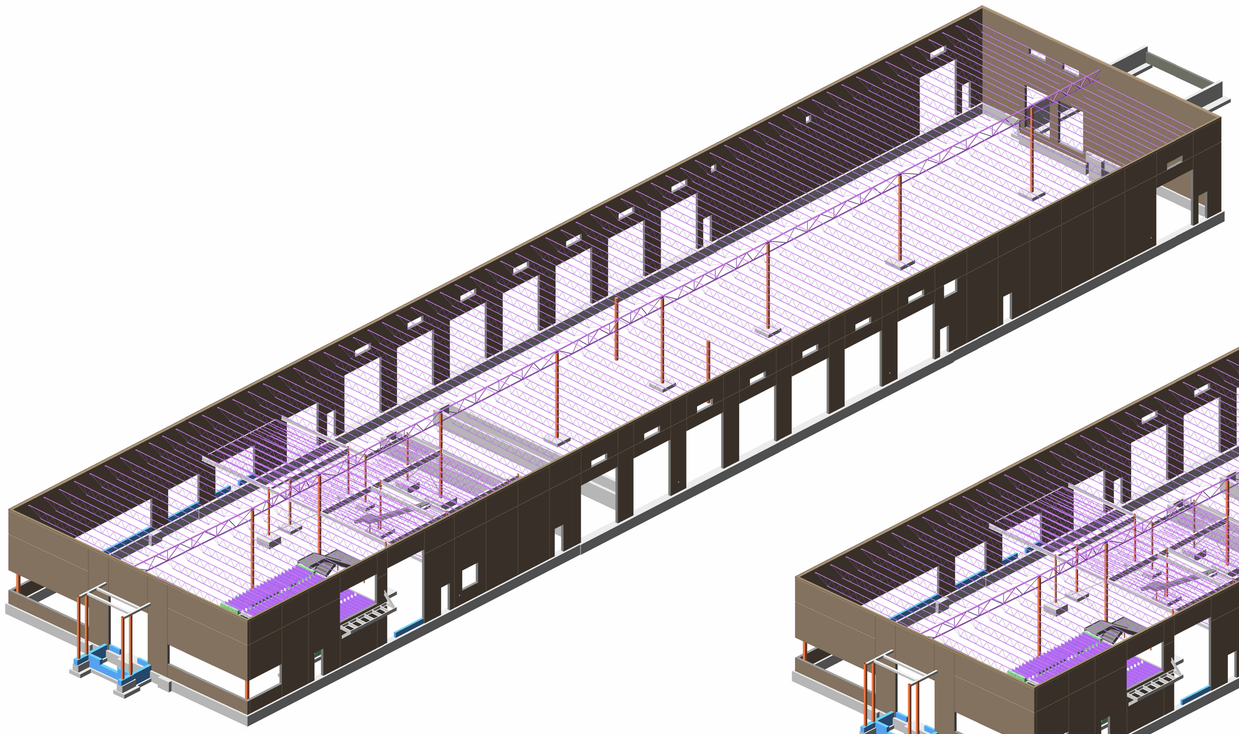
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Signature 5/12/2023 Date

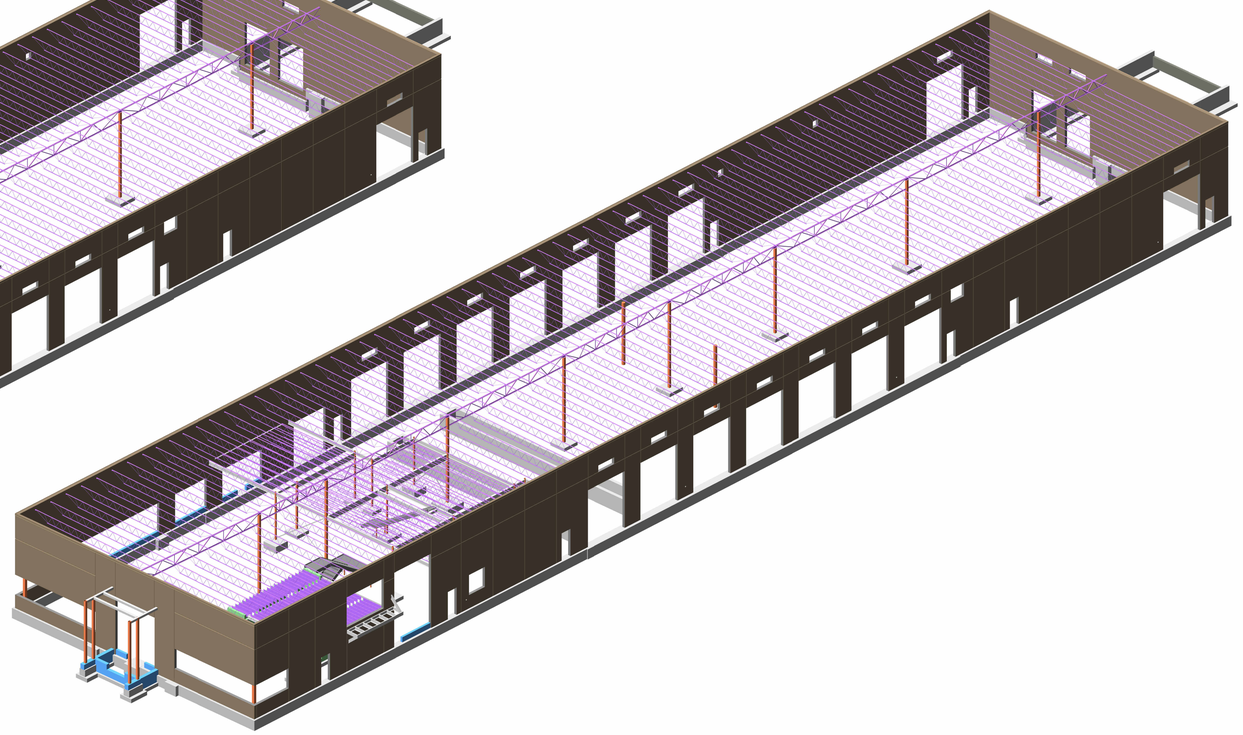
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S2.5	

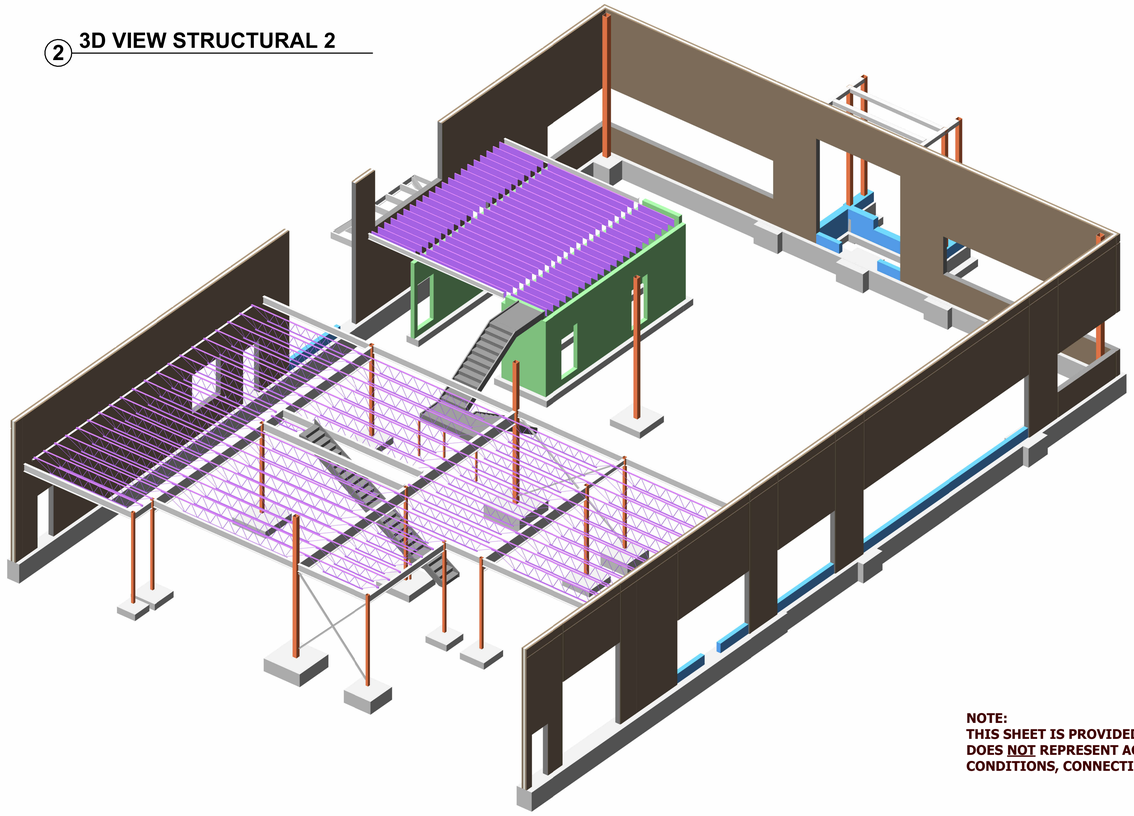
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1 3D VIEW STRUCTURAL 1



2 3D VIEW STRUCTURAL 2



3 3D VIEW STRUCTURAL 3 (CROPPED TO SHOW MEZZ & LOFT)

NOTE:
THIS SHEET IS PROVIDED FOR REFERENCE ONLY. IT DOES NOT REPRESENT ACTUAL BEARING CONDITIONS, CONNECTIONS, FOOTINGS, ETC.

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STRUCTURAL 3D VIEWS FOR REFERENCE ONLY

S3.1

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FURNACE / CONDENSING UNIT SCHEDULE

TAG	MANUFACTURER	FURNACE	AIR RATE (CFM)	FAN TYPE	ESP (WC)	HTG IN (MBH)	HTG OUT (MBH)	HEATING STAGES	VOLTAGE PHASE	MCA MOCP	WEIGHT (LBS)	AFUE	CONDENSING UNIT	COOLING (TONS)	COOLING STAGES	VOLTAGE PHASE	MCA MOCP	WEIGHT (LBS)	SEER	REFG	NOTES
F-1 / CU-1	CARRIER	59TP6A060	1200	VARIABLE	0.5"	60/39	58/38	2	120 1	10.3 20	150	96%	24ACB736	3	1	208 1	19.8 35	250	17	R410A	1-THRU-10
F-2 / CU-2	CARRIER	59TP6A060	900	VARIABLE	0.5"	60/39	58/38	2	120 1	10.3 20	150	96%	24ACB736	3	1	208 1	19.8 35	250	17	R410A	1-THRU-10
F-3 / CU-3	CARRIER	59TP6A040	800	VARIABLE	0.5"	40/26	39/25	2	120 1	10.3 20	140	96%	24ACB724	2	1	208 1	14.5 20	225	17	R410A	1-THRU-10
F-4 / CU-4	CARRIER	59TP6A060	1200	VARIABLE	0.5"	60/39	58/38	2	120 1	10.3 20	150	96%	24ACB736	3	1	208 1	19.8 35	250	17	R410A	1-THRU-10
F-5 / CU-5	CARRIER	59TP6A080	1600	VARIABLE	0.5"	80/52	78/50	2	120 1	12.4 20	175	96%	24ACB748	4	1	208 1	27.8 40	300	17	R410A	1-THRU-10
F-6 / CU-6	CARRIER	59TP6A060	900	VARIABLE	0.5"	60/39	58/38	2	120 1	10.3 20	150	96%	24ACB736	3	1	208 1	19.8 35	250	17	R410A	1-THRU-10
F-7 / CU-7	CARRIER	59TP6A040	800	VARIABLE	0.5"	40/26	39/25	2	120 1	10.3 20	140	96%	24ACB724	2	1	208 1	14.5 20	225	17	R410A	1-THRU-10
F-8 / CU-8	CARRIER	59TP6A080	1600	VARIABLE	0.5"	80/52	78/50	2	120 1	12.4 20	175	96%	24ACB748	4	1	208 1	27.8 40	300	17	R410A	1-THRU-10
F-9 / CU-9	CARRIER	59TP6A060	1000	VARIABLE	0.5"	60/39	58/38	2	120 1	10.3 20	150	96%	24ACB736	3	1	208 1	19.8 35	250	17	R410A	1-THRU-10

NOTES:

1. PROVIDE UPFLOW NATURAL GAS FURNACE WITH VARIABLE SPEED HIGH-EFFICIENCY BLOWER MOTOR AND DUAL-STAGE GAS ASSEMBLY.
2. PROVIDE FURNACE UNIT FLOOR MOUNTING PADS.
3. PROVIDE THREADED SCHEDULE 40 PVC CONDENSATE DRAIN PIPING TO ABOVE FLOOR DRAIN.
4. PROVIDE SEAL-COMBUSTION FLUE/VENTING WITH SCHEDULE 40 PVC VENTING TO EXTERIOR CONCENTRIC TERMINATION.
5. PROVIDE CASED EVAPORATOR COIL WITH GASKETED SEALED FURNACE UNIT CONNECTION AND THREADED SCHEDULE 40 PVC CONDENSATE DRAIN PIPING TO ABOVE FLOOR DRAIN.
6. PROVIDE HUMIDIFIER WITH VALVE WATER CONNECTION AND INTERLOCK CONTROL.
7. PROVIDE UPBLAST CONDENSING UNIT.
8. PROVIDE CONDENSING UNIT GRADE MOUNTING PAD AND COMPACTED GRAVEL BASE.
9. PROVIDE RETURN AIR FILTER SLEEVE FRAMING WITH MINIMUM 2" DISPOSABLE MERV-8 FILTER.
10. PROVIDE ELECTRONIC PROGRAMMABLE THERMOSTAT WITH INTEGRAL MULTI-STAGE TEMPERATURE AND HUMIDITY CONTROL AND WIRELESS-COMMUNICATION ACCESS CAPABILITY.

VENTILATION SCHEDULE

ROOM	PLAN NAME (CLASSIFICATION)	ORDINANCE MINIMUM VENTILATION REQUIRED RATES								ACTUAL VENTILATION PROVISION RATES			
		A_Z	R_A	$R_A A_Z$		P_Z	R_P	$R_P P_Z$	$R_A A_Z + R_P P_Z$	EXHAUST RATE (CFM/SF)	EXHAUST RATE (CFM)	ROOM SUPPLY RATE (CFM)	ROOM VENT RATE (CFM)	ROOM EXHAUST RATE (CFM)	NOTES
		AREA (SF)	VENT RATE (CFM/SF)	SUBTOTAL VENT RATE (CFM)	OCCUPANT DENSITY (P/1000SF)	NUMBER OF PERSONS	CFM PER PERSON	SUBTOTAL VENT RATE (CFM)	VENT RATE (CFM)						
100	LOBBY	357	0.06	21	10	4	5	20	0	NR	0	400	100	0	F-1
101	OFFICE SUITE	513	0.06	31	5	3	5	15	46	NR	0	575	115	0	F-2
101B	PRIVATE RESTROOM	114	NR	0	NR	0	NR	0	0	50/FIXT	100	75	15	100	F-2, TEF-2
102	SECURITY	162	0.06	10	5	1	5	5	15	NR	0	150	30	0	F-2
103	CORRIDOR	149	0.06	9	NR	0	NR	0	9	NR	0	150	38	0	F-1
104	HR OFFICE	228	0.06	14	5	1	5	5	19	NR	0	300	60	0	F-3
105	MGR OFFICE	257	0.06	15	5	2	5	10	25	NR	0	300	60	0	F-3
106	ACCOUNTING	279	0.06	17	5	2	5	10	27	NR	0	200	40	0	F-8
107	SAFETY	279	0.06	17	5	2	5	10	27	NR	0	200	40	0	F-8
108	SUPPLIES	119	0.12	14	NR	0	NR	0	0	NR	0	75	15	0	F-8
109/134	GENERAL DISPATCH/WORK	1473	0.06	88	5	8	5	40	128	NR	0	1125	225	0	F-8
110	CONFERENCE	398	0.06	24	50	14*	5	70	94	NR	0	400	100	0	F-1
111	OFFICE BREAKROOM	710	0.06	43	5	4	5	20	63	NR	0	1600	320	0	F-5
112	LOCKERS	141	NR	0	NR	0	NR	0	0	0.25	35	100	25	50	F-1, TEF-2
113	WOMEN	134	NR	0	NR	0	NR	0	0	50/FIXT	100	50	13	100	F-1, TEF-2
114	MEN	134	NR	0	NR	0	NR	0	0	50/FIXT	100	50	13	100	F-1, TEF-2
115	MECH/STORAGE	123	NR	0	NR	0	NR	0	0	NR	0	0	0	0	
116	I.T.	61	NR	0	NR	0	NR	0	0	NR	0	50	13	0	F-1
117	SERVICE BREAKROOM	383	0.06	23	5	2	5	10	33	NR	0	600	120	0	F-6
118/121	MECHANIC - MENS	207	NR	0	NR	0	NR	0	0	50/FIXT	200	150	30	200	F-6, TEF-1
119	MECHANIC - MENS LOCKER ROOM	90	NR	0	NR	0	NR	0	0	0.25	23	50	10	50	F-6, TEF-1
120	MECHANIC - MENS SHOWER	53	NR	0	NR	0	NR	0	0	50/FIXT	50	50	10	50	F-6, TEF-1
122	MECH	76	NR	0	NR	0	NR	0	0	NR	0	0	0	0	
123	MECHANIC - WOMENS	74	NR	0	NR	0	NR	0	0	50/FIXT	100	50	20	100	F-6, TEF-1
123	PARTS ROOM	1398	NR	0	NR	0	NR	0	0	NR	0	800	160	0	F-7
124	SHOP PARTS	153	0.06	9	5	1	5	5	14	NR	0	350	70	0	F-9
125	UNISEX	105	NR	0	NR	0	NR	0	0	50/FIXT	100	50	10	100	F-7, TEF-3
126	RETAIL PARTS	440	0.06	27	5	3	5	15	42	NR	0	450	90	0	F-9
127	LOUNGE	173	0.06	10	5	1	5	5	15	NR	0	150	30	0	F-9
128	PARTS DELIVERY	473	0.06	29	NR	0	NR	0	0	NR	0	0	0	0	
129	SERVICE BAYS	12,591	NR	0	NR	0	NR	0	0	0.75/0.05	9443/630	9500/650	9500/650	9500/650	EF-2, EF-3, IV-2, IV-3
130	WAREHOUSE	8098	0.06	486	NR	0	NR	0	0	NR	0	500	500	500	EF-1, IV-1
131	HALLWAY	142	NR	0	NR	0	NR	0	9	NR	0	0	0	0	
132	JC	24	NR	0	NR	0	NR	0	0	NR	0	0	0	0	
133	VESTIBULE	111	NR	0	NR	0	NR	0	0	NR	0	200	40	0	F-3
200	MEZZANINE	2874	NR	0	NR	0	NR	0	0	NR	0	0	0	0	
201	LOFT	767	0.06	46	5	4	5	20	66	NR	0	1200	240	0	F-4
202	MECH	88	NR	0	NR	0	NR	0	0	NR	0	0	0	0	

NOTES:
F-1: 1200 CFM TOTAL WITH 300 CFM OAI (25% OF TOTAL).
F-2: 900 CFM TOTAL WITH 180 CFM OAI (20% OF TOTAL).
F-3: 800 CFM TOTAL WITH 160 CFM OAI (20% OF TOTAL).
F-4: 1200 CFM TOTAL WITH 240 CFM OAI (20% OF TOTAL).
F-5: 1600 CFM TOTAL WITH 320 CFM OAI (20% OF TOTAL).
F-6: 900 CFM TOTAL WITH 180 CFM OAI (20% OF TOTAL).
F-7: 800 CFM TOTAL WITH 160 CFM OAI (20% OF TOTAL).
F-8: 1600 CFM TOTAL WITH 320 CFM OAI (20% OF TOTAL).
F-9: 1000 CFM TOTAL WITH 200 CFM OAI (20% OF TOTAL).

MECHANICAL SYMBOLS LIST

AFF	ABOVE FINISHED FLOOR
B	BOILER
CFM	CUBIC FEET PER MINUTE
CU	CONDENSING UNIT
E	EXHAUST AIR
EF	EXHAUST FAN
F	FURNACE
FD	FIRE DAMPER (TYPE-B)
GAS	GAS PIPING
HP	HORSEPOWER
NA	NOT APPLICABLE
NR	NOT REQUIRED
OAI	OUTDOOR AIR INTAKE
OBD	OPPOSED BLADE DAMPER
R	RETURN AIR
RD	ROUND
RFS	RADIANT FLOORING SYSTEM
S	SUPPLY AIR
UC	UNDERCUT (DOOR)
UH	UNIT HEATER
WC	WATER COLUMN
	SUPPLY OPENING
	RETURN/EXHAUST OPENING
	BALL VALVE
	BUTTERFLY VALVE
	UNION
	PUMP
	CIRCUIT SETTER
T	THERMOSTAT
	CONNECT TO EXISTING
	MANUAL VOLUME DAMPER
CO2	CO2 SENSOR

HVAC CONTROLS SEQUENCE OF OPERATIONS

PROVIDE COMPLETE ELECTRONIC CONTROL OF HEATING, VENTILATION, AND AIR CONDITION SYSTEMS, AS INDICATED ON SEQUENCE OF OPERATION, INCLUDING CONTROLLERS, SENSORS, INTERLOCKS, STRUCTURED CABLING (CABLING SHALL BE IN EMT CONDUIT WHERE WITHIN CONCEALED WALLS/CEILINGS), CONTROLS OPERATIONS MANUALS, AND TWO-HOUR MINIMUM TRAINING SESSION. CONTROLS OPERATIONS MANUALS, AND TWO-HOUR MINIMUM TRAINING SESSION. CONTROLS SHALL BE IN COMPLIANCE WITH LOCAL CODES AND ORDINANCES.

F / CU (TYPICAL)
UNIT SHALL BE CONTINUOUSLY ENERGIZED AND INTERLOCK RESPECTIVE F, CU, OAI, RELIEF CONTROL DAMPERS. TEMPERATURE AND HUMIDITY SHALL BE CONTROLLED VIA WALL MOUNTED PROGRAMMABLE THERMOSTAT WITH AUTOMATIC HEATING/COOLING CHANGEOVER. SYSTEM SHALL OPERATE HEATING AND COOLING STAGES. UNIT VENTILATION OUTSIDE AIR DAMPER SHALL BE AT MINIMUM-OPEN-POSITION DURING OCCUPIED TIMES AND CLOSED-POSITION DURING UNOCCUPIED TIMES. VERIFY OCCUPIED AND UNOCCUPIED SETPOINTS WITH USER.

TEF-1, TEF-2
UNIT SHALL BE ENERGIZED VIA INTERLOCK WITH TIME CLOCK TO OPERATE DURING OCCUPIED TIMES.

TEF-3
UNIT SHALL BE ENERGIZED VIA INTERLOCK WITH ROOM LIGHTING SWITCH TO OPERATE DURING OCCUPIED TIMES.

EF-1, EF-2, EF-3
UNITS SHALL BE ENERGIZED VIA INTERLOCK WITH EXHAUST FAN CONTROL PANEL FOR SIMULTANEOUS OPERATION WITH EXHAUST FAN AND INTAKE AIR LOUVER DAMPER. COORDINATE WITH MANUFACTURER SPECIFICATIONS.

CO+NO2 CONTROLS (CONTROLLER, SERVICE BAYS)
TOX-ALERT CO+NO2 MONITORING SYSTEM AND SENSORS. SENSOR LOCATIONS AND MONITOR SETPOINTS PROVIDED PER MANUFACTURER RECOMMENDATIONS. INTEGRATE SYSTEM WITH EF-2 OPERATIONS.

ENERGY NOTES

1. MINIMUM UNITARY (PACKAGED ROOFTOP UNITS) EQUIPMENT AIR COOLED EFFICIENCY SHALL BE 14.0 SEER (LESS THAN 65 MBH), 11.0 EER (65 MBH - 135 MBH), 10.8 EER (135 MBH - 240 MBH), 9.8 EER (240 MBH AND GREATER), AND 9.5 EER (760 MBH AND GREATER). MINIMUM DX COOLING STAGING SHALL BE 3 STAGES (65 MBH - 240 MBH) AND 4 STAGES (240 MBH AND GREATER).
2. MINIMUM EQUIPMENT AIR HEATED EFFICIENCY SHALL BE 80%.
3. ROOFTOP UNITS/SPLIT SYSTEMS, 54 MBH AND GREATER (COOLING) SHALL HAVE ECONOMIZERS.
4. FAN SYSTEM MOTOR NAMEPLATE HORSEPOWER/BRAKEHORSEPOWER SHALL NOT EXCEED ALLOWABLE NAMEPLATE MOTOR HORSEPOWER/BRAKEHORSEPOWER.
5. LOAD CALCULATIONS BASED ON ASHRAE FUNDAMENTALS HANDBOOK.
6. THERMOSTATS SHALL HAVE 5 DEGREE DEAD BAND, 7-DAY/WEEK PROGRAMMABLE CLOCK, 2-HOUR TEMPORARY OVERRIDE, SET POINT OVERLAP RESTRICTION, 10 HOUR BACKUP AND SETBACK CAPABLE OF 55 DEGREE HEATING AND 85 DEGREE COOLING (EXCEPT CONTINUOUS OPERATING ZONES), AUTOMATIC START (OPTIMAL START, ADAPTIVE RECOVERY), OUTSIDE AIR 0% CLOSED DURING UNOCCUPIED OR WARM UP CONDITION.
7. DEMAND CONTROL VENTILATION SHALL BE PROVIDED FOR SPACES LARGER THAN 500 SQUARE FEET AND AVERAGE OCCUPANT LOAD OF 25 PEOPLE PER 1000 SQUARE FEET, FOR SYSTEMS WITH AIR-SIDE ECONOMIZERS, AUTOMATIC MODULATING OUTSIDE AIR DAMPERS, OR OUTSIDE AIRFLOW GREATER THAN 3000 CFM.
8. DUCTWORK INSULATION SHALL HAVE MINIMUM VALUE OF R-6 (CONDITIONED SPACES) AND R-12 FOR OUTSIDE BUILDING (UNCONDITIONED SPACES), EXCEPT SPACES WHERE TEMPERATURE DIFFERENCE DOES NOT EXCEED 15 DEGREES.
9. DUCTWORK SHALL BE SECURELY FASTENED AND SEALED WITH WELDS, GASKETS, MASTICS (ADHESIVES), EXCEPT LOCKING-TYPE LONGITUDINAL JOINTS AND SEAMS ON DUCTWORK OPERATING AT STATIC PRESSURE LESS THAN 2" WATER GAUGE.
10. AIR BALANCE SYSTEM AND PROVIDE AIR TEST AND BALANCE REPORT.
11. HVAC EQUIPMENT OPERATION AND MAINTENANCE MANUALS PROVIDED TO BUILDING OWNER.

GENERAL NOTES

1. WORK SHALL BE PERFORMED AND INSTALLED IN COMPLIANCE WITH 2018 INTERNATIONAL MECHANICAL CODE, HEALTH REGULATIONS, AND LOCAL ORDINANCES.
2. WORK INCLUDES PERMIT FEES, UTILITY TAP FEES, AND INSPECTION FEES AS REQUIRED.
3. COORDINATE LOCATION OF ROOFING EQUIPMENT (UNITS, DUCTS, PIPING, DRAINS, ETC) AND CONNECTION POINTS WITH GENERAL CONTRACTOR. FIELD VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING BID AND INSTALLATION.
4. COORDINATE WITH OTHER TRADES LOCATIONS OF DUCTWORK, PIPING, AND EQUIPMENT TO REQUIRED CLEARANCES AND TO AVOID ANY INTERFERENCE.
5. COORDINATE INSTALLATION OF DUCTS WITH STRUCTURE.
6. WORK SHALL BE IN COMPLIANCE WITH LOCAL CODES AND ORDINANCES.
7. PROVIDE SHOP DRAWINGS AND EQUIPMENT SUBMITTALS PRIOR TO INSTALLING, OR FABRICATING ANY DUCTWORK.
8. PROVIDE ADJUSTABLE VOLUME DAMPER AT EACH BRANCH DUCT AND EACH AIR DEVICE.
9. PROVIDE TURNING VANES AT EACH DUCTWORK ELBOW.
10. FLEXIBLE DUCTS SHALL NOT EXCEED 5'-0" IN LENGTH.
11. SHEET METAL DUCTWORK SHALL BE IN ACCORDANCE WITH SMACNA AND INTERNATIONAL MECHANICAL CODE.

MECHANICAL SPECIFICATIONS

1.0 DESCRIPTION OF WORK

1.01 GENERAL CONDITIONS AND GENERAL NOTES INDICATED WITH ARCHITECTURAL DRAWINGS AND SPECIFICATIONS SHALL GOVERN WHERE APPLICABLE.

1.02 WORK INDICATED ON DRAWINGS SHALL BE CONSIDERED NEW AND IN-CONTRACT UNLESS NOTED OTHERWISE.

1.03 COMPLETELY OPERATIONAL HEATING, VENTILATING, AIR CONDITIONING AND EXHAUST SYSTEMS READY FOR USE AS ITEMIZED BUT NOT LIMITED TO AS FOLLOWS:

1.03A DEMOLITION, REMOVAL, AND ALTERATIONS OF EXISTING SYSTEMS AND EQUIPMENT AS REQUIRED THOUGH NOT SPECIFICALLY INDICATED ACCOMMODATING PROPOSED WORK.
1.03B FURNACES AND CONDENSING UNITS.
1.03C DUCTWORK AND AIR DEVICES.
1.03D EXHAUST FANS.
1.03E LOUVERS, VENTILATORS, AND DAMPERS.
1.03F THERMAL INSULATION AND DUCT LINING.
1.03G CONTROLS, SENSORS, CONTROL WIRING, AND INTERLOCKS.
1.03H GAS PIPING WITH CONNECTION TO EQUIPMENT REQUIRING NATURAL GAS.
1.03I BOILER, PUMPS, AND RELATED HYDRONIC EQUIPMENT.
1.03J HEATING WATER PIPING SYSTEM.

2.0 RELATED WORK BY OTHER TRADES

2.01 ELECTRIC POWER WIRING.
2.02 ELECTRIC TELECOMMUNICATION WIRING.

3.0 MECHANICAL INSTALLATION NOTES

3.01 WORK SHALL BE PERFORMED IN ACCORDANCE WITH CODES AND AUTHORITIES HAVING JURISDICTION, INCLUDING ADA GUIDELINES AND ENERGY COMPLIANCE.

3.02 WORK AND INSTALLATIONS SHALL BE PERFORMED IN FIRST-CLASS NEAT WORKMANLIKE MANNER. REMOVE DEBRIS ON REGULAR BASIS AND CLEAN EQUIPMENT DURING PROJECT COMPLETION.

3.03 APPLY, PROCURE, AND PAY FOR REQUIRED PERMITS AND INSPECTIONS.

3.04 FIELD VERIFY PROJECT CONSTRUCTION CONDITIONS AND PROJECT SITE CONDITIONS PRIOR TO SUBMITTING BID.

3.05 THIS TRADE SHALL DO ITS OWN CUTTING AND PATCHING, TRENCHING AND BACKFILLING. PENETRATIONS THROUGH FIRE-RATED ASSEMBLIES SHALL BE FILLED WITH FIRESTOP PRODUCT. SUBMIT FIRESTOP PRODUCT MATERIAL SPECIFICATIONS TO LOCAL AUTHORITIES HAVING JURISDICTION.

3.06 CONFER WITH THE OTHER TRADES IN COORDINATION OF THIS WORK FOR REQUIRED CLEARANCES, CHASES, RECESSES AND OPENINGS.

3.07 PROPOSAL PRICE SHALL INCLUDE SPECIFIED MATERIALS ONLY. SHOULD CONTRACTOR WISH TO SUBSTITUTE MATERIALS, EQUIPMENT OR MANUFACTURERS, IT SHALL BE DONE BY STATING EACH SUBSTITUTION AND ITS PRICE ADJUSTMENT.

3.08 DRAWINGS SHALL BE FOR BIDDING ONLY. ROUGH-IN AND FINAL CONNECTION SHALL BE MADE FROM APPROVED EQUIPMENT DRAWINGS ONLY.

3.09 GUARANTEE WORK AND EQUIPMENT TO BE FREE FROM DEFECTIVE WORKMANSHIP AND MATERIALS FOR PERIOD OF ONE (1) YEAR FROM DATE OF FINAL CERTIFICATE OF OCCUPANCY. ANY REPAIRS OR REPLACEMENT DURING THIS PERIOD SHALL BE MADE WITHOUT COST TO OWNER.

3.10 GAS PIPING SHALL BE SCHEDULE 40 ASTM A53 TYPE B BLACK STEEL WITH METALLIC FITTINGS. PROVIDE GAS VALVE, UNION, AND DIRT LEG (AND REGULATOR AS REQUIRED) AT EACH CONNECTION. GAS PIPING IN CONCEALED LOCATIONS SHALL NOT HAVE REMOVABLE FITTINGS. PIPING LARGER THAN 4" OR EXCEEDING 5 PSI SHALL BE WELDED. TEST GAS PIPING AT 1-1/2 TIMES MAXIMUM PRESSURE, BUT NOT LESS THAN 3 PSIG, AND REPAIR LEAKS AS REQUIRED, AND RETEST. GAS PIPING SHALL BE PAINTED YELLOW COLOR AND MARKED "GAS" WITH BLACK COLOR.

3.11 REFRIGERATION PIPING SHALL BE DEHYDRATED AND CAPPED ACR COPPER WITH WROUGHT COPPER FITTINGS. JOINTS SHALL BE MADE WITH SILFOS, EXCEPT AT VALVES AND OTHER EQUIPMENT DAMAGED BY HIGH TEMPERATURES WHERE 95-5 SOLDER SHALL BE INSTALLED.

3.12 INTERNALLY INSULATE (LINE) SPIRAL SUPPLY AIR AND RETURN AIR DUCTS WITH FIBER GLASS ANTI-MICROBIAL DUCT LINER INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. INSULATION SHALL HAVE FLAME SPREAD RATING NOT TO EXCEED 25 AND SMOKE DEVELOPED RATING NOT TO EXCEED 50, PER ASTM E84. PLAN DIMENSIONS INDICATE CLEAR-INSIDE DIMENSIONS.

3.13 EXTERNALLY INSULATE (WRAP) SUPPLY, RETURN, AND OUTSIDE AIR INTAKE DUCTS. DUCTS INSIDE BUILDING SHALL HAVE EXTERNAL WRAP BLANKET TYPE FIBERGLASS INSULATION WITH FACTORY APPLIED FIBERGLASS REINFORCED ALUMINUM FOIL FACING AND THERMAL VALUE OF R-6 OR GREATER AT 75 DEG F (CONDITIONED SPACES). DUCTS OUTSIDE BUILDING SHALL HAVE EXTERIOR RIGID FIBERGLASS INSULATION WITH FACTORY APPLIED VAPOR-RETARDANT FACING, PROVIDING THERMAL VALUE R-12 OR GREATER AT 0 DEG F (UNCONDITIONED SPACES). INSULATION SHALL BE WRAPPED TIGHT WITH JOINTS ABUTTED AND SEALED AND BE SECURED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. INSULATION SHALL HAVE FLAME SPREAD RATING NOT TO EXCEED 25 AND SMOKE DEVELOPED RATING NOT TO EXCEED 50, PER ASTM E84.

3.14 DUCTS SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH RECOMMENDATIONS SET FORTH IN SMACNA MANUAL. DUCTS SHALL BE SEALED TO PRESSURE CLASS A, WITH MECHANICAL JOINTS AND ADHESIVE SEALANT. FIRE DAMPERS SHALL BE TYPE B UNLESS NOTED OTHERWISE ON DRAWINGS.

3.15 FLEXIBLE RUNOUTS SHALL NOT EXCEED 5'-0" AND SHALL BE INSULATED WITH VAPOR BARRIER. NO PVC SHALL BE PERMITTED.

3.16 PROVIDE MANUALLY OPERATED VOLUME CONTROL AND/OR SPLITTER DAMPERS IN DUCT BRANCHES FOR PROPER BALANCING OF AIR HANDLING SYSTEMS. DAMPERS ABOVE INACCESSIBLE CEILINGS SHALL HAVE EXTENDED ARMS OR REMOTE OPERATORS. DAMPERS SPECIFIED WITH AIR DEVICES SHALL NOT REPLACE DAMPERS IN BRANCH DUCTWORK.

3.17 LOUVERS SHALL BE RUSKIN ELF375DX WITH OPENING SIZES AS INDICATED ON DRAWINGS. PAINTED AND FINISH (KYNAR 500 OR HYLAR 5000) SHALL BE SELECTED BY ARCHITECT.

3.18 CONTROL DAMPERS SHALL BE RUSKIN CD356 GALVANIZED STEEL LOW LEAKAGE TYPE WITH OPENING SIZES AS INDICATED ON THE DRAWINGS. PROVIDE MANUAL OPERATORS OR MOTORIZED ACTUATORS AS INDICATED OR REQUIRED.

3.19 GAS VENTING FLUES FOR BOILERS, FURNACES, UNIT HEATERS, AND WATER HEATERS SHALL BE TYPE "B" GALVANIZED FOR STANDARD EFFICIENCY UNITS, SCHEDULE 40 PVC FOR HIGH EFFICIENCY UNITS, AND TYPE "B" STAINLESS STEEL FOR INSTANTANEOUS UNITS. TYPE "B" VENTS SHALL PENETRATE ROOF WITH TALL FLASHING CONE, STORM COLLAR, AND TERMINATION CAP. PVC VENTS SHALL PENETRATE ROOF/WALL WITH CONCENTRIC KITS. VERIFY MANUFACTURER RECOMMENDATIONS AND REQUIREMENTS FOR MATERIALS TYPE, FITTINGS TYPE, AND TERMINATIONS TYPE.

3.20 AIR DEVICES SHALL BE COORDINATED WITH ARCHITECTURAL REFLECTED CEILING PLANS. VERIFY LAYIN CEILING GRID TYPE WITH ARCHITECTURAL DRAWINGS.

3.21 IDENTIFY EACH EQUIPMENT UNIT WITH 4" HIGH X 3/4" THICK LETTERS WITH UNIT NUMBERS AS INDICATED ON DRAWINGS. PROVIDE 3/4" HIGH WHITE-FACED MICARTA WITH BLACK LETTERS AT EACH UNIT THERMOSTAT WITH UNIT NUMBERS AS INDICATED ON DRAWINGS.

3.22 ROOF CURBS AND ROOF EQUIPMENT SUPPORTS SHALL BE FULLY INSULATED AND INSTALLED WITH 18-GAUGE GALVANIZED STEEL SHELLS, SEALED NAILERS, AND COUNTERFLASHING.

3.23 OUTDOOR AIR INTAKE GRAVITY VENTILATORS SHALL BE LOREN COOK PR 16-GAUGE SPUN ALUMINUM, CORROSION RESISTANT FASTENERS, CONTINUOUSLY WELDED CONSTRUCTION, 1/2" MESH BIRDSCREEN, AND BOLTED SUPPORT FRAMING ONTO ROOF CURB.

3.24 PIPING SHALL PENETRATE ROOF THROUGH PORTAL CURB WITH INSULATED EPDM PORTAL WITH 3-1/2" PIPE PENETRATION SLEEVES AND EPDM BOOTS WITH ADJUSTABLE STAINLESS STEEL BANDS.

3.25 ACCESS PANELS SHALL BE INSTALLED WHERE REQUIRED FOR SERVICING DEVICES AND EQUIPMENT. COORDINATE EXACT SIZES, LOCATIONS, AND COLORS WITH ARCHITECT.

3.26 ELECTRONIC CONTROL OF HEATING, VENTILATION, AND AIR CONDITION SYSTEMS, AS INDICATED ON SEQUENCE OF OPERATION, INCLUDING CONTROLLERS, SENSORS, INTERLOCKS, STRUCTURED CABLING (CABLING SHALL BE IN EMT CONDUIT WHERE WITHIN CONCEALED WALLS/CEILINGS), CONTROLS OPERATIONS MANUALS, AND TWO-HOUR MINIMUM TRAINING SESSION. UNITS SHALL BE CONTINUOUSLY ENERGIZED AND INTERLOCK RESPECTIVE HVAC EQUIPMENT. VERIFY OCCUPIED AND UNOCCUPIED SETPOINTS WITH USER. UNIT VENTILATION OUTSIDE AIR DAMPER SHALL OPERATE DURING OCCUPIED TIMES. UNIT SHALL CLOSE OUTSIDE AIR DAMPER DURING UNOCCUPIED TIMES.

3.27 AIR TEST AND BALANCE REPORT FOR SUPPLY, RETURN, OUTDOOR AIR INTAKE, AND EXHAUST SYSTEMS TO QUANTITIES INDICATED, WITHIN 10% TOLERANCE. SUBMIT THREE (3) REPORTS FROM INDEPENDENT TESTING AGENCY STATING EACH SYSTEM COMPLIANCE AND APPROVAL AUTHORIZATION.

4.0 SUBMITTALS (DIGITAL PDF FILES):

4.01 DUCTWORK INSTALLATION DRAWINGS TO SCALE.
4.02 FURNACES AND CONDENSING UNITS.
4.03 DUCTWORK AND AIR DEVICES.
4.04 EXHAUST FANS.
4.05 LOUVERS, VENTILATORS, AND DAMPERS.
4.06 THERMAL INSULATION AND DUCT LINING.
4.07 CONTROLS, SENSORS, CONTROL WIRING, AND INTERLOCKS.
4.08 BOILERS, PUMPS, AND RELATED HYDRONIC EQUIPMENT.

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PROJECT NO.
PROJECT MGR.
MECHANICAL SPECIFICATIONS AND SCHEDULES

M1.0

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EXHAUST FAN SCHEDULE

TAG	MANUFACTURER	MODEL NUMBER	AREA SERVED	CFM	ESP (WC)	HP / WATTS PHASE	WEIGHT (LBS)	NOTES
EF-1	LOREN COOK	ACEH-100	WAREHOUSE 130	500	1/8"	1/8 HP / 114W 120V	50	2, 3, 4, 5, 6
EF-2	LOREN COOK	ETE-48	SERVICE BAY 129	9500	1/8"	1 HP 120V	650	2, 3, 4, 5, 6
EF-3	LOREN COOK	ACED-135	SERVICE BAY 129	650	1/8"	1/6 HP 120V	75	2, 3, 4, 5, 6
TEF-1	LOREN COOK	ACEM-90	RM 118, 119, 120, 122	400	1/2"	1/8 HP / 96W 120 V	30	2, 3, 4, 5, 6
TEF-2	LOREN COOK	ACEB-120	RM 101B, 112, 113, 114	350	1/2"	1/6 HP / 528W 120 V	30	2, 3, 4, 5, 6
TEF-3	LOREN COOK	GEMINI GC-168	UNISEX 127	100	1/4"	39 W 120 V	15	1

NOTES:
1. PROVIDE VENT, BACKDRAFT DAMPER, ROOF PORTAL, TALL FLASHING CONE, STORM COLLAR, AND TERMINATION CAP WITH BIRDSCREEN.
2. PROVIDE FULLY INSULATED ROOF CURB WITH SLOPE TO MATCH PITCH AS REQUIRED.
3. PROVIDE FAN SPEED CONTROLLER WITH WEATHERPROOF ENCLOSURE.
4. PROVIDE DISCONNECT SWITCH WITH WEATHERPROOF ENCLOSURE.
5. PROVIDE ALUMINUM BACKDRAFT DAMPER.
6. PROVIDE ALUMINUM BIRDSCREEN.

RADIANT FLOORING SCHEDULE

TAG	DESCRIPTION	AREA (SQ. FT.)	HEATING CAPACITY (MBH)	TUBE SIZE (DIAMETER)	TUBE SPACING (ON-CENTER)	FINISHED FLOOR SURFACE	NOTES
RFS-1	SERVICE BAYS - 129	3060	91.8	3/4"	12"	FIELD VERIFY	1, 2, 3, 4
RFS-2	SERVICE BAYS - 129	3082	92.5	3/4"	12"	FIELD VERIFY	1, 2, 3, 4
RFS-3	SERVICE BAYS - 129	2918	87.5	3/4"	12"	FIELD VERIFY	1, 2, 3, 4
RFS-4	SERVICE BAYS - 129	2994	89.8	3/4"	12"	FIELD VERIFY	1, 2, 3, 4
RFS-5	SERVICE BAYS - 129	500	15	3/4"	12"	FIELD VERIFY	1, 2, 3, 4

NOTES:
1. PROVIDE RADIANT FLOORING SYSTEM BASE WITH 2" MINIMUM EXTRUDED EXPANDED POLYSTYRENE (EPS) INSULATION 3 MIL FILM (BOTH SIDES) RETARDER.
2. PROVIDE TUBING, MOUNTING SUPPORT, AND SPACING PER MANUFACTURERS RECOMMENDATIONS.
3. PROVIDE ELECTRONIC PROGRAMMABLE THERMOSTAT.
4. VERIFY FLOORING SURFACE TYPE WITH ARCHITECTURAL DRAWINGS PRIOR TO INSTALLATION.

LOUVER SCHEDULE

TAG	MANUFACTURER	MODEL NUMBER	AREA SERVED	CFM	ESP (WC)	TYPE	WEIGHT (LBS)	NOTES
IL-1	RUSKIN	ELF375DX - 2'X2'	130 - WAREHOUSE	500	1/10"	STATIONARY	25	1,2,3,4
IL-2	RUSKIN	ELF375DX - 4'X6'	129 - SERVICE BAYS	9500	1/10"	STATIONARY	100	1,2,3,4
IL-3	RUSKIN	ELF375DX - 2'X2'	129 - SERVICE BAYS	650	1/10"	STATIONARY	25	1,2,3,4

NOTES:
1. PROVIDE STATIONARY LOUVERS WITH PITCH DRAINAGE.
2. PROVIDE WALL FLANGE.
3. PROVIDE ALUMINUM BIRDSCREEN.
4. PROVIDE ALUMINUM MOTORIZED DAMPER.

BOILER SCHEDULE

TAG	MANUFACTURER	MODEL NUMBER	HTG IN (MBH)	TYPE	AFUE	VOLTAGE AMPS	NOTES
B-1	COLUMBIA	WL 60 - 500 (WASTE OIL)	500	10" B-VENT NATURAL VENT	80 %	120 V 15 A	1, 2, 3, 4

NOTES:
1. PROVIDE 250 GALLON STORAGE TANK.
2. PROVIDE AQUASTAT, CIRCULATION PUMP, ISOLATION VALVES, PRESSURE GAUGE, TEMPERATURE GAUGE, RELIEF VALVE, PURGE VENT, AIR PROVING SWITCH, AND OUTDOOR TEMPERATURE SENSOR.
3. CONTROLLER SHALL OPERATE DOMESTIC HOT WATER AND RADIANT FLOOR HEATING, WITH DOMESTIC HOT WATER PRIORITY.
4. PROVIDE 10 YEAR WARRANTY.

ELECTRIC HEATER SCHEDULE

TAG	MANUFACTURER	MODEL NUMBER	MOUNTING	MOUNTING HEIGHT (AFF)	HEAT (KW)	VOLTAGE PHASE	NOTES
EH-1	QMARK	MUH 0371	BRACKET WALL	VERIFY	3	277 1	1
EH-2	QMARK	MUH 0371	BRACKET WALL	VERIFY	3	277 1	1
EH-3	QMARK	CWH-1207 DSAF	RECESSED WALL	12"	2	277 1	1

NOTES:
1. PROVIDE THERMOSTAT, DISCONNECT, AND SURFACE WALL MOUNTING FRAME.
2. PROVIDE THERMOSTAT, DISCONNECT, AND RECESSED WALL MOUNTING FRAME.

AIR DEVICE SCHEDULE

TAG	MANUFACTURER	MODEL	STYLE	FRAME	DAMPER	NOTES
S1	TITUS	OMNI-24X24	ARCHITECTURAL DIFFUSER	LAYIN	OBD	1, 2, 5
S2	TITUS	250-S2-12X12	ADJUSTABLE DIFFUSER	SURFACE	OBD	1, 3, 5
S3	TITUS	300RL-14X6	DUAL DEFLECTION DIFFUSER	SURFACE	OBD	1, 3, 5
R1	TITUS	350RL-24X24	DEFLECTION GRILLE	LAYIN	-	1, 3
R2	TITUS	350RL-14X6	DEFLECTION GRILLE	SURFACE	-	1, 3, 4
R3	TITUS	350RL-24X24	DEFLECTION GRILLE	SURFACE	-	1, 3, 4
E1	TITUS	350RL-12X12	DEFLECTION GRILLE	SURFACE	-	1, 3, 4

NOTES:
1. COLOR TO MATCH CEILING OF AREA SERVED.
2. REFERENCE ARCHITECTURAL DRAWINGS FOR LAYIN GRID STYLE.
3. REFERENCE PLAN FOR NECK AND FACE SIZES.
4. PROVIDE DRYWALL CEILING TRIM FRAMING.
5. PROVIDE INSULATED AIR DEVICE.
6. PROVIDE WALL MOUNTED TEMPERATURE CONTROLLER, TRANSFORMER, AND CONTROL WIRING.
7. PROVIDE BYPASS TERMINAL DEVICE AND BALANCE TO VOLUME RATE INDICATED.

UNIT HEATER SCHEDULE

TAG	MANUFACTURER	MODEL NUMBER	CFM	GAS INPUT (MBH)	GAS OUTPUT (MBH)	THERMAL EFFICIENCY	TYPE	HP	VOLTAGE PHASE	WEIGHT (LBS)	BOTTOM OF UNIT AFF	NOTES
UH-1	REZNOR	B-200	3290	200	160	80 %	GRAVITY VENTED	1/2	208/1	250	18'-0"	1, 2, 3
UH-2	REZNOR	B-200	3290	200	160	80 %	GRAVITY VENTED	1/2	208/1	250	18'-0"	1, 2, 3
UH-3	REZNOR	B-200	3290	200	160	80 %	GRAVITY VENTED	1/2	208/1	250	18'-0"	1, 2, 3
UH-4	REZNOR	B-200	3290	200	160	80 %	GRAVITY VENTED	1/2	208/1	250	18'-0"	1, 2, 3
UH-5	REZNOR	B-400	6500	400	320	80 %	GRAVITY-VENTED	1	208 / 1	400	18'-0"	1, 2, 3
UH-6	REZNOR	B-400	6500	400	320	80 %	GRAVITY-VENTED	1	208 / 1	400	18'-0"	1, 2, 3
UH-7	REZNOR	B-400	6500	400	320	80 %	GRAVITY-VENTED	1	208 / 1	400	18'-0"	1, 2, 3
UH-8	REZNOR	B-400	6500	400	320	80 %	GRAVITY-VENTED	1	208 / 1	400	18'-0"	1, 2, 3

NOTES:
1. PROVIDE REMOTE MOUNTED THERMOSTAT WITH LOCKABLE COVER.
2. PROVIDE MOUNTING SUPPORT WITH FOUR (4) STEEL RODS AS REQUIRED FROM STRUCTURAL STEEL.
3. PROVIDE B-VENT, ROOF THIMBLE, TALL FLASHING CONE, STORM COLLAR, AND TERMINATION CAP. INSTALL PER MANUFACTURER RECOMMENDATIONS.

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2023.05.12 ISSUED FOR PERMIT

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LICENSE EXPIRES: 2023 NOV, 30

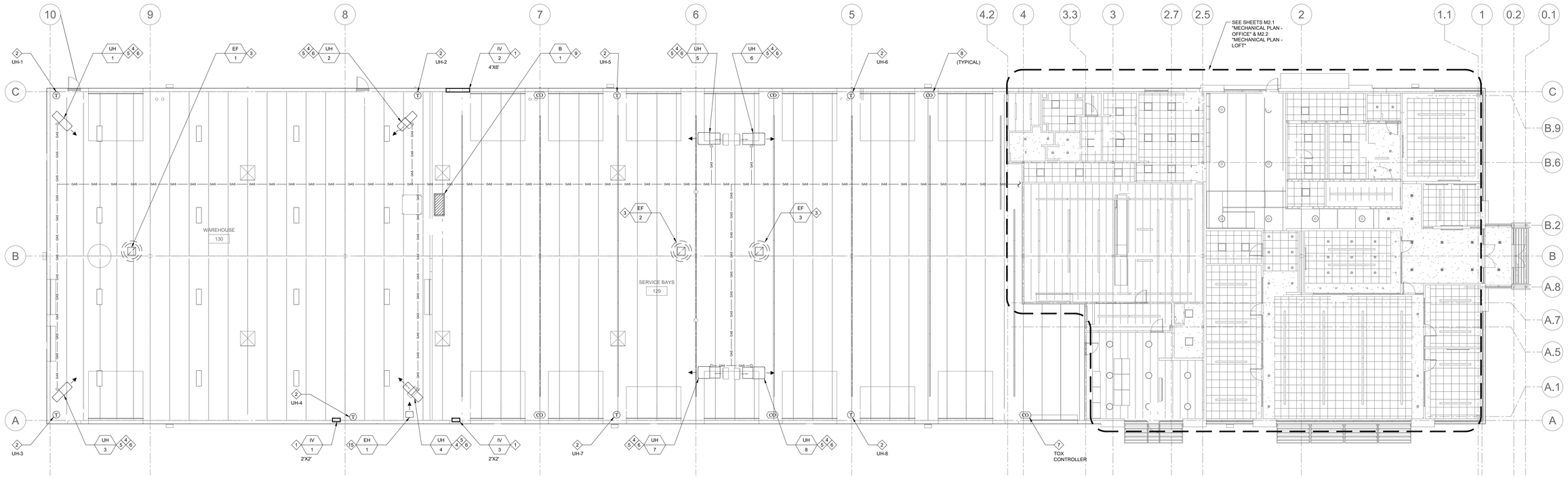
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MECHANICAL SCHEDULES

M1.1

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MECHANICAL PLAN - OVERALL

SCALE: 3/32" = 1'-0", WHEN PRINTED ON 30"X42" (ARCH E1)

N

KEY NOTES

1. WALL LOUVER OAI
PROVIDE WALL LOUVER FOR INTAKE AIR VENTILATION. PROVIDE WALL OPENING, FLASHING, SUPPORT, AND WEATHERTIGHT SEAL. INLET SHALL BE 12'-0" MINIMUM FROM ANY AIR OUTLET/FLUE. COORDINATE WITH OTHER DESIGN DRAWINGS, OTHER TRADES, ARCHITECTURAL DRAWINGS, AND WALL STRUCTURE.

2. THERMOSTAT
PROVIDE WALL MOUNTED ELECTRONIC PROGRAMMABLE THERMOSTAT. MOUNT THERMOSTAT PER ADA REGULATIONS. COORDINATE LOCATIONS WITH OTHER ELEMENTS OF WALL. VERIFY LOCATION AND SETPOINTS WITH OWNER.

3. EF (ROOF)
PROVIDE ROOFTOP MOUNTED EXHAUST AIR FAN AS SHOWN ON SCHEDULE. PROVIDE ROOF CURBING, FLASHING, SUPPORTS, AND MATCH ROOF SLOPE FOR LEVEL AND PLUMB MOUNTING. INSTALL PER MANUFACTURERS RECOMMENDATIONS. OUTLET 12'-0" MINIMUM FROM ANY AIR INTAKE. FIELD VERIFY LOCATION PRIOR TO INSTALLATION. COORDINATE WITH OTHER DESIGN DRAWINGS, OTHER TRADES, ARCHITECTURAL DRAWINGS, AND ROOF STRUCTURE.

4. UH
PROVIDE SUSPENDED UNIT HEATER AS SHOWN ON SCHEDULE. PROVIDE OVERHEAD ROOF SUPPORTS, STEEL RODS, BRACKETS, AND MOUNTING. VERIFY REQUIREMENTS WITH MANUFACTURER RECOMMENDATIONS. VERIFY MOUNTING HEIGHT WITH OWNER. COORDINATE WITH OTHER DESIGN DRAWINGS, OTHER TRADES, ARCHITECTURAL DRAWINGS, AND ROOF STRUCTURE.

5. UH FLUE
PROVIDE FLUE AND COMBUSTION PIPING FROM UNIT HEATER UP THROUGH ROOF WITH CONCENTRIC KIT. PROVIDE VENTING, CONNECTIONS, ROOFING PENETRATION, FLASHING, SUPPORT, AND TERMINATION. OUTLET SHALL BE 12'-0" MINIMUM FROM ANY AIR INTAKE. COORDINATE WITH OTHER DESIGN DRAWINGS, OTHER TRADES, ARCHITECTURAL DRAWINGS, AND ROOF STRUCTURE.

6. UH GAS WITH REGULATOR
PROVIDE GAS PIPING AND CONNECTION TO UH WITH VALVE, PRESSURE REGULATOR (2 PSI TO 6" WC), UNION, DIRT LEG, AND CONNECTION. REFERENCE NATURAL GAS EQUIPMENT SCHEDULE.

7. TOX-ALERT (VEHICLES)
PROVIDE CO+NO2 CONTROLS SYSTEM, INCLUDING PANEL, EQUIPMENT, MONITORS, MODULES, ALARMS, STROBES, AND SENSORS. PROVIDE CONTROLS, CONDUITS, WIRING, AND PROGRAMMING TO MONITOR AND ACTIVATE EXHAUST FANS AND INTAKE VENTILATORS SIMULTANEOUSLY - REFERENCE CONTROLS SEQUENCE OF OPERATION. VERIFY REQUIREMENTS WITH MANUFACTURER RECOMMENDATIONS. COORDINATE LOCATIONS WITH ARCHITECTURAL DRAWINGS, STRUCTURAL DRAWINGS, OTHER TRADES, AND OWNER'S REPRESENTATIVE.

8. TOX ALERT SENSORS
PROVIDE WALL/COLUMN MOUNTED CO+NO2 SENSOR FOR TOX-ALERT SYSTEM. MOUNTED AT 48" ABOVE FINISHED FLOOR, UNLESS NOTED OTHERWISE. PROVIDE MOUNTING, CONDUIT, WIRING, AND PROGRAMMING FOR SYSTEM. VERIFY REQUIREMENTS WITH MANUFACTURER RECOMMENDATIONS. COORDINATE LOCATIONS WITH ARCHITECTURAL DRAWINGS, STRUCTURAL DRAWINGS, OTHER TRADES, AND OWNER'S REPRESENTATIVE.

9. BOILER
PROVIDE FLOOR-MOUNTED BOILER AS SHOWN ON SCHEDULE. PROVIDE UNIT, FLOOR MOUNT FRAME, PIPING, EQUIPMENT, PUMPS, TANKS, VALVES, FITTINGS, AND CONTROLS. PROVIDE CONNECTIONS FROM UNIT TO EQUIPMENT AS SHOWN ON PLANS AND DETAILS. PROVIDE P&T RELIEF VALVE AND CONDENSATE DRAIN PIPING TO ABOVE FLOOR DRAIN.

10. BOILER FLUE AND COMBUSTION
PROVIDE FLUE AND COMBUSTION PIPING FROM BOILER UP THROUGH ROOF WITH ROOF FLUE KIT. PROVIDE VENTING, CONNECTIONS, ROOFING PENETRATION, SUPPORT, AND TERMINATION. OUTLET SHALL BE 12'-0" MINIMUM FROM ANY AIR INTAKE. COORDINATE WITH OTHER TRADES, ARCHITECTURAL DRAWINGS, AND ROOF STRUCTURE, PRIOR TO INSTALLATION.

11. HYDRONIC HOT WATER PUMPING SYSTEM
PROVIDE WALL-MOUNTED INFLOOR HYDRONIC PUMPING SYSTEM. PROVIDE PUMPS, WALL BRACKET MOUNTS, PIPING, EQUIPMENT, VALVES, FITTINGS, AND CONTROLS. PROVIDE CONNECTIONS FROM PUMPS TO EQUIPMENT AND ZONES/MANIFOLDS AS SHOWN ON PLANS AND DETAILS.

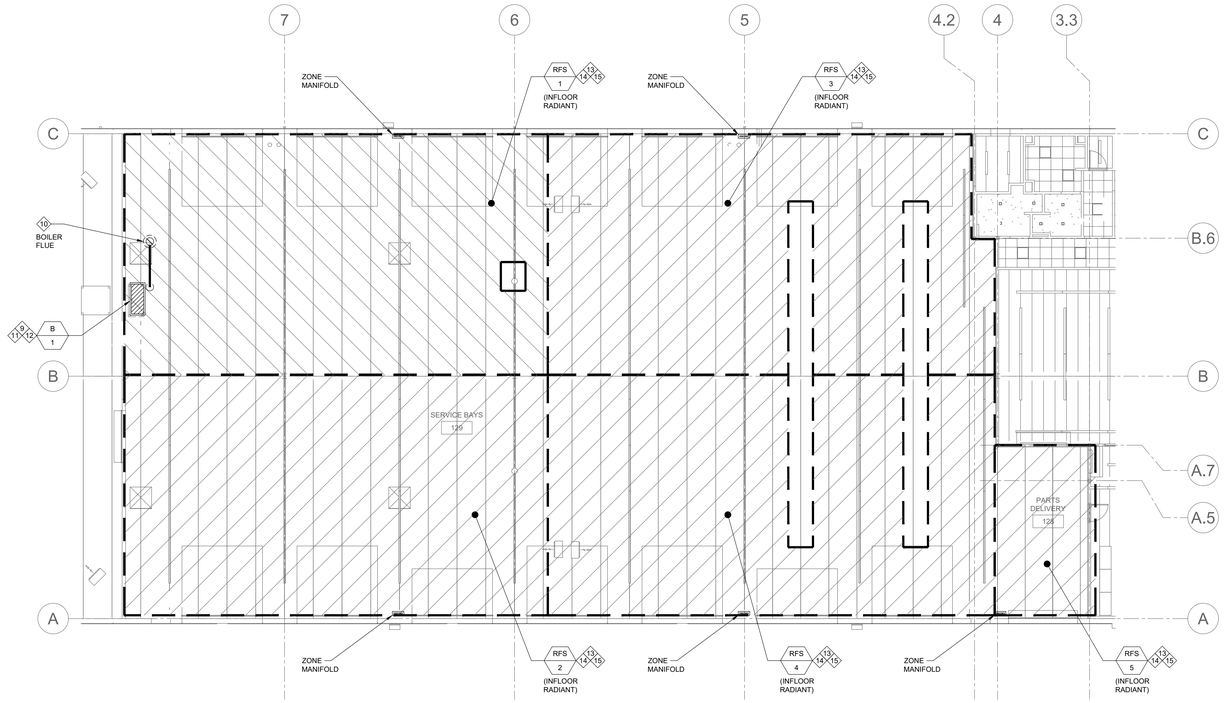
12. HYDRONIC INFLOOR HEATING SYSTEM CONTROLLER
PROVIDE WALL-MOUNTED ELECTRONIC PROGRAMMABLE THERMOSTAT FOR INFLOOR RADIANT HEATING SYSTEM WITH CONNECTIONS TO ZONE CONTROLLER AND PUMPING EQUIPMENT CONTROLLER. COORDINATE LOCATIONS WITH OTHER ELEMENTS OF WALL. VERIFY LOCATION AND SETPOINTS WITH OWNER.

13. INFLOOR/INSLAB RADIANT HEATING ZONE
PROVIDE FOR INFLOOR/INSLAB RADIANT HEATING SYSTEM. PROVIDE MANIFOLD, PIPING, CONTROLLER, AND FITTINGS. COORDINATE WITH OTHER TRADES AND ARCHITECTURAL DRAWINGS, PRIOR TO INSTALLATION.

14. INFLOOR/INSLAB RADIANT HEATING PIPING
PROVIDE INFLOOR/INSLAB RADIANT HEATING PIPING SYSTEM. PROVIDE INSULATION, PIPING, SUPPORTS, FITTINGS, AND CONNECTIONS, TO ZONE MANIFOLD. COORDINATE WITH OTHER TRADES, ARCHITECTURAL DRAWINGS, AND ROOF STRUCTURE, PRIOR TO INSTALLATION.

15. INFLOOR RADIANT HEATING SENSOR
PROVIDE SLAB-MOUNTED TEMPERATURE SENSOR FOR INFLOOR RADIANT HEATING SYSTEM WITH CONNECTIONS TO ZONE CONTROLLER AND PUMPING EQUIPMENT CONTROLLER.

16. EH
PROVIDE ELECTRIC HEATER AS SHOWN ON SCHEDULE. PROVIDE SUPPORT, BRACKETS, AND MOUNTING. VERIFY REQUIREMENTS WITH MANUFACTURER RECOMMENDATIONS. VERIFY MOUNTING HEIGHT WITH OWNER. COORDINATE WITH OTHER DESIGN DRAWINGS, OTHER TRADES, ARCHITECTURAL DRAWINGS, AND STRUCTURE.



MECHANICAL PLAN - IN FLOOR HEATING

SCALE: 3/32" = 1'-0", WHEN PRINTED ON 30"X42" (ARCH E1)

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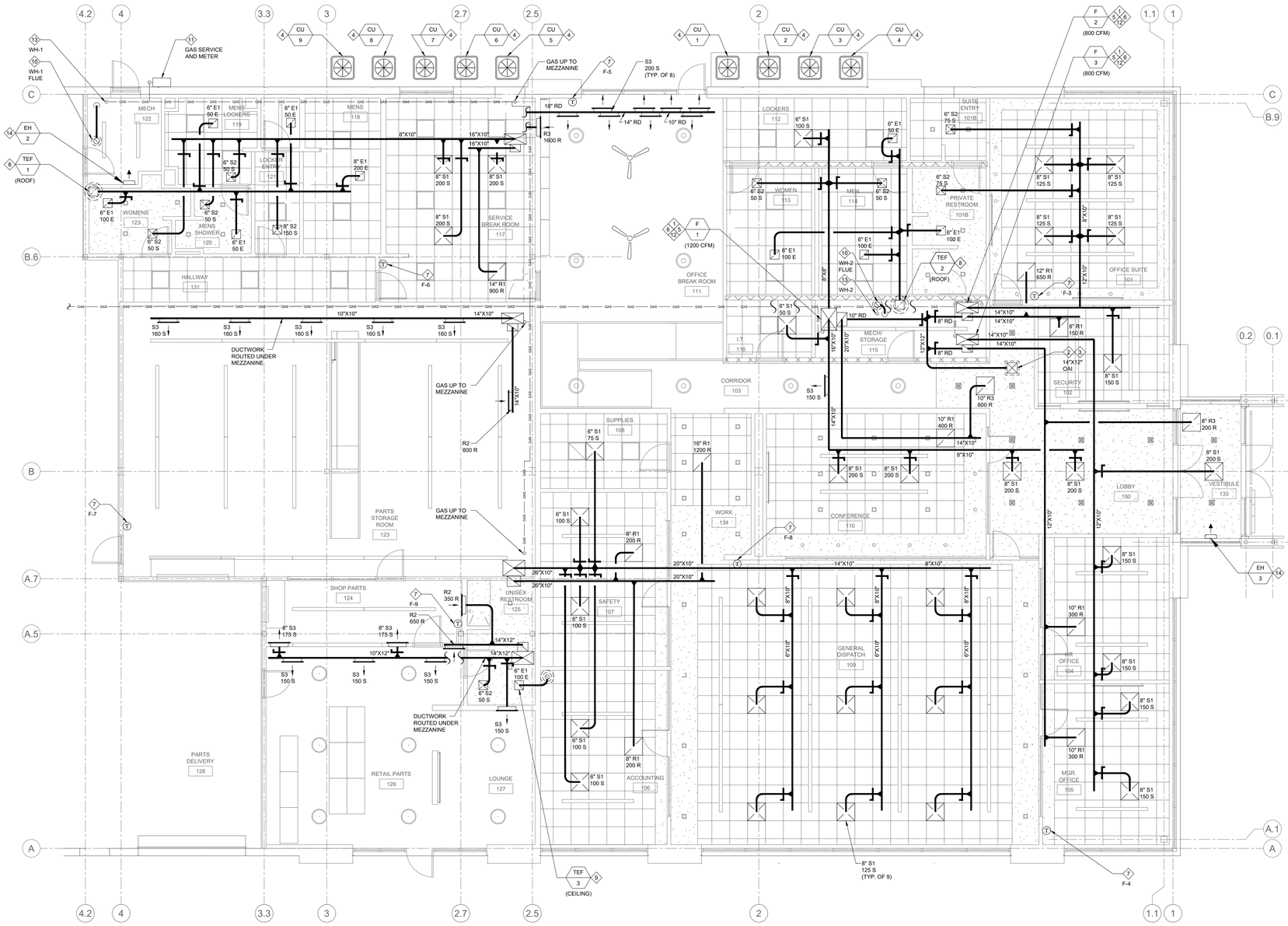
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MECHANICAL PLAN - OFFICE

SCALE: 3/16" = 1'-0", WHEN PRINTED ON 30"X42" (ARCH E1)

N

KEY NOTES

1. F
   PROVIDE FURNACE AS SHOWN ON SCHEDULE. PROVIDE UNIT, COIL, FILTER SLEEVE, FLOOR PAD MOUNT, AND DUCTWORK. PROVIDE INTAKE AIR ECONOMIZER-RETURN AIR DAMPER ASSEMBLY PROVIDE DUCTWORK CONNECTIONS FROM UNIT TO DUCTWORK SIZES SHOWN ON PLANS. PROVIDE CONDENSATE DRAIN PIPING TO ABOVE FLOOR DRAIN.
2. VENTILATOR OAI (ROOF)
   PROVIDE ROOF VENTILATOR FOR INTAKE AIR VENTILATION. PROVIDE ROOF CURBING, FLASHING, SUPPORTS, AND MATCH ROOF SLOPE FOR LEVEL AND PLUMB MOUNTING. PROVIDE DUCTWORK CONNECTIONS AS REQUIRED. INLET SHALL BE 12'-0" MINIMUM FROM ANY AIR OUTLET/FLUE. COORDINATE WITH OTHER DESIGN DRAWINGS, OTHER TRADES, ARCHITECTURAL DRAWINGS, AND ROOF STRUCTURE.
3. OAI DUCT
   PROVIDE DUCT FROM OUTSIDE AIR INTAKE WITH CONTROL DAMPER AND CONNECTION TO AIR HANDLING UNIT RETURN DUCT.
4. CU (GRADE)
   PROVIDE CONDENSING UNIT AS SHOWN ON SCHEDULE. LOCATE UNIT ON GRADE WITH SUPPORT BASE AND COMPACTED GRAVEL FOR LEVEL AND PLUMB MOUNTING. VERIFY REQUIREMENTS WITH MANUFACTURER RECOMMENDATIONS. COORDINATE WITH OTHER DESIGN DRAWINGS, OTHER TRADES, ARCHITECTURAL DRAWINGS, AND CIVIL ENGINEERING DRAWINGS.
5. REFRIGERATION PIPING
   PROVIDE REFRIGERATION PIPING AND CONTROL WIRING FROM AIR HANDLING UNIT TO CONDENSING UNIT. PROVIDE ROOF PORTAL, PENETRATION, INSULATION, AND WEATHERTIGHT SEAL. COORDINATE WITH OTHER DESIGN DRAWINGS, OTHER TRADES, AND ARCHITECTURAL DRAWINGS.
6. F FLUE AND COMBUSTION
   PROVIDE FLUE AND COMBUSTION PIPING FROM FURNACE UP THROUGH ROOF WITH CONCENTRIC KIT. PROVIDE VENTING, CONNECTIONS, ROOFING PENETRATION, FLASHING, SUPPORT, AND TERMINATION. OUTLET SHALL BE 12'-0" MINIMUM FROM ANY AIR INTAKE. COORDINATE WITH OTHER DESIGN DRAWINGS, OTHER TRADES, ARCHITECTURAL DRAWINGS, AND STRUCTURE.
7. THERMOSTAT
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8. EF (ROOF)
   PROVIDE ROOFTOP MOUNTED EXHAUST AIR FAN AS SHOWN ON SCHEDULE. PROVIDE ROOF CURBING, FLASHING, SUPPORTS, AND MATCH ROOF SLOPE FOR LEVEL AND PLUMB MOUNTING. INSTALL PER MANUFACTURERS RECOMMENDATIONS. OUTLET 12'-0" MINIMUM FROM ANY AIR INTAKE. FIELD VERIFY LOCATION PRIOR TO INSTALLATION. COORDINATE WITH OTHER DESIGN DRAWINGS, OTHER TRADES, ARCHITECTURAL DRAWINGS, AND ROOF STRUCTURE.
9. EF (CEILING)
   PROVIDE CEILING EXHAUST FAN AS SHOWN ON SCHEDULE. PROVIDE WALL PENETRATION, DUCT, SLEEVE, FLASHING, INSULATION, AND WEATHERTIGHT SEAL. EXHAUST OUTLET SHALL BE 15'-0" MINIMUM FROM ANY AIR INTAKE. COORDINATE WITH OTHER DESIGN DRAWINGS, OTHER TRADES, ARCHITECTURAL DRAWINGS, AND STRUCTURE.
10. WH FLUE AND COMBUSTION
    PROVIDE FLUE AND COMBUSTION PIPING FROM WATER HEATER UP THROUGH ROOF WITH ROOF FLUE KIT. PROVIDE VENTING, CONNECTIONS, ROOFING PENETRATION, SUPPORT, AND TERMINATION. OUTLET SHALL BE 12'-0" MINIMUM FROM ANY AIR INTAKE. COORDINATE WITH OTHER DESIGN DRAWINGS, OTHER TRADES, ARCHITECTURAL DRAWINGS, AND ROOF STRUCTURE.
11. GAS SERVICE
    PROVIDE 2-1/2" GAS PIPING FROM GAS METER SERVICE. FIELD VERIFY LOCATION AND CONNECTIONS PRIOR TO INSTALLATION. WORK SHALL BE IN ACCORDANCE WITH FUEL GAS CODE. GAS PIPING SHALL BE ROUTED TO INTERIOR, WITHIN WALL CAVITY UP TO ACCESSIBLE CEILING AREA. PROVIDE PIPING, SUPPORTS, BRACING, PORTALS, INSULATION, CONNECTIONS, AND ANY WORK NECESSARY FOR COMPLETE INSTALLATION. COORDINATE WITH CIVIL ENGINEERING DRAWINGS AND OTHER TRADES. PRIOR TO ANY WORK, COORDINATE WITH GAS COMPANY, EXISTING CONDITIONS, AND OWNERSHIP. GAS COMPANY COSTS FOR RELOCATION WORK SHALL BE SUBMITTED IN WRITING FROM MECHANICAL CONTRACTOR TO OWNERSHIP.
12. F GAS WITH REGULATOR
    PROVIDE 3/4" GAS PIPING AND CONNECTION TO F WITH VALVE, PRESSURE REGULATOR (2 PSI TO 6" WC), UNION, DIRT LEG, AND CONNECTION.
13. WH GAS WITH REGULATOR
    PROVIDE 3/4" GAS PIPING AND CONNECTION TO UH WITH VALVE, PRESSURE REGULATOR (2 PSI TO 6" WC), UNION, DIRT LEG, AND CONNECTION.
14. EH
    PROVIDE ELECTRIC HEATER AS SHOWN ON SCHEDULE. PROVIDE SUPPORT, BRACKETS, AND MOUNTING. VERIFY REQUIREMENTS WITH MANUFACTURER RECOMMENDATIONS. VERIFY MOUNTING HEIGHT WITH OWNER. COORDINATE WITH OTHER DESIGN DRAWINGS, OTHER TRADES, ARCHITECTURAL DRAWINGS, AND STRUCTURE.

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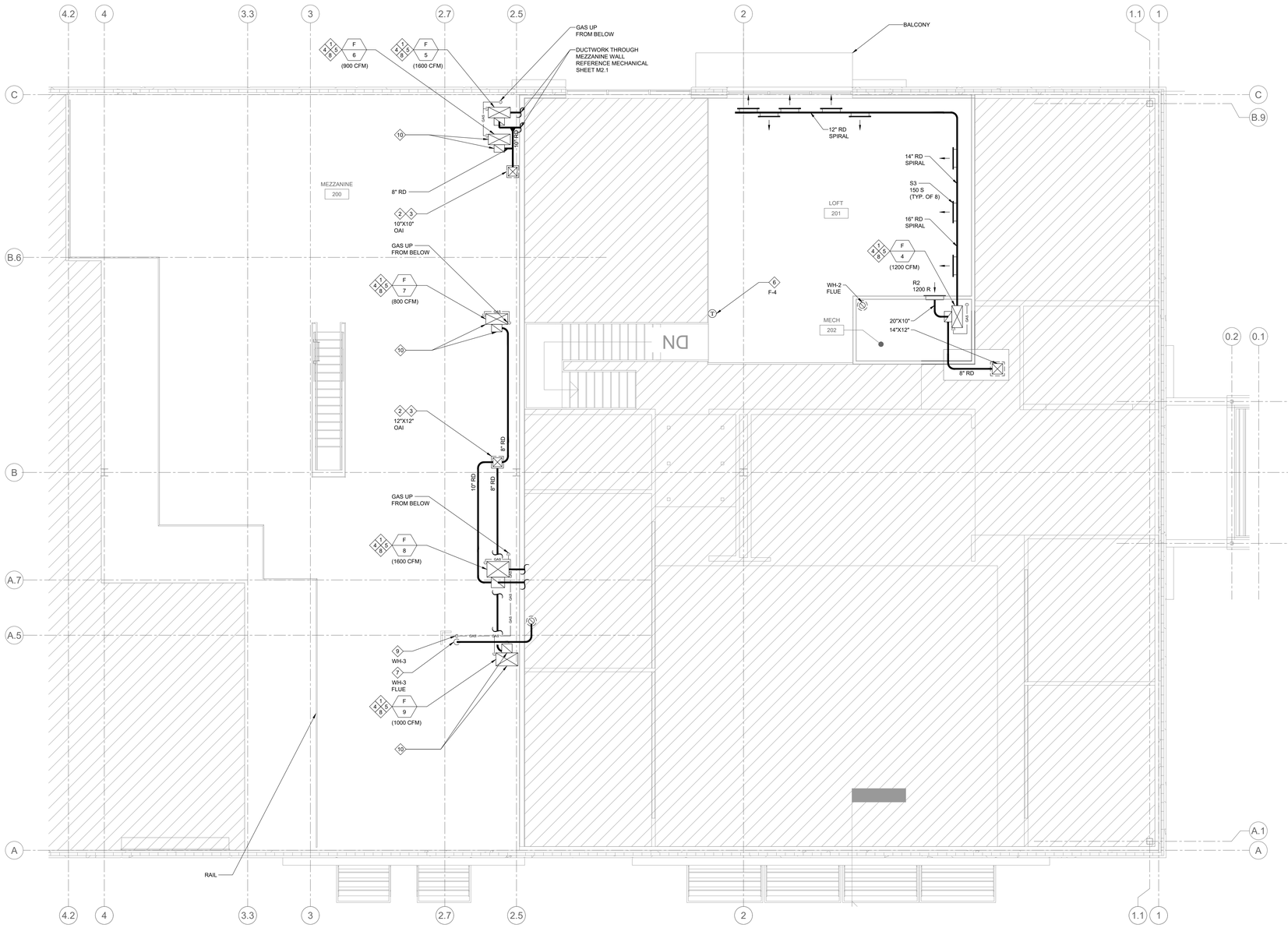
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MECHANICAL PLAN - LOFT

SCALE: 3/16" = 1'-0", WHEN PRINTED ON 30"X42" (ARCH E1)

N

KEY NOTES

1. F
   PROVIDE FURNACE AS SHOWN ON SCHEDULE. PROVIDE UNIT, COIL, FILTER SLEEVE, FLOOR PAD MOUNT, AND DUCTWORK. PROVIDE INTAKE AIR ECONOMIZER-RETURN AIR DAMPER ASSEMBLY PROVIDE DUCTWORK CONNECTIONS FROM UNIT TO DUCTWORK SIZES SHOWN ON PLANS. PROVIDE CONDENSATE DRAIN PIPING TO ABOVE FLOOR DRAIN.
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   PROVIDE ROOF VENTILATOR FOR INTAKE AIR VENTILATION. PROVIDE ROOF CURBING, FLASHING, SUPPORTS, AND MATCH ROOF SLOPE FOR LEVEL AND PLUMB MOUNTING. PROVIDE DUCTWORK CONNECTIONS AS REQUIRED. INLET SHALL BE 12'-0" MINIMUM FROM ANY AIR OUTLET/FLUE. COORDINATE WITH OTHER DESIGN DRAWINGS, OTHER TRADES, ARCHITECTURAL DRAWINGS, AND ROOF STRUCTURE.
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5. F FLUE AND COMBUSTION
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7. WH FLUE AND COMBUSTION
   PROVIDE FLUE AND COMBUSTION PIPING FROM WATER HEATER UP THROUGH ROOF WITH ROOF FLUE KIT. PROVIDE VENTING, CONNECTIONS, ROOFING PENETRATION, SUPPORT, AND TERMINATION. OUTLET SHALL BE 12'-0" MINIMUM FROM ANY AIR INTAKE. COORDINATE WITH OTHER DESIGN DRAWINGS, OTHER TRADES, ARCHITECTURAL DRAWINGS, AND ROOF STRUCTURE.
8. F GAS WITH REGULATOR
   PROVIDE 3/4" GAS PIPING AND CONNECTION TO F WITH VALVE, PRESSURE REGULATOR (2 PSI TO 6" WC), UNION, DIRT LEG, AND CONNECTION.
9. WH GAS WITH REGULATOR
   PROVIDE 3/4" GAS PIPING AND CONNECTION TO UH WITH VALVE, PRESSURE REGULATOR (2 PSI TO 6" WC), UNION, DIRT LEG, AND CONNECTION.
10. DUCT THROUGH FLOOR
    PROVIDE DUCTWORK AS SIZED ON DRAWINGS THROUGH MEZZANINE FLOOR. PROVIDE FLOOR OPENING AND SUPPORT. COORDINATE WITH OTHER DESIGN DRAWINGS, OTHER TRADES, ARCHITECTURAL DRAWINGS, AND FLOOR STRUCTURE.

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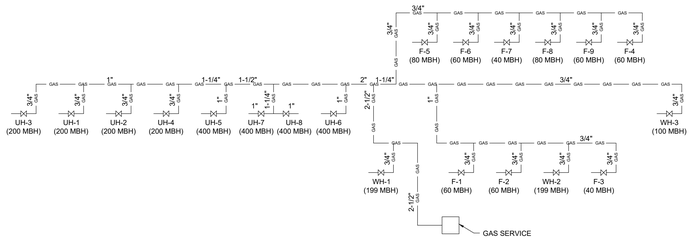
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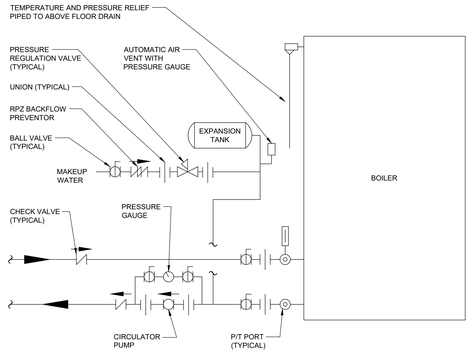
NATURAL GAS EQUIPMENT SCHEDULE

UNIT	GAS INPUT (MBH)	UNIT PIPING
F-1	60	3/4"
F-2	60	3/4"
F-3	40	3/4"
F-4	60	3/4"
F-5	80	3/4"
F-6	60	3/4"
F-7	40	3/4"
F-8	80	3/4"
F-9	60	3/4"
UH-1	200	3/4"
UH-2	200	3/4"
UH-3	200	3/4"
UH-4	200	3/4"
UH-5	400	1"
UH-6	400	1"
UH-7	400	1"
UH-8	400	1"
WH-1	199	3/4"
WH-2	199	3/4"
WH-3	100	3/4"
TOTAL	3378 MBH	2-1/2" PIPING (MEDIUM PRESSURE, 2 PSI)



GAS SERVICE
AT MEDIUM PRESSURE (2 PSI). FIELD VERIFY PRESSURE PRIOR TO INSTALLATION.

NATURAL GAS RISER
NOT TO SCALE



GENERAL NOTES:
1. REFERENCE MANUFACTURER RECOMMENDATIONS FOR INSTALLATION GUIDELINES, SUPPORT, SPACING, AND PRODUCT SPECIFICATIONS.
2. REFERENCE PLANS FOR FLOOR CONSTRUCTION AND EQUIPMENT LOCATIONS. PRIOR TO INSTALLATION FIELD VERIFY EXISTING CONDITIONS AND COORDINATE AS REQUIRED.

RADIANT FLOORING (HYDRONIC) SYSTEM DETAIL
NOT TO SCALE

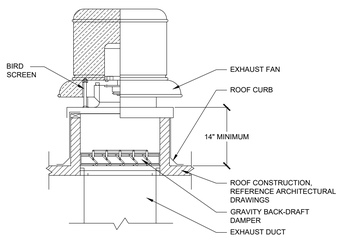
DUCTWORK TRANSITIONS (PER SMACNA)

PLAN LAYOUT	CONSTRUCTION PER SMACNA
TEE CONVERGING AIR DIVERGING	VOLUME DAMPER SINGLE TURNING VANES
ELBOW	SINGLE BLADE TURNING VANE (EITHER TYPE ELBOW OPTION - SUBJECT TO SPACE CONDITIONS) VANES SHALL BE WELDED.
SPLIT OR TAKE-OFF (BRANCH AIR FLOW 25% OR HIGHER)	A, B SHALL BE PROPORTIONAL TO AIR QUANTITY. 4" (10cm) MIN. IF A OR B IS LESS THAN 4" (10cm), USE TAP DETAIL. VOLUME DAMPER IN SHORTER BRANCH. D = 4"(102mm) MIN D = 4"(102mm) MIN
TAP (BRANCH TAP 25% OR LESS AIR FLOW)	SIDE TAP BRANCH SHALL BE LIMITED TO 25% OF MAIN AIR FLOW VOLUME DAMPER SUPPLY RETURN
RISE OR DROP	OFFSET IN VERTICAL PLANE SHALL BE SMOOTH FITTINGS
HORIZONTAL OFFSET	OFFSET IN HORIZONTAL PLANE SHALL BE SMOOTH FITTINGS
PLENUM OVER DIFFUSER CONNECTION TO LINEAR DIFFUSER PLENUM	PLENUM OVER LINEAR SUPPLY DEVICE OR RETURN DEVICE. CONICAL FITTINGS

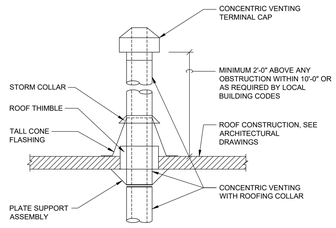


GENERAL NOTES
1. REFERENCE ARCHITECTURAL DRAWINGS FOR FLOOR CONSTRUCTION AND FINISHED SURFACE TYPE.
2. REFERENCE MANUFACTURER RECOMMENDATIONS FOR TUBING, SUPPORT, SPACING, AND POURED PRODUCT SPECIFICATIONS.

RADIANT FLOOR (CONCRETE INFLOOR) DETAIL
NOT TO SCALE

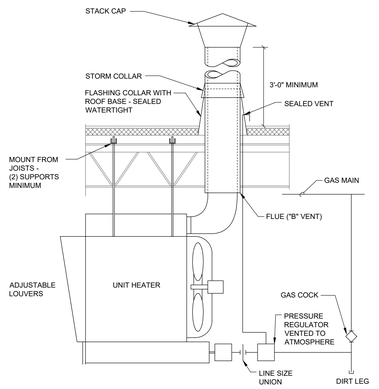


EXHAUST FAN ROOF DETAIL
NOT TO SCALE

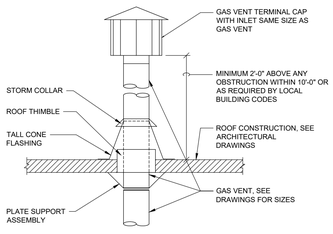


GENERAL NOTES:
1. CONCENTRIC FLUE AND COMBUSTION AIR VENTING UP THRU ROOF WITH ROOF SUPPORT ASSEMBLY.
2. TALL CONE FLASHING, STORM COLLAR, AND ROOFING THIMBLE. REFERENCE MANUFACTURER RECOMMENDATION FOR SIZING.

CONCENTRIC WATER HEATER VENT DETAIL
NOT TO SCALE

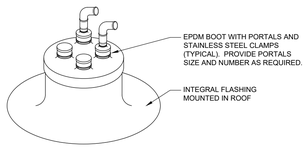


UNIT HEATER DETAIL
NOT TO SCALE

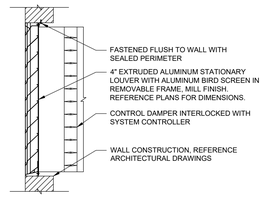


GENERAL NOTES:
1. METALBESTOS TYPE 'PS' GAS VENT UP THRU ROOF WITH ROOF SUPPORT ASSEMBLY.
2. TALL CONE FLASHING, STORM COLLAR, AND ROOFING THIMBLE. REFERENCE MANUFACTURER RECOMMENDATIONS FOR SIZING.

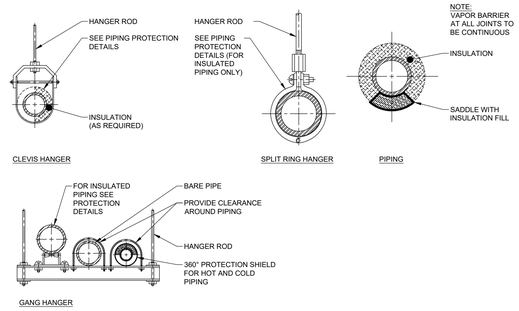
GAS VENT THRU ROOF DETAIL
NOT TO SCALE



ROOF PENETRATION DETAIL
NOT TO SCALE



WALL LOUVER DETAIL
NOT TO SCALE



PIPING SUPPORT AND INSULATION DETAIL
NOT TO SCALE

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ELECTRICAL SYMBOLS LIST

AFF	ABOVE FINISHED FLOOR
CCT	CIRCUIT
CL	CURRENT LIMITING DEVICE - NOTE D
CR	CONVENIENCE RECEPTACLE
CU	CONDENSING UNIT
EF	EXHAUST FAN
F	FURNACE
G	GROUND (GREEN)
GFI	GROUND FAULT INTERRUPT
IG	ISOLATED GROUND (ORANGE)
L	LIGHTING
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUG ONLY
OS	OCCUPANCY SENSOR - NOTE B
R	RECEPTACLE
SR	SPECIAL RECEPTACLE
UH	UNIT HEATER
WH	WATER HEATER
WP	WEATHER PROOF
J	JUNCTION BOX
OS	OCCUPANCY SENSOR - NOTE C
●	CONDUIT STUB UP FROM UNDER SLAB
	RECEPTACLE - SPECIAL AS CALLED OUT ON PLANS
	RECEPTACLE - DUPLEX
	RECEPTACLE - DEDICATED DUPLEX
	RECEPTACLE - DUPLEX AND USB
	RECEPTACLE - QUAD
▽	WALL MOUNTED DATA OUTLET - NOTE A
▼	WALL MOUNTED TELEPHONE OUTLET - NOTE A
▼	WALL MOUNTED DATA/TELEPHONE OUTLET - NOTE A
	MOTOR CONNECTION
	DISCONNECT - NON-FUSED, F = FUSED
	COMBINED MOTOR STARTER WITH DISC AND HOA, F = FUSED
	EXIT
	PUSH BUTTON FOR DOOR STRIKE
$	SINGLE-POLE SWITCH, D=DIMMABLE, OS=OCCUPANCY SENSOR, OS(D)=DIMMABLE OCCUPANCY SENSOR
$3/a	THREE-WAY SWITCH AND/OR SWITCH LEG a (LETTER)
	BRANCH PANELBOARD
AV	AUDIO/VISUAL ALARM
M	MANUAL (DOUBLE ACTION) STATION WITH CLEAR PLASTIC COVER
V	VISUAL ALARM

NOTE A: PROVIDE 4" BOX, 1-GANG COVER, AND (1) 3/4" CONDUIT FOR DATA AND (1) 3/4" CONDUIT FOR TELEPHONE OUTLET, AND TERMINATE 6" ABOVE ACCESSIBLE CEILING SPACE.

NOTE B: PROVIDE OCCUPANCY-VACANCY SENSOR (WALL MOUNTED) WITH INTEGRAL MANUAL OVERRIDE SWITCH AND 15 MINUTE OFF FOR UNOCCUPIED MODE.

NOTE C: PROVIDE OCCUPANCY-VACANY SENSOR (CEILING MOUNTED) AND WALL SWITCH, 15 MINUTE OFF FOR UNOCCUPIED MODE. PROVIDE POWER MODULE AND WALL MOUNTED MANUAL OVERRIDE SWITCH.

NOTE D: PROVIDE CURRENT LIMITING DEVICE FOR TRACK LIGHTING WITH POWER NOT TO EXCEED 30 WATTS/FT. LIMITING DEVICE SHALL MATCH TRACK LIGHTING MANUFACTURER.

CEILING FAN SCHEDULE

TAG	MANUFACTURER	MODEL NUMBER	AREA SERVED	FAN (WATTS)	VOLTAGE PHASE	WEIGHT (LBS)	NOTES
CF-1,2	TBD	56" DIAMETER	BREAK ROOM - 111	110 W	120 V 1 PH	35	1, 2, 3, 4

NOTES:

1. PROVIDE STABILIZATION SUPPORT TETHER AND ATTACHMENT HARDWARE.
2. PROVIDE ELECTRICAL CABLE WITH ATTACHMENT HARDWARE.
3. PROVIDE FAN SPEED CONTROLLER REMOTELY MOUNTED (BREAK ROOM WALL) TO SIMULTANEOUSLY CONTROL CEILING FANS.
4. VERIFY CEILING FAN DIRECTIONAL ORIENTATION WITH OWNER.

GENERAL NOTES

1. WORK SHALL BE PERFORMED AND INSTALLED IN COMPLIANCE WITH THE 2017 NATIONAL ELECTRIC CODE, HEALTH REGULATIONS, AND LOCAL ORDINANCES.
2. WORK SHALL INCLUDE PERMIT FEES, UTILITY TAP FEES, AND INSPECTION FEES AS REQUIRED.
3. COORDINATE LOCATION OF ROOFING EQUIPMENT (DISCONNECTS, JUNCTION BOXES, CONDUITS, CONDUCTORS, ETC) AND CONNECTION POINTS WITH GENERAL CONTRACTOR.
4. FIELD VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING BID AND PRIOR TO INSTALLATION.
5. COORDINATE WITH OTHER TRADES IN EQUIPMENT TO REQUIRED CLEARANCES AND TO AVOID ANY INTERFERENCE.
6. REFERENCE ARCHITECTURAL DRAWINGS FOR ANY ADDITIONAL EQUIPMENT INFORMATION.
7. GENERAL CONTRACTOR SHALL COORDINATE REQUIRED SUBMITTALS TO FIRE DEPARTMENT FOR FIRE ALARM SYSTEM.
8. GENERAL CONTRACTOR SHALL COORDINATE REQUIRED SUBMITTALS TO FIRE DEPARTMENT FOR AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEM.
9. BELOW GRADE CONDUIT OR EXTERIOR CONDUIT SHALL BE RIGID GALVANIZED STEEL (RGS) WITH COMPRESSION FITTINGS.
10. ABOVE GRADE INTERIOR CONDUIT SHALL BE ELECTRICAL METALLIC TUBING (EMT) OR INTERMEDIATE METALLIC CONDUIT (IMC).
11. CONDUCTORS SHALL BE INSTALLED IN METAL CONDUIT AND SHALL BE SOLID OR STRANDED COPPER.
12. LOW VOLTAGE WIRING SHALL BE INSTALLED IN CONDUIT WHERE CONCEALED BEHIND WALLS, INACCESSIBLE BY FINISH MATERIALS, OR SUBJECT TO PHYSICAL DAMAGE.

ENERGY NOTES - ELECTRICAL

1. RECESSED LUMINARIES INSTALLED IN BUILDING THERMAL ENVELOPE SHALL BE INSULATION CONTACT RATED, LABELED FOR AIR LEAKAGE IN ACCORDANCE WITH ASTM E283, AND SEALED WITH GASKET OR CAULK BETWEEN HOUSING AND INTERIOR WALL OR CEILING COVERING. (C402.5.8)
2. TO REDUCE ENERGY USAGE LUMINAIRE LEVEL LIGHTING CONTROLS (LLLC) TO BE INDEPENDENTLY CAPABLE OF MONITORING OCCUPANT ACTIVITY, MONITORING AMBIENT LIGHT, AND BEING CONFIGURABLE BASED ON PARAMETERS INCLUDING BRIGHT AND DIM SETPOINTS, TIMEOUTS, DIMMING FADE RATES, SENSOR SENSITIVITY, AND ZONING CONFIGURATIONS. EXCEPTIONS FOR SECURITY, EMERGENCY, AND EXIT EGRESS LIGHTING. (C405.2)
3. LOW-VOLTAGE DRY-TYPE TRANSFORMER ENERGY EFFICIENCIES TO CONFORM WITH ASHRAE 90.1 REGULATIONS AND MEET THE MINIMUM EFFICIENCY REQUIREMENTS OF TABLE C405.6. (C405.6)
4. ELECTRIC MOTORS SHALL MEET THE MINIMUM EFFICIENCY REQUIREMENTS OF TABLES C405.7(1) THROUGH C405.7(4) WHEN TESTED AND RATED IN ACCORDANCE WITH THE DOE 10 CFR 431. (C405.7)
5. LIGHTING CONTROL SYSTEMS TO BE TESTED TO ENSURE THAT CONTROL HARDWARE AND SOFTWARE ARE CALIBRATED, ADJUSTED, PROGRAMMED AND IN PROPER WORKING CONDITION IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND MANUFACTURER'S INSTRUCTIONS. (C408.3)

ELECTRICAL SPECIFICATIONS

1.0 DESCRIPTION OF WORK

1.01 GENERAL CONDITIONS AND GENERAL NOTES INDICATED WITH ARCHITECTURAL DRAWINGS AND SPECIFICATIONS SHALL GOVERN WHERE APPLICABLE.

1.02 WORK INDICATED ON DRAWINGS SHALL BE CONSIDERED NEW AND IN-CONTRACT UNLESS NOTED OTHERWISE.

1.03 COMPLETELY OPERATIONAL ELECTRICAL SYSTEMS READY FOR USE AS ITEMIZED BUT NOT LIMITED TO AS FOLLOWS:

1.03A DEMOLITION, REMOVAL, AND ALTERATIONS OF EXISTING SYSTEMS AND EQUIPMENT AS REQUIRED THOUGH NOT SPECIFICALLY INDICATED ACCOMMODATING PROPOSED WORK.
1.03B PANELS, BREAKERS, CONDUIT, WIRING, AND BRANCH CIRCUITS CONNECTING EACH FIXTURE, DEVICE AND EQUIPMENT.
1.03C MECHANICAL EQUIPMENT CONNECTIONS.
1.03D PLUMBING EQUIPMENT CONNECTIONS.
1.03E LIGHTING FIXTURES AND LAMPS.
1.03F FUSES, DISCONNECTS, STARTERS, DEVICES, PLATES, AND OTHER REQUIRED EQUIPMENT.
1.03G CONTACTORS, RELAYS, TIMECLOCKS, LIGHTING SENSORS, AND LIGHTING CONTROLS.
1.03H ELECTRIC HEATERS AND BASEBOARD.
1.03I EMPTY CONDUIT SYSTEM FOR TELEPHONE/DATA COMMUNICATIONS.
1.03J FIRE ALARM SYSTEM.

2.0 RELATED WORK BY OTHER TRADES

2.01 TEMPERATURE CONTROL AND INTERLOCK WIRING.
2.02 TELEPHONE AND DATA WIRING, DEVICES, AND TERMINATIONS.

3.0 RELATED WORK BY OTHERS

3.01 APPLIANCES.

4.0 ELECTRIC INSTALLATION NOTES

4.01 WORK SHALL BE PERFORMED IN ACCORDANCE WITH CODES AND AUTHORITIES HAVING JURISDICTION, INCLUDING ADA GUIDELINES AND ENERGY COMPLIANCE.

4.02 WORK AND INSTALLATIONS SHALL BE PERFORMED IN FIRST-CLASS NEAT WORKMANLIKE MANNER. REMOVE DEBRIS ON REGULAR BASIS AND CLEAN EQUIPMENT DURING PROJECT COMPLETION.

4.03 APPLY, PROCURE, AND PAY FOR REQUIRED PERMITS AND INSPECTIONS.

4.04 FIELD VERIFY PROJECT CONSTRUCTION CONDITIONS AND PROJECT SITE CONDITIONS PRIOR TO SUBMITTING BID.

4.05 THIS TRADE SHALL DO ITS OWN CUTTING AND PATCHING, TRENCHING AND BACKFILLING. PENETRATIONS THROUGH FIRE-RATED ASSEMBLIES SHALL BE FILLED WITH FIRESTOP PRODUCT. SUBMIT FIRESTOP PRODUCT MATERIAL SPECIFICATIONS TO LOCAL AUTHORITIES HAVING JURISDICTION.

4.06 CONFER WITH OTHER TRADES IN COORDINATION OF THIS WORK FOR REQUIRED CLEARANCES, CHASES, RECESSES AND OPENINGS.

4.07 PROPOSAL PRICE SHALL INCLUDE SPECIFIED MATERIALS ONLY. SHOULD CONTRACTOR WISH TO SUBSTITUTE MATERIALS, EQUIPMENT OR MANUFACTURERS, IT SHALL BE DONE BY STATING EACH SUBSTITUTION AND ITS PRICE ADJUSTMENT.

4.08 DRAWINGS SHALL BE FOR BIDDING ONLY. ROUGH-IN AND FINAL CONNECTION SHALL BE MADE FROM APPROVED EQUIPMENT DRAWINGS ONLY.

4.09 SIZE AND TYPE OF EQUIPMENT BRANCH OVERCURRENT PROTECTIVE DEVICE(S) SHALL BE AS RECOMMENDED BY EQUIPMENT MANUFACTURER. FIELD VERIFY EACH REQUIRED DEVICE PRIOR TO INSTALLATION.

4.10 GUARANTEE WORK AND EQUIPMENT TO BE FREE FROM DEFECTIVE WORKMANSHIP AND MATERIALS FOR PERIOD OF ONE (1) YEAR FROM DATE OF FINAL CERTIFICATE OF OCCUPANCY. ANY REPAIRS OR REPLACEMENT DURING THIS PERIOD SHALL BE MADE WITHOUT COST TO OWNER.

4.11 WIRE SHALL HAVE 600 VOLT INSULATION, NOT LESS THAN #12 EXCEPT FOR CONTROLS, BE SOLID COPPER TYPE THHN OR THWN FOR #12 AND SMALLER, AND BE STRANDED COPPER TYPE THHN OR THWN FOR WIRE #10 AND LARGER.

4.12 CONDUIT IN GROUND FOR EXTERIOR FIXTURES AND EQUIPMENT MAY BE PVC (IF PERMITTED BY LOCAL AUTHORITIES). CONDUIT EXPOSED TO WEATHER, IN SLABS ON GRADE, AND WHERE REQUIRED BY CODE SHALL BE RIGID GALVANIZED STEEL WITH WATERPROOF FITTINGS AND APPROVED COMPOUND. CONDUIT ELSEWHERE SHALL BE EMT WITH COMPRESSION OR SET SCREW FITTINGS.

4.13 DEVICES AND PLATES IN FINISHED AREAS SHALL HAVE COLOR SELECTED BY ARCHITECT. DEVICES IN UNFINISHED AREAS SHALL BE WHITE WITH GALVANIZED PLATES.

4.14 DEVICES SHALL BE, UNLESS NOTED OTHERWISE ON DRAWINGS:
HUBBELL HBL-1221-OW (SINGLE POLE SWITCHES, HUBBELL HBL-1223-OW (THREE WAY SWITCHES), HUBBELL HBL-5362-W (RECEPTACLES 20A), HUBBELL HBL-GF-5362-W (GFI RECEPTACLES 20A), HUBBELL HBL-IG-5362 (ORANGE IG RECEPTACLES 20A), HUBBELL SERIES (WALL OCCUPANCY/VACANCY) HUBBELL SERIES (CEILING OCCUPANCY SENSOR) WITH HUBBELL RSD315W ROCKER SWITCHES.

4.15 DEVICES LOCATED OUTDOORS, KITCHENS, TOILETS, FOOD SERVICE AREAS, OR WITHIN 6' OF PLUMBING FIXTURES SHALL BE GROUND-FAULT INTERRUPT TYPE.

4.16 LIGHTING FIXTURES SHALL HAVE CONTROLS WITH OCCUPANCY SENSORS, VACANCY SENSORS, DAYLIGHTING SENSORS, TIMECLOCKS, PHOTOCELLS, AND MANUAL OVERRIDES, INCLUDING MODULES, CONTACTORS, RELAYS, DEVICES, INTERLOCKS, SWITCHES, PROGRAMMING, AND WIRING. IDENTIFY CONTROLS WITH TYPE-PRINTED LABELING.

4.17 MOUNTING HEIGHTS SHALL BE, UNLESS NOTED OTHERWISE ON DRAWINGS:
SWITCHES AT 4'-0" ABOVE FINISHED FLOOR (3'-6" ADA), RECEPTACLES AT 1'-6" ABOVE FINISHED FLOOR (INDOOR) INCLUDING COMMUNICATION RECEPTACLES, 2'-0" ABOVE FINISHED FLOOR (OUTDOOR), AND 4" ABOVE COUNTERTOP BACKSPLASH.

4.18 IDENTIFY DISCONNECTS, STARTERS, PANELS, SWITCHBOARDS, DIMMERS, AND SWITCHES WITH 3/4" HIGH WHITE-FACED MICARTA WITH 1/4" BLACK LETTERS. DIMMERS AND SWITCHES IN GROUPS OF 2 OR LESS DO NOT REQUIRE IDENTIFICATION.

4.19 STARTERS SHALL BE ELECTRICALLY OPERATED WITH OVERLOAD PROTECTION ON EACH PHASE LINE, HAND-OFF-AUTO OR START-STOP CONTROL, CONTROL TRANSFORMERS, AND RED PILOT. SWITCHES SHALL BE SQUARE D QMB GENERAL DUTY (240V) OR HEAVY DUTY (480V) WITH BUSSMAN DUAL ELEMENT FUSES AS REQUIRED. PROVIDE 2 SPARE SETS OF FUSES FOR EACH FUSE SIZED AT 100A OR LARGER.

4.20 DISTRIBUTION PANELS SHALL BE SQUARE D TYPE I-LINE. BRANCH PANELS AND CIRCUIT BREAKERS SHALL BE SQUARE D TYPE NQ/NQODINF. PANELS SHALL HAVE COPPER BUS WITH BOLT-ON TYPE BREAKERS. PROVIDE ACCURATE AND TYPE-PRINTED PANEL SCHEDULE FOR EACH PANEL.

4.21 ELECTRICAL EQUIPMENT SHALL HAVE MINIMUM OF 65,000 AMP INTERRUPTING CAPACITY UNLESS NOTED OTHERWISE ON DRAWINGS, OR EQUIPMENT MANUFACTURER SUPPLIES DETAILED MINIMUM AIC CALCULATIONS JUSTIFYING RATINGS OF EQUIPMENT PROVIDED.

4.22 TRANSFORMER SHALL BE OPEN-VENTILATE, DRY TYPE, CLASS H INSULATION, 115°C TEMPERATURE RISE. WINDINGS SHALL BE COPPER. PRIMARY AND SECONDARY VOLTAGES SHALL BE AS NOTED, PROVIDE ADJUSTMENTS FOR REQUIRED VOLTAGE.

4.23 BALANCE LOAD ACROSS PHASES FOR CIRCUITS. TEST EACH PHASE AND PROVIDE REPORT DOCUMENT OF CONDITIONS.

4.24 ELECTRICALLY SUPERVISED AUTOMATIC FIRE ALARM SYSTEM INCLUDING WIRING TO INDOOR BELL, OUTDOOR BELL, OUTDOOR VISUAL, WATER FLOW ALARM(S), TAMPER SWITCHES, AND LOCAL AUTHORITY CONNECTION(S). DUCT DETECTORS SHALL HAVE REMOTE INDICATION/TEST AND SHUT DOWN EACH ASSOCIATED MECHANICAL EQUIPMENT.

4.25 COMMUNICATION OUTLETS SHALL BE INSTALLED WITH 4" BOX AND SINGLE GANG COVER, AND 3/4" CONDUIT ROUTED INTO ACCESSIBLE SPACE.

4.26 EXTERIOR AND KITCHEN EQUIPMENT SHALL BE NEMA 3R AND WEATHERPROOF LIQUIDTIGHT FLEXIBLE METAL CONDUIT CONNECTIONS.

5.0 SUBMITTALS (DIGITAL PDF FILES):

5.01 LIGHTING FIXTURES.
5.02 CONTACTORS, RELAYS, TIMECLOCKS, LIGHTING SENSORS, AND LIGHTING CONTROLS.
5.03 ELECTRIC SERVICE EQUIPMENT.
5.04 PANELS AND BREAKERS.
5.05 DISCONNECT SWITCHES.
5.06 ELECTRIC HEATERS.
5.07 FIRE ALARM SYSTEM.

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DATE: 2023 MAY. 12
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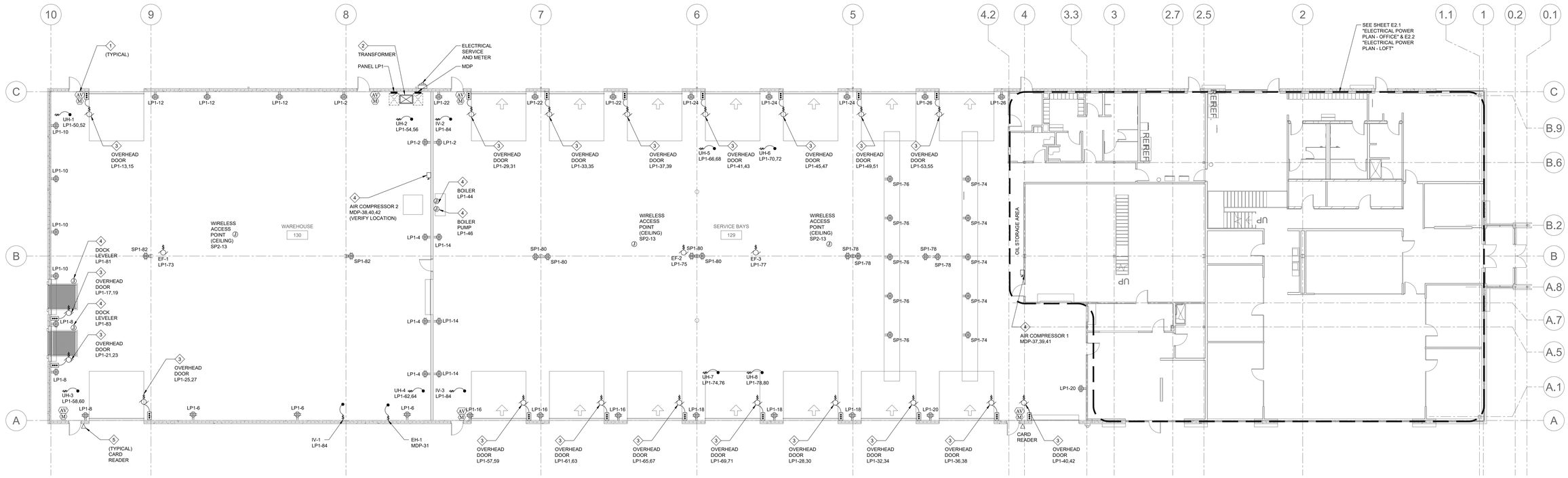
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ELECTRICAL POWER PLAN - OVERALL

SCALE: 3/32" = 1'-0", WHEN PRINTED ON 30"X42" (ARCH E1)

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ELECTRICAL RECEPTACLES WITHIN 6'-0" FROM SINKS SHALL HAVE GFI PROTECTION.

KEY NOTES

1. FIRE ALARM
PROVIDE FIRE ALARM SYSTEM. PROVIDE EQUIPMENT MODULE, DEVICES, CONNECTIONS, AND TESTING FOR ALARM SYSTEM. TEST FIRE ALARM SYSTEM AND DEVICES AS REQUIRED FOR LOCAL AUTHORITIES APPROVAL.

2. TRANSFORMER
PROVIDE STEPDOWN TRANSFORMER FOR PANEL LP1 SERVED FROM PANEL MDP - REFERENCE ELECTRICAL RISER. PROVIDE MOUNTING PAD. COORDINATE MOUNTING WITH ARCHITECTURAL DRAWINGS.

3. OVERHEAD DOORS
PROVIDE CONNECTIONS TO OVERHEAD DOOR EQUIPMENT. RECEIVE AND INSTALL OPERATOR SWITCH. VERIFY REQUIREMENTS WITH EQUIPMENT MANUFACTURER RECOMMENDATIONS. COORDINATE WITH GENERAL CONTRACTOR AND EQUIPMENT MANUFACTURER.

4. ELECTRICAL EQUIPMENT
PROVIDE CONNECTIONS TO ELECTRICAL EQUIPMENT PER MANUFACTURER RECOMMENDATIONS. COORDINATE WITH GENERAL CONTRACTOR AND EQUIPMENT MANUFACTURER.

5. DOOR CARD READER
PROVIDE JUNCTION BOXES, CONDUITS, AND CONDUCTORS AS REQUIRED TO INSTALL CARD READER SYSTEM. VERIFY REQUIREMENTS WITH MANUFACTURER AND OWNER RECOMMENDATIONS.

AIR COMPRESS 2 INFO

compressor equipment and accessories specs as purchased - provided by owner

Material details	Quantity
GA11+FF A 150 MEAF TR1 60 Part number 8153332666	1
OPTION TROPICAL THERMOSTAT Part number 0000007524	1
UD45+ inPASS (NPT3/4) Part number 8102372458	1
EWD 50 NPT 110V Part number 8102044040 Invoice number 1122021194	1
LV 400-165 Part number 1280567297	1
KIT:SRV-GAG 400-500GA 165PSI Part number 1280548023	1

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LICENSE EXPIRES: 2023 NOV, 30

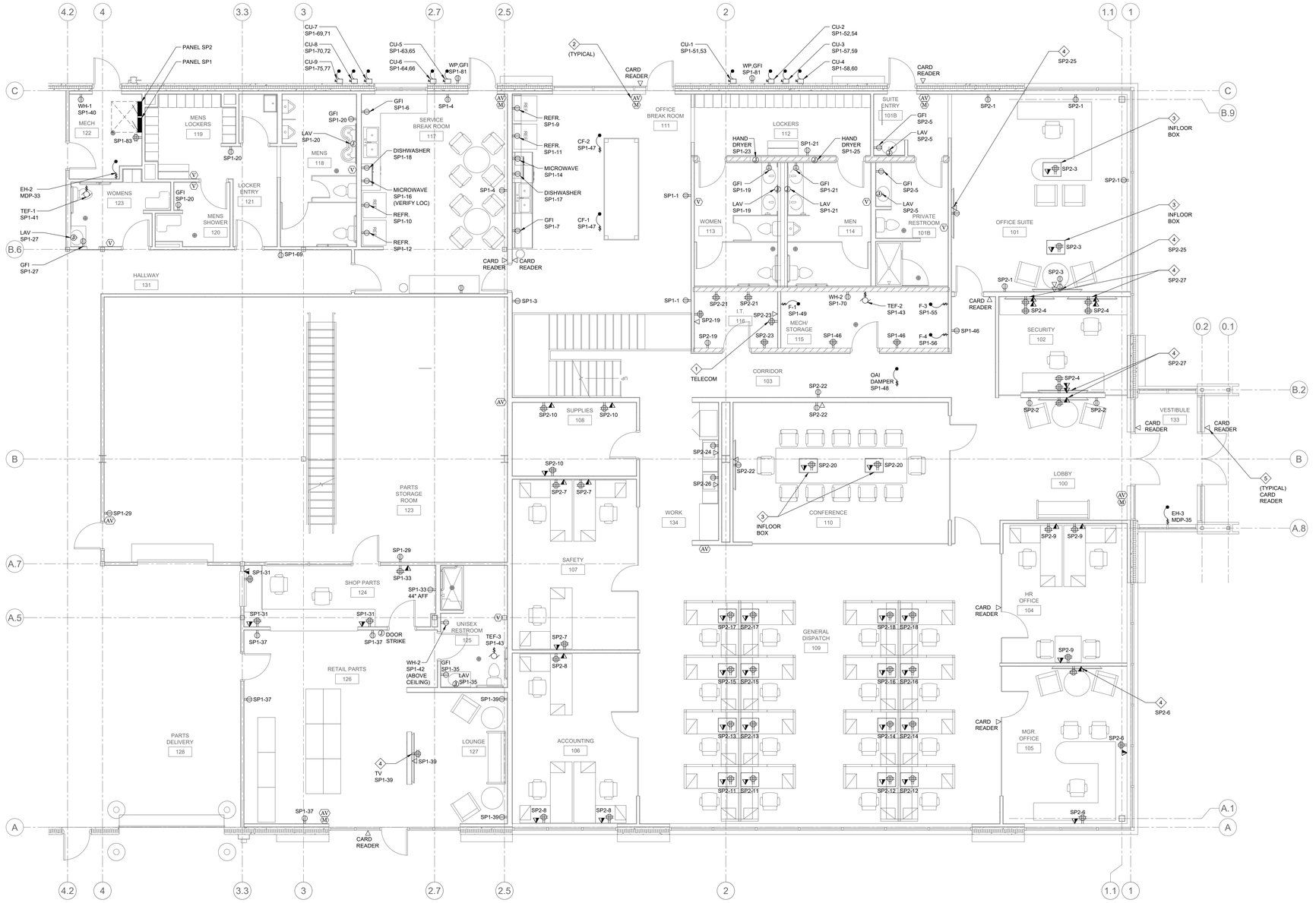
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KEY NOTES

1. TELECOM
PROVIDE JUNCTION BOXES, CONDUITS, AND CONDUCTORS AS REQUIRED TO INSTALL TELECOM INCOMING SERVICE. PROVIDE PHONEBOARD AND GROUNDING TO INSTALL CABLING FOR TELECOM CONNECTIONS AND EQUIPMENT NEEDED FOR INSTALLATION WITH TELECOM PROVIDER.

2. FIRE ALARM
PROVIDE FIRE ALARM SYSTEM. PROVIDE EQUIPMENT MODULE, DEVICES, CONNECTIONS, AND TESTING FOR ALARM SYSTEM. TEST FIRE ALARM SYSTEM AND DEVICES AS REQUIRED FOR LOCAL AUTHORITIES APPROVAL.

3. INFLOOR FLOOR BOX
PROVIDE RECESSED FLOOR BOX (QUAD POWER RECEPTACLE AND DATA/PHONE JACK WITH ACTIVATION COVER PLATES) WITH BRASS COVER PLATES. VERIFY LOCATION AND TYPE WITH ARCHITECTURAL DRAWINGS PRIOR TO INSTALLATION. PROVIDE 1-1/4" TELECOM CONDUIT AND 3/4" POWER CONDUIT ROUTED UNDERSLAB TO ADJACENT WALL AND ROUTED UP TO OVERHEAD STRUCTURE.

4. TV-DISPLAY
PROVIDE WALL RECEPTACLE/DATA FOR TELEVISION EQUIPMENT. VERIFY LOCATIONS WITH OWNER PRIOR TO INSTALLATION.

5. DOOR CARD READER
PROVIDE JUNCTION BOXES, CONDUITS, AND CONDUCTORS AS REQUIRED TO INSTALL CARD READER SYSTEM. VERIFY REQUIREMENTS WITH MANUFACTURER AND OWNER RECOMMENDATIONS.

ELECTRICAL POWER PLAN - OFFICE

SCALE: 3/16" = 1'-0", WHEN PRINTED ON 30"X42" (ARCH E1)

ELECTRICAL RECEPTACLES WITHIN 6'-0" FROM SINKS SHALL HAVE GFI PROTECTION.

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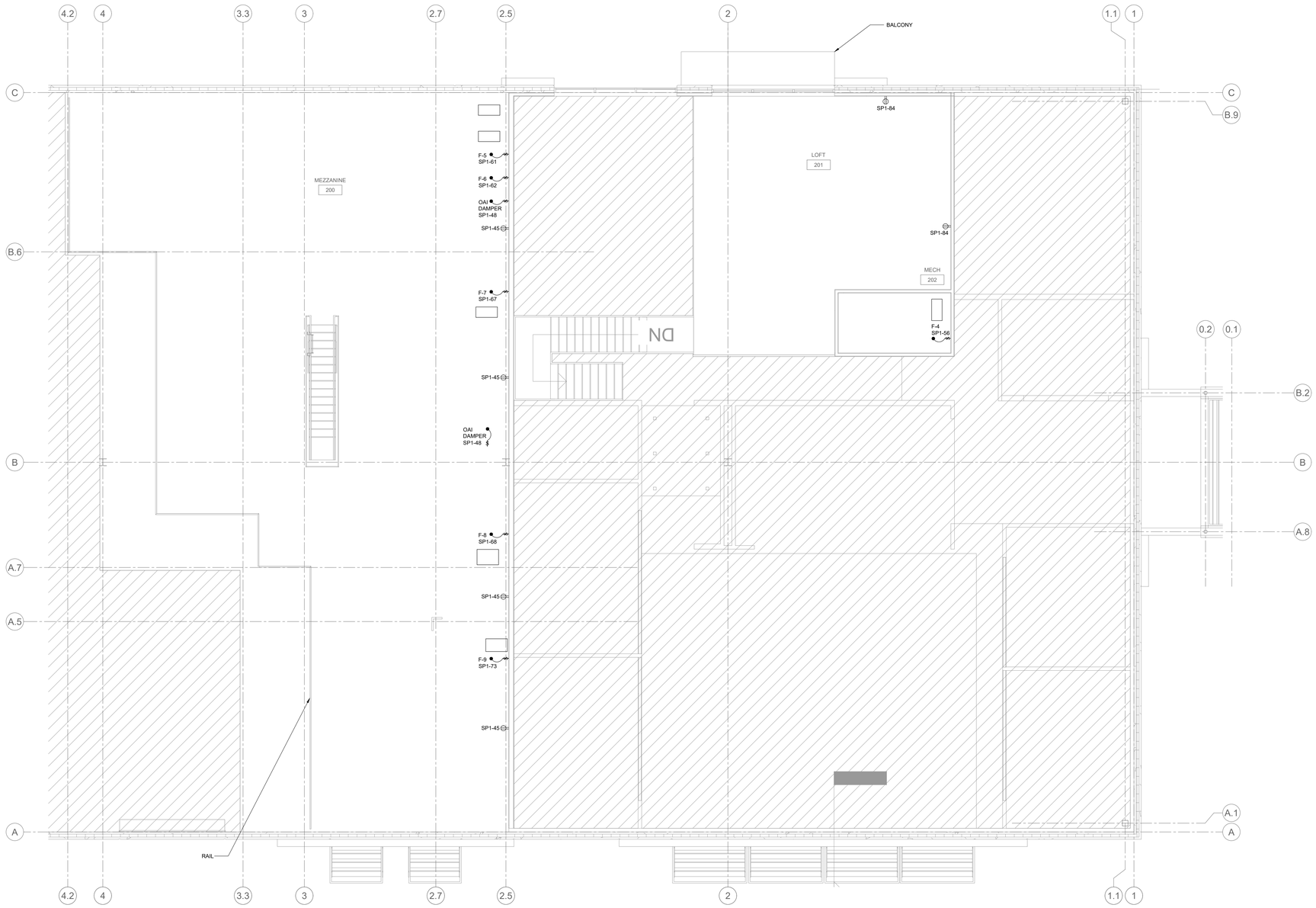
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ELECTRICAL POWER PLAN - LOFT

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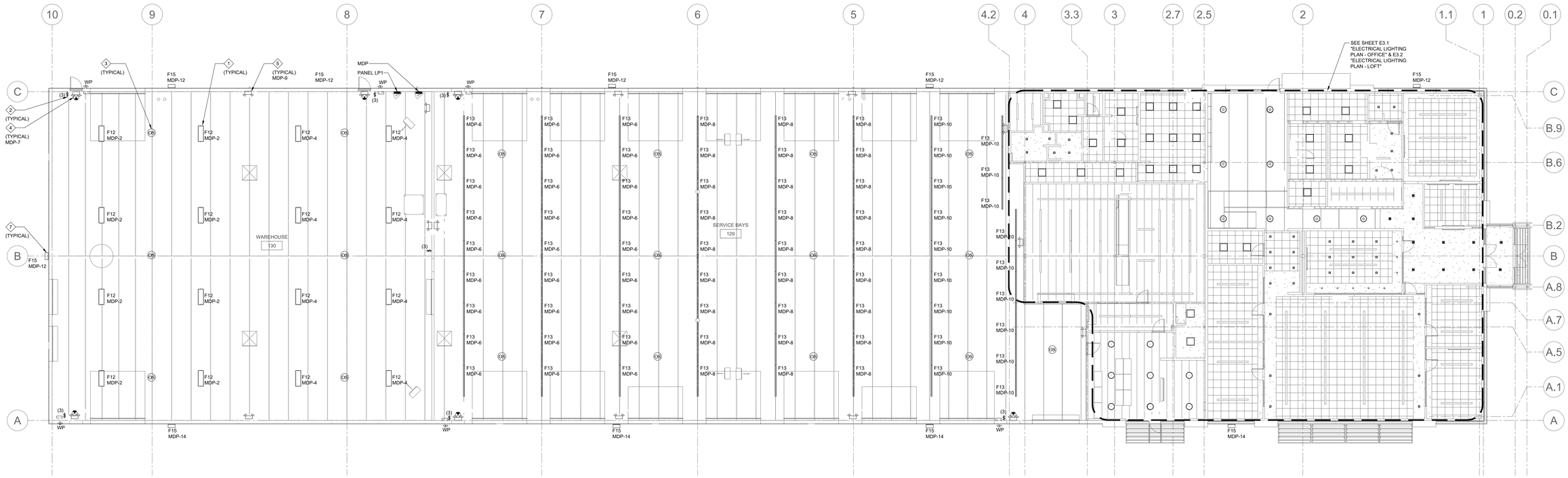
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ELECTRICAL LIGHTING PLAN - OVERALL

SCALE: 3/32" = 1'-0", WHEN PRINTED ON 30"X42" (ARCH E1)

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KEY NOTES

1. LIGHTING
REFERENCE ARCHITECTURAL REFLECTED CEILING PLAN FOR LIGHTING FIXTURE LOCATIONS.

2. SWITCHING
VERIFY SWITCHBANK LOCATION WITH OWNER PRIOR TO INSTALLATION. COORDINATE LOCATION WITH ARCHITECTURAL DRAWINGS.

3. OCCUPANCY SENSOR (CEILING MOUNTED)
PROVIDE CEILING MOUNTED OCCUPANCY SENSOR AND INTERLOCK WITH ROOM LIGHTING FIXTURES AND WALL MOUNTED SWITCH (WALL SWITCH FOR MANUAL MOMENTARY SWITCH OVERRIDE "ON/OFF/AUTO" MODES). VERIFY AREA COVERAGE WITH MANUFACTURER RECOMMENDATIONS AND CEILING/WALL CONSTRUCTION.

4. EXIT SIGNS
PROVIDE EXIT SIGNS AND EMERGENCY BACKUP BATTERY PACK FOR 90 MINUTES (MINIMUM) WITH POWER CONNECTIONS TO DEDICATED EMERGENCY EGRESS CIRCUIT BREAKER. PROVIDE LOCKING DEVICE ON CIRCUIT BREAKER.

5. EMERGENCY LIGHTING
PROVIDE EMERGENCY LIGHTING FIXTURE AND EMERGENCY BACKUP BATTERY PACK FOR 90 MINUTES (MINIMUM) WITH POWER CONNECTIONS TO LIGHTING OF AREA SERVED, AHEAD OF LOCAL SWITCHING.

6. SITE POLE LIGHTING
PROVIDE SITE LIGHTING FIXTURES AND CONCRETE POLE BASE WITH POWER CONNECTIONS. PROVIDE GROUND-DRIVEN COPPER ROD WITH EXOTHERMIC BONDING. VERIFY REQUIREMENTS WITH APPROVED SITE LIGHTING PHOTOMETRIC SPECIFICATIONS.

7. EXTERIOR LIGHTING
PROVIDE JUNCTION BOXES, CONDUITS, AND CONDUCTORS TO INSTALL EXTERIOR LIGHTING. REFERENCE PHOTOMETRIC PLAN AND ARCHITECTURAL SHEETS FOR FIXTURE LOCATIONS AND FURTHER INFORMATION. VERIFY REQUIREMENTS WITH OWNER, MANUFACTURER, AND EQUIPMENT SUBMITTAL PRIOR TO PURCHASE. COORDINATE TIME SETPOINTS WITH OWNER.

LIGHTING FIXTURE SCHEDULE

TAG	MANUFACTURER	MODEL NUMBER	TYPE	LUMENS	COLOR TEMPERATURE	LAMP	V/A'S	NOTES
F1 / F1A	LSI	SFP22-LED-FS-25W-3500K	2X2 LAYIN	3696	3500	LED	30	5, 6
F2	LUMENWERX	AE3RRB-SW-50-80-35-SDL-10W	3" DOWNLIGHT	1233	3500	LED	15	5, 6
F3	LUMENWERX	GEN06-4040-WWHXXX	6" DOWNLIGHT	4000	3500	LED	39	5, 6
F4	LUMENWERX	AE2RRB-SW-15-80-35-SDL-7W	2" DOWNLIGHT	961	3500	LED	10	6
F5	LUMENWERX	VIA2PDI-HLO-FH-WIO2-SW-80-350-350-35-4FT	LINEAR	750 / FT	3500	LED	30	6
F6	LSI	AST-4-4L-SA-UNV-835/CH36	4' STRIP	4596	3500	LED	34	5, 6
F7	LSI	AST-8-8L-SA-UNV-835/CH36	8' STRIP	9196	3500	LED	68	7
F8	LUMENWERX	OPS-05L-5Q-35K8	PENDANT	5190	3500	LED	34	6
F9	LUMENWERX	VIA2PDI-HLO-FH-WIO2-SW-80-500-350-35-4FT	LINEAR	750/ FT	3500	LED	30	6
F10	LUMENTRUSS	V2PERD-HLO-LED-80-350-35-2FT	TAPE	330 / FT	3000	LED	15	6
F11	LUMENWERX	-	4" DOWNLIGHT	1500	3500	LED	20	6
F12	COLUMBIA	LLHV4-50U-WST-ED-U	HIGHBAY	45249	5000	LED	368	5, 6
F13	COLUMBIA	MPS8-50XL-CW-EDU	8' STRIP	16831	5000	LED	133	5, 6
F15	GARDCO	ECF-S-48L-1A-NW-G2-4	WALL PACK	22518	5000	LED	159	6
F16	GARDCO	ECF-L-80L(64L)-1A-NW-G2-4-H1S(5W)	POLE LIGHT	30024	5000	LED	264	7
	DUAL-LITE	LE SERIES	EXIT	-	-	LED	3	1, SELF-POWERED
	DUAL-LITE	CU2HL SERIES	BATT	88	-	LED	5	2, 3
	DUAL-LITE	CC SERIES	EXIT/BATT	88	-	LED	3	1, 2, 3, SELF-POWERED
WP	DUAL-LITE	OCR SERIES (REMOTE DUAL HEADS)	BATT	88	-	LED	6	2, 3, 4

NOTES:

1. PROVIDE FACES, MOUNTING, AND ARROWS AS REQUIRED. PROVIDE AT LEAST 90 MINUTES OF EMERGENCY POWER.
2. PROVIDE MOUNTING AND AT LEAST (2) LAMP HEADS. PROVIDE AT LEAST 90 MINUTES OF EMERGENCY POWER.
3. CONNECT TO LIGHTING CIRCUIT OF ROOM SERVED AHEAD OF LOCAL CONTROL DEVICE UNLESS NOTED OTHERWISE.
4. PROVIDE BATTERY POWER SOURCE WITHIN INTERIOR (CONDITIONED) ACCESSIBLE SPACE AND CONNECTIONS AS REQUIRED.
5. PROVIDE FIXTURE SUPPORT AS REQUIRED BY NEC 410.36.
6. VERIFY MOUNTING WITH ARCHITECTURAL PLANS PRIOR TO INSTALLATION.
7. VERIFY FIXTURE SPECIFICATIONS AND QUANTITIES WITH APPROVED SITE LIGHTING PHOTOMETRIC DRAWINGS. PROVIDE POLES, HEADS, AND BASE SUPPORT STRUCTURE.

LIGHTING CONTROLS SEQUENCE OF OPERATIONS

PROVIDE COMPLETE ELECTRONIC CONTROL OF LIGHTING FIXTURES, AS INDICATED ON SEQUENCE OF OPERATION AND LIGHTING PLANS, INCLUDING CONTROLLERS, POWER MODULES, RELAYS, DEVICES, SENSORS, CONDUCTORS (LINE-VOLTAGE SHALL BE IN CONDUIT), CABLING (CABLING SHALL BE IN CONDUIT WHERE WITHIN CONCEALED WALLS/CEILINGS), CONTROLS OPERATIONS MANUALS, AND TWO-HOUR MINIMUM TRAINING SESSION, FOR EQUIPMENT AS FOLLOWS.

128 PART DELIVERY, 129 SERVICE BAYS, 130 WAREHOUSE
LIGHTING CONTROLLED VIA CEILING MOUNTED OCCUPANCY SENSOR WITH WALL MOUNTED OVERRIDE MANUAL SWITCH.

124 SHOP PARTS, 125 UNISEX RESTROOM, 126 RETAIL PARTS, 127 LOUNGE
LIGHTING CONTROLLED VIA WALL MOUNTED OCCUPANCY SENSOR WITH OVERRIDE MANUAL SWITCH.

123 PARTS ROOM
LIGHTING CONTROLLED VIA CEILING MOUNTED OCCUPANCY SENSOR WITH WALL MOUNTED OVERRIDE MANUAL SWITCH.

120 SHOWER, 121 MECHANICAL, 122 WOMEN'S RESTROOM
LIGHTING CONTROLLED VIA WALL MOUNTED OCCUPANCY SENSOR WITH OVERRIDE MANUAL SWITCH.

119 LOCKERS
LIGHTING CONTROLLED VIA CEILING MOUNTED OCCUPANCY SENSOR WITH WALL MOUNTED OVERRIDE MANUAL SWITCH.

118 MEN'S RESTROOM
LIGHTING CONTROLLED VIA WALL MOUNTED OCCUPANCY SENSOR WITH OVERRIDE MANUAL SWITCH.

117 SERVICE BREAK ROOM
LIGHTING CONTROLLED VIA CEILING MOUNTED OCCUPANCY SENSOR WITH WALL MOUNTED OVERRIDE MANUAL SWITCH.

115 MECHANICAL/JANITOR CLOSET, 116 I.T.
LIGHTING CONTROLLED VIA WALL MOUNTED OCCUPANCY SENSOR WITH OVERRIDE MANUAL SWITCH.

113 WOMEN'S RESTROOM, 114 MEN'S RESTROOM
LIGHTING CONTROLLED VIA WALL MOUNTED OCCUPANCY SENSOR WITH OVERRIDE MANUAL SWITCH.

112 LOCKERS
LIGHTING CONTROLLED VIA CEILING MOUNTED OCCUPANCY SENSOR WITH WALL MOUNTED OVERRIDE MANUAL SWITCH.

111 OFFICE BREAKROOM
LIGHTING CONTROLLED VIA CEILING MOUNTED OCCUPANCY SENSOR WITH WALL MOUNTED OVERRIDE MANUAL SWITCH.

110 CONFERENCE
LIGHTING CONTROLLED VIA CEILING MOUNTED OCCUPANCY SENSOR WITH WALL MOUNTED OVERRIDE MANUAL SWITCH.

109 GENERAL DISPATCH
LIGHTING CONTROLLED VIA CEILING MOUNTED OCCUPANCY SENSOR WITH WALL MOUNTED OVERRIDE MANUAL SWITCH.

108 SUPPLIES
LIGHTING CONTROLLED VIA WALL MOUNTED OCCUPANCY SENSOR WITH OVERRIDE MANUAL SWITCH.

104 HR, 105 MGR. OFFICE, 106 ACCOUNTING, 107 SAFETY
LIGHTING CONTROLLED VIA CEILING MOUNTED OCCUPANCY SENSOR WITH WALL MOUNTED OVERRIDE MANUAL SWITCH.

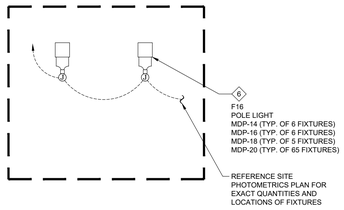
103 CORRIDOR
LIGHTING CONTROLLED VIA CEILING MOUNTED OCCUPANCY SENSOR WITH WALL MOUNTED OVERRIDE MANUAL SWITCH.

102 SECURITY
LIGHTING CONTROLLED VIA WALL MOUNTED OCCUPANCY SENSOR WITH OVERRIDE MANUAL SWITCH.

101 OFFICE SUITE
LIGHTING CONTROLLED VIA CEILING MOUNTED OCCUPANCY SENSOR WITH WALL MOUNTED OVERRIDE MANUAL SWITCH.

101B PRIVATE RESTROOM, 101B SUITE ENTRY
LIGHTING CONTROLLED VIA WALL MOUNTED OCCUPANCY SENSOR WITH OVERRIDE MANUAL SWITCH.

100 LOBBY, 133 VESTIBULE, 134 WORK
LIGHTING CONTROLLED VIA CEILING MOUNTED OCCUPANCY SENSOR WITH WALL MOUNTED OVERRIDE MANUAL SWITCH.



ELECTRICAL SITE LIGHTING

NOT TO SCALE

GENERAL NOTES

1. REFERENCE CIVIL ENGINEERING DRAWINGS FOR SITE PLAN AND UTILITIES.
2. REFERENCE SITE LIGHTING PHOTOMETRICS DRAWINGS FOR SITE LIGHTING PLAN.
3. REFERENCE ARCHITECTURAL DRAWINGS FOR SIGN LOCATIONS.
4. REFERENCE SIGN DRAWINGS FOR SIGN SPECIFICATIONS AND LOCATIONS.

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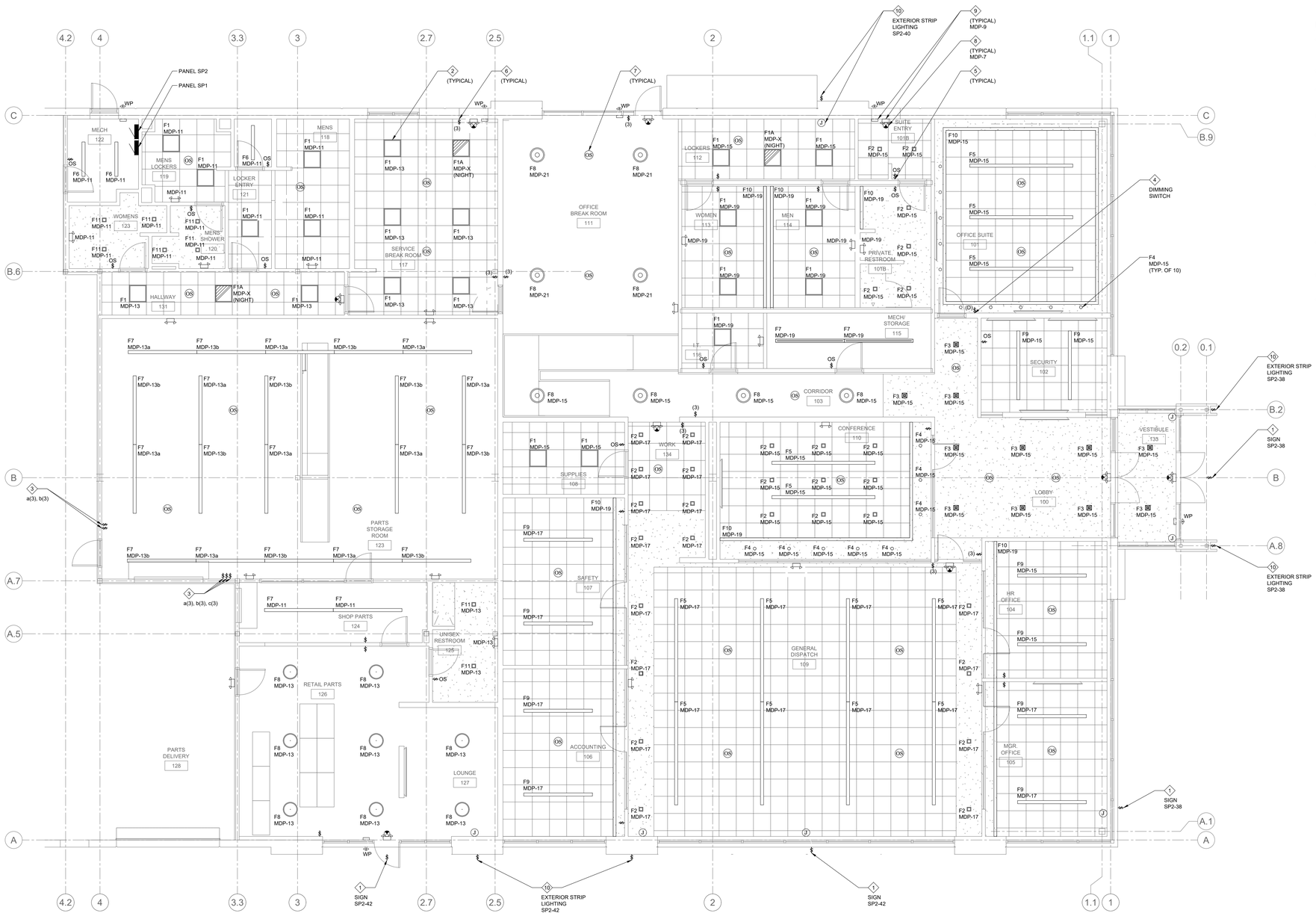
DATE: 2023 MAY, 12
LICENSE EXPIRES: 2023 NOV, 30

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PROJECT NO.
PROJECT MGR.
ELECTRICAL LIGHTING PLAN - OVERALL

E3.0

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KEY NOTES

1. SIGN
PROVIDE DISCONNECT SWITCHES, JUNCTION BOXES, CONDUITS, AND CONDUCTORS TO INSTALL SIGNAGE. PROVIDE ELECTRONIC ASTRONOMIC TIME CLOCK AND NECESSARY CONTACTORS. VERIFY REQUIREMENTS AND LOCATIONS WITH SIGN COMPANY. COORDINATE TIME SETPOINTS WITH OWNER.

2. LIGHTING
REFERENCE ARCHITECTURAL REFLECTED CEILING PLAN FOR LIGHTING FIXTURE LOCATIONS.

3. SWITCHING
VERIFY SWITCHBANK LOCATION WITH OWNER PRIOR TO INSTALLATION. COORDINATE LOCATION WITH ARCHITECTURAL DRAWINGS.

4. DIMMING SWITCH
PROVIDE WALL-MOUNTED DIMMING SWITCH SERVING SWITCHING AS INDICATED.

5. OCCUPANCY SENSOR (WALL MOUNTED)
PROVIDE WALL MOUNTED OCCUPANCY SENSOR AND INTERLOCK WITH ROOM LIGHTING FIXTURES (WALL SWITCH WITH MANUAL MOMENTARY SWITCH OVERRIDE "ON/OFF/AUTO" MODES). VERIFY AREA COVERAGE WITH MANUFACTURER RECOMMENDATIONS AND WALL CONSTRUCTION.

6. OCCUPANCY SENSOR (WALL MOUNTED WITH SWITCH-LEG)
PROVIDE WALL MOUNTED OCCUPANCY SENSOR AND INTERLOCK WITH ROOM LIGHTING FIXTURES SWITCH-LEG AS SHOWN - MULTIPLE WALL SWITCHES, EACH WITH MANUAL MOMENTARY SWITCH OVERRIDE "ON/OFF/AUTO" MODES. VERIFY AREA COVERAGE WITH MANUFACTURER RECOMMENDATIONS AND WALL CONSTRUCTION.

7. OCCUPANCY SENSOR (CEILING MOUNTED)
PROVIDE CEILING MOUNTED OCCUPANCY SENSOR AND INTERLOCK WITH ROOM LIGHTING FIXTURES AND WALL MOUNTED SWITCH (WALL SWITCH FOR MANUAL MOMENTARY SWITCH OVERRIDE "ON/OFF/AUTO" MODES). VERIFY AREA COVERAGE WITH MANUFACTURER RECOMMENDATIONS AND CEILING/WALL CONSTRUCTION.

8. EXIT SIGNS
PROVIDE EXIT SIGNS AND EMERGENCY BACKUP BATTERY PACK FOR 90 MINUTES (MINIMUM) WITH POWER CONNECTIONS TO DEDICATED EMERGENCY EGRESS CIRCUIT BREAKER. PROVIDE LOCKING DEVICE ON CIRCUIT BREAKER.

9. EMERGENCY LIGHTING
PROVIDE EMERGENCY LIGHTING FIXTURE AND EMERGENCY BACKUP BATTERY PACK FOR 90 MINUTES (MINIMUM) WITH POWER CONNECTIONS TO LIGHTING OF AREA SERVED, AHEAD OF LOCAL SWITCHING.

10. EXTERIOR STRIP LIGHTING
PROVIDE SWITCHING, JUNCTION BOXES, CONDUITS, AND CONDUCTORS TO INSTALL EXTERIOR STRIP LIGHTING. REFERENCE ARCHITECTURAL SHEETS FOR FIXTURE LOCATIONS AND FURTHER INFORMATION. VERIFY REQUIREMENTS WITH OWNER, MANUFACTURER, AND EQUIPMENT SUBMITTAL PRIOR TO PURCHASE. COORDINATE TIME SETPOINTS WITH OWNER.

ELECTRICAL LIGHTING PLAN - OFFICE
SCALE: 3/16" = 1'-0", WHEN PRINTED ON 30"X42" (ARCH E1)

N

REFERENCE SHEET E3.0 FOR LIGHTING FIXTURE SCHEDULE.

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LICENSE EXPIRES: 2023 NOV. 30

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PROJECT NO.	
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ELECTRICAL LIGHTING PLAN - OFFICE	
E3.1	

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ELECTRICAL LIGHTING PLAN - LOFT

SCALE: 3/16" = 1'-0", WHEN PRINTED ON 30"X42" (ARCH E1)

N

REFERENCE SHEET E3.0 FOR LIGHTING FIXTURE SCHEDULE.

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ELECTRICAL LIGHTING PLAN - LOFT	
E3.2	

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PANEL SCHEDULE — TAG: MDP

LOAD	NOTES	VA	P	A	CCT	A	P	VA	LOAD	NOTES
TRANSFORMER (225 KVA)		160,840	3		1	2	20	1	2944	130 WAREHOUSE LTG.	-
					3	4	20	1	2944	130 WAREHOUSE LTG.	-
				300	5	6	20	1	3591	129 SERVICE BAY LTG.	-
EXIT SIGNS	2	75	1	20	7	8	20	1	3591	129 SERVICE BAY LTG.	-
NIGHT/EM LTG.	2	210	1	20	9	10	20	1	2793	129 SERVICE BAY LTG.	-
TOILET/MEZZANINE LTG.		1379	1	20	11	12	20	1	1920	EXTERIOR LTG.	7
SERVICE/PARTS LTG.		2378	1	20	13	14	20	1	1920	EXTERIOR LTG.	7
OFFICE LTG.		1050	1	20	15	16	20	1	4096	SITE LTG	7
OFFICE LTG.		1648	1	20	17	18	20	1	4096	SITE LTG	7
OFFICE TOILET LTG.		330	1	20	19	20	20	1	4096	SITE LTG	7
BREAKROOM / LOFT LTG.		1500	1	20	21	22	20	1	3840	SITE LTG	7
SPARE	-	-	1	20	23	24	20	1	-	SPARE	-
SPARE	-	-	1	20	25	26	20	1	-	SPARE	-
SPARE	-	-	1	20	27	28	20	1	-	SPARE	-
SPARE	-	-	1	20	29	30	20	1	-	SPARE	-
EH-1	5,6	3000	1	20	31	32		3	-	SPARE	-
EH-2	5,6	3000	1	20	33	34					
EH-3	5,6	2000	1	20	35	36	20				
AIR COMPRESSOR 1	6	6316	3		37	38		3	6316	AIR COMPRESSOR 2	6
					39	40					
				20	41	42	20				

TOTAL LOAD 224,373 VA — BALANCED LOAD 276 A

VOLTAGE 277/480 V 3 PH 4 W — MAIN 400A MCB

NOTES:

* BALANCED LOAD = 125% OF LIGHTING + 100% OF HVAC + 50% OF REMAINDER.
1. PROVIDE GROUND BUS.
2. PROVIDE LOCKING DEVICE ON CIRCUIT BREAKER.
3. PROVIDE SEPARATE GROUND CONDUCTOR.
4. PROVIDE 200% RATED NEUTRAL CONDUCTOR.
5. PROVIDE HACR CIRCUIT BREAKER.
6. VERIFY REQUIREMENTS WITH APPROVED EQUIPMENT SPECIFICATIONS.
7. PROVIDE ELECTRONIC PROGRAMMABLE ASTRONOMIC TIMECLOCK WITH NECESSARY CONTACTORS. VERIFY SETPOINTS WITH USER.

PANEL SCHEDULE — TAG: SP1

LOAD	NOTES	VA	P	A	CCT	A	P	VA	LOAD	NOTES
111 BREAKROOM RECEPT.	-	540	1	20	1	2	20	1	-	SPARE	-
111 BREAKROOM RECEPT.	-	540	1	20	3	4	20	1	540	117 BREAKROOM RECEPT.	-
111 BREAKROOM GFI	-	180	1	20	5	6	20	1	180	117 BREAKROOM GFI	-
111 BREAKROOM GFI	-	180	1	20	7	8	20	1	180	117 BREAKROOM GFI	-
111 BREAKROOM REFR.	6	800	1	20	9	10	20	1	800	117 BREAKROOM REFR.	6
111 BREAKROOM REFR.	6	800	1	20	11	12	20	1	800	117 BREAKROOM REFR.	6
111 BREAKROOM MICROWAVE	6	900	1	20	13	14	20	1	900	117 BREAKROOM MICROWAVE	6
111 BREAKROOM MICROWAVE	6	900	1	20	15	16	20	1	900	117 BREAKROOM MICROWAVE	6
111 DISHWASHER	6	1000	1	20	17	18	20	1	1000	117 DISHWASHER	6
113 WOMEN GFI	-	300	1	20	19	20	20	1	720	118 MEN GFI/RECEPT	-
114 MEN GFI	-	300	1	20	21	22	20	1	-	SPARE	-
113 HAND DRYERS	6	1000	1	20	23	24	20	1	-	SPARE	-
114 HAND DRYERS	6	1000	1	20	25	26	20	1	-	SPARE	-
123 WOMEN GFI	-	600	1	20	27	28	20	1	-	SPARE	-
123 PARTS ROOM RECEPT.	-	360	1	20	29	30	20	1	-	SPARE	-
124 SHOP PARTS RECEPT.	-	1080	1	20	31	32	20	1	-	SPARE	-
124 SHOP PARTS RECEPT.	-	720	1	20	33	34	20	1	-	SPARE	-
125 UNISEX GFI/EF	-	600	1	20	35	36	20	1	-	SPARE	-
126 RETAILER PARTS RECEPT.	-	1080	1	20	37	38	20	1	-	SPARE	-
127 LOUNGE RECEPT.	-	720	1	20	39	40	20	1	360	WH-1	5,6
TEF-1	5,6	96	1	20	41	42	20	1	360	WH-2	5,6
TEF-2	5,6	96	1	20	43	44	20	1	360	WH-3	5,6
200 MEZZANINE RECEPT.	-	720	1	20	45	46	20	1	720	115 MECH/JC RECEPT.	-
CEILING FANS	5,6	200	1	20	47	48	20	1	100	OAI DAMPERS	5,6
F-1	5,6	1236	1	20	49	50	20	1	1236	F-2	5,6
CU-1	5,6	4118	2		51	52		2	4118	CU-2	5,6
	4#10 - 3/4" C			35	53	54	35				4#10 - 3/4" C
F-3	5,6	1236	1	20	55	56	20	1	1236	F-4	5,6
CU-3	5,6	3016	2		57	58		2	4118	CU-4	5,6
				20	59	60	35				4#10 - 3/4" C
F-5	5,6	1448	1	20	61	62	20	1	1236	F-6	5,6
CU-5	5,6	5782	2		63	64		2	4118	CU-6	5,6
	4#8 - 3/4" C			40	65	66	35				4#10 - 3/4" C
F-7	5,6	1236	1	20	67	68	20	1	1448	F-8	5,6
CU-7	5,6	3016	2		69	70		2	5782	CU-8	5,6
	4#10 - 3/4" C			20	71	72	40				4#8 - 3/4" C
F-9	5,6	1236	1	20	73	74	20	1	720	129 SERVICE BAYS RECEPT.	-
CU-9	5,6	4118	2		75	76	20	1	720	129 SERVICE BAYS RECEPT.	-
	4#10 - 3/4" C			35	77	78	20	1	720	129 SERVICE BAYS RECEPT.	-
WIRELESS ACCESS POINTS	6	200	1	20	79	80	20	1	720	129 SERVICE BAYS RECEPT.	-
EXTERIOR RECEPT.		360	1	20	81	82	20	1	720	130 WAREHOUSE RECEPT.	-
PANEL RECEPT.		360	1	20	83	84	20	1	360	201 LOFT RECEPT.	-

TOTAL LOAD 76,886 VA — BALANCED LOAD 214 A

VOLTAGE 120/208 V 3 PH 4 W — MAIN 250A MCB

NOTES:

* BALANCED LOAD = 125% OF LIGHTING + 100% OF HVAC + 50% OF REMAINDER.
1. PROVIDE GROUND BUS.
2. PROVIDE LOCKING DEVICE ON CIRCUIT BREAKER.
3. PROVIDE SEPARATE GROUND CONDUCTOR.
4. PROVIDE 200% RATED NEUTRAL CONDUCTOR.
5. PROVIDE HACR CIRCUIT BREAKER.
6. VERIFY REQUIREMENTS WITH APPROVED EQUIPMENT SPECIFICATIONS.

PANEL SCHEDULE — TAG: LP1

LOAD	NOTES	VA	P	A	CCT	A	P	VA	LOAD	NOTES
PANEL SP1	1	76,886	3		1	2	20	1	720	130 WAREHOUSE RECEPT.	-
	4#250 - 2-1/2" C				3	4	20	1	720	130 WAREHOUSE RECEPT.	-
				250	5	6	20	1	720	130 WAREHOUSE RECEPT.	-
PANEL SP2	1	17,400	3		7	8	20	1	720	130 WAREHOUSE RECEPT.	-
	4#3 - 1-1/4" C				9	10	20	1	720	130 WAREHOUSE RECEPT.	-
				100	11	12	20	1	720	130 WAREHOUSE RECEPT.	-
O/H DOOR	6	2080	2		13	14	20	1	720	129 SERVICE BAYS RECEPT.	-
				20	15	16	20	1	720	129 SERVICE BAYS RECEPT.	-
O/H DOOR	6	2080	2		17	18	20	1	720	129 SERVICE BAYS RECEPT.	-
				20	19	20	20	1	720	129 SERVICE BAYS RECEPT.	-
O/H DOOR	6	2080	2		21	22	20	1	720	129 SERVICE BAYS RECEPT.	-
				20	23	24	20	1	720	129 SERVICE BAYS RECEPT.	-
O/H DOOR	6	2080	2		25	26	20	1	720	129 SERVICE BAYS RECEPT.	-
				20	27	28		2	2080	O/H DOOR	6
O/H DOOR	6	2080	2		29	30	20				
				20	31	32		2	2080	O/H DOOR	6
O/H DOOR	6	2080	2		33	34	20				
				20	35	36		2	2080	O/H DOOR	6
O/H DOOR	6	2080	2		37	38	20				
				20	39	40		2	2080	O/H DOOR	6
O/H DOOR	6	2080	2		41	42	20				
				20	43	44	20	1	720	BOILER	5,6
O/H DOOR	6	2080	2		45	46	20	1	600	BOILER PUMP	5,6
				20	47	48	20	1	-	SPARE	
O/H DOOR	6	2080	2		49	50		2	1080	UH-1	5,6
				20	51	52	20				
O/H DOOR	6	2080	2		53	54		2	1080	UH-2	5,6
				20	55	56	20				
O/H DOOR	6	2080	2		57	58		2	1080	UH-3	5,6
				20	59	60	20				
O/H DOOR	6	2080	2		61	62		2	1080	UH-4	5,6
				20	63	64	20				
O/H DOOR	6	2080	2		65	66		2	1893	UH-5	5,6
				20	67	68	20				
O/H DOOR	6	2080	2		69	70		2	1893	UH-6	5,6
				20	71	72	20				
EF-1	5,6	114	1	20	73	74		2	1893	UH-7	5,6
EF-2	3#10 - 3/4"C 5,6	1920	1	30	75	76	20				
EF-3	5,6	528	1	20	77	78		2	1893	UH-8	5,6
SPARE	-	-	1	20	79	80	20				
DOCK LEVELER	6	800	1	20	81	82	20	1	-	SPARE	
DOCK LEVELER	6	800	1	20	83	84	20	1	300	IV DAMPERS	5,6

TOTAL LOAD 160,840 VA — BALANCED LOAD 447 A

VOLTAGE 120/208 V 3 PH 4 W — MAIN 600A MCB

NOTES:

* BALANCED LOAD = 125% OF LIGHTING + 100% OF HVAC + 50% OF REMAINDER.
1. PROVIDE GROUND BUS.
2. PROVIDE LOCKING DEVICE ON CIRCUIT BREAKER.
3. PROVIDE SEPARATE GROUND CONDUCTOR.
4. PROVIDE 200% RATED NEUTRAL CONDUCTOR.
5. PROVIDE HACR CIRCUIT BREAKER.
6. VERIFY REQUIREMENTS WITH APPROVED EQUIPMENT SPECIFICATIONS.

PANEL SCHEDULE — TAG: SP2

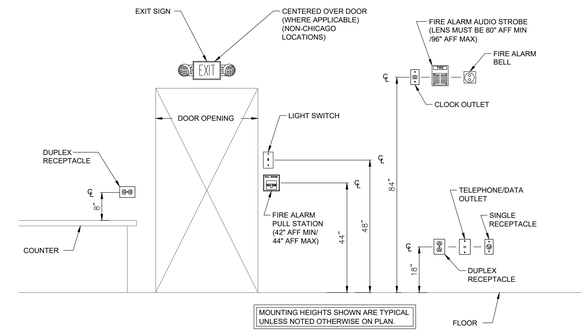
LOAD	NOTES	VA	P	A	CCT	A	P	VA	LOAD	NOTES
101 OFFICE RECEPT.	-	900	1	20	1	2	20	1	360	100 LOBBY RECEPT.	-
101 OFFICE RECEPT.	-	720	1	20	3	4	20	1	720	102 SECURITY RECEPT.	-
101B RESTROOM GFI	-	600	1	20	5	6	20	1	720	105 MGR. OFFICE RECEPT.	-
107 SAFETY RECEPT.	-	720	1	20	7	8	20	1	720	106 ACCOUNTING RECEPT.	-
104 HR RECEPT.	-	720	1	20	9	10	20	1	720	108 SUPPLIES RECEPT.	-
109 DISPATCH RECEPT.	-	720	1	20	11	12	20	1	720	109 DISPATCH RECEPT.	-
109 DISPATCH RECEPT.	-	720	1	20	13	14	20	1	720	109 DISPATCH RECEPT.	-
109 DISPATCH RECEPT.	-	720	1	20	15	16	20	1	720	109 DISPATCH RECEPT.	-
109 DISPATCH RECEPT.	-	720	1	20	17	18	20	1	720	109 DISPATCH RECEPT.	-
116 I.T. RECEPT.	-	360	1	20	19	20	20	1	720	110 CONFERENCE RECEPT.	-
116 I.T. RECEPT.	-	360	1	20	21	22	20	1	720	110 CONFERENCE RECEPT.	-
116 I.T. RECEPT.	-	360	1	20	23	24	20	1	400	COPIER	6
101 OFFICE T.V. RECEPTS.	6	360	1	20	25	26	20	1	400	COPIER	6
102 SECURITY T.V. RECEPTS.	6	360	1	20	27	28	20	1	-	SPARE	-
SPARE	-	-	1	20	29	30	20	1	-	SPARE	-
SPARE	-	-	1	20	31	32	20	1	-	SPARE	-
SPARE	-	-	1	20	33	34	20	1	-	SPARE	-
SPARE	-	-	1	20	35	36	20	1	-	SPARE	-
SPARE	-	-	1	20	37	38	20	1	200	EXTERIOR SIGN	6,7
SPARE	-	-	1	20	39	40	20	1	200	EXTERIOR SIGN	6,7
SPARE	-	-	1	20	41	42	20	1	300	EXTERIOR SIGN	6,7

TOTAL LOAD 17,400 VA — BALANCED LOAD 49 A

VOLTAGE 120/208 V 3 PH 4 W — MAIN 100A MCB

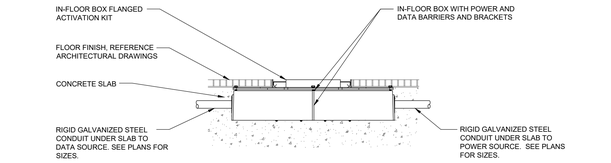
NOTES:

* BALANCED LOAD = 125% OF LIGHTING + 100% OF HVAC + 50% OF REMAINDER.
1. PROVIDE GROUND BUS
2. PROVIDE LOCKING DEVICE ON CIRCUIT BREAKER.
3. PROVIDE SEPARATE GROUND CONDUCTOR.
4. PROVIDE 200% RATED NEUTRAL CONDUCTOR.
5. PROVIDE HACR CIRCUIT BREAKER.
6. VERIFY REQUIREMENTS WITH APPROVED EQUIPMENT SPECIFICATIONS.
7. PROVIDE ELECTRONIC PROGRAMMABLE ASTRONOMIC TIMECLOCK WITH NECESSARY CONTACTORS. VERIFY SETPOINTS WITH USER.



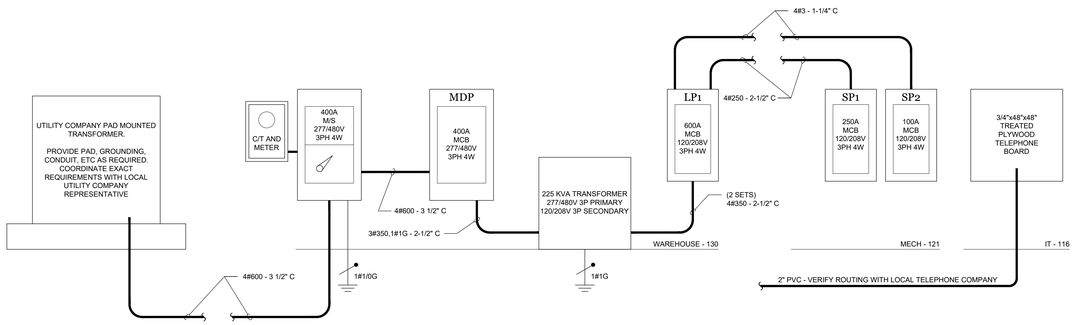
TYPICAL MOUNTING HEIGHT DETAIL

NOT TO SCALE



IN-FLOOR POWER/DATA BOX DETAIL

NOT TO SCALE

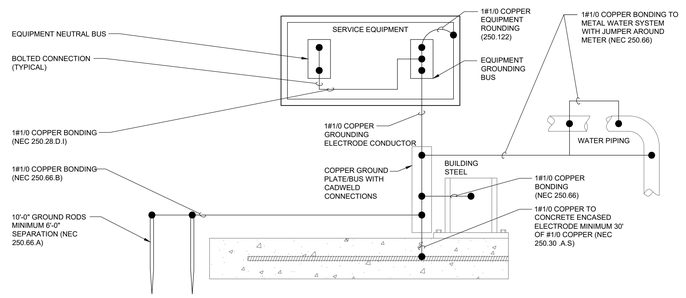


NOTES:

1. WORK SHALL COMPLY WITH ELECTRIC CODE AND LOCAL CODES. COORDINATE EXACT CODE REQUIREMENTS AND LOCAL AMENDMENTS WITH LOCAL INSPECTORS PRIOR TO ANY INSTALLATION.
2. CONTRACTOR SHALL CONTACT UTILITY COMPANY AND INCORPORATE REQUIREMENTS INTO WORK.
3. GROUND IN ACCORDANCE WITH ELECTRIC CODE AND LOCAL CODES. REFER TO GROUNDING DETAIL FOR ADDITIONAL INFORMATION.

ELECTRICAL RISER

NOT TO SCALE



GENERAL NOTES:

1. PROVIDE GROUNDING IN ACCORDANCE WITH ELECTRIC CODE AND LOCAL AUTHORITIES HAVING JURISDICTION.
2. PRIOR TO INSTALLATION, VERIFY REQUIREMENTS WITH LOCAL AUTHORITY INSPECTOR AND RECEIVE APPROVAL PRIOR TO INSTALLATION.

SERVICE GROUNDING DETAIL

NOT TO SCALE

LICENSED PROFESSIONAL ENGINEER
JOHN P.SEATON
062-056346
STATE OF ILLINOIS

DATE: 2023 MAY. 12
LICENSE EXPIRES: 2023 NOV. 30

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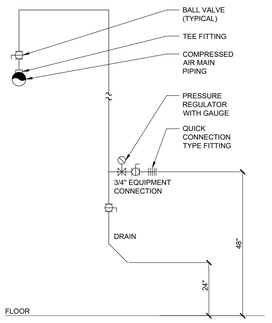
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Carroll Associates

PROJECT NO.
PROJECT MGR.
ELECTRICAL PANELS AND RISER

E4.0

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COMPRESSED AIR PIPING DROP DETAIL

NOT TO SCALE

PLUMBING FIXTURE CONNECTION SCHEDULE

TAG	FIXTURE DESCRIPTION	CW	HW	WASTE	VENT	NOTES
FD	FLOOR DRAIN	-	-	4"	2"	-
HB	HOSE BIBB	3/4"	-	-	-	PROVIDE INLINE DUAL CHECK VALVE
LAV	LAVATORY	1/2"	1/2"	1 1/2"	1 1/2"	PROVIDE THERMOSTATIC MIXING VALVE
SK	SINK	1/2"	1/2"	1 1/2"	1 1/2"	-
SH	SHOWER	3/4"	3/4"	4"	2"	PROVIDE FLOOR DRAIN. PROVIDE T AND P BALANCING VALVE
TD	TRENCH DRAIN	-	-	4"	2"	-
UR	URINAL	3/4"	-	2"	1 1/2"	ADA LIP AT 17" ABOVE FINISHED FLOOR
US	UTILITY SINK	1/2"	1/2"	1 1/2"	1 1/2"	PROVIDE VACUUM BREAKER
WC	WATER CLOSET (TANK)	1/2"	-	4"	2"	ADA SEAT AT 18" ABOVE FINISHED FLOOR

NOTES:

1. PROVIDE OTHER EQUIPMENT (TRIM PACKAGE, ACCESSORIES, VALVES, WATER HAMMER ARRESTORS, CAULKING) IF NOT COVERED ABOVE, AS REQUIRED TO MAKE PLUMBING SYSTEMS COMPLETE.
2. PROVIDE LAVATORIES SUPPLY WATER WITH THERMOSTATIC MIXING VALVE SET AT 110 F MAXIMUM.

GENERAL NOTES

1. WORK SHALL BE PERFORMED AND INSTALLED IN COMPLIANCE WITH ILLINOIS STATE PLUMBING CODE, HEALTH REGULATIONS, AND LOCAL ORDINANCES.
2. WORK INCLUDES PERMIT FEES, UTILITY TAP FEES, AND INSPECTION FEES AS REQUIRED.
3. COORDINATE LOCATION OF FLOOR DRAINS, FLOOR SINKS, OPEN SITE DRAINS, HUB DRAINS, AND CONNECTION POINTS WITH GENERAL CONTRACTOR. FIELD VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING BID AND PRIOR TO INSTALLATION.
4. PLUMBING PIPING SHALL BE CONCEALED - ROUTED UNDER FLOOR, ABOVE CEILING, OR RECESSED WITHIN WALLS AND PLUMBING CHASES. EXPOSED PIPING ONLY PERMITTED WHERE NECESSARY TO CONNECT WITH EQUIPMENT OR FIXTURES.
5. REFERENCE ARCHITECTURAL DRAWINGS FOR EQUIPMENT AND FIXTURE LOCATIONS.
6. PROVIDE FINAL CONNECTIONS TO EQUIPMENT WITH SHUTOFF VALVES, PRESSURE REGULATORS, VACUUM BREAKERS, BACKFLOW PREVENTORS, UNIONS (INSTALL UNION BETWEEN APPLIANCE AND SHUTOFF), FLEXIBLE CONNECTORS, FILTERS, DIRT LEGS, TRAPS, WATER STOP VALVES, AS SPECIFIED, REQUIRED BY CODE, AND AS NECESSARY FOR COMPLETELY OPERATIONAL EQUIPMENT.
7. PROVIDE WASTE PIPING OR EXTEND INDIRECT WASTE PIPING TO ABOVE DRAINS WITH AIR GAP 2X PIPE DIAMETER.

ENERGY NOTES - PLUMBING

1. WATER HEATING EQUIPMENT MUST MEET MINIMUM PERFORMANCE REQUIRED IN TABLE C404.2 (C404.2).
2. HOT WATER PIPING SHALL BE INSULATED FROM HOT WATER HEATER TO THE HEATED WATER FIXTURE. INSULATION SHALL BE 1" THICK FIBERGLAS SECTIONAL PIPE INSULATION WITH FLAME RETARDANT JACKET (C404.4).
3. HEATED WATER SUPPLY PIPING SHALL BE IN ACCORDANCE WITH SECTION 404.5.1 (LENGTH) OR C404.5.2 (VOLUME). THE FLOW RATE THROUGH 1/4-INCH PIPING SHALL BE NOT GREATER THAN 0.5 GPM. THE FLOW RATE THROUGH 5/16-INCH PIPING SHALL BE NOT GREATER THAN 1 GPM. THE FLOW RATE THROUGH 3/8-INCH PIPING SHALL BE NOT GREATER THAN 1.5 GPM. (C404.5)
4. HOT WATER CIRCULATION SYSTEMS SHALL BE PROVIDED WITH CIRCULATION PUMP AND CONTROLS SHALL START CIRCULATION PUMP BASED ON DEMAND FOR HOT WATER WITHIN SPACE. CONTROLS SHALL AUTOMATICALLY TURN OFF PUMP WHEN AT DESIRED TEMPERATURE OR WHEN THERE IS NO DEMAND FOR HOT WATER AND SHALL BE LOCATED WITH READY ACCESS (C404.6).
5. STORAGE TANK-TYPE WATER HEATERS AND HOT WATER STORAGE TANKS THAT HAVE VERTICAL WATER PIPES CONNECTING TO INLET AND OUTLET OF THE TANK SHALL BE PROVIDED WITH INTEGRAL HEAT TRAPS AT THOSE INLETS AND OUTLETS OR SHALL HAVE PIPE-CONFIGURED HEAT TRAPS IN THE PIPING CONNECTED TO THOSE INLETS AND OUTLETS. (C404.3)

PLUMBING FIXTURE UNITS

FIXTURE	QTY	WASTE		WATER	
		DFU	TOTAL	WSFU	TOTAL
BREAKROOM SINK	2	2	4	2	4
UTILITY SINK	1	3	3	3	3
WATER CLOSET (TANK)	8	4	32	3	24
URINAL	4	3	12	5	20
LAVATORY	9	2	18	2	18
FLOOR DRAIN	8	6	48	0	0
AREA DRAIN	6	6	36	0	0
SHOWER	4	3	12	3	12
REFRIGERATOR	4	0	0	0.5	2
HOSE BIBB	4	0	0	3	12
TOTAL			165		95

TOTAL WATER SUPPLY: 95 WSFU = 42.25 GPM.

STATE OF ILLINOIS PLUMBING CODE 890 APPENDIX A TABLE N, PROVIDE 1-1/2" WATER SERVICE PIPING AND 1-1/2" METER.

PLUMBING FIXTURE SCHEDULE

EQUIPMENT AND FIXTURES SHALL HAVE MATCHING COLOR SEALANT AT EDGING AND SEAMS OF WALLS, FLOORS, CEILINGS, AND COUNTERS. EQUIPMENT AND FIXTURES SHALL HAVE CHROME PLATED STOP VALVES, CHROME PLATED SUPPLIES, AND CHROME PLATED ESCUTCHEON PLATES. EXPOSED SANITARY PIPING SHALL BE CHROME PLATED.

CO (CLEANOUTS)
ZURN ZN-1440 (WALL),
ZN-1400TX (VINYL),
ZB-1400-TCM (CARPET),
ZB-1400T (CERAMIC),
ZB-1400T (CEMENT).

DRAINS
Z-415B (ROUND STRAINER)
Z-541 (12" ROUND TRAFFIC DUTY),

HB (HOSE BIBB)
WOODFORD 65 (SEMI-RECESSED) FREEZE-PROOF, ANTI-SIPHON, AND AUTOMATIC DRAINING.

LAV-1 (LAVATORY, WALL MOUNTED) (ADA)
ZURN S340 20"X18" VITREOUS CHINA LAVATORY WITH 4" FAUCET HOLES.
ZURN Z6915-TMV AQUASENSE BATTERY POWERED FAUCET WITH THERMOSTATIC MIXING VALVE.
SET TEMPERATURE LIMIT STOP FOR 110 DEG F MAXIMUM.
STRAINER WASTE.
FLOOR MOUNTED CONCEALED ARM CARRIER WITH RECTANGULAR UPRIGHTS.
ZURN Z8946-3-NT INSULATOR KIT FOR WASTE AND WATER.

LAV-2 (LAVATORY, WALL MOUNTED) (ADA)
BRADLEY SS-2N EXPRESS LAVATORY SYSTEM.
SET TEMPERATURE LIMIT STOP FOR 110 DEG F MAXIMUM.
STANDARD SUPPORT FRAME MOUNTED TO WALL.

SK-1 (BREAKROOM SINK) (ADA)
AMERICAN STANDARD COLONY 3322 ADA DOUBLE-BOWL STAINLESS STEEL SINK
AMERICAN STANDARD STAINLESS STEEL STRAINERS.
AMERICAN STANDARD COLONY 4175.500 1-HANDLE FAUCET WITH CHROME FINISH.

SH-1 (SHOWER) (ADA)
SHOWER ENCLOSURE (SEE ARCHITECTURAL DRAWINGS).
ZURN Z7300-SS-HW-MT SINGLE HANDLE BALANCING MIXING VALVE, CHECK STOPS, AND TEMPERATURE LIMIT STOPS CHROME FAUCET WITH SHOWER HEAD, FLEXIBLE 60" HOSE, AND 24" SLIDE BAR, ELBOW, AND FLANGE.
SET TEMPERATURE LIMIT STOPS FOR 110 DEG F MAXIMUM.

SH-2 (SHOWER) (ADA)
SHOWER ENCLOSURE (SEE ARCHITECTURAL DRAWINGS).
ZURN Z7300-SS-HW-MT SINGLE HANDLE BALANCING MIXING VALVE, CHECK STOPS, AND TEMPERATURE LIMIT STOPS CHROME FAUCET WITH SHOWER HEAD, FLEXIBLE 60" HOSE, AND 24" SLIDE BAR, ELBOW, AND FLANGE.
SET TEMPERATURE LIMIT STOPS FOR 110 DEG F MAXIMUM.

UR (URINAL) (ADA)
ZURN Z5755-U WALL MOUNTED URINAL
ZURN ZTR6203-EWS-LL FLUSH VALVE (0.5 GALLON) WITH LONG-LIFE BATTERY.
FLOOR MOUNTED CARRIER WITH RECTANGULAR UPRIGHTS.
ADA MOUNT LIP AT 17" ABOVE FINISHED FLOOR.

US (UTILITY SINK)
ZURN MS2620-DF1 UTILITY SINK WITH STEEL LEGS AND DUAL HANDLE SWIVEL FAUCET.

WC-1 (WATER CLOSET, TANK/BOWL) PRESSURE ASSIST
ZURN Z5571 ELONGATED BOWL AND INSULATED TANK (1.1 GALLON).
ZURN 5955SS-AM MATCHING SOLID ANTIMICROBIAL PLASTIC OPEN FRONT SEAT, COVER, AND STAINLESS STEEL CHECK HINGE.

WC-2 (WATER CLOSET, TANK/BOWL) PRESSURE ASSIST (ADA)
ZURN Z5571 ELONGATED BOWL AND INSULATED TANK (1.1 GALLON).
ZURN 5955SS-AM MATCHING SOLID ANTIMICROBIAL PLASTIC OPEN FRONT SEAT, COVER, AND STAINLESS STEEL CHECK HINGE.
MOUNT SEAT AT 18" ABOVE FINISHED FLOOR.

WH-1 (WATER HEATER)
AO SMITH CYCLONE BTH-199 100 GALLON TANK HEATER 96% EFFICIENCY WITH 199 MBH INPUT PROVIDING 230 GALLON RECOVERY PER HOUR FOR 100 DEG F TEMPERATURE RISE.
AMTROL EXPANSION TANK WITH DIAPHRAGM BLADDER AND CHARGE VALVE TO MATCH WORKING PRESSURE.
ASME PRESSURE AND TEMPERATURE RELIEF VALVE AND DRAIN PAN WITH 18 GAUGE GALVANIZED STEEL, 2" DEEP

WH-2 (WATER HEATER)
AO SMITH CYCLONE BTH-199 100 GALLON TANK HEATER 96% EFFICIENCY WITH 199 MBH INPUT PROVIDING 230 GALLON RECOVERY PER HOUR FOR 100 DEG F TEMPERATURE RISE.
AMTROL EXPANSION TANK WITH DIAPHRAGM BLADDER AND CHARGE VALVE TO MATCH WORKING PRESSURE.
ASME PRESSURE AND TEMPERATURE RELIEF VALVE AND DRAIN PAN WITH 18 GAUGE GALVANIZED STEEL, 2" DEEP

WH-3 (WATER HEATER)
AO SMITH CYCLONE BTX-100 50 GALLON TANK HEATER 96% EFFICIENCY WITH 100 MBH INPUT PROVIDING 116 GALLON RECOVERY PER HOUR FOR 100 DEG F TEMPERATURE RISE.
AMTROL EXPANSION TANK WITH DIAPHRAGM BLADDER AND CHARGE VALVE TO MATCH WORKING PRESSURE.
ASME PRESSURE AND TEMPERATURE RELIEF VALVE AND DRAIN PAN WITH 18 GAUGE GALVANIZED STEEL, 2" DEEP
HOLD-RITE QUICKSTAND WALL BRACKET PLATFORM WITH MOUNTING SUPPORTS AND HARDWARE.

PLUMBING SPECIFICATIONS

1.0 DESCRIPTION OF WORK

1.01 GENERAL CONDITIONS AND GENERAL NOTES INDICATED WITH ARCHITECTURAL DRAWINGS AND SPECIFICATIONS SHALL GOVERN WHERE APPLICABLE.

1.02 WORK INDICATED ON DRAWINGS SHALL BE CONSIDERED NEW AND IN-CONTRACT UNLESS NOTED OTHERWISE.

1.03 COMPLETELY OPERATIONAL PLUMBING SYSTEM READY FOR USE AS ITEMIZED BUT NOT LIMITED TO AS FOLLOWS:

1.03A DEMOLITION, REMOVAL, AND ALTERATIONS OF EXISTING SYSTEMS AND EQUIPMENT AS REQUIRED THOUGH NOT SPECIFICALLY INDICATED ACCOMMODATING PROPOSED WORK.
1.03B WASTE AND VENT SANITARY PIPING SYSTEM AND CONNECTIONS TO FIXTURES/DEVICES.
1.03C HOT AND COLD WATER PIPING SYSTEM AND CONNECTIONS TO FIXTURES/DEVICES.
1.03D PLUMBING EQUIPMENT, FIXTURES, AND DEVICES.
1.03E THERMAL INSULATION.
1.03F INCOMING WATER SERVICES FOR DOMESTIC WITH REQUIRED METER, READER, AND BACKFLOW PROTECTION.
1.03G ROOF DRAINS AND STORM PIPING SYSTEM.
1.03H SETTLING BASIN.

2.0 RELATED WORK BY OTHER TRADES

2.01 ELECTRIC POWER WIRING.
2.02 GAS PIPING.

3.0 PLUMBING INSTALLATION NOTES

3.01 WORK SHALL BE PERFORMED IN ACCORDANCE WITH CODES AND AUTHORITIES HAVING JURISDICTION, INCLUDING ADA GUIDELINES AND ENERGY COMPLIANCE.

3.02 WORK AND INSTALLATIONS SHALL BE PERFORMED IN FIRST-CLASS NEAT WORKMANLIKE MANNER. REMOVE DEBRIS ON REGULAR BASIS AND CLEAN EQUIPMENT DURING PROJECT COMPLETION.

3.03 APPLY, PROCURE, AND PAY FOR REQUIRED PERMITS AND INSPECTIONS.

3.04 FIELD VERIFY PROJECT CONSTRUCTION CONDITIONS AND PROJECT SITE CONDITIONS PRIOR TO SUBMITTING BID.

3.05 THIS TRADE SHALL DO ITS OWN CUTTING AND PATCHING, TRENCHING AND BACKFILLING. PENETRATIONS THROUGH FIRE-RATED ASSEMBLIES SHALL BE FILLED WITH FIRESTOP PRODUCT. SUBMIT FIRESTOP PRODUCT MATERIAL SPECIFICATIONS TO LOCAL AUTHORITIES HAVING JURISDICTION.

3.06 COORDINATE WITH OTHER TRADES FOR INSTALLATION OF WORK FOR REQUIRED CLEARANCES, CHASES, RECESSES AND OPENINGS.

3.07 PROPOSAL SHALL INCLUDE SPECIFIED MATERIALS ONLY. SHOULD CONTRACTOR WISH TO SUBSTITUTE ALTERNATE MATERIALS, EQUIPMENT, OR MANUFACTURERS, IT SHALL BE DONE BY STATING EACH SUBSTITUTION AND ITS PRICE ADJUSTMENT.

3.08 DRAWINGS SHALL BE FOR BIDDING ONLY. ROUGH-IN AND FINAL CONNECTION SHALL BE MADE FROM APPROVED EQUIPMENT DRAWINGS ONLY.

3.09 GUARANTEE WORK AND EQUIPMENT TO BE FREE FROM DEFECTIVE WORKMANSHIP AND MATERIALS FOR PERIOD OF ONE (1) YEAR FROM DATE OF FINAL CERTIFICATE OR OCCUPANCY. ANY REPAIRS OR REPLACEMENT DURING THIS PERIOD SHALL BE MADE WITHOUT COST TO OWNER.

3.10 PROVIDE ESCUTCHEON PLATES AT WALLS OF FINISHED AREAS.

3.11 FIXTURE AND EQUIPMENT CONNECTIONS SHALL BE MADE WITH CHROME PLATED SUPPLIES WITH STOPS. EXPOSED WASTE PIPING SHALL BE CHROME PLATED.

3.12 WHERE COPPER PIPE CONNECTS TO FERROUS PIPE USE ISOLATING UNIONS.

3.13 VENTS THRU ROOF AND ROOF DRAINS SHALL BE INSTALLED WITH 24" X 24" X 4LB LEAD FLASHING.

3.14 VENTS SHALL BE OFFSET WHERE REQUIRED SO THAT NO VENT THROUGH ROOF IS CLOSER THAN 15'-0" FROM ANY OUTSIDE AIR INTAKE. REFER TO APPROVED MECHANICAL DRAWINGS FOR EXACT OUTSIDE AIR INTAKE LOCATIONS.

3.15 WATER PIPING ABOVE GROUND SHALL BE TYPE L COPPER WITH LEAD-FREE JOINTS. WATER PIPING BELOW GROUND SHALL BE TYPE K COPPER TUBING WITHOUT JOINTS (NO JOINTS) OR CEMENT LINED DUCTILE IRON WITH PUSH JOINTS.

3.16 SUSPENDED WASTE AND VENT SANITARY PIPING SHALL BE SCHEDULE 40 PVC WITH SOLVENT WELDED FITTINGS.

3.17 BURIED WASTE AND VENT SANITARY PIPING SHALL BE SCHEDULE 40 PVC WITH SOLVENT WELDED FITTINGS.

3.18 EXTERIOR STORM AND SANITARY SEWER PIPING SHALL BE CODE APPROVED AND INSTALLED IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION.

3.19 PVC PIPING SHALL NOT BE INSTALLED IN AREAS USED AS AIR PLENUMS. COORDINATE EXACT PLENUM LOCATIONS WITH MECHANICAL CONTRACTORS.

3.20 INSULATE HOT WATER AND COLD WATER EXCEPT INDIVIDUAL FIXTURE SUPPLIES. INSULATION SHALL BE 1" THICK FIBERGLASS SECTIONAL PIPE INSULATION WITH FLAME RETARDANT JACKET. INSULATE EXPOSED WASTE, COLD, AND HOT WATER PIPING BELOW WHEELCHAIR LAVATORIES WITH ZURN INSULATION KITS. INSULATION SHALL HAVE FLAME SPREAD RATING NOT TO EXCEED 25 AND SMOKE DEVELOPED RATING NOT TO EXCEED 50, PER ASTM E84.

3.21 INSULATE STORM WATER DOWNSPOUT PIPING WITH 1" THICK FIBERGLASS SECTIONAL PIPE INSULATION WITH FLAME RETARDANT JACKET. INSULATION SHALL HAVE FLAME SPREAD RATING NOT TO EXCEED 25 AND SMOKE DEVELOPED RATING NOT TO EXCEED 50, PER ASTM B-84.

3.22 ACCESS PANELS WHERE REQUIRED FOR SERVICING DEVICES OR EQUIPMENT LOCATED BEHIND INACCESSIBLE AREAS. COORDINATE EXACT SIZES AND LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.

3.23 WATER PRESSURE ABOVE 80 PSI SHALL HAVE PRESSURE REDUCING VALVE ASSEMBLY, INCLUDING ISOLATION VALVE, PRESSURE REGULATOR VALVE, PRESSURE GAUGE, STRAINER, AND FITTINGS.

3.24 TEST AND REPORT FOR WATER, WASTE, AND VENT PIPING SYSTEMS. SUBMIT THREE (3) REPORTS STATING EACH SYSTEM COMPLIANCE AND APPROVAL AUTHORIZATION.

4.0 SUBMITTALS (DIGITAL PDF FILES):

4.01 PLUMBING FIXTURES.
4.02 PLUMBING EQUIPMENT.

FIRE PROTECTION SPECIFICATIONS

1.0 DESCRIPTION OF WORK

1.01 GENERAL CONDITIONS AND GENERAL NOTES INDICATED WITH ARCHITECTURAL DRAWINGS AND SPECIFICATIONS SHALL GOVERN WHERE APPLICABLE.

1.02 WORK INDICATED ON DRAWINGS SHALL BE CONSIDERED NEW AND IN-CONTRACT UNLESS NOTED OTHERWISE.

1.03 COMPLETELY OPERATIONAL WET PIPE AUTOMATIC FIRE PROTECTION SYSTEM READY FOR USE AS ITEMIZED BUT NOT LIMITED TO AS FOLLOWS:

1.03A DEMOLITION, REMOVAL, AND ALTERATIONS OF EXISTING SYSTEMS AND EQUIPMENT AS REQUIRED THOUGH NOT SPECIFICALLY INDICATED ACCOMMODATING PROPOSED WORK.
1.03B FIRE PROTECTION RISER, VALVES, TAMPER SWITCHES, WATERFLOW ALARMS, INDOOR BELL, OUTDOOR BELL, FIRE DEPARTMENT CONNECTION, HOSE CONNECTIONS, HEADS, AND INTERCONNECTING PIPING.
FIRE PROTECTION INSTALLATION DRAWINGS.
1.03C HYDRAULIC CALCULATIONS.
1.03D SPARE PARTS (MINIMUM OF THREE (3) EACH) AND SPARE PARTS BOX.

2.0 RELATED WORK BY OTHER TRADES

2.01 INCOMING WATER SERVICE.
2.02 ELECTRIC POWER WIRING.

3.0 RELATED WORK BY OTHERS

3.01 APPLIANCES.

4.0 FIRE PROTECTION INSTALLATION NOTES

4.01 WORK SHALL BE PERFORMED IN ACCORDANCE WITH CODES AND AUTHORITIES HAVING JURISDICTION, INCLUDING ADA GUIDELINES AND ENERGY COMPLIANCE.

4.02 WORK AND INSTALLATIONS SHALL BE PERFORMED IN FIRST-CLASS NEAT WORKMANLIKE MANNER. REMOVE DEBRIS ON REGULAR BASIS AND CLEAN EQUIPMENT DURING PROJECT COMPLETION.

4.03 APPLY, PROCURE, AND PAY FOR REQUIRED PERMITS AND INSPECTIONS.

4.04 FIELD VERIFY PROJECT CONSTRUCTION CONDITIONS AND PROJECT SITE CONDITIONS PRIOR TO SUBMITTING BID.

4.05 THIS TRADE SHALL DO ITS OWN CUTTING AND PATCHING, TRENCHING AND BACKFILLING. PENETRATIONS THROUGH FIRE-RATED ASSEMBLIES SHALL BE FILLED WITH FIRESTOP PRODUCT. SUBMIT FIRESTOP PRODUCT MATERIAL SPECIFICATIONS TO LOCAL AUTHORITIES HAVING JURISDICTION.

4.06 CONFER WITH THE OTHER TRADES IN COORDINATION OF THIS WORK FOR REQUIRED CLEARANCES, CHASES, RECESSES AND OPENINGS.

4.07 PROPOSAL PRICE SHALL INCLUDE SPECIFIED MATERIALS ONLY. SHOULD CONTRACTOR WISH TO SUBSTITUTE MATERIALS, EQUIPMENT OR MANUFACTURERS, IT SHALL BE DONE BY STATING EACH SUBSTITUTION AND ITS PRICE ADJUSTMENT.

4.08 DRAWINGS SHALL BE USED FOR BIDDING ONLY. ROUGH-IN AND FINAL CONNECTION SHALL BE MADE FROM APPROVED INSTALLATION AND EQUIPMENT DRAWINGS ONLY.

4.09 GUARANTEE WORK AND EQUIPMENT TO BE FREE FROM DEFECTIVE WORKMANSHIP AND MATERIALS FOR PERIOD OF ONE (1) YEAR FROM DATE OF FINAL CERTIFICATE OR OCCUPANCY. ANY REPAIRS OR REPLACEMENT DURING THIS PERIOD SHALL BE MADE WITHOUT COST TO OWNER.

4.10 INSTALLATION SHALL BE MADE IN ACCORDANCE WITH REQUIREMENTS OF APPLICABLE NFPA/ICC STANDARDS AND LOCAL FIRE PREVENTION DEPARTMENT.

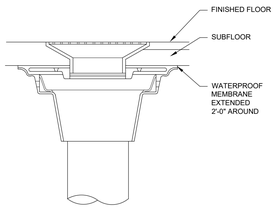
4.11 SUBMIT INSTALLATION DRAWINGS AND HYDRAULIC CALCULATIONS FOR WATER SERVICE AND LOCAL FIRE DEPARTMENT APPROVAL. DRAWINGS SHALL BEAR SIGNATURE AND SEAL OF STATE REGISTERED PROFESSIONAL ENGINEER.

4.12 FIRE PROTECTION HEADS SHALL BE BRASS UPRIGHT (IN UNFINISHED CEILING AREAS), CONCEALED PLATE (IN FINISHED CEILING AREAS), AND FREEZE PROOF (POTENTIAL FREEZING AREAS). MATCH CONCEALED COLOR PLATE WITH ARCHITECTURAL CEILING COLOR.

4.13 FIRE PROTECTION HEADS SHALL BE CENTERED IN CEILING GRID. ESCUTCHEON PLATES SHALL BE ADJUSTABLE TYPE AND MOUNTED TIGHT TO CEILING.

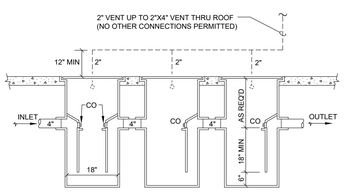
5.0 SUBMITTALS (DIGITAL PDF FILES):

5.01 FIRE PROTECTION INSTALLATION DRAWINGS.
5.02 HYDRAULIC CALCULATIONS.



FLOOR DRAIN DETAIL

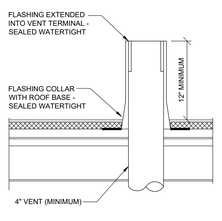
NOT TO SCALE



AK INDUSTRIES FIBERGLASS TRIPLE BASIN WITH GAS TIGHT STEEL COVERS. PROVIDE INLETS, OUTLETS, AND VENT CONNECTIONS AS INDICATED.

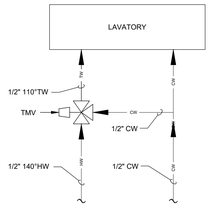
TRIPLE BASIN DETAIL

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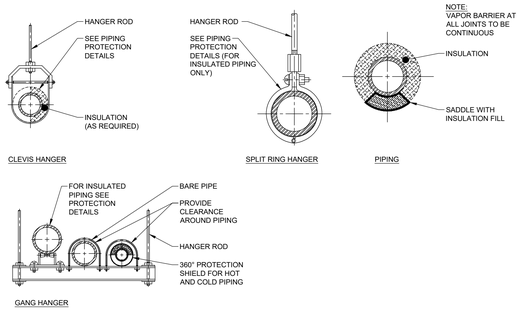
VENT THROUGH ROOF DETAIL

NOT TO SCALE



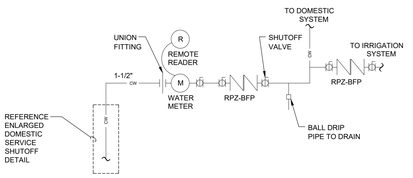
TMV MIXING VALVE DETAIL

NOT TO SCALE



PIPING SUPPORT AND INSULATION DETAIL

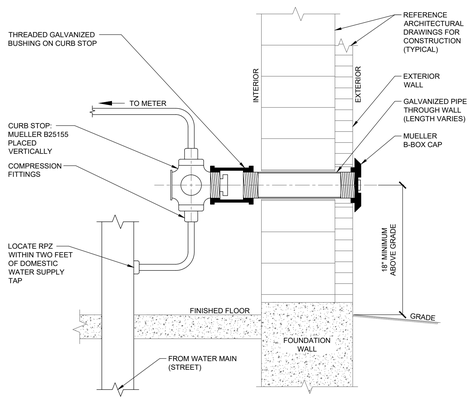
NOT TO SCALE



GENERAL NOTES:
1. METERED BYPASS FOR EACH RPZ-BFP WHERE REQUIRED BY LOCAL AUTHORITY.
2. ANY BYPASSES SHALL INCLUDE SMALL DIAMETER RPZ-BFP.
3. FIRE PROTECTION/SPRINKLER PIPING SHALL BE SIZED BY SPRINKLER CONTRACTOR.

FIRE PROTECTION AND DOMESTIC WATER RISER

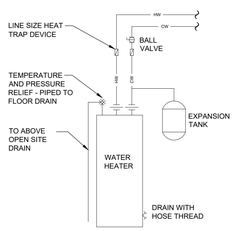
NOT TO SCALE



GENERAL NOTES:
1. SHUTOFF VALVE SHALL BE IN HEATED SPACE.
2. TYPICAL APPLICATION FOR RETROFIT OF MULTI-UNIT COMMERCIAL OR MULTI-FAMILY RESIDENTIAL WITH MULTIPLE METERS SERVICED BY ONE EXTERIOR SUPPLY PIPE.

ENLARGED DOMESTIC SERVICE SHUTOFF DETAIL

NOT TO SCALE



WATER HEATER PIPING DIAGRAM

NOT TO SCALE

PLUMBING SYMBOLS LIST

CW	COLD WATER SUPPLY PIPING
HW	HOT WATER SUPPLY PIPING (140 DEG F)
HWR	HOT WATER RETURN PIPING
TW	TEMPERED WATER SUPPLY PIPING (110 DEG F)
	SANITARY WASTE PIPING
	SANITARY VENT PIPING
	LINE SIZE DIELECTRIC UNION
	LINE SIZE GATE VALVE
	LINE SIZE BALL VALVE
	LINE SIZE BALANCING VALVE
	LINE SIZE CHECK VALVE
	LINE SIZE PRESSURE REGULATOR
	LINE SIZE PRESSURE GAGE
AFF	ABOVE FINISHED FLOOR
AD	AREA DRAIN
BFF	BELOW FINISHED FLOOR
BFP	BACKFLOW PREVENTOR
CO	FLOOR CLEANOUT
DDC	DUAL DETECTOR CHECK
FD	FLOOR DRAIN
HB	HOSE BIBB
IW	INDIRECT WASTE
LAV	LAVATORY
P	PRESSURE
RPZ	REDUCED PRESSURE ZONE
S	SINK
SH	SHOWER
SS	SERVICE SINK
T	TEMPERATURE
TMV	THERMOSTATIC MIXING VALVE
UR	URINAL
VB	VACUUM BREAKER
V	VENT
VTR	VENT THRU ROOF
W	WASTE
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WATER HEATER
	CONNECT TO EXISTING

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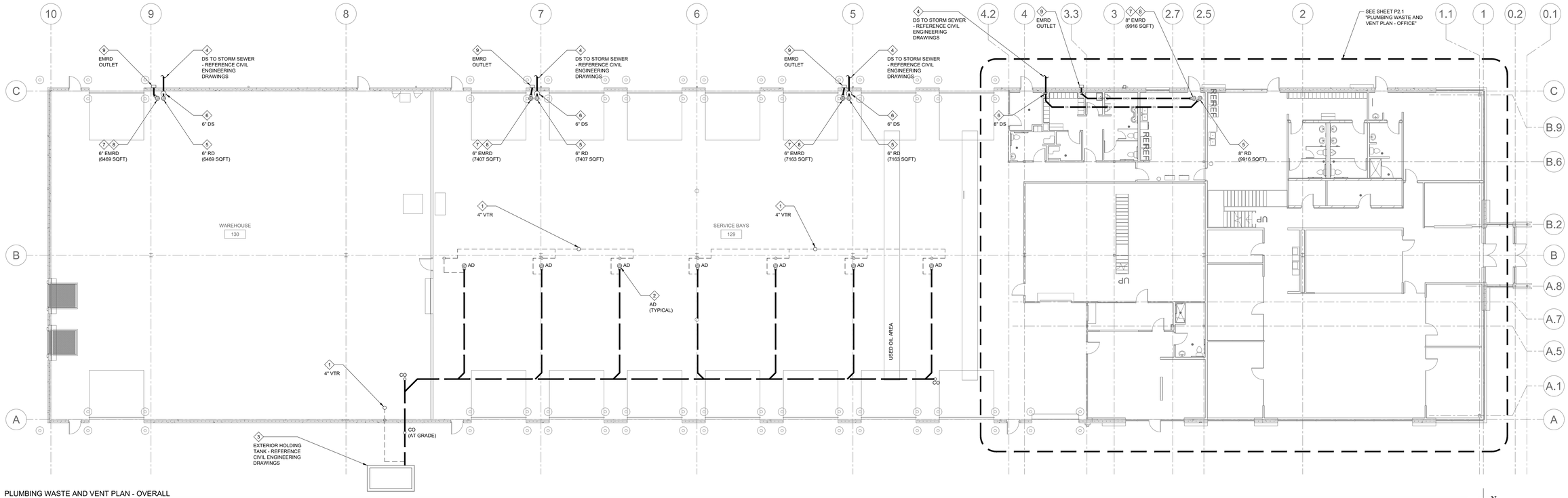
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PLUMBING WASTE AND VENT PLAN - OVERALL

SCALE: 3/32" = 1'-0", WHEN PRINTED ON 30"X42" (ARCH E1)

KEY NOTES

1. VENT THROUGH ROOF
   PROVIDE VENT STACK UP THROUGH ROOF WITH EXTERIOR TERMINATION. PROVIDE PORTAL, FLASHING, AND TERMINATE MINIMUM 18" ABOVE ROOF. TERMINATION SHALL BE MINIMUM 15'-0" FROM OUTSIDE AIR INTAKES.
2. AD
   PROVIDE AREA DRAIN RECESSED (FLUSH-WITH-FLOOR) WITH TRAFFIC-RATED COVER GRATES. FIELD VERIFY LOCATION, INVERT ELEVATIONS, AND FLOW DIRECTIONS PRIOR TO INSTALLATION.
3. HOLDING TANK
   REFERENCE CIVIL ENGINEERING DRAWINGS FOR SPECIFICATION AND LOCATION OF EXTERIOR HOLDING TANK. FIELD VERIFY LOCATION, INVERT ELEVATIONS, AND FLOW DIRECTIONS PRIOR TO INSTALLATION.
4. DS TO STORM SEWER
   PROVIDE DOWNSPOUT PIPING TO EXTERIOR STORM PIPING. COORDINATE WITH CIVIL ENGINEERING DRAWINGS.
5. RD
   PROVIDE ROOF DRAIN WITH DECK CLAMP ASSEMBLY AND DOWNSPOUT ROUTED TO ADJACENT COLUMN. COORDINATE WITH ARCHITECTURAL AND STRUCTURAL ENGINEERING DRAWINGS.
6. DS FOR RD
   PROVIDE VERTICAL DOWNSPOUT PIPING WITH WALL CLEANOUT ABOVE FLOOR SLAB. COORDINATE WITH ARCHITECTURAL AND STRUCTURAL ENGINEERING DRAWINGS.
7. EMRD
   PROVIDE EMERGENCY ROOF DRAIN WITH DECK CLAMP ASSEMBLY AND DOWNSPOUT ROUTED TO ADJACENT WALL. COORDINATE WITH ARCHITECTURAL AND STRUCTURAL ENGINEERING DRAWINGS.
8. DS FOR EMRD
   PROVIDE HORIZONTAL DOWNSPOUT PIPING THROUGH ROOF JOISTS AND TERMINATE AT WALL WITH EMERGENCY OUTLET FIXTURE.
9. OUTLET FOR EMRD
   PROVIDE EMERGENCY ROOF DRAIN DOWNSPOUT PIPING AND OUTLET DEVICE AT JOIST HEIGHT, WITH WALL OUTLET FIXTURE. COORDINATE WITH ARCHITECTURAL AND STRUCTURAL ENGINEERING DRAWINGS.

STORM WATER DOWNSPOUT PIPING SHALL HAVE POSITIVE PITCH WITH MINIMUM 2% SLOPE. COORDINATE ROUTING, MOUNTING, AND TERMINATIONS WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS.

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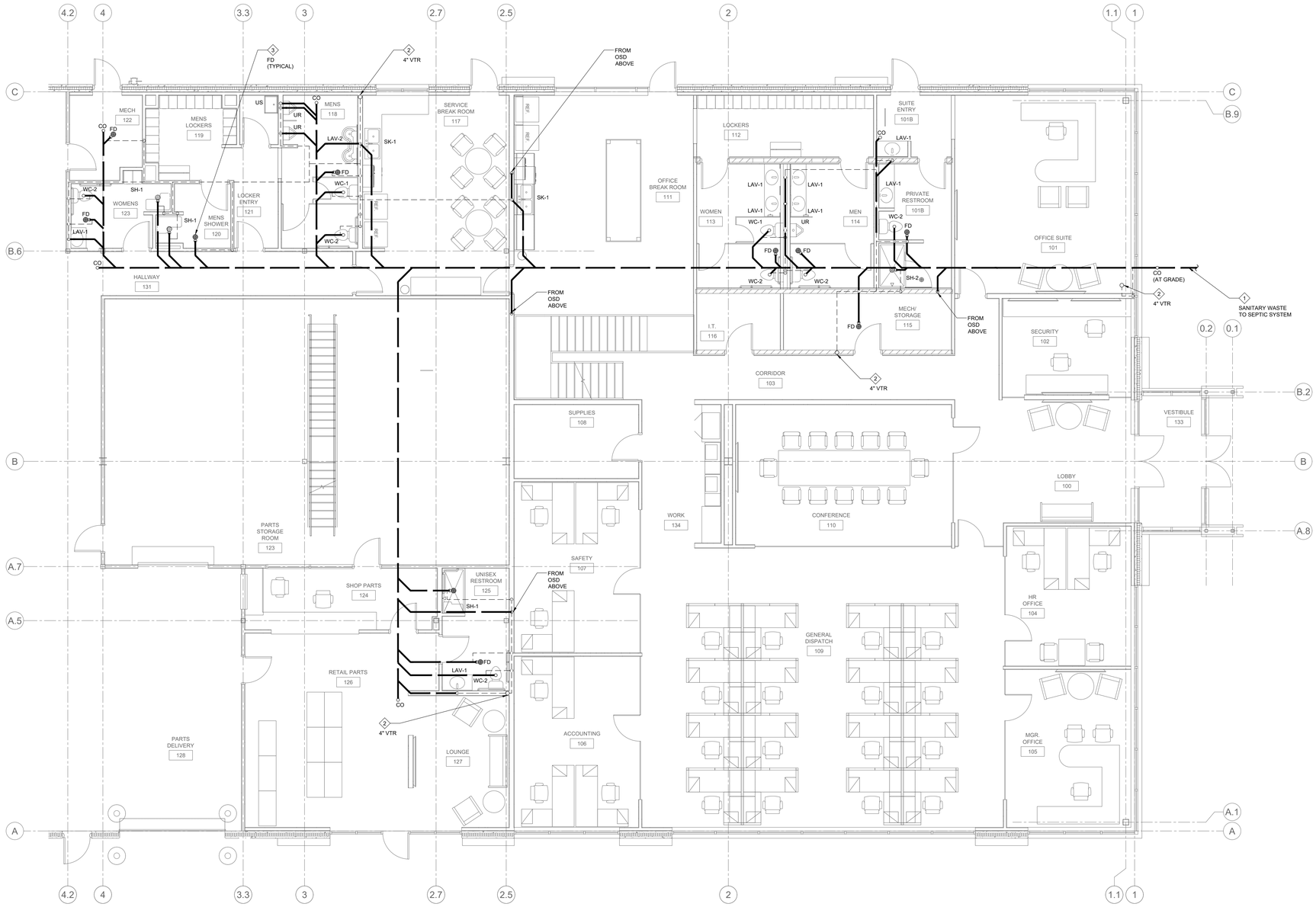
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PLUMBING WASTE AND VENT PLAN - OVERALL	
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KEY NOTES

1. SANITARY WASTE TO SEPTIC SYSTEM
   PROVIDE SANITARY WASTE PIPING CONNECTION TO EXTERIOR SEPTIC SYSTEM. PROVIDE CLEANOUT AT GRADE WITHIN ACCESSIBLE LOCATION. REFERENCE CIVIL ENGINEERING DRAWINGS FOR SEPTIC SYSTEM. FIELD VERIFY ROUTING, LOCATION, INVERT ELEVATION, AND DIRECTION OF FLOW OF PRIOR TO INSTALLATION.
2. VENT THROUGH ROOF
   PROVIDE VENT STACK UP THROUGH ROOF WITH EXTERIOR TERMINATION. PROVIDE PORTAL FLASHING, AND TERMINATE MINIMUM 18" ABOVE ROOF. TERMINATION SHALL BE MINIMUM 15'-0" FROM OUTSIDE AIR INTAKES.
3. FD
   COORDINATE FLOOR DRAIN LOCATIONS WITH FURNITURE, FIXTURES, AND EQUIPMENT. FIELD VERIFY LOCATION WITH EXISTING CONDITIONS.

PLUMBING WASTE AND VENT PLAN - OFFICE

SCALE: 3/16" = 1'-0", WHEN PRINTED ON 30"X42" (ARCH E1)

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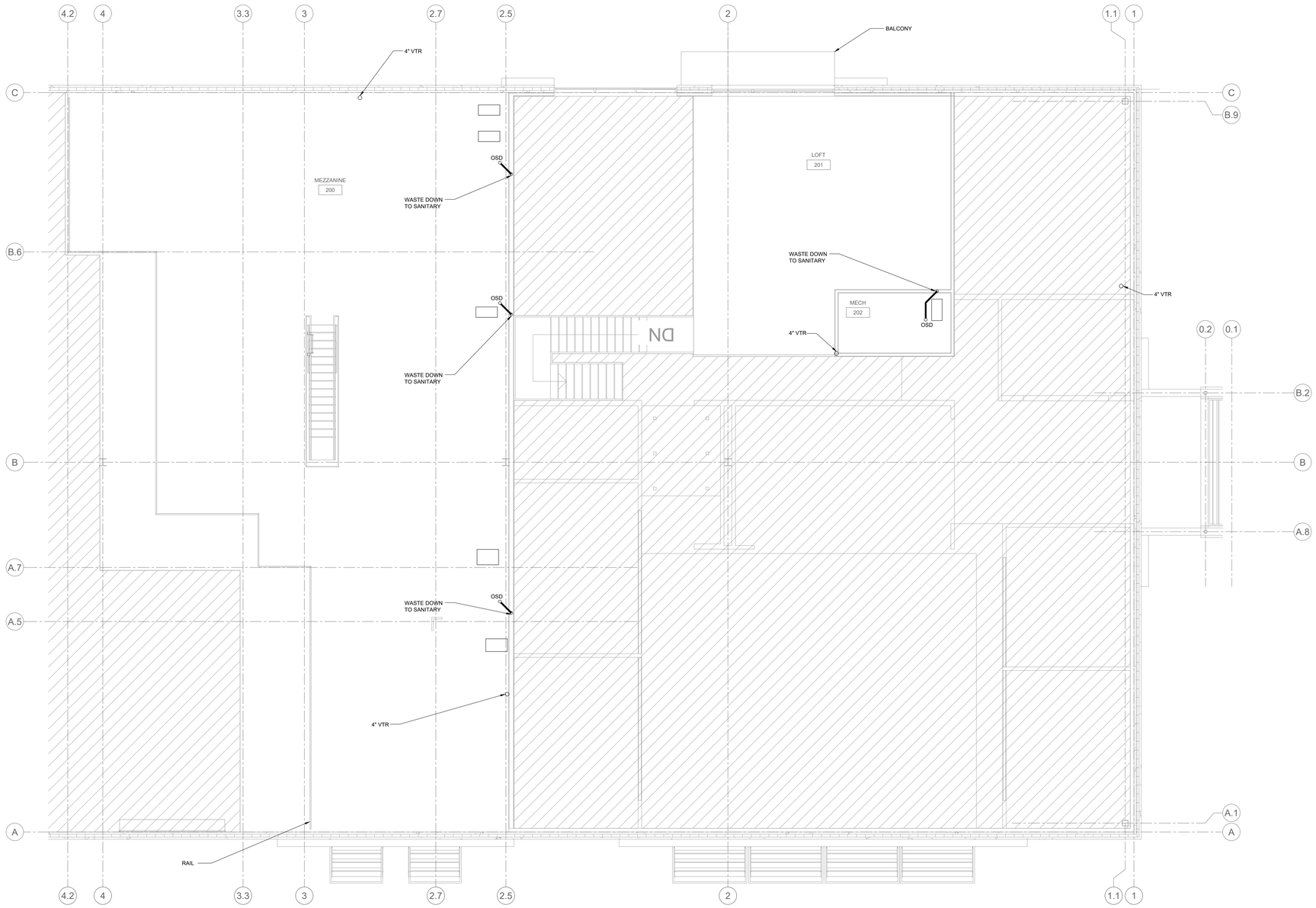
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KEY NOTES

1. OSD
COORDINATE OPEN SITE DRAIN LOCATIONS WITH FURNITURE, FIXTURES, AND EQUIPMENT. FIELD VERIFY LOCATION WITH EXISTING CONDITIONS.

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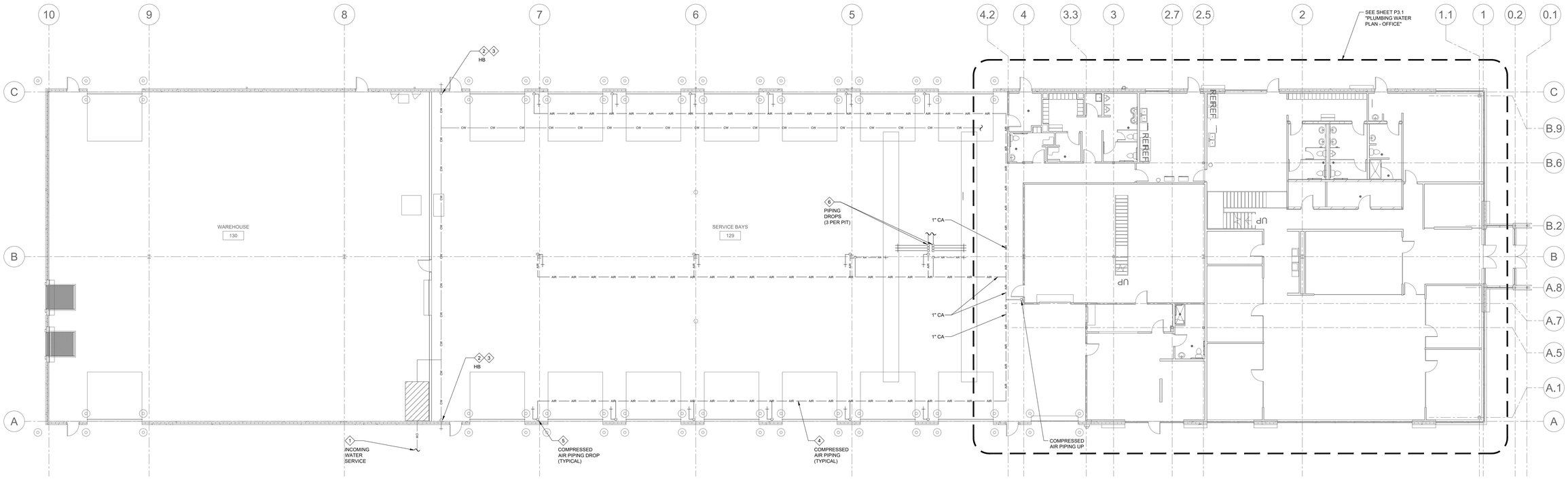
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PLUMBING WATER PLAN - OVERALL

SCALE: 3/32" = 1'-0", WHEN PRINTED ON 30"X42" (ARCH E1)

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KEY NOTES

1. INCOMING WATER SERVICE
PROVIDE WATER SERVICE PIPING - REFERENCE CIVIL ENGINEERING DRAWINGS FOR INCOMING WATER SERVICE. PROVIDE WATER METER WITH REMOTE READER AND RPZ-BFP WITH RELIEF PIPING TO ABOVE DRAIN. WORK SHALL BE COORDINATED WITH WATER UTILITY DEPARTMENT AND BASE BUILDING MANAGEMENT. FIELD VERIFY REQUIREMENTS PRIOR TO WORK. BID AND INSTALLATION SHALL INCLUDE WORK NECESSARY FOR FULLY OPERATIONAL SYSTEM.

2. STOP VALVES
PROVIDE WATER SUPPLY SHUTOFF VALVE FOR EACH FIXTURE, EQUIPMENT, AND APPLIANCE.

3. HOSE BIBB
PROVIDE HOSE BIBB AS SHOWN ON PLUMBING PLAN. VERIFY REQUIREMENTS WITH MANUFACTURER RECOMMENDATIONS.

4. COMPRESSED AIR PIPING
PROVIDE 1" COMPRESSED AIR PIPING FROM AIR COMPRESSOR UNIT, ROUTED UP INTO ROOF JOISTS SPACE, ROUTED ABOVE SERVICE BAYS. PROVIDE WALL-MOUNTED SUPPORT CHANNEL/STRUTS, CLAMPS, HARDWARE, WALL OPENINGS, AND FIRESTOP AS REQUIRED.

5. COMPRESSED AIR DROP
PROVIDE 3/4" COMPRESSED AIR PIPING FROM AIR COMPRESSOR UNIT, ROUTED UP INTO ROOF JOISTS SPACE, THRU JOISTS, AND DOWN COLUMN/WALL AT LOCATIONS AS SHOWN ON PLAN. ROUTE PIPING UNDER SLAB INTO PIT AS REQUIRED. PROVIDE TEE-FITTING WITH VALVE, AND CAPPED (FUTURE USE). PROVIDE SUPPORT CHANNEL/STRUTS, CLAMPS, HARDWARE, AND PIPING AS REQUIRED.

6. FLUID PIPING DROP
PROVIDE THREE (3) FLUID PIPING DROPS FROM STORAGE TANKS (NEW OIL, COOLANT, WASHER FLUID), ROUTED UP INTO ROOF JOISTS SPACE, THRU JOISTS, AND DOWN COLUMN AT LOCATIONS AS SHOWN ON PLAN. ROUTE PIPING UNDER SLAB INTO PIT AS REQUIRED. PROVIDE TEE-FITTING WITH VALVE, AND CAPPED (FUTURE USE). PROVIDE SUPPORT CHANNEL/STRUTS, CLAMPS, HARDWARE, AND PIPING AS REQUIRED. VERIFY EXACT REQUIREMENTS AND TANK LOCATIONS WITH OWNER PRIOR TO INSTALLATION.

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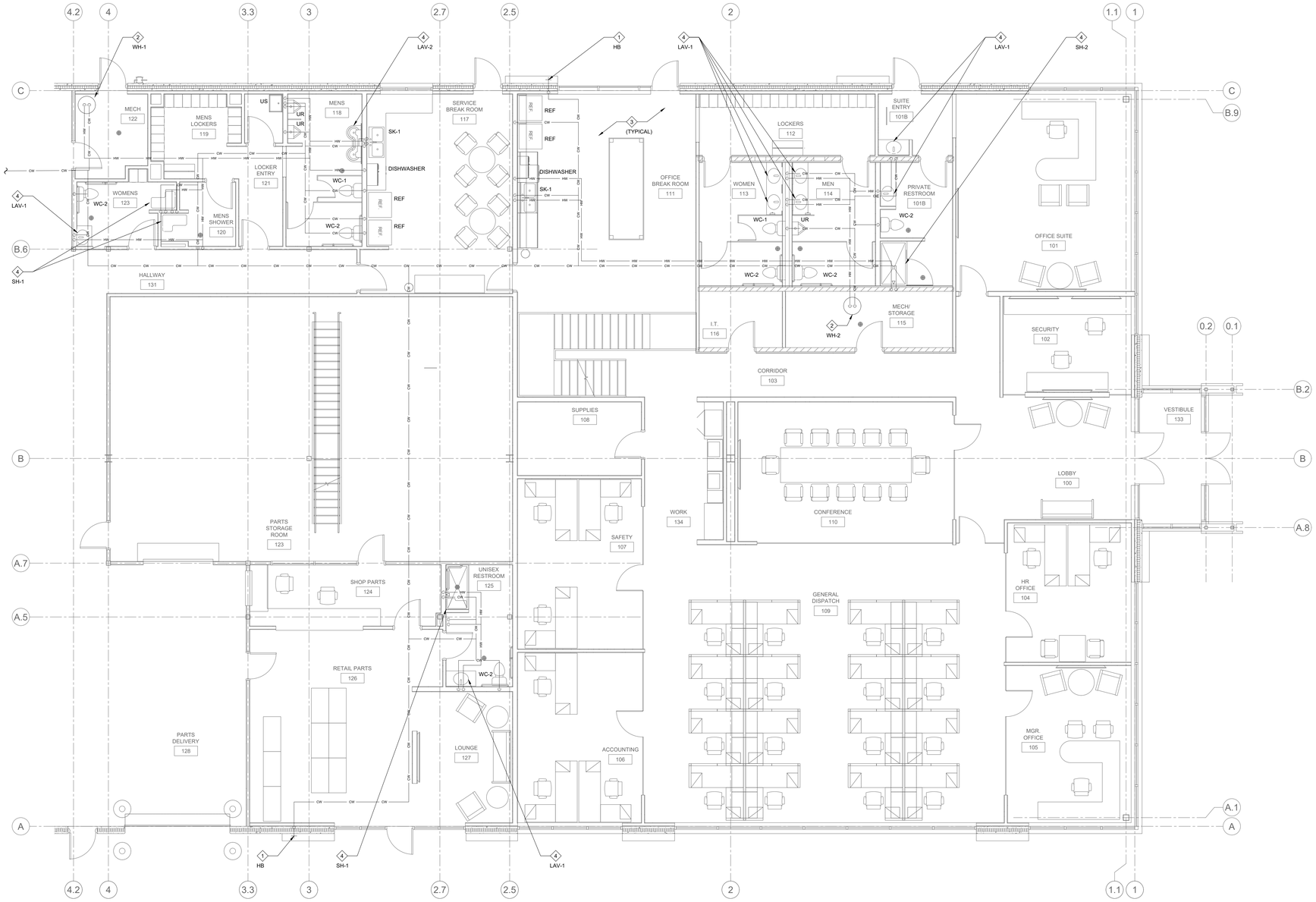
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KEY NOTES

1. HOSE BIBB
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2. WH
PROVIDE WATER HEATER AS SHOWN ON EQUIPMENT SCHEDULE - REFERENCE WATER HEATER DETAIL. PROVIDE EXPANSION TANK WITH PRESSURE TO MATCH WORKING PRESSURE.

3. STOP VALVES
PROVIDE WATER SUPPLY SHUTOFF VALVE FOR EACH FIXTURE, EQUIPMENT, AND APPLIANCE.

4. TMV
PROVIDE THERMOSTATIC MIXING VALVE SET TO 110 DEG F MAXIMUM AT EACH LAVATORY AND HAND SINK.

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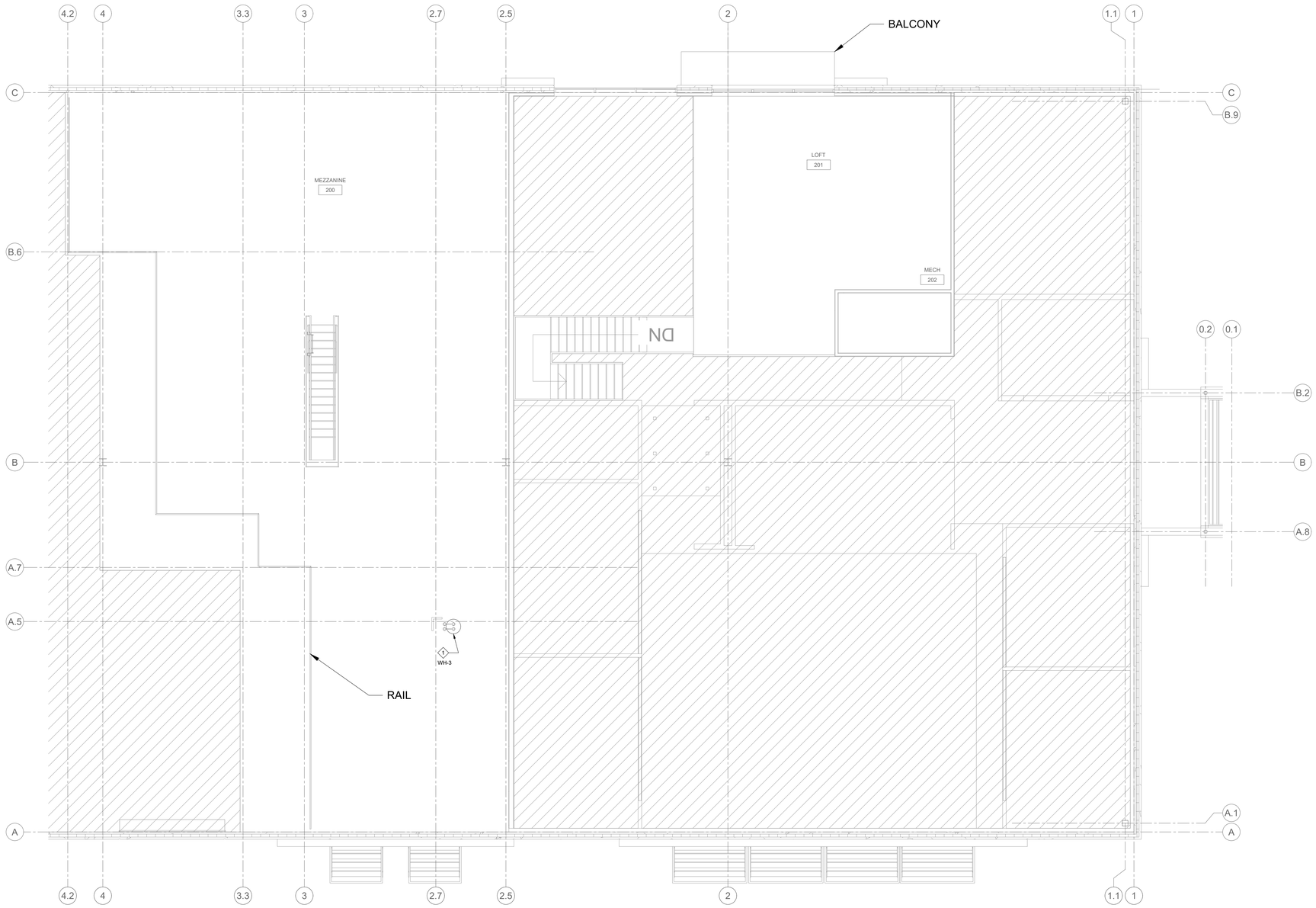
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KEY NOTES

1 WH
PROVIDE WATER HEATER AS SHOWN ON EQUIPMENT SCHEDULE - REFERENCE WATER HEATER DETAIL. PROVIDE EXPANSION TANK WITH PRESSURE TO MATCH WORKING PRESSURE.

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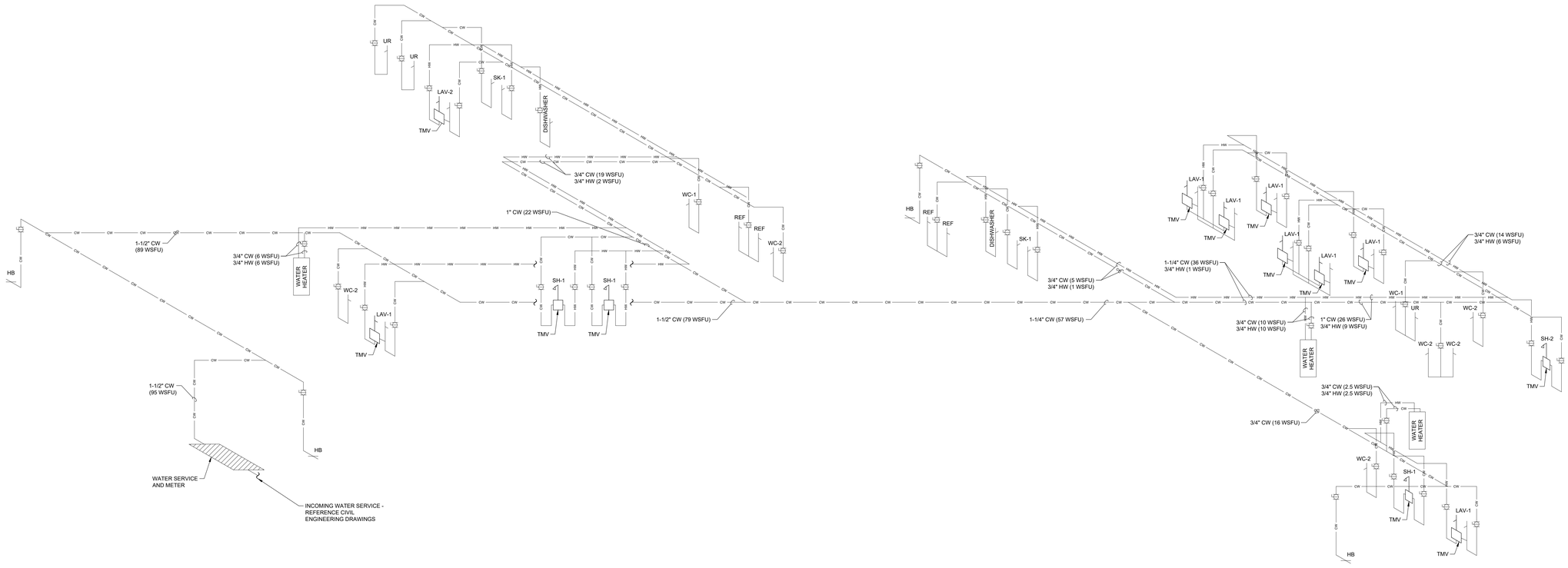
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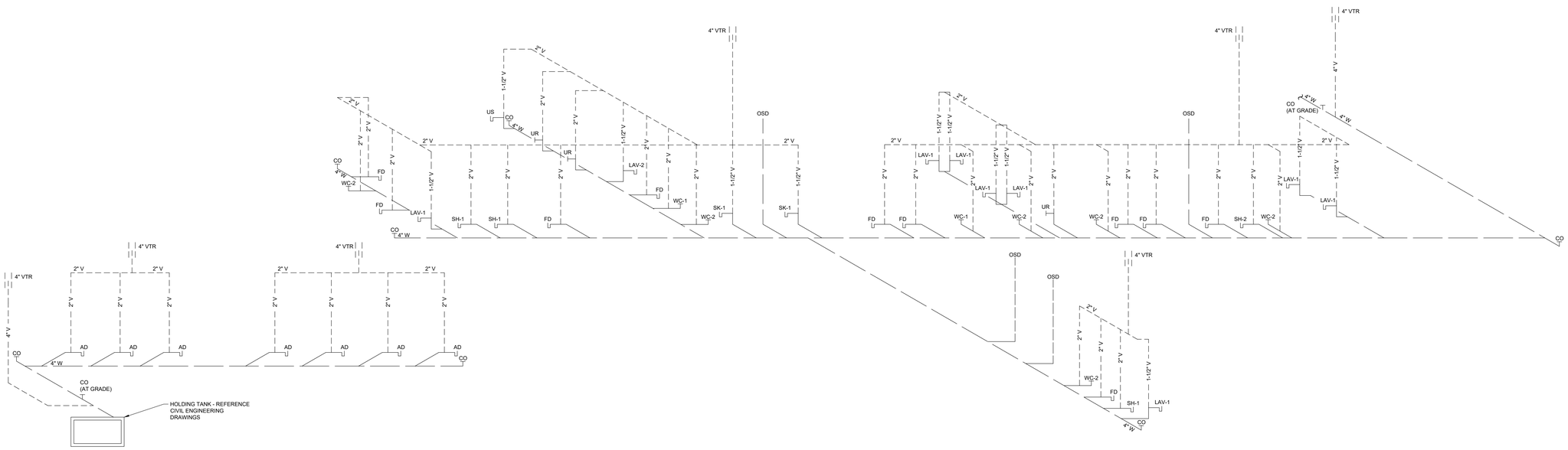
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PLUMBING WATER RISER

NOT TO SCALE



PLUMBING WASTE AND VENT RISER

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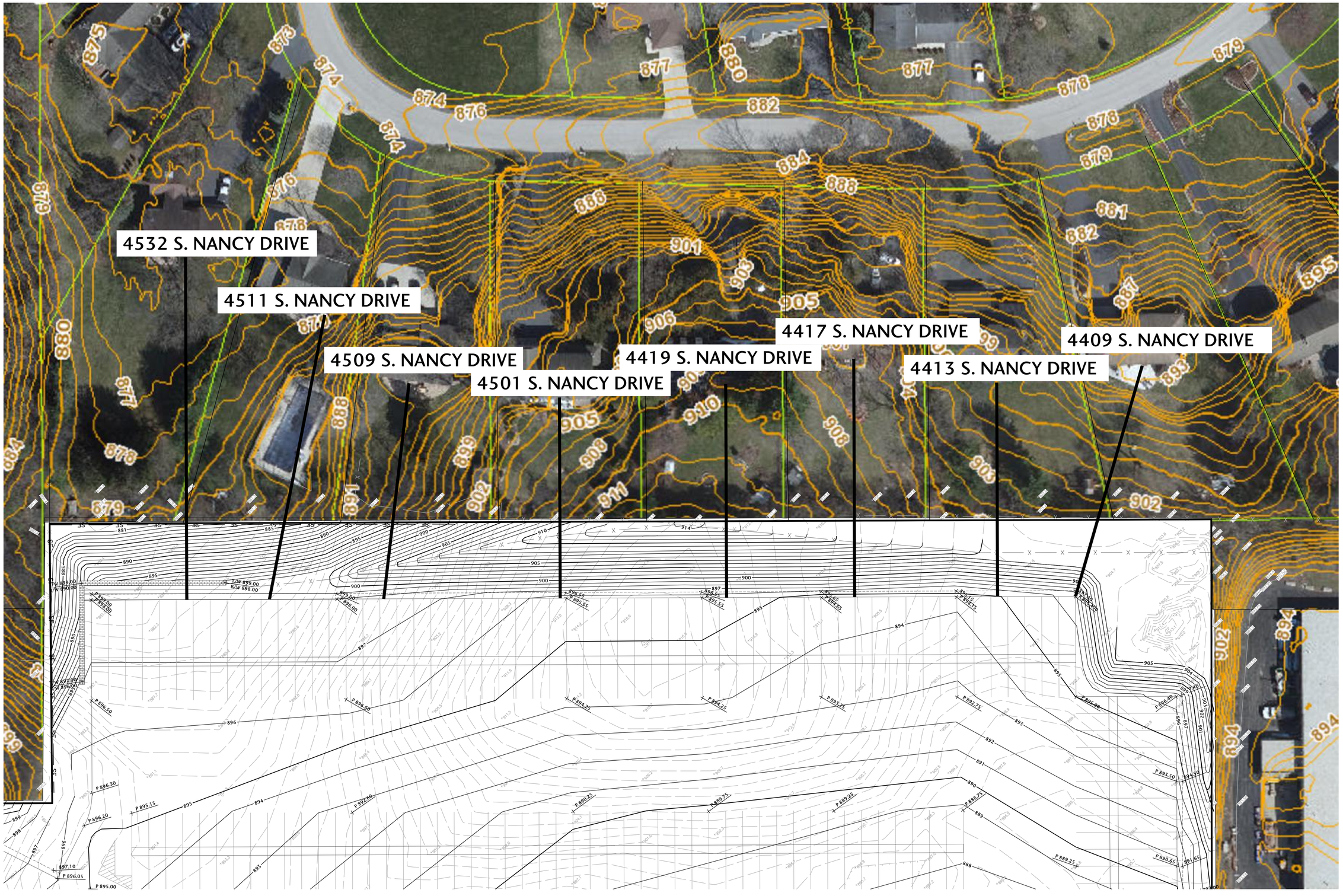
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30 0 15 30 60

(IN FEET)

1 inch = 30 ft.

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IL DESIGN FIRM # 184-006759

NVA PROP IL LLC

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SCALE
1"=30'

ISSUE DATE
5/25/2023

PROJECT MANAGER
JEC

DESIGNER
LRT

QUALITY CONTROL
MAM

NVA TRUCKING FACILITY EXPANSION

CRYSTAL LAKE, ILLINOIS

NO.	DATE	DESCRIPTION

PROJECT NUMBER
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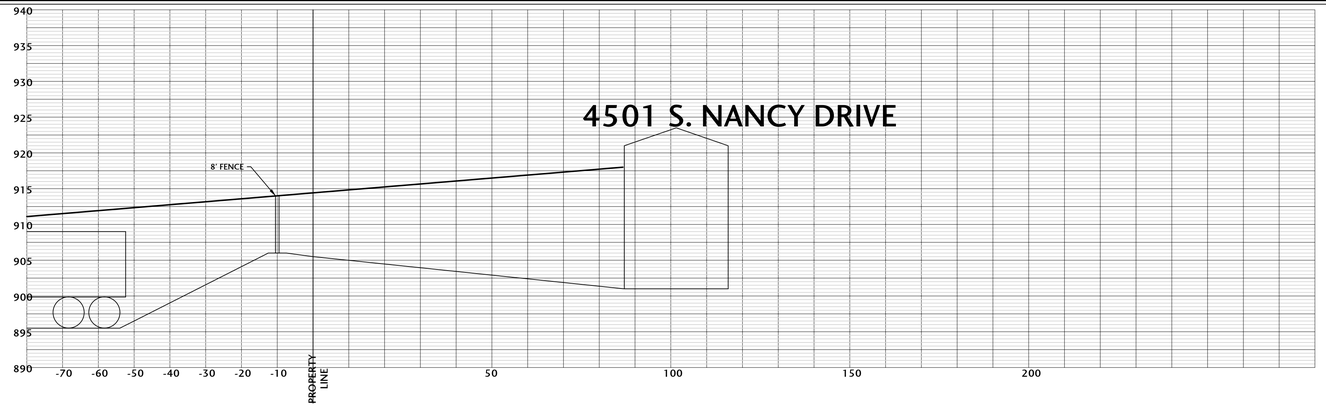
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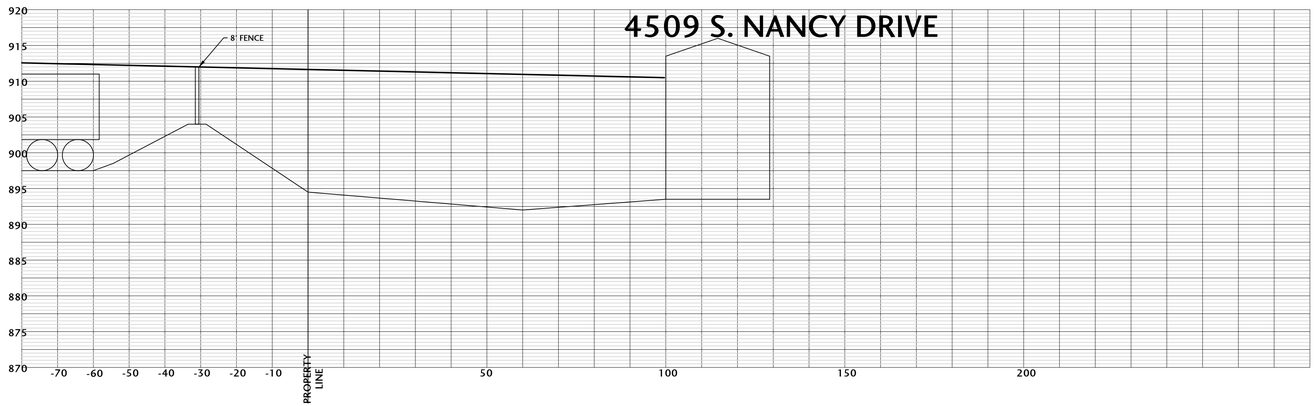
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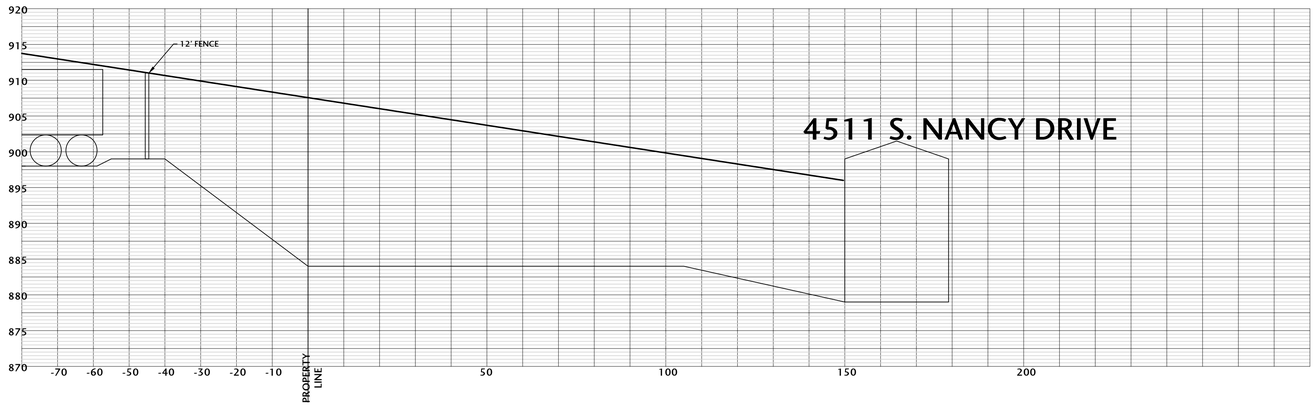
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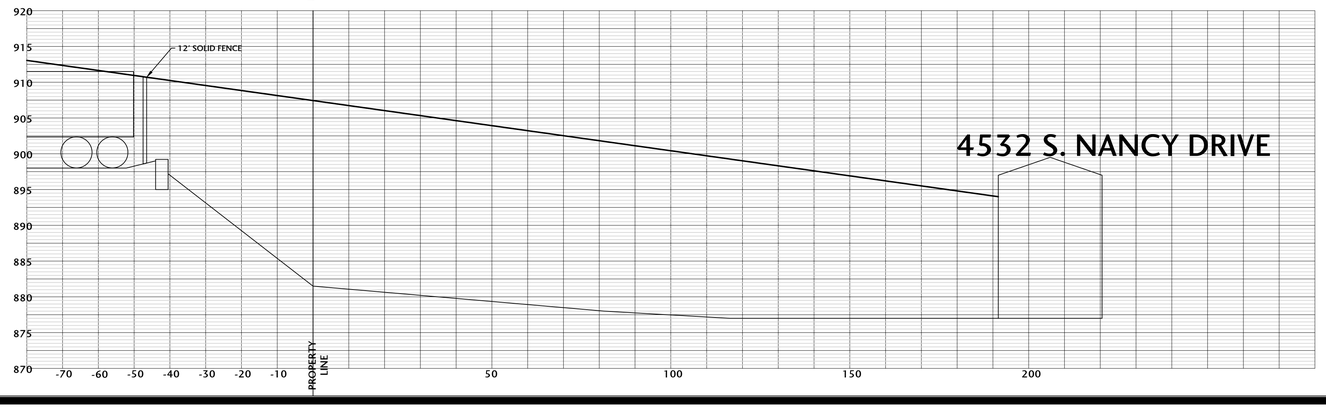
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20 0 10 20 40

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MAM

NVA TRUCKING FACILITY EXPANSION

CRYSTAL LAKE, ILLINOIS

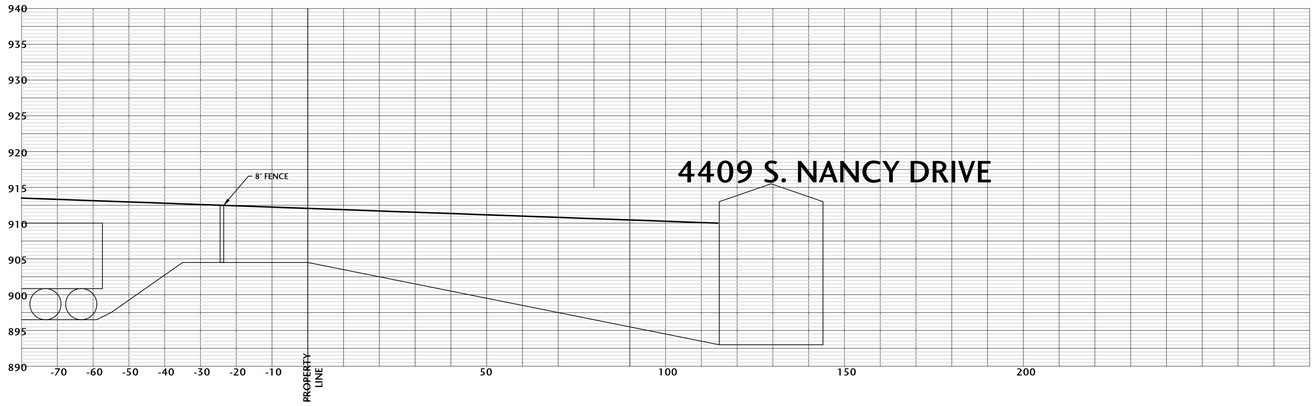
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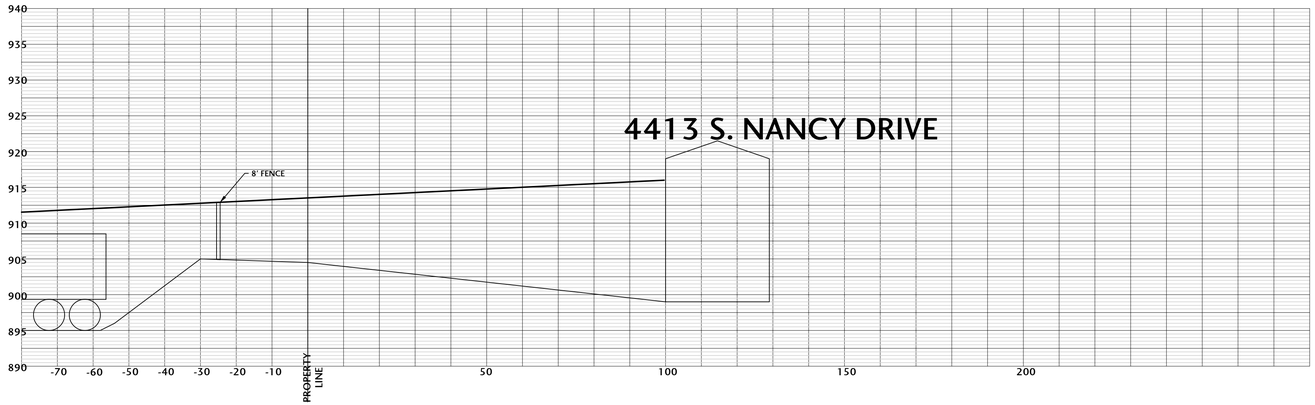
PROJECT NUMBER
NART-22034-3

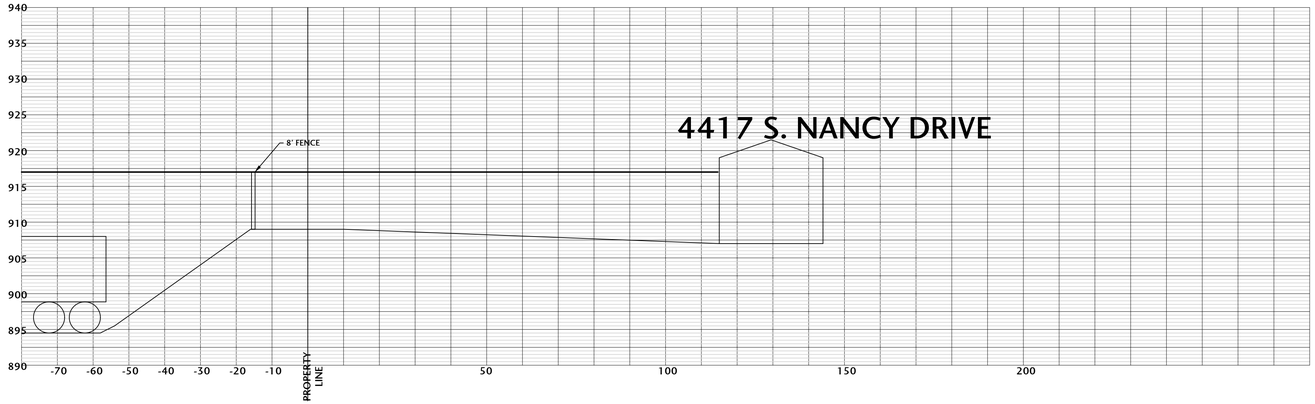
SHEET TITLE
NORTH RESIDENT'S SIGHT VIEWS

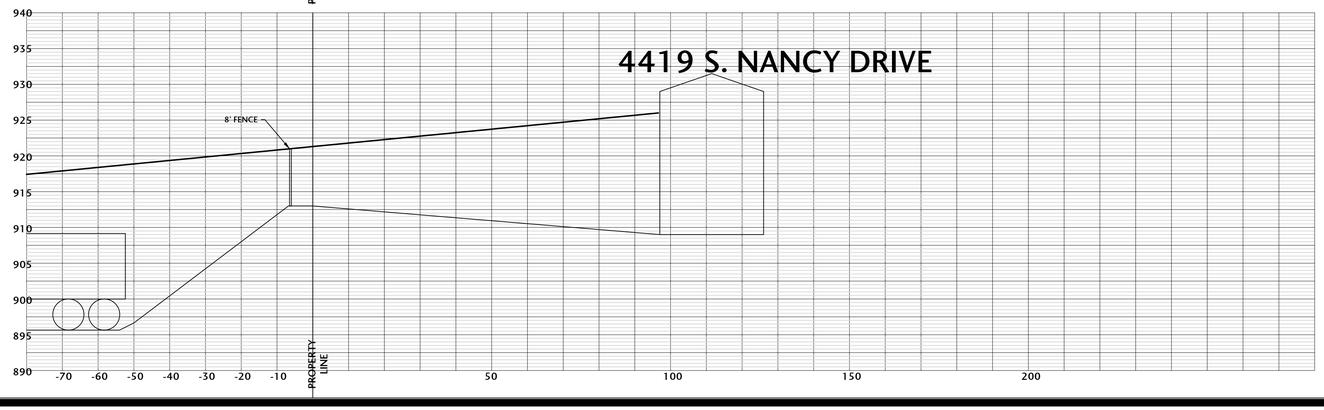
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GRAPHIC SCALE

20 0 10 20 40

(IN FEET)

1 inch = 20 ft.

J. CONDON & ASSOCIATES, INC.
CONSULTING ENGINEERS
5415 BUSINESS PARKWAY
RINGWOOD, ILLINOIS 60072
815.728.0068
IL DESIGN FIRM # 184-006759

NVA PROP IL LLC

CRYSTAL LAKE, ILLINOIS

N W E S

SCALE
1"=20'

ISSUE DATE
5/25/2023

PROJECT MANAGER
JEC

DESIGNER
LRT

QUALITY CONTROL
MAM

NVA TRUCKING FACILITY EXPANSION

CRYSTAL LAKE, ILLINOIS

NO.	DATE	DESCRIPTION

PROJECT NUMBER
NART-22034-3

SHEET TITLE
NORTH RESIDENT'S SIGHT VIEWS

SHEET NUMBER
XS0.2

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