# BEFORE THE BOARD OF BUILDING APPEALS STATE OF OHIO

Rialto Manufacturing 1632 Cascade Drive Marion, OH 43302

### Appellant

-VS-

CASE NO. 22-0046

# **FINAL ORDER**

Geoffrey D. Eaton, Building Official Division of Industrial Compliance Bureau of Building Code Compliance 6606 Tussing Road Reynoldsburg, OH 43068

Appellee

This matter came up for hearing on Thursday, March 24, 2022 on an appeal from Adjudication Order No. 2022060016, dated March 9, 2022, issued by the Bureau of Building Code Compliance. Said adjudication order involved the premises known as Rialto Manufacturing, 1632 Cascade Drive, Marion, Ohio.

Based on evidence adduced by, and representations of the Appellant and the Appellee, the Appellant appealed Items 1 and 2 of the adjudication order.

The Board having determined that inasmuch as it would not be contrary to the public interest and unnecessary hardship would result if a literal enforcement of the Ohio Building Code and/or the Ohio Fire Code was required, a variance against Items 1 and 2 of the adjudication order is given.

Item 1 of the adjudication order states unlimited area buildings shall be allowed where they are in compliance with Section 507 OBC. Show the 60 ft open area around the building per OBC 507.3.

Item 2 of the adjudication order states buildings erected or altered shall be classified in one of the five construction types defined in OBC 602.2 through 602.5. The IIB and VB construction types require a firewall separation or classification of the entire building as the VB construction. Submit allowable area calculations etc. showing VB construction or provide a firewall building separation.

Variance is conditioned upon the following:

- 1. An alternate fire alarm system shall be installed and maintained comprising of a remote annunciator at the front entrance; system smoke detectors with integral heat detectors throughout the entire structure, audible/visual alarm notification devices throughout the entire structure; and pull stations at all identified means of egress.
- The alternate fire alarm system shall be required to be off-premise monitored in a manner approved pursuant to OBC 901.6.
- 3. The alternate fire alarm system and off-premise monitoring shall be considered required systems and listed as such on the Certificate of Occupancy by the Building Official.
- The alternate fire alarm system and off-premise monitoring shall be maintained as required systems utilizing the Ohio Fire Code and adopted NFPA standards.
- 5. A fire apparatus access road shall be provided and maintained utilizing the design and specifications of Section 503 of the Ohio Fire Code and to the satisfaction of the Fire Official.
- 6. A fire hydrant shall be installed on the south side of the main driveway to the satisfaction of the Fire Official.

- 7. Knox Boxes shall be installed to the satisfaction of the Fire Official.
- 8. Portable fire extinguishers shall be installed according to the provisions of OBC 906 and to the satisfaction of the Fire Official and shall be maintained as required by the Ohio Fire Code and adopted NFPA standards.
- 9. A fire safety, evacuation and emergency operational plan shall be developed and annually maintained utilizing the design guidelines of Ohio Fire Code Chapter 4, approved by the Fire Official and listed as a special condition on the Certificate of Occupancy.
- 10. This variance is granted based on the use, construction, occupant load, building area and level of activity identified on the approved construction documents including the maintenance of all building systems and any conditions required herein.

Variance is granted noting the no objection of the Building Official.

The Board declares that any conditions required as part of the variance are inseparable and must be complied with in full; variance is dependent upon compliance with all conditions herein stated and lack of compliance with any portion of these conditions shall negate the entire variance. In addition, any conditions to the variance shall be incorporated into final Permit Drawings for examination and any appropriate fees shall be paid.

<b>VOTING F</b>	VOTING RECORD			BY THE MEMBERS OF THE BOARD	
YES	NO	ABSTAIN	ABSENT		
Х				Karl H. Schneider, Attorney	
х				Paul R. Beegan, Architect	
х				Russell M. Demagall, Pipefitter	
x				Bradley J. Smith, Engineer	
Х				Porter Welch, Firefighter	

Any party desiring to appeal shall file a Notice of Appeal with the Board of Building Appeals, 6606 Tussing Road, Reynoldsburg, Ohio 43068 setting forth the order appealed from and stating that the agency's order is not supported by reliable, probative, and substantial evidence and is not in accordance with law. The notice of appeal may, but need not, set forth the specific grounds of the party's appeal beyond the statement that the agency's order is not supported by reliable, probative, and substantial evidence and is not in accordance with law. The Notice of Appeal shall also be filed by the appellant with the Court of Common Pleas of the county in which he is a resident or in which the premises affected by this order is located. Such notices of appeal shall be filed within fifteen (15) days after the mailing of the notice of the Board of Building Appeals Order as provided in Section 119.12 of the Ohio Revised Code.

# CERTIFICATION

The State of Ohio, County of Franklin, SS

I, the undersigned Executive Secretary for the Board of Building Appeals, hereby certify that the foregoing is a true and exact reproduction of the original Order of the Board of Building Appeals entered on its journal, on the 2022.



usar R. Steer

Susan R. Steer Executive Secretary

COMcheck Software Version 4.1.5.3 Envelope Compliance Certificate

# **Project Information**

Energy Code: Project Title:	90.1 (2010) Standard Rialto Manufacturing, Inc.
Location:	Marion, Ohio
Climate Zone:	5a
Project Type:	Addition
Vertical Glazing / Wall Area:	6%

Construction Site: Owner/Agent: 1632 Cascade Drive Josh Obenour Marion, OH 43302 Rialto Manucacturing, Inc. 1632 Cascade Dr. Marion, OH 43302 Designer/Contractor: Paul Omness ODI 140 Fairfax Rd. Marion, OH 43302

Floor Area

# **Building Area**

1-Manufacturing Facility : Nonresidential	29250

# **Envelope Assemblies**

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U- Factor <sub>(a)</sub>
Roof 1: Metal Building, Standing Seam, Double Insulation Layer with Thermal Blocks (c), [Bldg. Use 1 - Manufacturing Facility]	29250	30.0	6.0	0.039	0.055
Exterior Wall 1: Metal Building Wall, Single Layer Mineral Fiber (compressed at girt), [Bldg. Use 1 - Manufacturing Facility]	13506	19.0	0.0	0.084	0.069
Window 1: Metal Frame with Thermal Break, Perf. Type: Energy code default, Double Pane with Low-E, Clear , SHGC 0.68, [Bldg. Use 1 - Manufacturing Facility]	137	_		0.900	0.550
Door 1: Insulated Metal, Swinging, [Bldg. Use 1 - Manufacturing Facility]	273			0.100	0.700
Door 3: Insulated Metal, Non-Swinging, [Bldg. Use 1 - Manufacturing Facility]	468	—	—	0.040	0.500
Floor 1: Slab-On-Grade:Heated, Vertical 2 ft., [Bldg. Use 1 - Manufacturing Facility] (b)	630		10.0	0.900	0.860

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.

(b) Slab-On-Grade proposed and budget U-factors shown in table are F-factors.

(c) Thermal spacer block with minimum R-3.5 must be installed above the purlin/batt, and the roof deck secured to the purlins.

# Envelope PASSES: Design 7% better than code

# **Envelope Compliance Statement**

*Compliance Statement:* The proposed envelope design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed envelope systems have been designed to meet the 90.1 (2010) Standard requirements in COM*check* Version 4.1.5.3 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

- OMNESS-ARCHINER Name - Title

8/8/23 Date

Signature

# COMcheck Software Version 4.1.5.3 Inspection Checklist

Energy Code: 90.1 (2010) Standard

Requirements: 0.0% were addressed directly in the COM*check* software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
4.2.2,5.4. 3.1.1,5.7 [PR1] <sup>1</sup>	Plans and/or specifications provide all information with which compliance can be determined for the building envelope and document where exceptions to the standard are claimed.	Complies Does Not Not Observable	
	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the electrical systems and equipment and document where exceptions are claimed. Feeder connectors sized in accordance with approved plans and branch circuits sized for maximum drop of 3%.	,□Complies □Does Not □Not Observable □Not Applicable	

**Additional Comments/Assumptions:** 

1 High Impact (Tier 1) 2 Medium Impact (Tier 2)

3 Low Impact (Tier 3)

Section # & Req.ID	Footing / Foundation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
5.5.3.3 [FO1] <sup>2</sup>	Below-grade wall insulation R- value.	R	R	Complies	See the Envelope Assemblies table for values.
				Not Observable	
5.5.3.5 [FO3] <sup>2</sup>	Slab edge insulation R-value.	R Unheated	R Unheated	Complies	See the Envelope Assemblies table for values.
医觉		Heated	Heated	Inot Observable INot Applicable	
5.8.1.2 [FO4] <sup>2</sup>	Slab edge insulation installed per manufacturer's instructions.			Complies	
				□Not Observable □Not Applicable	
5.5.3.5 [FO5] <sup>2</sup>	Slab edge insulation depth/length.	ft	ft	Complies	See the Envelope Assemblies table for values.
				Not Observable	
5.8.1.7.3 [FO7] <sup>1</sup>	Insulation in contact with the ground has <=0.3% water			Complies Does Not	
	absorption rate per ASTM C272.			□Not Observable □Not Applicable	
[FO11] <sup>3</sup>	Bottom surface of floor structures incorporating radiant heating	R	R	Complies	See the Envelope Assemblies table for values.
	insulated to >=R-3.5.			Not Observable	

1 High Impact (Tier 1) 2

2 Medium Impact (Tier 2)

3 Low Impact (Tier 3)

Section # & Reg.ID	Framing / Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
5.4.3.2 [FR1] <sup>3</sup>	Factory-built fenestration and doors are labeled as meeting air leakage requirements.			Complies Does Not Not Observable Not Applicable	
5.4.3.4 [FR4] <sup>3</sup>	Vestibules are installed where building entrances separate conditioned space from the exterior, and meet exterior envelope requirements. Doors have self-closing devices, and are >=7 ft apart.			Complies Does Not Not Observable Not Applicable	
5.5.4.3a [FR8] <sup>1</sup>	Vertical fenestration U-Factor.	U	U	Complies Does Not Not Observable	See the Envelope Assemblies table for values.
5.5.4.3b [FR9] <sup>1</sup>	Skylight fenestration U-Factor.	U	U	Complies Does Not	See the Envelope Assemblies table for values.
5.5.4.4.1 [FR10] <sup>1</sup>	Vertical fenestration SHGC value.	SHGC:	SHGC:	Complies Does Not Not Observable	See the Envelope Assemblies table for values.
5.5.4.4.2 [FR11] <sup>1</sup>	Skylight SHGC value.	SHGC:	SHGC:	Complies Does Not Not Observable	See the Envelope Assemblies table for values.
5.8.2.1 [FR12] <sup>2</sup>	Fenestration products rated in accordance with NFRC.			Complies Does Not Not Observable	
	Fenestration products are certified as to performance labels or certificates provided.			Complies Does Not Not Observable Not Applicable	
5.8.2.3,5. 5.3.6 [FR14] <sup>2</sup>	U-factor of opaque doors associated with the building thermal envelope meets requirements.	U Swinging Nonswinging	U Swinging Nonswinging	Complies Does Not Not Observable	See the Envelope Assemblies table for values.
5.4.3.1 [FR15] <sup>1</sup>	Continuous air barrier is wrapped, sealed, caulked, gasketed, and/or taped in an approved manner, except in semiheated spaces and in climate zones 1-6.			Complies Does Not Not Observable	

	1 High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier	3)	
Project Title:	Rialto Manufacturing, Inc.					Report date:	08,
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Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
[EL10] <sup>2</sup>	At least 50% of all 125 volt 15- and 20-Amp receptacles are controlled by an automatic control device.	Complies Does Not Not Observable	

1 High Impact (Tier 1) 2 Medium Impact (Tier 2)

3 Low Impact (Tier 3)

Section # & Req.ID	Insulation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
5.4.3.1 [IN1] <sup>1</sup>	All sources of air leakage in the building thermal envelope are sealed, caulked, gasketed, weather stripped or wrapped with moisture vapor-permeable wrapping material to minimize air leakage.			Complies Does Not Not Observable Not Applicable	
5.5.3.1 [IN2] <sup>1</sup>	Roof R-value. For some ceiling systems, verification may need to occur during Framing Inspection.	R Above deck	R Above deck Metal Attic	Complies Does Not Not Observable Not Applicable	See the Envelope Assemblies table for values.
5.8.1.2,5. 8.1.3 [IN3] <sup>1</sup>	Roof insulation installed per manufacturer's instructions. Blown or poured loose-fill insulation is installed only where the ceiling slope is <= 3:12.			Complies Does Not Not Observable Not Applicable	
5.5.3.2 [IN6] <sup>1</sup>	Above-grade wall insulation R- value.	R Mass Metal Steel Wood	R Mass Metal Steel Wood	Complies Does Not Not Observable	See the Envelope Assemblies table for values.
5.8.1.2 [IN7] <sup>1</sup>	Above-grade wall insulation installed per manufacturer's instructions.			Complies Does Not Not Observable Not Applicable	
5.5.3.4 [IN8] <sup>2</sup>	Floor insulation R-value.	R Mass Steel Wood	R Mass Steel Wood	Complies Does Not Not Observable	See the Envelope Assemblies table for values.
5.8.1.1 [IN10] <sup>2</sup>	Building envelope insulation is labeled with R-value or insulation certificate providing R-value and other relevant data.			Complies Does Not Not Observable	
5.8.1.4 [IN11] <sup>2</sup>	Eaves are baffled to deflect air to above the insulation.			Complies Does Not Not Observable Not Applicable	
5.8.1.5 [IN12] <sup>2</sup>	Insulation is installed in substantial contact with the inside surface separating conditioned space from unconditional space.			Complies Does Not Not Observable Not Applicable	
5.8.1.6 [IN13] <sup>2</sup>	Recessed equipment installed in building envelope assemblies does not compress the adjacent insulation.			Complies Does Not Not Observable Not Applicable	

1 High Impact (Tier 1) 2 Medium

2 Medium Impact (Tier 2) 3 Low

3 Low Impact (Tier 3)

Project Title: Rialto Manufacturing, Inc.

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Section # & Req.ID	Insulation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
5.8.1.7 [IN14] <sup>2</sup>	Exterior insulation is protected from damage with a protective material. Verification for exposed foundation insulation may need to occur during Foundation Inspection.			Complies Does Not Not Observable Not Applicable	
5.8.1.7.1 [IN15] <sup>2</sup>	Attics and mechanical rooms have insulation protected where adjacent to attic or equipment access.			Complies Does Not Not Observable	
5.8.1.7.2 [IN16] <sup>2</sup>	Foundation vents do not interfere with insulation.			Complies Does Not Not Observable	
5.8.1.8 [IN17] <sup>3</sup>	Insulation intended to meet the roof insulation requirements cannot be installed on top of a suspended ceiling. Mark this requirement compliant if insulation is installed accordingly.			□Complies □Does Not □Not Observable □Not Applicable	

1 High Impact (Tier 1)

2 Medium Impact (Tier 2)

3 Low Impact (Tier 3)

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
5.4.3.3 [FI1] <sup>1</sup>	dock cargo doors in Climate Zones 4-	Complies	
	8.	i□Not Observable □Not Applicable	

1 High Impact (Tier 1) 2 Medium Impact (Tier 2)

2) 3 Low Impact (Tier 3)

 Project Title:
 Rialto Manufacturing, Inc.
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# COMcheck Software Version 4.1.5.5 Mechanical Compliance Certificate

# **Project Information**

Energy Code:
Project Title:
Location:
Climate Zone:
Project Type:

90.1 (2010) Standard Rialto Manufacturing, Inc. Marion, Ohio 5a Addition

Construction Site: 1632 Cascade Drive Marion, OH 43302 Owner/Agent: Josh Obenour Rialto Manucacturing, Inc. 1632 Cascade Dr. Marion, OH 43302

# **Mechanical Systems List**

# Quantity System Type & Description

- 1 RH-1 (Single Zone): Heating: 1 each - Radiant Heater, Gas, Capacity = 175 kBtu/h No minimum efficiency requirement applies Fan System: None
- RH-2 (Single Zone):
   Heating: 1 each Radiant Heater, Gas, Capacity = 175 kBtu/h No minimum efficiency requirement applies
   Fan System: None
- RH-3 (Single Zone): Heating: 1 each - Radiant Heater, Gas, Capacity = 175 kBtu/h No minimum efficiency requirement applies Fan System: None
- RH-4 (Single Zone):
   Heating: 1 each Radiant Heater, Gas, Capacity = 175 kBtu/h No minimum efficiency requirement applies
   Fan System: None
- 1 RH-5 (Single Zone): Heating: 1 each - Radiant Heater, Gas, Capacity = 175 kBtu/h No minimum efficiency requirement applies Fan System: None
- 1 RH-6 (Single Zone): Heating: 1 each - Radiant Heater, Gas, Capacity = 175 kBtu/h No minimum efficiency requirement applies Fan System: None
- 1 RH-7 (Single Zone): Heating: 1 each - Radiant Heater, Gas, Capacity = 175 kBtu/h No minimum efficiency requirement applies Fan System: None

Designer/Contractor: Paul Omness ODI 140 Fairfax Rd. Marion, OH 43302

# **Mechanical Compliance Statement**

*Compliance Statement:* The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 90.1 (2010) Standard requirements in COM*check* Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

mandatory requirements listed in the Inspection Checklist.  $DOVG KVHL PECH_{ES}$ . Doug Hall 8-8-23 Date Signature Name - Title

# COMcheck Software Version 4.1.5.5 Inspection Checklist

Energy Code: 90.1 (2010) Standard

# Requirements: 0.0% were addressed directly in the COM*check* software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
4.2.2,6.4. 4.2.1,6.7. 2 [PR2] <sup>1</sup>	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the mechanical systems and equipment and document where exceptions to the standard are claimed. Load calculations per acceptable engineering standards and handbooks.	□Complies □Does Not □Not Observable □Not Applicable	
4.2.2,8.4. 1.1,8.4.1. 2,8.7 [PR6] <sup>2</sup>	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the electrical systems and equipment and document where exceptions are claimed. Feeder connectors sized in accordance with approved plans and branch circuits sized for maximum drop of 3%.	□Complies □Does Not □Not Observable □Not Applicable	
6.7.2.4 [PR5] <sup>1</sup>	Detailed instructions for HVAC systems commissioning included on the plans or specifications for projects >=50,000 ft2.	□Complies □Does Not □Not Observable □Not Applicable	

Additional Comments/Assumptions:

1High Impact (Tier 1)2Medium Impact (Tier 2)3Low Impact (Tier 3)

Section # & Req.ID	Footing / Foundation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
6.4.3.8 [FO9] <sup>3</sup>	Freeze protection and snow/ice melting system sensors for future connection to controls.			□Complies □Does Not □Not Observable □Not Applicable	

 1
 High Impact (Tier 1)
 2
 Medium Impact (Tier 2)
 3
 Low Impact (Tier 3)

Section # & Req.ID	Mechanical Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
	HVAC equipment efficiency verified. Non-NAECA HVAC equipment labeled as meeting 90.1.	Efficiency:	Efficiency:	□Complies □Does Not □Not Observable	<i>See the Mechanical Systems list for values.</i>
6.4.3.4.1 [ME3] <sup>3</sup>	Stair and elevator shaft vents have motorized dampers that automatically close.			<ul> <li>Not Applicable</li> <li>Complies</li> <li>Does Not</li> <li>Not Observable</li> <li>Not Applicable</li> </ul>	
6.4.3.4.2, 6.4.3.4.3 [ME4] <sup>3</sup>	Outdoor air and exhaust systems have motorized dampers that automatically shut when not in use and meet maximum leakage rates. Check gravity dampers where allowed.			Complies Does Not Not Observable Not Applicable	
6.4.3.4.5 [ME39] <sup>3</sup>	Enclosed parking garage ventilation has automatic contaminant detection and capacity to stage or modulate fans to 50% or less of design capacity.			□Complies □Does Not □Not Observable □Not Applicable	
6.4.3.4.4 [ME5] <sup>3</sup>	Ventilation fans >0.75 hp have automatic controls to shut off fan when not required.			Complies Does Not Not Observable Not Applicable	
6.4.3.9 [ME6] <sup>1</sup>	Demand control ventilation provided for spaces >500 ft2 and >40 people/1000 ft2 occupant density and served by systems with air side economizer, auto modulating outside air damper control, or design airflow >3,000 cfm.			□Complies □Does Not □Not Observable □Not Applicable	
6.4.3.10 [ME40] <sup>2</sup>	Single zone HVAC systems with fan motors >=5 hp have variable airflow controls. Air conditioning equipment with a cooling capacity >=110,000 Btu/h has variable airflow controls.			□Complies □Does Not □Not Observable □Not Applicable	<i>See the Mechanical Systems list for values.</i>
6.4.3.10 [ME40] <sup>2</sup>	Single zone HVAC systems with fan motors >=5 hp have variable airflow controls. Air conditioning equipment with a cooling capacity >=110,000 Btu/h has variable airflow controls.			□Complies □Does Not □Not Observable □Not Applicable	See the Mechanical Systems list for values.
6.4.3.10 [ME40] <sup>2</sup>	Single zone HVAC systems with fan motors >=5 hp have variable airflow controls. Air conditioning equipment with a cooling capacity >=110,000 Btu/h has variable airflow controls.			□Complies □Does Not □Not Observable □Not Applicable	<i>See the Mechanical Systems list for values.</i>
6.4.3.10 [ME40] <sup>2</sup>	Single zone HVAC systems with fan motors >=5 hp have variable airflow controls. Air conditioning equipment with a cooling capacity >=110,000 Btu/h has variable airflow controls.			□Complies □Does Not □Not Observable □Not Applicable	<i>See the Mechanical Systems list for values.</i>

			-		
1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

# & Req.ID	Mechanical Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
6.4.3.10 [ME40] <sup>2</sup>	Single zone HVAC systems with fan motors >=5 hp have variable airflow controls. Air conditioning equipment with a cooling capacity >=110,000 Btu/h has variable airflow controls.			□Complies □Does Not □Not Observable □Not Applicable	See the Mechanical Systems list for values.
6.4.3.10 [ME40] <sup>2</sup>	Single zone HVAC systems with fan motors >=5 hp have variable airflow controls. Air conditioning equipment with a cooling capacity >=110,000 Btu/h has variable airflow controls.			□Complies □Does Not □Not Observable □Not Applicable	See the Mechanical Systems list for values.
6.4.3.10 [ME40] <sup>2</sup>	Single zone HVAC systems with fan motors >=5 hp have variable airflow controls. Air conditioning equipment with a cooling capacity >=110,000 Btu/h has variable airflow controls.			Complies Does Not Not Observable Not Applicable	See the Mechanical Systems list for values.
6.4.4.1.1 [ME7] <sup>3</sup>	Insulation exposed to weather protected from damage. Insulation outside of the conditioned space and associated with cooling systems is vapor retardant.			□Complies □Does Not □Not Observable □Not Applicable	
6.4.4.1.2 [ME8] <sup>2</sup>	HVAC ducts and plenums insulated. Where ducts or plenums are installed in or under a slab, verification may need to occur during Foundation Inspection.	R	R	□Complies □Does Not □Not Observable □Not Applicable	
6.4.4.1.3 [ME9] <sup>2</sup>	HVAC piping insulation thickness. Where piping is installed in or under a slab, verification may need to occur during Foundation Inspection.	in.	in.	□Complies □Does Not □Not Observable □Not Applicable	
6.4.4.1.4 [ME41] <sup>3</sup>	Thermally ineffective panel surfaces of sensible heating panels have insulation >= R-3.5.			Complies Does Not Not Observable Not Applicable	
6.4.4.2.1 [ME10] <sup>2</sup>	Ducts and plenums sealed based on static pressure and location.			Complies Does Not Not Observable Not Applicable	
6.4.4.2.2 [ME11] <sup>3</sup>	Ductwork operating >3 in. water column requires air leakage testing.			Complies Does Not Not Observable Not Applicable	
6.4.4.2.2 [ME11] <sup>3</sup>	Ductwork operating >3 in. water column requires air leakage testing.			Complies Does Not Not Observable Not Applicable	
6.4.4.2.2 [ME11] <sup>3</sup>	Ductwork operating >3 in. water column requires air leakage testing.			Complies Does Not Not Observable Not Applicable	
6.4.4.2.2 [ME11] <sup>3</sup>	Ductwork operating >3 in. water column requires air leakage testing.			Complies Does Not Not Observable	

Section # & Req.ID	Mechanical Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
6.4.4.2.2 [ME11] <sup>3</sup>	Ductwork operating >3 in. water column requires air leakage testing.			Complies	
	-			□Not Observable □Not Applicable	
6.4.4.2.2 [ME11] <sup>3</sup>	Ductwork operating >3 in. water column requires air leakage			□Complies □Does Not	
	testing.			□Not Observable □Not Applicable	
6.4.4.2.2 [ME11] <sup>3</sup>	Ductwork operating >3 in. water column requires air leakage			□Complies □Does Not	
	testing.			□Not Observable □Not Applicable	
6.5.2.3 [ME19] <sup>3</sup>	Dehumidification controls provided to prevent reheating,			□Complies □Does Not	
	recooling, mixing of hot and cold airstreams or concurrent heating and cooling of the same airstream.			□Not Observable □Not Applicable	
6.5.3.3 [ME42] <sup>3</sup>	Multiple zone VAV systems with DDC of individual zone boxes			□Complies □Does Not	<i>See the Mechanical Systems list for values.</i>
	have static pressure setpoint reset controls.			□Not Observable □Not Applicable	
6.5.3.3 [ME42] <sup>3</sup>	Multiple zone VAV systems with DDC of individual zone boxes			□Complies □Does Not	<i>See the Mechanical Systems list for values.</i>
	have static pressure setpoint reset controls.			□Not Observable □Not Applicable	
6.5.3.3 [ME42] <sup>3</sup>	Multiple zone VAV systems with DDC of individual zone boxes			□Complies □Does Not	See the Mechanical Systems list for values.
	have static pressure setpoint reset controls.			□Not Observable □Not Applicable	
6.5.3.3 [ME42] <sup>3</sup>	Multiple zone VAV systems with DDC of individual zone boxes			□Complies □Does Not	<i>See the Mechanical Systems list for values.</i>
	have static pressure setpoint reset controls.			□Not Observable □Not Applicable	
6.5.3.3 [ME42] <sup>3</sup>	Multiple zone VAV systems with DDC of individual zone boxes			Complies Does Not	<i>See the Mechanical Systems list for values.</i>
	have static pressure setpoint reset controls.			□Not Observable □Not Applicable	
6.5.3.3 [ME42] <sup>3</sup>	Multiple zone VAV systems with DDC of individual zone boxes			Complies Does Not	<i>See the Mechanical Systems list for values.</i>
	have static pressure setpoint reset controls.			□Not Observable	
6.5.3.3	Multiple zone VAV systems with			Not Applicable Complies	<i>See the Mechanical Systems list for values.</i>
[ME42] <sup>3</sup>	DDC of individual zone boxes have static pressure setpoint reset controls.			□Does Not □Not Observable	ior values.
6.5.4.1	HVAC pumping systems >10 hp			□Not Applicable □Complies	
[ME25] <sup>3</sup>	designed for variable fluid flow.			Does Not	
				□Not Observable □Not Applicable	

-					
	I High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Mechanical Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
6.5.6.1 [ME56] <sup>1</sup>	Exhaust air energy recovery on systems meeting Table 6.5.6.1.			□Complies □Does Not	
				□Not Observable □Not Applicable	
6.5.7.1.1 [ME32] <sup>2</sup>	Kitchen hoods >5,000 cfm have make up air >=50% of exhaust air volume.			□Complies □Does Not	
	air volume.			□Not Observable □Not Applicable	
6.5.7.1.5 [ME49] <sup>3</sup>	Approved field test used to evaluate design air flow rates			□Complies □Does Not	
	and demonstrate proper capture and containment of kitchen exhaust systems.			□Not Observable □Not Applicable	
6.5.7.2 [ME33] <sup>1</sup>	Fume hoods exhaust systems >=15,000 cfm have VAV hood			□Complies □Does Not	
	exhaust and supply systems, direct make-up air or heat recovery.			□Not Observable □Not Applicable	
6.5.8.1 [ME34] <sup>2</sup>	Unenclosed spaces that are heated use only radiant heat.			□Complies □Does Not	
				□Not Observable □Not Applicable	1 1 1 1 1

 1
 High Impact (Tier 1)
 2
 Medium Impact (Tier 2)
 3
 Low Impact (Tier 3)

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
8.4.2 [EL10] <sup>2</sup>	At least 50% of all 125 volt 15- and 20-Amp receptacles are controlled by an automatic control device.	Complies Does Not Not Observable Not Applicable	
10.4.1 [EL9] <sup>2</sup>	Electric motors meet requirements where applicable.	Complies Does Not Not Observable Not Applicable	

 1
 High Impact (Tier 1)
 2
 Medium Impact (Tier 2)
 3
 Low Impact (Tier 3)

Section #	Final Increation	Compliant	Commonte (Accumentions
& Req.ID	Final Inspection	Complies?	Comments/Assumptions
6.4.3.1.2 [FI3] <sup>3</sup>	Thermostatic controls have a 5 °F deadband.	□Complies □Does Not	
		□Not Observable □Not Applicable	
6.4.3.2 [FI20] <sup>3</sup>	Temperature controls have setpoint overlap restrictions.	□Complies □Does Not	
		□Not Observable □Not Applicable	
6.4.3.3.1 [FI21] <sup>3</sup>	HVAC systems equipped with at least one automatic shutdown control.	□Complies □Does Not	
		□Not Observable □Not Applicable	
6.4.3.3.2 [FI22] <sup>3</sup>	restart and temporary operation as	□Complies □Does Not	
	required for maintenance.	□Not Observable □Not Applicable	
6.4.3.7 [FI6] <sup>3</sup>	When humidification and dehumidification are provided to a	□Complies □Does Not	
	zone, simultaneous operation is prohibited.	□Not Observable □Not Applicable	
6.7.2.1 [FI7] <sup>3</sup>	submitted within 90 days of system	□Complies □Does Not	
	acceptance.	□Not Observable □Not Applicable	
6.7.2.2 [FI8] <sup>3</sup>	Furnished O&M manuals for HVAC systems within 90 days of system	□Complies □Does Not	
	acceptance.	□Not Observable □Not Applicable	
6.7.2.3 [FI9] <sup>1</sup>		□Complies □Does Not	
	systems serving zones >5,000 ft2 of conditioned area.	□Not Observable □Not Applicable	
6.7.2.4 [FI10] <sup>1</sup>	HVAC control systems have been tested to ensure proper operation, collipation and adjustment of controls	□Complies □Does Not	
	calibration and adjustment of controls.	□Not Observable □Not Applicable	
10.4.3 [FI24] <sup>2</sup>	proper lighting, ventilation power, and	□Complies □Does Not	
	standby mode.	□Not Observable □Not Applicable	

1

	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
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# **COMcheck Software Version 4.1.5.4 Interior Lighting Compliance Certificate**

# **Project Information**

Energy Code:	90.1 (2010) Standard
Project Title:	Rialto Manufacturing, Inc.
Project Type:	Addition

Construction Site:	
1632 Cascade Drive	
Marion, OH 43302	

Owner/Agent: Josh Obenour Rialto Manucacturing, Inc. 1632 Cascade Dr. Marion, OH 43302

Designer/Contractor: Paul Omness ODI 140 Fairfax Rd. Marion, OH 43302

### Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft		D wed Watts (B X C)	
1-Manufacturing (Manufacturing:High Bay (25-50 ft. Floor to Ceiling Height))	29250	1.23		35978	
	Тс	otal Allowed V	/atts =	= 35978	
Proposed Interior Lighting Power					
A	В	С	D	E	
Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	Lamps/ Fixture	# of Fixtures	Fixture Watt.	(C X D)	
1-Manufacturing (Manufacturing:High Bay (25-50 ft. Floor to Ceiling Height))					
LED 1: A: 2X4 Surface Flat Panel: LED Panel 40W:	1	12	40	480	
LED 2: B: 4'-0" Strip Light: LED Panel 44W:	1	19	50	950	
LED 3: C: 24,000 Lumen High Bay: LED Other Fixture Unit 125W:	1	77	151	11627	
LED 3 copy 1: C1: 12,000 Lumen High Bay: LED Other Fixture Unit 125W:	1	7	74	518	
		Total Propos	ed Watts =	13575	

# Interior Lighting PASSES: Design 62% better than code

### Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 90.1 (2010) Standard requirements in COMcheck Version 4.1.5.4 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

61 ESIGNE Name - Title

Signatu

# COMcheck Software Version 4.1.5.4 Exterior Lighting Compliance Certificate

# **Project Information**

Energy Code:		90.1 (2010) Standard	
Project Title:		Rialto Manufacturing, Inc.	
Project Type:		Addition	
Exterior Lighting Zone	÷.,	3 (Other (LZ3))	

Construction Site: 1632 Cascade Drive Marion, OH 43302 Owner/Agent: Josh Obenour Rialto Manucacturing, Inc. 1632 Cascade Dr. Marion, OH 43302 Designer/Contractor: Paul Omness ODI 140 Fairfax Rd. Marion, OH 43302

### **Allowed Exterior Lighting Power**

A Area/Surface Category	B Quantity	C Allowed Watts / Unit	D Tradable Wattage	E Allowed Watts (B X C)
Wall Surface (Illuminated length of facade wall or surface)	580 ft	3.75	No	2175
		Total Tradab	le Watts (a) =	0
		Total All	owed Watts =	2175
	Total All	owed Supplement	tal Watts (b) =	750
(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.				

(b) A supplemental allowance equal to 750 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

# **Proposed Exterior Lighting Power**

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (CXD)
Wall Surface (Illuminated length of facade wall or surface 580 ft): Non-tradable Wa	ttage			
LED 1: G: Wall Pack: LED Other Fixture Unit 103W:	1	13	100	1300
	Total Tradable Proposed Watts =			0

# Exterior Lighting PASSES: Design 0.0% better than code

# **Exterior Lighting Compliance Statement**

*Compliance Statement:* The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 90.1 (2010) Standard requirements in COM*check* Version 4.1.5.4 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title

Signa

# COMcheck Software Version 4.1.5.4 Inspection Checklist

# Energy Code: 90.1 (2010) Standard

Requirements: 0.0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
4.2.2,8.4. 1.1,8.4.1. 2,8.7 [PR6] <sup>2</sup>	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the electrical systems and equipment and document where exceptions are claimed. Feeder connectors sized in accordance with approved plans and branch circuits sized for maximum drop of 3%.	Complies Does Not Not Observable Not Applicable	
4.2.2,9.4. 4,9.7 [PR4] <sup>1</sup>	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	Complies Does Not Not Observable Not Applicable	
9.7 [PR8] <sup>1</sup>	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the exterior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include exterior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	Complies Does Not Not Observable Not Applicable	

**Additional Comments/Assumptions:** 

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: Rialto Manufacturing, Inc.

Data filename: C:\Users\owner\Documents\ACAD\Omnsess\Rialto Manufacturing\Rialto Comcheck.cck

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
8.4.2 [EL10] <sup>2</sup>	At least 50% of all 125 volt 15- and 20-Amp receptacles are controlled by an automatic control device.	□Complies □Does Not □Not Observable □Not Applicable	
9.4.1.1 [EL1] <sup>2</sup>	Automatic controls to shut off all building lighting.	Complies Does Not Not Observable	
9.4.1.2 [EL2] <sup>2</sup>	Independent lighting controls installed per approved lighting plans and all manual controls readily accessible and visible to occupants	□Not Applicable □Complies □Does Not □Not Observable □Not Applicable	
9.4.1.3 [EL11] <sup>2</sup>	Parking garage lighting is equipped with required lighting controls and daylight transition zone lighting.	□Complies □Does Not □Not Observable □Not Applicable	-
9.4.1.4 [EL12] <sup>1</sup>	Primary sidelighted areas >=250 ft2 are equipped with required lighting controls.	□Complies □Does Not □Not Observable □Not Applicable	
9.4.1.5 [EL13] <sup>1</sup>	Enclosed spaces with daylight area under skylights and rooftop monitors >900 ft2 are equipped with required lighting controls.	Complies Does Not Not Observable Not Applicable	
9.4.1.7 [EL3] <sup>2</sup>	Automatic lighting controls for exterior lighting installed.		
9.4.1.6 [EL4] <sup>1</sup>	Separate lighting control devices for specific uses installed per approved lighting plans.	□Complies □Does Not □Not Observable □Not Applicable	
9.4.2 [EL6] <sup>1</sup>	Exit signs do not exceed 5 watts per face.	Complies Does Not Not Observable Not Applicable	
9.4.3 [EL7] <sup>1</sup>	Exterior grounds lighting over 100 W provides >60 lm/W unless on motion sensor or fixture is exempt from scope of code or from external LPD		
9.6.2 [EL8] <sup>1</sup>	allowed for special functions per the approved lighting plans and is automatically controlled and	□Complies □Does Not □Not Observable □Not Applicable	

1 High Impact (Tier 1) 2 Medium Impact (Tier 2)	3	Low Impact (Tier 3)
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Project Title: Rialto Manufacturing, Inc.

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Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
8.7.1 [FI16] <sup>3</sup>	Furnished as-built drawings for electric power systems within 30 days of system acceptance.	□Complies □Does Not □Not Observable □Not Applicable	
8.7.2 [FI17] <sup>3</sup>	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	□Complies □Does Not □Not Observable □Not Applicable	
9.2.2.3 [FI18] <sup>1</sup>	Interior installed lamp and fixture lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	Complies Does Not Not Observable Not Applicable	See the Interior Lighting fixture schedule for values.
9.4.3 [FI19] <sup>1</sup>	Exterior lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	□Complies □Does Not □Not Observable □Not Applicable	See the Exterior Lighting fixture schedule for values.

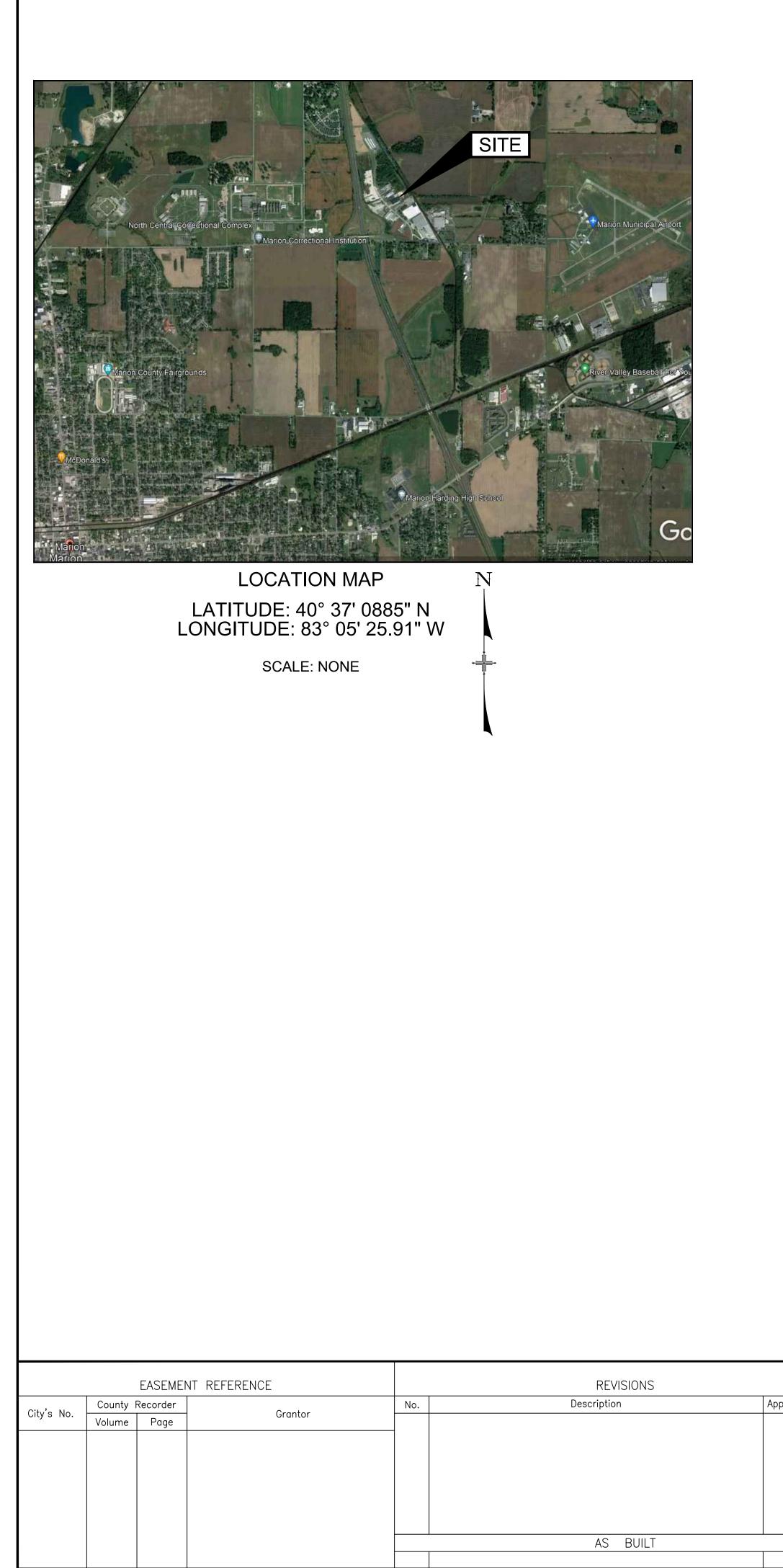
 1
 High Impact (Tier 1)
 2
 Medium Impact (Tier 2)
 3
 Low Impact (Tier 3)

Project Title: Rialto Manufacturing, Inc.

Data filename: C:\Users\owner\Documents\ACAD\Omnsess\Rialto Manufacturing\Rialto Comcheck.cck

 Project Title:
 Rialto Manufacturing, Inc.
 Report

 Data filename:
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# CONSTRUCTION PLANS FOR: RIALTO MANUFACTING INC. BUILDING ADDITION 2023

# SITUATED IN THE STATE OF OHIO, COUNTY OF MARION, CITY OF MARION AND BEING PART OF MARION TOWNSHIP

OWNER

**RIALTO MANUFACTURING INC.** 1632 CASCADE DR. MARION, OHIO 43302 PHONE: (740) 914-4230 FAX: (740) 914-4260

I HEREBY STATE THAT THESE PLANS HAVE BEEN PREPARED WITH OUR KNOWLEDGE AND CONCURRENCE AND REPRESENT OUR INTENT AND INTEREST.

OWNER AND DEVELOPER

DATE



oroval Date	Plans Prepared By : Akeever ssociates, Inc. Po. Box 325, 1810 E. MANSFIELD ST. BUCYRUS, OHIO 44820 Phone: (419) 562-7757 Fax: (419) 562-4717 DYLAN J. WYATT E-86763	Signatures below signify only concurrence with the general purpose and general location of the project. All technical details remain the responsibility of the engineer preparing the plans.	ENG. FILE NO	BUILDING AD	ACTURING, INC. DDITION 2023 N, OHIO
	DYLAN J. WYATT				Sheet No. : 1 OF 6
	<u>E-86763</u> Ohio Reg. NoDate			Original Sheet Size = 24"x36" Original Date : 07/26/2023	S:\2022\091\Staking Dwg. No. : 2022-091-002E

INDEX OF SHEETS

TITLE SHEET **GENERAL NOTES** EXISTING SITE PLAN PROPOSED LAYOUT PLAN GRADING PLAN DETENTION BASIN

# **GENERAL NOTES**

WHERE SPECIFIED. THE CURRENT STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS (O.D.O.T. NUMBERS) SHALL APPLY EXCEPT AS MODIFIED OR EXPANDED HEREIN OR IN THE TECHNICAL SPECIFICATIONS

# UNDERGROUND UTILITIES

THE LOCATIONS OF THE UNDERGROUND UTILITIES AS SHOWN ON THE PLANS WERE OBTAINED FROM THE OWNERS OF THE UTILITY. THE LOCATION OF THE EXISTING UTILITIES AS SHOWN ON THESE PLANS IS APPROXIMATE. THE EXACT LOCATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE EXISTING UTILITIES IN THE PROJECT AREA SHALL BE PROTECTED DURING CONSTRUCTION.

# UTILITIES NOTIFICATION

AT LEAST TWO (2) WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION OPERATIONS IN AN AREA WHICH MAY INVOLVE UNDERGROUND UTILITY FACILITIES, THE CONTRACTOR SHALL NOTIFY THE FOLLOWING COMPANIES:

1. OHIO UTILITY PROTECTION SERVICE (811)

# MAINTAINING TRAFFIC

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND CONTROLLING TRAFFIC ON ALL STREETS AND ROADS AFFECTED BY CONSTRUCTION AND SHALL, PRIOR TO ANY CONSTRUCTION, SUBMIT A CONSTRUCTION SCHEDULE TO THE MARION TOWNSHIP, OHIO FOR APPROVAL INDICATING DATES AND DURATION OF EACH PHASE OF CONSTRUCTION.

ALL CONSTRUCTION SIGNS AND TEMPORARY TRAFFIC CONTROL AND PROTECTION DEVICES SHALL BE ERECTED AND MAINTAINED IN ACCORDANCE WITH "OHIO DEPARTMENT OF TRANSPORTATION MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS," AND O.D.O.T. ITEM 614 - MAINTAINING TRAFFIC. PAYMENT FOR MAINTAINING TRAFFIC SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PROJECT.

# TESTING OF MATERIALS

ANY MATERIALS DELIVERED OR OTHERWISE INCORPORATED INTO THE PROJECT MAY BE SUBJECTED TO TESTING BY THE ENGINEER TO INSURE COMPLIANCE WITH SPECIFICATIONS. TESTS PERFORMED WILL BE PAID FOR BY THE OWNER WITH NO ADDITIONAL COST ASSUMED BY THE CONTRACTOR.

# MISCELLANEOUS ITEMS

THE CONTRACTOR SHALL REMOVE ANY MAILBOX. STREET SIGNS. YARD LIGHTS, FENCES, LAWN ORNAMENTS, ETC. WHICH COULD BE DAMAGED DURING THE COURSE OF CONSTRUCTION AND RESET SAME AFTER CONSTRUCTION HAS PASSED THE AREA.

ANY CATCH BASINS, LAWNS, DRIVEWAYS, OR OTHER VARIOUS ITEMS DISTURBED DURING THE CONSTRUCTION OF THE PROJECT SHALL BE REPAIRED TO A LIKE OR BETTER CONDITION. PAYMENT OF THIS WORK SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PROJECT.

# TRENCH PROTECTION

THE CONTRACTOR SHALL PROVIDE SHORING, SHEETING, BRACING, TRENCH BOX, ETC., AS REQUIRED TO PROTECT EXISTING STRUCTURES, UTILITIES, WORKMEN, ETC. PAYMENT OF THIS WORK SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PROJECT.

BACKFILLING SHALL FOLLOW IMMEDIATELY BEHIND CONSTRUCTION AND ONLY THE MINIMUM LENGTH OF TRENCH REQUIRED FOR CONSTRUCTION SHALL BE OPEN AT ANY GIVEN TIME.

# CONCRETE

ALL CONCRETE UTILIZED WITHIN THIS PROJECT SHALL BE O.D.O.T. CLASS "QC MISC" UNLESS OTHERWISE STATED. PAYMENT FOR CONCRETE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PROJECT.

# CLEARING AND GRUBBING

THIS WORK SHALL CONSIST OF CLEARING, GRUBBING, SCALPING, REMOVAL OF TREES AND STUMPS, AND DISPOSING OF ALL VEGETATION AND DEBRIS WITHIN THE LIMITS OF THE PROJECT AREA AS DIRECTED BY THE ENGINEER. PAYMENT FOR CLEARING AND GRUBBING SHALL BE INCLUDED IN THE CONTRACT PRICES FOR THE PROJECT.

# AGGREGATE BACKFILL

CONTRACTOR SHALL USE O.D.O.T. ITEM 304 BACKFILL IN ALL UTILITY TRENCHES IN ALL DISTURBED ASPHALT OR PROPOSED ASPHALT AREAS UNLESS OTHERWISE NOTED. PAYMENT FOR AGGREGATE BACKFILL MATERIAL SHALL BE INCLUDED IN THE CONTRACT PRICES FOR THE PROJECT.

# EARTH BACKFILL

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING SUITABLE EARTH BACKFILL IN ALL GRASS AREAS. THE TOP 6 INCHES OF THE FILL MATERIAL SHALL BE TOPSOIL. PAYMENT FOR EARTH BACKFILL MATERIAL AND TOPSOIL SHALL BE INCLUDED IN THE CONTRACT PRICES FOR THE PROJECT.

# SEEDING AND MULCHING

ALL GRASS AREAS DISTURBED DURING THE COURSE OF THE CONTRACT SHALL BE PROPERLY SEEDED, MULCHED, AND FERTILIZED ACCORDING TO O.D.O.T. ITEM 659. PAYMENT FOR SEEDING AND MULCHING SHALL BE INCLUDED IN THE CONTRACT PRICES FOR THE PROJECT.

# EXCAVATION

CONTRACTOR SHALL REMOVE ALL TOPSOIL ENCOUNTERED PRIOR TO PLACING PROPOSED FILL MATERIAL AND REPLACE WITH SUITABLE CLAY SOIL TO SUBGRADE ELEVATIONS. IN CUT AREAS, A MINIMUM OF 12" OF 203 MATERIAL SHALL BE REMOVED AND PLACED TO PROPER GRADE AND COMPACTION. PAYMENT FOR EXCAVATION SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PROJECT.

# STORM SEWERS

THE CONTRACTOR MAY USE THE FOLLOWING MATERIAL SPECIFICATIONS IN PREPARING THE UNIT PRICE BID FOR THE STORM SEWER CONDUIT

- 1. AASHTO M-294 TYPE "S" CORRUGATED POLYETHYLENE PIPE WITH BUILT IN BELL AND SPIGOT (PER ASTM M-249) WITH GASKETS (PER ASTM F-477) FOR SIZES: 6" - 8"
- 2. ADS N-12 ST IB PIPE (PER ASTM F-2648) WITH BUILT IN BELL AND SPIGOT (PER ASTM F-2648) WITH GASKETS (PER ASTM F-477) FOR SIZES: 6" - 8"

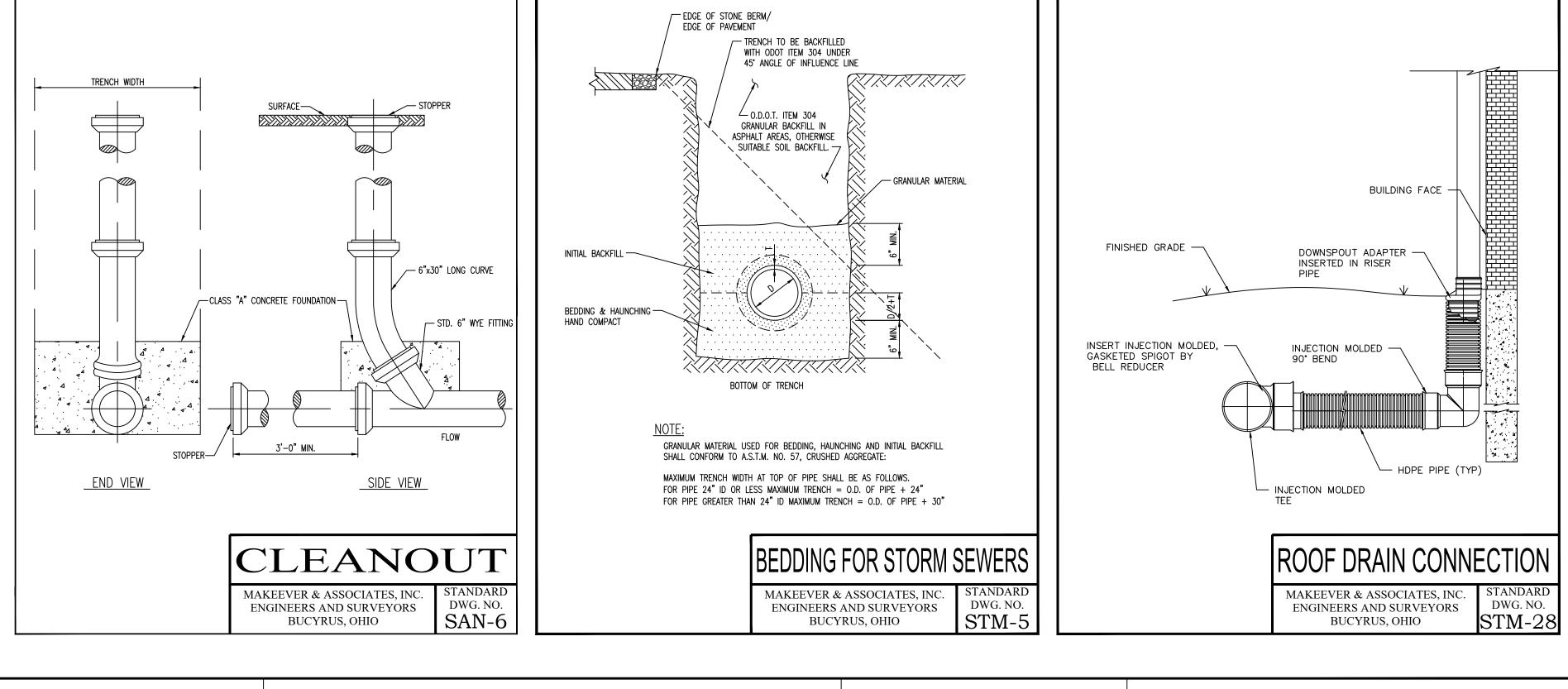
TO INSURE PROPER HORIZONTAL AND VERTICAL ALIGNMENT OF THE STORM SEWERS DURING CONSTRUCTION, THE CONTRACTOR SHALL USE A LASER ALIGNMENT DEVICE CAPABLE OF BOTH HORIZONTAL AND VERTICAL ADJUSTMENT.

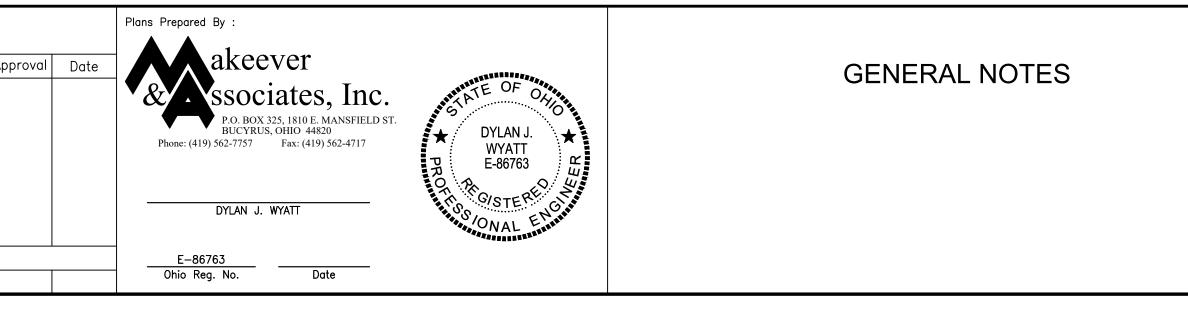
ALL TRENCHES FOR THE STORM SEWER SHALL CONFORM TO STANDARD DRAWING STM-5 BEDDING FOR STORM SEWERS LOCATED IN STANDARD DRAWINGS. PAYMENT FOR STORM SEWER TRENCH AND BEDDING SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PROJECT.

# WATERLINE

REFERENCE AQUA MULTI-FAMILY, COMMERCIAL, AND INDUSTRIAL METER AND SERVICE STANDARDS FOR ALL WORK RELATED TO THE NEW WATER SERVICE AND FIRE HYDRANT ASSEMBLY.

		EASEME	NT REFERENCE		REVISIONS	
City's No.	County Re	Recorder	Quantum	No.	Description	Ap
City's No.	Volume	olume Page Grantor				
					AS BUILT	
					AS DOILT	



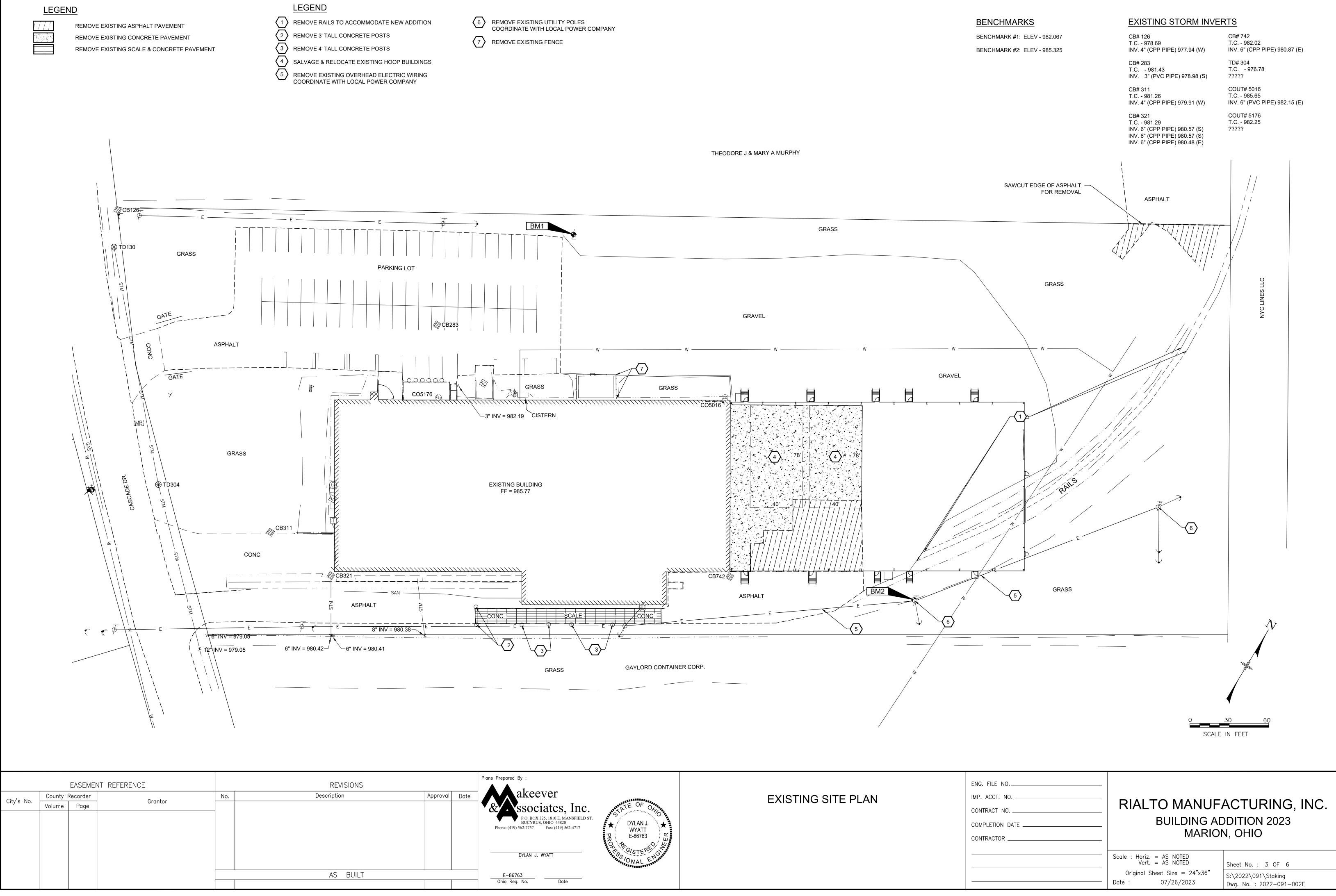


# LEGEND

FOUND SET

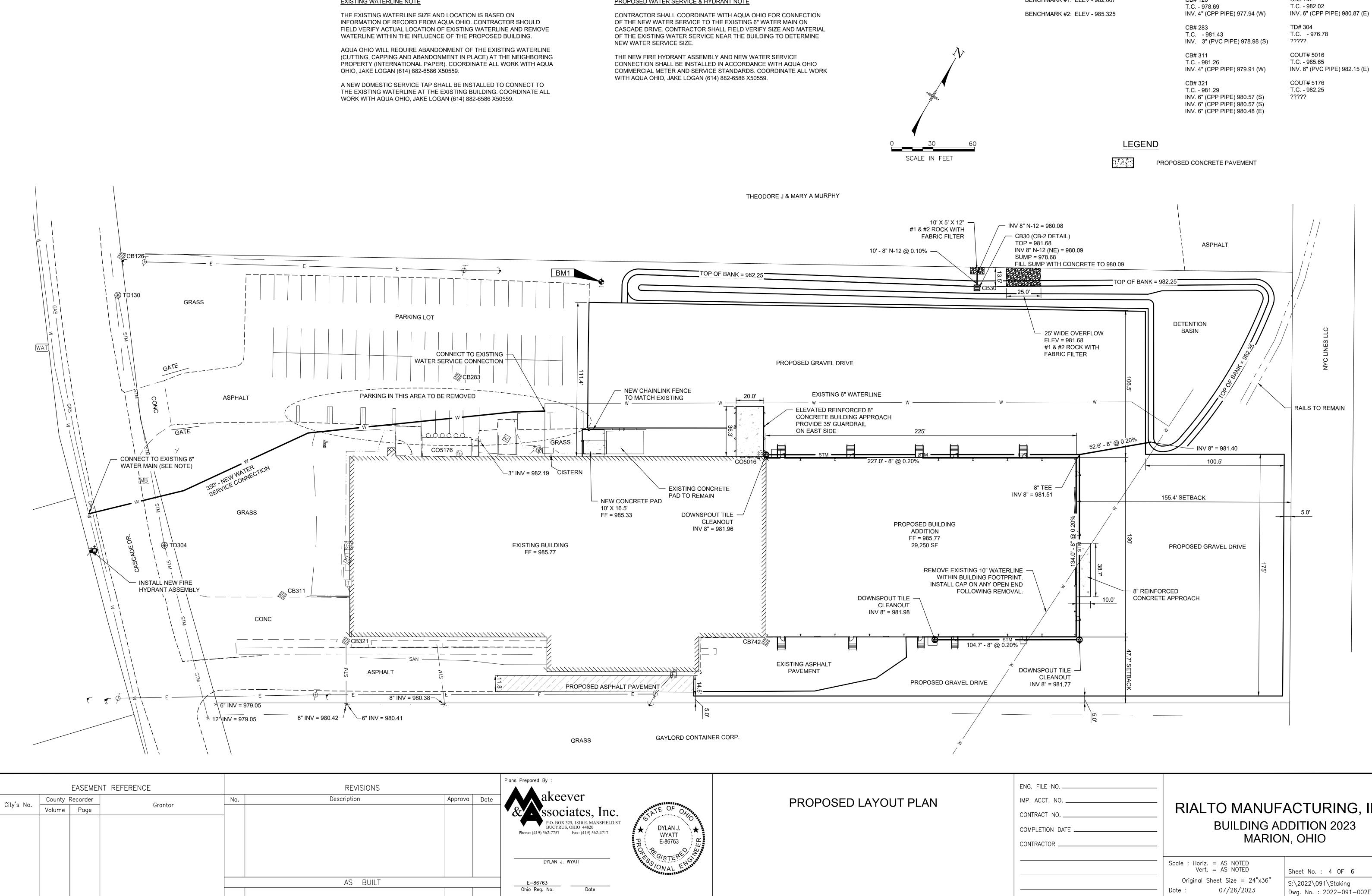
TOUND	5L1			
Ø		3/4" IRON PIPE, UNLESS NOTED	-1	SIGN
0	ightarrow	5/8" IRON PIN, UNLESS NOTED	T	TELEPHONE BOX
$\bigcirc$	•	SURVEY NAIL	C	GAS METER
$\bigtriangleup$		RAIL ROAD SPIKE	ЧG	GAS MARKER
$\bigcirc$		MAG SPIKE	$\oslash$	GAS VALVE
$\overline{T}$		T BAR	$\Theta$	TREE
$\odot$		CONCRETE MONUMENT		EVERGREEN TREE
		CATCH BASIN	Ê	SHRUB
Ø		STORM MANHOLE	鬥	STUMP
$\circledast$		TILE DROP	SAN	SANITARY SEWER
©)		CLEAN OUT	STM	STORM SEWER
S		SANITARY MANHOLE	W	WATER LINE
WELL		WELL	E	ELECTRIC LINE
38		ELECTRIC TRANSFORMER	T	TELEPHONE LINE
AC		AIR CONDITIONER UNIT	CATV	CABLE TV LINE
Þ		FLAG POLE	GAS	GAS LINE
ф		POWER POLE	xx	FENCE
€		GUY WIRE	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	TREE LINE

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AS	BUIL





PROPOSED WATER SERVICE & HYDRANT NOTE

# BENCHMARKS

BENCHMARK #1: ELEV - 982.067

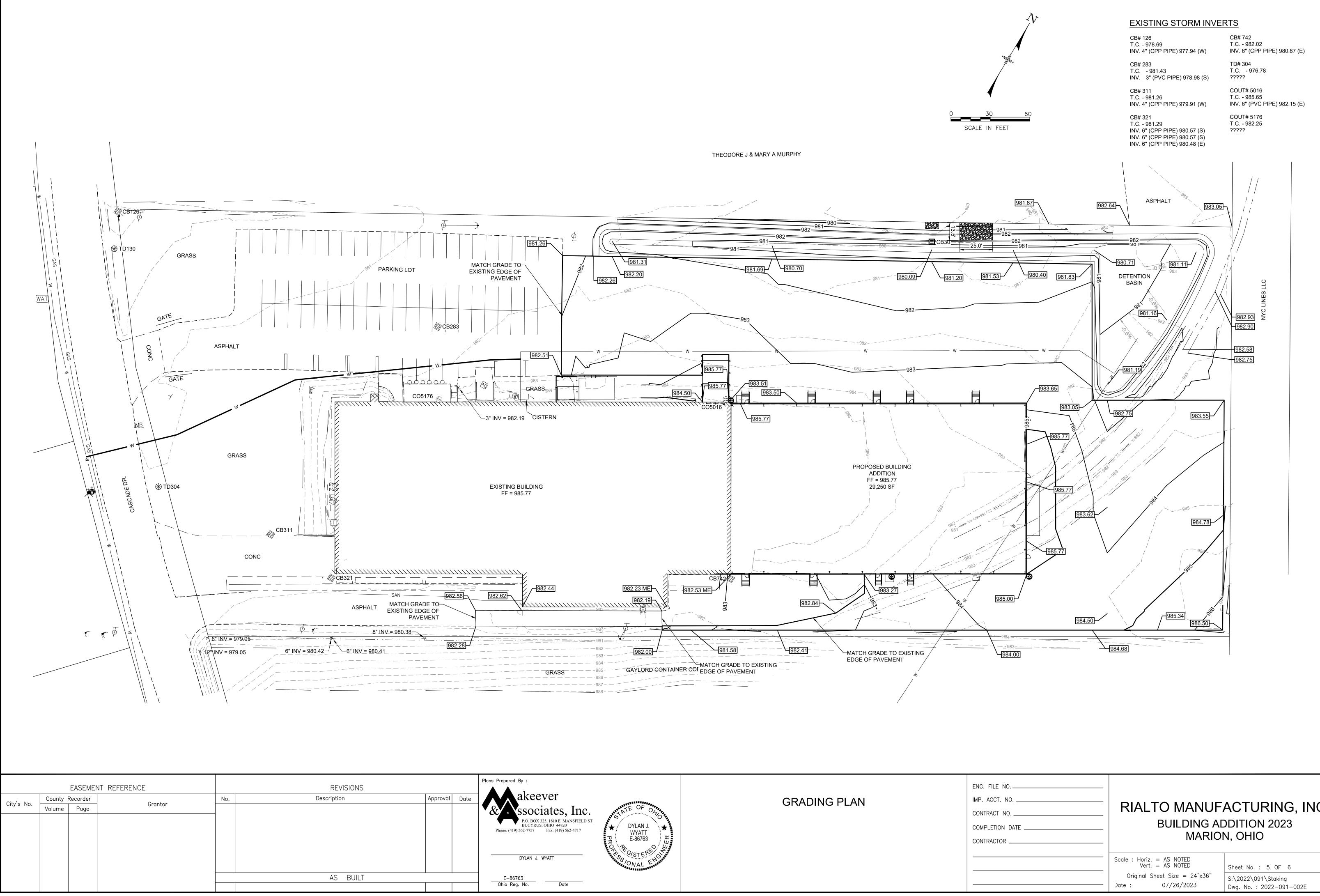
# EXISTING STORM INVERTS

CB# 126

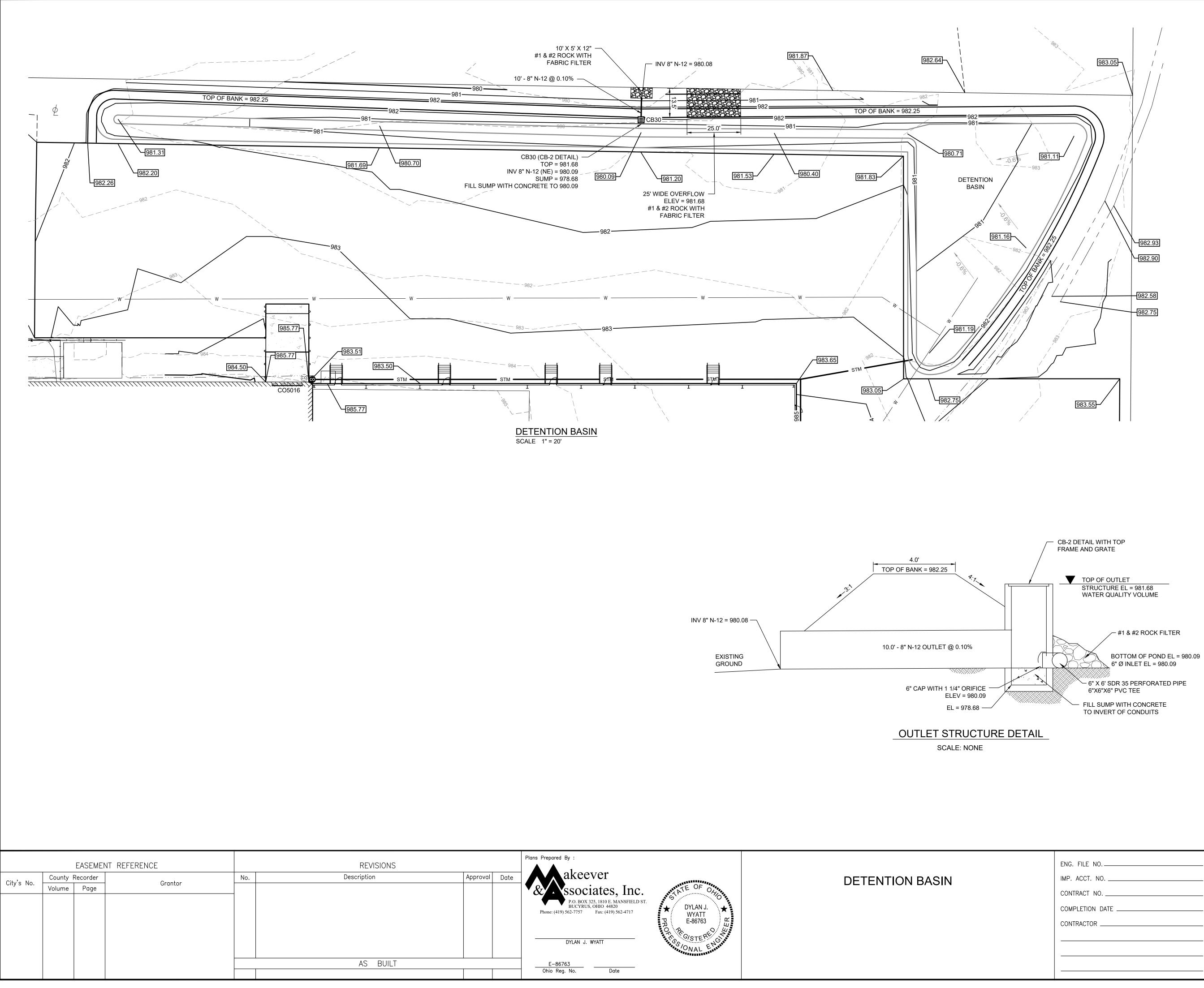
CB# 742 INV. 6" (CPP PIPE) 980.87 (E)

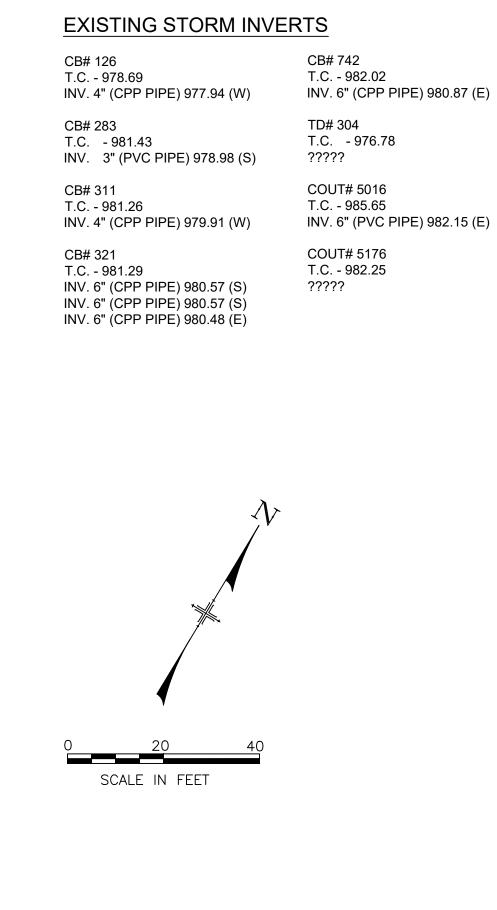
INV. 6" (PVC PIPE) 982.15 (E)

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	Scale : Horiz. = AS NOTED Vert. = AS NOTED	Sheet No. : 5 OF 6
	Original Sheet Size = 24"x36" Date : 07/26/2023	S:\2022\091\Staking Dwg. No. : 2022-091-002E

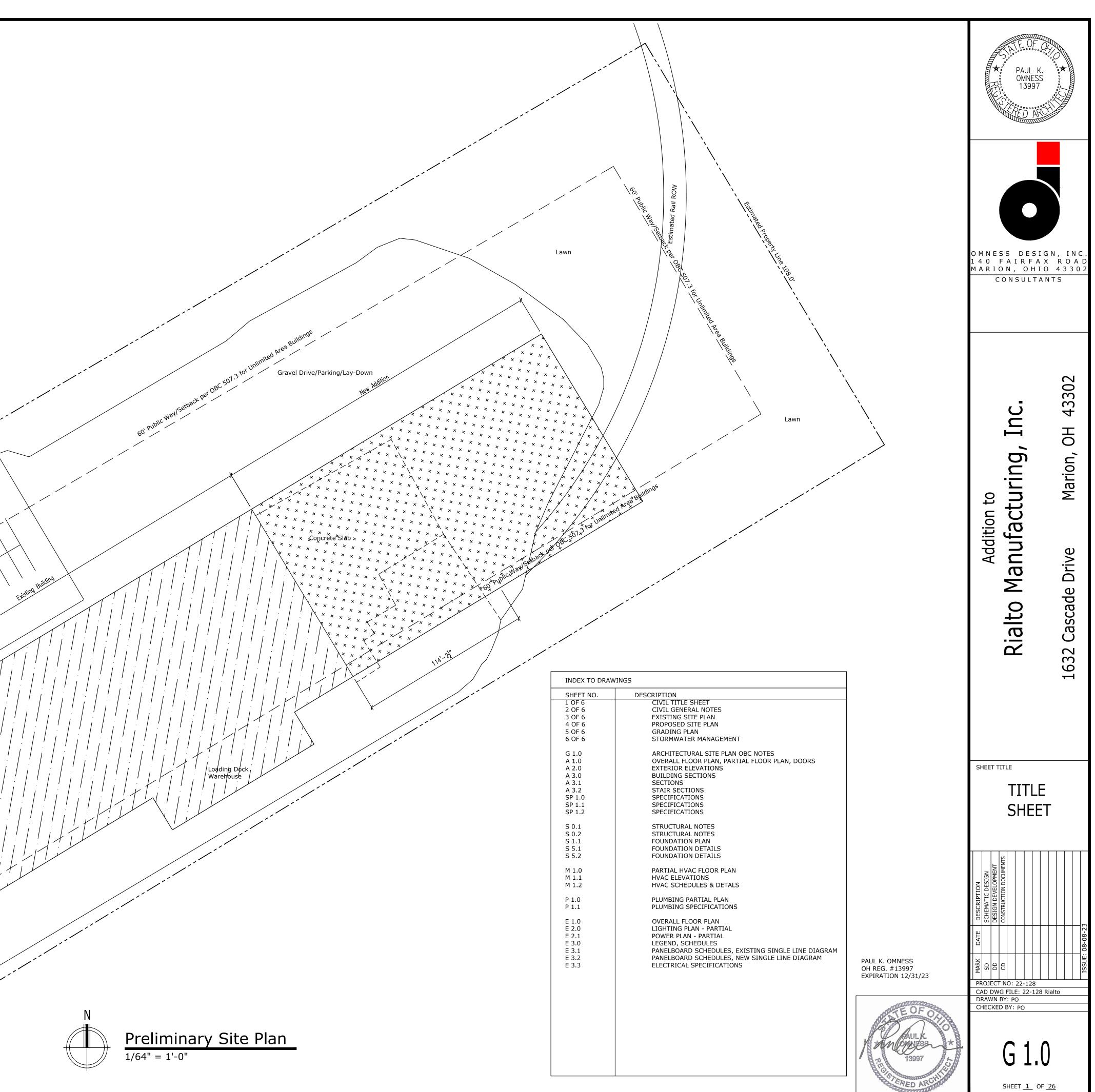


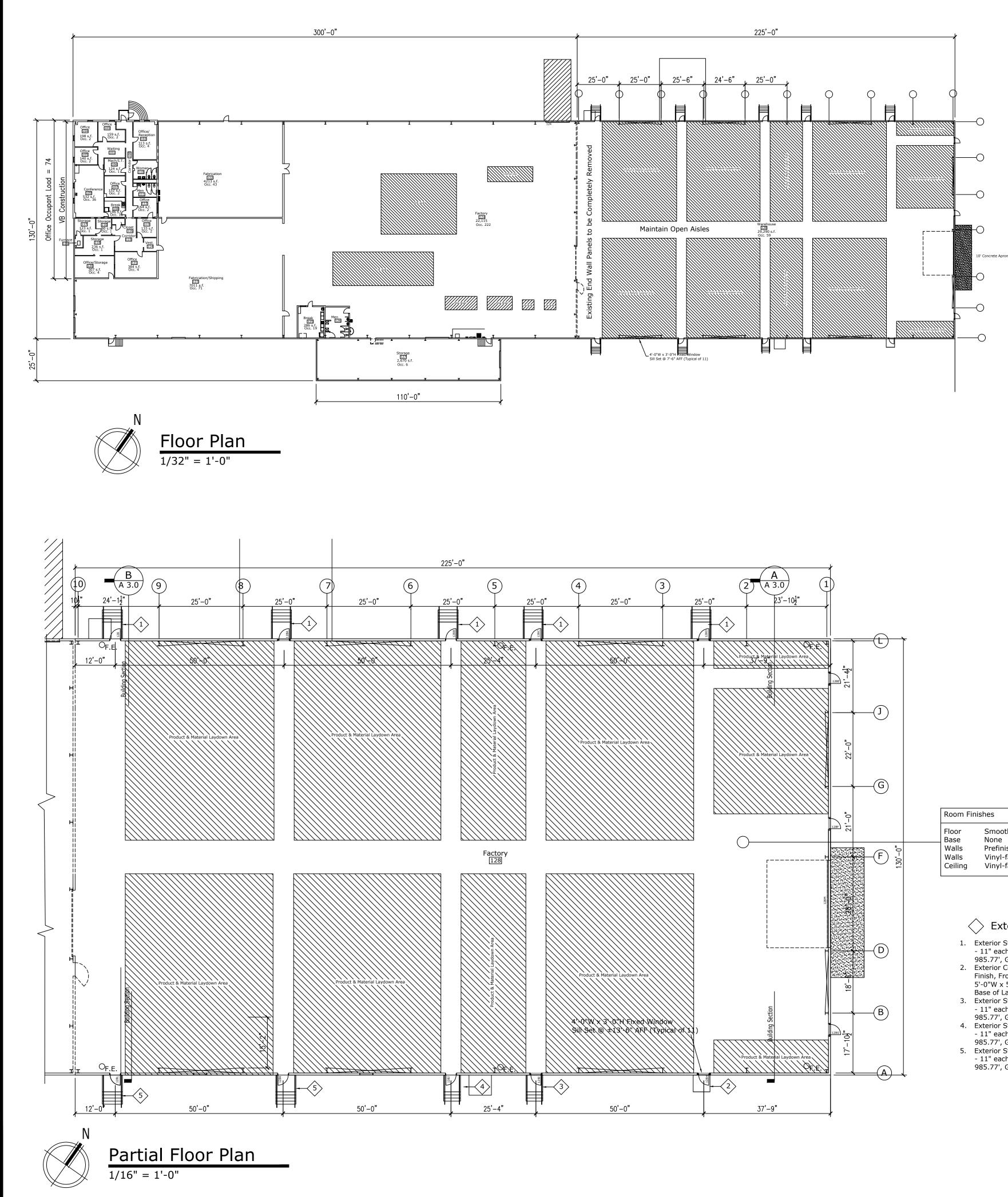


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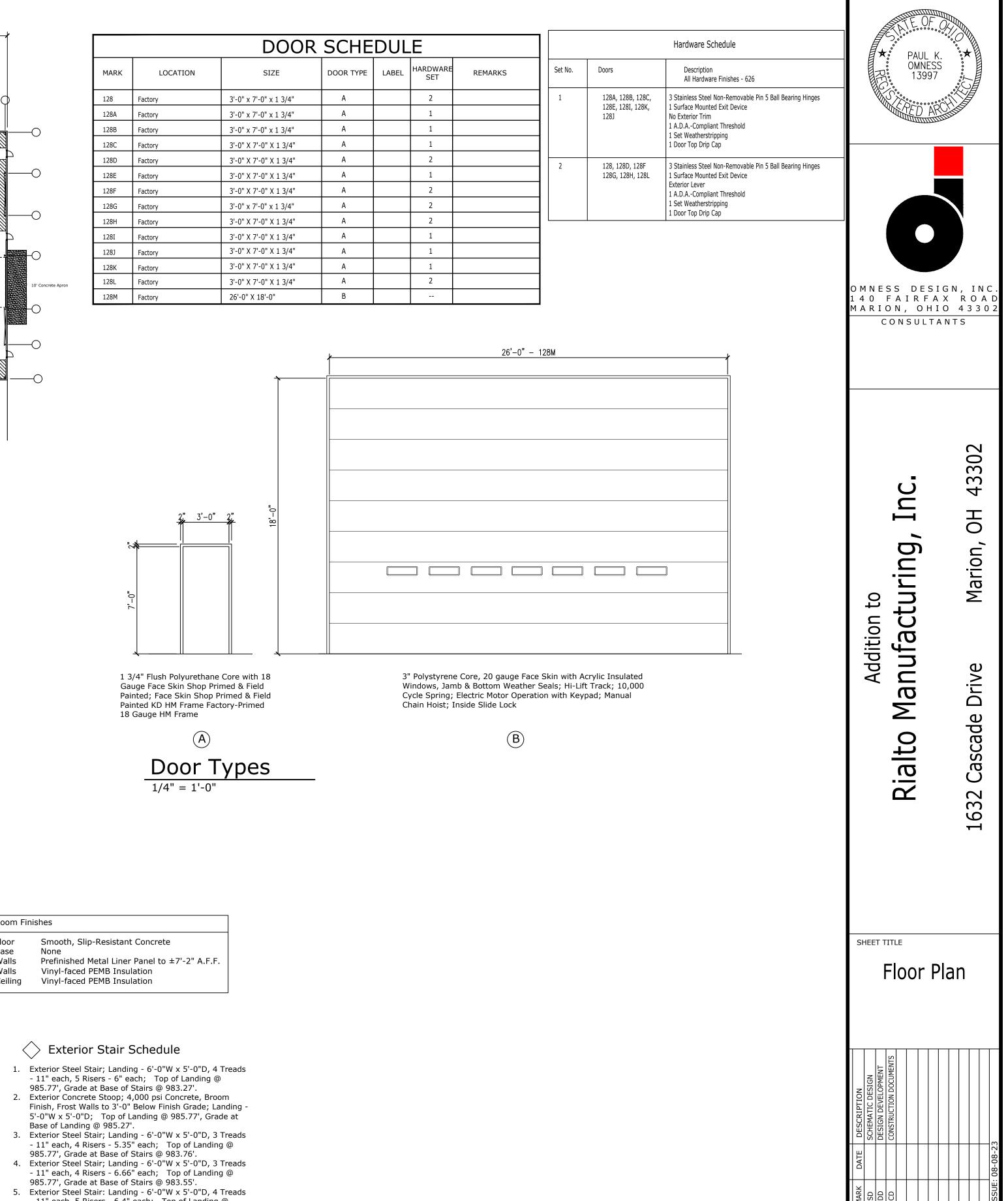
ENG. FILE NO	BUILDING AD	ACTURING, INC. DDITION 2023 N, OHIO
	Scale : Horiz. = AS NOTED Vert. = AS NOTED	Sheet No. : 6 OF 6
	Original Sheet Size = 24"x36" Date : 07/26/2023	S:\2022\091\Staking Dwg. No. : 2022-091-002E

BUILDING CODE MECHANICA CODE OF 0010 BUILDING CODE 2017 HELENING CODE OF 0010 BUILDING CODE 2017 HELENING CODE OF 0010 SUBJECT 2010 BUILDING CODE OF 0010 BUILDING CODE 0017 HELENING CODE DESCRIPTION: ADDITION OF WAREHOUSING AREA PROPOSED OCCUMANCY CLASSIFICATIONS F-2,5-2, B UNSERVACTOR VICEOUSING AREA PROPOSED OCCUMANCY CLASSIFICATIONS F-2,5-2, B UNSERVACTOR UNCEOUSING AREAS EXISTING CALORA AREAS EXISTING CLASS F-2,5-2, B NA PROPOSED OCCUMANCY CLASSIFICATIONS F-2,5-2, B NA PROPOSED OCCUMANCY CLASSIFICATIONS F-2,5-2, B NA PROPOSED OCCUMANCY CLASSIFICATIONS F-2,5-2, B NA PROPOSED OCCUMANCY CLASSIFICATIONS F-2,5-2, B NA PROPOSED AND AREAS EXISTING CLOSS AREA PROPOSED OCCUMANT AREA F-2,5-2, B NA PROPOSED AREA F-2,5-2, B NA PROPOSED OCCUMANT AREA F-2,5-2, B NA PROPOSED AREA F-2,5-2, B NA PROPOSED AREA F-2,5-2, B NA PROPOSED OCCUMANT AREA F-2,5-2, B NA PROPOSED OCCUMANT AREA F-2,5-2, B PROPOSED OCCUMANT AREA F-2,5-2,5-2,5-2,5-2,5-2,5-2,5-2,5-2,5-2,5	
BOARD OF APPEALS CASE +22-046 CP4.202200016 DESCREPTOR: MODITION OF WAREHOUSING AREA PRISTING COUPANY CLASSIFICATIONS F-2, S-2, B MIC UNSERVARATION MADE US MIC UNSERVARATION MADE US MIC UNSERVARATION MADE US MIC UNSERVARATION CLASSIFICATIONS F-2, S-2, B MIC UNSERVARATION MADE US MIC UNSERVARATION MADE US MIC UNSERVARATION CLASSIFICATIONS F-2, S-2, B MIC UNSERVARATIONS F-2, S-2, B MIC UNSERVARATION CLASSIFICATIONS F-2, S-2, B MIC UNSERVARATION CLASSIFICATION CLASSIFICATION CLASSIFICATION CLASSIFICATION CLASSIFICATION CLASSIFICATION CLASSIFICATION CLASSIFICATION CLASSIF	
ADDITION OF WAREHOUSING AREA EXISTING COLUMNATION CLASSIFICATIONS F-2,5-2,8 PREVIOUS CR4 +5 VIA UNDERPARATION MIXED USE VIA	
PROPOSED OCCUPANCY CLASSIFICATIONS F-2, S-2, B UNSERVARUED MIXED VES PREVEVOUS CFA # 3 NA CONSTRUCTION CLASS IIB HEIGHT I STORK, 30 FEET EXISTING FLOOR AREAS EXISTING FL	
EXISTING FLOOR AREAS EXISTING B EXISTING F 2/5-2 TOTAL AREA TOTAL AREA TOTAL AREA TOTAL AREA TOTAL AREA NCREASE (LOO% OPEN PERIMETER) I, = (1 - 0.25] = (0.75 * 0.86] = 0.65 AREA NCREASE (LOO% OPEN PERIMETER) I, = (1 - 0.25] = (0.75 * 0.86] = 0.65 AREA NCREASE (LOO% OPEN PERIMETER) I, = (1 - 0.25] = (0.75 * 0.86] = 0.65 AREA NCREASE (LOO% OPEN PERIMETER) I, = (1 - 0.25] = (0.75 * 0.86] = 0.65 AREA NCREASE (LOO% OPEN PERIMETER) I, = (1 - 0.25] = (0.75 * 0.86] = 0.65 AREA NCREASE (LOO% OPEN PERIMETER) I, = (1 - 0.25] = (0.75 * 0.86] = 0.65 AREA NCREASE (LOO% OPEN PERIMETER) I, = (1 - 0.25] = (0.75 * 0.86] = 0.65 AREA NCREASE (LOO% OPEN PERIMETER) I, = (1 - 0.25] = (0.75 * 0.86] = 0.65 AREA NCREASE (LOO% OPEN PERIMETER) I, = (1 - 0.25] = (0.75 * 0.86] = 0.65 AREA NCREASE (LOO% OPEN PERIMETER) I, = (1 - 0.25] = (0.75 * 0.86] = 0.65 AREA NCREASE (LOO% OPEN PERIMETER) I, = (1 - 0.25] = (0.75 * 0.86] = 0.65 AREA NCREASE (LOO% OPEN PERIMETER) I, = (1 - 0.25] = (0.75 * 0.86] = 0.65 AREA NCREASE (LOO% OPEN PERIMETER) I, = (1 - 0.25] = (0.75 * 0.86] = 0.65 AREA NCREASE (LOO% OPEN PERIMETER) I, = (1 - 0.25] = (0.75 * 0.86] = 0.65 AREA NCREASE (LOO% OPEN PERIMETER) I, = (1 - 0.25] = (0.75 * 0.86] = 0.65 AREA NCREASE (LOO% OPEN PERIMETER) I, = (1 - 0.25] = (0.75 * 0.86] = 0.65 AREA NCREASE (LOO% OPEN PERIMETER) I, = (1 - 0.25] = (0.75 * 0.86] = 0.65 AREA NCREASE (LOO% OPEN PERIMETER) I, = (1 - 0.25] = (0.75 * 0.86] = 0.65 AREA NCREASE (LOO% OPEN PERIMETER) I, = (1 - 0.25] = (0.75 * 0.86] = 0.65 AREA NCREASE (LOO% OPEN PERIMETER) I, = (1 - 0.25] = (0.75 * 0.86] = 0.65 AREA NCREASE (LOO% OPEN PERIMETER) I, = (1 - 0.25] = (0.75 * 0.86] = 0.65 AREA NCREASE (LOO% OPEN PERIMETER) I, = (1 - 0.25] = (0.75 * 0.86] = 0.65 AREA NCREASE (LOO% OPEN PERIMETER) I, = (1 - 0.25] = (0.75 * 0.86] = 0.65 AREA NCREASE (LOO% OPEN PERIMETER) I, = (1 - 0.25] = (0.75 * 0.86] = 0.65 AREA NCREASE (LOO% OPEN PERIMETER) I, = (1 - 0.25] = (0.75 * 0.86] = 0.65 AREA NCREASE (LOO% OPEN PERIMETER) I, = (1 - 0.25] = (0.75 * 0.86] = (1 - 0.25] = (1 - 0.25] = (1	
EXISTING F-2/S-2     36,943 SF       NEW ADDITION     22,253 GF       TOTAL AREA     71,000 SF > MAX. ALLOWABLE AREA = 23,000 SF       AREA OF ALTERATION     2,254 SF       FRONTAGE INCREASE (100% OPEN PERIMETER)     1, = (1 - 0.25) 32 = (0.75 * 0.86) = 0.55       AREA INCREASE     2000 + (23,000 * 0.65) = 2.3,000 + 14,950 = 37,950 SF       PROPOSED AREA EXCEEDS ALLOWABLE AREA PER FRONTAGE INCREASE FOR UNSPRINKLERED BUILDING       OCCUPANT LOAD     475; ACTUAL 50       GEGRESS WIDTH     93.0° REQD < 360° ACTUAL	
FRONTAGE INCREASE       100% OPEN PERIMETER)       1, = (1 - 0.25] § = [0.75 + 0.66] = 0.65         AREA INCREASE       23,000 + (23,000 + 14,950 = 37,950 SF         PROPOSED AREA EXCEEDS ALLOWABLE AREA PER FRONTAGE INCREASE FOR UNSPRINKLERED BUILDING         OCCUPANT LOAD       475; ACTUAL 50         EGRESS WIDTH       SO'R REQ'D < 360* ACTUAL	
EGRESS WIDTH 95.0" REQ/D < 360" ACTUAL SPRINKLER SYSTEM N/A FIRE ALARN SYSTEM N/PA 72 - PROPOSED MOKE DETECTION SYSTEM NFPA 72 - PROPOSED PLUMBING FIXTURES FEMALE OCCUPANT LOAD-238 FIXTURES TEMALE OCCUPANT LOAD-238 FIXTURE TYPE REO/D ACTUAL FEMALE WC'S 2.38 3 FEMALE UN'S 2.38 3 SERVICE SINKS 1 1 DP'S 1 2	
FIRE ALARM SYSTEM     NFPA 72 - PROPOSED       SMOKE DETECTION SYSTEM     NFPA 72 - PROPOSED       PLUMBING FIXTURES FEMALE OCCUPANT LOAD-238     MALE OCCUPANT LOAD-238       PEMALE LAV'S     2.38       MALE WC'S     2.38       MALE UR'S     2.33       SERVICE SINKS     1       DF'S     1       0F'S     1       0F'S     1	
PLUMBING FIXTURES FEMALE OCCUPANT LOAD-238 FIXTURE TYPE REO'D ACTUAL FEMALE US'S 2.38 3 MALE US'S 2.38 2 MALE UR 2 MALE UR 2 DF'S 1 1 2 MALE UR 7 DF'S 1 2 MALE UR 7 Paved Parking 72 Spaces	
FEMALE LAV'S       2.38       3         MALE WC'S       2.38       2         MALE UR       2       3         MALE LAVS       2.38       3         SERVICE SINKS       1       1         DF'S       1       2         MALE WAY       2.38       3         SERVICE SINKS       1       1         DF'S       1       2         MALE LAVS       2.38       3         SERVICE SINKS       1       1         DF'S       1       2         VICE SINKS       1       2         VICE SINKS       1       2         VICE SINKS       1       2         VICE SINKS       1       2         VICE SINK       1       2         VICE SINK       1       2         VICE SINK       1       2         VICE SINK       1       1	
SERVICE SINKS 1 1 DFS 1 2	
Paved Parking 72 Spaces	
72 Spaces	
72 Spaces	
72 Spaces	4
72 Spaces	
72 Spaces	LH
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Lawn	
Lawn	
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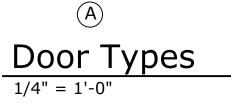




		DOOR	SCHE	DUL
MARK	LOCATION	SIZE	DOOR TYPE	LABEL
128	Factory	3'-0" x 7'-0" x 1 3/4"	А	
128A	Factory	3'-0" x 7'-0" x 1 3/4"	А	
128B	Factory	3'-0" x 7'-0" x 1 3/4"	А	
128C	Factory	3'-0" X 7'-0" X 1 3/4"	A	
128D	Factory	3'-0" X 7'-0" X 1 3/4"	A	
128E	Factory	3'-0" X 7'-0" X 1 3/4"	A	
128F	Factory	3'-0" X 7'-0" X 1 3/4"	A	
128G	Factory	3'-0" x 7'-0" x 1 3/4"	A	
128H	Factory	3'-0" X 7'-0" X 1 3/4"	A	
128I	Factory	3'-0" X 7'-0" X 1 3/4"	A	
128J	Factory	3'-0" X 7'-0" X 1 3/4"	А	
128K	Factory	3'-0" X 7'-0" X 1 3/4"	А	
128L	Factory	3'-0" X 7'-0" X 1 3/4"	A	
128M	Factory	26'-0" X 18'-0"	В	



1 3/4" Flush Polyurethane Core with 18 Gauge Face Skin Shop Primed & Field Painted; Face Skin Shop Primed & Field Painted KD HM Frame Factory-Primed



oor	Smooth, Slip-Resistant Concrete
ise	None
alls	Prefinished Metal Liner Panel to $\pm 7'-2"$ A.F.F.
alls	Vinyl-faced PEMB Insulation
eiling	Vinyl-faced PEMB Insulation

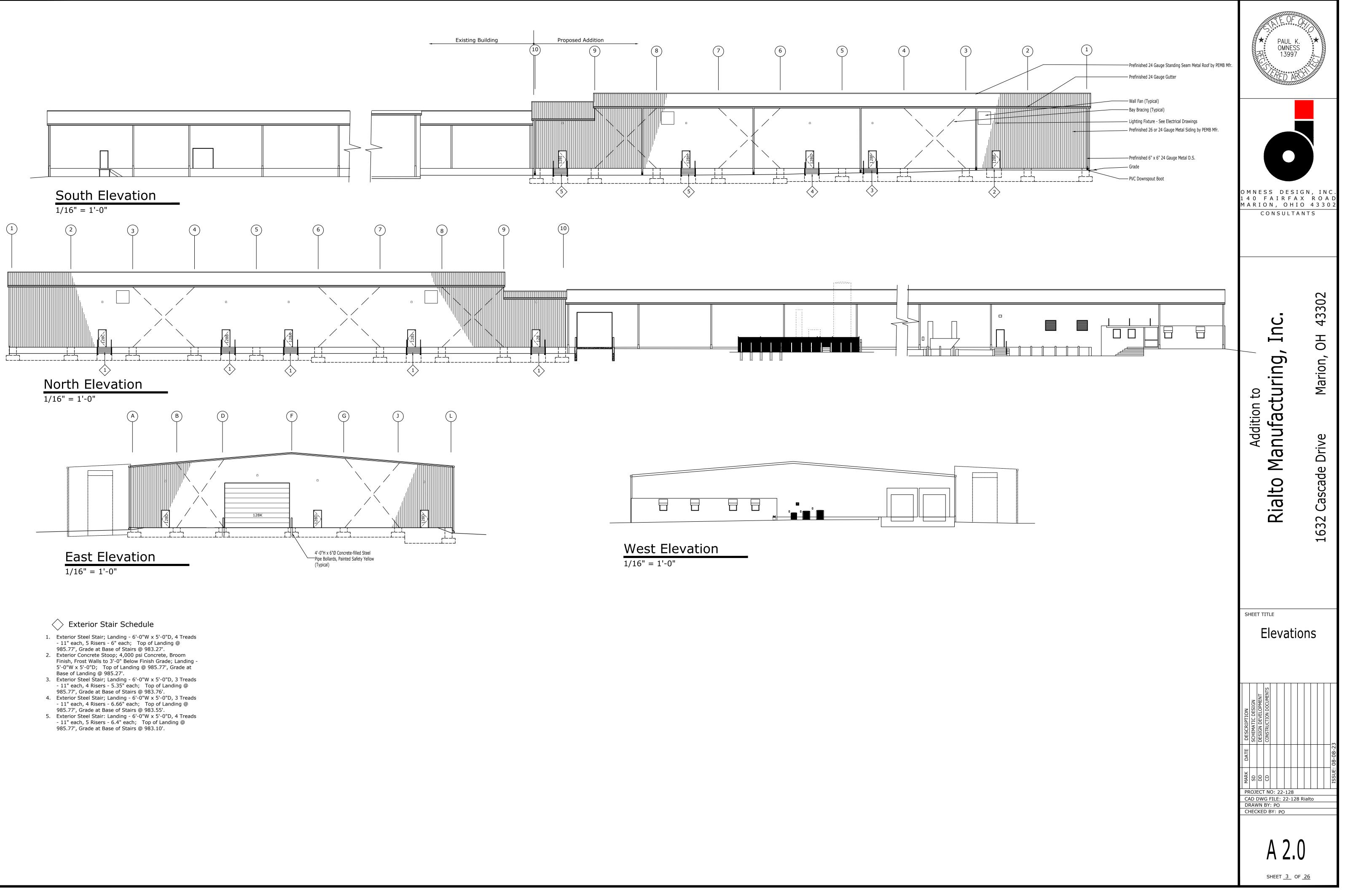
# Exterior Stair Schedule

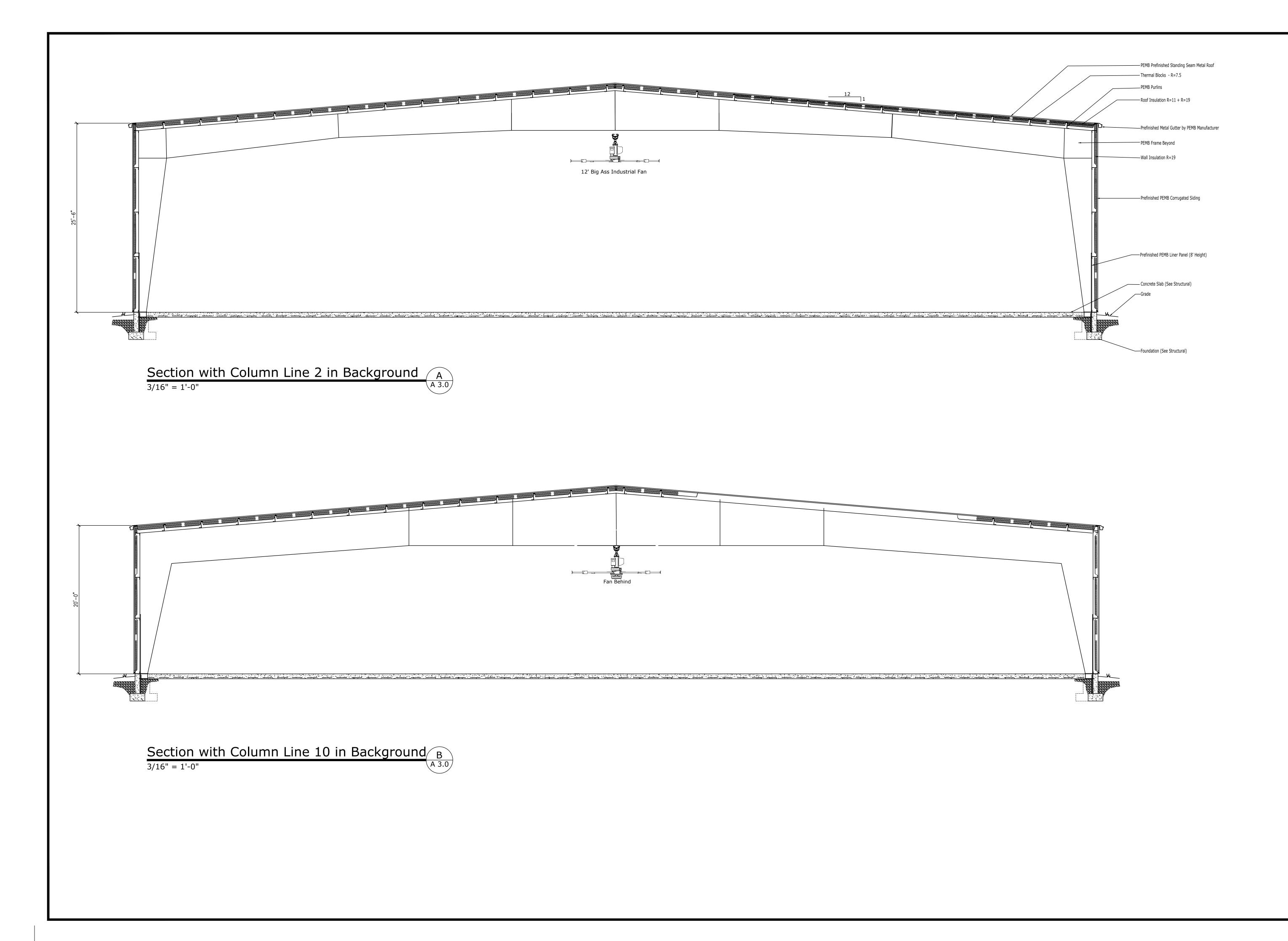
- Exterior Steel Stair; Landing 6'-0"W x 5'-0"D, 4 Treads 11" each, 5 Risers 6" each; Top of Landing @ 985.77', Grade at Base of Stairs @ 983.27'.
- 2. Exterior Concrete Stoop; 4,000 psi Concrete, Broom Finish, Frost Walls to 3'-0" Below Finish Grade; Landing -5'-0"W x 5'-0"D; Top of Landing @ 985.77', Grade at Base of Landing @ 985.27'.

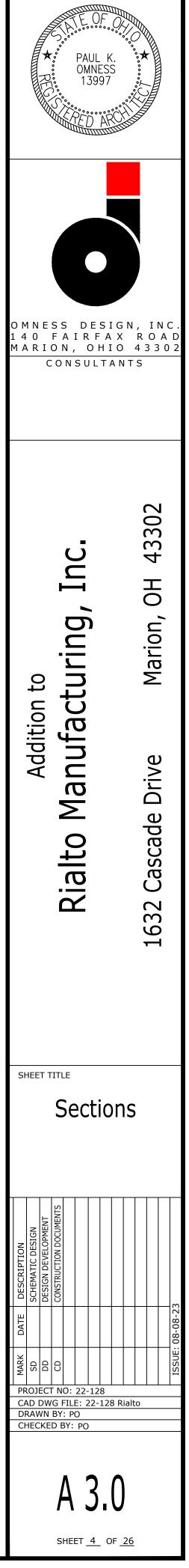
- 5. Exterior Steel Stair: Landing 6'-0"W x 5'-0"D, 4 Treads 11" each, 5 Risers 6.4" each; Top of Landing @ 985.77', Grade at Base of Stairs @ 983.10'.

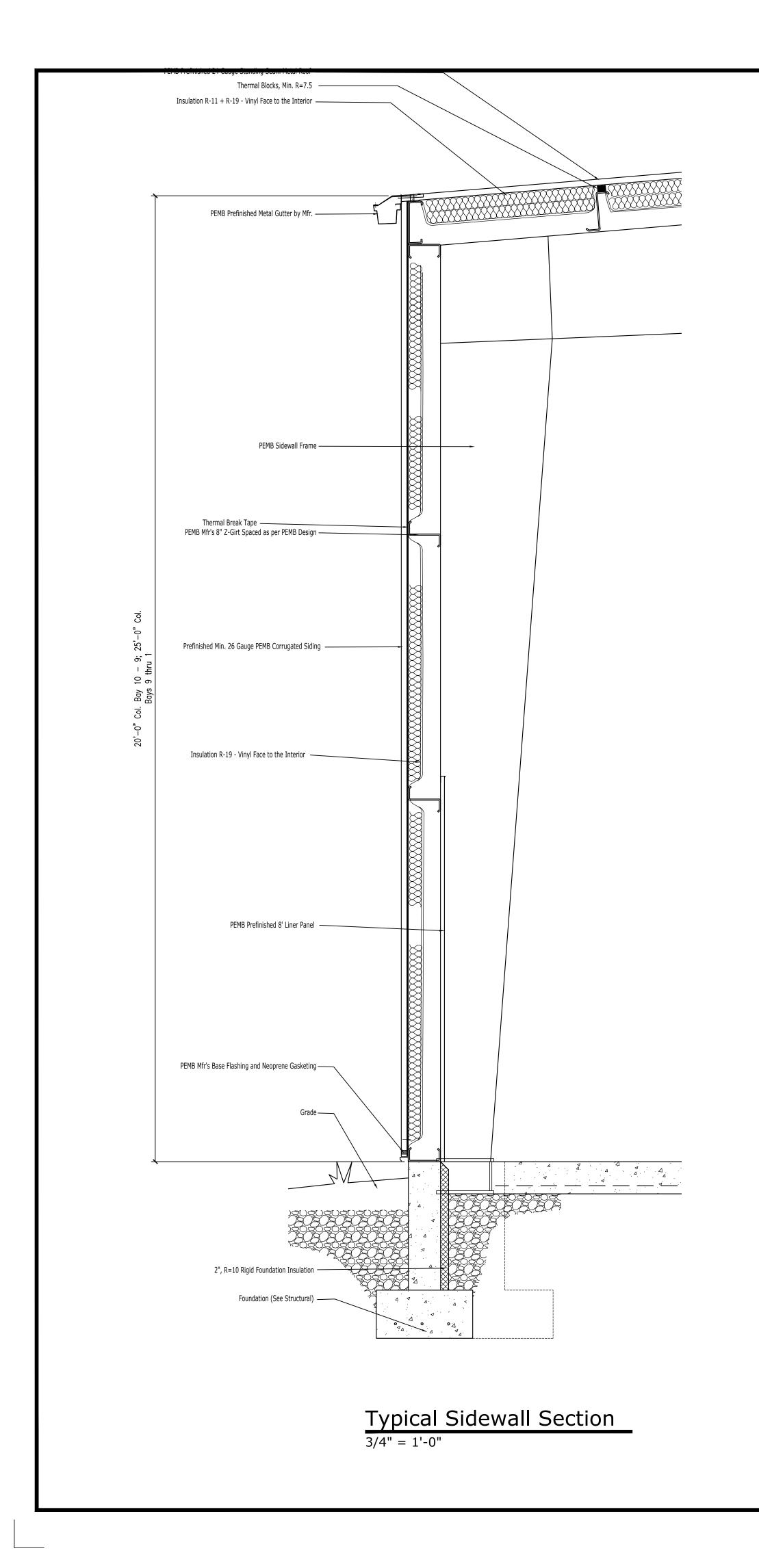
PROJECT NO: 22-113 CAD DWG FILE: 22-113 Rialto DRAWN BY: PO CHECKED BY: PO

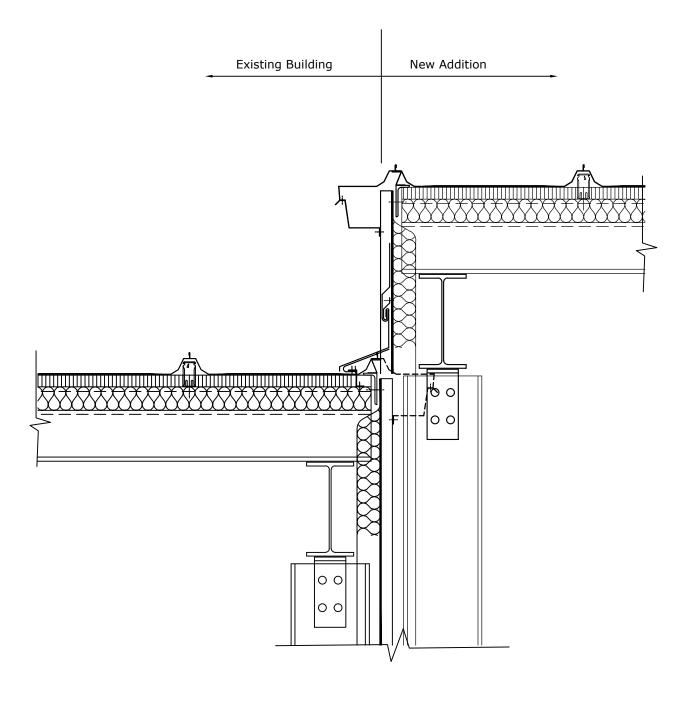
> A 1.0 SHEET 2 OF 26



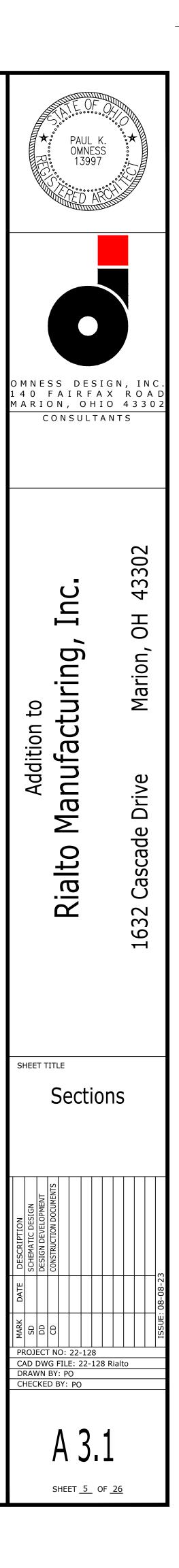


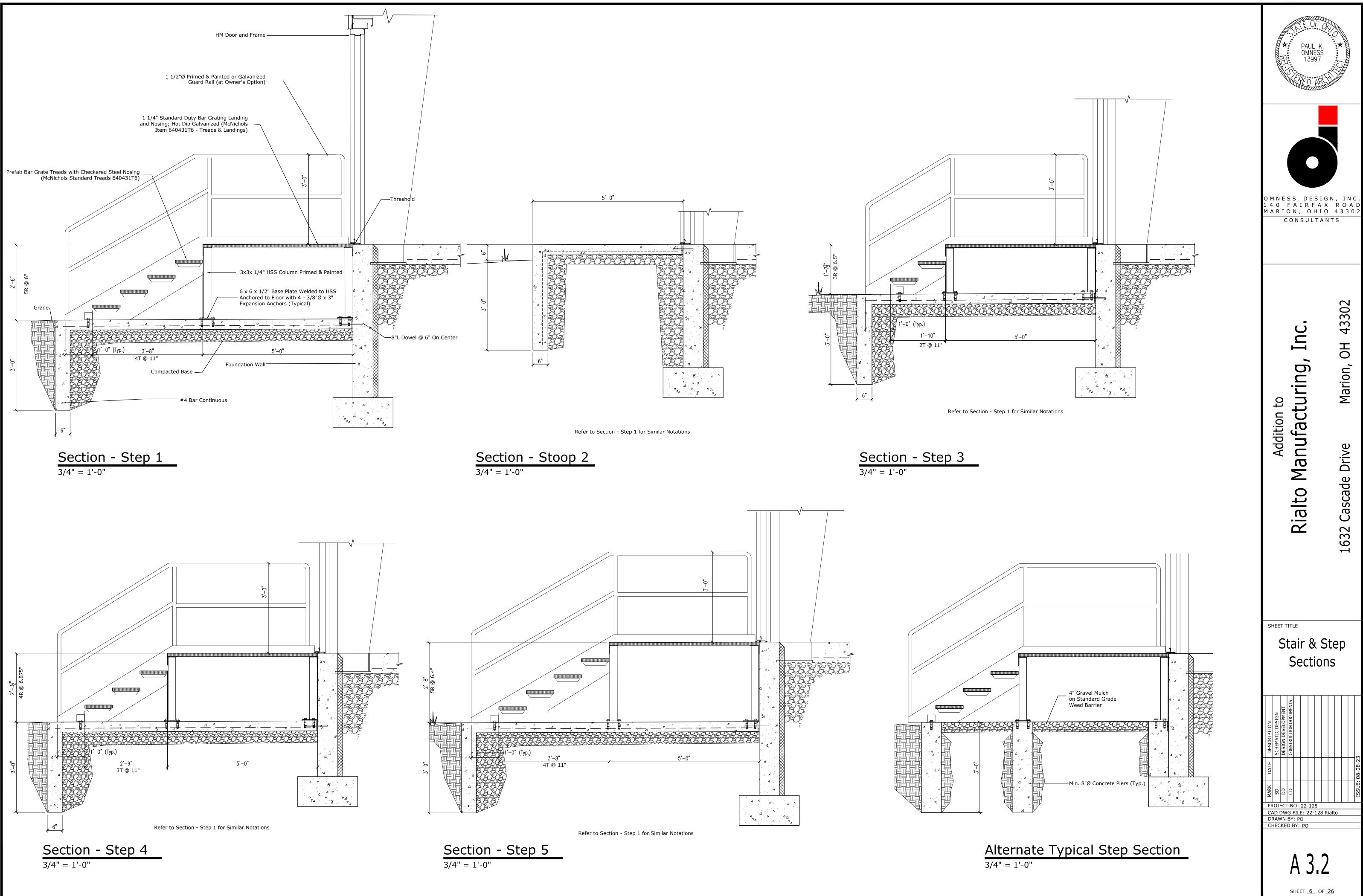






Roof Offset Detail





		3.4	MOISTURE AND MOLD CONTROL
SECTION 014000 - QUALITY REQUIREMENTS		A. Be	efore installation of weather barriers, protect materials from water damage a and organic materials from coming into prolonged contact with concrete.
PART 1 - GENERAL			<ol> <li>Protect stored and installed material from flowing or standing water.</li> </ol>
1.1 SECTION REQUIREMENTS			<ol> <li>Remove standing water from decks.</li> <li>Keep deck openings covered or dammed.</li> </ol>
A. Testing and inspecting services are required to verify compliance with indicated. These services do not relieve Contractor of responsibilit Contract Document requirements.		B. Af	ter installation of weather barriers but before full enclosure and conditioning protect as follows:
B. Referenced Standards: If compliance with two or more standards is s establish different or conflicting requirements, comply with the mos Refer uncertainties to Architect for a decision.	st stringent requirement.		<ol> <li>Do not load or install drywall or porous materials into partially enclosed be Discard water-damaged material.</li> <li>Do not install material that is wet.</li> <li>Discard, replace, or clean stored or installed material that begins to grow Perform work in a sequence that allows any wet materials adequate</li> </ol>
C. Minimum Quantity or Quality Levels: The quantity or quality level show the minimum. The actual installation may exceed the minimum wit Indicated numeric values are minimum or maximum, as appropriat requirements. Refer uncertainties to Architect for a decision.	thin reasonable limits.	3.5	enclosing the material in drywall or other interior finishes. OPERATION, TERMINATION, AND REMOVAL
D. Special Tests and Inspections: Owner will engage a qualified testin inspector to conduct special tests and inspections required by auth			Supervision: Enforce strict discipline in use of temporary facilities. To mininabuse, limit availability of temporary facilities to essential and intended use emove each temporary facility when need for its service has ended, when it
PART 2 - PRODUCTS (Not Used)			by authorized use of a permanent facility, or no later than Substantial Com t Substantial Completion, repair, renovate, and clean permanent facilities us
PART 3 - EXECUTION		0. A	construction period.
3.1 REPAIR AND PROTECTION		END OF	= SECTION 015000
A. General: On completion of testing, inspecting, sample taking, and sim damaged construction and restore substrates and finishes.	nilar services, repair	SECTIC	ON 017000 - EXECUTION AND CLOSEOUT REQUIREMENTS
B. Repair and protection are Contractor's responsibility, regardless of the responsibility for quality-control services.	e assignment of	PART 1	- GENERAL
END OF SECTION 014000		1.1	EXECUTION REQUIREMENTS
		A. Cl	<ol> <li>Structural Elements: When cutting and patching structural elements,</li> </ol>
SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS PART 1 - GENERAL	014000 - 1		<ol> <li>Solutional Elements: When cutting and patching structural elements, locations and details of cutting and await directions from Architect be Shore, brace, and support structural elements during cutting and pat</li> <li>Operational Elements: Do not cut and patch operating elements and relation in a manner that results in reducing their capacity to perform as inter- increased maintenance or decreased operational life or safety.</li> </ol>
QUALITY REQUIREMENTS 1.1 SECTION REQUIREMENTS	014000 - 1		<ol> <li>Visual Elements: Do not cut and patch construction in a manner that res evidence of cutting and patching. Do not cut and patch exposed construction</li> </ol>
A. Use Charges: Installation and removal of and use charges for tempora included in the Contract Sum unless otherwise indicated.	ary facilities shall be	B. Ma	that would, in Architect's opinion, reduce the building's aesthetic qua
B. Water and Electric Power: Available from Owner's existing system with without payment of use charges. Provide connections and extensio construction operations.			recommendations and instructions for installation of products and equipme
C. Accessible Temporary Egress: Comply with applicable provisions in IC	CC A117.1.	1.2	CLOSEOUT SUBMITTALS
			ontractor's List of Incomplete Items: Initial submittal at Substantial Completion peration and Maintenance Data: Submit two (2) copies of manual.
PART 2 - PRODUCTS			DF Electronic File: Assemble manual into a composite electronically indexed
2.1 MATERIALS			digital media.
A. Plastic Mesh Fencing: minimum 4 feet high with posts.			ecord Drawings: Submit one set(s) of marked-up record prints.
2.2 TEMPORARY FACILITIES		L. Re	cold i foddet Data. Submit one paper copy of each submittal.
A. Provide field offices, storage and fabrication sheds, and other supp construction operations. Store combustible materials apart from but	, i i i i i i i i i i i i i i i i i i i	1.3 A.	SUBSTANTIAL COMPLETION PROCEDURES Prepare a list of items to be completed and corrected (punch list), the value
2.3 EQUIPMENT			and reasons why the Work is not complete.
<ul> <li>Fire Extinguishers: Portable, UL rated; with class and extinguishing locations and classes of fire exposures.</li> </ul>	agent as required by	B. St	<ul> <li>Ibmittals Prior to Substantial Completion: Before requesting Substantial Cor</li> <li>inspection, complete the following:</li> <li>1. Obtain and submit releases from authorities having jurisdiction permitting</li> </ul>
PART 3 - EXECUTION			<ul><li>unrestricted use of the Work and access to services and utilities. Incl permits, operating certificates, and similar releases.</li><li>Submit closeout submittals specified in other sections, including proj.</li></ul>
3.1 TEMPORARY UTILITY INSTALLATION			documents, operation and maintenance manuals, property surveys, s information, warranties, workmanship bonds, maintenance service ag certifications, and similar documents.
A. General: Install temporary service or connect to existing service.			3. Submit maintenance material submittals specified in other sections, i parts, extra materials, and similar items, and deliver to location desig
B. Sanitary Facilities: Provide temporary toilets, wash facilities, and dr Comply with regulations and health codes for type, number, locatio maintenance of fixtures and facilities.			<ol> <li>Submit test/adjust/balance records.</li> <li>Submit changeover information related to Owner's occupancy, use, or maintenance.</li> </ol>
C. Provide temporary lighting with local switching that provides adequated construction operations, observations, inspections, and traffic cond		C.	Procedures Prior to Substantial Completion: Before requesting Substantial inspection, complete the following:
3.2 SUPPORT FACILITIES INSTALLATION			<ol> <li>Advise Owner of pending insurance changeover requirements.</li> <li>Make final changeover of permanent locks and deliver keys to Owner.</li> </ol>
A. Waste Disposal Facilities: Provide waste-collection containers in sizes from construction operations. Comply with requirements of authorit			<ol> <li>Complete startup and testing of systems and equipment.</li> <li>Perform preventive maintenance on equipment used prior to Substar</li> <li>Advise Owner of changeover in heat and other utilities.</li> </ol>
3.3 SECURITY AND PROTECTION FACILITIES INSTALLATION			<ol> <li>Participate with Owner in conducting inspection and walkthrough with responders.</li> <li>Remove temporary facilities and controls.</li> </ol>
A. Provide protection, operate temporary facilities, and conduct constructions with environmental regulations and that minimize possible air, wate contamination or pollution or other undesirable effects.			<ol> <li>Complete final cleaning requirements, including touchup painting.</li> <li>Touch up and otherwise repair and restore marred exposed finishes defects.</li> </ol>
B. Tree and Plant Protection: Install temporary fencing located as indicat of trees to protect vegetation from damage from construction opera systems from damage, flooding, and erosion.		D.	Inspection: Submit a written request for inspection for Substantial Complete request, Architect will proceed with inspection or advise Contractor of unful Architect will prepare the Certificate of Substantial Completion after inspec Contractor of items that must be completed or corrected before certificate v
C. Furnish and install site enclosure fence in a manner that will prever easily entering site except by entrance gates.	nt people and animals from	1.4	FINAL COMPLETION PROCEDURES
D. Barricades, Warning Signs, and Lights: Comply with requirements of a jurisdiction for erecting structurally adequate barricades, including			ubmittals Prior to Final Completion: Before requesting inspection for determi completion, complete the following:
<ul> <li>Provide temporary enclosures for protection of construction, in progeneous exposure, foul weather, other construction operations, and similar a weathertight enclosure for building exterior.</li> </ul>			<ol> <li>Submit a final Application for Payment.</li> <li>Submit certified copy of Architect's Substantial Completion inspectior completed or corrected (punch list), endorsed and dated by Architect</li> </ol>
<ul><li>F. Provide floor-to-ceiling dustproof partitions to limit dust and dirt mig</li></ul>	gration and to separate		the list shall state that each item has been completed or otherwise re 3. Certificate of Insurance: Submit evidence of final, continuing insurance of

Install and maintain temporary fire-protection facilities. Comply with NFPA 241.

areas occupied by Owner from fumes and noise.

4. Submit pest-control final inspection report.

naterials from water damage and keep porous	B. Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare final Certificate for Payment after inspection or will advise Contractor of items that	F.	Joint arrar
nged contact with concrete.	must be completed or corrected before certificate will be issued.	G. l	Use pro
om flowing or standing water.	<ol> <li>Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.</li> </ol>	3.3	CUT
ull enclosure and conditioning of building,	PART 2 - PRODUCTS	Α.	Provi
terials into partially enclosed building.	2.1 MATERIALS	В.	Prote Provi expo
ed material that begins to grow mold.	A. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.	C. 1	Where e such
s any wet materials adequate time to dry before er interior finishes.	B. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous	D. (	Sutting: adjoi
/AL	to health or property or that might damage finished surfaces. 1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not		1. Cu
f temporary facilities. To minimize waste and to essential and intended uses.	applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.	E.	Patcl insta
ts service has ended, when it has been replaced no later than Substantial Completion.	2.2 OPERATION AND MAINTENANCE DOCUMENTATION		1.
d clean permanent facilities used during	A. Directory: Prepare a single, comprehensive directory of emergency, operation, and maintenance data and materials, listing items and their location to facilitate ready access to desired information.		2. W
REQUIREMENTS	B. Organization: Unless otherwise indicated, organize manual into separate sections for each system and subsystem, and separate sections for each piece of equipment not part of a system.		3. W
EQUIREMENTS	C. Organize data into three-ring binders with identification on front and spine of each binder, and envelopes for folded drawings. Include the following:		
	<ol> <li>Manufacturer's operation and maintenance documentation.</li> <li>Maintenance and service schedules.</li> </ol>	3.4	CLE/
	<ol> <li>Maintenance and service schedules.</li> <li>Maintenance service contracts. Include name and telephone number of service agent.</li> <li>Emergency instructions.</li> </ol>	A. (	Clean P 1. Re
patching structural elements, notify Architect of	<ol> <li>Spare parts list and local sources of maintenance materials.</li> <li>Wiring diagrams.</li> <li>Option of instruction in a budge proceedings to fellow and required patifications for</li> </ol>		2. W
ait directions from Architect before proceeding. ements during cutting and patching.	<ol> <li>Copies of warranties. Include procedures to follow and required notifications for warranty claims</li> </ol>	В (	3. R∉ Complet
ch operating elements and related components ir capacity to perform as intended or that results in perational life or safety.	2.3 RECORD DRAWINGS		Subs
estruction in a manner that results in visual ot cut and patch exposed construction in a manner the building's aesthetic qualities.	A. Record Prints: Maintain a set of prints of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued. Mark to show actual installation where installation varies from that shown originally. Accurately record information		1. Cle 2. Sv
and maintain on-site manufacturer's written ation of products and equipment.	in an acceptable drawing technique. 1. Identify and date each record Drawing; include the designation "PROJECT RECORD		3. Re 4. Cl
	DRAWING" in a prominent location.		5. CI 6. Va
mittal at Substantial Completion.			7.
?) copies of manual.	<ul> <li>3.1 EXAMINATION AND PREPARATION</li> <li>A. Existing Conditions: The existence and location of underground and other utilities and</li> </ul>		8. Re
mposite electronically indexed file. Submit on	construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, and other construction affecting the Work.	3.5	OPE
up record prints.	B. Before proceeding with each component of the Work, examine substrates, areas, and conditions,	A. (	Operatio data
each submittal.	with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance.		not p
ES orrected (punch list), the value of items on the list,	<ol> <li>Verify compatibility with and suitability of substrates.</li> <li>Examine roughing-in for mechanical and electrical systems.</li> <li>Examine walls, floors, and roofs for suitable conditions.</li> </ol>	B. 1	Manufae shee com
re requesting Substantial Completion	C. Proceed with installation only after unsatisfactory conditions have been corrected.		ident appli
s having jurisdiction permitting Owner	D. Take field measurements as required to fit the Work properly. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication.		1.
is to services and utilities. Include occupancy ilar releases.	E. Verify space requirements and dimensions of items shown diagrammatically on Drawings.	C. 1	Drawing relati
other sections, including project record e manuals, property surveys, similar final record onds, maintenance service agreements, final	F. Surface and Substrate Preparation: Comply with manufacturer's written recommendations for preparation of substrates to receive subsequent work.		flow
s specified in other sections, including tools, spare , and deliver to location designated by Architect.	3.2 INSTALLATION	3.6	DEM
to Owner's occupancy, use, operation, and	A. Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.	Α.	Enga syste follov
Before requesting Substantial Completion	<ol> <li>Make vertical work plumb and make horizontal work level.</li> <li>Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.</li> </ol>		1.
eover requirements. and deliver keys to Owner.	B. Comply with manufacturer's written instructions and recommendations.		
nd equipment. uipment used prior to Substantial Completion.	C. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.	END C	OF SEC
other utilities. spection and walkthrough with local emergency	D. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed.		
uding touchup painting. tore marred exposed finishes to eliminate visual	E. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place. Where size and type of attachments are not indicated, verify size and type required for load conditions.		

Mounting Heights: Where mounting heights are not indicated, mount components at

1.

heights directed by Architect.

ection for Substantial Completion. On receipt of n or advise Contractor of unfulfilled requirements. tantial Completion after inspection or will advise or corrected before certificate will be issued.

questing inspection for determining final

- ostantial Completion inspection list of items to be ndorsed and dated by Architect. Certified copy of been completed or otherwise resolved. of final, continuing insurance coverage
- complying with insurance requirements.

F. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, nge joints for the best visual effect. Fit exposed connections together to form hairline joints.

oducts, cleaners, and installation materials that are not considered hazardous.

TING AND PATCHING

vide temporary support of work to be cut.

ection: Protect in-place construction during cutting and patching to prevent damage. vide protection from adverse weather conditions for portions of Project that might be osed during cutting and patching operations.

existing services/systems are required to be removed, relocated, or abandoned, bypass services/systems before cutting to minimize interruption to occupied areas.

: Cut in-place construction using methods least likely to damage elements retained or ining construction.

ut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

h with durable seams that are as invisible as possible. Provide materials and comply with allation requirements specified in other Sections.

Restore exposed finishes of patched areas and extend finish restoration into adjoining construction in a manner that will minimize evidence of patching and refinishing. /here walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance.

/here patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

# ANING

Project site and work areas daily, including common areas. Dispose of materials lawfully.

emove liquid spills promptly. /here dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

emove debris from concealed spaces before enclosing the space.

ete the following cleaning operations before requesting inspection for certification of stantial Completion:

ean Project site, yard, and grounds, in areas disturbed by construction activities. Sweep paved areas; remove stains, spills, and foreign deposits. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.

weep paved areas broom clean. Remove spills, stains, and other foreign deposits. Remove labels that are not permanent.

Clean transparent materials, including mirrors. Remove excess glazing compounds. Clean exposed finishes to a dust-free condition, free of stains, films, and foreign substances. Sweep concrete floors broom clean.

acuum carpeted surfaces and wax resilient flooring.

Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and foreign substances. Clean plumbing fixtures. Clean light fixtures, lamps, globes, and reflectors.

eplace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.

ERATION AND MAINTENANCE MANUAL PREPARATION

ion and Maintenance Manuals: Assemble a complete set of operation and maintenance indicating operation and maintenance of each system, subsystem, and piece of equipment part of a system.

acturers' Data: Where manuals contain manufacturers' standard printed data, include only ets pertinent to product or component installed. Mark each sheet to identify each product or ponent incorporated into the Work. If data include more than one item in a tabular format, tify each item using appropriate references from the Contract Documents. Identify data icable to the Work and delete references to information not applicable.

Prepare supplementary text if manufacturers' standard printed data are unavailable and where the information is necessary for proper operation and maintenance of equipment or systems.

gs: Prepare drawings supplementing manufacturers' printed data to illustrate the tionship of component parts of equipment and systems and to illustrate control sequence and / diagrams.

MONSTRATION AND TRAINING

age qualified instructors to instruct Owner's personnel to adjust, operate, and maintain tems, subsystems, and equipment not part of a system. Include a detailed review of the owing:

Include instruction for basis of system design and operational requirements, review of documentation, emergency procedures, operations, adjustments, troubleshooting, maintenance, and repairs.

CTION 017000

AUL K. OMNESS 13997							
Addition to alto Manufacturing, Inc.	Marion, OH 43302						
Addi Rialto Manuf	1632 Cascade Drive						
SHEET TITLE Specifications							
Wark       Schewatic description         MARK       Descr	IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII						
SP 1.(							

#### SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data and color Samples.
- Environmental Limitations: Do not proceed with installation of joint sealants when ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.

PART 2 - PRODUCTS

- 2.1 JOINT SEALANTS
- A. Compatibility: Provide joint sealants, joint fillers, and other related materials that are compatible with one another and with joint substrates under service and application conditions.
- Sealant for General Exterior Use Where Another Type Is Not Specified:
- Single-component, neutral-curing silicone sealant, ASTM C 920, Type S; Grade NS; Class 25; for Use NT.
- Single-component, nonsag urethane sealant, ASTM C 920, Type S; Grade NS; Class 25; 2. and for Use NT.
- Single-component, nonsag polysulfide sealant, ASTM C 920, Type S; Grade NS; 3. Class 25; for Use NT.
- Single-component, nonsag urethane sealant, ASTM C 920, Type S; Grade NS; Class 25; for Use T.
- Sealant for Exterior Traffic-Bearing Joints, Where Slope Allows Use of Pourable Sealant: C.
  - Single-component, pourable urethane sealant, ASTM C 920, Type S; Grade P; Class 25; for Use T.
- Sealant for Interior Use at Perimeters of Door and Window Frames: D.

1. Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

- E. Acoustical Sealant:
  - 1. Nonsag, paintable, nonstaining latex sealant complying with ASTM C 834 that effectively reduces airborne sound transmission as demonstrated by testing according to ASTM E 90.
- 2.2 MISCELLANEOUS MATERIALS
- Provide sealant backings of materials that are nonstaining; are compatible with joint substrates, Α. sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C 1330, of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.
- D. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

#### PART 3 - EXECUTION

# 3.1 INSTALLATION

- A. Comply with ASTM C 1193.
- B. Install sealant backings to support sealants during application and to produce cross-sectional shapes and depths of installed sealants that allow optimum sealant movement capability.
- C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- D. Acoustical Sealant Installation: At sound-rated assemblies and elsewhere as indicated, seal perimeters, control joints, openings, and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions. Comply with ASTM C 919.

END OF SECTION 079200

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

- 1.1 SECTION REQUIREMENTS
- A. Submittals: Product Data and Shop Drawings.

PART 2 - PRODUCTS

- 2.1 HOLLOW METAL DOORS AND FRAMES
- A. Frames: ANSI A250.8; conceal fastenings unless otherwise indicated.
  - Steel Sheet for Interior Frames: 0.042-inch- minimum thickness.
  - Interior Frame Construction: Knocked down. 3. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcement
  - plates from same material as frames.
  - 4. Frame Anchors: Not less than 0.042 inch thick.
- Prepare doors and frames to receive mortised and concealed hardware according to SDI A250.6 B and BHMA A156.115.
- C. Reinforce doors and frames to receive surface-applied hardware.
- Prime Finish: Manufacturer's standard, factory-applied coat of lead- and chromate-free primer D. complying with SDI A250.10 acceptance criteria.

# 2.2 MATERIALS

- - Class B.

# PART 3 - EXECUTION

- 3.1 INSTALLATION
- Install hollow metal frames to comply with SDI A250.11. Α.

- C.

# END OF SECTION 081113

SECTION 081416 - FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS A. Submittals: Samples for factory-finished doors.

PART 2 - PRODUCTS

- 2.1 FLUSH WOOD DOORS
- 2.2 DOOR CONSTRUCTION, GENERAL A. Quality Standard: WDMA I.S.1-A.
- B. WDMA I.S.1-A Performance Grade:
- 1. Heavy duty unless otherwise indicated. cores for doors with protection plates.

# 2.3 FLUSH WOOD DOORS

- A. Veneer-Faced Doors for Transparent Finish:

  - a. Faces: Grade A rotary-cut select white birch.
- 2.4 FABRICATION AND FINISHING

- with DHI-WDHS-3.
- C. Cut and trim openings to comply with referenced standards.
- 1. Sheen: Satin.

# PART 3 - EXECUTION

- 3.1 INSTALLATION
- indicated.
  - Install fire-rated doors to comply with NFPA 80. 2

# B. Align and fit doors in frames with uniform clearances and bevels.

- C. Clearances: As follows unless otherwise indicated:
- 1/8 inch at heads, jambs, and between pairs of doors.
- 1/4 inch from bottom of door to top of threshold. 4. Comply with NFPA 80 for fire-rated doors.

END OF SECTION 081416

A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, suitable for exposed applications.

B. Frame Anchors: ASTM A 879/A 879M, 4Z coating designation; mill phosphatized.

For anchors built into exterior walls, sheet steel complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M,

1. Fire-Rated Frames: Install according to NFPA 80.

Install doors to provide clearances between doors and frames as indicated in SDI A250.11.

Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying rust-inhibitive primer.

C. Particleboard-Core Doors: Provide structural composite lumber cores instead of particleboard

1. Interior Solid-Core Doors: Premium grade, five-ply, particleboard cores

b. Veneer Matching: Book and balance match. c. Continuous matching for doors with transoms.

A. Factory-fit doors to suit frame-opening sizes indicated and to comply with clearances specified.

B. Factory-machine doors for hardware that is not surface applied. Locate hardware to comply

D. Factory-finish doors indicated for transparent finish with stain and manufacturer's standard finish complying with WDMA TR-6, catalyzed polyurethane for grade specified for doors.

A. Install doors to comply with manufacturer's written instructions and WDMA I.S.1-A, and as

Install smoke- and draft-control doors according to NFPA 105.

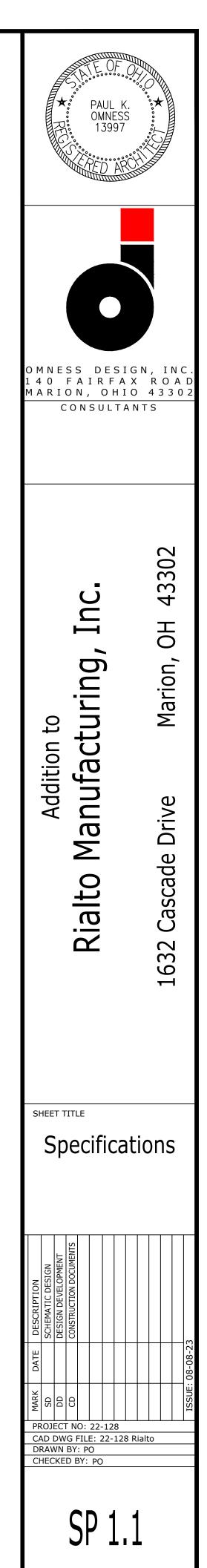
1/8 inch from bottom of door to top of decorative floor finish or covering.

SECTION 084113 - ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

<b>,</b> .		E
1.1	SECTION REQUIREMENTS	
A	A. Submittals: Product Data, Shop Drawings, and color Samples.	END
	1. For entrance doors, include hardware schedule.	SEC
PAF	RT 2 - PRODUCTS	PAR
2.1		1.1
	PERFORMANCE REQUIREMENTS A. Structural Performance: Design, engineer, fabricate, and install aluminum-framed storefronts to	A
r	withstand structural loads indicated.	PAR
	<ol> <li>Limit deflection of framing members normal to wall plane to 1/175 of clear span or an amount that restricts edge deflection of individual glazing lites to 3/4 inch, whichever is less.</li> </ol>	2.1 A
E	B. Windborne-Debris Resistance: Framing system and doors pass basic-protection testing requirements in ASTM E 1996 for Wind Zone 1 when tested according to ASTM E 1886.	П
C	C. Air Infiltration: Limited to 0.06 cfm/sq. ft. of fixed framing and glass area when tested according to ASTM E 283 at a static-air-pressure difference of 6.24 lbf/sq. ft	В
[	D. Water Penetration: Systems do not evidence water leakage when tested according to ASTM E 331 at minimum differential pressure of 20 percent of positive wind-load design pressure but not less than 10 lbf/sq. ft	C
E	. Thermal Transmittance (U-factor): Fixed glazing and framing areas shall have U-factor of not more than 0.40 Btu/sq. ft. x h x deg F as determined according to NFRC 100.	D
2.2	ALUMINUM-FRAMED STOREFRONTS	E
	ALOMINOM-FRAMED STOREFRONTS A. Basis of Design: Tubelite T24650 and T14000.	
	8. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish	2.2
	indicated; ASTM B 209 sheet; ASTM B 221 extrusions.	2.2 A
(	C. Framing Members: Manufacturer's standard extruded-aluminum framing members of thickness required and reinforced as required to support imposed loads.	В
	1. Construction: Thermally broken.	С
[	D. Doors: 1-3/4-inch-thick glazed doors with minimum 0.125-inch-thick, extruded-aluminum tubular rail and stile members. Mechanically fasten corners with reinforcing brackets that are deeply penetrated and fillet welded or that incorporate concealed tie rods. Provide snap-on, extruded-aluminum glazing stops and preformed gaskets.	D
	<ol> <li>Door Design: As indicated; Narrow stile; 2-1/8-inch nominal width.</li> <li>Accessible Doors: Smooth surfaced for width of door in area within 10 inches above floor or ground plane.</li> <li>Exterior Doors: Provide compression weather stripping at fixed stops. At other locations,</li> </ol>	2.3 A
	provide sliding weather stripping retained in adjustable strip mortised into door edge.	PAR
E	E. Glazing: Comply with Section 088000 "Glazing."	3.1
F	E. Glazing Gaskets: Manufacturer's standard sealed-corner pressure-glazing system of black, resilient elastomeric glazing gaskets, setting blocks, and shims or spacers.	A
(	G. Fasteners and Accessories: Compatible with adjacent materials, corrosion resistant, nonstaining, and nonbleeding. Use concealed fasteners except for application of door hardware.	B
ŀ	I. Fabrication: Fabricate framing in profiles indicated for flush glazing (without projecting stops). Provide subframes and reinforcing of types indicated or, if not indicated, as required for a	С
	complete system. Factory-assemble components to greatest extent possible. Disassemble components only as necessary for shipment and installation.	3.2 A
	<ol> <li>Door Framing: Reinforce to support imposed loads. Factory-assemble door and frame units and factory-install hardware to greatest extent possible. Reinforce door and frame units for hardware indicated. Cut, drill, and tap for factory-installed hardware before finishing components.</li> </ol>	
I	Aluminum Finish: Class I, clear anodic finish; complying with AAMA 611.	
PAF	RT 3 - EXECUTION	-
3.1	INSTALLATION	B
/	A. Isolate metal surfaces in contact with incompatible materials, including wood, by painting contact surfaces with bituminous coating or primer or by applying sealant or tape recommended by manufacturer.	
E	B. Install components to drain water passing joints, condensation occurring within framing members, and moisture migrating within the system to exterior.	
(	<ul> <li>Set continuous sill members and flashing in full sealant bed as specified in Section 079200</li> <li>"Joint Sealants" to produce weathertight installation.</li> </ul>	
[	<ol> <li>Install framing components true in alignment with established lines and grades to the following tolerances:</li> </ol>	С
	1. Variation from Plane: Limit to 1/8 inch in 12 feet; 1/4 inch over total length.	

2. Alignment: For surfaces abutting in line, limit offset to 1/16 inch. For surfaces meeting at corners, limit offset to 1/32 inch. 3. Diagonal Measurements: Limit difference between diagonal measurements to 1/8 inch. Install doors without warp or rack. Adjust doors and hardware to provide tight fit at contact points and smooth operation. ND OF SECTION 084113 ECTION 088000 - GLAZING ART 1 - GENERAL SECTION REQUIREMENTS A. Submittals: Product Data and Samples. ART 2 - PRODUCTS GLASS, GENERAL A. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below unless more stringent requirements are indicated. See these publications for glazing terms not otherwise defined in this Section or in referenced standards. Safety Glazing: Where safety glazing is indicated, provide glazing that complies with 16 CFR 1201, Category II. Safety Glazing Labeling: Where safety glazing is indicated, permanently mark glazing with certification label of the SGCC or another certification agency acceptable to authorities having jurisdiction or manufacturer. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of IGCC. E. Windborne-Debris-Impact Resistance: Exterior glazing shall comply with basic-protection testing requirements in ASTM E 1996 for Wind Zone 1 when tested according to ASTM E 1886. Test specimens shall be no smaller in width and length than glazing indicated for use on Project and shall be installed in same manner as glazing indicated for use on Project. GLASS PRODUCTS A. Fully Tempered Float Glass: ASTM C 1048, Kind FT; Type I; Quality-Q3. B. Heat-Strengthened Float Glass: ASTM C 1048, Kind HS; Type I; Quality-Q3. C. Reflective-Coated Glass: ASTM C 1376, coated by pyrolytic or vacuum deposition (sputtercoating) process. D. Insulating-Glass Units: Factory-assembled units consisting of sealed lites of glass separated by a dehydrated interspace, qualified according to ASTM E 2190. GLAZING SEALANTS A. Glazing Sealant: Neutral-curing silicone glazing sealant complying with ASTM C 920, Type S, Grade NS, Class 25, Use NT. RT 3 - EXECUTION INSTALLATION A. Comply with combined recommendations of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are contained in GANA's "Glazing Manual." B. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics. C. Remove nonpermanent labels, and clean surfaces immediately after installation. INSULATING-GLASS TYPES A. Glass Type C: Tinted insulating glass. 1. Overall Unit Thickness: 1 inch. 2. Thickness of Each Glass Lite: 1/4". 3. Outdoor Lite: Heat-strengthened float glass. Omitted Interspace Content: Air. Indoor Lite: Heat-strengthened float glass. 6 7. Solar Heat-Gain Coefficient: 0.14 maximum. B. Glass Type b: Reflective-coated, tinted insulating glass. 1. Overall Unit Thickness: 1 inch. 2. Thickness of Each Glass Lite: 1/4". 3. Outdoor Lite: Tinted fully tempered float glass. 4. Omitted. Interspace Content: Air. 6. Indoor Lite: Clear fully tempered float glass. 7. Coating Location: Second surface. 8. Coating Color: Gray. 9. Solar Heat-Gain Coefficient: 0.14 maximum. 10. Safety glazing required. C. Glass Type a: Reflective-coated, tinted insulating spandrel glass 1. Overall Unit Thickness: 1 inch. 2. Thickness of Each Glass Lite: <sup>1</sup>/<sub>4</sub>". 3. Outdoor Lite: Tinted fully tempered float glass. 4. Omitted Interspace Content: Air. Indoor Lite: Clear fully tempered float glass. 7. Coating Location: Second surface. 8. Coating Color: Omitted END OF SECTION 088000 SECTION 092216 - NON-STRUCTURAL METAL FRAMING PART 1 - GENERAL 1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.



SHEET <u>8</u> OF <u>26</u>

#### PART 2 - PRODUCTS

2.1	METAL FRAMING AND SUPPORTS		
Α.	Steel Framing Members, General: ASTM C 754.	3.1	INSTALLATION
	1. Steel Sheet Components: ASTM C 645. Thickness specified is minimum uncoated base-	А.	Install gypsum board to comply with ASTM
	metal thickness.         2.       Protective Coating:         Coating with equivalent corrosion resistance of		<ol> <li>Isolate gypsum board assemblies fro edge trim and acoustical sealant.</li> </ol>
	ASTM A 653/A 653M, G40 zinc coating.		<ol> <li>Single-Layer Fastening Methods: Fa</li> <li>Multilayer Fastening Methods: Faste</li> </ol>
В.	Framing Systems:		layers with adhesive and supplemen
	<ol> <li>Studs and Runners: In depth indicated and 0.018 inch thick unless otherwise indicated.</li> <li>Flat Strap and Backing: 0.018 inch thick.</li> </ol>	В.	Fire-Resistance-Rated Assemblies: Compl
	3. Hat-Shaped, Rigid Furring Channels: In depth indicated and 0.018 inch thick.	C.	Finishing Gypsum Board: ASTM C 840.
	<ol> <li>Z-Furring: In depth required by insulation, 1-1/4-inch face flange, 7/8-inch wall- attachment flange, and 0.018 inch thick.</li> </ol>		1. At concealed areas, unless a higher leve
			assemblies, provide Level 1 finish: E 2. At substrates for tile, provide Level 2 fin
2.2	ACCESSORIES		joint compound to tape, fasteners, a
A. (	General: Comply with referenced installation standards.		3. Unless otherwise indicated, provide Lev fill, and finish coats of joint compoun
	1. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.	D. (	Glass-Mat, Water-Resistant Backing Panels: instructions.
В.	Isolation Strip at Exterior Walls: Asphalt felt or foam gasket.		
		END C	OF SECTION 092900
PART	3 - EXECUTION	SECTI	ON 095113 - ACOUSTICAL PANEL CEILING
3.1	INSTALLATION	PART	1 - GENERAL
A.	Install steel framing to comply with ASTM C 754."		
	1. Gypsum Board Assemblies: Also comply with ASTM C 840.	1.1	SECTION REQUIREMENTS
В.	Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.	A. S	Submittals: Product Data and Samples.
C.	Isolate steel framing from building structure, except at floor, to prevent transfer of loading imposed by structural movement.	PART	2 - PRODUCTS
	1. Where studs are installed directly against exterior walls, install isolation strip between studs and wall.	2.1	PERFORMANCE REQUIREMENTS
D.	Fire-Resistance-Rated Assemblies: Comply with requirements of listed assemblies.	2.2	ACOUSTICAL PANELS
		A. E	Basis of Design: Armstrong, Mesa 681.
	DF SECTION 092216	В. С	Classification: As follows, per ASTM E 1264:
SECTI	ON 092900 - GYPSUM BOARD		1. Pattern: CE (perforated, small holes
PART	1 - GENERAL		2. LRC: Not less than 0.85. 3. NRC: Not less than 0.60.
			4. CAC: Not less than 35.
1.1	SECTION REQUIREMENTS		5. Surface-Burning Characteristics: Cla
A. S	Submittals: Product data.	C. (	Color: White.
		D.	Edge Detail: Reveal sized-to-fit exposed fla
PART	2 - PRODUCTS	E. T	hickness: 9/16 inch.
2.1	PERFORMANCE REQUIREMENTS	F.	Modular Size: 24 by 48 inches.
Α.	Fire-Resistance-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 119 by an independent testing and inspecting agency acceptable to	2.3	CEILING SUSPENSION SYSTEM
	authorities having jurisdiction.	A. C	Ceiling Suspension System: Wide-face, direct
B. S	TC-Rated Assemblies: Provide materials and construction identical to those tested in		structural classification.
	assemblies per ASTM E 90 and classified per ASTM E 413 by a qualified independent testing and inspecting agency.		<ol> <li>Face Design: Flat, flush.</li> <li>Face Finish: Painted white.</li> </ol>
2.2	PANEL PRODUCTS	В. А	Attachment Devices: Sized for 5 times the des Direct Hung, unless otherwise indicated.
Α.	Provide in maximum lengths available to minimize end-to-end butt joints.	C. V	Vire Hangers, Braces, and Ties: Zinc-coated
В.	Interior Gypsum Board: ASTM C 1396/C 1396M, in thickness indicated, with manufacturer's standard edges. Type as required for specific fire-resistance-rated assemblies.		<ul><li>zinc coating, soft temper.</li><li>1. Size: Provide yield strength at least</li></ul>
C. C	Blass-Mat, Water-Resistant Gypsum Backing Board: ASTM C 1178/C 1178M, of thickness		Table 1, Direct Hung), but not less t
	indicated Required type Unless otherwise indicated and Lype X where required for fire		

PART 3 - EXECUTION

# 3.1 INSTALLATION

- Systems Handbook."
- precise fit.

C. Arrange directionally patterned acoustical units as indicated on Drawings.

END OF SECTION 095113

indicated. Regular type unless otherwise indicated and Type X where required for fireresistance-rated assemblies and where indicated.

#### 2.3 ACCESSORIES

- A. Trim Accessories: ASTM C 1047, formed from galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized-steel sheet. For exterior trim, use accessories formed from hot-dip galvanized-steel sheet, plastic, or rolled zinc.
  - Provide cornerbead at outside corners unless otherwise indicated.
  - Provide LC-bead (J-bead) at exposed panel edges.
  - 3. Provide control joints where indicated.
- B. Joint-Treatment Materials: ASTM C 475/C 475M.
  - 1. Joint Tape: Paper unless otherwise recommended by panel manufacturer.
  - 2. Joint Compounds: Setting-type taping compound and drying-type, ready-mixed, compounds for topping.
- C. Sound-Attenuation Blankets: ASTM C 665, Type I (unfaced).

	SECTION 096513 - RESILIENT BASE AND ACCESSORIES	3.2	APPLICATIO
	PART 1 - GENERAL	A. (	Comply with rec applicable to
k. Provide	1.1 SECTION REQUIREMENTS	В.	Paint expose
crews.	A. Submittals: Product data and Samples.		1. Do not pair unless o
ers to base	B. Extra Materials: Deliver to Owner at least 10 linear feet of each type and color of resilient wall base installed.	C. A	pply paints acc 1. Use brushe
S.	PART 2 - PRODUCTS	D. A	pply paints to p roller tracking
-rated	2.1 RESILIENT BASE		breaks.
st coat of	A. Vinyl Base: ASTM F 1861, Type TV (vinyl, thermoplastic), Group I (solid, homogeneous).		1. If under film has
rate first,	B. Style: Cove (base with toe).		
en	C. Minimum Thickness: 0.125 inch.	3.3	EXTERIOR P
	D. Height: 4 inches.	Α.	Steel:
	E. Lengths: Cut lengths 48 inches long or coils in manufacturer's standard lengths.		1. Semiglo primer.
	F. Outside Corners: Job formed or preformed.		
	G. Inside Corners: Job formed or preformed.		F SECTION 09 ON 099123 - IN
	2.2 RESILIENT MOLDING ACCESSORY	OLOTI	011 000 120 - 113
	A. Rubber Molding Accessories.	PART	1 - GENERAL
	B. Vinyl Molding Accessories.	1.1	SECTION RE
	C. Description: Nosing for resilient flooring; Transition strips.		SECTION RE Submittals:
	2.3 INSTALLATION ACCESSORIES	Α. Ο	1. Sample
	A. Adhesives: Water-resistant type recommended by manufacturer to suit floor covering and substrate conditions indicated.	В.	Extra Materia Project, in co
	PART 3 - EXECUTION	PART	2 - PRODUCTS
	3.1 INSTALLATION	2.1	PAINT
	A. Prepare horizontal surfaces according to ASTM F 710. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.		Ann
	B. Adhesively install resilient wall base and accessories.		1. For eac
	C. Install wall base in maximum lengths possible. Apply to walls, columns, pilasters, casework, and other permanent fixtures in rooms or areas where base is required.	B. L	manufa ow-Emitting Ma
	D. Install reducer strips at edges of floor coverings that would otherwise be exposed.		LEED 2009 fo
	END OF SECTION 096513		Colors: As selec
	SECTION 099113 - EXTERIOR PAINTING		3 - EXECUTION
ate-duty	PART 1 - GENERAL	3.1	PREPARATIO
		A. C	Comply with rec applicable to
	1.1 SECTION REQUIREMENTS	B. F	emove hardwa
le 1,	A. Submittals: 1. Samples.		that cannot b
/I, Class 1	<ul> <li>B. Extra Materials: Deliver to Owner 1 gal. of each color and type of finish-coat paint used on Project, in containers, properly labeled and sealed.</li> </ul>		lean and prepa so cleaning o
C 635,	PART 2 - PRODUCTS	3.2 A. (	APPLICATIC
	2.1 PAINT	В.	applicable to Paint expose
	A. Material Compatibility: Provide materials that are compatible with one another and with		1. Paint s
1	<ol> <li>Substrates.</li> <li>For each coat in a paint system, provide products recommended in writing by</li> </ol>		<ol> <li>Paint s</li> <li>Paint tl</li> <li>Color-code</li> </ol>
CA's "Ceiling	manufacturers of topcoat for use in paint system and on substrate indicated. B. Colors: As selected.		5. Do not pai unless
n system		C. /	Apply paints ac
provide a neat,	PART 3 - EXECUTION		1. Use brush 2. Use rollers
	3.1 PREPARATION	D. /	Apply paints to roller tracking
	<ul> <li>A. Comply with recommendations in MPI's "MPI Architectural Painting Specification Manual" applicable to substrates indicated.</li> <li>B. Remove hardware, lighting fixtures, and similar items that are not to be painted. Mask items</li> </ul>		breaks. 1. If unde film ha
	that cannot be removed. Reinstall items in each area after painting is complete.		
	C. Clean and prepare surfaces in an area before beginning painting in that area. Schedule painting	3.3	INTERIOR P

C. Clean and prepare surfaces in an area before beginning painting in that area. Schedule painting so cleaning operations will not damage newly painted surfaces. A. Steel:

2.

#### ASTM C 840.

PART 3 - EXECUTION

blies from abutting structural and masonry work. ant.

ods: Fasten gypsum panels to supports with scre Fasten base layers with screws, and face layers plementary fasteners.

: Comply with requirements of listed assemblies.

her level of finish is required for fire-resistance-ra inish: Embed tape at joints. vel 2 finish: Embed tape and apply separate first o ners, and trim flanges. ide Level 4 finish: Embed tape and apply separat ompound to tape, fasteners, and trim flanges.

anels: Finish according to manufacturer's writter

CEILINGS

1264:

I holes and lightly textured).

ics: Class A.

osed flange of suspension system.

e, direct-hung system; ASTM C 635, intermediate

the design load indicated in ASTM C 635, Table

coated carbon-steel wire; ASTM A 641/A 641M,

t least 3 times the hanger design load (ASTM C ( less than 0.106-inch- diameter wire.

A. Install acoustical ceilings to comply with ASTM C 636/C 636M and seismic design requirements indicated, according to manufacturer's written instructions and CISCA

B. Install acoustical panels with undamaged edges and fit accurately into suspension s runners and edge moldings. Scribe and cut panels at borders and penetrations to pr

### **APPLICATION**

nply with recommendations in MPI's "MPI Architectural Painting Specification Manual" pplicable to substrates indicated.

aint exposed surfaces, new, unless otherwise indicated. Do not paint prefinished items, items with an integral finish, operating parts, and labels unless otherwise indicated.

y paints according to manufacturer's written instructions.

Use brushes only where the use of other applicators is not practical.

y paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, oller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color reaks.

If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

**EXTERIOR PAINT APPLICATION SCHEDULE** 

# teel:

Semigloss Water-Based, Light-Industrial Coating: Two coats over alkyd anticorrosive primer.

SECTION 099113

099123 - INTERIOR PAINTING

SECTION REQUIREMENTS

# Samples.

Extra Materials: Deliver to Owner 1 gal. of each color and type of finish-coat paint used on roject, in containers, properly labeled and sealed.

### PRODUCTS

## PAINT

erial Compatibility: Provide materials that are compatible with one another and with

For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

-Emitting Materials: Comply with Section 018113.13 - Sustainable Design Requirements -EED 2009 for New Construction and Major Renovations.

ors: As selected.

# EXECUTION

#### REPARATION

nply with recommendations in MPI's "MPI Architectural Painting Specification Manual" pplicable to substrates indicated.

nove hardware, lighting fixtures, and similar items that are not to be painted. Mask items hat cannot be removed. Reinstall items in each area after painting is complete.

an and prepare surfaces in an area before beginning painting in that area. Schedule painting o cleaning operations will not damage newly painted surfaces.

APPLICATION

mply with recommendations in MPI's "MPI Architectural Painting Specification Manual" applicable to substrates indicated.

Paint exposed surfaces, new and existing, unless otherwise indicated.

Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Paint surfaces behind permanently fixed equipment or furniture with prime coat only. Paint the back side of access panels.

1. Color-code mechanical piping in accessible ceiling spaces.

5. Do not paint prefinished items, items with an integral finish, operating parts, and labels unless otherwise indicated.

bly paints according to manufacturer's written instructions.

. Use brushes only where the use of other applicators is not practical. 2. Use rollers for finish coat on interior walls and ceilings.

ly paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, oller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color reaks.

If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

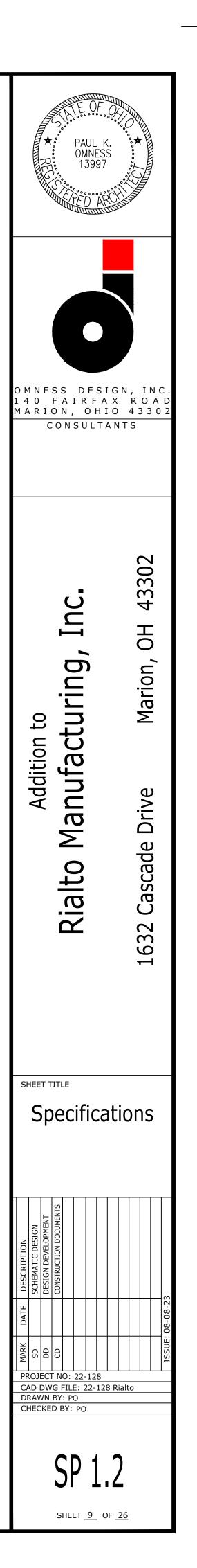
# 3.3 INTERIOR PAINT APPLICATION SCHEDULE

Semigloss, Quick-Dry Enamel: Two coats over quick-drying alkyd metal primer: 1 MPI INT 5.1A.

# B. Gypsum Board:

Eggshell Latex: Two coats over latex primer/sealer: MPI INT 9.2A. Eggshell Institutional Low-Odor/VOC Latex: Two coats over low-odor/VOC primer/sealer: MPI INT 9.2M.

END OF SECTION 099123



#### GOVERNING CODE: 2017 OHIO BUILDING CODE DEAD LOADS BUILDING ROOF A. BUILDING SELF WEIGHT = BY PEMB SUPPLIER = 5.0 PSF B. COLLATERAL = 5.0 PSF + SELF WEIGHT C. TOTAL DEAD LOAD 2. ROOF LIVE LOADS: A. MINIMUM ROOF LIVE LOAD = 20 PSF ROOF SNOW DESIGN PARAMETERS A. GROUND SNOW LOAD Pg = 20.0 PSF B. FLAT ROOF SNOW LOAD Pf = 14.0 PSF C. MINIMUM UNIFORM DESIGN SNOW LOAD = 20.0 PSF D. UNIFORM SNOW LOAD WITH UNBALANCED / DRIFTING = 14.0 PSF E. SNOW EXPOSURE FACTOR Ce = 1.0 F. SNOW LOAD IMPORTANCE FACTOR I = 1.0 G. THERMAL FACTOR Ct = 1.0 H. DRIFTING SNOW AND UNBALANCED SNOW PER ASCE 7-10. WIND DESIGN PARAMETERS 4 A. ULTIMATE DESIGN WIND SPEED Vult = 115 MPH B. NOMINAL DESIGN WIND SPEED Vasd = 89 MPH C. RISK CATEGORY= II D. WIND EXPOSURE CATEGORY = C E. INTERNAL PRESSURE COEFFICIENT = +/-0.18 F. WIND DESIGN PRESSURES FOR COMPONENTS AND CLADDING: COMPONENT AND CLADDING WIND PRESSURES (BASED UPON WIND VELOCITY Vasd SERVICE LEVEL LOAD) REFER TO ASCE7-10 TABLE 30.7-2 FOR COMPONENT AND CLADDING ZONES, a = 6.2' EFFECTIVE POSITIVE NEGATIVE PRESSURE PRESSURE WIND AREA ZONE (SF) (PSF) (PSF) 10 10.0 -19.3 (1)-18.1 10.0 50 100 10.0 -17.6 10.0 -32.3 10 2 50 10.0 -24.3

-20.9

-48.6

-29.2

-20.9 -27.7

-26.6

-26.1

-45.7

-22.9

-13.1

-19.1

-17.3

-16.5

-23.5

-19.9

-18.3

SEISMIC DESIGN PARAMETERS A. SEISMIC IMPORTANCE FACTOR = 1.0

3

2

3

4

(5)

B. SEISMIC OCCUPANCY CATEGORY = II

100

10

50 100

10

50

100

10

50

100

10

50

100

10

50

100

10.0 10.0

10.0

10.0

10.0

10.0

10.0 10.0

10.0

10.0

17.6

15.8

15.0

17.6

15.8

15.0

C. MAXIMUM CONSIDERED EARTHQUAKE GROUND MOTION AT 0.2 SECOND PERIOD, SS = 13.0%g D. MAXIMUM CONSIDERED EARTHQUAKE GROUND MOTION AT 1.0 SECOND PERIOD, S1 = 6.0%g

E. SITE CLASS = D

F. SDS = 0.137g

G. SD1 = 0.095g

H. SEISMIC DESIGN CATEGORY = D I. BUILDING SYSTEM:

J. SEISMIC RESISTING SYSTEM:

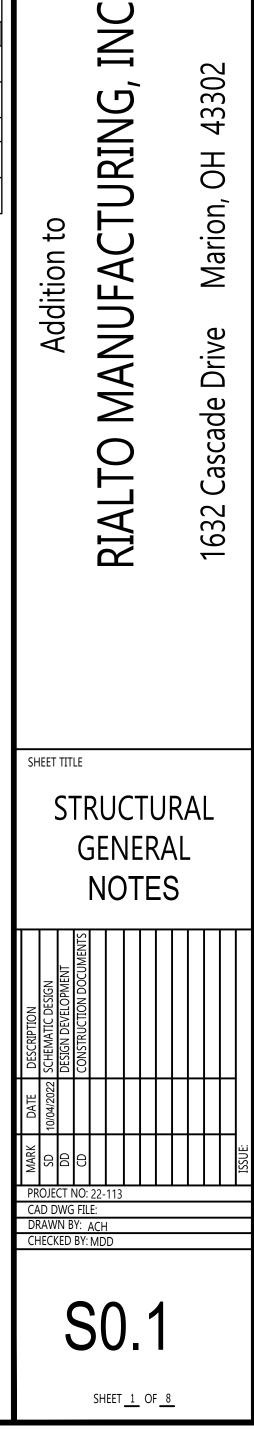
J. RESPONSE MODIFICATION FACTOR, R: 3.0 K. DESIGN BASE SHEAR: 0.046

STRUCTURAL STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE. STRUCTURAL STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE.

0.046

	SCHEDUL
	ITEM
BRIC	CATORS: (1705.2 OBC)
	INSPECTION AND NDE PER QUALITY ASSURANCE REQUIREMENTS OF AISC 360
	STRUCTURAL LOAD BEARING MEMBERS
	STRUCTURAL LOAD BEARING ASSEMBLIES
EEL	CONSTRUCTION: (1705.2 OBC)
	INSPECTION AND NDE PER QUALITY ASSURANCE REQUIREMENTS OF AISC 360
	HIGH STRENGTH BOLTS
	STRUCTURAL STEEL MATERIALS
	STRUCTURAL STEEL WELDING
	STRUCTURAL STEEL FRAME JOINT DETAILS
ONCF	RETE CONSTRUCTION
	INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS INCLUDING PLACEMI VERIFICATION
	REINFORCING BAR WELDING
	VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A-706
	INSPECT SINGLE-PASS FILLET WELDS
	INSPECT ALL OTHER WELDS
	INSPECT ANCHORS CAST IN CONCRETE
	INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS
	ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS
	MECHANICAL ANCHORS AND ADHESIVE ANCHORS OTHER THAN THOSE DEFINED ABOV
	VERIFY USE OF REQUIRED DESIGN MIX
	PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS AND DETERMINE THE TEMPERATURE OF CONCRETE
	INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES
	VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES
	INSPECT ERECTION OF PRECAST CONCRETE MEMBERS
DILS	
	VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY
	VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPE MATERIAL
	PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS
	VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.
	PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SI HAS BEEN PREPARED PROPERLY.

ILE O	F SPE	CIAL INS	PECTION	NS		
	REQ'	INSPECT	ION TYPE	REFERENCED STANDARD	OBC REFERENCE	STALE OF OX
	D	CONT.	PER.		OBCINELENEL	★ MATTHEW D.★
	Х					및 DERWACTER K
			Х			Ő. E-68641 Ш ∽
			Х			STERVE G
			Х			
	Х					08-07-2023
			X			08-07-2023
			X			
			X			
			X			
			X			
	Х					
MENT			x	ACI 318: 25.2, 25.3, 26.5.126.5.3	1908.4	
			Х	AWS D1.4 AND ACI 318: 26.5.4		
			Х	AWS D1.4 AND ACI 318: 26.5.4		
			Х	AWS D1.4 AND ACI 318: 26.5.4		
		Х		AWS D1.4 AND ACI 318: 26.5.4		OMNESS DESIGN, INC 140 FAIRFAX ROAI
			х	ACI 318: 17.8.2		MARION, OHIO 43302
						CONSULTANTS
DVE						DERWACTER
			x	ACI 318: CHAPTER 19 AND 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3	ASSOCIATES, LLC 5275 Milford Dr.
			~	ACT 310. CHALLER 13 AND 20.4.3, 20.4.4	1904.1, 1904.2, 1900.2, 1900.3	Zanesville, OH 43701
		х		ASTM C 172, ASTM C 31, ACI 318: 26.4.5, 26.12	1908.10	
		х		ACI 318: 26.4.5	1908.6, 1908.7, 1908.8	
			х	ACI 318: 26.4.7 - 26.4.9	1908.9	
			Х	ACI 318: CHAPTER 26.8		
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# **GENERAL NOTES**

- ANY CHANGES MADE TO THE DESIGN IDENTIFIED ON THESE DRAWINGS AND/OR ASSOCIATED SPECIFICATIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO MAKING ANY MODIFICATIONS TO THE PROJECT. ANY LIABILITY AS A RESULT OF DESIGN MODIFICATIONS. AS WELL AS ANY COSTS ASSOCIATED WITH SUCH MODIFICATIONS, MADE WITHOUT THE WRITTEN
- APPROVAL OF ENGINEER OF RECORD SHALL BECOME THE RESPONSIBILITY OF THE CONTRACTOR. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE BUILDING IS FULLY COMPLETED. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ERECTION PROCEDURES AND SEQUENCE, AND TO ENSURE THE STABILITY OF THE BUILDING AND ITS COMPONENT PARTS, AND THE ADEQUACY OF TEMPORARY OR INCOMPLETE CONNECTIONS, DURING ERECTION. THIS INCLUDES THE ADDITION OF ANY SHORING, SHEETING, TEMPORARY GUYS, BRACING OR TIEDOWNS THAT MIGHT BE NECESSARY. SUCH MATERIAL IS NOT SHOWN ON THE DRAWINGS. IF APPLIED, THEY SHALL BE REMOVED AS CONDITIONS PERMIT, AND SHALL REMAIN THE CONTRACTOR'S PROPERTY. THE ENGINEER HAS NO EXPERTISE IN, AND TAKES NO RESPONSIBILITY FOR, CONSTRUCTION MEANS AND METHODS OR JOB SITE SAFETY DURING CONSTRUCTION. PROCESSING AND/OR APPROVING SUBMITTALS MADE BY THE CONTRACTOR WHICH MAY CONTAIN INFORMATION RELATED TO CONSTRUCTION METHODS OR SAFETY ISSUES, OR PARTICIPATION IN MEETINGS WHERE SUCH ISSUES MIGHT BE DISCUSSED, SHALL NOT BE CONSTRUED AS VOLUNTARY ASSUMPTION BY THE ENGINEER OF ANY RESPONSIBILITY FOR SAFETY PROCEDURES
- IT IS SOLELY THE RESPONSIBILITY OF EACH CONTRACTOR TO FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION. THE ENGINEER IS NOT ENGAGED IN, AND DOES NOT SUPERVISE CONSTRUCTION.
- SHOULD ANY OF THE DETAILED INSTRUCTIONS SHOWN ON THE PLANS CONFLICT WITH THESE STRUCTURAL NOTES, OR WITH EACH OTHER, THE STRICTEST PROVISION SHALL GOVERN.

# **USE OF THESE DOCUMENTS:**

- THESE DOCUMENTS SHALL NOT BE REPRODUCED IN ANY MANNER FOR THE PRODUCTION OF FABRICATION OR ERECTION SUBMITTALS. REPRODUCTION OF THESE DOCUMENTS IN THAT MANNER CONSTITUTES COPYRIGHT INFRINGEMENT. ANY DOCUMENTS SUBMITTED FOR REVIEW THAT CONTAIN ANY IMAGE. SKETCH, DETAIL, ETC. FROM THESE DOCUMENTS WILL BE REJECTED.
- ELECTRONIC VERSIONS OF THESE DOCUMENTS ARE THE PROPERTY OF DERWACTER & ASSOCIATES, LLC. ELECTRONIC OR CAD FILES WILL NOT BE MADE AVAILABLE FOR CONSTRUCTION PURPOSES.

# **REINFORCED MASONRY:**

THE ANCHOR.

- REINFORCED MASONRY SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH, fm, OF 1500 PSI. MASONRY UNITS SHALL BE NORMAL WEIGHT BLOCK CONFORMING TO ASTM C90, AND SHALL HAVE A MINIMUM NET AREA COMPRESSIVE STRENGTH OF 2150 PSI. MORTAR SHALL CONFORM TO ASTM C270, TYPE S. MINIMUM GROUT COMPRESSIVE STRENGTH SHALL EQUAL OR EXCEED fm, BUT NOT BE LESS THAN 2000 PSI. REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60, UNLESS NOTED OTHERWISE.
- CONTINUOUS WIRE REINFORCING (JOINT REINFORCING) SHALL BE HOT DIPPED GALVANIZED, LADDER TYPE FORMED FROM 9 GAUGE COLD - DRAWN STEEL WIRE COMPLYING WITH ASTM A82. JOINT REINFORCING SHALL BE SPACED AT 16" O.C. VERTICALLY IN ALL MASONRY WALLS AND PIERS, U.N.O.
- SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF VERTICAL CONTROL JOINTS. HORIZONTAL BOND BEAM AND LINTEL REINFORCING SHALL BE CONTINUOUS ACROSS VERTICAL CONTROL JOINTS. JOINT REINFORCING SHALL BE STOPPED EACH SIDE OF VERTICAL CONTROL JOINTS ALL REINFORCED CELLS, ALL CELLS BELOW GRADE AND ALL CELLS BELOW FINISH FLOOR SHALL BE
- GROUTED SOLID. AT VERTICAL REINFORCING LOCATIONS, PROVIDE DOWEL FROM FOOTING TO MATCH SIZE AND SPACING OF
- VERTICAL WALL REINFORCING. DOWELS SHALL BE EMBEDDED INTO THE FOOTING MINIMUM 9" INCHES AND SHALL HAVE A 90 DEGREE STANDARD HOOK. WHEN A FOUNDATION DOWEL DOES NOT LINE UP WITH A VERTICAL BLOCK CORE, IT SHALL NOT BE SLOPED MORE THAN ONE HORIZONTAL IN 6 VERTICAL. DOWELS MAY BE GROUTED INTO A CELL IN VERTICAL
- ALIGNMENT, EVEN THOUGH IT IS IN A CELL ADJACENT TO THE VERTICAL WALL REINFORCING. REINFORCING STEEL SHALL BE SECURED IN PLACE BEFORE GROUTING STARTS.
- ALL REINFORCING LAP SPLICES SHALL BE IN ACCORDANCE WITH THE MASONRY REINFORCING LAP SPLICE LENGTH SCHEDULE, U.N.O. SPLICE VERTICAL SHALL BE WIRED TOGETHER, LAP SPLICES BETWEEN ADJACENT BARS SHALL BE STAGGERED A MINIMUM OF 24 BAR DIAMETERS.
- VERTICAL BARS SHALL BE HELD IN POSITION AT TOP AND BOTTOM AND AT INTERVALS NOT EXCEEDING 96 DIAMETERS OF THE REINFORCING BAR WITH REBAR POSITIONERS. BARS SHALL BE ANCHORED IN PLACE PRIOR TO GROUTING.
- VERTICAL REINFORCING BARS SHALL HAVE A MINIMUM CLEARANCE OF 3/4 OF AN INCH FROM THE MASONRY AND NOT LESS THAN ONE BAR DIAMETER BETWEEN BARS.
- VERTICAL CELLS THAT WILL BE GROUTED SHALL HAVE A VERTICAL ALIGNMENT TO MAINTAIN A CONTINUOUS UNOBSTRUCTED CELL AREA NOT LESS THAN 3"x4".
- GROUT SHALL BE PLACED IN LIFTS NOT TO EXCEED 5 FEET. THE TOTAL HEIGHT OF 8-INCH (NOMINAL) OR LARGER MASONRY TO BE GROUTED PRIOR TO THE ERECTION OF ADDITIONAL MASONRY SHALL NOT
- EXCEED 24 FEET. GROUTING SHALL BE STOPPED 1 1/2" BELOW THE TOP OF A COURSE SO AS TO FORM A KEY AT THE POUR
- JOINT. GROUTING OF MASONRY BEAMS OVER OPENINGS SHALL BE DONE IN ONE CONTINUOUS OPERATION. ALL BOLTS, ANCHORS, ETC., INSERTED IN THE WALLS, SHALL BE GROUTED SOLID INTO POSITION. CELLS AT ANCHOR LOCATIONS SHALL BE GROUTED TO MINIMUM 6" ABOVE AND 6" BELOW THE CENTERLINE OF

MASONRY REINFORCING LAP SPLICE LENGTH (IN.)							
	NUMBER OF REINFORCING LAYERS						
BAR		ONE LAYER		TWO LAYERS			
SIZE	NOMINAL WALL THICKNESS			NOMINAL WALL THICKNESS			
	8"	10"	12"	8"	10"	12"	
#4	25	25	25	31	31	31	
#5	31	31	31	48	48	48	
#6	57	52	52	98	98	98	
#7	79	61	61	177	121	121	
#8	112	86	74	-	149	149	

# STRUCTURAL STEEL:

- MATERIALS:
- A. STRUCTURAL STEEL WIDE FLANGE SHAPES: ASTM A992, Fy = 50 KSI B. STRUCTURAL STEEL CHANNELS, ANGLES, PLATES, ETC.: ASTM A36, Fy = 36 KSI C. STRUCTURAL TUBING (INCLUDES SQUARE, RECTANGULAR AND ROUND SECTIONS): ASTM A500, GRADE C, Fy = 50 KSI
- D. HIGH STRENGTH BOLTS: ASTM A325 UNLESS NOTED OTHERWISE E. ANCHOR RODS: ASTM F1554, GRADE 36, UNLESS NOTED OTHER WISE. GALVANIZE IN EXTERIOR WALLS AND EXTERIOR LOCATIONS.
- F. SHEAR STUDS: ASTM A108, Fy = 60 KSI
- G. DEFORMED BAR ACNHORS: ASTM A496, Fy = 70 KSI H. ELECTRODES: SERIES E70
- I. ALL STRUCTURAL STEEL SHALL BE DOMESTICALLY PRODUCED AND COMPLY WITH ALL FEDERAL AND STATE REQUIREMENTS.
- SPECIFICATIONS A. WELDING PERSONNEL AND PROCEDURES ARE TO BE QUALIFIED PER AWS D1.1. UNLESS SPECIFICALLY SHOWN OTHERWISE, THE DESIGN FABRICATION AND ERECTION IS TO BE GOVERNED BY THE LATEST **REVISION OF:** i. AISC SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR
- BUILDINGS ii. AISC CODE OF STANDARD PRACTICE
- iii. STRUCTURAL WELDING CODE, AWS D1.1 OF THE AMERICAN WELDING SOCIETY iv. SPECIFICATIONS FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS SUBMITTALS
- A. SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL WHICH INCLUDE ERECTION PLANS, CONNECTIONS, HOLES. THREADED FASTENER TYPES AND FINISHES. B. SUBMITTALS MUST BE THE ORIGINAL WORK OF THE FABRICATOR OR DETAILER. ELECTRONIC REPRODUCTIONS OF THESE DOCUMENTS WILL NOT BE REVIEWED. ANY DELAY CREATED BY THE FAILURE TO COMPLY WITH THIS PROVISION SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. C. THE SUBMITTAL MUST INCLUDE ALL REQUIRED FIELD VERIFICATION OF DETAILS AND DIMENSIONS.
- D. INDICATE MATERIAL SPECIFICATIONS, STRENGTHS AND FINISHES. INDICATE COMPLIANCE WITH ALL STATE AND FEDERAL REQUIREMENTS FOR DOMESTICALLY PRODUCED STEEL. RETAIN MILL CERTIFICATIONS AND DOMESTICALLY PRODUCED STEEL CERTIFICATIONS FOR ALL STRUCTURAL SHAPES FOR THE DURATION OF THE WARRANTY PERIOD OF THE STRUCTURE.
- CONNECTIONS A. FIELD CONNECTIONS ARE TO BE BOLTED, EXCEPT AS INDICATED OTHERWISE. SHOP CONNECTIONS MAY
- BE EITHER WELDED OR BOLTED. B. CONNECTIONS ARE TO BE DESIGNED BY THE FABRICATOR TO DEVELOP EITHER 100% OF THE FULL UNIFORM LOAD CAPACITY OF THE MEMBER OR THE FORCES SHOWN ON THE PLANS. THE MINIMUM CONNECTION CAPACITY SHALL BE 5.0 KIPS. DETAILS ARE PROVIDED SHOWING THE GENERAL ARRANGEMENT OF CONNECTIONS. COATINGS:
- A. DO NOT PAINT STEEL OR ANCHOR RODS WHICH WILL BE ENCASED IN 3" MINIMUM OF CONCRETE OR ANY STEEL WHICH IS TO RECEIVE SPRAY-APPLIED OR INTUMESCENT FIREPROOFING.
- B. PAINT ALL INTERIOR STEEL WITH TWO COATS OF RED-OXIDE PRIMER.
- C. HOT-DIP GALVANIZE ALL EXTERIOR STEEL INCLUDING LINTELS AND SHELF ANGLES. D. PROVIDE A FIELD-APPLIED COAT OF ASPHALTIC MASTIC FOR ANY BELOW GRADE STEEL, NOT COVER BY 3" OF CONCRETE OR MASONRY GROUT, INCLUDING BASE PLATES AND ANCHOR RODS.

# EPOXY ANCHORS:

- EPOXY ANCHORING SHALL NOT BE USED EXCEPT WHERE SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS, OR WHEN APPROVED IN ADVANCE BY THE STRUCTURAL ENGINEER. WHERE PERMITTED, EPOXY ANCHORING SHALL BE COMPLETED USING ONE OF THE FOLLOWING PRODUCTS:
- FOR USE IN CONCRETE:
- A. HIT HY-200 ADHESIVE ANCHOR, BY HILTI, INC. (ICC-ES REPORT #3187) FOR USE IN SOLID GROUTED MASONRY: A. HIT-70 WITH HAS ROD ANCHOR SYSTEM BY HILTI, INC. (ICC-ES REPORT #2682) B. HIT-70 WITH TZ ROD ANCHOR SYSTEM BY HILTI, INC. (ICC-ES REPORT #2682) C. SET-ADHESIVE SYSTEMS BY SIMPSON STRONG-TIE (ICC-ES REPORT #1772) D. CIA-GEL 7000 EPOXY BY USP STRUCTURAL CONNECTORS, INC. (ICC-ES REPORT #1702) ANCHOR RODS USED FOR EPOXY ANCHORING SHALL BE THE TYPE SPECIFIED IN THE REFERENCED
- ICC-ES REPORT. THE ANCHOR SIZE SHALL BE AS INDICATED ON THE PLANS. THE ANCHOR ROD EMBEDMENT SHALL BE AS INDICATED ON THE PLANS, OR APPROVED IN ADVANCE BY THE STRUCTURAL FNGINFFR
- ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE EPOXY MANUFACTURER'S RECOMMENDATIONS AND THE CURRENT ICC-ES REPORT DRILLING SHALL BE PERFORMED WITH A ROTARY HAMMER DRILL AND CARBIDE TIPPED DRILL BIT IN ACCORDANCE WITH INSTRUCTOR'S ACCOMPANYING ADHESIVE CARTRIDGES AND APPLICABLE ICC-ESR (ALTERNATE METHODS OF DRILLING ARE PROHIBITED UNLESS APPROVED IN ADVANCE BY THE STRUCTURAL ENGINEER.)

# **FOUNDATIONS - GENERAL:**

- THE FOUNDATION HAS BEEN DESIGNED IN ACCORDANCE WITH THE RECOMMENDATIONS MADE IN THE GEOTECHNICAL REPORT (GCI PROJECT #22-6-26622) PREPARED BY GEOTECHNICAL CONSULTANTS, INC., DATED JULY 6, 2022. FOOTINGS SHALL BEAR ON SOILS CAPABLE OF SUSTAINING A NET ALLOWABLE BEARING PRESSURE OF 3.0 KSF UNDER SERVICE LIVE AND DEAD LOAD. ISOLATED SPREAD FOOTINGS SHALL BEAR ON SOIL CAPABLE OF SUSTAINING A NET ALLOWABLE BEARING PRESSURE OF 3.0 KSF UNDER SERVICE LIVE AND DEAD LOAD. ALL FOOTINGS SHOULD BEAR ON STABLE, NATURAL NON-ORGANIC SOILS (EXTENDED THROUGH ANY EXISTING STONE LEFT IN PLACE) OR ON NEW, CONTROLLED FILL PLACED DIRECTLY OVER STABLE, NATURAL NON-ORGANIC SOILS (IF EXISTING STONE IS REMOVED).
- FOOTINGS MAY BE POURED INTO AN EARTH-FORMED TRENCH IF SOIL CONDITIONS PERMIT. ALL BEARING MATERIAL SHALL BE INSPECTED BY THE INDEPENDENT TESTING AGENCY PRIOR TO CONCRETE PLACEMENT. THE INDEPENDENT TESTING AGENCY SHALL BE THE SOLE JUDGE AS TO THE SUITABILITY OF THE BEARING MATERIAL. FOOTING ELEVATIONS SHALL BE ADJUSTED AS REQUIRED.
- BOTTOM OF EXTERIOR FOOTINGS SHALL BEAR <u>36"</u> TO <u>42</u>" BELOW FINAL GRADE. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO ADJUST BOTTOM OF FOOTING ELEVATIONS SHOWN IN THE DOCUMENTS AS REQUIRED TO ENSURE MINIMUM FOOTING EMBEDMENT AND TO REACH THE REQUIRED BEARING ELEVATION AS SHOWN IN THE GEOTECHNICAL ENGINEERING REPORT. FOUNDATION WALLS THAT RETAIN EARTH SHALL BE BRACED AGAINST BACKFILLING PRESSURES
- UNTIL FLOOR SLABS AT TOP AND BOTTOM ARE IN PLACE AND CURED.
- WHERE FOUNDATION WALLS ARE TO HAVE EARTH PLACED ON EACH SIDE, PLACE FILL SIMULTANEOUSLY SO AS TO MAINTAIN A COMMON ELEVATION ON EACH SIDE OF THE WALL. FOUNDATION CONCRETE SHALL HAVE REACHED A MINIMUM COMPRESSIVE STRENGTH OF 2,000 PSI
- BEFORE BEING LOADED. STRENGTHS SHALL BE VERIFIED BY TEST.

# **REINFORCED CONCRETE:**

MATERIALS: A. SPECIFICATIONS: IN GENERAL, COMPLY WITH ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE".

CAST-IN PLACE CONCRETE								
LOCATION	CLASS	ťc (PSI)	MIN. CEMENT (LBS)	MIN. AIR CONTENT	MAX. W/C RATIO	NOTES		
FOOTINGS	I	3,000	517	ENTRAPPED	.50			
PERIMETER WALL / PIERS / RETAINING WALLS	=	4,500	564	5% +/- 1%	.45			
INTERIOR SLAB ON GRADE	Ш	3,500	540	ENTRAPPED	.45			
EXTERIOR SLAB ON GRADE	IV	4,500	564	6% +/- 1%	.45			

B. SUBMIT CONCRETE MIX DESIGN FOR APPROVAL IN ACCORDANCE TO ACI 301. MIX DESIGNS SHALL INCLUDE ALL BACKUP DATA MATERIAL WITH COMPRESSIVE STRENGTH BREAKS BASED ON EXPERIENCE OR TRIAL MIX PER ACI 301. SUBMIT THREE (3) SETS FOR REVIEW. THE MIX DESIGNS MUST INCLUDE THE BATCH IDENTIFICATION NUMBER AND THE CLASS IDENTIFICATION FROM THE TABLE ABOVE. FAILURE TO INCLUDE BOTH OF THESE ITEMS WILL RESULT IN THE RETURN OF THE MIX DESIGNS WITHOUT REVIEW.

- FIELD MANUAL: PROVIDE AT LEAST ONE COPY OF THE ACI FIELD REFERENCE MANUAL, SP-15, IN THE FIELD OFFICE AT ALL TIMES.
- CONTINGENCIES: PROVIDE SUPPORTS AS REQUIRED TO MAINTAIN ALIGNMENT OF SCHEDULED REINFORCING. SUCH SUPPORTS ARE TO BE REFLECTED IN THE BID. THE USE OF CLAY BRICK IS NOT ACCEPTABLE.
- FOOTINGS:
- A. DOWELS IN FOOTINGS TO MATCH SIZE AND SPACING OF VERTICAL WALL REINFORCING. B. PROVIDE CONTROLLED LOW-STRENGTH MATERIAL (CLSM) UNDER FOUNDATIONS FOR ACCIDENTAL OVER-EXCAVATION, SOFT SPOTS AND TRENCHES.
- CONSTRUCTION JOINTS: A. PROVIDE CONSTRUCTION JOINTS AT ALL POUR STOP LOCATIONS. ALL CONSTRUCTION JOINTS ARE TO BE DOWELED, USE 3/4" SMOOTH DOWELS 1'-0" LONG EMBEDDED 6" EACH SIDE GREASE ONE END OR PROVIDE SLEEVE. UNLESS WHERE NOTED OTHERWISE ON DRAWINGS.

# **REINFORCING FOR CONCRETE:**

- REINFORCING SHALL CONFORM TO ASTM A615, GRADE 60 OR ASTM A706, UNLESS NOTED OTHERWISE. ALL WELDED REINFORCING BARS SHALL CONFORM TO ASTM A706.
- WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 (SHEETS FORM, NOT ROLLED)
- MINIMUM CONCRETE COVER, UNLESS NOTED OTHERWISE: A. UNFORMED SURFACE IN CONTACT WITH THE GROUND: 3 IN.
- B. FORMED SURFACES EXPOSED TO EARTH OR WEATHER: #6 BARS AND LARGER 2 IN.
- #5 BARS AND SMALLER 1 1/2 IN. C. FORMED SURFACES NOT EXPOSED TO EARTH OR WEATHER: BEAMS, GIRDERS, AND COLUMNS 1 1/2 IN. SLABS, WALLS, AND JOISTS
- 3/4 IN. #11 BARS AND SMALLER #14 AND #18 BARS 1 1/2 IN.
- 4. LAP SPLICES SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE, UNLESS NOTED OTHERWISE.

	CLASS B SPLICE	COMPRESSION SPLICE		CLASS B SPLICE	COMPRESSION SPLICE
BAR	LAP LENGTH	LAP LENGTH	BAR	LAP LENGTH	LAP LENGTH
SIZE	(INCHES)	(INCHES)	SIZE	(INCHES)	(INCHES)
#3	22	12	#8	72	30
#4	29	15	#9	81	34
#5	36	19	#10	89	38
#6	43	23	#11	98	42
#7	63	27			

COMPRESSION DOWEL EMBEDMENT: 22 BAR DIAMETERS, UNLESS NOTED OTHERWISE BASE PLATES, ANCHOR RODS, SUPPORT ANGLES, ETC., BELOW GRADE SHALL BE COVERED WITH A MINIMUM OF 3" OF CONCRETE.

# STRUCTURAL LUMBER

- SPECIFICATIONS AND STANDARDS: DESIGN AND DETAILING OF WOOD FRAMING AND CONNECTIONS SHALL CONFORM TO THE CURRENT EDITION OF THE OHIO BUILDING CODE AND THE EDITION OF THE "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION" ISSUED BY THE NATIONAL FOREST PRODUCTS ASSOCIATION REFERENCED THERE-IN.
- MATERIALS: THE MATERIALS USED FOR THE WORK OF THIS PROJECT ARE TO COMPLY WITH THE MINIMUM STANDARDS OF QUALITY LISTED BELOW; UNLESS SPECIFICALLY NOTED OTHERWISE IN THE CONTRACT DOCUMENTS.

MINIMUM STRUCTURAL PROPERTIES FOR DIMENSIONAL LUMBER										
		STRUCTURAL PROPERTIES								
LOCATION	SIZE	Fb (psi)	Fv (psi)	E (ksi)						
	2X4	875	135	1400						
	2X6	875	135	1400						
JOISTS	2X8	1200	175	1600						
	2X10	1050	175	1600						
	2X12	975	175	1600						

- ALL STRUCTURAL LUMBER SHALL BE KILN DRIED TO A MAXIMUM MOISTURE CONTENT OF 15%. ALL WOOD MEMBERS EXPOSED TO THE ELEMENTS SHALL BE PRESERVATIVE PRESSURE TREATED. ALL WOOD MEMBERS SECURED TO OR PLACED AGAINST CONCRETE, MASONRY, AND/OR EARTH ARE TO BE
- PRESERVATIVE PRESSURE TREATED FOR GROUND CONTACT. STRUCTURAL WOOD MEMBERS ARE NOT TO BE CUT, COPED, OR MODIFIED, OTHER THAN CUTTING TO LENGTH OR MAKING PROVISIONS FOR FASTENERS. MAKE ALL CUTS TRUE AND SQUARE FOR FULL
- BEARING AT STRUCTURAL JOINTS. CONNECT ALL WOOD FRAMING SECURELY TOGETHER WITH NAILS, SPIKES, OR FRAMING ANGLES, IN ACCORDANCE WITH TABLE 2304.9.1 OF THE OHIO BUILDING CODE. FASTENERS USED TO CONNECT PRESERVATIVE PRESSURE TREATED LUMBER SHALL BE OF STAINLESS STEEL OR HOT DIPPED GALVANIZED STEEL. PROVIDE PLYWOOD NAILING AS RECOMMENDED BY THE AMERICAN PLYWOOD
- ASSOC THE CONTRACTOR SHALL SUBMIT PRODUCT DATA TO THE ARCHITECT PRIOR TO THE START OF CONSTRUCTION INDICATING COMPLIANCE WITH THIS SECTION.

# **DELEGATED DESIGN (PEMB):**

ALL STRUCTURAL STEEL BUILDING ELEMENTS FROM THE COLUMN BASE PLATES UP, SHALL BE DESIGNED BY AN ENGINEER FAMILIAR WITH THE REQUIREMENTS OF THE CURRENT OHIO BUILDING CODE AND THE STANDARDS SET FORTH BY THE METAL BUILDING MANUFACTURER'S ASSOCIATION. ALL LOADS SHOWN ON THESE PLANS SHALL BE INTERPRETED AS MINIMUM STANDARDS. IF, THE DELEGATED ENGINEER'S CALCULATED LOADS DIFFER FROM WHAT IS SHOWN, THE HIGHER OF THE TWO SHALL GOVERN. THE DELEGATED ENGINEER SHALL SUBMIT FABRICATION AND INSTALLATION DRAWINGS BEARING THE SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER. THE SUBMITTAL SHALL INCLUDE THE FOLLOWING

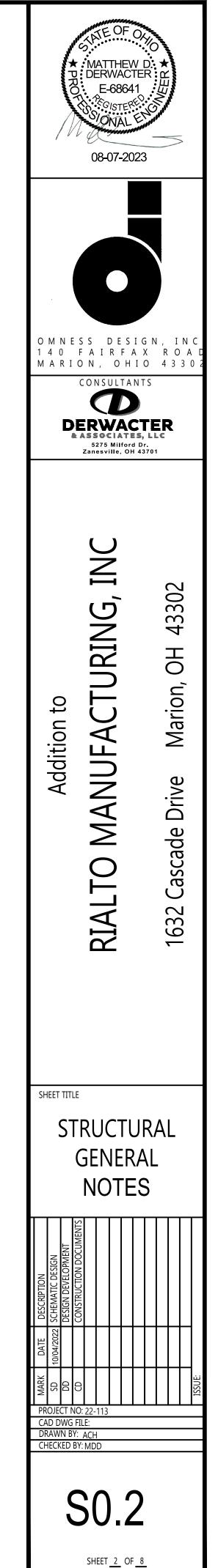
INFORMATION: DIMENSIONED PLAN LAYOUT

- SEQUENCING SCHEDULE
- STRUCTURAL CALCULATIONS С
- ERECTION DRAWINGS D.
- BUILDING REACTIONS
- THE MANUFACTURER SHALL IAS ACCREDITED FOR METAL BUILDING SYSTEMS AC 472. THE PRE-ENGINEERED METAL BUILDING SHALL BE DESIGNED FOR THE FOLLOWING DEFLECTION AND DRIFT

LIMITATIONS: - VERTICAL FRAME DEFLECTION: L/240 UNDER DESIGN SNOW LOAD OR ROOF LIVE LOAD, WHICHEVER IS MORE STRINGENT.

HORIZONTAL FRAME DRIFT: H/100 UNDER 10 YEAR MRI WIND LOAD. PURLIN/OPEN WEB STEEL JOISTS VERTICAL DEFLECTION: L/240 UNDER DESIGN SNOW LOAD OR ROOF LIVE LOAD, WHICHEVER IS MORE STRINGENT.

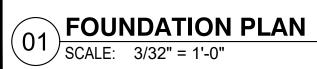
GIRT AND WIND POST HORIZONTAL DEFLECTION: L/240 UNDER WIND LOAD.

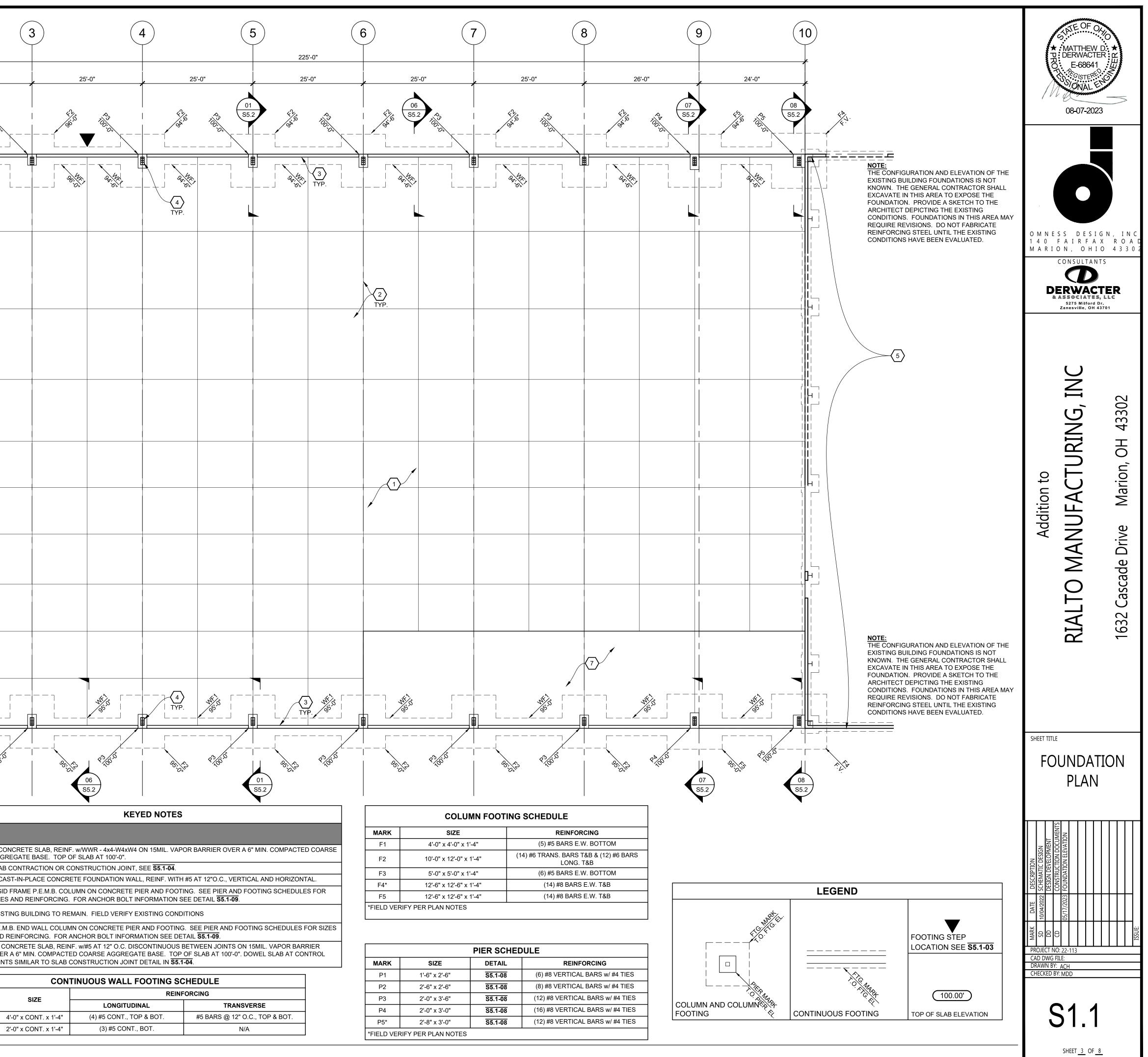


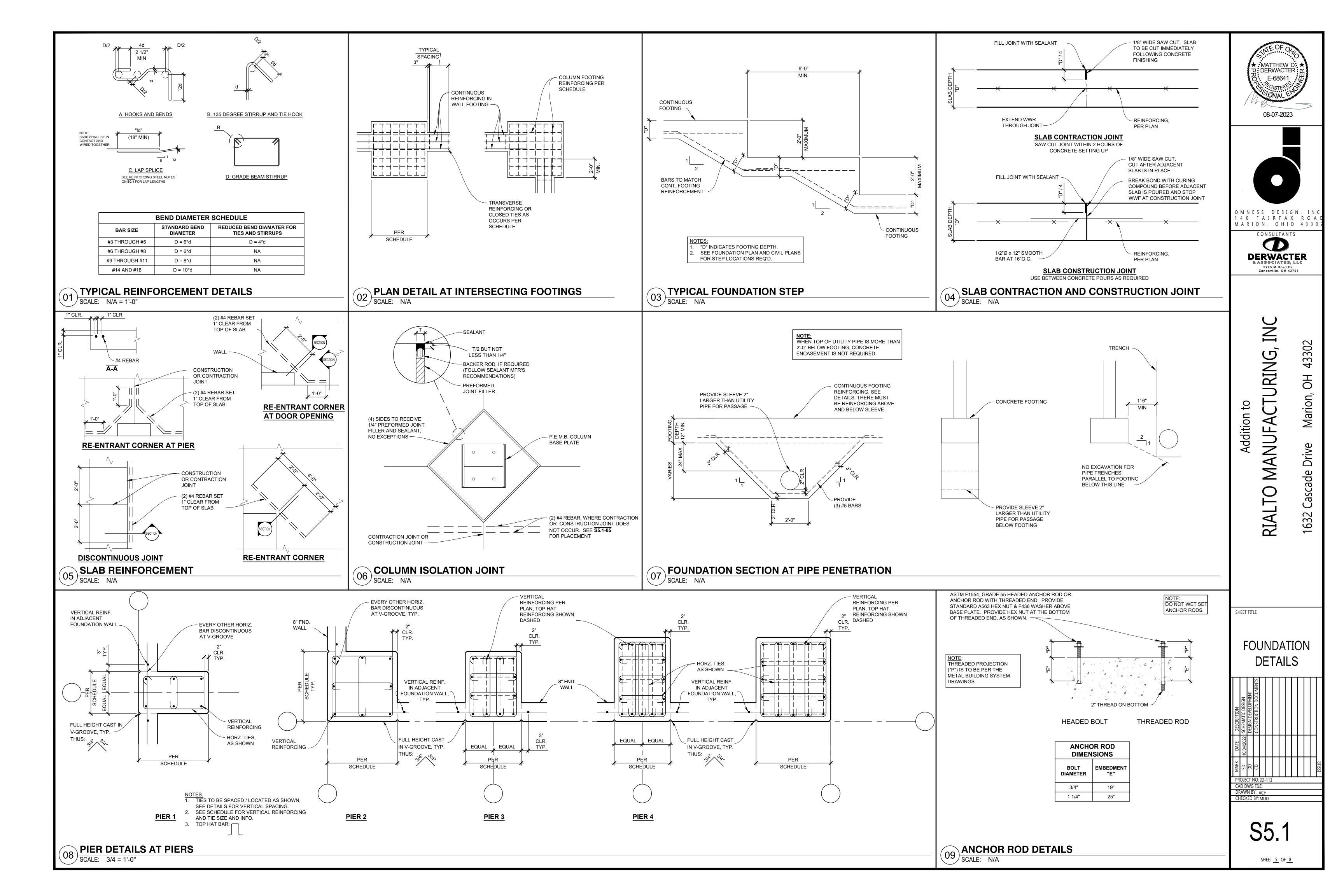
		1			2			3
A	17:-6"	27,000 27,000		5-0"		25'-0"		
B D		02 S5.2 Pho S5.2						
	30-0"	81,00.0 100.0 100.0	6 TYP.					
G -œ E		P1000						
K			TYP.					
	22'-0"	P1000	01 10 <sup>1</sup> 05 10 <sup>1</sup> 05 10 <sup>1</sup> 1	P <sup>3</sup> 100 <sup>10</sup>				
A SEE SHEETS <b>SO.1</b> AND <b>SO.2</b> B ALL ELEVATIONS ARE REL FINISHED FLOOR TO MATC C COORDINATE DOOR OPEN D SEE DETAIL <b>S5.1-01</b> FOR T	<b>2</b> FOR GENERAL NOTE ATIVE TO A FINISH FLC CH THE FINISHED FLOC INGS WITH ARCHITEC	DOR SLAB ELEVATION OF DR ELEVATION OF THE A TURAL DRAWINGS.	F 100'-0" (REFERE			1 8" 0	CONCRETE GREGATE	BASE. TOP
DSEE DETAILS5.1-01 FOR TESTEPS IN FOOTING AS REG ELEVATION. SEES5.1-03 FFSEE DETAILS5.1-05 FOR RGSEE DETAILS5.1-07 FOR THSEE DETAILS5.1-02 FOR RISEE P.E.M.B. DRAWINGS F MATERIAL AND EMBEDMENT	QUIRED TO MAINTAIN F OR TYPICAL DETAIL. E-ENTRANT SLAB REIN YPICAL PIPE PENETRA EINFORCING AT INTER OR ANCHOR ROD DIAM	FROST DEPTH AND EMBI NFORCING, TYP. AT SLAE TIONS THROUGH FOUNI RSECTING FOOTINGS.	3 PENETRATIONS DATIONS.	5, DOOR OPENING	S, ETC.	4 RIC SIZ 5 EX 6 P.E AN 7 OV	CAST-IN-PL GID FRAME (ES AND RE ISTING BUII E.M.B. END V ID REINFOR CONCRETI (ER A 6" MIN INTS SIMILA	P.E.M.B. CO INFORCINO DING TO F WALL COLU CING. FOF E SLAB, RE I. COMPAC AR TO SLAE
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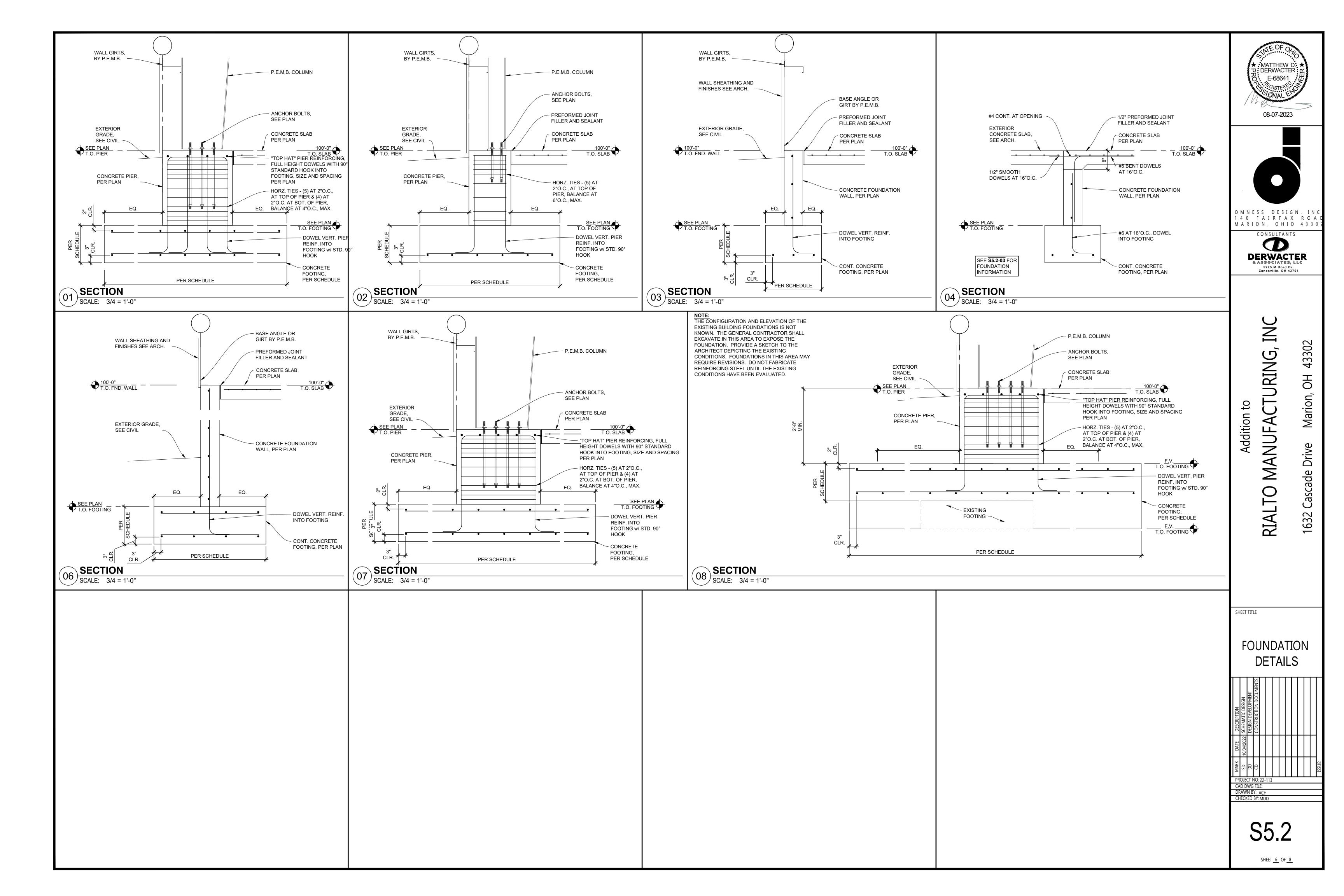
WF1

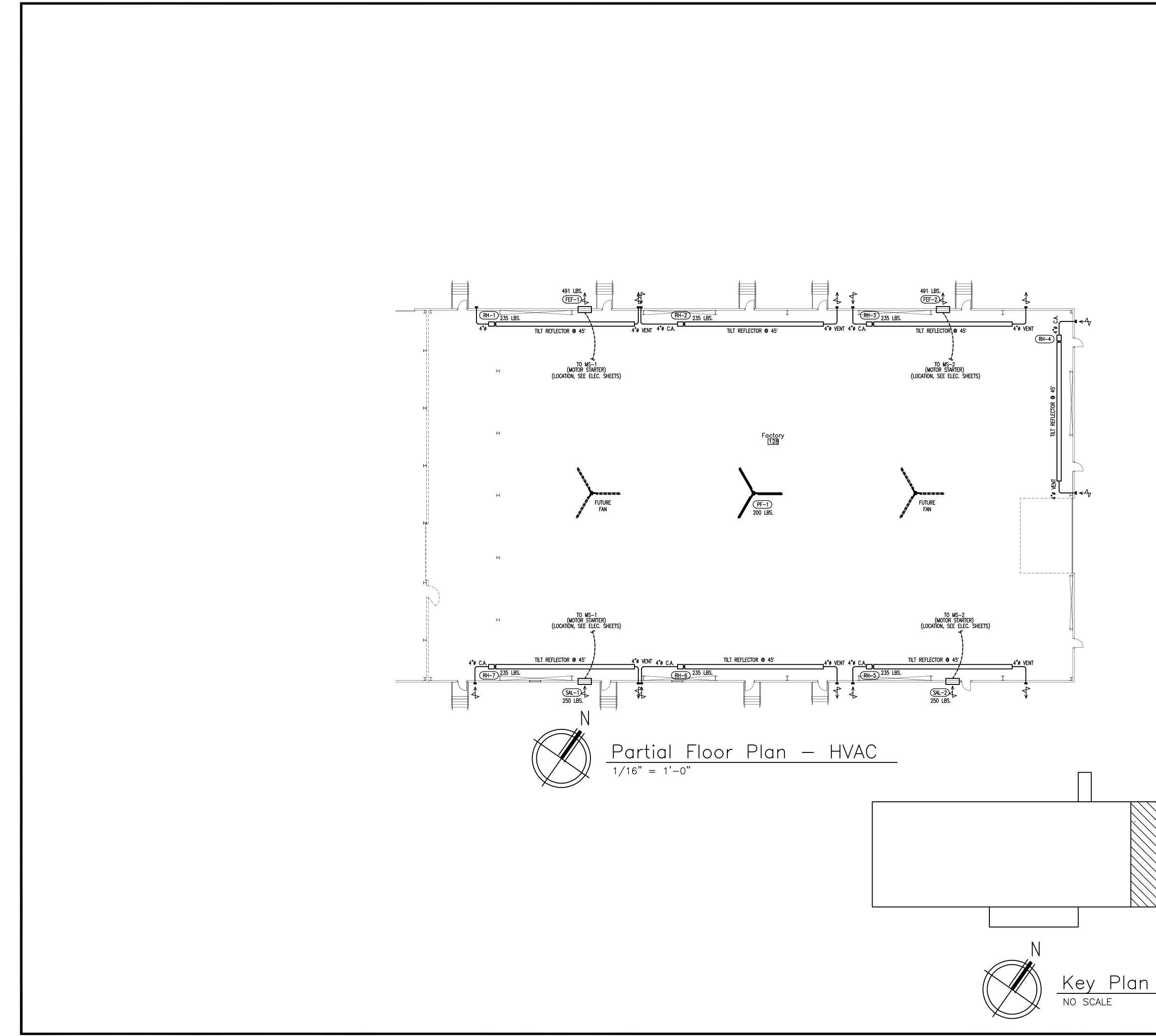
WF2

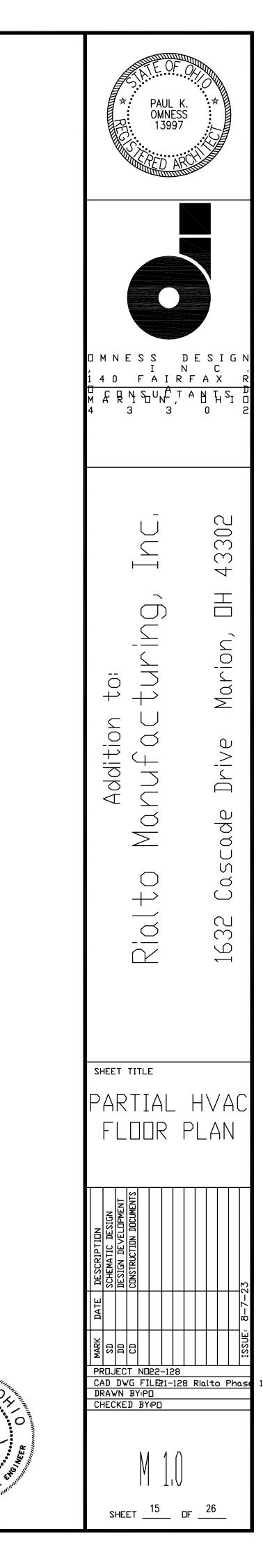




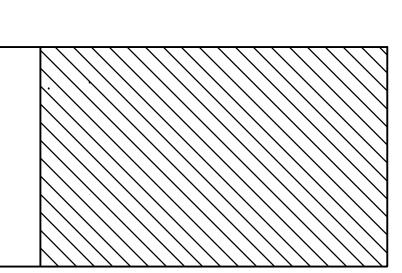












#### MECHANICAL SPECIFICATIONS **INSULAT** GENERAL CONDITIONS A. SUBM A. REFERENCE 8. This Contractor shall make provisions to ensure oil return to 1. For purposes of clearness and legibility, Drawings are diagrammtic and although size and location of equipment are drawn to scale wherever possible, Contractor shall make use of all data in all of the Contract Documents and shall verify this information at the compressor as required. . Equipment manufacturer shall provide one year parts and labor warranty, and four year extended compressor warranty. Contractor 2. All shall submit terms of parts and labor contract with equipment supplier building site. Dimensions given in figures on the Drawings take for approval. precedence over scaled dimensions. Equipment manufacturer shall provide start-up, test, and submit 2. Drawings and Specifications to be considered cooperative, and anything report to Engineer. appearing in Specifications but not on Drawings or vice versa, shall be considered part of the Contract and must be executed. G. Every effort shall be made to minimize vibration and noise. H. Condensing unit must be installed level! B. QUALITY ASSURANCE AIR DISTRIBUTION 1. Codes and Permits - Deliver official record of approval, by governing 3. N agencies, to Engineer to transmit to Owner. A. EXHAUST FANS <u>Service</u> C. OPERATING INSTRUCTIONS 1. Submittals Refriger a. Submit detailed Shop Drawings clearly indicating make, model, location, type, and size. 1. Provide to Owner, after all equipment is in operation and at an Liquid agreeable time, competent instructors for the purpose of training Exposed Ductwork Owner's personnel in all phases of operation and maintenance of 2. Furnish and install, where show on Drawings, exhaust equipment and systems for both heating and cooling season. fans as manufactured by Greenheck. Conceale D. DAMAGE AND EMERGENCY REPAIRS 3. Exhaust fans as manufactured by Loren Cook, Penn, or Carnes will be acceptable providing construction, capacity Ductwork 1. Contractor will be held responsible for any damage that may be TYPES 0 incurred on any installed work of other trades, by any workman and operating characteristics are equal. employed in the installation of work under this Contract. Provide A S J B. LOW PRESSURE DUCTWORK covering under workbench or under any work involving cutting and 1. Ductwork shall be constructed of the following gauges, where velocity does not exceed 2500 FPM and static pressure does not excedd 2.0 WG. All is in accordance with ASHRAE and SMACNA Standards: fitting of materials being installed, so as not to damage surrounding A.P.F finished surfaces. TYPES ( D. MATERIALS IYPE II a. Rectangular Ducts: 1. Provide material and labor for that which is neither drawn nor A.P.F. specified but which is obviously a component part of and necessary to complete work which is customarily a part of work of similar <u>U.S. Gauge</u> <u>Galvanized Steel</u> <u>Largest Dimension</u> TYPE III character To 12" 13" to 30" 2. All materials, fixtures, and equipment shall be new, of the best grade, and installed according to manufacturer's recommendations. Additionally, the installation shall be according to the best standards J.M.S. b. Round Ducts: 0.V.S. of practices, complete with all accessories and connections necesary <u>U.S. Gauge</u> <u>Galvanized Steel</u> <u>Duct Diameter</u> for propercepration, and in compliance with effective State or Local Code requirements. K.F.G. To 13" 14" to 26" GAS FIRED FURNACE TYPE IN 2. All ductwork shall be constructed of galvanized steel complying with ASTM A527-71, lockforming quality. All toilet and shower room exhaust ducts shall be aluminum construction, and all joints welded or sealed with 3M Company #EC-1792 sealant. Sheetmetal must A. SUBMITTALS J.M.M. 1. Submit detailed Shop Drawings clearly indicating make, model, type, size, and location. 0.F.F. B. Furnish and install, where shown on Drawings, gas fired furnace as be fabricated so that the gauge of material being used is visible manufactured by York. Furnace shall be vertical model with DX cooling coil, single speed blower, tubular aluminized steel primary heat exchanger with stainless steel tube/aluminum fin secondary heat exchanger, and externally. 3. Duct fasteners shall comply with SMACNA MF-1. rotatable inducer. Furnace shall be design certified by A.G.A. Laboratories. 4. Provide hot dipped galvanized steel fasteners, anchors, rods, straps, trim and angles for support of ductwork. C. Cabinet shall be constructed of heavy gauge, cold rolled steel with insulated vestibule and back panels. Safety interlock switch, located 5. Provide turning vanes in all mitered elbows and where otherwise indicated. Vanes shall be 2" galvanized steel for up to and including 18" ducts and 4—1/2" for ducts over 18". Construction of vanes shall be double wall, fixed blade type for 90 degree elbows. in control box, automatically turns power off to unit when blower compartment door is removed. D. The controls shall have factory installed blower cooling relay, fan and 6. All joints and seams shall be sealed to SMACNA Class B Standards limit controls, factory wired 24 volt control transformer, and controller. (100% sealing) with Duro-Dyne SAS-UL-C siliconized acrylic water E. Gas burner shall have automatic gas controls, including the following: based duct séaler. 1. 100% safety shut-off. . GRILLES AND DIFFUSERS 2. Automatic safety pilot valve. 3. Automatic electric valve and gas pressure regulator. 1. Submittals 4. Solid state electronic direct spark ignitor. a. Submit detailed Shop Drawings clearly indicating make, model, 5. Gas fired furnace as manufactured by Carrier or Comfortmaker will be location, type, and size. acceptable providing construction, capacity, and operating characteristics are equal to the specified equipment. The cost for any modifications b. Furnish and install, where shown on Drawings, grilles and diffusers as manufactured by Price. to the building structure, the duct system, the natural gas piping system, the power wiring system, or the temperature control system (including interface points and interlock wiring) which is necessitated c. Grilles and diffusers as manufactured by Titus, Krueger, or Carnes will be acceptable providing construction, capacity, and by the substitution of the other listed manufacturers, shall be borne operating characteristics are equal. by the Mechanical Contractor making the substitution. 2. All grilles and diffusers shall have a factory applied off-white finish G. Equipment manufacturer shall warrant parts and workmanship for one unless otherwise noted on Plans. year from the date of substantial completion as determined by the 3. Ceiling Supply Diffusers: Fully adjustable air pattern, round or square with full flow damper. Diffusers shall be surface mount or lay—in Architect and/or Engineer. H. Unit shall be completely tested by the manufacturer before shipment. frame to fit ceiling construction being used. I. Every effort shall be made to minimize vibration, noise, and drafts 4. Egg Crate Return Grilles: Aluminum frame with aluminum core grid. through careful fabrication and erection. Egg crate grilles shall be surface mount, lay—in, or panel mounted to fit ceiling construction being used. AIR COOLED CONDENSING UNIT 5. Refer to Architectural Reflected Ceiling Plan for exact location of A. SUBMITTALS ceiling diffusers and ceiling construction being used. 1. Submit detailed Shop Drawings clearly indicating make, model, type, size, location, capacity at the operating suction and liquid temps, voltage, and required fuse size. 1. Furrnish filters as manufactured by Koch, model Multi-Pleat XL8. Media shall be reinforced glass fiber supported by galvanized steel grids formed to the configuration of the pleats. The media pack B. Furnish and install, where shown on Drawings, air cooled condensing unit as manufactured by York. Unit shall use refrigerant R-410A, be shall be sealed into a galvanized frame. Filter shall have a rated average atmospheric dust spot efficiency of not less than 35 to 40% and an average synthetic arrestance of 95% when tested in accordance with ASHRAE Standards 52–76. The filter shall be completely assembled and factory assembled. Unit shall be complete with single or multiple hermetic compressors, condensing coils, condenser fan, fan motors, fan guards, refrigerant reservoir, charging valves, valves, crankcase heater (if required), high and low pressure safety switches, capable of operating with variable face velocities up to 600 FPM liquid line sight glass, filter drier. strainers. contactors. and overload without impairing performance. It shall have an initial resistance protection for all motors and all controls to provide proper operation not to exceed the value selected from the capacity table and shall with pump down control. Unit shall have part winding and starters. The be classified by Underwriter Laboratories as Class II. entire unit shall be housed in a fully weather proof casing of outdoor 2. Spare Filters: One original and two sets of spare filters shall be supplied. One set is for use during the construction phase and a installation. Manufacturer shall furnish unit complete to provide oepration down to 40 degrees F outdoor temperature. set shall be installed for testing and balancing. One complete set C. Air cooled condensing unit as manufactured by Carrier or Comfortmaker of unused filters shall be turned over to the Owner at completion will be acceptable providing construction, capacity and operating characteristics are equal to the specified equipment. The cost for of the project. 3. Filters as manufactured by Cambridge, Continental or American for any modifications to the building structure, the power wiring system, or the temperature control system (including interface points Air Filter will be acceptable providing construction, capacity, and and interlock wiring) which is necessitated by the substitution of operating characteristics are equal. the other listed manufacturers, shall be borne by the Mechanical DUCTWORK AND ACCESSORIES Contractor making the substitution. A. Provide all sheetmetal work, as shown on the Drawings, in accordance with the latest edition of the ASHRAE guide and data book, SMACNA Standards and this Specification, the most demanding of which shall D. REFRIGERANT PIPING AND ACCESSORIES 1. All piping shall be Type "ACR" Hard Drawn Copper Tubing. All fittings shall be Wrought or Forged Brass Type approved for refrigerant piping and all elbows shall be long turn pattern. All pipe and fittings shall be assembled with Siflos or Easyflow Silver Solder be the minimum standard. Install ductwork indicated on Drawings making all neccesary changes in cross sections and offsets, whether or not specifically indicated. with approximate 1000 degrees F. . All changes in cross section shall be made without reducing the 2. Refrigerant piping shall be sized as shown on Drawings. Mechanical Contractor shall confirm pipe sizing with selected unit manufacturer design area of the duct. . Cap all open ends of ductwork until connected to grilles, diffusers, before proceeding with installation. and equipment to prevent entrance of debris, dust, etc. 3. Assembly and Workmanship: All tubing and fittings shall be carefully and thoroughly cleaned and polished with steel wool. Prior to heating, . Make changes in direction of ductwork, unless otherwise specified with coat all polished surfaces with a thin coat of flux. Heat fittings square elbows and double thickness turning vanes; full radius elbows and tubing with oxyacetylene torch. Provide continual flow of inert having inside radius equal to width of duct measured in plane of turn; gas (nitrogen) through tubing while brazing joints. Any overheated unsafe joints must be replaced before project is accepted. or one-third radius elbows with inside radius equal to one-third duct width and a single vane radius of two-thirds duct width. 4. Testing: Test all refrigerant piping as follows: . No pipe or other obstructions shall pass through air ducts. 3. Ducts shall not be hung from other ducts, pipe or conduit. a. Evacute entire system to 28 inch vacuum and hold said vacuum for 24 hours without leakage. 1. Duct dimensions are gross except of lined ducts where dimensions b. Charge piping with inert gas to a pressure of not more than 300 psi and no less than 200 psi and hold pressure for 24 are for net free area. I. All joints and seams in ducts shall be air—tight; poorly made joints, splits, visible holes at corners, etc. shall be reworked or new pieces hours without leakage. c. During above test, remove or bypass any valves, gauges, etc., of ductwork installed. Where excessive pulsating of ductwork or plenum subject to damage by pressure exerted during test. housing is found, additional stiffeners shall be added. Any cracking, in the coating around seams or joints, or in any other part of the formed duct that is apparent upon inspection, shall be sufficient to d. Triple evacuate entire system and purge each time with approriate refrigerant. Insert refrigerant dryer with valves bypass arrangement for moisture removal during triple purge and evacuation process. warrant rejection. Round duct joints in diameter through 60" shall be assembled and e. Test all joints, after charging system with an alcohol fired or sealed as follows: prestolite halide lead detector 1. Approved sealer is applied to the male end of the couplings and f. Contractor shall include the fee for inspection as required by fittings. After the joint is slipped together, sheetmetal screws are placed 1/2" from the joint bead for mechanical strength. Sealer is applied to the outside of the joint extending 1" on each side the Ohio Board of Building Standards Chapter BB-201 of Ohio Pressure Piping System Rules.

- 5. Refrigerant and Oil Charge: Charge entire system with accurate quantities of refrigerant (R-410A) and provide necessary oil for compressor and system requirements.
- 6. Specialties: Expansion valves, liquid line solenoid valves, liquid sight glass, strainers, hand valves, etc. are to be furnished by this Contractor in compliance with manufacturer's recommendation.
- 7. Miscellanous: Flexible pipe connections shall be furnished and installed where shown or required to permit free movement of piping and to prevent undue stress and vibrations at the compressor and air cooled condenser.
- 2. The duct sealer must be specifically formulated for the job of sealing the field joints for low-medium pressure systems. The sealer shall be compatible with plastic backed duct type so the two shall cure and bond together.

tape is immediately applied over the wet sealer.

the joint bead and covering the screw heads. Plastic backed

K. Install additional balancing dampers, where required by the Air Balance Contractor, to properly adjust the systems air volumes.

5									
INSULA	TION								
A. SUB	MITTALS								
1. S ir	Submit deta	ailed Sl oducts	nop Dra to be u	wings or des sed.	scriptive lite	erature	for	all	
a A o fi ta s P	nd adhesive) STM E84, N f 25 and so ree to comp o pipe insui o pipe insui ct as activ pread ratir olyethylene	) fire ar NFPA 23 moke de ply with lation a ve air o ng and insulati	id smoke 55 and oveloped OSHA re nd cover ducts. A 150 sr on is ac	•	s as tested exceeding a n silicate sh above requ plenums an s shall hav ed as test	under pr flame all be a uirement d shafts e a 25 ed abo	spression spression sap swh flat ve,	ure tos ply icih me No	
				shall conform			chedi	ule:	
<u>Service</u>		<u>Type</u>	<u>Size</u>		<u>Cons. &amp;</u>	<u>Exp.</u>			
Refrige Liquid	rant & Suction	II	ALL	1/2"	A.P.F.				
Expose Ductwo		Ш	ALL	1"	A.S.J.				
Concea Ductwo		IV	ALL	2"	F.S.K.				
<u>TYPES</u>	OF COVERIN	<u>NG</u>							
F.S.K.	All Service Foil Scrim J.M. Aerotu	– Kra	ft	ng ArmaFlex A	۱P				
TYPES	OF INSULAT	ION		-					
TYPE II									
A.P.F.	Armstrong K = .27,	ArmaFl Density	ex AP P = 6.0#	ipe Insulation /ft3					
TYPE II	I								
J.M.S.	Johns-Mar Density =	nville Ri 4.25#/	gid "Spir ft₃ with	n—Glas"Duct A.S.J. Facing	Insulation				
0.V.S.									
K.F.G.	K.F.G. Knauf Insulation Board Density = 3.0#/ft₃ with A.S.J. Facing.								
TYPE IN	/								
J.M.M.	Johns-Mar Density =	nville "N 0.6#/f	licrolite" t₃ with	Flexible Fiber F.S.K. Facing.	glass Duct	Insulatio	on,		
0.F.F.				berglass Duct F.S.K. Facing.					
K.F.G.	Knauf Con Density =	nmercia 3/4#/	l Duct V ft with	/rapped Insula A.S.J. Facing.	tion				

$\bigcirc$	
SYM.	М
PF-1	BIG AS

$\bigcirc$			F/	АСТС	) RY	AN SCHEDULE				
SYM.	MFR.	MODEL NO.	CAPA	<b>CITY</b>	MOTOR			REMARKS		
51M.	MEIX.	MODEL NO.	CFM	S.P.	£	FLA	VOLTAGE	REMARKS		
FEF-1	GREENHECK	SBE-2L48	21730	0.25	3	4.8	460-3-60	WALL MOUNTED EXHAUST FAN W/ WALL HOUSING, WEATHER HOOD, BACKDRAFT DAMPER, BIRDSCREEN, MOTOR STARTER & VARIABLE FREQUENCY DRIVE.		
FEF-2	GREENHECK	SBE-2L48	21730	0.25	3	4.8	460-3-60	WALL MOUNTED EXHAUST FAN W/ WALL HOUSING, WEATHER HOOD, BACKDRAFT DAMPER, BIRDSCREEN, MOTOR STARTER & VARIABLE FREQUENCY DRIVE.		

DTE:	EXHAUS
	S

	VENTILATION FOR ACCEPTABLE INDOOR AIR QUALITY																		
AIR HANDLING UNIT TAG	CATEGORY	OCCUPANCY CATEGORY	PEOPLE OUTDOOR AIR RATE	AREA OUTDOOR AIR RATE	ZONE FLOOR AREA	NORMAL OCC.	PEAK OCC.	INTERM. USAGE	CORR. OCC.	CALC. OCC.	DEFAULT OCC.	DESIGN OCC.	PEOPLE OUTDOOR AIR		Breathing Zone Outdoor Airflow		ZONE AIR DISTRIBUTION EFFECTIVENESS		REQUIRED OUTDOOR AIR INTAKE FLOW
NUMBER	NUMBER		CFM/PERSON	CFM/SQ.FT.	SQ.FT.	PEOPLE	PEOPLE	FT.	PEOPLE	PEOPLE	PEOPLE	PEOPLE	CFM	CFM	CFM			CFM	CFM
FEF-1&2	43	FACTORY	10.0	0.18	28975	0	0	0	0	0	202.8	203	2030	5216	7246	3	0.8	9057	9057
OUTDOOR I	DESIGN TEMP.	- SUMMER	(DEG. F)(ASHRAE	1.0%): 95.0															

OUTDOOR DESIGN TEMP. - SUMMER (DEG. F)(ASHRAE 99.6%): -4.0 INDOOR DESIGN TEMP. - WINTER (DEG. F): 75.0 OUTDOOR DESIGN TEMP. - SUMMER (DEG. F): 70.0

RESTROOM EXHAUST FANS WILL EXHAUST PROPER CFM PER CODE VALUES

·					
		RA	DIANT	HEATE	R SCHEDULE
SYM.	MFR.	MODEL NO.	INPUT	VOLTAGE	REMARKS
RH-1	RE-VERBER-RAY	DES3-50-200	175,000 BTUH	120-1-60	COMPLETE WITH REFLECTORS AT 45°, TUBE HANGERS, REFLECTOR CENTER SUPPORTS, REFLECTOR END CAP, 1/2" FPT GAS INLET WITH SHUT-OFF VALVE, FLEXIBLE STAINLESS STEEL SUPPLY LINE AND BLOWER MOTOR , 1.7 AMPS © IGNITION
RH-2	RE-VERBER-RAY	DES3-50-200	175,000 BTUH	120-1-60	COMPLETE WITH REFLECTORS AT 45°, TUBE HANGERS, REFLECTOR CENTER SUPPORTS, REFLECTOR END CAP, 1/2" FPT GAS INLET WITH SHUT-OFF VALVE, FLEXIBLE STAINLESS STEEL SUPPLY LINE AND BLOWER MOTOR , 1.7 AMPS @ IGNITION
RH-3	RE-VERBER-RAY	DES3-50-200	175,000 BTUH	120-1-60	COMPLETE WITH REFLECTORS AT 45°, TUBE HANGERS, REFLECTOR CENTER SUPPORTS, REFLECTOR END CAP, 1/2" FPT GAS INLET WITH SHUT-OFF VALVE, FLEXIBLE STAINLESS STEEL SUPPLY LINE AND BLOWER MOTOR , 1.7 AMPS @ IGNITION
RH-4	RE-VERBER-RAY	DES3-50-200	175,000 BTUH	120-1-60	COMPLETE WITH REFLECTORS AT 45°, TUBE HANGERS, REFLECTOR CENTER SUPPORTS, REFLECTOR END CAP, 1/2" FPT GAS INLET WITH SHUT-OFF VALVE, FLEXIBLE STAINLESS STEEL SUPPLY LINE AND BLOWER MOTOR , 1.7 AMPS @ IGNITION
RH-5	RE-VERBER-RAY	DES3-50-200	175,000 BTUH	120-1-60	COMPLETE WITH REFLECTORS AT 45°, TUBE HANGERS, REFLECTOR CENTER SUPPORTS, REFLECTOR END CAP, 1/2" FPT GAS INLET WITH SHUT-OFF VALVE, FLEXIBLE STAINLESS STEEL SUPPLY LINE AND BLOWER MOTOR , 1.7 AMPS @ IGNITION
RH–6	RE-VERBER-RAY	DES3-50-200	175,000 BTUH	120-1-60	COMPLETE WITH REFLECTORS AT 45°, TUBE HANGERS, REFLECTOR CENTER SUPPORTS, REFLECTOR END CAP, 1/2" FPT GAS INLET WITH SHUT-OFF VALVE, FLEXIBLE STAINLESS STEEL SUPPLY LINE AND BLOWER MOTOR , 1.7 AMPS @ IGNITION
RH-7	RE-VERBER-RAY	DES3-50-200	175,000 BTUH	120-1-60	COMPLETE WITH REFLECTORS AT 45°, TUBE HANGERS, REFLECTOR CENTER SUPPORTS, REFLECTOR END CAP, 1/2" FPT GAS INLET WITH SHUT-OFF VALVE, FLEXIBLE STAINLESS STEEL SUPPLY LINE AND BLOWER MOTOR , 1.7 AMPS @ IGNITION

NOTE: INSTALL HEATERS PER MANUFACTURERS INSTRUCTIONS W/ REQUIRED CLEARANCE TO COMBUSTIBLES.

	PROPELLER FAN SCHEDULE											
FR. MODEL NO.		CAPACITY			MOTO	)R	REMARKS					
FR.	MODEL NO.	MODEL NO.	RPM	S.P.	HP	AMPS	VOLTAGE					
s fans	PF8-10	148	0.25"	1.0	15 BRKR	120/1/60	HANG FROM STRUCTURE WITH PROPER ACCESSORIES AND INCLUDE WALL CONTROL. 10'-0"Ø					

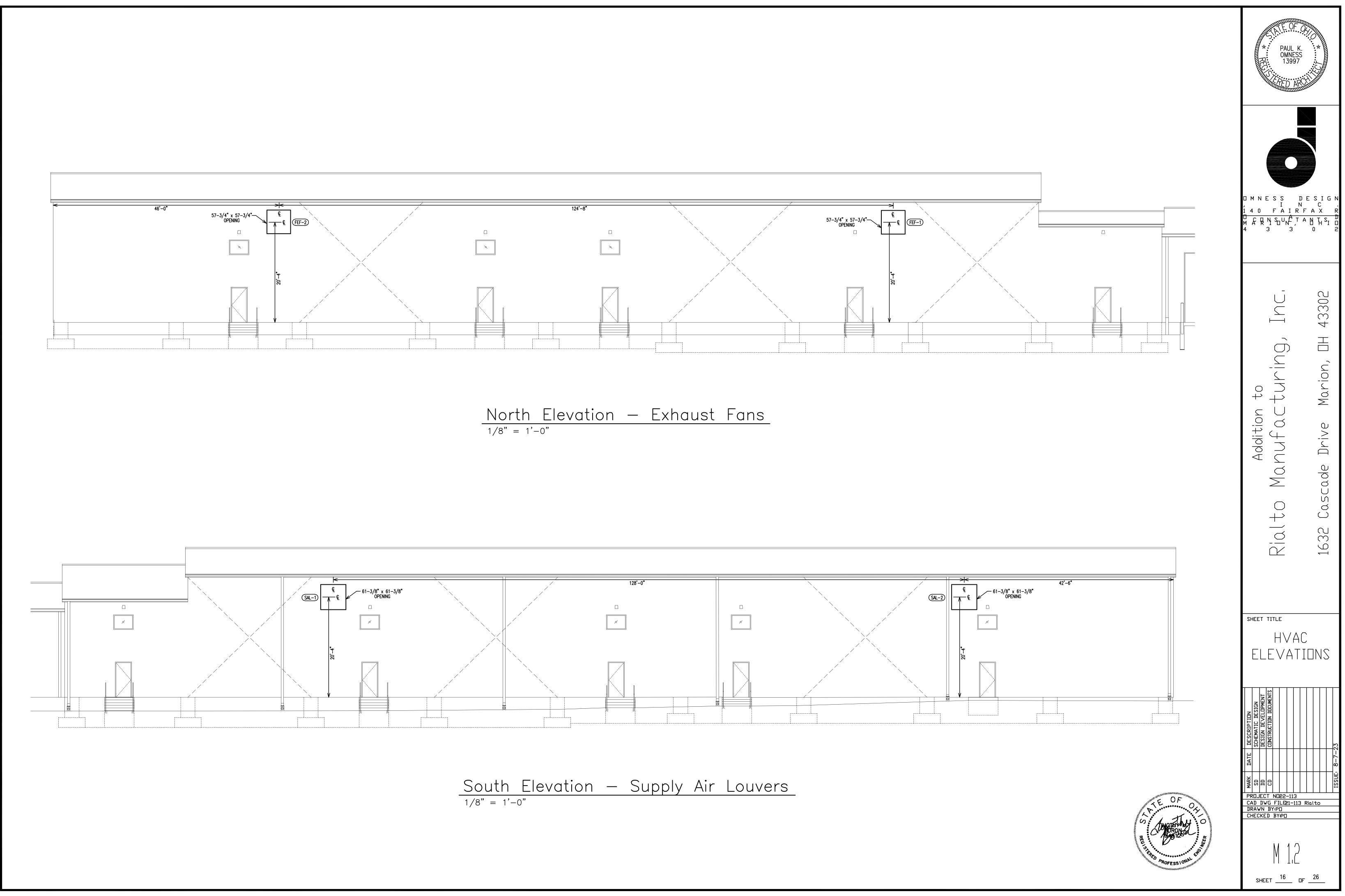
JST FANS & LOUVERS SIZED AT 1.5 CFM/SQFT WHICH EXCEEDS REQUIRED VENTILATION CFM.

$\supset$		SUPPLY	AIR	LOI	JVER SCHEDULE	$\subset$
SYM.	MFR.	MODEL NO.	CFM	SIZE	REMARKS	
AL-1	RUSKIN	ELC6375DX	21730	60x60	WITH RUSKIN MOTOR-OPERATED DAMPER.	
AL-2	RUSKIN	ELC6375DX	21730	60x60	WITH RUSKIN MOTOR-OPERATED DAMPER.	

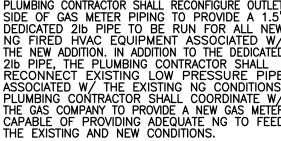


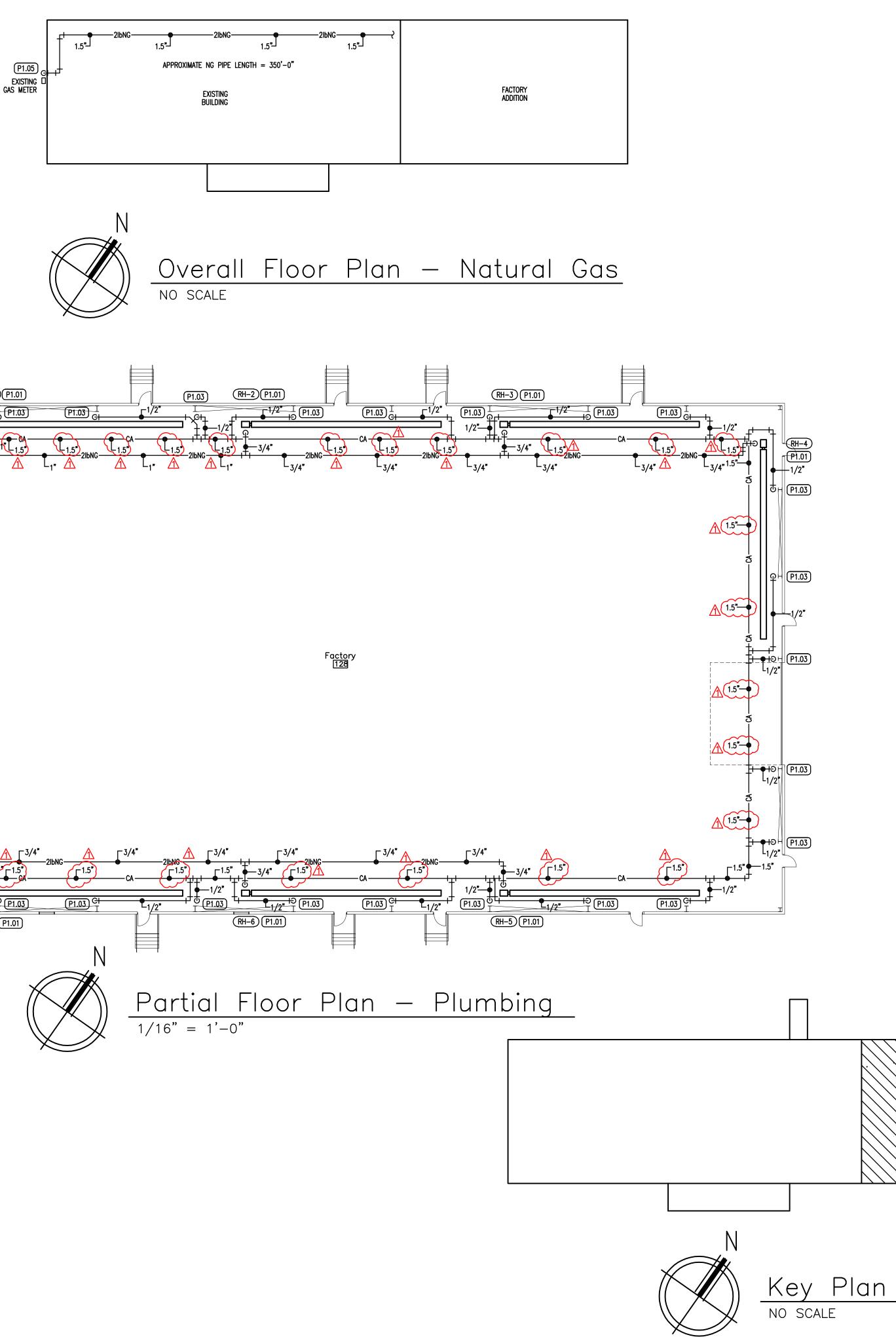
* PAUL K. OMNESS 13997	
DMNESS D I MNESS D I A O FAIRF A SUNFTA 4 3 3	
Rialto Manufacturing, Inc.	1632 Cascade Drive Marion, DH 43302
SHEET TITLE HVAC S( AND DET	
	ISSUE: 8-7-23
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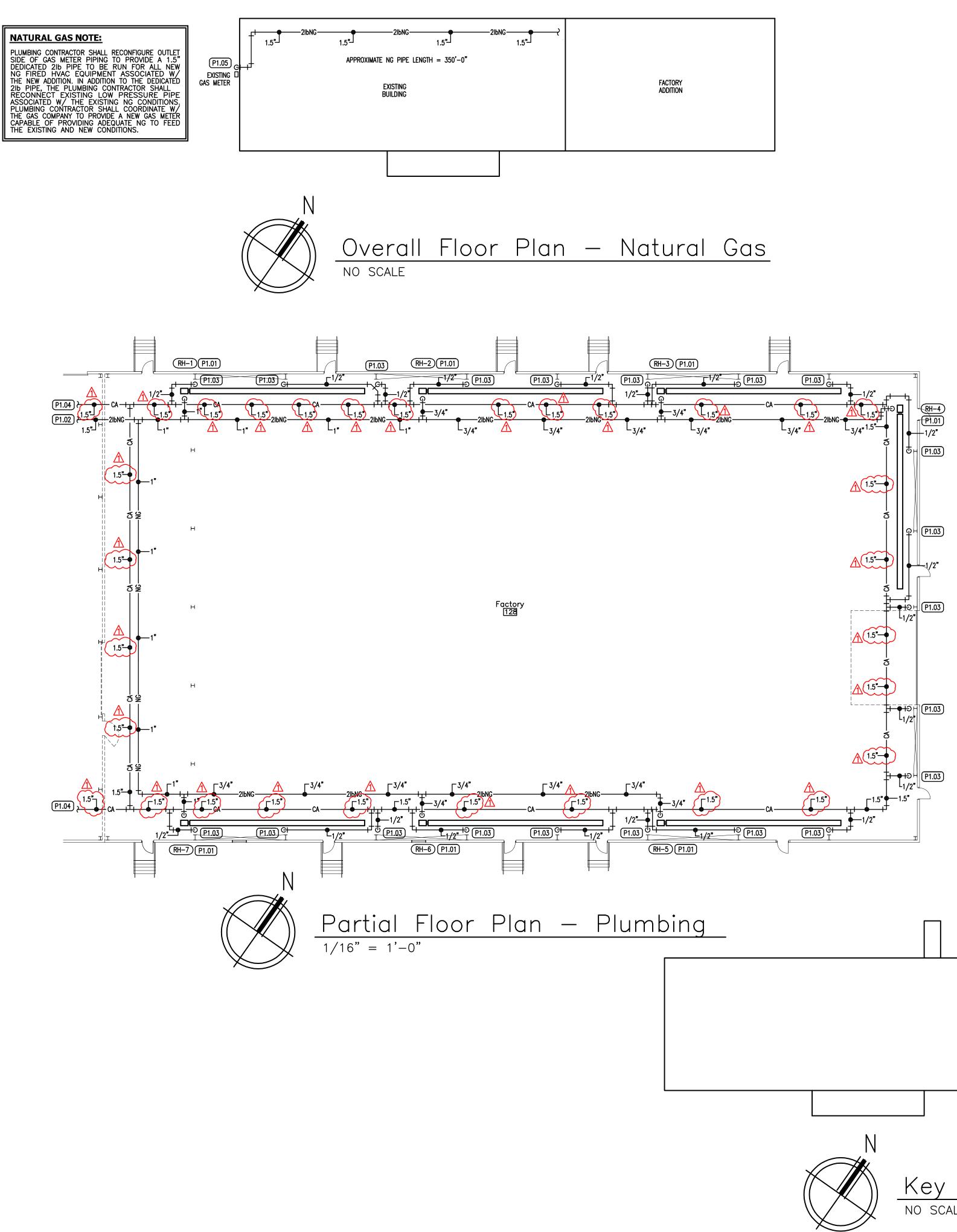
SHEET <u>17</u> DF <u>26</u>



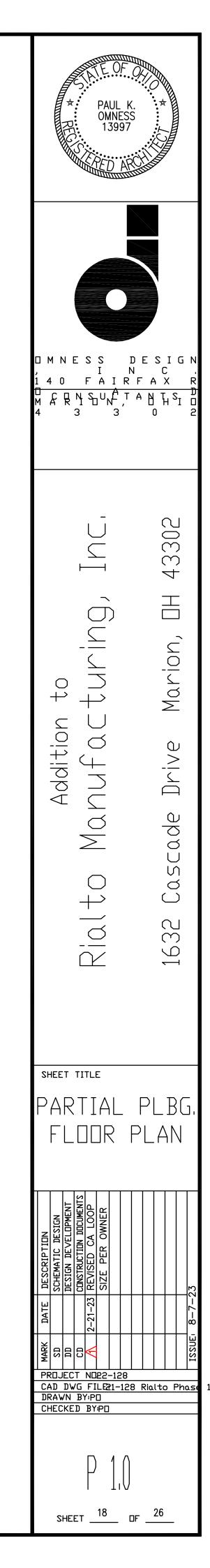


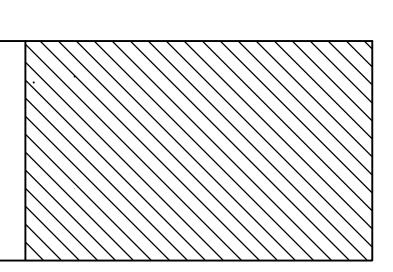






	NATURAL GAS CODED NOTES
(P1.01)	3/4" 216 NATURAL GAS FROM CEILING SPACE DOWN TO RADIANT HEATER W/ GAS COCK, UNION, 6" DRIP LEG & REGULATOR AS REQUIRED.
P1.02	SEE OVERALL FLOOR PLAN - NATURAL GAS FOR CONTINUATION OF 1.5" 21b NATURAL GAS LINE.
P1.03	1/2" COMPRESSED AIR DROP W/ QUICK CONNECT FITTING AS REQUIRED.
P1.04	MAKE 1.5" COMPRESSED AIR CONNECTION TO EXISTING LINE AS REQUIRED.
(P1.05)	1.5" 215 NATURAL GAS DOWN ON WALL AND MAKE CONNECTION AT EXISTING NATURAL GAS METER. SEE NATURAL GAS NOTE FOR MORE INFORMATION.





# GENERAL CONDITIONS

#### A. REFERENCE

- For purposes of clearness and legibility, Drawings diagrammatic and although size and location of to scale wherever possible, Contractor shall mak all of the Contract Documents and shall verify building site. Dimensions given in figures on th precedence over scaled dimensions.
- Drawings and Specifications to be considered coor appearing in Specifications but not on Drawings considered part of the Contract and must be ex
   B. QUALITY ASSURANCE
- Codes and Permits Deliver official record of agencies, to Engineer to transmit to Owner.
   OPERATING INSTRUCTIONS
- Provide to Owner, after all equipment is in oper agreeable time, competent instructors for the p Owner's personnel in all phases of operation ar
- equipment and systems for both heating and co D. DAMAGE AND EMERGENCY REPAIRS
- Contractor will be held responsible for any dama incurred on any installed work of other trades, employed in the installation of work under this covering under workbench or under any work in fitting of materials being installed, so as not to finished surfaces.
   E. MATERIALS
- Provide material and labor for that which is neit but which is obviously a component part of and work which is customarily a part of work of sind
- 2. All materials, fixtures, and equipment shall be ne and installed according to manufacturer's recom Additionally, the installation shall be according to of practices, complete with all accessories and for proper operation, and in compliance with eff Code requirements.
- Where piping passes through floor, ceiling or wal pipe and construction with fire stop putty.
   <u>PIPE AND PIPE FITTINGS</u>
- A. QUALITY ASSURANCE
  - 1. Welding Materials and Procedures: Conform to A Standards of the American Welding Society, OBB Obio Pressure Piping System Rules
  - Ohio Pressure Piping System Rules. 2. All piping systems in compliance with the Ohio System Rules must be performed by certified
- of welding certificate and mark all joints with a
- B. PRODUCTS1. PIPE AND TUBE
  - a. Steel Pipe: ASTM A53; Schedule 40 black. b. Ductile Iron Water Pipe: ANSI A21.51. c. Copper Water Tube: ASTM B88; type and te
  - d. PVC Plastic Pipe: ASTM D2665, Schedule 40
- PIPE AND TUBE JOINTS AND FITTINGS

   Malleable Iron Threaded Fittings: ASME B16.
   Malleable Iron Threaded Unions: Class 150.
- c. Ductile Iron Fittings: ANSI A21.10.
- d. Wrought Copper/Bronze Solder Joint Fittings (pressure fittings).
- e. Solder: ASTM B32, Grade 95TA.
- f. PVC Pipe Fittings: ASTM D2665 for Scheduleg. Solvent for PVC Jointing: ASTM D2564.
- C. INSTALLATION 1. General: Install pipe, tube and fittings in accord industry practices which will achieve permanently
  - systems, capable of performing each indicated s failure. Install each run with a minimum of jo with adequate and accessible unions for disasser replacement of valves and equipment. Reduce by use of reduced fittings. Align piping accurawith 1/16" misalignment tolerance.
- 2. Locate piping runs, except as otherwise indicated horizontally (pitched to drain) and avoid diagond possible. Orient horizontal runs parallel with we Locate runs as shown or described by diagrams or if not otherwise indicated, run piping in the does not obstruct usable space or block access building and its equipment. Hold piping close t construction, columns and other structural memb in finished and and occupied spaces, conceal p
- Electrical Equipment Spaces: Do not run piping vaults and other electrical or electronic equipm enclosures.
- Piping System Joints: Provide joints of the type piping system.
   a. Thread pipe and fittings shall have cut three
- a. Thread pipe and fittings shall have cut thre using sharp dies. Ream threaded ends to restore full inside diameter. Apply pipe joi joint tape (Teflon) where recommended by manufacturer, on male threads at each joi to leave not more than three threads expo
- b. Solder copper tube and fitting joints where accordance with recognized industry practic squarely, ream to full inside diameter, and tube ends and inside of fittings. Apply so areas of both tubes and fittings. Insert tu fitting, and solder in a manner which will of and circumference of joint. Wipe excess s before it hardens.
- c. Plastic Pipe/Tube Joints: Comply with manufacturer's and recommendations and with applicable industry sta Make solvent cemented joints ASTM D2865 and F402.

	PL	UME	BIN	G S	SPECIF	ICATIONS	
s are essentially		for installi	ing unic Iction a	ons. In nd stop	stall unions in a corrosion where	manufacturer's instructions manner which will prevent the "joining of ferrous and	3.
f equipment are drawn ke use of all data in this information at the he Drawings take	D. CLEAN 1. G	ING, FLUS Seneral: ( superfluou	HING, II Clean e Is mate	NSPECTI xterior rials ar	ON surfaces of install nd prepare for ap	led piping systems of plication of specified coatings clean water before proceeding	4.
operative, and anything or vice versa, shall be executed.	E. PIPING	with requi of joints, TEST	ired tes support	ts. In: ts and	spect each run of accessory items.	f each system for completion	5.
approval, by governing	2. F	Repair pipi disassemb required t	ng syst ly and o overc	ems se re—inst come le	allation, using new	the required piping test, by v materials to the extent se chemicals, stop—leak	D. D0 1.
ation and at an purpose of training nd maintenance of ooling season.	3. D	)rain test been com	water f pleted.	from pi		r testing and repair work has	2.
age that may be by any workman		on the fo	llowing	schedul	services shall be e: ATERIALS, JOINTS /		4.
Contract. Provide wolving cutting and damage surrounding	<u>Service</u> Natural	Gas	<u>Above</u> <u>Grade</u> X	<u>Below</u> <u>Grade</u>	<u>Pipe</u> Black Steel Schedule 40	<u>Joints &amp; Fittings</u> Malleable Iron Class 150	E. NA
ther drawn nor specified I necessary to complete milar character.	Sanitary and Ven	it	x	х	PVC ASTM D2665 Schedule 40	Solvent Weld (ASTM D2564) Cement) PVC Fittings	1. F. PL
ew, of the best grade, nmendations.	Domesti		Х	.,	Copper, Hard Type L	Soldered (Grade 95TA)	1.
o the best standards connections necessary fective State or Local	Domesti 3" & Lo Domesti	arger c Water		x x	Ductile Iron Water Pipe Copper, Soft	Push On Joints Soldered (Grade 95TA)	2.
ıll, close space between	2.5" & <u>PIPE HANG</u> A. PRODU	<u>ERS</u> ICTS	500		Туре К		3.
ASME Code, 1980 3C Chapter 4101:8		PIPE HANG a. Hange ring.		e sizes	1/2" to 1 1/2",	adjustable wrought steel	4 5.
Pressure Pressure velders. Provide copies certificate ID.		c. Mutipl	e or Tr hanger	apeze l	=	ıble wrought steel clevis. annels with welded spacers	6.
	B. INSTAL	or co LATION	ontinuol	us threa	ıded.	ooth ends, threaded one end, angers from wood trusses.	7.
mper as scheduled;	C. SPACIN	NG REQUIF	REMENTS	5	and copper piping	-	8.
3.	<u>S</u>	<u>lominal Pi</u> ize (inch) /2	pe		<u>oce Between</u> <u>oort (feet)</u> 6	<u>Hanger Rod</u> <u>Diameter (inch)</u> 3/8	9.
	3 2	/4 to 1 and 2 1 and 4	1/2 /2		6 10 12	3/8 3/8 5/8	
s: ASME B16.22		covering d	and adj	acent w	e minimum 1/2" ( ork. ne foot of each h	clear space between finished norizontal elbow.	G. TE 1.
e 40.	4. L	Jse hange piping is d	rs whic erected.	h are v	ertically adjustable	e 1 1/2" minimum after arallel and at same elevation,	<u>INSULA</u>
ance with recognized y—leakproof piping	PLUMBING	provide m			eze hangers.		A. SU 1.
service without piping bints and couplings, but mbly and maintenance/ sizes (where indicated)					or all water heater	rs, plumbing fixtures, floor	2.
itely at connections,		Submit det type, and STIC WATEF	size.		awings clearly indic	cating make, model, location,	
d, vertically and al runs wherever alls and column lines. s, details and notations	1. F	Provide wa	iter hea	iters sh	own on Drawings: Id steel jacketed s	storage tank with baked	
shortest route which s for servicing the to walls, overhead		on fi b. Tempe	inish. erature/	/Pressui	re relief valve, ASM	ME rated.	3. <u>Serv</u>
bers. Wherever possible piping from view. through transformer			lined s osi work	-	tank with anode r essure.	rod.	Dom Wate Dom
ent spaces and		f. Coppe			itoff upon pilot fa eating elements, f	ilure. actory wired with fused	Wate <u>TYPE</u>
e indicated in each eads full and clean			table in approved		n stat and high te	emperature cutout.	ASJ VB -
o remove burns and int compound, or pipe pipe/fitting int and tighten joint		A.O. Smith are accep	ı, Lochi			cribed on Drawings. er heaters of equal size	<u>TYPE</u> TYPE OFG
osed. indicated, in ce. Cut tube ends I clean outside of		again	nst tank	failure	due to corrosion	5-year limited warranty or due to metal failure sand, sediment, or sludge.	JFG KFG
older flux to joint ube full depth into draw solder full depth solder from joint	1. R	of drains,	ainage o soil an	and ven id waste	e piping shall mee	as possible. Actual location t the various building	TYPE APF
nufacturer's instructions industry standards. and F402.	2. S	conditions. Slope brand foot of ru of "Y" bra	Do a ch soil n. Mal Inches (	iny worl and wo ke char and 1/4	< necessary to co iste pipes at an in iges in direction o	nceal piping. ncline of at least 1/4" per f drainage piping by means bends except that sanitary	

- Provide cleanouts at base of all stacks, at changes of direction and as shown on Drawings. Cleanouts on undergroundlines shall extend up flush with finished floor or grade. Provide cleanouts not over 50 ft. o.c. along straight runs. Cleanouts shall be size of pipe to which it is installed up to 4" in diameter. Pipe over 4" in diameter shall have a 4" cleanout.
   Terminate vent pipes at least 12" above roof. Make each vent
- 4. Terminate vent pipes at least 12" above roof. Make each vent terminal water—tight with the roof by using sheet lead (4 psf) with base not less than 24" in all directions from center of pipe and full height of pipe and turned down 2" inside of pipe.
- 5. Lay all sanitary sewers with full length of each section resting on a solid bed. Lay pipe starting at upgrade with spigot end of pipe pointing in direction of flow. All sanitary sewers shall be collected separately as shown on Drawings
- DOMESTIC WATER SUPPLY SYSTEMS 1. Install water system as shown on Drawings with hot and cold water
- being supplied and connected to all fixtures and equipment. 2. Provide unions at all equipment valves, strainer, etc., to facilitate
- removal for repair or replacement without disturbing adjacent piping. 3. Provide temporary water service to area of construction for use of all trades. Plumbing Contractor shall be responsible for maintaining
- 4. Chlorinate all domestic water systems. Flush out domestic system then hold a solution mixture of 50 ppm of chlorina in the system for a
- hold a solution mixture of 50 ppm of chlorine in the system for a period of 24 hours. Drain and flush system until chlorine residual of .5 ppm. Chlorination shall be repeated if necessary and conform to AWWA Specifications C601-54 and be accepted by Local Health Dept. NATURAL GAS PIPING SYSTEM
- Connect to all building equipment requiring natural gas. Install drip leg and shut—off cock at each connection.
   PLUMBING FIXTURES AND EQUIPMENT
- Provide plumbing fixtures shown on Drawings and listed in Fixture Schedule. Fixtures as manufactured by Mansfield, Kohler, or Eljer are approved eaual.
- 2. All countertop sinks to be individually valved under sinks using Wolverine Ball Valves.
- 3. Faucets and Flush Valves to have renewable seats and discs and chrome plated trim. Delany and Watrous flush valves and Delta Faucets are acceptable on Base Bid.
- All fixtures to be supported as indicated on Fixture Schedule.After installation, all connecting piping to be flushed and valves
- After installation, all connecting piping to be flushed and valves properly adjusted. Labels, plaster, stains and other foreign material to be removed from all fixtures so they are acceptable in and operation. Caulk all Fixtures at wall and floors.
   Fixtures act to beight as shown in schedule and in logation shown on
- 6. Fixtures set to height as shown in schedule and in location shown on Drawings, plumb, level and substantially supported. Immediately after the setting of any fixture, fitting or piping, protect it adequately without extra cost to the Owner. At all stages of the installation, pipe openings must be protected against the entrance of foreign material.
- Exposed piping to plumbing fixtures shall be chromium plated, iron pipe size, brass pipe and chromium plated stop valves where exposed and brass where concealed.
- 8. All fixtures shall be furnished and installed according to schedules on the Drawings. However, the Plumbing Contractor shall ascertain the correct amount of fixtures required by the plans as he will be held strictly responsible for furnishing and installing all items shown.
- 9. Contractor shall inform himself fully regarding peculiarities and limitations of space available for installation of all material and equipment to be installed under this Contract, and see that all equipment to be reached periodically for operation and maintenance is made easily accessible.
- TESTS
- 1. Sanitary, Waste, and Vent Piping: All sanitary, storm, and water piping shall be tested per State Plumbing Code and/or requirements of Local Authority.

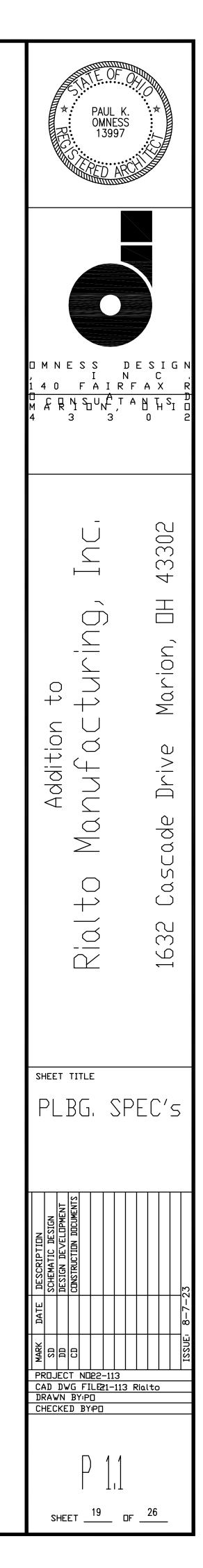
INSULATION A. SUBMITTALS

- Submit detailed Shop Drawings or descriptive literature for all insulation products to be used.
- All insulation and accessories shall have composite (insulation, jacket, and adhesive) fire and smoke hazard ratings as tested under procedure ASTM-E-84, NFPA 255 and UL 723, not exceeding a flame spread of 25 and smoke developed 50. All calcium silicate shall be asbestos free to comply with OSHA regulations. The above requirements apply to pipe insulation and coverings used in plenums and shafts which act as active air ducts. All other areas shall have a 25 flame spread rating and 150 smoke developed as tested above. No polyethylene insulation acceptable.

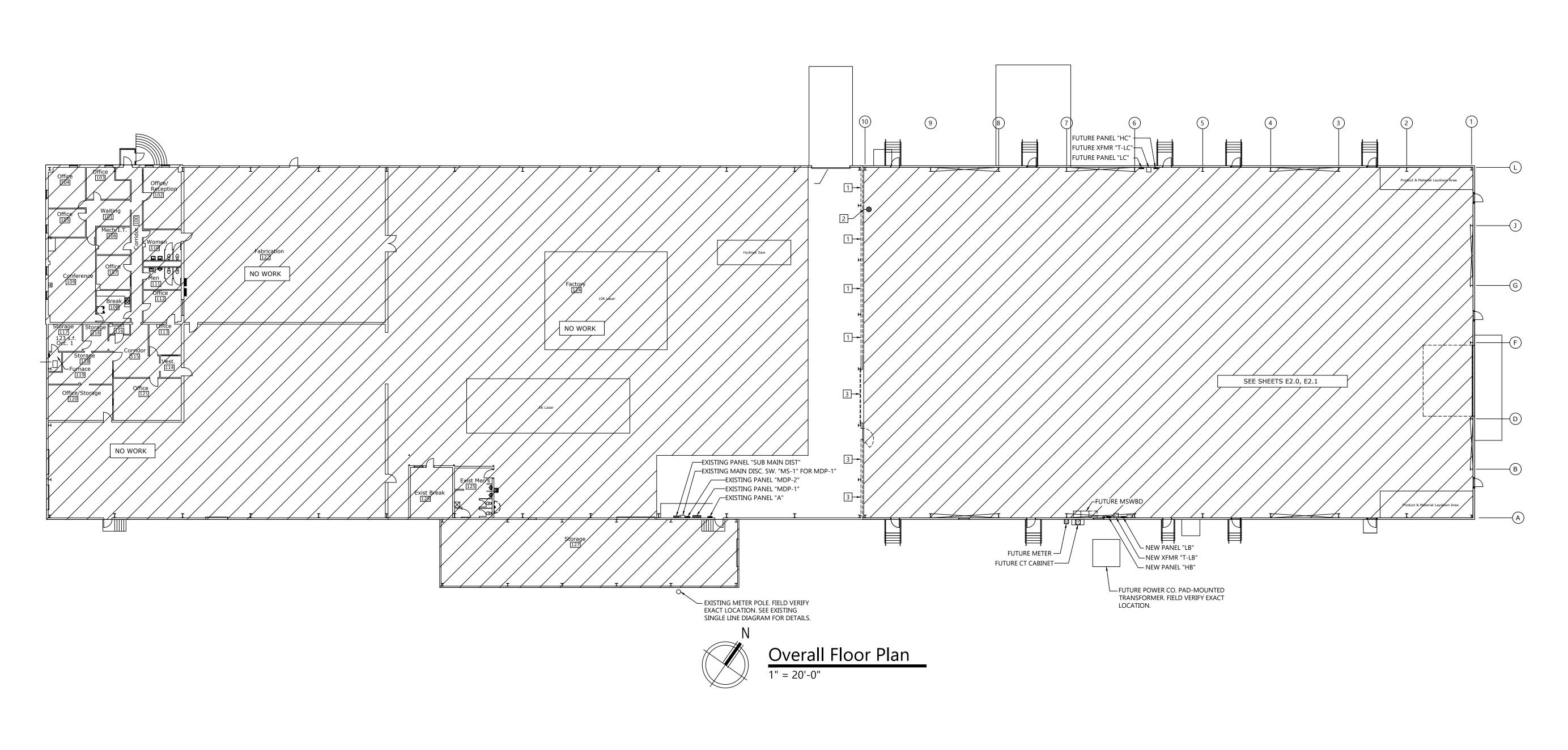
insulation	accept	table.				
3. Materials:	All insu	ulation wo	rk shall cont	form to the following	schedule:	
<u>Service</u>	<u>Type</u>	<u>Size</u>	<u>Thickness</u>	<u>Cons. &amp; Exp.</u>		
Domestic Hot Water	 	2" and under	1 <b>"</b> 1 1/2"	VB A.S.J. VB A.S.J.		
Domestic Cold Water	 	ALL	1"	VB A.S.J.		
TYPES OF COVERING						
ASJ - All Service	e Jacke	, <del>t</del>				

ASJ — All Service Jacket VB — Vapor Barrier

- TYPES OF INSULATION
- TYPE I
- OFG Owens-Corning One Piece Fiberglass Pipe Insulation, K = .23, Density =  $4.0 \#/\text{ft}^3$ .
- G Johns—Manville "Micro—Lok" Fiberglass Pipe Insulation, K = .23, Density = 4.0#/ft<sup>3</sup>.
- FG Knauf Fiberglass Pipe Insulation, K = .23, Heavy Density.
- TYPE II APF — Armstrong Armaflex AP Pipe Insulation, K = .27 (1/2" on Domestic Hot and Cold Water Piping).







3

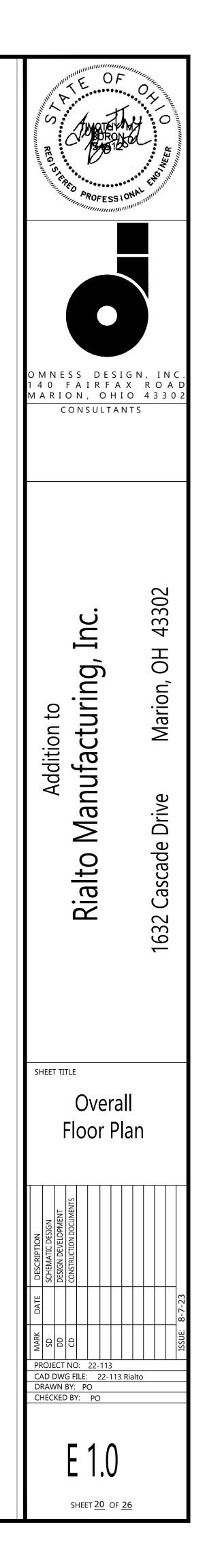
# DEMOLITION NOTES

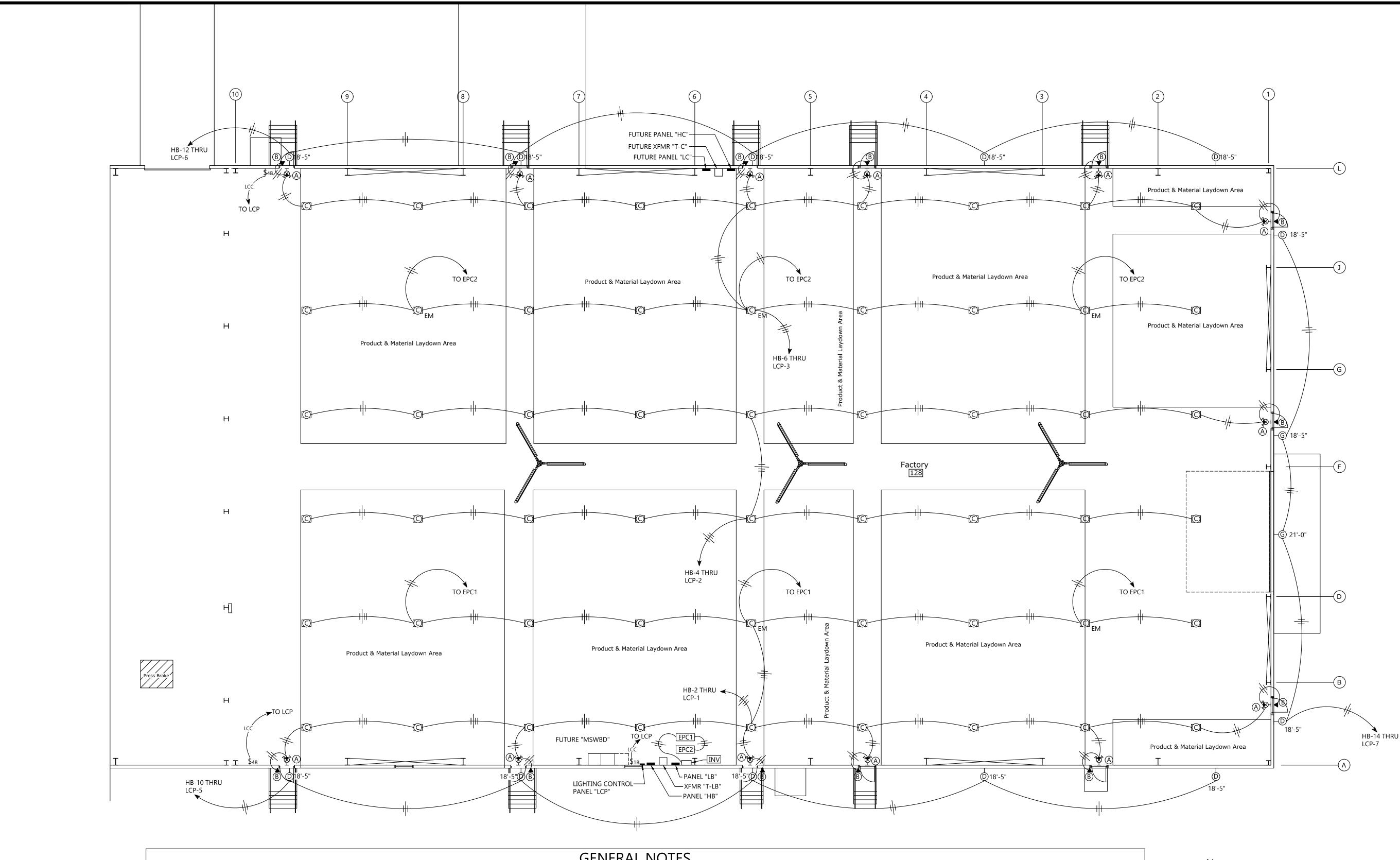
EXISTING WALL TO BE REMOVED BY OTHERS. EC TO REMOVE ALL AFFECTED ELECTRICAL ITEMS AND ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE. EC TO RECONNECT ANY REMAINING ACTIVE ELECTRICAL ITEMS WHOSE POWER WAS DISCONNECTED DUE TO ABOVE DEMOLITION. DISCONNECT AND REMOVE EXISTING WALL PACK. REMOVE ALL ASSOCIATED CONDUIT AND 2 WIRING BACK TO SOURCE. EC TO RECONNECT ANY REMAINING ACTIVE ELECTRICAL ITEMS WHOSE POWER WAS DISCONNECTED DUE TO ABOVE DEMOLITION.

EXISTING OVERHEAD DOOR TO BE REMOVED BY OTHERS. EC TO REMOVE ALL AFFECTED ELECTRICAL ITEMS AND ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE. EC TO RECONNECT ANY REMAINING ACTIVE ELECTRICAL ITEMS WHOSE POWER WAS DISCONNECTED DUE TO ABOVE DEMOLITION.

# DEMOLITION GENERAL NOTES

- ELECTRICAL CONTRACTOR TO FIELD VERIFY ALL EXISTING ELECTRICAL ITEMS AS REQUIRED PRIOR TO CONSTRUCTION.
- ELECTRICAL CONTRACTOR TO COORDINATE ALL PHASING WITH GC PRIOR TO DEMOLITION. MAINTAIN ALL EXISTING ELECTRICAL, TELEPHONE, TELEVISION, FIRE ALARM, ETC. UNTIL THE NEW SERVICE SERVICE IS COMPLETELY INSTALLED OR RELOCATED.
- RECONNECT ANY REMAINING ACTIVE ELECTRICAL ITEMS WHOSE POWER WAS DISCONNECTED DUE TO DEMOLITION WORK.
- . REMOVE ALL NON-ACTIVE EXPOSED CABLES.
- PROVIDE BLANK COVERPLATES OVER ALL UNUSED BOXES.
- PATCH ALL OPENINGS LEFT BY REMOVAL OF ELECTRICAL ITEMS TO MATCH EXISTING CONDITIONS AS DIRECTED BY ARCHITECT UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION. BRING ANY DISCREPANCIES TO ARCHITECT/ENGINEER PRIOR TO CONSTRUCTION.
- SCOPE OF WORK ONLY INCLUDES THE AREAS AND ITEMS OF WORK AS SHOWN. IT SPECIFICALLY EXCLUDES ANY CODE VIOLATIONS OUTSIDE THE SCOPE OF WORK. ELECTRICAL CONTRACTOR SHALL BRING ANY CODE VIOLATIONS OR SERIOUS HAZARDOUS CONDITIONS, WHICH ARE FOUND, TO THE ATTENTION OF THE OWNER & ENGINEER SO THAT CORRECTIVE ACTION CAN BE TAKEN.





- ALL ELECTRIC WORK SHALL BE IN STRICT ACCORDANCE WITH CURRENT NEC, NFPA, ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AND LOCAL AUTHORITY HAVING JURISDICTION.
- CONCEAL ALL WIRING TO THE GREATEST EXTENT POSSIBLE.
- FOR PURPOSES OF CLEARNESS AND LEGIBILITY, DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC AND ALTHOUGH SIZE AND LOCATION OF EQUIPMENT ARE DRAWN TO SCALE WHEREVER POSSIBLE, CONTRACTOR SHALL VERIFY THIS INFORMATION AT THE BUILDING SITE.
- . CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED PERMITS, ROUGH-IN/FINAL INSPECTION, ETC.
- ALL MATERIALS AND EQUIPMENT SHALL BE NEW, OF THE BEST GRADE, AND INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- WORKMANSHIP AND MATERIALS TO BE GUARANTEED FOR ONE YEAR FROM DATE OF FINAL ACCEPTANCE.
- ALL CONDUITS TO CONTAIN A GROUND WIRE SIZED PER TABLE 250-122.
- MINIMUM CONDUIT SIZE SHALL BE 3/4" FOR EMT OR PVC U.N.O. ALL WIRING SHALL BE INSTALLED IN POLYVINYL CHLORIDE (PVC) OR ELECTRIC METALLIC TUBING (EMT) CONDUIT. MC CABLE MAY BE USED FOR BRANCH CIRCUIT WIRING WHERE CONCEALED IN ACCORDANCE WITH NEC, BUT ALL HOMERUNS SHALL BE IN CONDUIT.
- EXTEND RACEWAYS PARALLEL AND PERPENDICULAR TO STRUCTURAL MEMBERS AND SURFACE CONTOURS AS MUCH AS IS PRACTICAL.

- THAN 100 FEET.
- 4. IDENTIFICATION TAGGING IS REQUIRED ON ALL PANELBOARD, JUNCTION BOXES, RELAYS, DISCONNECT SWITCHES, STARTERS, CONTROL PANELS, PUSHBUTTONS, AND MISC. ELECTRICAL DEVICES INSTALLED BY CONTRACTOR. USE ENGRAVED LAMACOID LABEL, 1" WIDE BY 2" LONG MINIMUM, BLACK WITH WHITE LETTERS, MINIMUM 3/4" HIGH.
- 5. CONTRACTOR SHALL COORDINATE THE PROPER INSTALLATION OF ALL POWER WIRING AND TEMPERATURE CONTROL WIRING (INCLUDING INTERLOCKS AND STARTERS) WITH PROPER SUBCONTRACTORS AS REQUIRED FOR A COMPLETE WORKING SYSTEM.
- 7. PANEL AND ELECTRICAL EQUIPMENT LOCATIONS SHALL BE COORDINATED WITH ALL CONTRACTORS PRIOR TO INSTALLATION TO INSURE THE INSTALLATION IS IN STRICT ACCORDANCE WITH ALL WORKING SPACE & DEDICATED ELECTRICAL SPACE REQUIREMENTS PER N.E.C. ART. 110.

# GENERAL NOTES

10. ALL WIRING TO BE A MINIMUM OF #12 AWG COPPER CONDUCTOR FOR POWER AND LIGHTING CIRCUITS UNLESS NOTED OTHERWISE. ALL WIRING TO BE COPPER TYPE THHN, XHHW, OR THWN, 600-V (75° C). ALUMINUM CONDUCTORS MAY BE USED FOR FEEDERS #1 SIZE AND LARGER.

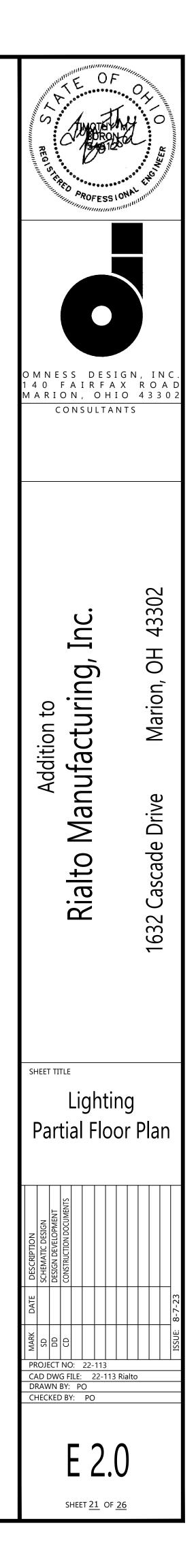
1. MINIMUM 14 AWG CONDUCTOR FOR CONTROL CIRCUITS.

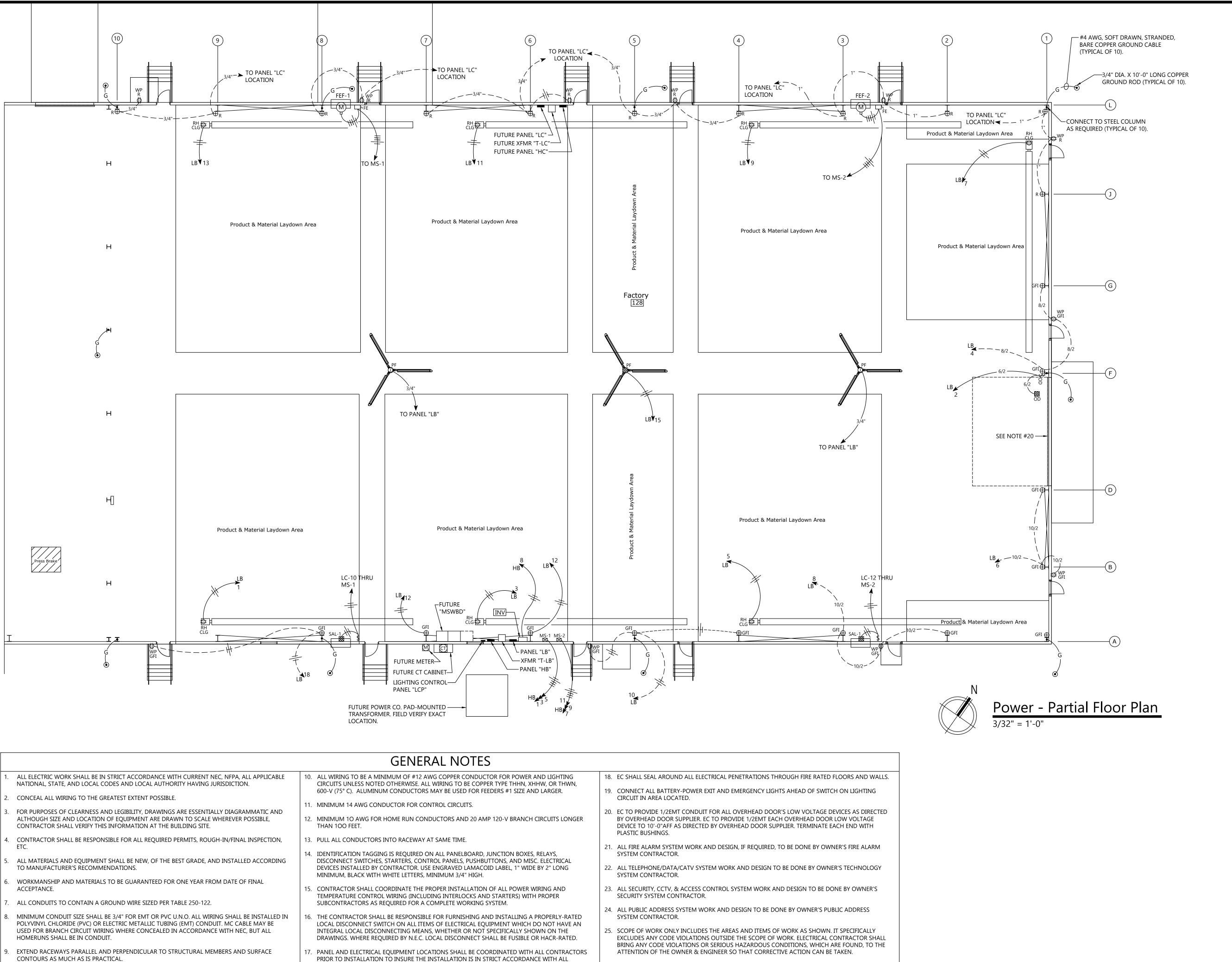
- 12. MINIMUM 10 AWG FOR HOME RUN CONDUCTORS AND 20 AMP 120-V BRANCH CIRCUITS LONGER
- 13. PULL ALL CONDUCTORS INTO RACEWAY AT SAME TIME.
- 5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING A PROPERLY-RATED LOCAL DISCONNECT SWITCH ON ALL ITEMS OF ELECTRICAL EQUIPMENT WHICH DO NOT HAVE AN INTEGRAL LOCAL DISCONNECTING MEANS, WHETHER OR NOT SPECIFICALLY SHOWN ON THE DRAWINGS. WHERE REQUIRED BY N.E.C. LOCAL DISCONNECT SHALL BE FUSIBLE OR HACR-RATED.

- 18. EC SHALL SEAL AROUND ALL ELECTRICAL PENETRATIONS THROUGH FIRE RATED FLOORS AND WALLS.
- 19. CONNECT ALL BATTERY-POWER EXIT AND EMERGENCY LIGHTS AHEAD OF SWITCH ON LIGHTING CIRCUIT IN AREA LOCATED.
- 20. ALL FIRE ALARM SYSTEM WORK AND DESIGN, IF REQUIRED, TO BE DONE BY OWNER'S FIRE ALARM SYSTEM CONTRACTOR.
- 21. ALL TELEPHONE/DATA/CATV SYSTEM WORK AND DESIGN TO BE DONE BY OWNER'S TECHNOLOGY SYSTEM CONTRACTOR.
- 22. ALL SECURITY, CCTV, & ACCESS CONTROL SYSTEM WORK AND DESIGN TO BE DONE BY OWNER'S SECURITY SYSTEM CONTRACTOR.
- 23. ALL PUBLIC ADDRESS SYSTEM WORK AND DESIGN TO BE DONE BY OWNER'S PUBLIC ADDRESS SYSTEM CONTRACTOR.
- 24. SCOPE OF WORK ONLY INCLUDES THE AREAS AND ITEMS OF WORK AS SHOWN. IT SPECIFICALLY EXCLUDES ANY CODE VIOLATIONS OUTSIDE THE SCOPE OF WORK. ELECTRICAL CONTRACTOR SHALL BRING ANY CODE VIOLATIONS OR SERIOUS HAZARDOUS CONDITIONS, WHICH ARE FOUND, TO THE ATTENTION OF THE OWNER & ENGINEER SO THAT CORRECTIVE ACTION CAN BE TAKEN.
- 25. SEE SHEET E3.0 FOR LOCATION OF LIGHTING CONTROL PANEL "LCP" & INVERTER.



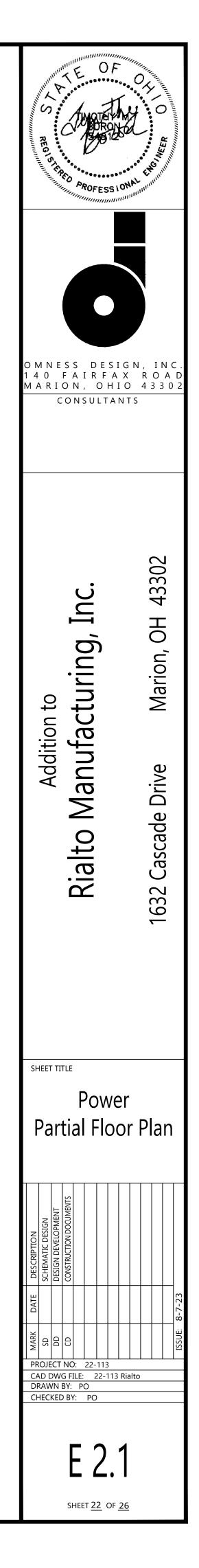
Lighting - Partial Floor Plan





1.	ALL ELECTRIC WORK SHALL BE IN STRICT ACCORDANCE WITH CURRENT NEC, NFPA, ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AND LOCAL AUTHORITY HAVING JURISDICTION.	10.	ALL WIRING TO BE A M CIRCUITS UNLESS NOT 600-V (75° C). ALUMIN
2.	CONCEAL ALL WIRING TO THE GREATEST EXTENT POSSIBLE.		
3.	FOR PURPOSES OF CLEARNESS AND LEGIBILITY, DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC AND	11.	MINIMUM 14 AWG CO
5.	ALTHOUGH SIZE AND LOCATION OF EQUIPMENT ARE DRAWN TO SCALE WHEREVER POSSIBLE, CONTRACTOR SHALL VERIFY THIS INFORMATION AT THE BUILDING SITE.	12.	MINIMUM 10 AWG FC THAN 100 FEET.
4.	CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED PERMITS, ROUGH-IN/FINAL INSPECTION, ETC.	13.	PULL ALL CONDUCTOR
-		14.	IDENTIFICATION TAGG
5.	ALL MATERIALS AND EQUIPMENT SHALL BE NEW, OF THE BEST GRADE, AND INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.		DISCONNECT SWITCHE DEVICES INSTALLED BY
			MINIMUM, BLACK WIT
6.	WORKMANSHIP AND MATERIALS TO BE GUARANTEED FOR ONE YEAR FROM DATE OF FINAL	45	
	ACCEPTANCE.	15.	CONTRACTOR SHALL C
7.	ALL CONDUITS TO CONTAIN A GROUND WIRE SIZED PER TABLE 250-122.		SUBCONTRACTORS AS
8.	MINIMUM CONDUIT SIZE SHALL BE 3/4" FOR EMT OR PVC U.N.O. ALL WIRING SHALL BE INSTALLED IN	16	THE CONTRACTOR SH
0.	POLYVINYL CHLORIDE (PVC) OR ELECTRIC METALLIC TUBING (EMT) CONDUIT. MC CABLE MAY BE	10.	LOCAL DISCONNECT S
	USED FOR BRANCH CIRCUIT WIRING WHERE CONCEALED IN ACCORDANCE WITH NEC, BUT ALL		INTEGRAL LOCAL DISC
	HOMERUNS SHALL BE IN CONDUIT.		DRAWINGS. WHERE RE
9.	EXTEND RACEWAYS PARALLEL AND PERPENDICULAR TO STRUCTURAL MEMBERS AND SURFACE	17.	PANEL AND ELECTRICA
	CONTOURS AS MUCH AS IS PRACTICAL.		PRIOR TO INSTALLATIO
			WORKING SPACE & DE

- TION TO INSURE THE INSTALLATION IS IN STRICT ACCORDANCE WITH ALL DEDICATED ELECTRICAL SPACE REQUIREMENTS PER N.E.C. ART. 110.



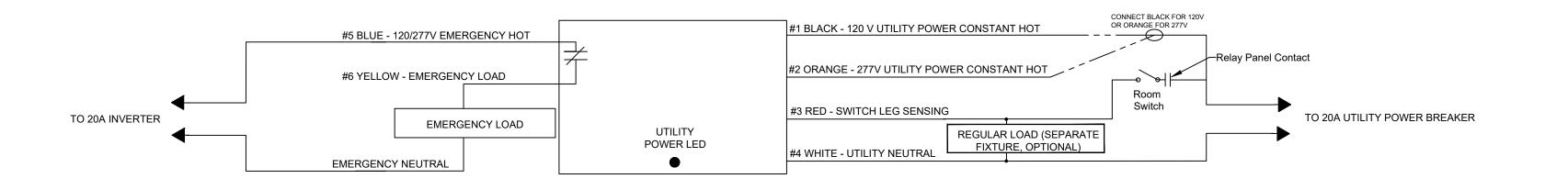
	LEGEND
SYMBOL	DESCRIPTION
H⊗	COMBINATION EXIT SIGN/EMERGENCY LIGHT
•	SINGLE POLE SWITCH WITH STAINLESS STEEL COVERPLATE. MOUNT AT 48"AFF TO
\$	CENTERLINE UNLESS OTHERWISE NOTED. 3-WAY, 4-WAY SINGLE POLE SWITCH WITH STAINLESS STEEL COVERPLATE. MOUNT AT
<b>\$</b> 3	48"AFF TO CENTERLINE UNLESS OTHERWISE NOTED.
\$ <sub>4B</sub>	NEXTLIGHT OPTIMA #CRC3014 OR EQUIVALENT 4-BUTTON LOW VOLTAGE WALL SWITCH WITH STAINLESS STEEL COVERPLATE. MOUNT T 48"AFF TO CENTERLINE UNLESS NOTED OTHERWISE. VERIFY COLOR WITH OWNER PRIOR TO ORDERING. PROGRAM AND LABEL SWITCH AS DIRECTED BY OWNER AND SWITCH SUPPLIER.
\$ <sub>1B</sub>	NEXTLIGHT OPTIMA #CRC3011 OR EQUIVALENT 1-BUTTON LOW VOLTAGE WALL SWITCH WITH STAINLESS STEEL COVERPLATE FOR MANUAL OVERRIDE. MOUNT T 48"AFF TO CENTERLINE UNLESS NOTED OTHERWISE. VERIFY COLOR WITH OWNER PRIOR TO ORDERING. PROGRAM AND LABEL SWITCH AS DIRECTED BY OWNER & LUMINAIRE SUPPLI
\$ <sub>0D</sub>	30A, 125V SINGLE POLE SWITCH WITH STAINLESS STEEL COVERPLATE FOR OVERHEAD DOOR. MOUNT NEXT TO OVERHEAD DOOR MOTOR AS DIRECTED BY OVERHEAD DOOR SUPPLIER.
EPC1,2	LVS INC. #EPC-A-1 OR EQUIVALENT EMERGENCY POWER CONTROL DEVICE SURFACE MOUNT EMERGENCY POWER CONTROL DEVICE AS DIRECTED BY EMERGENCY POWER CONTROL DEVICE SUPPLIER. PROVIDE ALL CONNECTIONS AS DIRECTED BY EMERGENCY POWER CONTROL DEVICE SUPPLIER AND AS REQUIRED FOR A COMPLETE WORKING SYSTEM. SEE EMERGENCY POWER CONTROL DEVICE WIRING DIAGRAM FOR ADDITIONAL INFORMATION.
INV	LVS INC. #CEPS-A-1000-277-3 OR EQUIVALENT 1000 WATT, 277V INVERTER WITH THREE (3 20A/1P CIRCUIT BREAKERS. SURFACE MOUNT INVERTER AS DIRECTED BY INVERTER SUPPLIER. PROVIDE ALL CONNECTIONS AS DIRECTED BY INVERTER SUPPLIER AND AS REQUIRED FOR A COMPLETE WORKING SYSTEM.
Φ	20A, 125V, DUPLEX RECEPTACLE WITH STAINLESS STEEL COVERPLATE. MOUNT AT 18"AFF TO CENTERLINE UNLESS OTHERWISE NOTED. <u>GFI</u> - GROUND FAULT INTERRUPTING <u>WP</u> - WEATHERPROOF COVER <u>RH/CLG</u> - CEILING MOUNT NEXT TO RADIANT HEATER (1.7FLA, 120V, 1PH) AS DIRECTED BY MC. FIELD VERIFY EXACT LOCATION PRIOR TO ROUGH-IN. <u>WP/R</u> - ROUGH-IN BOX FOR A "GFI" TYPE DUPLEX RECEPTACLE. PROVIDE A BLANK WEATHERPROOF COVER
⊕ GFI	TWO (2) 20A, 125V, DUPLEX RECEPTACLES MOUNTED IN THE SAME BOX WITH COMMON STAINLESS STEEL COVERPLATE. MOUNT AT 24"AFF TO CENTERLINE UNLESS OTHERWISE NOTED. (GFI - INDICATES BOTH DUPLEX RECEPTACLES TO BE "GFI" TYPE RECEPTACLES.)
⊕ R	ROUGH-IN BOX FOR A DOUBLE DUPLEX RECEPTACLE. PROVIDE A BLANK STAINLESS STEEL COVERPLATE. MOUNT AT 24"AFF TO CENTERLINE UNLESS OTHERWISE NOTED.
FEF-1,2 M	FACTORY EXHAUST FAN EF-1,2 (3HP, 480V, 3PH). CONNECT AS DIRECTED BY MC.
8	POINT OF CONNECTION TO ELECTRICAL EQUIPMENT. VERIFY EXACT LOCATION WITH RESPECTIVE EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN.
	POINT OF CONNECTION TO PROPELLER FAN (750W, 120V, 1PH). CONNECT AS DIRECTED B
	FAN SUPPLIER. POINT OF CONNECTION TO OVERHEAD DOOR POWER (1HP, 120V, 1PH). CONNECT THRU
🔀 OD	DOOR CONTROLLER AND CONNECT TO MOTOR AS DIRECTED BY OVERHEAD DOOR SUPPLIER.
🔀 SAL-1,2	POINT OF CONNECTION TO SUPPLY AIR LOUVER SAL-1,2 (1FLA, 120V, 1PH). CONNECT AS DIRECTED BY MC. INTERLOCK WITH RESPECTIVE EXHAUST FAN MOTOR STARTER AS DIRECTED BY MC.
4	DISCONNECT SWITCH. FRAME SIZE/# OF POLES/# OF FUSES/VOLTAGE RATING/ ENCLOSURE TYPE.
۲ FE	30A/3P/NF/250V/NEMA 1 DISCONNECT SWITCH FOR FACTORY EXHAUST FAN. INSTALL AT LOCATION AS DIRECTED BY MC.
<b>M</b> S-1,2	MOTOR STARTER MS-1,2 FURNISHED BY MC AND INSTALLED AND WIRED BY EC AS
	DIRECTED BY MC. JUNCTION BOX
() <sub>PF</sub>	ROUGH IN JUNCTION BOX FOR FUTURE PROPELLER FAN. CEILING MOUNT AT LOCATION AS DIRECTED BY MC. FIELD VERIFY LOCATION WITH MC PRIOR TO ROUGH-IN.
	POWER PANEL
	CONDUIT CONCEALED
	INSTALL CONDUIT AT 30" BELOW CONCRETE SLAB TO TOP OF CONDUIT.
<u> </u>	CONDUIT HOME RUN WITH CIRCUIT NUMBER
'	HOT, NEUTRAL, GROUND
LCC	NEXLIGHT 2-WIRE DATA BUS - BELDEN 6200UE or equal, 1/2"C FOR LIGHTING CONTROL
10/2	2-#10CU, 1-#10CU GND, 3/4"C.
<u> </u>	2-#8CU, 1-#10CU GND, 1"C
<u> </u>	2-#6CU, 1-#10CU GND, 1"C
<u> </u>	3/4" CONDUIT WITH PULL WIRE
· .	
1" BFG	1" CONDUIT WITH PULL WIRE BELOW FINISHED GRADE
AFF	ABOVE FINISHED GRADE
AFF	ABOVE FINISHED FLOOR
BFC	
	BELOW FINISHED CEILING
EC	
MC PC	
116	PLUMBING CONTRACTOR

# LUMINAIRE SCHEDULE

TYPE	MFG	CAT NO.	VOLT	AMPS	
A	CHLORIDE OR EQUIVALENT - COMBINATION LED EXIT SIGN/ EMERGENCY LIGHT WITH REMOTE CAPABILITY & 90 MINUTE BATTERY BACK-UP	VLTCR3R	120/277	INTEGRAL	U
В	CHLORIDE OR EQUIVALENT - LED REMOTE EMERGENCY LIGHT WITH TWIN HEADS	VLL2RGO	120/277	INTEGRAL	W
с	DAYBRITE - 24,000 LUMEN LED INDUSTRIAL HIGH BAY LUMINAIRE	FBZ-24L-840-UNV-LFA-WC6/5 [HARD WIRED]	UNV	(1) 151.0W LED, 4000K	CE OF LUI
C/EM	DAYBRITE - 24,000 LUMEN LED INDUSTRIAL HIGH BAY LUMINAIRE CONNECTED TO INVERTER THROUGH EMERGENCY POWER CONTROL DEVICE TO ACT AS AN EMERGENCY LIGHT.	FBZ-24L-840-UNV-LFA-WC6/5 [HARD WIRED]	UNV	(1) 151.0W LED, 4000K	CEI OF LUI
D	STONCO - WALL PACK	LPW32-90-NW-G3-3-UNV-XX-BAC	UNV	(1) 90.0W LED/4000K	WA LUI

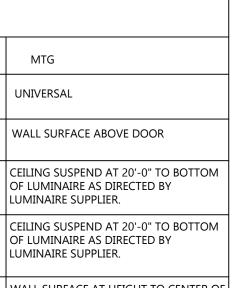
NOTES: 1. SUBSCRIPT "NL" INDICATES LUMINAIRE TO BE CONNECTED AHEAD OF SWITCH TO ACT AS A "NIGHT LIGHT". 2. CONNECT ALL BATTERY-POWER EXIT AND EMERGENCY LIGHTS AHEAD OF SWITCH ON LIGHTING CIRCUIT IN AREA LOCATED. 3. VERIFY LED LAMP COLORS OF ALL LUMINAIRE WITH OWNER & ARCHITECT PRIOR TO ORDERING. 4. EQUIVALENT LUMINAIRES AS MANUFACTURED BY LITHONIA & COOPER. EQUIVALENT MANUFACTURER SHALL PROVIDE LIGHTING CALCULATION FOR EACH SPACE.

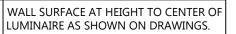
LIC	GHTING CONTROL PANEL "LCP" S	CHEDULE			
RELAY NUMBER	LOCATION OF RELAY CIRCUIT	PANEL "HB" CKT. NO.			
1	FACTORY 128 TYPE "C" & "C1" LUMINAIRES	2			
2	FACTORY 128 TYPE "C" & "C1" LUMINAIRES	4			
3	FACTORY 128 TYPE "C" LUMINAIRES	6			
4	SOUTH BUILDING TYPE "D" LUMINAIRES	10			
5	NORTH BUILDING TYPE "D" LUMINAIRES	12			
6	EAST BUILDING TYPE "D" LUMINAIRES	14			
7	SPARE	-			
8-16	SPARE	-			
<ol> <li><u>NOTES:</u></li> <li>EC TO PROVIDE AN EXTRA HOT WIRE FOR RELAY NUMBERS 1,2,3, BYPASSING LIGHTING CONTROL PANEL, TO FEED THE COMBINATION EXIT SIGNS/EMERGENCY LIGHTS AND EMERGENCY LIGHTS CONNECTED TO THE INVERTER AS REQUIRED FOR A COMPLETE WORKING SYSTEM.</li> <li>LIGHTING CONTROL PANEL "LCP" TO BE A NEXLIGHT #NXL-R16s 16-RELAY PANEL WITH TIME CLOCK, NO DIMMING, AND NEMA 1 SURFACE MOUNTED CABINET.</li> <li>EC TO PROGRAM LIGHTING CONTROL PANEL AS DIRECTED BY OWNER AND LIGHTING CONTROL SYSTEM SUPPLIER. PROVIDE A COMPLETE WORKING SYSTEM.</li> <li>EC TO PROVIDE FOUR (4) HOURS OF TRAINING TO THE OWNER.</li> <li>COORDINATE ALL WORK WITH BOB HENNINGE OF BRIGHT FOCUS SALES AT (216) 233-8809 OR (216) 751-8384 EXT. 209</li> </ol>					

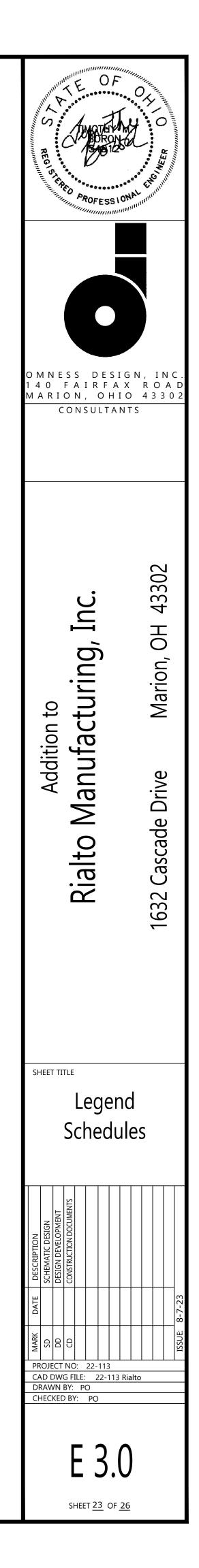


# EMERGENCY POWER CONTROL DEVICE WIRING DIAGRAM

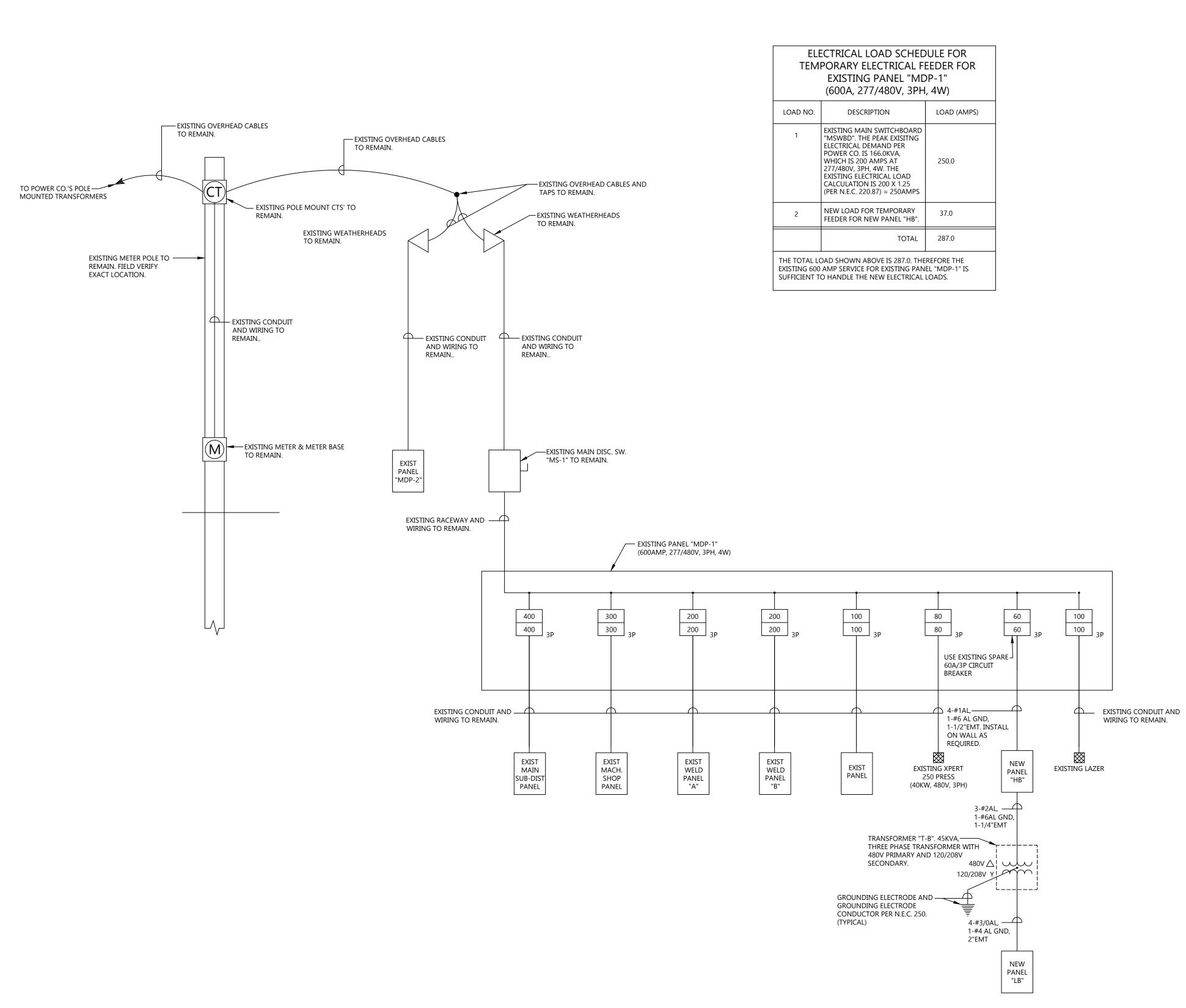
N.T.S.







1



NTS

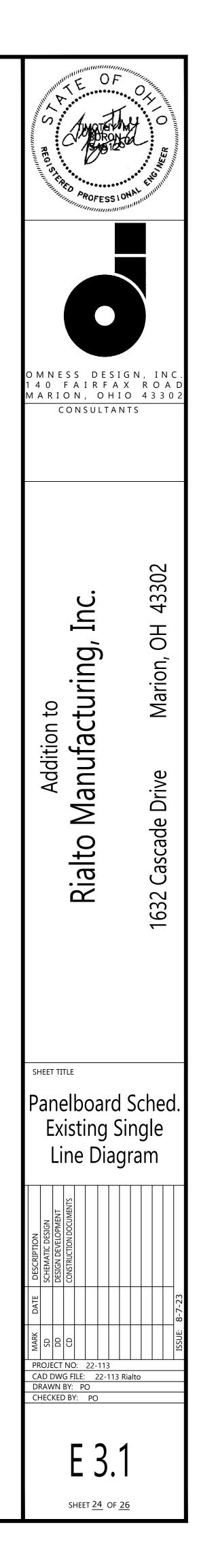
TEMPORARY ELECTRICAL FEEDER FOR EXISTING PANEL "MDP-1" (600A, 277/480V, 3PH, 4W)							
LOAD NO.	DESCRIPTION	LOAD (AMPS)					
1	EXISTING MAIN SWITCHBOARD "MSWBD". THE PEAK EXISITNG ELECTRICAL DEMAND PER POWER CO. IS 166.0KVA, WHICH IS 200 AMPS AT 277/480V, 3PH, 4W. THE EXISTING ELECTRICAL LOAD CALCULATION IS 200 X 1.25 (PER N.E.C. 220.87) = 250AMPS	250.0					
2	NEW LOAD FOR TEMPORARY FEEDER FOR NEW PANEL "HB".	37.0					
	TOTAL	287.0					
THE TOTAL LOAD SHOWN ABOVE IS 287.0. THEREFORE THE EXISTING 600 AMP SERVICE FOR EXISTING PANEL "MDP-1" IS SUFFICIENT TO HANDLE THE NEW ELECTRICAL LOADS.							

PANEL: NEW PA	NEL "HB"		TYPE:		NEMA 1		N	MOUNTIN	IG: SURFACE	
FEATURES: X	GROUND BUS	X	SOLID N	IEUTRAL	X	MAIN	LUGS ON	ΙLΥ		
SERVICE: 400	AMPS	277/480	) vc	OLTS -	3 Pł	HASE	W	/IRE <u>6</u>	0 HZ 22,000	A.I.C.
LOAD		WIRE SIZE	CB/P	CIRC. NO.	АВС	CIRC. NO.	CB/P	WIRE SIZE	LOAD	
328 KEF-1, 128	•	12	20/3	1	•	2	20/1	12	LTG., 128	2564
328 KEF-1, 128	•	12	20/3	3	<b>││∳│</b>	4	20/1	12	LTG., 128	2564
328 KEF-1, 128	•	12	20/3	5	]	6	20/1	12	LTG., 128	2564
328 KEF-2, 128	•	12	20/3	7	<b>│∮│</b>	8	20/1	12	INVERTER	1000
328 KEF-2, 128	•	12	20/3	9	<b>]   ∳  </b>	10	20/1	12	LTG., SOUTH BLDG.	690
328 KEF-2, 128	•	12	20/3	11	<b>]     ∳</b>	12	20/1	12	LTG., NORTH BLDG.	690
3432 XFMR "T-B"	•	4	80/3	13	<b>┤┥││</b>	14	20/1	12	LGT., EAST BLDG.	552
2958 XFMR "T-B"	•	4	80/3	15	<b>││∳│</b>	16	65/3	-	SPARE	-
2568 XFMR "T-B"	•	4	80/3	17	<b>│││</b> ∳	18	65/3	-	SPARE	-
SPARE	•	-	80/3	19	<b>│∮│</b>	20	65/3	-	• SPARE	-
SPARE	•	-	80/3	21	<b>││∳│</b>	22	65/3	-	SPARE	-
SPARE	•	-	80/3	23	<b>│││∳</b>	24	65/3	-	SPARE	-
SPARE	•	-	50/3	25	<b>│∮│</b>	26	65/3	-	• SPARE	-
SPARE	•	-	50/3	27	<b>││∳│</b>	28	20/1	-	SPARE	-
SPARE	•	-	50/3	29	<b>│││</b> ∳	30	20/1	-	SPARE	-
SPARE		-	20/1	31	<b>│∮│</b>	32	20/1	-	SPARE	-
SPARE		-	20/1	33	<b>││∳│</b>	34	20/1	-	SPARE	-
SPARE		-	20/1	35	<b>│││</b> ∳	36	20/1	-	SPARE	-
SPARE		-	20/1	37	<b>┤┥╽│</b>	38	20/1	-	SPARE	-
SPARE		-	20/1	39	<b>││∳│</b>	40	20/1	-	SPARE	-
SPARE		-	20/1	41	<u><u>]</u>  ∳</u>	42	20/1	-	SPARE	-
LOADS:	A = 10,204W	,		В	= 8,868	W		С	= 8,478W	
TOTAL LOAD:	3 X PHA = = 37 AMP	30,612								

# 

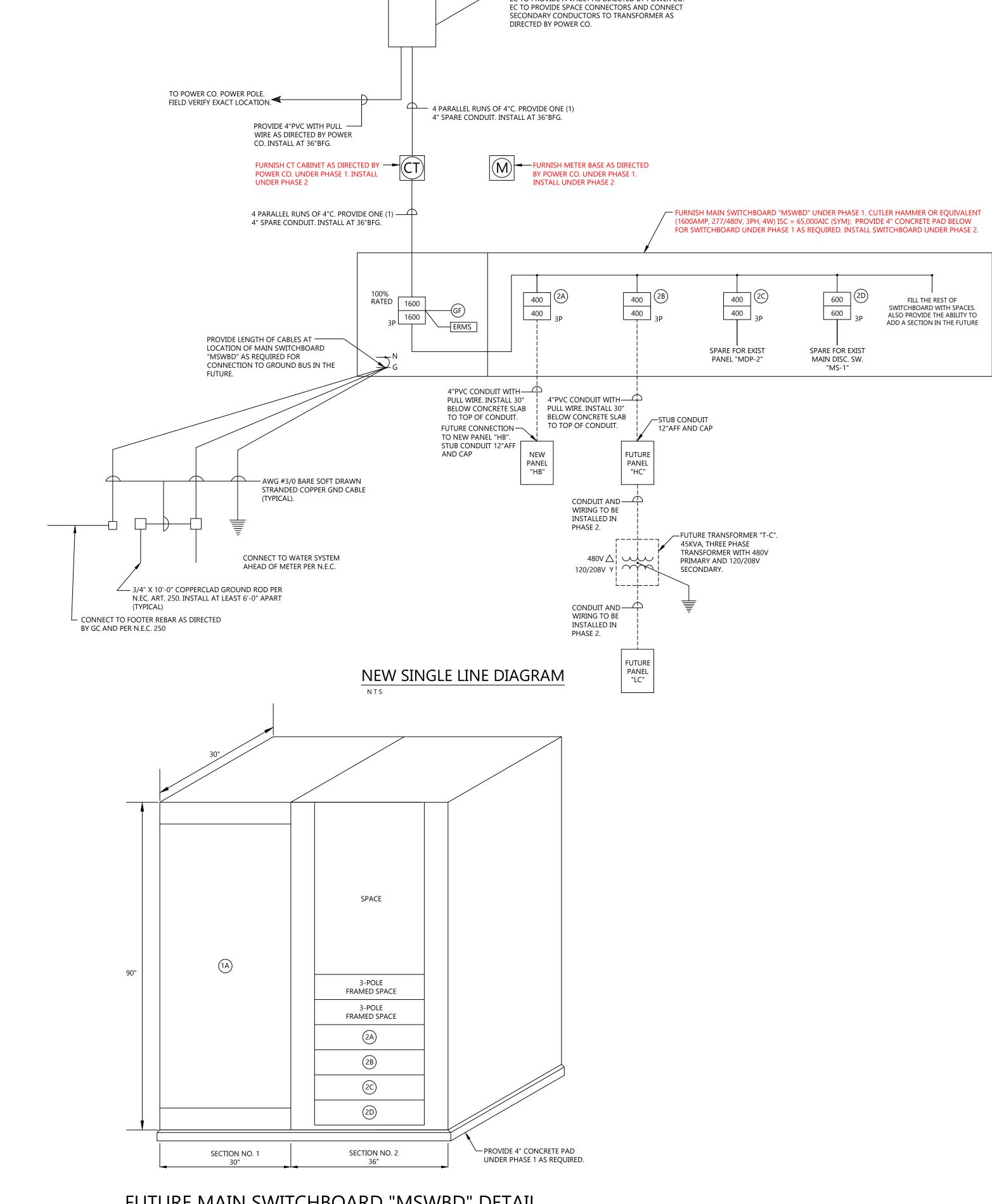
									NG: <u>SURFAC</u>	E	
FEATURES:	X GROUND BU	JS X	SOLID N	IEUTRAL	X	MAIN	CIRCUIT I	BREAKER			
SERVICE:	150 AMPS	120/208	8 VC	OLTS	3 PH	IASE	W	/IRE <u>6</u>	0 HZ	22,000	A.I.C.
L	OAD	WIRE SIZE	CB/P	CIRC. NO.	АВС	CIRC. NO.	CB/P	WIRE SIZE		LOAD	
204 RH, 12	28	12	20/1	1	•	2	30/1	6	OD, 128		1920
204 RH, 12	28	12	15/1	3	<b>││∳│</b>	4	20/1	8	REC., 128		900
204 RH, 12	28	12	15/1	5	▋┃┃╇	6	20/1	10	REC., 128		900
204 RH, 12	28	12	20/1	7	]	8	20/1	10	REC., 128		900
204 RH, 12	28	12	20/1	9	<b>││♦│</b>	10	20/1	12	REC., 128		900
204 RH, 12	28	12	20/1	11	<u></u> ]  ∳	12	20/1	12	REC., 128		720
204 RH, 12	28	12	20/1	13	<b>│</b> ♦┃┃	14	20/1	-	SPARE		-
750 PF, 12	28	12	15/1	15	<b>│ │ ♦ │</b>	16	20/1	-	SPARE		-
SPAR	E	-	15/1	17	<u></u> ]  ∳	18	20/1	12	REC., 128		540
SPAR	E	-	15/1	19	<b>│</b> ♦┃┃	20	20/1	-	SPARE		-
SPAR	E	-	20/1	21	<b>│ │ ♦ │</b>	22	20/1	-	SPARE		-
SPAR	E	-	20/1	23	<u></u>	24	20/1	-	SPARE		-
SPAR	E	-	20/1	25	<b>」</b> ♦┃┃	26	20/1	-	SPARE		-
SPAR	E	-	20/1	27	<b>│ │ ♦ │</b>	28	20/1	-	SPARE		-
SPAR	E	-	20/1	29	<u></u>	30	30/1	-	SPARE		-
SPAR	E	-	20/1	31	<b>」</b> ♦┃┃	32	20/1	-	SPARE		-
SPAR	E	-	20/1	33	<b>│ │ ♦ │</b>	34	20/1	-	SPARE		-
SPAR	E	-	20/1	35	<b>│ │ │ ∲</b>	36	20/1	-	SPARE		-
SPAR	E	-	20/1	37	<b>│<b>∮│</b></b>	38	20/1	-	SPARE		-
SPAR	E	-	20/1	39	<b>│ │ ♦ │</b>	40	20/1	-	SPARE		-
SPAR	Ε	-	20/1	41		42	20/1	-	SPARE		-
LOADS:	A = 3,432	N		E	8 = 2,958\	N		С	= 2,568W		
TOTAL LOAN <u>NOTES:</u> 1.		A = 10,296 MPS @ 120		LTS, 3PF	l, 4W						

# EXISTING SINGLE LINE DIAGRAM

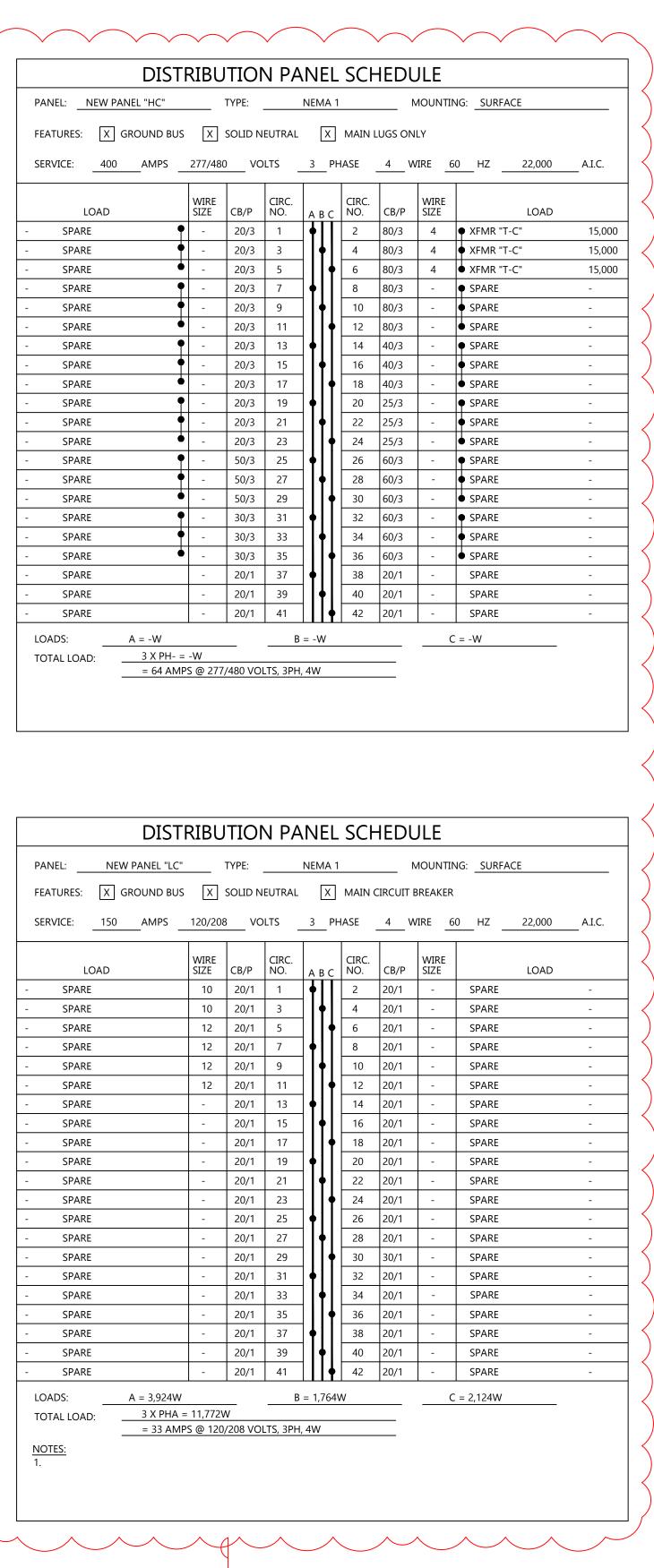


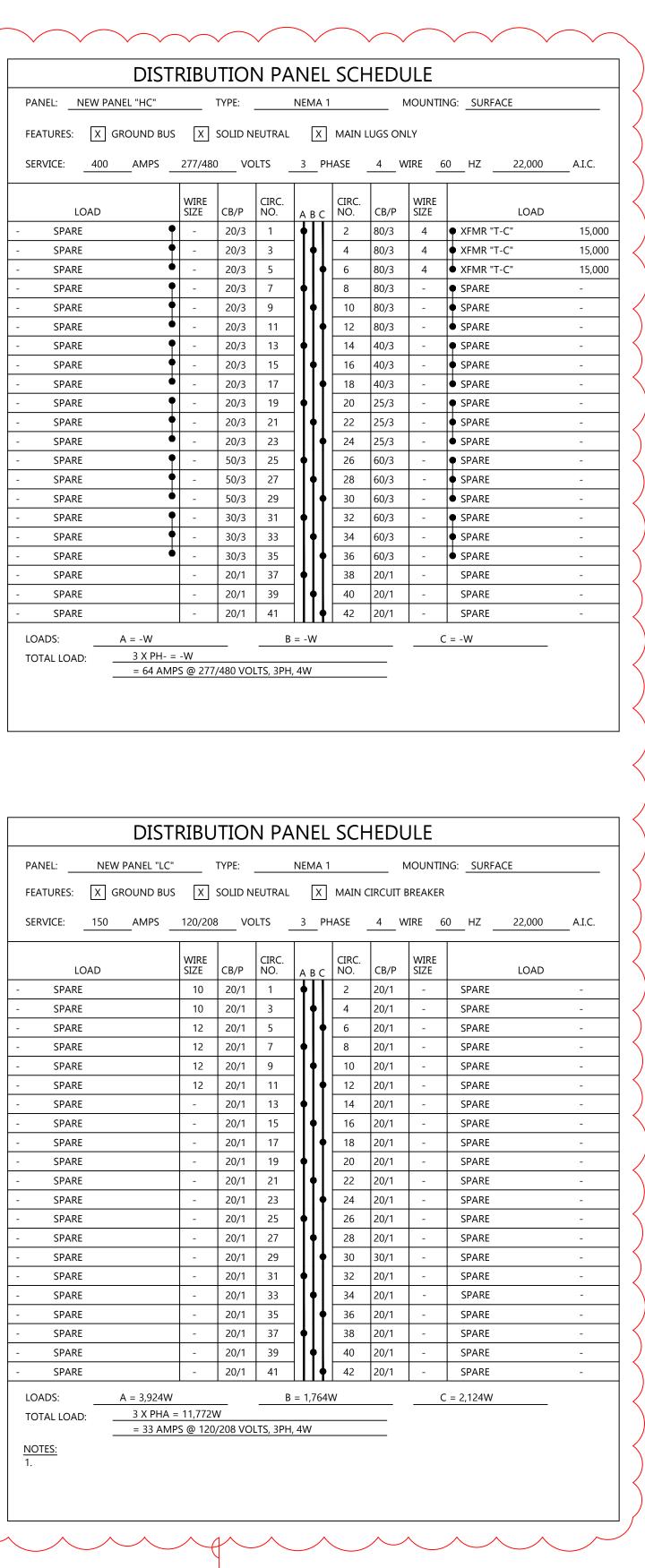
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# FUTURE POWER CO. PAD-MOUNTED TRANSFORMER. EC TO PROVIDE A VAULT AS DIRECTED BY POWER CO.





- FURNISH PANELS UNDER PHASE 1 AND INSTALL THEM UNDER PHASE 2.



- WORK INCLUDED: WORK INCLUDED IS SUBJECT TO THE GENERAL CONDITIONS AND INSTRUCTIONS TO BII THE ENTIRE OPERATION. THE CONTRACTORS AND/OR SUBCONTRACTORS FOR THIS PORTION OF THE WOR REQUIRED TO REFER ESPECIALLY THERETO.
- 1.a. THE WORK COVERED UNDER THIS SPECIFICATION SHALL INCLUDE ALL LABOR, MATERIALS, TOOLS, EQUIPM AND SERVICES NECESSARY FOR, OR INCIDENTAL TO PROPER INSTALLATION AND COMPLETION OF ELECT WORK AS INDICATED ON THE DRAWINGS OR HEREIN SPECIFIED, OR BOTH.
- 1.b. THE CONTRACT DOCUMENTS ARE COMPLIMENTARY AND WHAT IS CALLED FOR BY ONE SHALL BE AS BINE IF CALL FOR BY ALL. IF THE DRAWINGS AND SPECIFICATIONS ARE IN CONFLICT, THE MOST COMPREHENSI OF WORK AND BETTER QUALITY MATERIAL AS CALLED FOR IN ONE DOCUMENT SHALL BE USED FOR BIDE PURPOSED. CONFLICT IN THE DRAWINGS AND SPECIFICATIONS SHALL BE SUBMITTED TO THE ARCHITECT-ENGINEER FOR CLARIFICATION. MISUNDERSTANDING OF DRAWINGS AND SPECIFICATIONS S CLARIFIED BY THE ARCHITECT/ENGINEER WHOSE DECISION SHALL BE FINAL.
- 1.c. ALL PORTIONS OF OTHER SECTIONS OF SPECIFICATIONS AND DRAWINGS WHICH CAN BE MADE TO APPL BE CONSIDERED A PART OF THE SPECIFICATIONS. THE ELECTRICAL CONTRACTOR SHALL REVIEW OTHER S OF THE SPECIFICATIONS AND DRAWINGS AND INCLUDE IN HIS BID ALL ELECTRICAL WORK REQUIRED TO COMPLETE ALL WORK.
- 1.d. WHERE THE LETTER "EC" IS USED IN THESE SPECIFICATIONS IT IS RELATIVE TO THE ELECTRICAL CONTRACT
- 1.e. ANY APPARATUS, APPLIANCE, MATERIAL, OR WORK NOT SHOWN ON THE DRAWINGS, BUT MENTIONED SPECIFICATIONS, OR VICE-VERSA, OR ANY INCIDENTAL ACCESSORIES NECESSARY TO MAKE THE WORK CO AND PERFECT ON ALL RESPECTS AND REDO FOR OPERATION EVEN IF NOT PARTICULARLY SPECIFIED, SHA FURNISHED, DELIVERED AND INSTALLED BY THE EC WITHOUT ADDITIONAL EXPENSE TO THE OWNER.
- 1.f. MINOR DETAILS NOT USUALLY SHOWN OR SPECIFIED, BUT NECESSARY FOR PROPER INSTALLATION AND OPERATION, SHALL BE INCLUDED IN THE EC'S ESTIMATE, THE SAME AS IF HEREIN SPECIFIED OR SHOWN.
- 1.g. WITH SUBMISSION OF BID, THE EC SHALL GIVE WRITTEN NOTICE TO THE ARCHITECT OF ANY MATERIALS APPARATUS BELIEVED INADEQUATE OR UNSUITABLE, IN VIOLATION OF LAWS, ORDINANCES, RULES, AND NECESSARY ITEMS OR WORK OMITTED. IN THE ABSENCE OF SUCH WRITTEN NOTICE, IT IS MUTUALLY AGF THE EC HAS INCLUDED THE COST OF ALL REQUIRED ITEMS IN HIS PROPOSAL, AND THAT HE WILL BE RESF FOR THE APPROVED SATISFACTORY FUNCTIONING OF OF THE ENTIRE SYSTEM WITHOUT EXTRA COMPEN
- ELECTRICAL DRAWINGS: THE DRAWINGS CONSTITUTE AN INTEGRAL PART OF THESE SPECIFICATIONS. TH DRAWINGS INDICATE THE GENERAL LAYOUT OF EQUIPMENT AND ALL DIMENSIONS AND CLEARANCES SHOU VERIFIED IN THE FIELD. ALL DISCREPANCIES OF DIMENSIONS TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT-ENGINEER FOR DISPOSITION.
- ELECTRICAL DRAWINGS: THE ARCHITECT/ENGINEER SHALL RESERVE THE RIGHT TO MAKE MINOR ADJUSTMI LOCATIONS OF OUTLETS, SWITCHES, FIXTURES, CONDUIT, ETC., AND EQUIPMENT WHERE HE CONSIDERS SUC ADJUSTMENTS DESIRABLE IN THE INTEREST OF CONCEALING WORK OR PRESENTING A BETTER APPEARANCE EXPOSED. ANY SUCH CHANGES SHALL BE ANTICIPATED AND REQUESTED SUFFICIENTLY IN ADVANCE AS TO I CAUSE EXTRA WORK ON THE PART OF THE CONTRACTOR, OR UNDULY DELAY THE WORK, COORDINATE WOR ADVANCE WITH ALL OTHER TRADES AND REPORT IMMEDIATELY AND ANY DIFFICULTIES WHICH CAN BE ANTI
- ADDENDA: THE DRAWINGS MAY BE SUPERSEDED BY LATER REVISED OR DETAILED DRAWINGS OR SPECIFICA ADDENDA. REFER TO GENERAL CONDITIONS AND INSTRUCTIONS TO BIDDERS.
- SHOP DRAWINGS: BEFORE WORK IS DONE ON ANY ITEM OF EOUIPMENT, SUBMIT SIX (6) COPIES OF EACH C FOLLOWING: SHOP DRAWINGS, CATALOG CUTS, MANUFACTURER'S CATALOG NUMBERS AND FULL AND COI INFORMATION FOR REVIEW. SUBMIT SHOP DRAWINGS CONTAINING OR MARKED WITH IDENTIFICATION AN INFORMATION DESCRIBED BELOW. ANY SHOP DRAWINGS NOT IN COMPLIANCE WITH THESE REOUIREMEN RETURNED, WITHOUT REVIEW, FOR CORRECTION AND RESUBMITTAL. ASSEMBLE AND SUBMIT IN LOGICALLY ARRANGED FOLDERS, ALL INSTRUCTION BULLETINS, LUBRICATION SCHEDULES, OPERATION INSTRUCTIONS, LISTS, PAMPHLETS FOR ELECTRICAL EQUIPMENT AND APPARATUS FURNISHED.
- 5.a. SHOP DRAWING IDENTIFICATION: INCLUDE PROJECT NAME AND ARCHITECT-ENGINEER'S JOB NUMBER, A NAME, NUMBER AND INTENDED USE AS DESIGNATED BY THE CONTRACT DRAWINGS AND SPECIFICATION AS "LIGHTING PANEL "LP-6".
- 5.b. SHOP DRAWING INFORMATION: INCLUDE FOLLOWING DATA: MANUFACTURER'S MODEL NUMBER OR CA NUMBER, SIZE AND PERFORMANCE CURVES AND DATA. INDICATE OPERATING POINT ON CURVES AND TA DATA FOR EACH PIECE OF EQUIPMENT THAT CURVES OR DATA REPRESENT. INDICATION OF ALL PERFORM DATA, CONSTRUCTION MATERIAL FINISHES AND MODIFICATIONS TO MANUFACTURER'S STANDARD DESIC SPECIFIED, ROUGHING-IN, FOUNDATION, AND SUPPORT POINTS DIMENSIONS IF APPLICABLE.
- OPERATING MANUALS AND PARTS LISTS: IN ADDITION TO REQUIREMENTS OF GENERAL CONDITIONS, IN THE FOLLOWING: NAME, ADDRESS, AND TELEPHONE NUMBER OF LOCAL SUPPLIER OR MANUFACTURER'S REPRESENTATIVE FOR EACH PIECE OF EQUIPMENT. ASSEMBLE MANUALS IN SEPARATE BINDER OR BINDERS F SYSTEM. INCLUDE CHARTS OR DIAGRAMS SHOWING ESSENTIAL FEATURES OF THE SYSTEM, AND INCLUDE A DESCRIPTION OF THE SYSTEM. SUBMIT TWO (2) COPIES OF ABOVE BEFORE BINDING IN OPERATING MANUAL ARCHITECT-ENGINEER FOR APPROVAL.
- **RECORD DRAWINGS:** RECEIVE FROM THE ARCHITECT-ENGINEER A COMPLETE SET OF DRAWINGS. NOTE IN RI PENCIL ON THIS SET ANY DEVIATIONS OF INSTALLATION. SUBMIT MARKED SET OF DRAWINGS TO THE ARCHITECT-ENGINEER.
- COORDINATION AND SCHEDULING: ALL PHASES AND SCHEDULING OF WORK TO BE CLOSELY COORDINATED WITH THE OWNER AND AUTHORIZED IN WRITING BY THE OWNER AT LEAST ONE WEEK PRIOR TO THE EXECUTION OF ANY WORK
- SUPERVISION: THE CONTRACTOR SHALL HAVE AN EXPERIENCED SUPERINTENDENT CONSTANTLY ON THE SITE TO SUPERVISE ALL WORK OF ELECTRICAL CONTRACT.
- **10. <u>TEMPORARY ELECTRICAL SERVICE</u>:** TEMPORARY ELECTRIC SERVICE SHALL BE PROVIDED AS REQUIRED.

# SPECIFICATIONS

IDDERS OF RK ARE	11.	AL	TERATIONS AND REHABILITATION OF EXISTING I	NSTALLATIONS:		
PMENT	11	.a.	REMOVE EXISTING ELECTRICAL EQUIPMENT, DEVICE: REQUIRED.	S, OUTLETS, CONDUIT AND WIRING AS INDICATED OR		
	11.b. CAP CONDUIT ENDS, PROVIDE COVERS FOR OPENINGS LEFT IN PANELBOARDS, OUTLETS, AND RACEN PROVIDE A FINISHED FLUSH-APPEARANCE WHERE WORK HAS BEEN REMOVED.					
NDING AS SIVE SCOPE DING	11		WHERE WALLS ARE REMOVED, CUT OFF CONDUITS REMOVED, AS CLOSE TO THE FLOOR AS PRACTICABL	WHICH PROJECT FROM THE FLOOR INTO THE WALL BEING .E.		
SHALL BE	11		TAKE POSSESSION OF WIRING, CONDUIT AND MISC REUSED. PROMPTLY REMOVE THESE MATERIALS FRO ARCHITECT/ENGINEER.	ELLANEOUS ELECTRICAL EQUIPMENT REMOVE AND NOT OM JOB SITE UNLESS OTHERWISE DIRECTED BY THE		
LY SHALL SECTIONS	11		EQUIPMENT, OUTLETS OR RECEPTACLES (TO REMAIN	NG REMOVED BACK TO THE SOURCE OF SUPPLY. IF OTHER N) ARE SUPPLIED BY THE SAME FEEDER OR CIRCUIT, PROVIDE R RECEPTACLES IN SERVICE AND REMOVE UNUSED PORTIONS DX AND TAPE ENDS OF CONDUCTORS.		
TOR. IN THE	11		DISCONNECT AND REMOVE OR RELOCATE ELECTRIC INTERFERENCE EXISTS AT FACILITIES TO BE EXTENDE	AL ITEMS AFFECTED BY DEMOLITION WORK AND WHERE		
OMPLETE ALL BE	11	5		F CONNECTION, DISCONNECTION OR RELOCATION ARE NOT AND WORKMANSHIP COMPATIBLE WITH THE EXISTING IFACTURER AND THE OWNER.		
OR D ANY	11			INSTALLED IN THE EXISTING BUILDING, THE LAYOUT BEING GENERAL CONTRACTOR THROUGHOUT IN THE REMOVAL OF		
REED THAT PONSIBLE ISATION.	12.		ATERIALS: PROVIDE MATERIALS AND EQUIPMENT BE E CUSTOMARY, REQUIRED, OR SPECIFIED.	ARING CERTIFICATION OF UL WHERE SUCH LABELS OR STAMPS		
HE ULD BE	13.	CE		NSES AND PERMITS AND, AT COMPLETION OF WORK, IAVING LOCAL JURISDICTION. PAY ALL CHARGES AND PECTION CERTIFICATES AS DIRECTED.		
MENTS IN CH E WHERE NOT	14.	CC AN CA	ID 120 VOLT RECEPTACLE CIRCUITS. PERFORM CONT	IND. PERFORM OPERATIONAL TESTS ONLY ON ALL LIGHTING INUITY TESTS ON ALL POWER AND CONTROL CIRCUITS. TEST GER BETWEEN EACH PHASE AND GROUND, WITH TEST		
DRK IN TICIPATED.	15.	CC ME	NNECTIONS. TEST RESISTANCE AT VARIOUS POINTS	FOR CONTINUITY AND TIGHT ELECTRICAL AND MECHANICAL USING BIDDLE GROUND OHMER, OR OTHER STANDARD CE IS 5 OHMS. CONNECT SYSTEM GROUND TO WATER METER		
OF THE MPLETE ND TS WILL BE PARTS	16.	INS DA WI HA REI	TE OF FINAL ACCEPTANCE AND LEAVE HIS WORK IN THIN THE GUARANTEE PERIOD, THIS CONTRACTOR S VE ALL DAMAGES TO OTHER WORK OR FURNISHING PAIRED AND/OR REPLACED AT HIS EXPENSE, TO THE	HIS WORKMANSHIP AND MATERIALS INCLUDING: AND CONTROLS FOR A PERIOD OF ONE (1) YEAR FROM THE PERFECT ORDER AT COMPLETION. SHOULD DEFECTS DEVELOP SHALL, UPON NOTICE OF SAME, REMEDY THE DEFECTS AND G CAUSED BY THE DEFECTS OR THE WORK CORRECTING SAME CONDITION BEFORE SUCH DAMAGE. THE DATE OF FINAL OF THE OWNER ON THE FINAL PAYMENT OF THIS CONTRACT.		
AND BY	17.	RA	CEWAY AND FITTINGS: USE ELECTRIC METALLIC TU	BING (EMT) CONDUIT EXCEPT AS OTHERWISE INDICATED.		
N, SUCH	18.	<u>co</u>	NDUIT SIZE: MINIMUM CONDUIT SIZE 1/2 INCH, EX	CEPT WHERE OTHER SIZES ARE SPECIFICALLY INDICATED.		
ATALOG ABULAR MANCE	19.	M	DUNTING HEIGHTS: UNLESS OTHERWISE INDICATE			
SIGN			OUTLET ELEY			
NCLUDE			LIGHTING SWITCHES	4'-0" ABOVE FINISHED FLOOR TO CENTERLINE		
FOR EACH BRIEF L TO THE			RECEPTACLE OUTLETS IN OFFICES AND FINISHED AREAS	2'-0" ABOVE FLOOR TO CENTERLINE. COORDINATE MOUNTED HEIGHTS WITH OWNER PRIOR TO ROUGH-IN.		
			LIGHTING PANELBOARDS	6'-8" FROM TOP OF PANEL TO ABOVE FINISHED FLOOR.		
RED			FIRE ALARM PULL STATION	4'-0" ABOVE FINISHED FLOOR TO CENTERLINE		

FIRE ALARM HORN/STROBE OR STROBE ONLY 6'-8" ABOVE FINISHED FLOOR OR 6" BELOW

FINISHED CEILING TO CENTERLINE.

AS INDICATED ON DRAWINGS

8'-0" ABOVE FINISHED FLOOR TO CENTERLINE

0'-9" BELOW FINISHED CEILING TO CENTERLINE

DEVICES

EMERGENCY LIGHT OUTLETS

BRACKET AND SPECIAL OUTLETS

EXIT LIGHT OUTLETS

- 20. CONDUCTOR TYPES: TYPE THHN 75 DEGREES "C" RATING, FOR LIGHTING, POWER AND CONTROL, NO. 8 AWG AND SMALLER. USE STRANDED WIRE FOR NO. 10 AWG AND LARGER.
- **1. GROUNDING:** GROUND RODS-COPPERWELD STEEL COMPANY. CONNECT-ORS-BURNDY, THOMAS & BETTS OR O.Z. THERMITE WELDING-CADWELD OR THERMOWELD. GROUND THE FOLLOWING: RECEPTACLES, SWITCH BOXES, LUMINARIES AND OTHER ELECTRICAL DEVICES AS REQUIRED BY NEC.
- 22. <u>POWER DISTRIBUTION PANELBOARDS:</u> MANUFACTURERS SHALL BE G.E., SIEMENS/I-T-E, SQUARE D OR CUTLER HAMMER. COMPLETELY FACTORY BUILT AND TESTED, TOTALLY ENCLOSED, DEAD FRONT TYPE PANELBOARDS. NEATLY TYPED DIRECTORY, WITH A CLEAR PLASTIC COVER. IN FRAME INSIDE EACH. PANELBOARD DOOR. FULL-CAPACITY INSULATED SOLID NEUTRAL. SEPARATE GROUND BUS WITH LUGS AS REQUIRED IN ADDITION TO NEUTRAL BUS.
- 23. CIRCUIT BREAKER PANELBAORD: MANUFACTURERS SHALL BE GE, SIEMENS/ITE, SQUARE D OR CUTLER HAMMER. MOLDED CASE CIRCUIT BREAKERS, THERMAL MAGNETIC, QUICK-MAKE, QUICK-BREAK, AMBIENT COMPENSATED OR FACTORY-CALIBRATED FOR PANELBOARD INSTALLATION. HANDLES ARRANGED FOR PADLOCKING IN OFF POSITION. ALL MULTIPOLE BREAKERS TO BE COMMON TRIP. HANDLE TIES WILL NOT BE ACCEPTED. SPACES TO BE COMPLETE WITH BUSES AND HARDWARE READY FOR CIRCUIT BREAKER
- SAFETY AND DISCONNECT SWITCHES: SAFETY AND DISCONNECT SWITCHES SHALL BE AS MANUFACTURED BY GENERAL ELECTRIC, SQUARE D, SIEMENS/ITE OR CUTLER HAMMER. FRONT-OPERATED, TYPE HD, SINGLE THROW, QUICK-MAKE, QUICK-BREAK, HP RATED, VISIBLE BLADE, SWITCHING UNIT. FUSIBLE TYPE TO BE PROVIDED WITH FUSE TERMINALS TO ACCOMMODATE TYPE OF FUSES INDICATED.
- **25. FUSES:** PROVIDE FUSES AS FOLLOWS: FUSES 600 VOLTS AND LOWER. FOR MOTOR CIRCUITS, UL CLASS K-5, DUAL ELEMENT, 200,000 AIC SYMMETRICAL BUSS FRS FUSETRON, 600 VOLT RATING, BUS FRN FUSETRON, 250 VOLT RATING, OR SHAWMUT EQUIVALENT. FOR PANELBOARD SERVICES, UL CLASS RK-5, 200,000AIC SYMMETRICAL. OR BUSS LPN LOW PEAK, 250 VOLT RATING, OR SHAWMUT EQUIVALENT, AS INDICATED ON THE DRAWINGS. FURNISH ONE SET OF SPARE FUSES FOR EACH SIZE REQUIRED.
- WIRING DEVICES: PROVIDE SPECIFICATION GRADE DEVICES AS INDICATED, OR EQUIVALENT, HUBBELL, PASS AND SEYMOUR, OR GENERAL ELECTRIC. SWITCHES TO BE RATED AT 20 AMPERES, 120 TO 277VOLTS, AC, WITH SHALLOW PLASTIC BODY, SCREW OR PRESSURE TERMINALS SUITABLE FOR NO. 12 AND NO. 10 WIRES, UNLESS OTHERWISE NOTED. ALL WALL SWITCHES AND 20 AMPERE CONVENIENCE RECEPTACLES TO HAVE AN IVORY FINISH. VERIFY COLOR OF ALL DEVICES AND COVERPLATES WITH OWNER PRIOR TO ORDERING. ELECTRICAL CONTRACTOR TO VERIFY THE TYPES AND STYLES OF PARTITIONS TO INSURE PROPER DEVICES BEFORE INSTALLATION. WIRE DEVICES AND COVERPLATES TO BE AS FOLLOWS:
- 26.a. WALL SWITCHES: STANDARD TYPE, PASS & SEYMOUR NO. CS20AC1-W, CS20AC3-W, OR CS20AC4-1 OR EQUIVALENT WHITE QUIET FLUSH TYPE TOGGLE SWITCH. VERIFY COLOR WITH OWNER PRIOR TO ORDERING.
- 26.b. RECEPTACLES: 26.b.1. DUPLEX TYPE - PASS & SEYMOUR CR20-W, 20 AMPERES, 125 VOLTS, 3-WIRE, OR EQUIVALENT WHITE GROUNDING TYPE, NEMA CONFIGURATION 5-20R. VERIFY COLOR WITH OWNER PRIOR TO ORDERING.
- 26.b.2. GROUND FAULT INTERRUPTING TYPE PASS & SEYMOUR 2091-W 20 AMPERES, OR EQUIVALENT 125 VOLTS, 3-WIRE, WHITE, GROUND FAULT INTERRUPTING TYPE, NEMA CONFIGURATION 5-20R. VERIFY COLOR WITH OWNER PRIOR TO ORDERING.

26.c. COVERPLATES:

- 26.c.1. ALL COVERPLATES FOR INDOORS AND SIMILAR FINISHED AREA WIRING DEVICES TO BE #302 STAINLESS STEEL WITH BRUSHED SATIN FINISH AND FACE OPENINGS FOR THE INTENDED DEVICE.
- 27. ALL **FIRE ALARM SYSTEM** WORK AND DESIGN, IF REQUIRED, TO BE DONE BY OWNER'S FIRE ALARM SYSTEM CONTRACTOR.
- 18. ALL **TELEPHONE/DATA/CATV SYSTEM** WORK AND DESIGN TO BE DONE BY OWNER'S TECHNOLOGY SYSTEM CONTRACTOR.
- 9. ALL SECURITY, CCTV, & ACCESS CONTROL SYSTEM WORK AND DESIGN TO BE DONE BY OWNER'S SECURITY SYSTEM CONTRACTOR.
- 0. ALLOWANCES: ALLOWANCE FOR \$10,000 TO BE INCLUDED IN BASE BID FOR SERVICE WORK BEYOND THE SCOPE SHOWN. USE ALLOWANCE TO BE AUTHORIZED OWNER IN WRITING. UNUSED PORTION TO REVERT TO OWNER.
- . SCOPE OF WORK: SCOPE OF WORK ONLY INCLUDES THE AREAS AND ITEMS OF WORK AS SHOWN. IT SPECIFICALLY EXCLUDES ANY CODE VIOLATIONS OUTSIDE THE SCOPE OF WORK. ELECTRICAL CONTRACTOR SHALL BRING ANY CODE VIOLATIONS OR SERIOUS HAZARDOUS CONDITIONS, WHICH ARE FOUND, TO THE ATTENTION OF THE OWNER & ENGINEER SO THAT CORRECTIVE ACTION CAN BE TAKEN



# GENERAL NOTES:

MATERIALS STRUCTURAL STEEL PLATE HOT ROLLED MILLS SHAPES HSS ROUND **HSS RECTANGULAR COLD FORM SHAPES ROOF AND WALL SHEETING** BOLTS CABLE RODS

**ASTM DESCRIPTION** AS529 / A572 / A1011 A36 / A529 / A572 / A500 A500 A500 A653 / A1011 A653 / A792 A307 / A325 / A490 A475 A529 / A572

2. STRUCTURAL PRIMER NOTE:

SHOP COAT PRIMER IS INTENDED TO PROTECT THE STEEL FRAMING FOR A SHORT PERIOD OF TIME. STORAGE IN EXTREME COLD TEMPERATURES OR WINTER SNOW CONDITIONS, INCLUDING TRANSPORTATION ON SALTED OR CHEMICALLY TREATED ROADS WILL ADVERSELY AFFECT THE DURABILITY AND LONGEVITY OF THE PRIMER. THE COAT OF SHOP PRIMER DOES NOT PROVIDE THE UNIFORMITY OF APPEARANCE, OR THE DURABILITY AND CORROSION RESISTANCE OF A FIELD APPLIED FINISH COAT OF PAINT OVER A SHOP PRIMER. MINOR ABRASIONS TO THE SHOP COAT PRIMER CAUSED BY HANDLING, LOADING, SHIPPING, UNLOADING AND ERECTION ARE UNAVOIDABLE AND ARE NOT THE RESPONSIBILITY OF THE METAL BUILDING MANUFACTURER METAL BUILDING MANUFACTURER IS NOT RESPONSIBLE FOR THE DETERIORATION OF THE PRIMER OR CORROSION THAT MAY RESULT FROM ATMOSPHERIC AND ENVIRONMENTAL CONDITIONS NOR THE COMPATIBILITY OF THE PRIMER TO ANY FIELD APPLIED COATING.

# 3. BUILDING ERECTION NOTES

THE GENERAL CONTRACTOR AND/OR ERECTOR IS RESPONSIBLE TO SAFELY AND PROPERLY ERECT THE METAL BUILDING SYSTEM IN CONFORMANCE WITH THESE DRAWINGS. OSHA REQUIREMENTS. AND EITHER MBMA OR CSA S16 STANDARDS PERTAINING TO PROPER ERECTION. TEMPORARY SUPPORTS SUCH AS GUYS, BRACES, FALSEWORK, CRIBBING, OR OTHER ELEMENTS FOR ERECTION ARE TO BE DETERMINED, FURNISHED, AND INSTALLED BY THE ERECTOR. THESE SUPPORTS MUST SECURE THE STEEL FRAMING, OR PARTLY ASSEMBLED STEEL FRAMING, AGAINST LOADS COMPARABLE IN INTENSITY TO THOSE FOR WHICH THE STRUCTURE WAS DESIGNED IN ADDITION TO LOADS RESULTING FROM THE ERECTION OPERATION. SECONDARY WALL AND ROOF FRAMING (GIRTS, PURLINS, AND/OR JOISTS) ARE NOT DESIGNED TO FUNCTION AS A WORKING PLATFORM OR TO PROVIDE AS AN ANCHORAGE POINT FOR A FALL ARREST / SAFETY TIE OFF.

# 4. SPECIAL INSPECTION:

SPECIAL INSPECTIONS AND TESTING THAT MAY BE REQUIRED BY GOVERNMENTAL OR OTHER AUTHORITY DURING CONSTRUCTION AND/OR STEEL FABRICATION (COLLECTIVELY, "INSPECTIONS") ARE NOT THE RESPONSIBILITY OF NBG, AND TO THE EXTENT REQUIRED IT SHALL BE THE RESPONSIBILITY OF THE BUILDER AND/OR OWNER. IN THE EVENT INSPECTIONS ARE REQUIRED, THE BUILDER AND/OR OWNER SHALL EMPLOY A THIRD PARTY QUALITY ASSURANCE TESTING AGENCY APPROVED BY THE RELEVANT AUTHORITY. IF SUCH REQUIREMENTS ARE NOT SPECIFICALLY INCLUDED IN NBG SALES DOCUMENTS, NO INSPECTIONS BY NBG OR AT ANY NBG FACILITY SHALL BE MADE. ALL NBG FACILITIES ARE ACCREDITED BY IAS AC472.

# 5. A325 & A490 BOLT TIGHTENING REQUIREMENTS:

IT IS THE RESPONSIBILITY OF THE ERECTOR TO ENSURE PROPER BOLT TIGHTNESS IN ACCORDANCE WITH APPLICABLE REGULATIONS. FOR PROJECTS IN THE UNITED STATES SEE THE RCSC SPECIFICATION FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS OR FOR PROJECTS IN CANADA, SEE THE CAN/CSA S16 LIMIT STATES DESIGN OF STEEL STRUCTURES FOR MORE INFORMATION.

THE FOLLOWING CRITERIA MAY BE USED TO DETERMINE THE BOLT TIGHTNESS (I.E., "SNUG-TIGHT" OR "FULLY-PRETENSIONED"), UNLESS REQUIRED OTHERWISE BY LOCAL JURISDICTION OR CONTRACT REQUIREMENTS:

A) ALL A490 BOLTS SHALL BE "FULLY-PRETENSIONED" B) ALL A325 BOLTS IN PRIMARY FRAMING (RIGID FRAMES AND BRACING) MAY BE "SNUG-TIGHT", EXCEPT AS FOLLOWS: "FULLY-PRETENSION" A325 BOLTS IF:

- a) BUILDING SUPPORTS A CRANE SYSTEM WITH A CAPACITY GREATER THAN 5 TONS. b) BUILDING SUPPORTS MACHINERY THAT CREATES VIBRATION, IMPACT OR STRESS-REVERSALS ON THE CONNECTIONS. THE ENGINEER-OF-RECORD FOR
- THE PROJECT SHOULD BE CONSULTED TO EVALUATE FOR THIS CONDITION. c) THE PROJECT SITE IS LOCATED IN A HIGH SEISMIC AREA. FOR IBC-BASED CODES. "HIGH SEISMIC AREA" IS DEFINED AS "SEISMIC DESIGN CATEGORY" OF "D", "E", OR "F". SEE THE "BUILDING LOADS" SECTION OF THIS PAGE FOR THE DEFINED SEISMIC DESIGN CATEGORY FOR THIS PROJECT.
- d) ANY CONNECTION DESIGNATED IN THESE DRAWINGS AS "A325-SC" OR "SLIP-CRITICAL (SC) CONNECTIONS MUST BE FREE OF PAINT. OIL. OR OTHER MATERIALS THAT REDUCE FRICTION AT CONTACT SURFACES. GALVANIZED OR LIGHTLY RUSTED SURFACES ARE ACCEPTABLE.

C) IN CANADA, ALL A325 AND A490 BOLTS SHALL BE "FULLY PRE-TENSIONED", EXCEPT FOR SECONDARY MEMBERS (PURLINS, GIRTS, OPENING FRAMING, ETC.) AND FLANGE BRACES

SECONDARY MEMBER (PURLIN, GIRT, OPENING FRAMING, ETC.) AND FLANGE BRACE CONNECTIONS MAY ALWAYS BE "SNUG-TIGHT". UNLESS INDICATED OTHERWISE IN THESE DRAWINGS.

# 6. GENERAL DESIGN NOTES:

- 1) ALL STRUCTURAL STEEL SECTIONS AND WELDED PLATE MEMBERS ARE DESIGNED IN ACCORDANCE WITH ANSI/AISC 360 "SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS" OR THE CAN/CSA S16 "LIMIT STATES DESIGN OF STEEL STRUCTURES", AS REQUIRED BY THE SPECIFIED BUILDING CODE.
- 2) ALL WELDING OF STRUCTURAL STEEL IS BASED ON EITHER AWS D1.1 "STRUCTURAL WELDING CODE – STEEL" OR CAN/CSA W59 "WELDED STEEL CONSTRUCTION (METAL ARC WELDING)", AS REQUIRED BY THE SPECIFIED BUILDING CODE.
- 3) ALL COLD FORMED MEMBERS ARE DESIGNED IN ACCORDANCE WITH ANSI/AISI 100 OR THE CAN/CSA S136 "SPECIFICATIONS FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS". AS REQUIRED BY THE SPECIFIED BUILDING CODE.
- 4) ALL WELDING OF COLD FORMED STEEL IS BASED ON AWS D1.3 "STRUCTURAL WELDING CODE -SHEET STEEL" OR CAN/CSA W59 "WELDED STEEL CONSTRUCTION (METAL ARC WELDING)", AS REQUIRED BY THE SPECIFIED BUILDING CODE.
- THIS MANUFACTURING FACILITY IS IAS AC-472 ACCREDITED AND CAN/CSA A660 AND W47.1
- CERTIFIED (IF APPLICABLE) FOR THE DESIGN AND MANUFACTURING OF METAL BUILDING SYSTEMS. 6) IF JOISTS ARE INCLUDED WITH THIS PROJECT, THEY ARE SUPPLIED AS A PART OF THE SYSTEMS ENGINEERED METAL BUILDING AND ARE FABRICATED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 1926.758 OF OSHA SAFETY STANDARDS FOR STEEL ERECTION DATED JANUARY 18, 2001.

THE DRAWINGS AND THE METAL BUILDING THEY REPRESENT ARE THE PRODUCT OF THE METAL BUILDING MANUFACTURER. THE REGISTERED PROFESSIONAL ENGINEER'S SEAL PERTAINS ONLY TO THE REQUIREMENTS LISTED HEREIN FOR THE MATERIALS DESIGNED AND SUPPLIED BY THE METAL BUILDING MANUFACTURER. THE REGISTERED PROFESSIONAL ENGINEER WHOSE SEAL APPEARS ON THESE DRAWINGS IS EMPLOYED OR ENGAGED BY THE METAL BUILDING MANUFACTURER AND DOES NOT SERVE AS OR REPRESENT THE PROJECT ENGINEER OF RECORD AND SHALL NOT BE CONSTRUED AS SUCH.

- 7. GLOSSARY OF ABBREVIATIONS:
- A.B. = ANCHOR RODS B.U. = BUILT-UP
- **BS = BOTH SIDES**
- DIA = DIAMETER
- F.S. = FAR SIDE FLG = FLANGE
- GA. = GAUGE H.S.B. = HIGH STRENGTH BOLTS
- HT. = HEIGHT
- LLV = LONG LEG VERTICAL

M.B. = MACHINE BOLTS MAX = MAXIMUMMBS = METAL BUILDING SUPPLIER MIN = MINIMUMN.S. = NEAR SIDE N/A = NOT APPLICABLE NIC = NOT IN CONTRACT O.A.L. = OVERALL LENGTH O.C. = ON CENTER

PL = PLATEREQ'D = REQUIREDREV. = REVISION SIM = SIMILARSL = STEEL LINE SLV = SHORT LEG VERTICAL TBD = TO BE DETERMINED TYP = TYPICALU.N.O. = UNLESS NOTED OTHERWISE

?? = PART MARK TO BE DETERMINED AND WILL BE UPDATED ON CONSTRUCTION DRAWINGS

# **KIRBY BUILDING SYSTEMS** 124 KIRBY DRIVE PORTLAND, TN 37148 PHONE: 615-325-4165

# PROJECT BUILDING LOADS

CERTIFICATION EXTENDS ONLY FOR THE LOADS SPECIFIED ON KIRBY'S PURCHASE ORDER TO THE STRUCTURAL COMPONENTS OF THE BUILDING DESIGNED AND SUPPLIED BY KIRBY BUILDING SYSTEMS, IF ERECTED AS INDICATED. KIRBY'S CUSTOMER IS TO CONFIRM THAT THESE LOADS COMPLY WITH THE REQUIREMENTS OF THE LOCAL BUILDING DEPARTMENT. NOTE THAT KIRBY'S ENGINEER IS NOT ACTING AS THE ENGINEER OF RECORD FOR THIS CONSTRUCTION PROJECT. DESIGN LOADS HAVE BEEN APPLIED IN ACCORDANCE WITH THE FOLLOWING.

DESIGN CODE: OHIO 2017 (IBC 2015)						
ROOF LIVE LOAD: 20.00 psf REDUCIBLE PER CODE	RISK CATEGORY: II - STANDARD BUILDINGS					
GROUND SNOW LOAD: 20.00 psf SNOW IMPORTANCE FACTOR, Is: 1.00	SNOW EXP. FACTOR, Ce: 1.00					
ULTIMATE DESIGN WIND SPEED: 115 NOMINAL DESIGN WIND SPEED: 89 WIND EXPOSURE: C	mph (Vult) mph (Vasd)					
DESIGN SUCTION / PRESSURE FOR WALL COMPO AND CLADDING NOT DESIGNED OR PROVIDED BY						
UL-90 : NO						
SEISMIC INFORMATION: Ss: 0.130	S1: 0.060					
DESIGN (Sds / Sd1): 0.139/0.096	SITE CLASS: D					
SEISMIC IMP. FACTOR, le: 1.00	SEISMIC DESIGN CATEGORY: B					
ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE BASIC SFRS: NOT DETAILED FOR SEISMIC						

STATE: OHIO COUNTY: MARION

# NOTES:

1) COLLATERAL DEAD LOADS, UNLESS OTHERWISE NOTED, ARE ASSUMED TO BE UNIFORMLY DISTRIBUTED. WHEN SUSPENDED SPRINKLER SYSTEMS, LIGHTING, HVAC EQUIPMENT, CEILINGS, ETC., ARE SUSPENDED FROM ROOF MEMBERS, CONSULT THE M.B.S. IF THESE CONCENTRATED LOADS EXCEED 500 POUNDS (USING THE WEB MOUNT DETAIL), OR 200 POUNDS (USING THE FLANGE MOUNT DETAIL), OR IF INDIVIDUAL MEMBERS ARE LOADED SIGNIFICANTLY MORE THAN OTHERS.

2) THE DESIGN OF STRUCTURAL MEMBERS SUPPORTING GRAVITY LOADS IS CONTROLLED BY THE MORE CRITICAL EFFECT OF ROOF LIVE LOAD OR ROOF SNOW LOAD, AS DETERMINED BY THE APPLICABLE CODE.

3) ALL WELDING MUST BE PERFORMED BY AWS QUALIFIED WELDERS FOR THE WELDING PROCESSES AND POSITIONS TO BE USED. ALL WELDING AND WELD PREP MUST BE COMPLETED AND VISUALLY INSPECTED TO AWS ACCEPTANCE CRITERIA (TABLE 6.1) IN ACCORDANCE WITH THE APPLICABLE AWS STANDARD. WELD ELECTRODES USED FOR ALL FIELD WELD PROCESSES MUST BE SELECTED FROM TABLE 3.1 IN AWS D1.1 FOR GROUP II MATERIAL GREATER THAN OR EQUAL TO 0.125" THICK OR TABLE 1.2 IN AWS D1.3 FOR MATERIAL LESS THAN 0.125" THICK AND ALL FILLER MATERIAL MUST HAVE A Fu OF 70 KSI.

4) ALL EXTERIOR COMPONENTS (WINDOWS, DOORS, ETC) MUST MEET WIND LOADING REQUIREMENTS FOR THE BUILDING CODE LISTED ABOVE OR MUST BE ADEQUATELY PROTECTED DURING A HIGH WIND EVENT. ALL GLAZING AND OTHER APPLICABLE OPENINGS IN WINDBORNE DEBRIS REGIONS MUST BE IMPACT-RESISTANT OR PROTECTED WITH AN IMPACT-RESISTANT COVERING. IMPACT RESISTANT MATERIALS MUST MEET THE LARGE AND/OR SMALL MISSILE TEST OF ASTM E 1996 AND ASTM E 1886.

# BUILDING SPECIFIC LOADING INFORMATION

\* DEAD LOAD: NORMAL WEIGHT OF METAL BUILDING COMPONENTS. NOT INCLUDING PRIMARY FRAMING. AS SUPPLIED BY THE MANUFACTURER

\*\* Pm IS BASED ON THE MINIMUM ROOF SNOW LOAD CALCULATED PER BUILDING CODE OR THE CONTRACT-SPECIFIED ROOF SNOW LOAD, WHICHEVER IS GREATER. THIS VALUE, Pm, IS ONLY APPLIED IN COMBINATION WITH DEAD AND COLLATERAL LOADS. ROOF SNOW IN OTHER LOADING CONDITIONS IS DETERMINED PER THE SPECIFIED BUILDING CODE.

	ROOF DEAD	COLLATERAL DEAD		SNOW CO	EFFICIENT	SNOV	V LOAD	WIND			SEISMIC	
BLDG.	(psf)*	Pri (psf)	Sec (psf)	Ct	Cs	Ps (psf)	**Pm (psf)	Enclosure	GCpi	R	Cs	V (kips)
Α	3.00	5.00	5.00	1.00	1.00	14.00	20.00	Enclosed	+/-0.18	3.00	0.046	14.27
В	3.50	5.00	5.00	1.00	1.00	14.00	20.00	Enclosed	+/-0.18	3.00	0.046	5.84

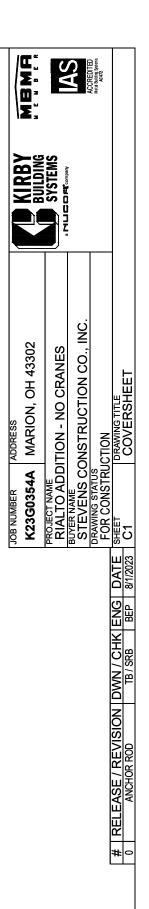
# **ENGINEER NOTES:**

FOR OCCUPANCY (RISK) CATEGORY I OR II, IBC PROVISIONS INDICATE THAT SINGLE-STORY BUILDINGS SHALL HAVE "NO DRIFT LIMIT" PROVIDED THAT INTERIOR WALLS, PARTITIONS, CEILINGS, AND EXTERIOR WALL SYSTEMS HAVE BEEN DESIGNED TO ACCOMMODATE THE SEISMIC STORY DRIFTS. INTERIOR WALLS, PARTITIONS, CEILINGS, OR EXTERIOR WALL SYSTEMS NOT PROVIDED BY THE METAL BUILDING MANUFACTURER SHALL BE DESIGNED AND DETAILED BY OTHERS TO ACCOMMODATE THE SEISMIC STORY DRIFTS. SEISMIC DRIFT VALUES MAY BE OBTAINED FROM THE METAL BUILDING MANUFACTURER.

FRAMED OPENINGS HAVE BEEN DESIGNED TO SUPPORT WIND LOAD NORMAL TO THE WALL BASED ON THE STANDARD BUILDING CODE CRITERIA. FRAMED OPENINGS HAVE NOT BEEN DESIGNED FOR ANY ADDITIONAL MOMENT OR CATENARY FORCES FROM THE DOOR. ANY CHANGE TO THE INFORMATION SHOWN HERE WILL REQUIRE AN ENGINEERING INVESTIGATION AND POSSIBLE BUILDING REINFORCEMENT.

CONTENTS	5
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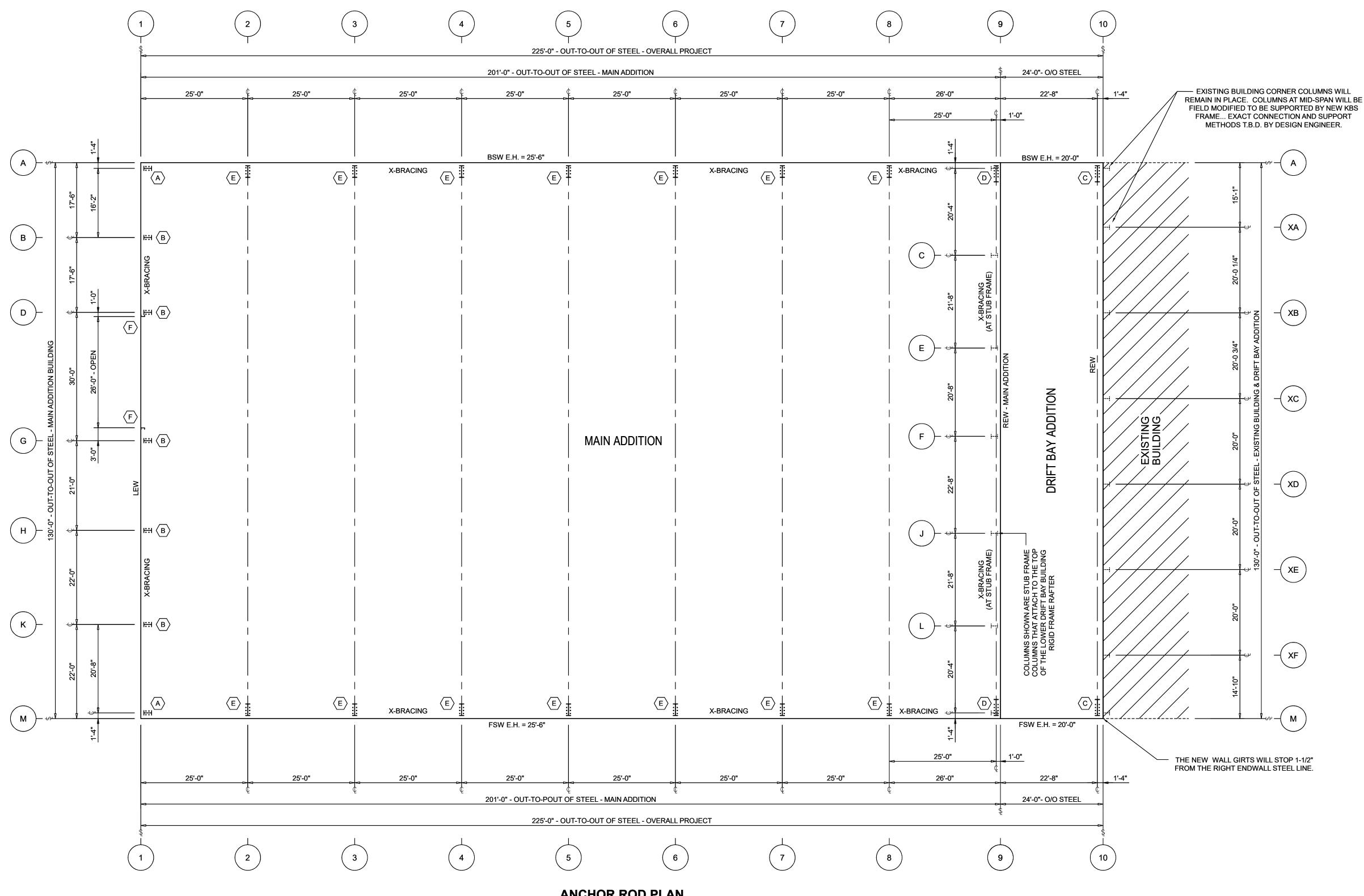
SHEET NUMBER	DESCRIPTION
C1	COVER SHEET(S)
F1	ANCHOR ROD PLAN



B - DRIFT	BAY ADDITION	N								
PRIMER										
WALL SEC	AL FRAMING:		RAY PRIMER							
ROOF SEC			RAY PRIMER							
		01-0								
ROOF PANE	LS_									
TYPE:	24 Ga. STAN	IDING SEA	M 360 (SS3)							
	HIGH SYSTI	EM w/ THEF	RMAL SPACERS							
COLOR:	GALVALUME	E PLUS (GN	/)							
WALL PANE	LS									
TYPE:	 26 Ga. REVE	ERSE R-PA	NEL							
COLOR:	PEARL GRA	Y, PVDF (P	G)							
SOFFIT PAN	FIS									
TYPE:	N/A									
COLOR:	N/A N/A									
OOLON.										
LINER PANE	LS									
TYPE:	26 Ga. R-PA	NEL								
COLOR:	POLAR WHI	TE, SP (PW	/)							
TRIM COLORS										
ROOF	LINE TRIM: _	SLATE GRA	Y, PVDF (SG)							
DOW	NSPOUTS: _	SLATE GRA	Y, PVDF (SG)							
WALL COF	NER TRIM: _	SLATE GRA	Y, PVDF (SG)							
E	BASE TRIM: _	SLATE GRA	Y, PVDF (SG)							
FRAMED OPE		SLATE GRA	Y, PVDF (SG)							
			YPES OR COLORS VATION DRAWINGS.							
THE BUILDING CODE REQUIRE SURCHARGES FOR ANY LOWE			-							
OF A HIGHER STRUCTURE. IN			-							
BUILDING MANUFACTURER INI										
CONSIDERED IN THE METAL B	UILDING DESI	GN AS SHO	JVVN BELOVV.							
Π										
	Ge load (D)									
	.,									
	~ FI ΔT.	ROOF SNOW								
DRIFT WIDTH (Wd)										
THE CONDITIONS AT THE FOLI DRIFT SURCHARGE LOADS:	-OWING LOCA	ATIONS PR	ODUCE							
1. LOCATION: MAIN BLDG ONTO D(psf	): 72.96 Pf(p:	sf): 14.00	Wd(ft): 17.58							
DRIFT BAY ONTO			. ,							
Z. LOUATION: EXISTING BLDG D(PST	): <u>19.20</u> Pf(p:	51). 14.00	Wd(ft): <u>9.25</u>							

**BUILDING NAME DESIGNATION** 

A - MAIN ADDITION



ANCHOR ROD PLAN GENERAL NOTES: AN1: THE SPECIFIED ANCHOR ROD DIAMETER ASSUMES F1554 GRADE 36 UNLESS NOTED OTHERWISE. ANCHOR ROD MATERIAL OF EQUAL DIAMETER MEETING OR EXCEEDING THE STRENGTH REQUIREMENTS SET FORTH ON THESE DRAWINGS MAY BE UTILIZED AT THE DISCRETION OF THE FOUNDATION DESIGN ENGINEER. ANCHOR ROD EMBEDMENT LENGTH SHALL BE DETERMINED BY THE FOUNDATION DESIGN ENGINEER.

AN4: THE ANCHOR ROD LOCATIONS PROVIDED BY THE METAL BUILDING MANUFACTURER SATISFY PERTINENT REQUIREMENTS FOR THE DESIGN OF THE MATERIALS SUPPLIED BY THE METAL BUILDING MANUFACTURER. IT IS THE RESPONSIBILITY OF THE FOUNDATION ENGINEER TO MAKE CERTAIN THAT SUFFICIENT EDGE DISTANCE IS PROVIDED FOR ALL ANCHOR RODS IN THE DETAILS OF THE FOUNDATION DESIGN. AN5: DRAWINGS ARE NOT TO SCALE. SEE DETAILS FOR COLUMN ORIENTATION.

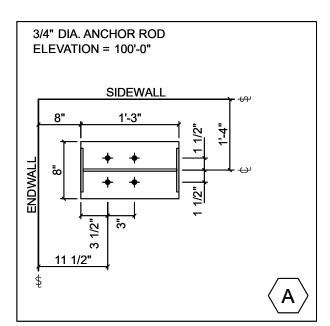
AN2: METAL BUILDING MANUFACTURER IS NOT RESPONSIBLE FOR PROJECT FOUNDATION DESIGN. THE FOUNDATION DESIGN IS THE RESPONSIBILITY OF A REGISTERED PROFESSIONAL ENGINEER, FAMILIAR WITH LOCAL SITE CONDITIONS. AN3: ANCHOR RODS, NUTS, FLAT WASHERS FOR ANCHOR RODS, EXPANSION BOLTS, AND CONCRETE/MASONRY EMBEDMENT PLATES ARE NOT BY THE METAL BUILDING MANUFACTURER.

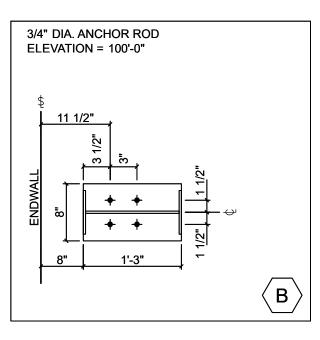
AN6: THE ANCHOR ROD PLAN INDICATES WHERE THE ANCHOR RODS ARE TO BE PLACED AS WELL AS THE FOOTPRINT OF THE METAL BUILDING. IT IS ESSENTIAL THAT THESE ANCHOR ROD PATTERNS BE FOLLOWED. IF THESE SETTINGS DIFFER FROM THE ARCHITECTURAL FOUNDATION PLANS, THE METAL BUILDING MANUFACTURER MUST BE CONTACTED IMMEDIATELY – BEFORE CONCRETE IS PLACED.

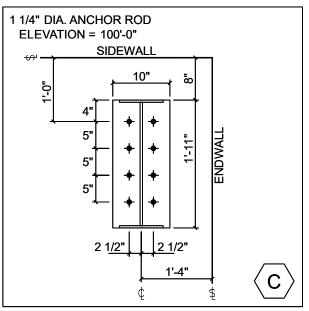
ANCHOR ROD PLAN NOTE: ALL BASE PLATES @ 100'-0" (U.N.) FINISHED FLOOR @ 100'-0"

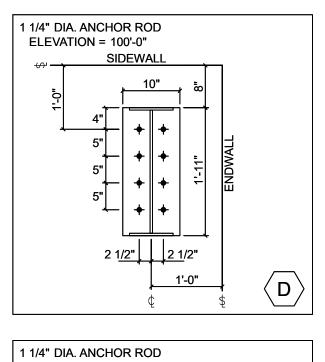
	ANCHOR RODS					
BASE PLATE				PROJECTION		
ANCHOR ROD SHAPE	QTY.	DIA.	MATERIAL	(*P)		
	28	3/4"	F1554 GR 36	3"		
		1"	F1554 GR 36	3"		
FOUNDATION	116	1-1/4"	F1554 GR 36	3-1/2"		
ENGINEER.		1-1/2"	F1554 GR 36	3-1/2"		
	BASE PLATE ANCHOR ROD SHAPE AND EMBEDMENT LENGTH "D" IS TO BE DETERMINED BY THE FOUNDATION	BASE PLATE     QTY.       ANCHOR ROD SHAPE     QTY.       AND EMBEDMENT     28       LENGTH "D" IS TO BE     DETERMINED BY THE       FOUNDATION     116	BASE PLATE     QTY.     DIA.       ANCHOR ROD SHAPE     QTY.     DIA.       AND EMBEDMENT     28     3/4"       LENGTH "D" IS TO BE     1"       DETERMINED BY THE     116     1-1/4"	BOTTOM OFBASE PLATEQTY.DIA.MATERIALANCHOR ROD SHAPE AND EMBEDMENT LENGTH "D" IS TO BE DETERMINED BY THE FOUNDATIONQTY.DIA.MATERIAL1161-1/4"F1554 GR 361161-1/4"F1554 GR 36		

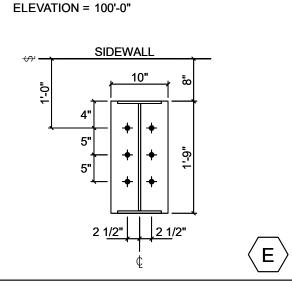
FINAL BASE PLATE LENGTHS MAY DIFFER +/- 2" FROM LENGTH SHOWN ON DETAILS. ANCHOR ROD LOCATIONS WILL REMAIN CONSISTENT U.N.O. 

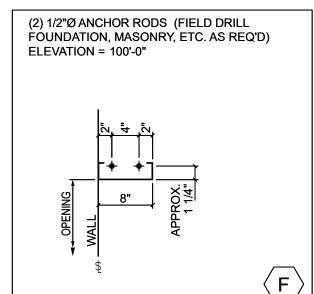


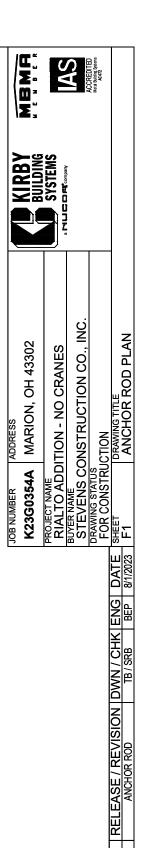












DESIGN ENGINEER: DATE:

Page: R1 of **9** Date: 7/30/2023

# **GENERAL INFORMATION FOR COLUMN BASE PLATE REACTIONS**

○ FOR REVIEW

• FOR CONSTRUCTION

Project Name: RiAlto Addition - No Cranes

Project Number: K23G0354A

Customer: STEVENS CONSTRUCTION CO INC

Design Engineer: Phelps, Brice (KBS) Checked: JDJ 8/2/2023

Column base reactions are included in this packet for a building designed by the metal building manufacturer. These reactions result from frame analysis done by a qualified Engineer for this specific job. They reflect all loading to which the building may be subject, per the appropriate building code and loading information provided to the metal building manufacturer at the date of design. Reaction packets marked "FOR REVIEW" are subject to change and are usually provided at the request of the customer, although the Engineer believes he/she is working with undefined, incomplete or assumed information.

Reactions are provided by load case in order to aid the foundation engineer in determining the appropriate load factors and combinations to be used with either Working Stress or Ultimate Strength design methods. Wind load cases are given for each primary wind direction.

For ASCE7-10 based building codes, the unfactored load case reactions due to wind are generated using the ultimate design wind speed (Vult).

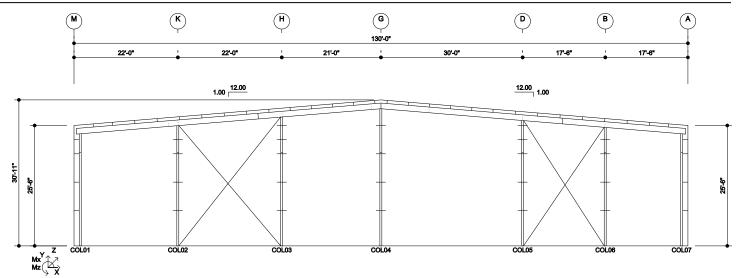
Anchor bolt diameter, grade, location and projection is provided on the Anchor Bolt Plan. Anchor bolt embedment lengths and types are not provided by the metal building manufacturer. This information is closely related to the complete foundation design which should be done by a Registered Professional Engineer familiar with the local site conditions and construction practices.





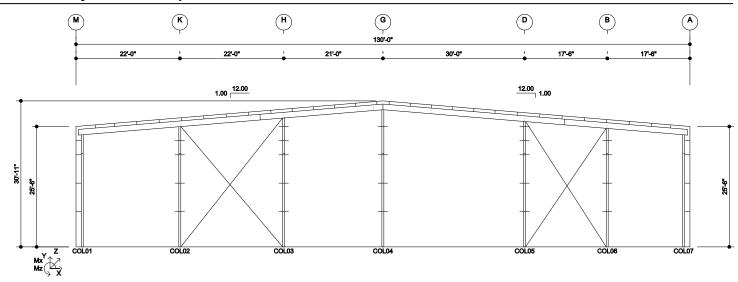


Job #	: K23G0354A	Job Name	: RiAlto Addition - No Cranes	Frame : FL 1
File	: E11-0.nfr	Designer	: BEP	
App Version	: 1.7.91.0	Date	: 7/28/2023	



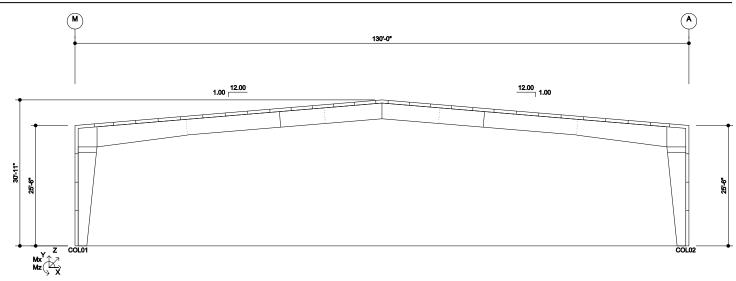
Member	X (kips)	Y (kips)	Z (kips)	Mx (kip-ft)	Mz (kip-ft)	Ι	Member		X (kips)	Y (kips)	Z (kips)	Mx (kip-ft)	Mz (kip-ft)
LOAD CASE 1 - DEAD						 I		2 - COLLATERAL					
COL01	0	1	0	0	0		COL01		0	1	0	0	0
COL02	0	2	0	0	0	1	COL01 COL02		0	2	0	0	0
COL02	0	2	0	0	0		COL02 COL03		0	2	0	0	0
COL04	0	2	0	0	0 0		COL03		Õ	2	0	0	0
COL05	0 0	3	0	0	0 0		COL05		Ő	3	0	0	0
COL06	0	2	0	0	0		COL06		0	1	0	0	0
COL07	0	1	0	0	0	ļ	COL07		0	1	0	0	0
LOAD CASE 3 - ROOF LIVE						 	LOAD CASE	4 - SNOW					
COL01	0	3	0	0	0	i	COL01		0	2	0	0	0
COL02	0	7	0	0	0	i	COL02		0	5	0	0	0
COL03	0	7	0	0	0	i	COL03		0	5	0	0	0
COL04	0	6	0	0	0	i	COL04		0	4	0	0	0
COL05	0	9	0	0	0	Í	COL05		0	6	0	0	0
COL06	0	4	0	0	0	Í	COL06		0	3	0	0	0
COL07	0	3	0	0	0	I	COL07		0	2	0	0	0
LOAD CASE 5 - MINIMUM R	OOF SNO	w					LOAD CASE	6 - WIND CASE 1	TO RIGH	 IT			
COL01	0	3	0	0	0		COL01		0	-3	0	0	0
COL02	0	7	0	0	0		COL02		-3	-11	0	0	0
COL03	0	7	0	0	0		COL03		0	-6	0	0	0
COL04	0	6	0	0	0		COL04		0	-5	0	0	0
COL05	0	9	0	0	0		COL05		-3	-7	0	0	0
COL06	0	4	0	0	0		COL06		0	2	0	0	0
COL07	0	3	0	0	0		COL07		0	-2	0	0	0
LOAD CASE 7 - WIND CASE	1 TO LEFT						LOAD CASE	8 - WIND CASE 2	TO RIGH	IT			
COL01	0	-2	0	0	0	Í	COL01		0	-5	0	0	0
COL02	0	-1	0	0	0	Í	COL02		-3	-14	0	0	0
COL03	3	-6	0	0	0	ĺ	COL03		0	-9	0	0	0
COL04	0	-6	0	0	0		COL04		0	-7	0	0	0
COL05	0	-8	0	0	0		COL05		-3	-11	0	0	0
COL06	2	-8	0	0	0	Ì	COL06		0	-1	0	0	0
COL07	0	-3	0	0	0		COL07		0	-3	0	0	0

Job #	: K23G0354A	Job Name	: RiAlto Addition - No Cranes	Frame : FL 1
File	: E11-0.nfr	Designer	: BEP	
App Version	: 1.7.91.0	Date	: 7/28/2023	



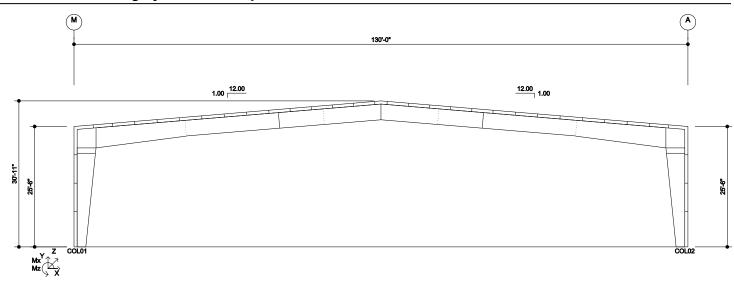
	х	Y	Z	Mx	Mz			Х	Y	Z	Mx	Mz
Member	(kips)	(kips)	(kips)	(kip-ft)	(kip-ft)		Member	(kips)	(kips)	(kips)	(kip-ft)	(kip-ft)
LOAD CASE 9 - WIND CASE	2 TO LEFT						LOAD CASE 10 - LON	G. WIND 1 TO BAG	СК			
COL01	0	-3	0	0	0	1	COL01	0	-5	-3	0	0
COL02	0	-4	0	0	0	1	COL02	0	-12	-5	0	0
COL03	3	-10	0	0	0	1	COL03	0	-12	-5	0	0
COL04	0	-8	0	0	0		COL04	0	-10	-7	0	0
COL05	0	-12	0	0	0	1	COL05	0	-15	-6	0	0
COL06	2	-10	0	0	0		COL06	0	-7	-4	0	0
COL07	0	-4	0	0	0	Ι	COL07	0	-5	-2	0	0
LOAD CASE 11 - LONG. WINI	D 1 TO FRO	ONT				 	LOAD CASE 12 - SEIS	MIC TO RIGHT				
COL01	0	-5	3	0	0	İ	COL01	0	0	0	0	0
COL02	0	-12	5	0	0	Ì	COL02	-1	-1	0	0	0
COL03	0	-12	6	0	0	İ	COL03	0	1	0	0	0
COL04	0	-10	8	0	0	İ	COL04	0	0	0	0	0
COL05	0	-15	6	0	0	İ	COL05	-1	-1	0	0	0
COL06	0	-7	4	0	0	İ	COL06	0	1	0	0	0
COL07	0	-5	3	0	0	Ì	COL07	0	0	0	0	0
LOAD CASE 13 - SEISMIC TO	LEFT					 	LOAD CASE 14 - ALTE	RNATE SNOW 1				
COL01	0	0	0	0	0	İ	COL01	0	2	0	0	0
COL02	0	1	0	0	0	İ	COL02	0	5	0	0	0
COL03	1	-1	0	0	0	Ì	COL03	0	8	0	0	0
COL04	0	-1	0	0	0	Ì	COL04	0	4	0	0	0
COL05	0	1	0	0	0	Í	COL05	0	2	0	0	0
COL06	1	-1	0	0	0	1	COL06	0	1	0	0	0
COL07	0	0	0	0	0	Ì	COL07	0	1	0	0	0
LOAD CASE 15 - ALTERNATE	SNOW 2					 						
COL01	0	1	0	0	0	İ						
COL02	0	2	0	0	0	i						
COL03	0	2	0	0	0	İ						
COL04	0	5	0	0	0	İ						
COL05	0	9	0	0	0	İ						
COL06	0	2	0	0	0	İ						
COL07	0	2	0	0	0	İ						

Job #	: K23G0354A	Job Name	: RiAlto Addition - No Cranes	Frame	: FL 2,5
File	: F11-0.nfr	Designer	: BEP		
App Versior	n : 1.7.91.0	Date	: 7/28/2023		



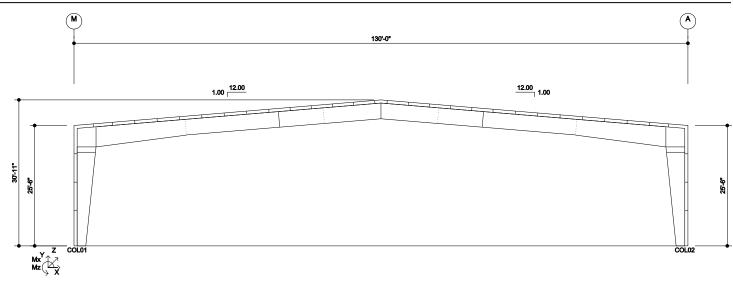
Member	X (kips)	Y (kips)	Z (kips)	Mx (kip-ft)	Mz (kip-ft)		Member	X (kips)	Y (kips)	Z (kips)	Mx (kip-ft)	Mz (kip-ft)		
LOAD CASE 1 - DEAD							LOAD CASE 2 - COLLATER	AL						
COL01	8	11	0	0	0	ļ	COL01	8	9	0	0	0		
COL02	-8	11	0	0	0	I	COL02	-8	9	0	0	0		
LOAD CASE 3 - ROOF LIVE							LOAD CASE 4 - SNOW							
COL01	18	21	0	0	0	i	COL01	21	24	0	0	0		
COL02	-18	21	0	0	0	İ	COL02	-21	24	0	0	0		
LOAD CASE 5 - MINIMUM F	ROOF SNO	 W				 I	LOAD CASE 6 - WIND CASE 1 TO RIGHT							
COL01	29	35	0	0	0	i	COL01	-21	-22	0	0	0		
COL02	-29	35	0	0	0	İ	COL02	11	-12	0	0	0		
LOAD CASE 7 - WIND CASE	1 TO LEFT					 I	LOAD CASE 8 - WIND CAS	E 2 TO RIGH	 Т					
COL01	-11	-12	0	0	0	i	COL01	-33	-39	0	0	0		
COL02	21	-22	0	0	0	i	COL02	23	-29	0	0	0		
LOAD CASE 9 - WIND CASE	2 TO LEFT						LOAD CASE 10 - LONG. WI	ND 1 TO BA	 СК					
COL01	-23	-29	0	0	0	i	COL01	-12	-20	0	0	0		
COL02	33	-39	0	0	0	İ	COL02	13	-13	0	0	0		
LOAD CASE 11 - LONG. WIN	D 1 TO FR	 DNT					LOAD CASE 12 - LONG. WI	ND 2 TO BA	 СК					
COL01	-13	-13	0	0	0	i	COL01	-24	-37	0	0	0		
COL02	12	-20	0	0	0	İ	COL02	25	-30	0	0	0		
LOAD CASE 13 - LONG. WIN	D 2 TO FR	 DNT					LOAD CASE 14 - SEISMIC 1	o right						
COL01	-25	-30	0	0	0	i	COL01	-1	-1	0	0	0		
COL02	24	-37	0	0	0	Ì	COL02	-1	1	0	0	0		
LOAD CASE 15 - SEISMIC TO							LOAD CASE 16 - ALTERNA							
COL01	1	1	0	0	0	i	COL01	18	25	0	0	0		
COL02	1	-1	0	0	0	İ	COL02	-18	15	0	0	0		
LOAD CASE 17 - ALTERNATE	SNOW 2													
COL01	18	15	0	0	0	i								
COL02	-18	25	0	0	0	İ								

Job #	: K23G0354A	Job Name	: RiAlto Addition - No Cranes	Frame	: FL 3,4,6,7,8
File	: F11-0.nfr	Designer	: BEP		
App Version	: 1.7.91.0	Date	: 7/28/2023		



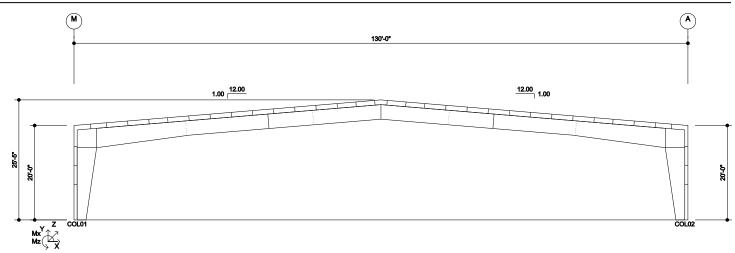
Member	X (kips)	Y (kips)	Z (kips)	Mx (kip-ft)	Mz (kip-ft)	I	Member	X (kips)	Y (kips)	Z (kips)	Mx (kip-ft)	Mz (kip-ft)
LOAD CASE 1 - DEAD						 	LOAD CASE 2 - COLLATE	RAL				
COL01	8	11	0	0	0	i	COL01	8	9	0	0	0
COL02	-8	11	0	0	0	Ì	COL02	-8	9	0	0	0
LOAD CASE 3 - ROOF LIVE							LOAD CASE 4 - SNOW					
COL01	18	21	0	0	0	Ì	COL01	21	24	0	0	0
COL02	-18	21	0	0	0	Ì	COL02	-21	24	0	0	0
OAD CASE 5 - MINIMUM ROOF SNOW						 	LOAD CASE 6 - WIND C	ASE 1 TO RIGH	т			
COL01	29	35	0	0	0	İ	COL01	-21	-22	0	0	0
COL02	-29	35	0	0	0	Ì	COL02	11	-12	0	0	0
LOAD CASE 7 - WIND CASE	1 TO LEFT					 	LOAD CASE 8 - WIND C	ASE 2 TO RIGH	т			
COL01	-11	-12	0	0	0	İ	COL01	-33	-39	0	0	0
COL02	21	-22	0	0	0	Ì	COL02	23	-29	0	0	0
LOAD CASE 9 - WIND CASE	2 TO LEFT						LOAD CASE 10 - LONG. V	VIND 1 TO BA	ск			
COL01	-23	-29	0	0	0	i	COL01	-12	-20	0	0	0
COL02	33	-39	0	0	0	i	COL02	13	-13	0	0	0
LOAD CASE 11 - LONG. WIN	D 1 TO FR	 DNT				 	LOAD CASE 12 - LONG. V	VIND 2 TO BA	 СК			
COL01	-13	-13	0	0	0	i	COL01	-24	-37	0	0	0
COL02	12	-20	0	0	0	i	COL02	25	-30	0	0	0
LOAD CASE 13 - LONG. WIN	D 2 TO FR	 DNT				 	LOAD CASE 14 - SEISMIC	TO RIGHT				
COL01	-25	-30	0	0	0	i	COL01	-1	-1	0	0	0
COL02	24	-37	0	0	0	Ì	COL02	-1	1	0	0	0
LOAD CASE 15 - SEISMIC TO	LEFT					 	LOAD CASE 16 - ALTERN	ATE SNOW 1				
COL01	1	1	0	0	0	i	COL01	18	25	0	0	0
COL02	1	-1	0	0	0	İ	COL02	-18	15	0	0	0
LOAD CASE 17 - ALTERNATE	.OAD CASE 17 - ALTERNATE SNOW 2						LOAD CASE 18 - BRACIN	G WIND TO FR	ONT			
COL01	18	15	0	0	0	İ	COL01	-1	-9	8	0	0
COL02	-18	25	0	0	0	İ	COL02	1	-9	8	0	0

Job #	: K23G0354A	Job Name	: RiAlto Addition - No Cranes	Frame	: FL 3,4,6,7,8
File	: F11-0.nfr	Designer	: BEP		
App Versio	n :1.7.91.0	Date	: 7/28/2023		



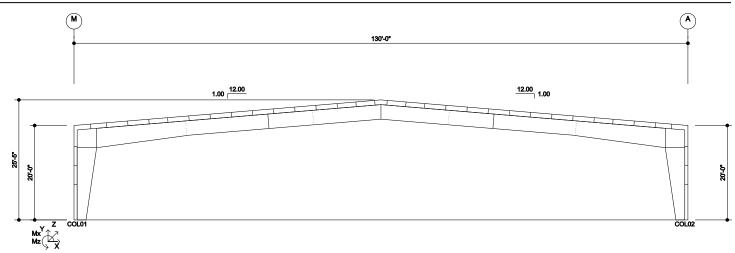
	Х	Y	Z	Mx	Mz			Х	Y	Z	Mx	Mz
Member (kips) (kips)	(kips)	(kips)	(kip-ft)	(kip-ft)		Member	(kips)	(kips)	(kips)	(kip-ft)	(kip-ft)	
LOAD CASE 19 - BRACIN	IG WIND TO BA	 АСК				 	LOAD CASE 20 - BF	RACING SEISMIC TO	BACK			
COL01	1	9	-8	0	0	İ	COL01	1	7	-7	0	0
COL02	-1	9	-8	0	0	Ì	COL02	-1	7	-7	0	0
LOAD CASE 21 - BRACIN	IG SEISMIC TO	FRONT				 						
COL01	0	-7	7	0	0	Í						
COL02	0	-7	7	0	0	Ì						

Job #	: K23G0354A	Job Name	: RiAlto Addition - No Cranes	Frame : FL 9
File	: F21-0.nfr	Designer	: BEP	
App Versior	n : 1.7.91.0	Date	: 7/30/2023	



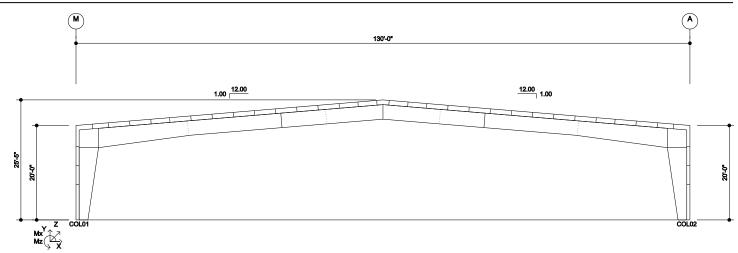
Member	X (kips)	Y (kips)	Z (kips)	Mx (kip-ft)	Mz (kip-ft)		Member	X (kips)	Y (kips)	Z (kips)	Mx (kip-ft)	Mz (kip-ft)
LOAD CASE 1 - DEAD						 	LOAD CASE 2 - COLLATE	RAL				
COL01	16	17	0	0	0	i	COL01	12	11	0	0	0
COL02	-16	17	0	0	0	İ	COL02	-12	11	0	0	0
LOAD CASE 3 - ROOF LIVE							LOAD CASE 4 - SNOW					
COL01	36	32	0	0	0		COL01	67	59	0	0	0
COL02	-36	32	0	0	0	Ι	COL02	-67	59	0	0	0
OAD CASE 5 - MINIMUM ROOF SNOW							LOAD CASE 6 - WIND CA	ASE 1 TO RIGH	тт			
COL01	44	38	0	0	0		COL01	-22	-28	0	0	0
COL02	-44	38	0	0	0	Ι	COL02	37	-23	0	0	0
LOAD CASE 7 - WIND CASE	1 TO LEFT						LOAD CASE 8 - WIND CA	ASE 2 TO RIGH	т			
COL01	-37	-23	0	0	0	Í	COL01	-41	-46	0	0	0
COL02	22	-28	0	0	0	I	COL02	56	-41	0	0	0
LOAD CASE 9 - WIND CASE	2 TO LEFT						LOAD CASE 10 - LONG. V	VIND 1 TO BA	CK			
COL01	-57	-42	0	0	0	Í	COL01	-47	-45	0	0	0
COL02	42	-46	0	0	0	Ι	COL02	48	-42	0	0	0
LOAD CASE 11 - LONG. WIN	ID 1 TO FR	ONT					LOAD CASE 12 - LONG. WIND 2 TO BACK					
COL01	-48	-41	0	0	0	Í	COL01	-54	-52	0	0	0
COL02	47	-45	0	0	0	Ì	COL02	55	-49	0	0	0
LOAD CASE 13 - LONG. WIN	ID 2 TO FR	 ONT					LOAD CASE 14 - SEISMIC	TO RIGHT				
COL01	-55	-49	0	0	0	i	COL01	-3	-2	0	0	0
COL02	54	-52	0	0	0	Ì	COL02	-2	2	0	0	0
LOAD CASE 15 - SEISMIC TO	) LEFT						LOAD CASE 16 - ALTERNA	ATE SNOW 1				
COL01	2	2	0	0	0	i	COL01	27	28	0	0	0
COL02	3	-2	0	0	0	İ	COL02	-27	17	0	0	0
LOAD CASE 17 - ALTERNATE	SNOW 2						LOAD CASE 18 - BRACING	G WIND TO FR	RONT			
COL01	28	17	0	0	0	i	COL01	-1	-9	8	0	0
COL02	-28	27	0	0	0		COL02	1	-9	8	0	0

Job #	: K23G0354A	Job Name	: RiAlto Addition - No Cranes	Frame	: FL 9
File	: F21-0.nfr	Designer	: BEP		
App Versior	n : 1.7.91.0	Date	: 7/30/2023		



Member	X (kips)	Y (kips)	Z (kips)	Mx (kip-ft)	Mz (kip-ft)	I	Member	X (kips)	Y (kips)	Z (kips)	Mx (kip-ft)	Mz (kip-ft)
LOAD CASE 19 - BRAC	ING WIND TO BA	ACK					LOAD CASE 20 - BI	RACING SEISMIC TO	) BACK			
COL01	1	9	-8	0	0	Í	COL01	1	7	-7	0	0
COL02	-1	9	-8	0	0	I	COL02	-1	7	-7	0	0
LOAD CASE 21 - BRAC	ING SEISMIC TO	FRONT										
COL01	-1	-7	7	0	0	Í						
COL02	1	-7	7	0	0	Í						

Job #	: K23G0354A	Job Name	: RiAlto Addition - No Cranes	Frame	: FL 10
File	: F22-0.nfr	Designer	: BEP		
App Versior	ו : 1.7.91.0	Date	: 7/28/2023		



Member	X (kips)	Y (kips)	Z (kips)	Mx (kip-ft)	Mz (kip-ft)	I	Member	X (kips)	Y (kips)	Z (kips)	Mx (kip-ft)	Mz (kip-ft)	
LOAD CASE 1 - DEAD						 	LOAD CASE 2 - COLLATE	RAL					
COL01	12	13	0	0	0	i	COL01	11	10	0	0	0	
COL02	-12	13	0	0	0	Ι	COL02	-11	10	0	0	0	
LOAD CASE 3 - ROOF LIVE							LOAD CASE 4 - SNOW						
COL01	24	22	0	0	0		COL01	59	53	0	0	0	
COL02	-24	22	0	0	0	Ι	COL02	-59	53	0	0	0	
LOAD CASE 5 - MINIMUM F	DAD CASE 5 - MINIMUM ROOF SNOW						LOAD CASE 6 - WIND CA	ASE 1 TO RIGH	 IT				
COL01	40	36	0	0	0	Í	COL01	-24	-21	0	0	0	
COL02	-40	36	0	0	0	Ì	COL02	16	-12	0	0	0	
LOAD CASE 7 - WIND CASE	1 TO LEFT						LOAD CASE 8 - WIND CA	ASE 2 TO RIGH	 IT				
COL01	-16	-12	0	0	0	i	COL01	-41	-38	0	0	0	
COL02	24	-21	0	0	0	Ì	COL02	32	-29	0	0	0	
LOAD CASE 9 - WIND CASE	2 TO LEFT						LOAD CASE 10 - LONG. V	VIND 1 TO BA	ск				
COL01	-32	-29	0	0	0	i	COL01	-17	-20	0	0	0	
COL02	41	-38	0	0	0	İ	COL02	18	-13	0	0	0	
LOAD CASE 11 - LONG. WIN	D 1 TO FR	ONT					LOAD CASE 12 - LONG. WIND 2 TO BACK						
COL01	-18	-13	0	0	0	i	COL01	-34	-37	0	0	0	
COL02	17	-20	0	0	0	Ì	COL02	35	-30	0	0	0	
LOAD CASE 13 - LONG. WIN	D 2 TO FR	 DNT					LOAD CASE 14 - SEISMIC	TO RIGHT					
COL01	-35	-30	0	0	0	i	COL01	-2	-1	0	0	0	
COL02	34	-37	0	0	0	Ì	COL02	-2	1	0	0	0	
LOAD CASE 15 - SEISMIC TO	LEFT						LOAD CASE 16 - ALTERN	ATE SNOW 1					
COL01	2	1	0	0	0	i	COL01	25	26	0	0	0	
COL02	2	-1	0	0	0	i	COL02	-25	16	0	0	0	
LOAD CASE 17 - ALTERNATE	SNOW 2												
COL01	25	16	0	0	0	i							
COL02	-25	26	0	0	0	Í							

# Letter Of Transmittal



а ПОССК сопрану P. O. Box 390 · Portland, TN 37148 · P 615-325-4165 · F 800-231-3460

#### To: STEVENS CONSTRUCTION CO INC 2181 INNOVATION DRIVE, SUITE 101 MARION, OH 43302

#### Attn: BEN STEVENS

(740) 387-1931

Date: Wednesday, August 2, 2023 KBS Job No: **K23G0354A** Project: **RIALTO ADDITION-NO CRANES** 

Enclosed are the following items:

Your Attention is directed to the following:	Seal Qty							
Permit Details	N/A							
Approval Drawings       24x36         Approval Details       24x36         Confirmation Drawings								
Approval Details       24x30         Confirmation Drawings								
Approval Details								
Erection Drawings								
Erection Details       Image: Sector of Certification         X       Column Reactions         X       Column Reactions         Design Calculations       Image: Sector of Certification         X       Letter of Certification         1       Image: Sector of Certification         Ship Via:       X         VPS Ground       US Mail         UPS Overnight       X         Electronic       Wet         Digital       Embossed         Your Attention is directed to the following:								
Bill Of Materials List       ALL REACTIONS         X       Column Reactions       ALL REACTIONS         Design Calculations       Image: Calculations       Image: Calculations         X       Letter of Certification       1       1         Ship Via:       X       UPS Ground       US Mail       UPS Overnight       X       EMAIL         Seal Type:       X       Electronic       Wet       Digital       Embossed       Sheets:         Your Attention is directed to the following:       Image: Calculation is directed to the following:       Image: Calculation is directed to the following:								
X       Column Reactions       1       ALL REACTIONS         Design Calculations       I       I       I         X       Letter of Certification       1       I       I         Ship Via:       X       UPS Ground       US Mail       UPS Overnight       X EMAIL         Seal Type:       X       Electronic       Wet       Digital       Embossed       Sheets:         Your Attention is directed to the following:       Image: Column State       Image: Colu								
Design Calculations       1         X       Letter of Certification       1         Ship Via:       X       UPS Ground       US Mail       UPS Overnight       X EMAIL         Seal Type:       X       Electronic       Wet       Digital       Embossed       Sheets         Your Attention is directed to the following:								
X       Letter of Certification       1       1         Ship Via:       X       UPS Ground       US Mail       UPS Overnight       X       EMAIL         Seal Type:       X       Electronic       Wet       Digital       Embossed       Sheets:         Your Attention is directed to the following:       X       Embossed       Sheets:	1							
Ship Via:       X       UPS Ground       US Mail       UPS Overnight       X       EMAIL         Seal Type:       X       Electronic       Wet       Digital       Embossed       Sheets         Your Attention is directed to the following:								
Seal Type:       X       Electronic       Wet       Digital       Embossed       Sheets         Your Attention is directed to the following:	1							
Your Attention is directed to the following:								
5	LOC & REACTIONS							
	Your Attention is directed to the following:							
The above prints have been approved for construction								
Engineering has been completed. The job has been released for fabrication.	Engineering has been completed. The job has been released for fabrication.							
The above prints are for obtaining the building permit								
	Final detailing and fabrication have been scheduled. Changes or alterations to the building will cause the							
schedule and price to be subject to change.								
Final detailing and fabrication <u>have not been</u> scheduled. Changes or alterations to the building will cause the price to be subject to change.								
	The above prints are issued for your approval Final detailing and fabrication <u>have not been</u> scheduled. Changes or alterations to the building will cause the price to be subject to change. Your price is protected based on the must ship date shown on the order contract. Please return the approved drawings no later than If the drawings are not returned by this date, the price will be subject to change.							
Final detailing and fabrication have not been scheduled. Changes or alterations to the build								
Final detailing and fabrication have been scheduled. Changes or alterations to the building v								
schedule and price to be subject to change. The approved drawings must be returned with i								
no later than	-							
If the drawings are not returned by this date, the schedule and price will be subject to change	).							
The above documents have been revised. Please destroy previous issues. Reason for revision:								
	Reason for revision:							

DETAILER: <u>TB</u> CHECKER: <u>SRB</u> Sincerely, Robert Hodges robert.hodges@kirbybuildingsystems.com 615-745-6034



STEVENS CONSTRUCTION CO INC 2181 INNOVATION DRIVE MARION, OH 43302 <u>Attn.:</u> BEN STEVENS <u>Project Location:</u> Marion, OH 43302 <u>Project Number:</u> K23G0354A <u>Project Name:</u> RiAlto Addition - No Cranes <u>Buildings:</u> A->130'-0"x201'-0"x25'-6"(RCG, 1:12); B->130'-0"x24'-0"x20'-0"(RCG, 1:12);

Sunday, July 30, 2023

This Letter of Design Certification ensures that the materials furnished by the metal building supplier are designed in accordance with the information specified to the metal building supplier on the order documents and summarized by the loading information listed below. The Project Engineer of Record (not the metal building supplier) is responsible for verifying that the building code and design loads meet any and all applicable local requirements.

The Professional Engineer whose seal appears on this Letter of Certification is employed by the metal building manufacturer, a Member of MBMA, and does not serve as or represent the Engineer of Record for this project and shall not be construed as such. **DESIGN LOAD CRITERIA:** 

#### Structural Loads Applied in General Accordance with: Ohio 2017 (IBC 2015)

		11				(	)					
	Risk Category: II - Standard Buildings											
<u>PROJE</u>	CT-WIDE LC	DADING IN	FORMATIC	<u>)N:</u>								
	Ground Snov	w Load:	20.00	osf		Snow Exp	osure Factor	,Ce: 1.00	Snow	Imp. Facto	or,Is:	1.00
	Roof Live Load:			osf		Redu	cible as per c	ode				
Design Wind Velocity:				115 mph	Nomi	nal Design V	Vind Velocity	: 89 mph	***C&(	C Wind:30	psf/-40ps	f
	Is Roof to m	eet UL 90 R	equirements?	: No					Wind Ex	posure: C		
	Seismic Criteria:		Ss:0.1	30 S1:0.06	50	*No gi	round snow in	ncluded in se	ismic calcu	lation		
	Design Sds / Sd1:		0.139/	0.096		Analys	sis Procedure	: Equivale	nt Lateral F	orce Proce	dure	
	Seis. Imp. Factor, Ie:		1.00			Long.	SFRS:	Not Deta	iled For Sei	ismic		
	Seis. Design	Category:	В	Site	Class:	D Lat. Sl	FRS:	Not Deta	iled For Sei	ismic		
<b>BUILD</b>	ING-SPECIFI	IC LOADIN	G INFORA	MTION:								
	Roof Dead	Collater	al Dead	Snow C	oeficient	Snow L	oad (psf)	Wi	nd		Seismic	
Bldg	(psf)*	Pri (psf)	Sec (psf)	Ct	Cs	Ps (psf)	**Pm (psf)	Enclosure	GCpi	R	Cs	V (kips)
А	3.00	5.00	5.00	1.00	1.00	14.00	20.00	Enclosed	±0.18	3.00	0.046	16.1
В	3.50	5.00	5.00	1.00	1.00	14.00	20.00	Enclosed	±0.18	3.00	0.046	6.8

#### \*Primary Structural Not Included

\*\*Pm is based on the minimum roof snow load calculated per building code or the contract-specified roof snow load, whichever is greater. This value, Pm, is only applied in combination with Dead and Collateral Loads. Roof Snow in other loading conditions is determined per the specified Building Code.

\*\*\*Design wind pressures to be used for wall exterior component and cladding materials not provided by Metal Building Supplier Mezzanine Information:

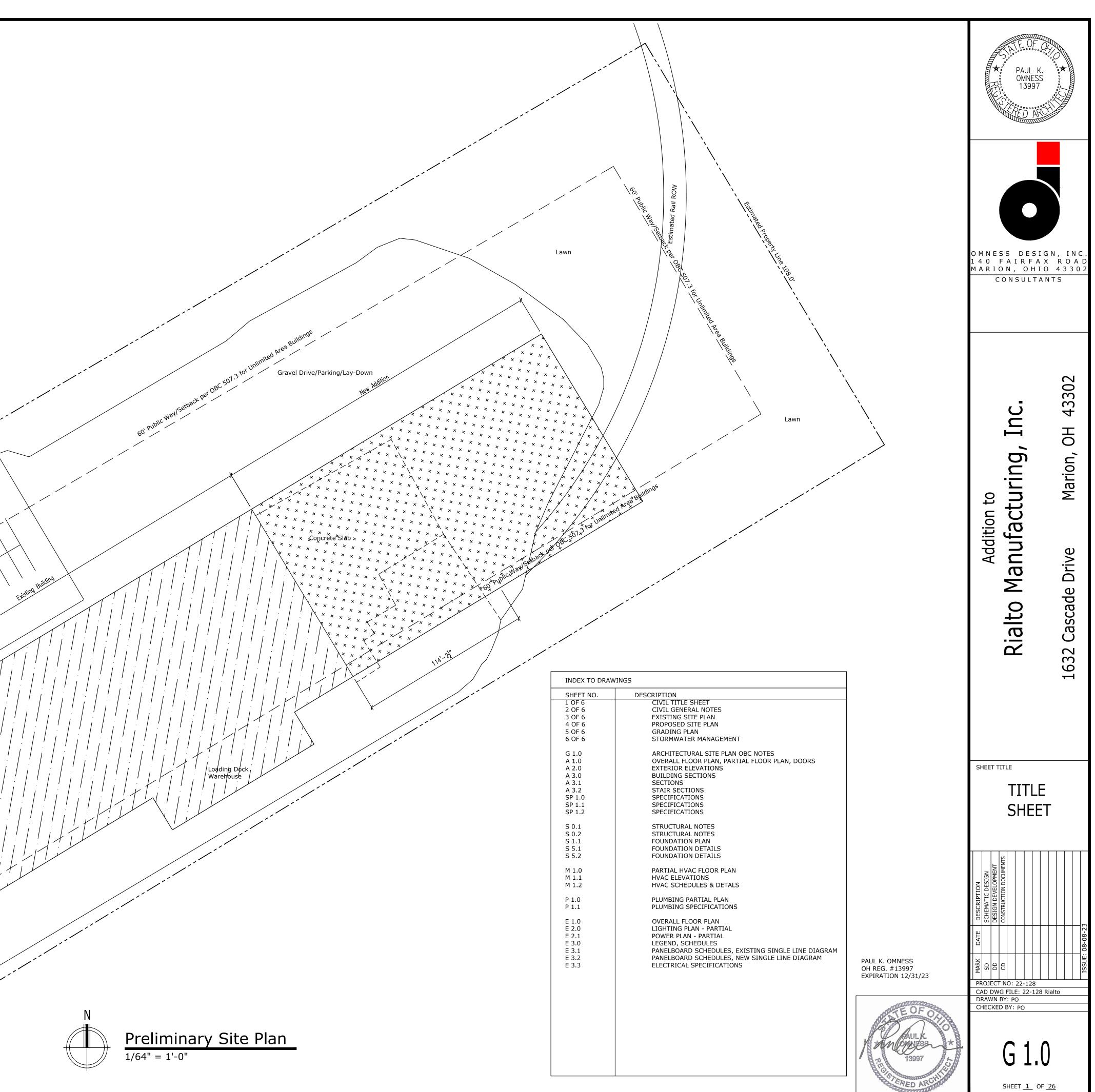
Floor Dead Load: N/A Floor Collateral Load: N/A Floor Live Load: N/A **Crane Information:** No cranes on building OF **Roof-Top Unit Information:** ATTALIA CONTRACTOR HAROLE No roof-top units on building. WAYNE EGOR The design of structural members supporting roof gravity loads is controlled by the more critical NORAL L effect of roof live load or roof snow applied in accordance with the governing building code. **DESIGN STANDARDS REFERENCED:** • AISC Specification for Structural Steel Buildings - Steel Construction Manual, 14th Edition, ©2010. • AISI North-American Spec. for the Design of Cold-Formed Steel Structures, ©2012 Edition. • IBC codes are designed in accordance with ASCE7-10 Edition. • MBMA Metal Building Systems Manual, Latest Edition. • AWS Latest Edition of Structural Welding Code. Professional Seal

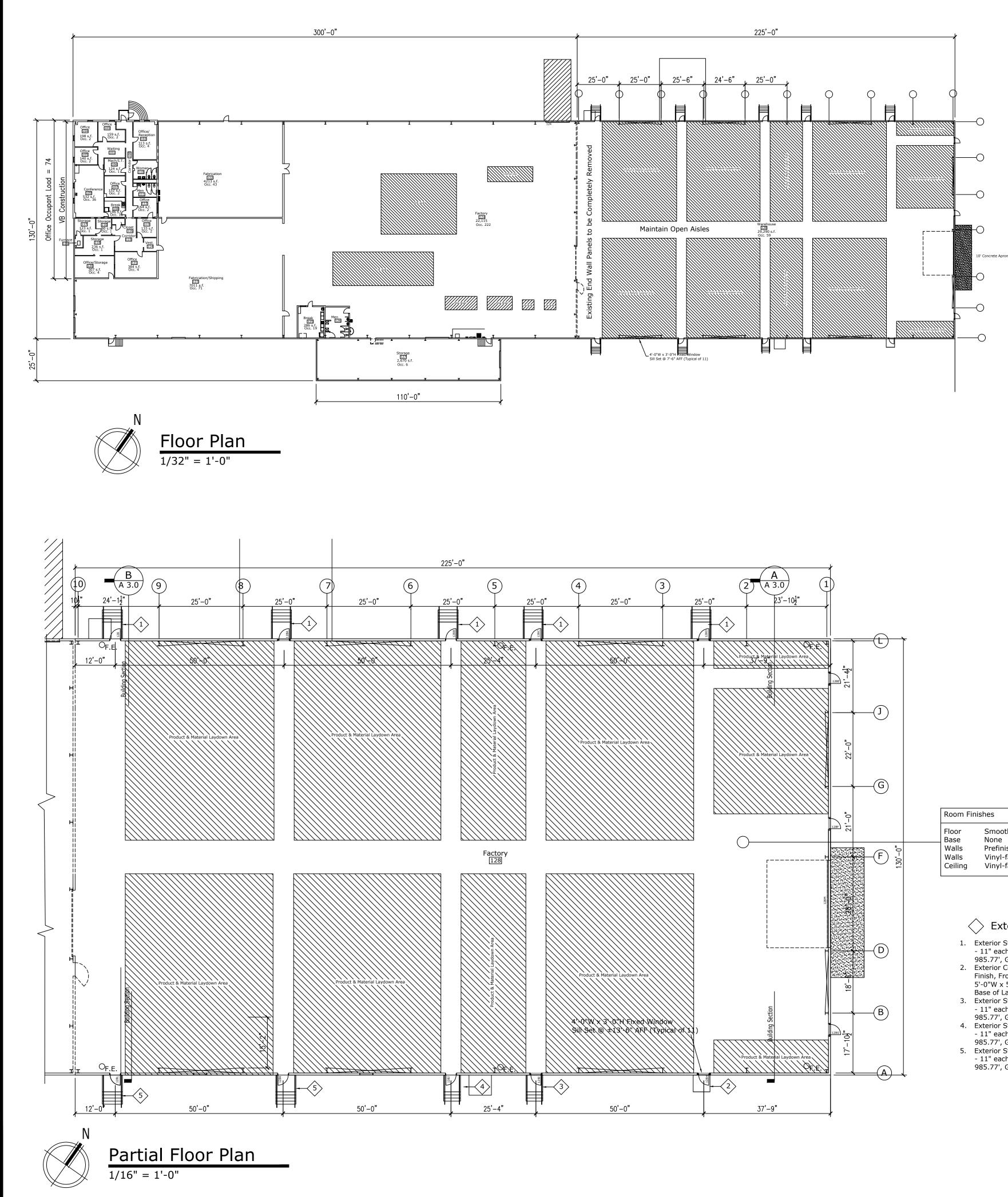
• No buyout structural components provided on this project.



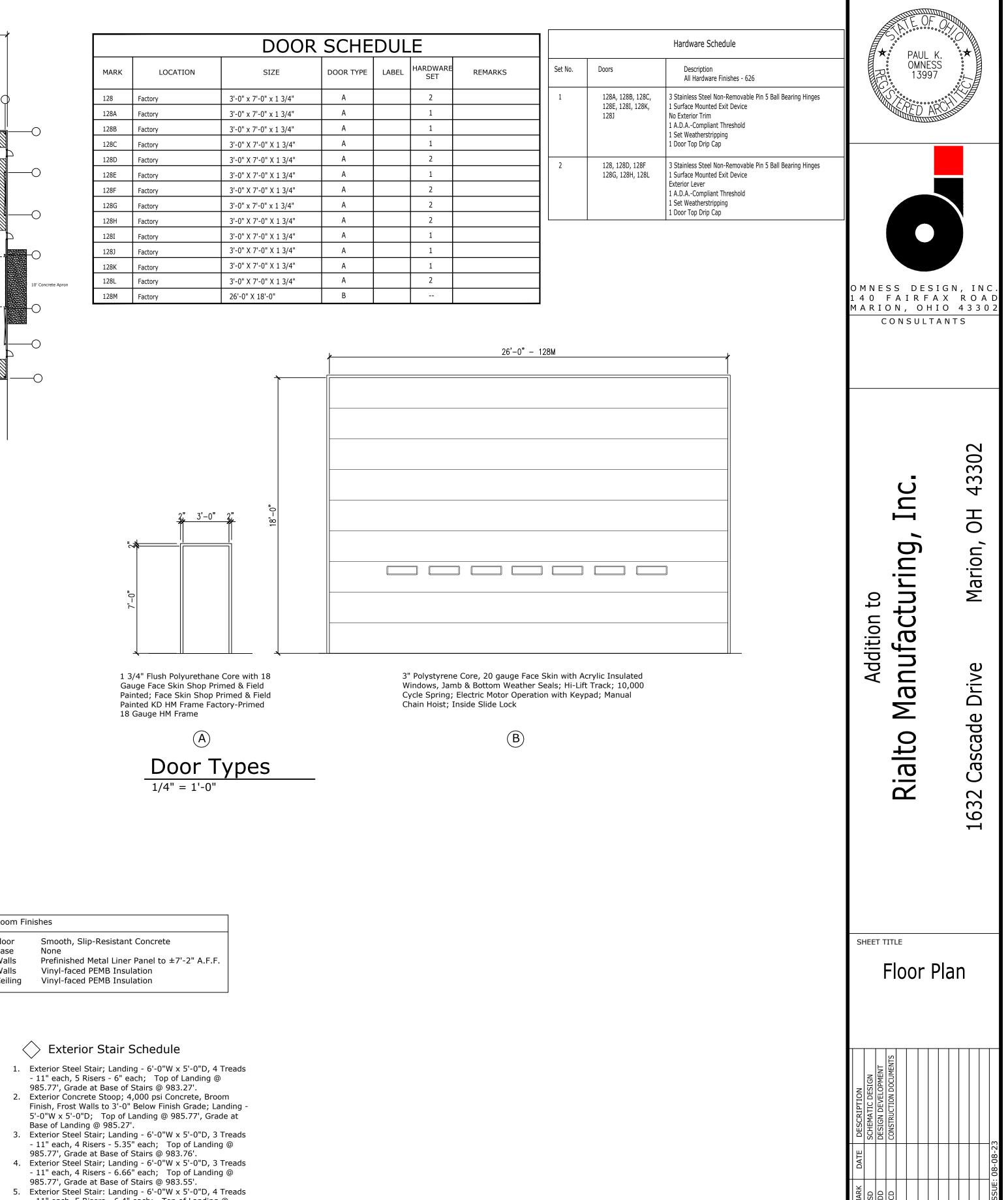


MECHANICAL CODE OHIO MEC	2.1 2009 DNS F-2,S-2, B TONS F-2, S-2, B N/A IIB 1 STORY, 30 FEET 4,807 SF 36,943 SF 29,250 SF 71,000 SF > MAX. ALLO 2,254 SF RIMETER) I <sub>f</sub> = $[1 - 0.25]\frac{26}{30} = [0.7]$ 23,000 + (23,000 * 0.6] E AREA PER FRONTAGE INCREASE FO 475; ACTUAL 50 95.0" REQ'D < 360" ACTUAL N/A NFPA 72 - PROPOSED NFPA 72 - PROPOSED	55) = 23,000 + 14,950 = 37,95 OR UNSPRINKLERED BUILDING	50 SF	
BUILDING CODEOHIO BUILMECHANICAL CODEOHIO PLUPLUMBING CODEOHIO PLUELECTRICAL CODENEC 2017ACCESSIBLITYICC A-117BOARD OF APPEALS CASE #22-046CPA# 2022060016DESCRIPTION:ADDITION OF WAREHOUSING AREAEXISTING OCCUPANCY CLASSIFICATIONPROPOSED OCCUPANCY CLASSIFICATIONPROPOSED OCCUPANCY CLASSIFICATIONPREVIOUS CPA #'SCONSTRUCTION CLASSHEIGHTEXISTING FLOOR AREASEXISTING FLOOR AREASEXISTING F-2/S-2NEW ADDITIONTOTAL AREAAREA OF ALTERATIONFRONTAGE INCREASE (100% OPEN PEIAREA INCREASEPROPOSED AREA EXCEEDS ALLOWABLIOCCUPANT LOADEGRESS WIDTHSPRINKLER SYSTEMPLUMBING FIXTURES FEMALE OCCUP/FIXTURE TYPEREQ'DFEMALE LAV'S2.38MALE WC'S2.38MALE URMALE LAVS2.38SERVICE SINKS1	CHANICAL CODE 2017 MBING CODE 2017 7.1 2009 DNS F-2, S-2, B N/A IIB 1 STORY, 30 FEET 4,807 SF 36,943 SF 29,250 SF 71,000 SF > MAX. ALLO 2,254 SF RIMETER) I <sub>f</sub> = $[1 - 0.25]\frac{26}{30} = [0.7]$ 23,000 + (23,000 * 0.6] E AREA PER FRONTAGE INCREASE FO 475; ACTUAL 50 95.0" REQ'D < 360" ACTUAL N/A NFPA 72 - PROPOSED NFPA 72 - PROPOSED ANT LOAD-238 MALE OCCU ACTUAL 3 3 1	75 * 0.86] = 0.65 65) = 23,000 + 14,950 = 37,95 OR UNSPRINKLERED BUILDING		
BOARD OF APPEALS CASE #22-046 CPA#2022060016DESCRIPTION: ADDITION OF WAREHOUSING AREAEXISTING OCCUPANCY CLASSIFICATION PROPOSED OCCUPANCY CLASSIFICATION UNSEPARATED MIXED USE PREVIOUS CPA #'S CONSTRUCTION CLASS HEIGHTEXISTING FLOOR AREAS EXISTING F-2/S-2 NEW ADDITION TOTAL AREA AREA OF ALTERATION FRONTAGE INCREASE (100% OPEN PEL AREA INCREASE PROPOSED AREA EXCEEDS ALLOWABLEOCCUPANT LOAD EGRESS WIDTHSPRINKLER SYSTEM FIRE ALARM SYSTEMPLUMBING FIXTURES FEMALE OCCUPA FEMALE UC'S FEMALE LAV'S MALE UR MALE LAVS SERVICE SINKSAREA UR MALE LAVS SERVICE SINKS	DNS F-2, S-2, B DNS F-2, S-2, B N/A IIB 1 STORY, 30 FEET 4,807 SF 36,943 SF 29,250 SF 71,000 SF > MAX. ALLO 2,254 SF RIMETER) I <sub>f</sub> = $[1 - 0.25]\frac{26}{30} = [0.7]$ 23,000 + (23,000 * 0.6] E AREA PER FRONTAGE INCREASE FO 475; ACTUAL 50 95.0" REQ'D < 360" ACTUAL N/A NFPA 72 - PROPOSED ANT LOAD-238 ANT LOAD-238 MALE OCCU <u>ACTUAL</u> 3 3 2 2 3 1	75 * 0.86] = 0.65 65) = 23,000 + 14,950 = 37,95 OR UNSPRINKLERED BUILDING	50 SF	
ADDITION OF WAREHOUSING AREA EXISTING OCCUPANCY CLASSIFICATIO PROPOSED OCCUPANCY CLASSIFICATIO UNSEPARATED MIXED USE PREVIOUS CPA #'S CONSTRUCTION CLASS HEIGHT EXISTING FLOOR AREAS EXISTING F-2/S-2 NEW ADDITION TOTAL AREA AREA OF ALTERATION FRONTAGE INCREASE (100% OPEN PEL AREA INCREASE PROPOSED AREA EXCEEDS ALLOWABLE OCCUPANT LOAD EGRESS WIDTH SPRINKLER SYSTEM FIRE ALARM SYSTEM SMOKE DETECTION SYSTEM PLUMBING FIXTURES FEMALE OCCUP/ FIXTURE TYPE REQ'D FEMALE UC'S 2.38 MALE UR MALE LAVS 2.38 SERVICE SINKS 1	$\begin{array}{rcl} \text{IONS} & \text{F-2, S-2, B} \\ & & \text{N/A} \\ & \text{IIB} \\ 1 \text{ STORY, 30 FEET} \\ & & 4,807 \text{ SF} \\ & 36,943 \text{ SF} \\ 29,250 \text{ SF} \\ & 71,000 \text{ SF} > \text{MAX. ALLO} \\ & & 2,254 \text{ SF} \\ \\ \text{RIMETER}) & \text{I}_{f} = [1 - 0.25] \frac{26}{30} = [0.7] \\ & & 23,000 + (23,000 * 0.6] \\ \\ \text{E AREA PER FRONTAGE INCREASE FOR \\ & 475; \text{ ACTUAL 50} \\ & 95.0" \text{ REQ'D < 360" ACTUAL} \\ & & \text{N/A} \\ & \text{NFPA 72 - PROPOSED} \\ \\ \text{ANT LOAD-238} & \text{MALE OCCU} \\ \\ & & \text{ACTUAL} \\ & & 3 \\ & & 3 \\ & & 2 \\ & & 2 \\ & & 3 \\ & & 1 \end{array}$	75 * 0.86] = 0.65 65) = 23,000 + 14,950 = 37,95 OR UNSPRINKLERED BUILDING		
PROPOSED OCCUPANCY CLASSIFICATIUNSEPARATED MIXED USEPREVIOUS CPA #'SCONSTRUCTION CLASSHEIGHTEXISTING FLOOR AREASEXISTING F-2/S-2NEW ADDITIONTOTAL AREAAREA OF ALTERATIONFRONTAGE INCREASE (100% OPEN PELAREA INCREASEPROPOSED AREA EXCEEDS ALLOWABLEOCCUPANT LOADEGRESS WIDTHSPRINKLER SYSTEMFIRE ALARM SYSTEMPLUMBING FIXTURES FEMALE OCCUP/FIXTURE TYPEREQ'DFEMALE WC'S2.38FEMALE LAV'S2.38MALE URMALE LAVS2.38SERVICE SINKS1	$\begin{array}{rcl} \text{IONS} & \text{F-2, S-2, B} \\ & & \text{N/A} \\ & \text{IIB} \\ 1 \text{ STORY, 30 FEET} \\ & & 4,807 \text{ SF} \\ & 36,943 \text{ SF} \\ 29,250 \text{ SF} \\ & 71,000 \text{ SF} > \text{MAX. ALLO} \\ & & 2,254 \text{ SF} \\ \\ \text{RIMETER}) & \text{I}_{f} = [1 - 0.25] \frac{26}{30} = [0.7] \\ & & 23,000 + (23,000 * 0.6] \\ \\ \text{E AREA PER FRONTAGE INCREASE FOR \\ & 475; \text{ ACTUAL 50} \\ & 95.0" \text{ REQ'D < 360" ACTUAL} \\ & & \text{N/A} \\ & \text{NFPA 72 - PROPOSED} \\ \\ \text{ANT LOAD-238} & \text{MALE OCCU} \\ \\ & & \text{ACTUAL} \\ & & 3 \\ & & 3 \\ & & 2 \\ & & 2 \\ & & 3 \\ & & 1 \end{array}$	75 * 0.86] = 0.65 65) = 23,000 + 14,950 = 37,95 OR UNSPRINKLERED BUILDING		
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MALE LAVS2.38SERVICE SINKS1	1			
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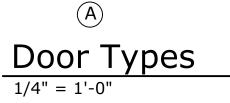




		DOOR	SCHE	DUL
MARK	LOCATION	SIZE	DOOR TYPE	LABEL
128	Factory	3'-0" x 7'-0" x 1 3/4"	А	
128A	Factory	3'-0" x 7'-0" x 1 3/4"	А	
128B	Factory	3'-0" x 7'-0" x 1 3/4"	А	
128C	Factory	3'-0" X 7'-0" X 1 3/4"	A	
128D	Factory	3'-0" X 7'-0" X 1 3/4"	A	
128E	Factory	3'-0" X 7'-0" X 1 3/4"	A	
128F	Factory	3'-0" X 7'-0" X 1 3/4"	A	
128G	Factory	3'-0" x 7'-0" x 1 3/4"	A	
128H	Factory	3'-0" X 7'-0" X 1 3/4"	A	
128I	Factory	3'-0" X 7'-0" X 1 3/4"	A	
128J	Factory	3'-0" X 7'-0" X 1 3/4"	А	
128K	Factory	3'-0" X 7'-0" X 1 3/4"	А	
128L	Factory	3'-0" X 7'-0" X 1 3/4"	A	
128M	Factory	26'-0" X 18'-0"	В	



1 3/4" Flush Polyurethane Core with 18 Gauge Face Skin Shop Primed & Field Painted; Face Skin Shop Primed & Field Painted KD HM Frame Factory-Primed



oor	Smooth, Slip-Resistant Concrete
ase	None
alls	Prefinished Metal Liner Panel to $\pm 7'-2"$ A.F.F.
alls	Vinyl-faced PEMB Insulation
eiling	Vinyl-faced PEMB Insulation
-	-

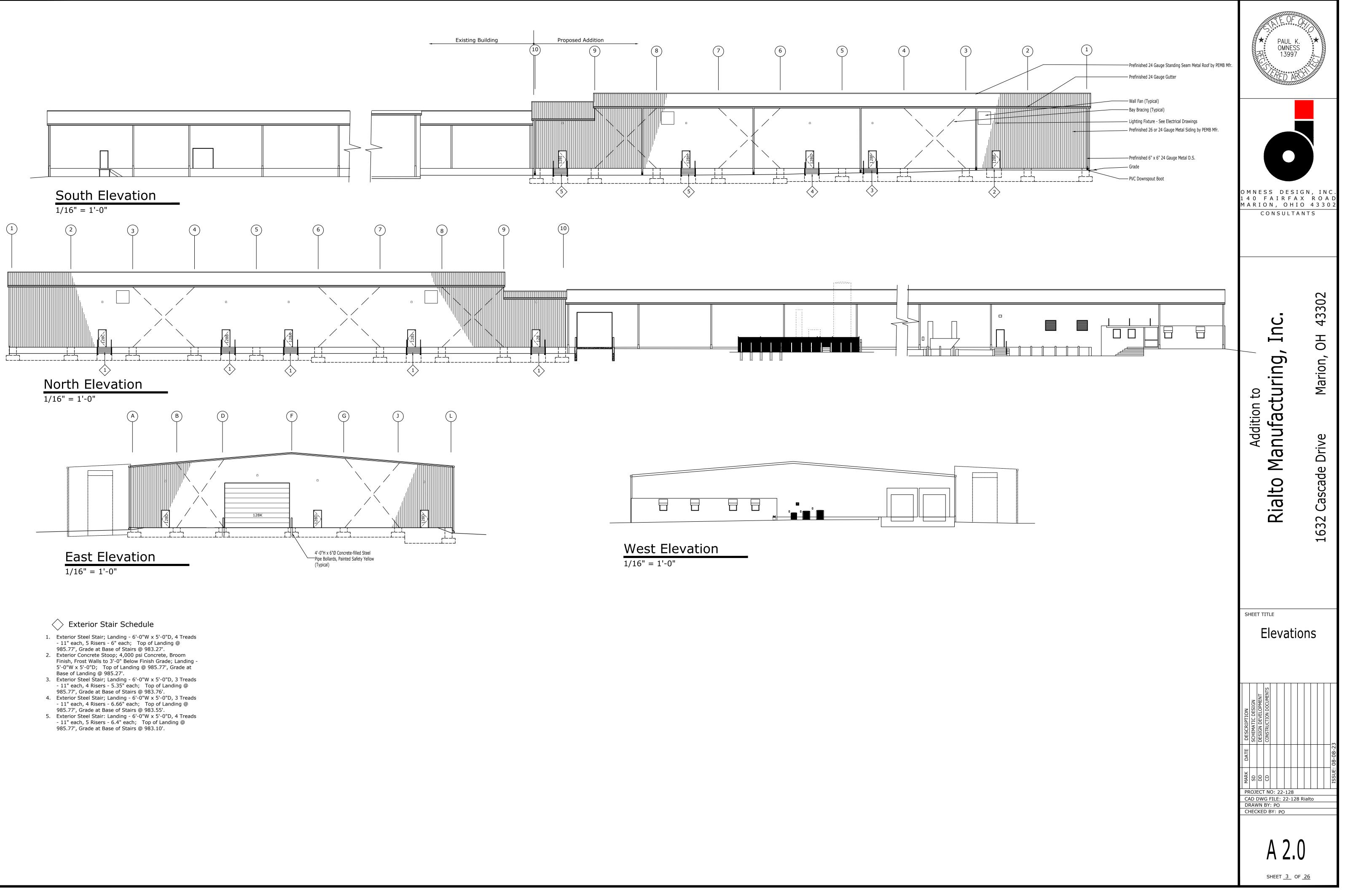
# Exterior Stair Schedule

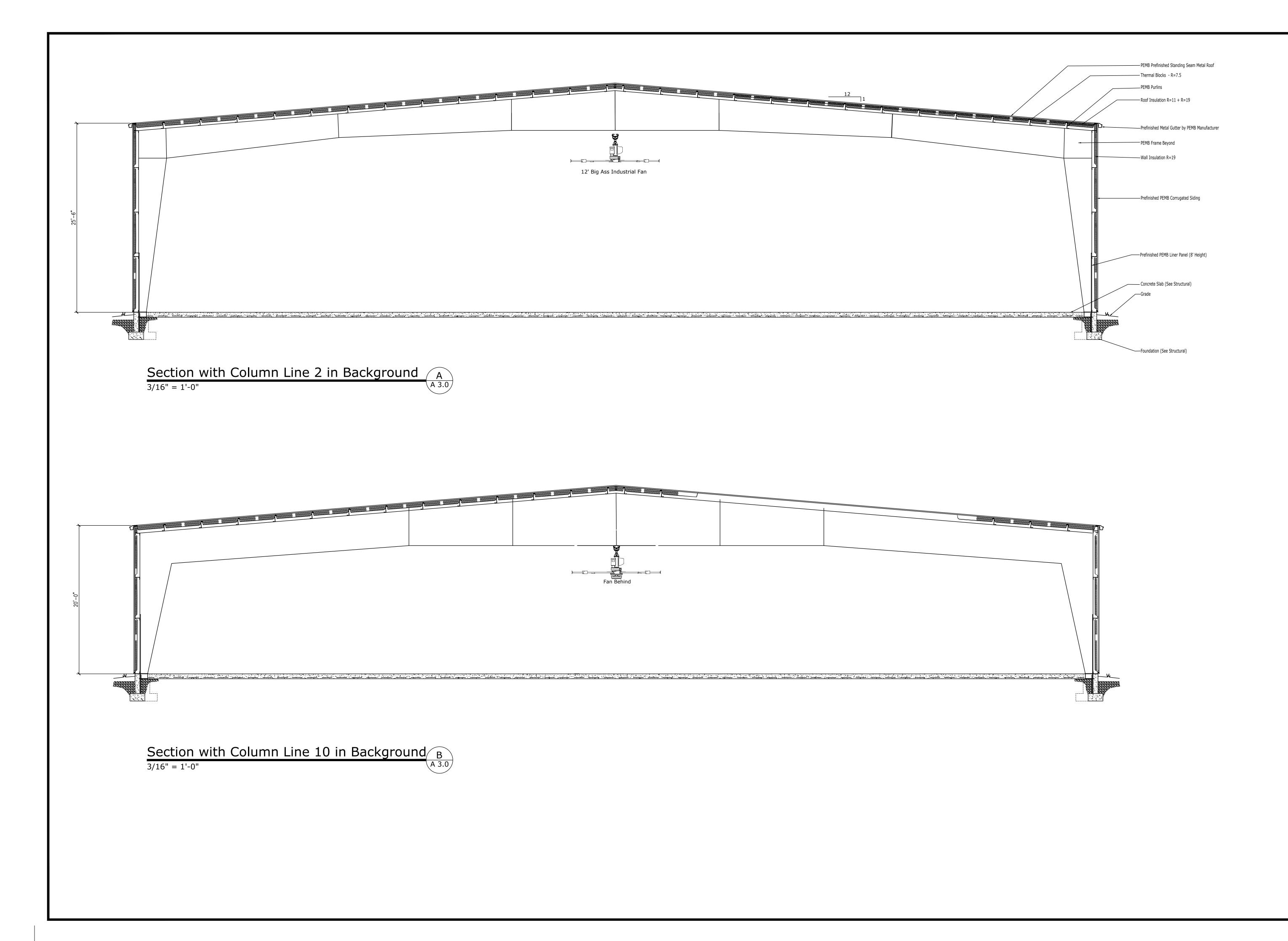
- Exterior Steel Stair; Landing 6'-0"W x 5'-0"D, 4 Treads 11" each, 5 Risers 6" each; Top of Landing @ 985.77', Grade at Base of Stairs @ 983.27'.
- 2. Exterior Concrete Stoop; 4,000 psi Concrete, Broom Finish, Frost Walls to 3'-0" Below Finish Grade; Landing -5'-0"W x 5'-0"D; Top of Landing @ 985.77', Grade at Base of Landing @ 985.27'.

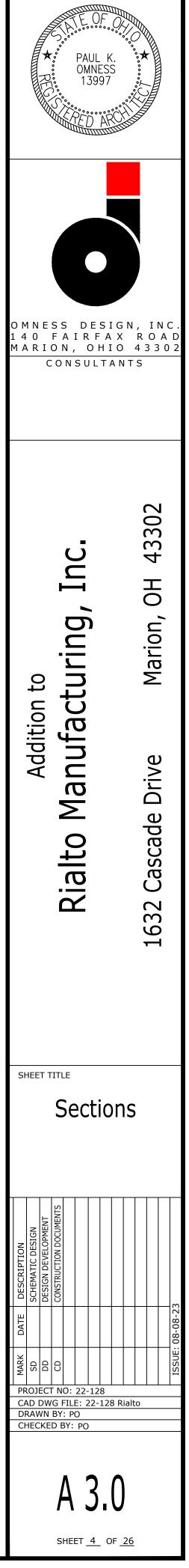
- 5. Exterior Steel Stair: Landing 6'-0"W x 5'-0"D, 4 Treads 11" each, 5 Risers 6.4" each; Top of Landing @ 985.77', Grade at Base of Stairs @ 983.10'.

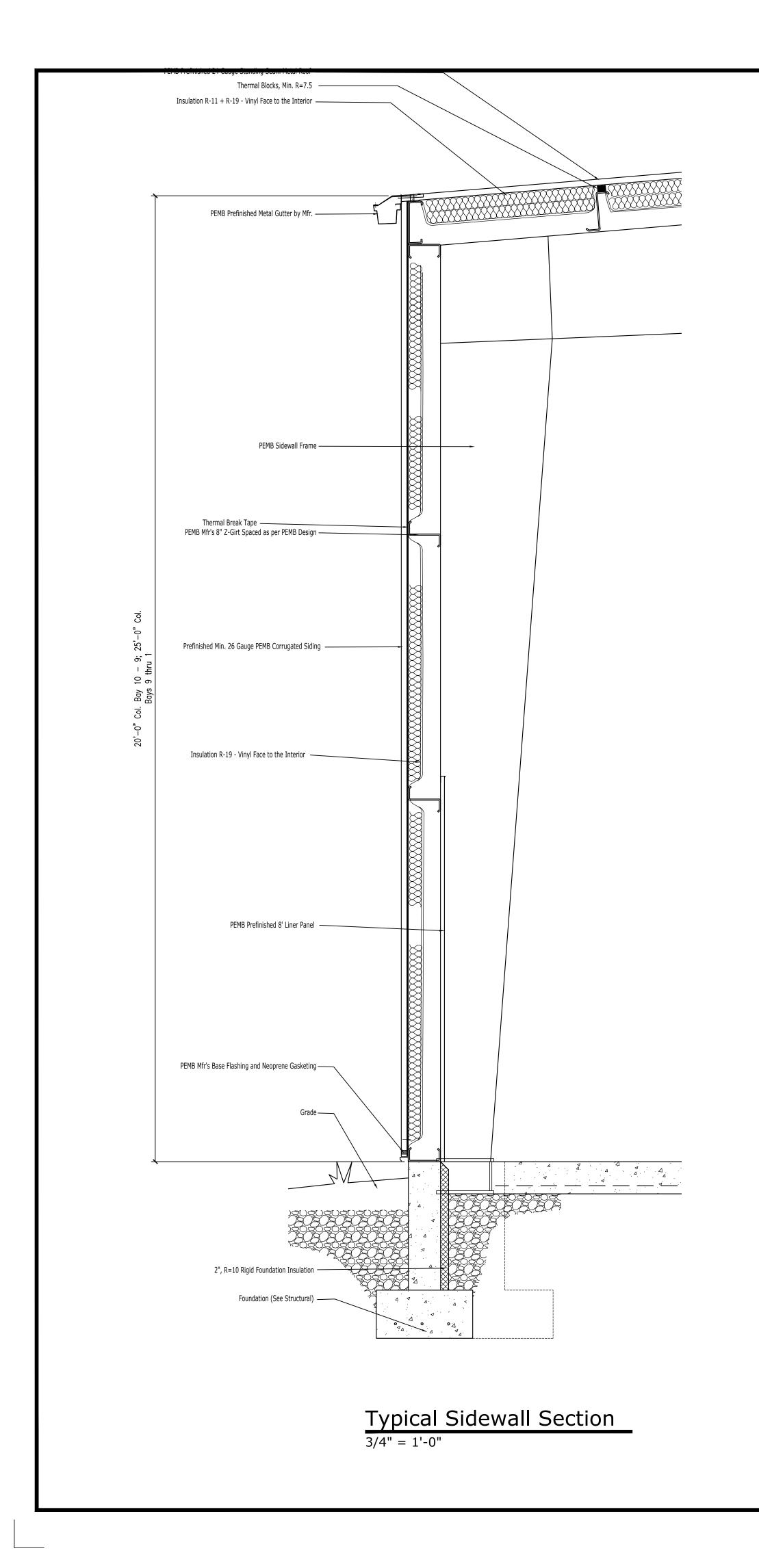
PROJECT NO: 22-113 CAD DWG FILE: 22-113 Rialto DRAWN BY: PO CHECKED BY: PO

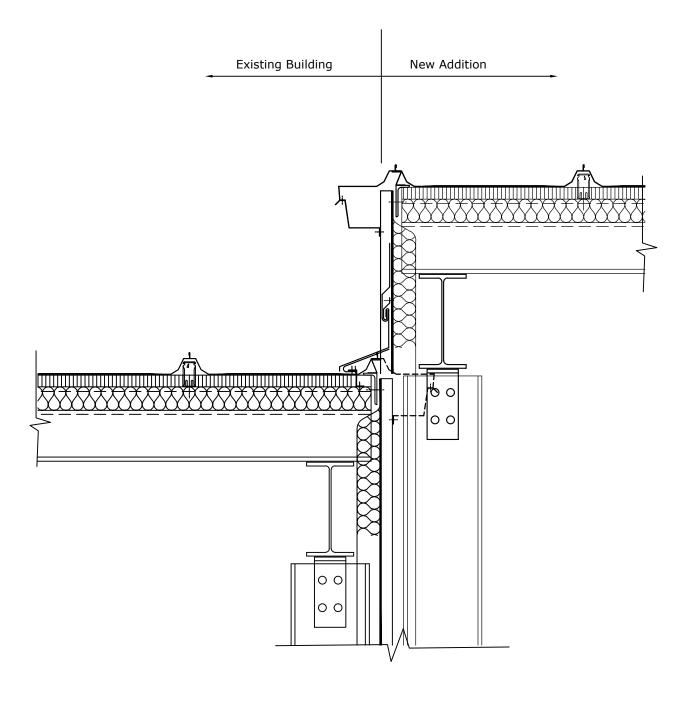
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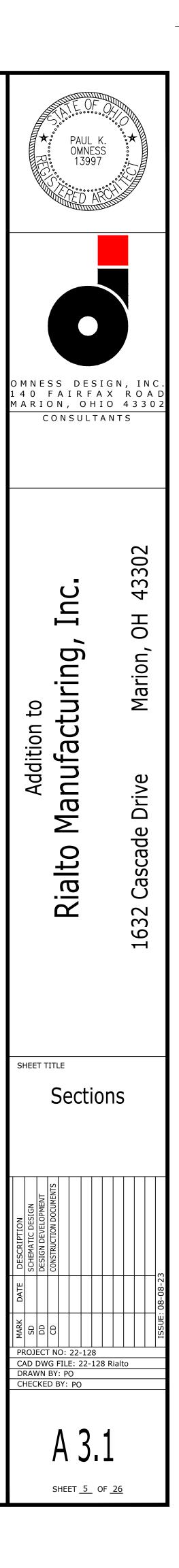


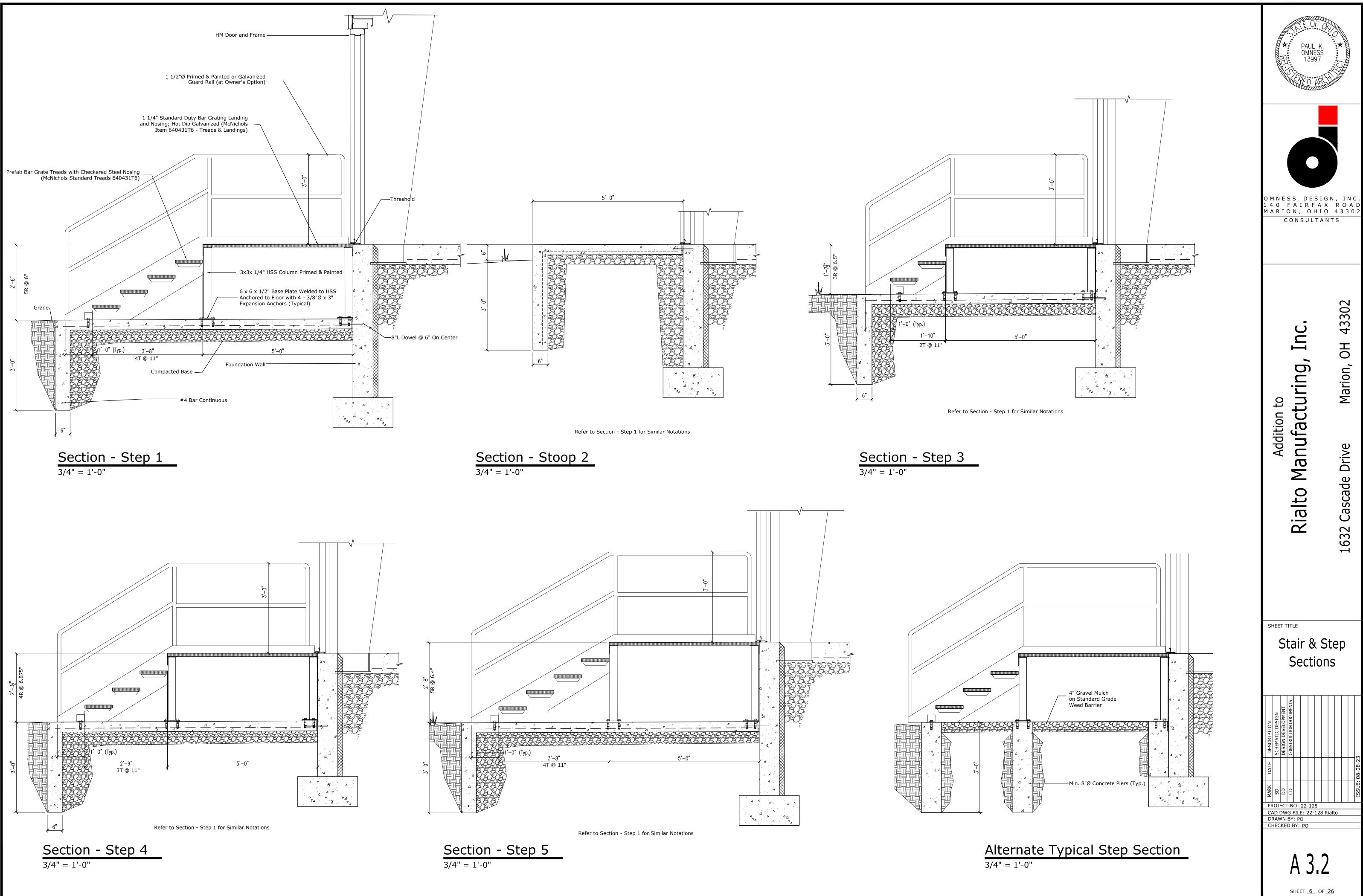






Roof Offset Detail





		3.4	MOISTURE AND MOLD CONTROL
SECTION 014000 - QUALITY REQUIREMENTS		A. Be	efore installation of weather barriers, protect materials from water damage a and organic materials from coming into prolonged contact with concrete.
PART 1 - GENERAL			<ol> <li>Protect stored and installed material from flowing or standing water.</li> </ol>
1.1 SECTION REQUIREMENTS			<ol> <li>Remove standing water from decks.</li> <li>Keep deck openings covered or dammed.</li> </ol>
A. Testing and inspecting services are required to verify compliance with indicated. These services do not relieve Contractor of responsibilit Contract Document requirements.		B. Af	ter installation of weather barriers but before full enclosure and conditioning protect as follows:
B. Referenced Standards: If compliance with two or more standards is s establish different or conflicting requirements, comply with the mos Refer uncertainties to Architect for a decision.	st stringent requirement.		<ol> <li>Do not load or install drywall or porous materials into partially enclosed be 2. Discard water-damaged material.</li> <li>Do not install material that is wet.</li> <li>Discard, replace, or clean stored or installed material that begins to grow 5. Perform work in a sequence that allows any wet materials adequate</li> </ol>
C. Minimum Quantity or Quality Levels: The quantity or quality level show the minimum. The actual installation may exceed the minimum wit Indicated numeric values are minimum or maximum, as appropriat requirements. Refer uncertainties to Architect for a decision.	thin reasonable limits.	3.5	enclosing the material in drywall or other interior finishes. OPERATION, TERMINATION, AND REMOVAL
D. Special Tests and Inspections: Owner will engage a qualified testin inspector to conduct special tests and inspections required by auth			Supervision: Enforce strict discipline in use of temporary facilities. To mininabuse, limit availability of temporary facilities to essential and intended use emove each temporary facility when need for its service has ended, when it
PART 2 - PRODUCTS (Not Used)			by authorized use of a permanent facility, or no later than Substantial Com t Substantial Completion, repair, renovate, and clean permanent facilities us
PART 3 - EXECUTION		0. A	construction period.
3.1 REPAIR AND PROTECTION		END OF	= SECTION 015000
A. General: On completion of testing, inspecting, sample taking, and sim damaged construction and restore substrates and finishes.	nilar services, repair	SECTIC	ON 017000 - EXECUTION AND CLOSEOUT REQUIREMENTS
B. Repair and protection are Contractor's responsibility, regardless of the responsibility for quality-control services.	e assignment of	PART 1	- GENERAL
END OF SECTION 014000		1.1	EXECUTION REQUIREMENTS
		A. Cl	<ol> <li>Structural Elements: When cutting and patching structural elements,</li> </ol>
SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS PART 1 - GENERAL	014000 - 1		<ol> <li>Solutional Elements: When cutting and patching structural elements, locations and details of cutting and await directions from Architect be Shore, brace, and support structural elements during cutting and pat</li> <li>Operational Elements: Do not cut and patch operating elements and relation in a manner that results in reducing their capacity to perform as inter- increased maintenance or decreased operational life or safety.</li> </ol>
QUALITY REQUIREMENTS 1.1 SECTION REQUIREMENTS	014000 - 1		<ol> <li>Visual Elements: Do not cut and patch construction in a manner that res evidence of cutting and patching. Do not cut and patch exposed construction</li> </ol>
A. Use Charges: Installation and removal of and use charges for tempora included in the Contract Sum unless otherwise indicated.	ary facilities shall be	B. Ma	that would, in Architect's opinion, reduce the building's aesthetic qua
B. Water and Electric Power: Available from Owner's existing system with without payment of use charges. Provide connections and extensio construction operations.			recommendations and instructions for installation of products and equipme
C. Accessible Temporary Egress: Comply with applicable provisions in IC	CC A117.1.	1.2	CLOSEOUT SUBMITTALS
			ontractor's List of Incomplete Items: Initial submittal at Substantial Completion peration and Maintenance Data: Submit two (2) copies of manual.
PART 2 - PRODUCTS			DF Electronic File: Assemble manual into a composite electronically indexed
2.1 MATERIALS			digital media.
A. Plastic Mesh Fencing: minimum 4 feet high with posts.			ecord Drawings: Submit one set(s) of marked-up record prints.
2.2 TEMPORARY FACILITIES		L. Re	cond i roddet Data. Submit one paper copy of each submittal.
A. Provide field offices, storage and fabrication sheds, and other supp construction operations. Store combustible materials apart from but	, i i i i i i i i i i i i i i i i i i i	1.3 A.	SUBSTANTIAL COMPLETION PROCEDURES Prepare a list of items to be completed and corrected (punch list), the value
2.3 EQUIPMENT			and reasons why the Work is not complete.
<ul> <li>Fire Extinguishers: Portable, UL rated; with class and extinguishing locations and classes of fire exposures.</li> </ul>	agent as required by	B. St	<ul> <li>Ibmittals Prior to Substantial Completion: Before requesting Substantial Cor</li> <li>inspection, complete the following:</li> <li>1. Obtain and submit releases from authorities having jurisdiction permitting</li> </ul>
PART 3 - EXECUTION			<ul><li>unrestricted use of the Work and access to services and utilities. Incl permits, operating certificates, and similar releases.</li><li>Submit closeout submittals specified in other sections, including proj.</li></ul>
3.1 TEMPORARY UTILITY INSTALLATION			documents, operation and maintenance manuals, property surveys, s information, warranties, workmanship bonds, maintenance service ag certifications, and similar documents.
A. General: Install temporary service or connect to existing service.			3. Submit maintenance material submittals specified in other sections, i parts, extra materials, and similar items, and deliver to location desig
B. Sanitary Facilities: Provide temporary toilets, wash facilities, and dr Comply with regulations and health codes for type, number, locatio maintenance of fixtures and facilities.			<ol> <li>Submit test/adjust/balance records.</li> <li>Submit changeover information related to Owner's occupancy, use, or maintenance.</li> </ol>
C. Provide temporary lighting with local switching that provides adequated construction operations, observations, inspections, and traffic cond		C.	Procedures Prior to Substantial Completion: Before requesting Substantial inspection, complete the following:
3.2 SUPPORT FACILITIES INSTALLATION			<ol> <li>Advise Owner of pending insurance changeover requirements.</li> <li>Make final changeover of permanent locks and deliver keys to Owner.</li> </ol>
A. Waste Disposal Facilities: Provide waste-collection containers in sizes from construction operations. Comply with requirements of authorit			<ol> <li>Complete startup and testing of systems and equipment.</li> <li>Perform preventive maintenance on equipment used prior to Substar</li> <li>Advise Owner of changeover in heat and other utilities.</li> </ol>
3.3 SECURITY AND PROTECTION FACILITIES INSTALLATION			<ol> <li>Participate with Owner in conducting inspection and walkthrough with responders.</li> <li>Remove temporary facilities and controls.</li> </ol>
A. Provide protection, operate temporary facilities, and conduct constructions with environmental regulations and that minimize possible air, wate contamination or pollution or other undesirable effects.			<ol> <li>Complete final cleaning requirements, including touchup painting.</li> <li>Touch up and otherwise repair and restore marred exposed finishes defects.</li> </ol>
B. Tree and Plant Protection: Install temporary fencing located as indicat of trees to protect vegetation from damage from construction opera systems from damage, flooding, and erosion.		D.	Inspection: Submit a written request for inspection for Substantial Complete request, Architect will proceed with inspection or advise Contractor of unful Architect will prepare the Certificate of Substantial Completion after inspec Contractor of items that must be completed or corrected before certificate v
C. Furnish and install site enclosure fence in a manner that will prever easily entering site except by entrance gates.	nt people and animals from	1.4	FINAL COMPLETION PROCEDURES
D. Barricades, Warning Signs, and Lights: Comply with requirements of a jurisdiction for erecting structurally adequate barricades, including			ubmittals Prior to Final Completion: Before requesting inspection for determi completion, complete the following:
<ul> <li>Provide temporary enclosures for protection of construction, in progeneous exposure, foul weather, other construction operations, and similar a weathertight enclosure for building exterior.</li> </ul>			<ol> <li>Submit a final Application for Payment.</li> <li>Submit certified copy of Architect's Substantial Completion inspectior completed or corrected (punch list), endorsed and dated by Architect</li> </ol>
<ul><li>F. Provide floor-to-ceiling dustproof partitions to limit dust and dirt mig</li></ul>	gration and to separate		the list shall state that each item has been completed or otherwise re 3. Certificate of Insurance: Submit evidence of final, continuing insurance of

Install and maintain temporary fire-protection facilities. Comply with NFPA 241.

areas occupied by Owner from fumes and noise.

4. Submit pest-control final inspection report.

naterials from water damage and keep porous	B. Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare final Certificate for Payment after inspection or will advise Contractor of items that	F.	Joint arrar
nged contact with concrete.	must be completed or corrected before certificate will be issued.	G. l	Use pro
om flowing or standing water.	<ol> <li>Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.</li> </ol>	3.3	CUT
ull enclosure and conditioning of building,	PART 2 - PRODUCTS	Α.	Provi
terials into partially enclosed building.	2.1 MATERIALS	В.	Prote Provi expo
ed material that begins to grow mold.	A. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.	C. 1	Where e such
s any wet materials adequate time to dry before er interior finishes.	B. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous	D. (	Sutting: adjoi
/AL	to health or property or that might damage finished surfaces. 1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not		1. Cu
f temporary facilities. To minimize waste and to essential and intended uses.	applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.	E.	Patcl insta
ts service has ended, when it has been replaced no later than Substantial Completion.	2.2 OPERATION AND MAINTENANCE DOCUMENTATION		1.
d clean permanent facilities used during	A. Directory: Prepare a single, comprehensive directory of emergency, operation, and maintenance data and materials, listing items and their location to facilitate ready access to desired information.		2. W
REQUIREMENTS	B. Organization: Unless otherwise indicated, organize manual into separate sections for each system and subsystem, and separate sections for each piece of equipment not part of a system.		3. W
EQUIREMENTS	C. Organize data into three-ring binders with identification on front and spine of each binder, and envelopes for folded drawings. Include the following:		
	<ol> <li>Manufacturer's operation and maintenance documentation.</li> <li>Maintenance and service schedules.</li> </ol>	3.4	CLE/
	<ol> <li>Maintenance and service schedules.</li> <li>Maintenance service contracts. Include name and telephone number of service agent.</li> <li>Emergency instructions.</li> </ol>	A. (	Clean P 1. Re
patching structural elements, notify Architect of	<ol> <li>Spare parts list and local sources of maintenance materials.</li> <li>Wiring diagrams.</li> <li>Option of instruction in a budge proceedings to fellow and required patifications for</li> </ol>		2. W
ait directions from Architect before proceeding. ements during cutting and patching.	<ol> <li>Copies of warranties. Include procedures to follow and required notifications for warranty claims</li> </ol>	В (	3. R∉ Complet
ch operating elements and related components ir capacity to perform as intended or that results in perational life or safety.	2.3 RECORD DRAWINGS		Subs
estruction in a manner that results in visual ot cut and patch exposed construction in a manner the building's aesthetic qualities.	A. Record Prints: Maintain a set of prints of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued. Mark to show actual installation where installation varies from that shown originally. Accurately record information		1. Cle 2. Sv
and maintain on-site manufacturer's written ation of products and equipment.	in an acceptable drawing technique. 1. Identify and date each record Drawing; include the designation "PROJECT RECORD		3. Re 4. Cl
	DRAWING" in a prominent location.		5. CI 6. Va
mittal at Substantial Completion.			7.
?) copies of manual.	<ul> <li>3.1 EXAMINATION AND PREPARATION</li> <li>A. Existing Conditions: The existence and location of underground and other utilities and</li> </ul>		8. Re
mposite electronically indexed file. Submit on	construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, and other construction affecting the Work.	3.5	OPE
up record prints.	B. Before proceeding with each component of the Work, examine substrates, areas, and conditions,	A. (	Operatio data
each submittal.	with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance.		not p
ES orrected (punch list), the value of items on the list,	<ol> <li>Verify compatibility with and suitability of substrates.</li> <li>Examine roughing-in for mechanical and electrical systems.</li> <li>Examine walls, floors, and roofs for suitable conditions.</li> </ol>	B. 1	Manufae shee com
re requesting Substantial Completion	C. Proceed with installation only after unsatisfactory conditions have been corrected.		ident appli
s having jurisdiction permitting Owner	D. Take field measurements as required to fit the Work properly. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication.		1.
is to services and utilities. Include occupancy ilar releases.	E. Verify space requirements and dimensions of items shown diagrammatically on Drawings.	C. I	Drawing relati
other sections, including project record e manuals, property surveys, similar final record onds, maintenance service agreements, final	F. Surface and Substrate Preparation: Comply with manufacturer's written recommendations for preparation of substrates to receive subsequent work.		flow
s specified in other sections, including tools, spare , and deliver to location designated by Architect.	3.2 INSTALLATION	3.6	DEM
to Owner's occupancy, use, operation, and	A. Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.	А.	Enga syste follov
Before requesting Substantial Completion	<ol> <li>Make vertical work plumb and make horizontal work level.</li> <li>Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.</li> </ol>		1.
eover requirements. and deliver keys to Owner.	B. Comply with manufacturer's written instructions and recommendations.		
nd equipment. uipment used prior to Substantial Completion.	C. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.	END C	OF SEC
other utilities. spection and walkthrough with local emergency	D. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed.		
uding touchup painting. tore marred exposed finishes to eliminate visual	E. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place. Where size and type of attachments are not indicated, verify size and type required for load conditions.		

Mounting Heights: Where mounting heights are not indicated, mount components at

1.

heights directed by Architect.

ection for Substantial Completion. On receipt of n or advise Contractor of unfulfilled requirements. tantial Completion after inspection or will advise or corrected before certificate will be issued.

questing inspection for determining final

- ostantial Completion inspection list of items to be ndorsed and dated by Architect. Certified copy of been completed or otherwise resolved. of final, continuing insurance coverage
- complying with insurance requirements.

F. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, nge joints for the best visual effect. Fit exposed connections together to form hairline joints.

oducts, cleaners, and installation materials that are not considered hazardous.

TING AND PATCHING

vide temporary support of work to be cut.

ection: Protect in-place construction during cutting and patching to prevent damage. vide protection from adverse weather conditions for portions of Project that might be osed during cutting and patching operations.

existing services/systems are required to be removed, relocated, or abandoned, bypass services/systems before cutting to minimize interruption to occupied areas.

: Cut in-place construction using methods least likely to damage elements retained or ining construction.

ut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

h with durable seams that are as invisible as possible. Provide materials and comply with allation requirements specified in other Sections.

Restore exposed finishes of patched areas and extend finish restoration into adjoining construction in a manner that will minimize evidence of patching and refinishing. /here walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance.

/here patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

## ANING

Project site and work areas daily, including common areas. Dispose of materials lawfully.

emove liquid spills promptly. /here dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

emove debris from concealed spaces before enclosing the space.

ete the following cleaning operations before requesting inspection for certification of stantial Completion:

ean Project site, yard, and grounds, in areas disturbed by construction activities. Sweep paved areas; remove stains, spills, and foreign deposits. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.

weep paved areas broom clean. Remove spills, stains, and other foreign deposits. Remove labels that are not permanent.

Clean transparent materials, including mirrors. Remove excess glazing compounds. Clean exposed finishes to a dust-free condition, free of stains, films, and foreign substances. Sweep concrete floors broom clean.

acuum carpeted surfaces and wax resilient flooring.

Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and foreign substances. Clean plumbing fixtures. Clean light fixtures, lamps, globes, and reflectors.

eplace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.

ERATION AND MAINTENANCE MANUAL PREPARATION

ion and Maintenance Manuals: Assemble a complete set of operation and maintenance indicating operation and maintenance of each system, subsystem, and piece of equipment part of a system.

acturers' Data: Where manuals contain manufacturers' standard printed data, include only ets pertinent to product or component installed. Mark each sheet to identify each product or ponent incorporated into the Work. If data include more than one item in a tabular format, tify each item using appropriate references from the Contract Documents. Identify data icable to the Work and delete references to information not applicable.

Prepare supplementary text if manufacturers' standard printed data are unavailable and where the information is necessary for proper operation and maintenance of equipment or systems.

gs: Prepare drawings supplementing manufacturers' printed data to illustrate the tionship of component parts of equipment and systems and to illustrate control sequence and / diagrams.

MONSTRATION AND TRAINING

age qualified instructors to instruct Owner's personnel to adjust, operate, and maintain tems, subsystems, and equipment not part of a system. Include a detailed review of the owing:

Include instruction for basis of system design and operational requirements, review of documentation, emergency procedures, operations, adjustments, troubleshooting, maintenance, and repairs.

CTION 017000

OMNESS DESIGNATION, OHIO CONSULTAN	R O A D 4 3 3 0 2
Addition to alto Manufacturing, Inc.	Marion, OH 43302
Addi Rialto Manuf	1632 Cascade Drive
SHEET TITLE Specificat	ions
Wark       Schewalt         NOLLEN       DESCRIPTION         MARK       DESIGN	IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
SP 1.(	

#### SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data and color Samples.
- Environmental Limitations: Do not proceed with installation of joint sealants when ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.

PART 2 - PRODUCTS

- 2.1 JOINT SEALANTS
- A. Compatibility: Provide joint sealants, joint fillers, and other related materials that are compatible with one another and with joint substrates under service and application conditions.
- Sealant for General Exterior Use Where Another Type Is Not Specified:
- Single-component, neutral-curing silicone sealant, ASTM C 920, Type S; Grade NS; Class 25; for Use NT.
- Single-component, nonsag urethane sealant, ASTM C 920, Type S; Grade NS; Class 25; 2. and for Use NT.
- Single-component, nonsag polysulfide sealant, ASTM C 920, Type S; Grade NS; 3. Class 25; for Use NT.
- Single-component, nonsag urethane sealant, ASTM C 920, Type S; Grade NS; Class 25; for Use T.
- Sealant for Exterior Traffic-Bearing Joints, Where Slope Allows Use of Pourable Sealant: C.
  - Single-component, pourable urethane sealant, ASTM C 920, Type S; Grade P; Class 25; for Use T.
- Sealant for Interior Use at Perimeters of Door and Window Frames: D.

1. Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

- E. Acoustical Sealant:
  - 1. Nonsag, paintable, nonstaining latex sealant complying with ASTM C 834 that effectively reduces airborne sound transmission as demonstrated by testing according to ASTM E 90.
- 2.2 MISCELLANEOUS MATERIALS
- Provide sealant backings of materials that are nonstaining; are compatible with joint substrates, Α. sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C 1330, of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.
- D. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

#### PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Comply with ASTM C 1193.
- B. Install sealant backings to support sealants during application and to produce cross-sectional shapes and depths of installed sealants that allow optimum sealant movement capability.
- C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- D. Acoustical Sealant Installation: At sound-rated assemblies and elsewhere as indicated, seal perimeters, control joints, openings, and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions. Comply with ASTM C 919.

END OF SECTION 079200

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

- 1.1 SECTION REQUIREMENTS
- A. Submittals: Product Data and Shop Drawings.

PART 2 - PRODUCTS

- 2.1 HOLLOW METAL DOORS AND FRAMES
- A. Frames: ANSI A250.8; conceal fastenings unless otherwise indicated.
  - Steel Sheet for Interior Frames: 0.042-inch- minimum thickness.
  - Interior Frame Construction: Knocked down. 3. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcement
  - plates from same material as frames.
  - 4. Frame Anchors: Not less than 0.042 inch thick.
- Prepare doors and frames to receive mortised and concealed hardware according to SDI A250.6 B and BHMA A156.115.
- C. Reinforce doors and frames to receive surface-applied hardware.
- Prime Finish: Manufacturer's standard, factory-applied coat of lead- and chromate-free primer D. complying with SDI A250.10 acceptance criteria.

### 2.2 MATERIALS

- - Class B.

### PART 3 - EXECUTION

- 3.1 INSTALLATION
- Install hollow metal frames to comply with SDI A250.11. Α.

- C.

### END OF SECTION 081113

SECTION 081416 - FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS A. Submittals: Samples for factory-finished doors.

PART 2 - PRODUCTS

- 2.1 FLUSH WOOD DOORS
- 2.2 DOOR CONSTRUCTION, GENERAL A. Quality Standard: WDMA I.S.1-A.
- B. WDMA I.S.1-A Performance Grade:
- 1. Heavy duty unless otherwise indicated. cores for doors with protection plates.

### 2.3 FLUSH WOOD DOORS

- A. Veneer-Faced Doors for Transparent Finish:

  - a. Faces: Grade A rotary-cut select white birch.
- 2.4 FABRICATION AND FINISHING

- with DHI-WDHS-3.
- C. Cut and trim openings to comply with referenced standards.
- 1. Sheen: Satin.

### PART 3 - EXECUTION

- 3.1 INSTALLATION
- indicated.
  - Install fire-rated doors to comply with NFPA 80. 2

### B. Align and fit doors in frames with uniform clearances and bevels.

- C. Clearances: As follows unless otherwise indicated:
- 1/8 inch at heads, jambs, and between pairs of doors.
- 1/4 inch from bottom of door to top of threshold. 4. Comply with NFPA 80 for fire-rated doors.

END OF SECTION 081416

A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, suitable for exposed applications.

B. Frame Anchors: ASTM A 879/A 879M, 4Z coating designation; mill phosphatized.

For anchors built into exterior walls, sheet steel complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M,

1. Fire-Rated Frames: Install according to NFPA 80.

Install doors to provide clearances between doors and frames as indicated in SDI A250.11.

Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying rust-inhibitive primer.

C. Particleboard-Core Doors: Provide structural composite lumber cores instead of particleboard

1. Interior Solid-Core Doors: Premium grade, five-ply, particleboard cores

b. Veneer Matching: Book and balance match. c. Continuous matching for doors with transoms.

A. Factory-fit doors to suit frame-opening sizes indicated and to comply with clearances specified.

B. Factory-machine doors for hardware that is not surface applied. Locate hardware to comply

D. Factory-finish doors indicated for transparent finish with stain and manufacturer's standard finish complying with WDMA TR-6, catalyzed polyurethane for grade specified for doors.

A. Install doors to comply with manufacturer's written instructions and WDMA I.S.1-A, and as

Install smoke- and draft-control doors according to NFPA 105.

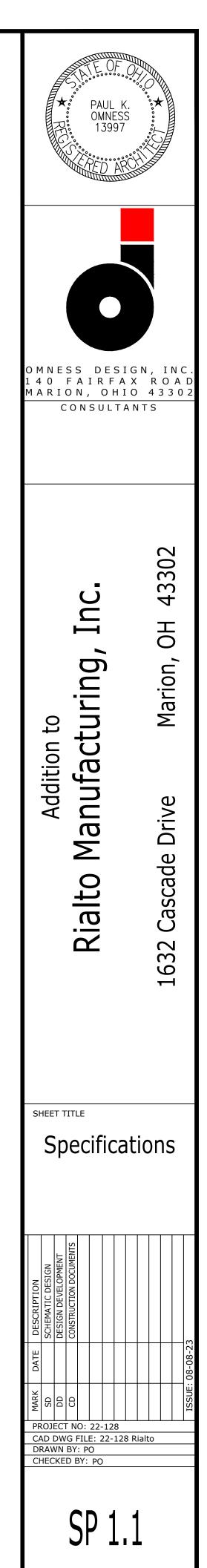
1/8 inch from bottom of door to top of decorative floor finish or covering.

SECTION 084113 - ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

<b>,</b> .		E
1.1	SECTION REQUIREMENTS	
A	A. Submittals: Product Data, Shop Drawings, and color Samples.	END
	1. For entrance doors, include hardware schedule.	SEC
PAF	RT 2 - PRODUCTS	PAR
2.1		1.1
	PERFORMANCE REQUIREMENTS A. Structural Performance: Design, engineer, fabricate, and install aluminum-framed storefronts to	A
r	withstand structural loads indicated.	PAR
	<ol> <li>Limit deflection of framing members normal to wall plane to 1/175 of clear span or an amount that restricts edge deflection of individual glazing lites to 3/4 inch, whichever is less.</li> </ol>	2.1 A
E	B. Windborne-Debris Resistance: Framing system and doors pass basic-protection testing requirements in ASTM E 1996 for Wind Zone 1 when tested according to ASTM E 1886.	П
C	C. Air Infiltration: Limited to 0.06 cfm/sq. ft. of fixed framing and glass area when tested according to ASTM E 283 at a static-air-pressure difference of 6.24 lbf/sq. ft	В
[	D. Water Penetration: Systems do not evidence water leakage when tested according to ASTM E 331 at minimum differential pressure of 20 percent of positive wind-load design pressure but not less than 10 lbf/sq. ft	C
E	. Thermal Transmittance (U-factor): Fixed glazing and framing areas shall have U-factor of not more than 0.40 Btu/sq. ft. x h x deg F as determined according to NFRC 100.	D
2.2	ALUMINUM-FRAMED STOREFRONTS	E
	ALOMINOM-FRAMED STOREFRONTS A. Basis of Design: Tubelite T24650 and T14000.	
	8. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish	2.2
	indicated; ASTM B 209 sheet; ASTM B 221 extrusions.	2.2 A
(	C. Framing Members: Manufacturer's standard extruded-aluminum framing members of thickness required and reinforced as required to support imposed loads.	В
	1. Construction: Thermally broken.	С
[	D. Doors: 1-3/4-inch-thick glazed doors with minimum 0.125-inch-thick, extruded-aluminum tubular rail and stile members. Mechanically fasten corners with reinforcing brackets that are deeply penetrated and fillet welded or that incorporate concealed tie rods. Provide snap-on, extruded-aluminum glazing stops and preformed gaskets.	D
	<ol> <li>Door Design: As indicated; Narrow stile; 2-1/8-inch nominal width.</li> <li>Accessible Doors: Smooth surfaced for width of door in area within 10 inches above floor or ground plane.</li> <li>Exterior Doors: Provide compression weather stripping at fixed stops. At other locations,</li> </ol>	2.3 A
	provide sliding weather stripping retained in adjustable strip mortised into door edge.	PAR
E	E. Glazing: Comply with Section 088000 "Glazing."	3.1
F	E. Glazing Gaskets: Manufacturer's standard sealed-corner pressure-glazing system of black, resilient elastomeric glazing gaskets, setting blocks, and shims or spacers.	A
(	G. Fasteners and Accessories: Compatible with adjacent materials, corrosion resistant, nonstaining, and nonbleeding. Use concealed fasteners except for application of door hardware.	B
ŀ	I. Fabrication: Fabricate framing in profiles indicated for flush glazing (without projecting stops). Provide subframes and reinforcing of types indicated or, if not indicated, as required for a	С
	complete system. Factory-assemble components to greatest extent possible. Disassemble components only as necessary for shipment and installation.	3.2 A
	<ol> <li>Door Framing: Reinforce to support imposed loads. Factory-assemble door and frame units and factory-install hardware to greatest extent possible. Reinforce door and frame units for hardware indicated. Cut, drill, and tap for factory-installed hardware before finishing components.</li> </ol>	
I	Aluminum Finish: Class I, clear anodic finish; complying with AAMA 611.	
PAF	RT 3 - EXECUTION	-
3.1	INSTALLATION	B
/	A. Isolate metal surfaces in contact with incompatible materials, including wood, by painting contact surfaces with bituminous coating or primer or by applying sealant or tape recommended by manufacturer.	
E	B. Install components to drain water passing joints, condensation occurring within framing members, and moisture migrating within the system to exterior.	
(	<ul> <li>Set continuous sill members and flashing in full sealant bed as specified in Section 079200</li> <li>"Joint Sealants" to produce weathertight installation.</li> </ul>	
[	<ol> <li>Install framing components true in alignment with established lines and grades to the following tolerances:</li> </ol>	С
	1. Variation from Plane: Limit to 1/8 inch in 12 feet; 1/4 inch over total length.	

2. Alignment: For surfaces abutting in line, limit offset to 1/16 inch. For surfaces meeting at corners, limit offset to 1/32 inch. 3. Diagonal Measurements: Limit difference between diagonal measurements to 1/8 inch. Install doors without warp or rack. Adjust doors and hardware to provide tight fit at contact points and smooth operation. ND OF SECTION 084113 ECTION 088000 - GLAZING ART 1 - GENERAL SECTION REQUIREMENTS A. Submittals: Product Data and Samples. ART 2 - PRODUCTS GLASS, GENERAL A. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below unless more stringent requirements are indicated. See these publications for glazing terms not otherwise defined in this Section or in referenced standards. Safety Glazing: Where safety glazing is indicated, provide glazing that complies with 16 CFR 1201, Category II. Safety Glazing Labeling: Where safety glazing is indicated, permanently mark glazing with certification label of the SGCC or another certification agency acceptable to authorities having jurisdiction or manufacturer. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of IGCC. E. Windborne-Debris-Impact Resistance: Exterior glazing shall comply with basic-protection testing requirements in ASTM E 1996 for Wind Zone 1 when tested according to ASTM E 1886. Test specimens shall be no smaller in width and length than glazing indicated for use on Project and shall be installed in same manner as glazing indicated for use on Project. GLASS PRODUCTS A. Fully Tempered Float Glass: ASTM C 1048, Kind FT; Type I; Quality-Q3. B. Heat-Strengthened Float Glass: ASTM C 1048, Kind HS; Type I; Quality-Q3. C. Reflective-Coated Glass: ASTM C 1376, coated by pyrolytic or vacuum deposition (sputtercoating) process. D. Insulating-Glass Units: Factory-assembled units consisting of sealed lites of glass separated by a dehydrated interspace, qualified according to ASTM E 2190. GLAZING SEALANTS A. Glazing Sealant: Neutral-curing silicone glazing sealant complying with ASTM C 920, Type S, Grade NS, Class 25, Use NT. RT 3 - EXECUTION INSTALLATION A. Comply with combined recommendations of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are contained in GANA's "Glazing Manual." B. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics. C. Remove nonpermanent labels, and clean surfaces immediately after installation. INSULATING-GLASS TYPES A. Glass Type C: Tinted insulating glass. 1. Overall Unit Thickness: 1 inch. 2. Thickness of Each Glass Lite: 1/4". 3. Outdoor Lite: Heat-strengthened float glass. Omitted Interspace Content: Air. Indoor Lite: Heat-strengthened float glass. 6 7. Solar Heat-Gain Coefficient: 0.14 maximum. B. Glass Type b: Reflective-coated, tinted insulating glass. 1. Overall Unit Thickness: 1 inch. 2. Thickness of Each Glass Lite: 1/4". 3. Outdoor Lite: Tinted fully tempered float glass. 4. Omitted. Interspace Content: Air. 6. Indoor Lite: Clear fully tempered float glass. 7. Coating Location: Second surface. 8. Coating Color: Gray. 9. Solar Heat-Gain Coefficient: 0.14 maximum. 10. Safety glazing required. C. Glass Type a: Reflective-coated, tinted insulating spandrel glass 1. Overall Unit Thickness: 1 inch. 2. Thickness of Each Glass Lite: <sup>1</sup>/<sub>4</sub>". 3. Outdoor Lite: Tinted fully tempered float glass. 4. Omitted Interspace Content: Air. Indoor Lite: Clear fully tempered float glass. 7. Coating Location: Second surface. 8. Coating Color: Omitted END OF SECTION 088000 SECTION 092216 - NON-STRUCTURAL METAL FRAMING PART 1 - GENERAL 1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.



SHEET <u>8</u> OF <u>26</u>

#### PART 2 - PRODUCTS

2.1	METAL FRAMING AND SUPPORTS			
Α.	Steel Framing Members, General: ASTM C 754.	3.1	INSTALLATION	
	1. Steel Sheet Components: ASTM C 645. Thickness specified is minimum uncoated base-	А.	Install gypsum board to comply with ASTM	
	metal thickness.         2.       Protective Coating:         Coating with equivalent corrosion resistance of		<ol> <li>Isolate gypsum board assemblies fro edge trim and acoustical sealant.</li> </ol>	
	ASTM A 653/A 653M, G40 zinc coating.		<ol> <li>Single-Layer Fastening Methods: Fa</li> <li>Multilayer Fastening Methods: Faste</li> </ol>	
В.	Framing Systems:		layers with adhesive and supplemen	
	<ol> <li>Studs and Runners: In depth indicated and 0.018 inch thick unless otherwise indicated.</li> <li>Flat Strap and Backing: 0.018 inch thick.</li> </ol>	В.	Fire-Resistance-Rated Assemblies: Compl	
	3. Hat-Shaped, Rigid Furring Channels: In depth indicated and 0.018 inch thick.	C.	Finishing Gypsum Board: ASTM C 840.	
	<ol> <li>Z-Furring: In depth required by insulation, 1-1/4-inch face flange, 7/8-inch wall- attachment flange, and 0.018 inch thick.</li> </ol>		1. At concealed areas, unless a higher leve	
			assemblies, provide Level 1 finish: E 2. At substrates for tile, provide Level 2 fin	
2.2	ACCESSORIES		joint compound to tape, fasteners, a	
A. (	General: Comply with referenced installation standards.		3. Unless otherwise indicated, provide Lev fill, and finish coats of joint compoun	
	1. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.	D. (	Glass-Mat, Water-Resistant Backing Panels: instructions.	
В.	Isolation Strip at Exterior Walls: Asphalt felt or foam gasket.			
		END C	OF SECTION 092900	
PART	3 - EXECUTION	SECTI	ON 095113 - ACOUSTICAL PANEL CEILING	
3.1	INSTALLATION	PART	1 - GENERAL	
A.	Install steel framing to comply with ASTM C 754."			
	1. Gypsum Board Assemblies: Also comply with ASTM C 840.	1.1	SECTION REQUIREMENTS	
В.	Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.	A. Submittals: Product Data and Samples.		
C.	Isolate steel framing from building structure, except at floor, to prevent transfer of loading imposed by structural movement.	PART	2 - PRODUCTS	
	1. Where studs are installed directly against exterior walls, install isolation strip between studs and wall.	2.1	PERFORMANCE REQUIREMENTS	
D.	Fire-Resistance-Rated Assemblies: Comply with requirements of listed assemblies.	2.2	ACOUSTICAL PANELS	
		A. E	Basis of Design: Armstrong, Mesa 681.	
	DF SECTION 092216	В. С	Classification: As follows, per ASTM E 1264:	
SECTI	ON 092900 - GYPSUM BOARD		1. Pattern: CE (perforated, small holes	
PART	1 - GENERAL		2. LRC: Not less than 0.85. 3. NRC: Not less than 0.60.	
			4. CAC: Not less than 35.	
1.1	SECTION REQUIREMENTS		5. Surface-Burning Characteristics: Cla	
A. S	Submittals: Product data.	C. (	Color: White.	
		D.	Edge Detail: Reveal sized-to-fit exposed fla	
PART	2 - PRODUCTS	E. T	hickness: 9/16 inch.	
2.1	PERFORMANCE REQUIREMENTS	F.	Modular Size: 24 by 48 inches.	
Α.	Fire-Resistance-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 119 by an independent testing and inspecting agency acceptable to	2.3	CEILING SUSPENSION SYSTEM	
	authorities having jurisdiction.	A. C	Ceiling Suspension System: Wide-face, direct	
B. S	TC-Rated Assemblies: Provide materials and construction identical to those tested in		structural classification.	
	assemblies per ASTM E 90 and classified per ASTM E 413 by a qualified independent testing and inspecting agency.		<ol> <li>Face Design: Flat, flush.</li> <li>Face Finish: Painted white.</li> </ol>	
2.2	PANEL PRODUCTS	В. А	Attachment Devices: Sized for 5 times the des Direct Hung, unless otherwise indicated.	
Α.	Provide in maximum lengths available to minimize end-to-end butt joints.	C. V	Vire Hangers, Braces, and Ties: Zinc-coated	
В.	Interior Gypsum Board: ASTM C 1396/C 1396M, in thickness indicated, with manufacturer's standard edges. Type as required for specific fire-resistance-rated assemblies.		<ul><li>zinc coating, soft temper.</li><li>1. Size: Provide yield strength at least</li></ul>	
C. C	Blass-Mat, Water-Resistant Gypsum Backing Board: ASTM C 1178/C 1178M, of thickness		Table 1, Direct Hung), but not less t	
	indicated Required type Unless otherwise indicated and Lyne X where required for fire			

PART 3 - EXECUTION

## 3.1 INSTALLATION

- Systems Handbook."
- precise fit.

C. Arrange directionally patterned acoustical units as indicated on Drawings.

END OF SECTION 095113

indicated. Regular type unless otherwise indicated and Type X where required for fireresistance-rated assemblies and where indicated.

#### 2.3 ACCESSORIES

- A. Trim Accessories: ASTM C 1047, formed from galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized-steel sheet. For exterior trim, use accessories formed from hot-dip galvanized-steel sheet, plastic, or rolled zinc.
  - Provide cornerbead at outside corners unless otherwise indicated.
  - Provide LC-bead (J-bead) at exposed panel edges.
  - 3. Provide control joints where indicated.
- B. Joint-Treatment Materials: ASTM C 475/C 475M.
  - 1. Joint Tape: Paper unless otherwise recommended by panel manufacturer.
  - 2. Joint Compounds: Setting-type taping compound and drying-type, ready-mixed, compounds for topping.
- C. Sound-Attenuation Blankets: ASTM C 665, Type I (unfaced).

	SECTION 096513 - RESILIENT BASE AND ACCESSORIES	3.2	APPLICATIO
	PART 1 - GENERAL	A. (	Comply with rec applicable to
k. Provide	1.1 SECTION REQUIREMENTS	В.	Paint expose
crews.	A. Submittals: Product data and Samples.		1. Do not pair unless o
ers to base	<ul> <li>B. Extra Materials: Deliver to Owner at least 10 linear feet of each type and color of resilient wall base installed.</li> </ul>	C. A	pply paints acc 1. Use brushe
S.	PART 2 - PRODUCTS	D. A	pply paints to p roller tracking
-rated	2.1 RESILIENT BASE		breaks.
st coat of	A. Vinyl Base: ASTM F 1861, Type TV (vinyl, thermoplastic), Group I (solid, homogeneous).		1. If under film has
rate first,	B. Style: Cove (base with toe).		
en	C. Minimum Thickness: 0.125 inch.	3.3	EXTERIOR P
	D. Height: 4 inches.	Α.	Steel:
	E. Lengths: Cut lengths 48 inches long or coils in manufacturer's standard lengths.		1. Semiglo primer.
	F. Outside Corners: Job formed or preformed.		
	G. Inside Corners: Job formed or preformed.		F SECTION 09 ON 099123 - IN
	2.2 RESILIENT MOLDING ACCESSORY	OLOTI	011 000 120 - 113
	A. Rubber Molding Accessories.	PART	1 - GENERAL
	B. Vinyl Molding Accessories.	1.1	SECTION RE
	C. Description: Nosing for resilient flooring; Transition strips.		SECTION RE Submittals:
	2.3 INSTALLATION ACCESSORIES	Α. Ο	1. Sample
	A. Adhesives: Water-resistant type recommended by manufacturer to suit floor covering and substrate conditions indicated.	В.	Extra Materia Project, in co
	PART 3 - EXECUTION	PART	2 - PRODUCTS
	3.1 INSTALLATION	2.1	PAINT
	A. Prepare horizontal surfaces according to ASTM F 710. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.		Ann Ann Ann Ann Ann Ann Ann Ann Ann Ann
	B. Adhesively install resilient wall base and accessories.		1. For eac
	C. Install wall base in maximum lengths possible. Apply to walls, columns, pilasters, casework, and other permanent fixtures in rooms or areas where base is required.	B. L	manufa ow-Emitting Ma
	D. Install reducer strips at edges of floor coverings that would otherwise be exposed.		LEED 2009 fo
	END OF SECTION 096513		Colors: As selec
	SECTION 099113 - EXTERIOR PAINTING		3 - EXECUTION
ate-duty	PART 1 - GENERAL	3.1	PREPARATIO
		A. C	Comply with rec applicable to
	1.1 SECTION REQUIREMENTS	B. F	emove hardwa
le 1,	A. Submittals: 1. Samples.		that cannot b
/I, Class 1	<ul> <li>B. Extra Materials: Deliver to Owner 1 gal. of each color and type of finish-coat paint used on Project, in containers, properly labeled and sealed.</li> </ul>		lean and prepa so cleaning o
C 635,	PART 2 - PRODUCTS	3.2 A. (	APPLICATIC
	2.1 PAINT	В.	applicable to Paint expose
	A. Material Compatibility: Provide materials that are compatible with one another and with		1. Paint s
	<ol> <li>Substrates.</li> <li>For each coat in a paint system, provide products recommended in writing by</li> </ol>		<ol> <li>Paint s</li> <li>Paint tl</li> <li>Color-code</li> </ol>
CA's "Ceiling	manufacturers of topcoat for use in paint system and on substrate indicated. B. Colors: As selected.		5. Do not pai unless
n system		C. /	Apply paints ac
provide a neat,	PART 3 - EXECUTION		1. Use brush 2. Use rollers
	3.1 PREPARATION	D. /	Apply paints to roller tracking
	<ul> <li>A. Comply with recommendations in MPI's "MPI Architectural Painting Specification Manual" applicable to substrates indicated.</li> <li>B. Remove hardware, lighting fixtures, and similar items that are not to be painted. Mask items</li> </ul>		breaks. 1. If unde film ha
	that cannot be removed. Reinstall items in each area after painting is complete.		
	C. Clean and prepare surfaces in an area before beginning painting in that area. Schedule painting	3.3	INTERIOR P

C. Clean and prepare surfaces in an area before beginning painting in that area. Schedule painting so cleaning operations will not damage newly painted surfaces. A. Steel:

2.

#### ASTM C 840.

PART 3 - EXECUTION

blies from abutting structural and masonry work. ant.

ods: Fasten gypsum panels to supports with scre Fasten base layers with screws, and face layers plementary fasteners.

: Comply with requirements of listed assemblies.

her level of finish is required for fire-resistance-ra inish: Embed tape at joints. vel 2 finish: Embed tape and apply separate first o ners, and trim flanges. ide Level 4 finish: Embed tape and apply separat ompound to tape, fasteners, and trim flanges.

anels: Finish according to manufacturer's writter

CEILINGS

1264:

I holes and lightly textured).

ics: Class A.

osed flange of suspension system.

e, direct-hung system; ASTM C 635, intermediate

the design load indicated in ASTM C 635, Table

coated carbon-steel wire; ASTM A 641/A 641M,

t least 3 times the hanger design load (ASTM C ( less than 0.106-inch- diameter wire.

A. Install acoustical ceilings to comply with ASTM C 636/C 636M and seismic design requirements indicated, according to manufacturer's written instructions and CISCA

B. Install acoustical panels with undamaged edges and fit accurately into suspension s runners and edge moldings. Scribe and cut panels at borders and penetrations to pr

#### **APPLICATION**

nply with recommendations in MPI's "MPI Architectural Painting Specification Manual" pplicable to substrates indicated.

aint exposed surfaces, new, unless otherwise indicated. Do not paint prefinished items, items with an integral finish, operating parts, and labels unless otherwise indicated.

y paints according to manufacturer's written instructions.

Use brushes only where the use of other applicators is not practical.

y paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, oller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color reaks.

If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

**EXTERIOR PAINT APPLICATION SCHEDULE** 

### teel:

Semigloss Water-Based, Light-Industrial Coating: Two coats over alkyd anticorrosive primer.

SECTION 099113

099123 - INTERIOR PAINTING

SECTION REQUIREMENTS

# Samples.

Extra Materials: Deliver to Owner 1 gal. of each color and type of finish-coat paint used on roject, in containers, properly labeled and sealed.

#### PRODUCTS

#### PAINT

erial Compatibility: Provide materials that are compatible with one another and with

For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

-Emitting Materials: Comply with Section 018113.13 - Sustainable Design Requirements -EED 2009 for New Construction and Major Renovations.

ors: As selected.

# EXECUTION

#### REPARATION

nply with recommendations in MPI's "MPI Architectural Painting Specification Manual" pplicable to substrates indicated.

nove hardware, lighting fixtures, and similar items that are not to be painted. Mask items hat cannot be removed. Reinstall items in each area after painting is complete.

an and prepare surfaces in an area before beginning painting in that area. Schedule painting o cleaning operations will not damage newly painted surfaces.

APPLICATION

mply with recommendations in MPI's "MPI Architectural Painting Specification Manual" applicable to substrates indicated.

Paint exposed surfaces, new and existing, unless otherwise indicated.

Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Paint surfaces behind permanently fixed equipment or furniture with prime coat only. Paint the back side of access panels.

1. Color-code mechanical piping in accessible ceiling spaces.

5. Do not paint prefinished items, items with an integral finish, operating parts, and labels unless otherwise indicated.

bly paints according to manufacturer's written instructions.

. Use brushes only where the use of other applicators is not practical. 2. Use rollers for finish coat on interior walls and ceilings.

ly paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, oller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color reaks.

If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

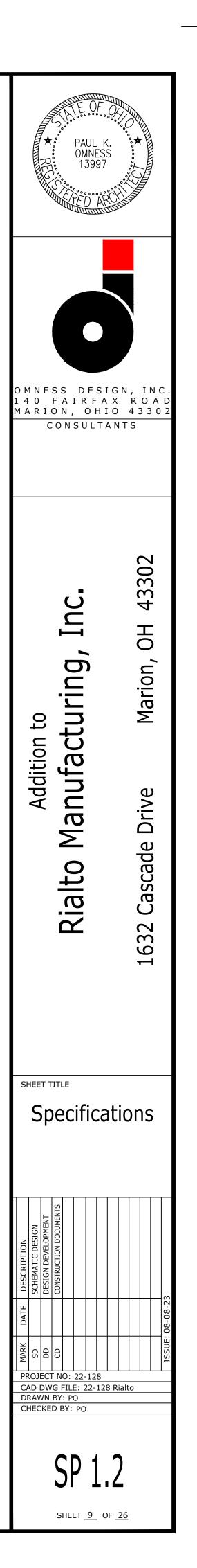
# 3.3 INTERIOR PAINT APPLICATION SCHEDULE

Semigloss, Quick-Dry Enamel: Two coats over quick-drying alkyd metal primer: 1 MPI INT 5.1A.

## B. Gypsum Board:

Eggshell Latex: Two coats over latex primer/sealer: MPI INT 9.2A. Eggshell Institutional Low-Odor/VOC Latex: Two coats over low-odor/VOC primer/sealer: MPI INT 9.2M.

END OF SECTION 099123



#### GOVERNING CODE: 2017 OHIO BUILDING CODE DEAD LOADS BUILDING ROOF A. BUILDING SELF WEIGHT = BY PEMB SUPPLIER = 5.0 PSF B. COLLATERAL = 5.0 PSF + SELF WEIGHT C. TOTAL DEAD LOAD 2. ROOF LIVE LOADS: A. MINIMUM ROOF LIVE LOAD = 20 PSF ROOF SNOW DESIGN PARAMETERS A. GROUND SNOW LOAD Pg = 20.0 PSF B. FLAT ROOF SNOW LOAD Pf = 14.0 PSF C. MINIMUM UNIFORM DESIGN SNOW LOAD = 20.0 PSF D. UNIFORM SNOW LOAD WITH UNBALANCED / DRIFTING = 14.0 PSF E. SNOW EXPOSURE FACTOR Ce = 1.0 F. SNOW LOAD IMPORTANCE FACTOR I = 1.0 G. THERMAL FACTOR Ct = 1.0 H. DRIFTING SNOW AND UNBALANCED SNOW PER ASCE 7-10. WIND DESIGN PARAMETERS 4 A. ULTIMATE DESIGN WIND SPEED Vult = 115 MPH B. NOMINAL DESIGN WIND SPEED Vasd = 89 MPH C. RISK CATEGORY= II D. WIND EXPOSURE CATEGORY = C E. INTERNAL PRESSURE COEFFICIENT = +/-0.18 F. WIND DESIGN PRESSURES FOR COMPONENTS AND CLADDING: COMPONENT AND CLADDING WIND PRESSURES (BASED UPON WIND VELOCITY Vasd SERVICE LEVEL LOAD) REFER TO ASCE7-10 TABLE 30.7-2 FOR COMPONENT AND CLADDING ZONES, a = 6.2' EFFECTIVE POSITIVE NEGATIVE PRESSURE PRESSURE WIND AREA ZONE (SF) (PSF) (PSF) 10 10.0 -19.3 (1)-18.1 10.0 50 100 10.0 -17.6 10.0 -32.3 10 2 50 10.0 -24.3

-20.9

-48.6

-29.2

-20.9 -27.7

-26.6

-26.1

-45.7

-22.9

-13.1

-19.1

-17.3

-16.5

-23.5

-19.9

-18.3

SEISMIC DESIGN PARAMETERS A. SEISMIC IMPORTANCE FACTOR = 1.0

3

2

3

(4)

(5)

B. SEISMIC OCCUPANCY CATEGORY = II

100

10

50 100

10

50

100

10

50

100

10

50

100

10

50

100

10.0 10.0

10.0

10.0

10.0

10.0

10.0 10.0

10.0

10.0

17.6

15.8

15.0

17.6

15.8

15.0

C. MAXIMUM CONSIDERED EARTHQUAKE GROUND MOTION AT 0.2 SECOND PERIOD, SS = 13.0%g D. MAXIMUM CONSIDERED EARTHQUAKE GROUND MOTION AT 1.0 SECOND PERIOD, S1 = 6.0%g

E. SITE CLASS = D

F. SDS = 0.137g

G. SD1 = 0.095g

H. SEISMIC DESIGN CATEGORY = D I. BUILDING SYSTEM:

J. SEISMIC RESISTING SYSTEM:

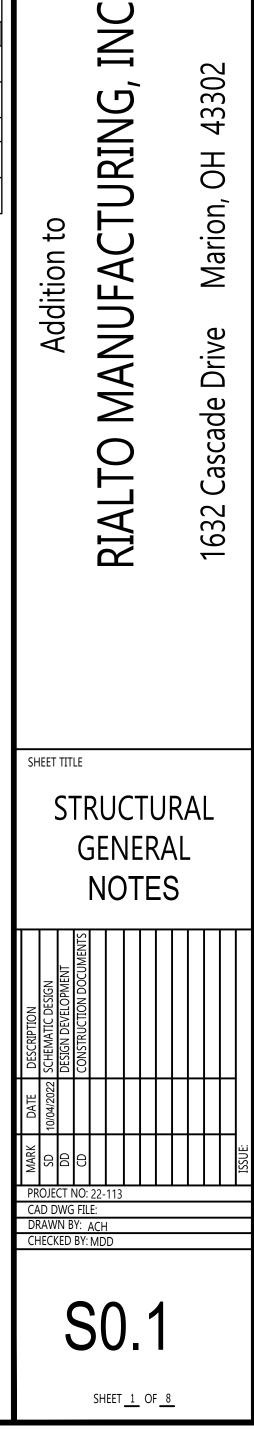
J. RESPONSE MODIFICATION FACTOR, R: 3.0 K. DESIGN BASE SHEAR: 0.046

STRUCTURAL STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE. STRUCTURAL STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE.

0.046

	SCHEDUL
	ITEM
BRIC	CATORS: (1705.2 OBC)
	INSPECTION AND NDE PER QUALITY ASSURANCE REQUIREMENTS OF AISC 360
	STRUCTURAL LOAD BEARING MEMBERS
	STRUCTURAL LOAD BEARING ASSEMBLIES
EEL	CONSTRUCTION: (1705.2 OBC)
	INSPECTION AND NDE PER QUALITY ASSURANCE REQUIREMENTS OF AISC 360
	HIGH STRENGTH BOLTS
	STRUCTURAL STEEL MATERIALS
	STRUCTURAL STEEL WELDING
	STRUCTURAL STEEL FRAME JOINT DETAILS
ONCF	RETE CONSTRUCTION
	INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS INCLUDING PLACEMI VERIFICATION
	REINFORCING BAR WELDING
	VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A-706
	INSPECT SINGLE-PASS FILLET WELDS
	INSPECT ALL OTHER WELDS
	INSPECT ANCHORS CAST IN CONCRETE
	INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS
	ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS
	MECHANICAL ANCHORS AND ADHESIVE ANCHORS OTHER THAN THOSE DEFINED ABOV
	VERIFY USE OF REQUIRED DESIGN MIX
	PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS AND DETERMINE THE TEMPERATURE OF CONCRETE
	INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES
	VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES
	INSPECT ERECTION OF PRECAST CONCRETE MEMBERS
DILS	
	VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY
	VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPE MATERIAL
	PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS
	VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.
	PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SI HAS BEEN PREPARED PROPERLY.

ILE O	F SPE	CIAL INS	PECTION	NS		
	REQ'	INSPECT	ION TYPE	REFERENCED STANDARD	OBC REFERENCE	STALE OF OX
	D	CONT.	PER.		OBCINELENEL	★ MATTHEW D.★
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			Х			STERVE G
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	Х					08-07-2023
			X			08-07-2023
			X			
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			X			
			X			
	Х					
MENT			x	ACI 318: 25.2, 25.3, 26.5.126.5.3	1908.4	
			х	AWS D1.4 AND ACI 318: 26.5.4		
			Х	AWS D1.4 AND ACI 318: 26.5.4		
			Х	AWS D1.4 AND ACI 318: 26.5.4		
		Х		AWS D1.4 AND ACI 318: 26.5.4		OMNESS DESIGN, INC 140 FAIRFAX ROAI
			х	ACI 318: 17.8.2		MARION, OHIO 43302
						CONSULTANTS
DVE						DERWACTER
			x	ACI 318: CHAPTER 19 AND 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3	ASSOCIATES, LLC 5275 Milford Dr.
			~	ACT 310. CHALLER 13 AND 20.4.3, 20.4.4	1904.1, 1904.2, 1900.2, 1900.3	Zanesville, OH 43701
		х		ASTM C 172, ASTM C 31, ACI 318: 26.4.5, 26.12	1908.10	
		х		ACI 318: 26.4.5	1908.6, 1908.7, 1908.8	
			х	ACI 318: 26.4.7 - 26.4.9	1908.9	
			Х	ACI 318: CHAPTER 26.8		
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## **GENERAL NOTES**

- ANY CHANGES MADE TO THE DESIGN IDENTIFIED ON THESE DRAWINGS AND/OR ASSOCIATED SPECIFICATIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO MAKING ANY MODIFICATIONS TO THE PROJECT. ANY LIABILITY AS A RESULT OF DESIGN MODIFICATIONS. AS WELL AS ANY COSTS ASSOCIATED WITH SUCH MODIFICATIONS, MADE WITHOUT THE WRITTEN
- APPROVAL OF ENGINEER OF RECORD SHALL BECOME THE RESPONSIBILITY OF THE CONTRACTOR. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE BUILDING IS FULLY COMPLETED. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ERECTION PROCEDURES AND SEQUENCE, AND TO ENSURE THE STABILITY OF THE BUILDING AND ITS COMPONENT PARTS, AND THE ADEQUACY OF TEMPORARY OR INCOMPLETE CONNECTIONS, DURING ERECTION. THIS INCLUDES THE ADDITION OF ANY SHORING, SHEETING, TEMPORARY GUYS, BRACING OR TIEDOWNS THAT MIGHT BE NECESSARY. SUCH MATERIAL IS NOT SHOWN ON THE DRAWINGS. IF APPLIED, THEY SHALL BE REMOVED AS CONDITIONS PERMIT, AND SHALL REMAIN THE CONTRACTOR'S PROPERTY. THE ENGINEER HAS NO EXPERTISE IN, AND TAKES NO RESPONSIBILITY FOR, CONSTRUCTION MEANS AND METHODS OR JOB SITE SAFETY DURING CONSTRUCTION. PROCESSING AND/OR APPROVING SUBMITTALS MADE BY THE CONTRACTOR WHICH MAY CONTAIN INFORMATION RELATED TO CONSTRUCTION METHODS OR SAFETY ISSUES, OR PARTICIPATION IN MEETINGS WHERE SUCH ISSUES MIGHT BE DISCUSSED, SHALL NOT BE CONSTRUED AS VOLUNTARY ASSUMPTION BY THE ENGINEER OF ANY RESPONSIBILITY FOR SAFETY PROCEDURES
- IT IS SOLELY THE RESPONSIBILITY OF EACH CONTRACTOR TO FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION. THE ENGINEER IS NOT ENGAGED IN, AND DOES NOT SUPERVISE CONSTRUCTION.
- SHOULD ANY OF THE DETAILED INSTRUCTIONS SHOWN ON THE PLANS CONFLICT WITH THESE STRUCTURAL NOTES, OR WITH EACH OTHER, THE STRICTEST PROVISION SHALL GOVERN.

### **USE OF THESE DOCUMENTS:**

- THESE DOCUMENTS SHALL NOT BE REPRODUCED IN ANY MANNER FOR THE PRODUCTION OF FABRICATION OR ERECTION SUBMITTALS. REPRODUCTION OF THESE DOCUMENTS IN THAT MANNER CONSTITUTES COPYRIGHT INFRINGEMENT. ANY DOCUMENTS SUBMITTED FOR REVIEW THAT CONTAIN ANY IMAGE. SKETCH, DETAIL, ETC. FROM THESE DOCUMENTS WILL BE REJECTED.
- ELECTRONIC VERSIONS OF THESE DOCUMENTS ARE THE PROPERTY OF DERWACTER & ASSOCIATES, LLC. ELECTRONIC OR CAD FILES WILL NOT BE MADE AVAILABLE FOR CONSTRUCTION PURPOSES.

### **REINFORCED MASONRY:**

THE ANCHOR.

- REINFORCED MASONRY SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH, fm, OF 1500 PSI. MASONRY UNITS SHALL BE NORMAL WEIGHT BLOCK CONFORMING TO ASTM C90, AND SHALL HAVE A MINIMUM NET AREA COMPRESSIVE STRENGTH OF 2150 PSI. MORTAR SHALL CONFORM TO ASTM C270, TYPE S. MINIMUM GROUT COMPRESSIVE STRENGTH SHALL EQUAL OR EXCEED fm, BUT NOT BE LESS THAN 2000 PSI. REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60, UNLESS NOTED OTHERWISE.
- CONTINUOUS WIRE REINFORCING (JOINT REINFORCING) SHALL BE HOT DIPPED GALVANIZED, LADDER TYPE FORMED FROM 9 GAUGE COLD - DRAWN STEEL WIRE COMPLYING WITH ASTM A82. JOINT REINFORCING SHALL BE SPACED AT 16" O.C. VERTICALLY IN ALL MASONRY WALLS AND PIERS, U.N.O.
- SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF VERTICAL CONTROL JOINTS. HORIZONTAL BOND BEAM AND LINTEL REINFORCING SHALL BE CONTINUOUS ACROSS VERTICAL CONTROL JOINTS. JOINT REINFORCING SHALL BE STOPPED EACH SIDE OF VERTICAL CONTROL JOINTS ALL REINFORCED CELLS, ALL CELLS BELOW GRADE AND ALL CELLS BELOW FINISH FLOOR SHALL BE
- GROUTED SOLID. AT VERTICAL REINFORCING LOCATIONS, PROVIDE DOWEL FROM FOOTING TO MATCH SIZE AND SPACING OF
- VERTICAL WALL REINFORCING. DOWELS SHALL BE EMBEDDED INTO THE FOOTING MINIMUM 9" INCHES AND SHALL HAVE A 90 DEGREE STANDARD HOOK. WHEN A FOUNDATION DOWEL DOES NOT LINE UP WITH A VERTICAL BLOCK CORE, IT SHALL NOT BE SLOPED MORE THAN ONE HORIZONTAL IN 6 VERTICAL. DOWELS MAY BE GROUTED INTO A CELL IN VERTICAL
- ALIGNMENT, EVEN THOUGH IT IS IN A CELL ADJACENT TO THE VERTICAL WALL REINFORCING. REINFORCING STEEL SHALL BE SECURED IN PLACE BEFORE GROUTING STARTS.
- ALL REINFORCING LAP SPLICES SHALL BE IN ACCORDANCE WITH THE MASONRY REINFORCING LAP SPLICE LENGTH SCHEDULE, U.N.O. SPLICE VERTICAL SHALL BE WIRED TOGETHER, LAP SPLICES BETWEEN ADJACENT BARS SHALL BE STAGGERED A MINIMUM OF 24 BAR DIAMETERS.
- VERTICAL BARS SHALL BE HELD IN POSITION AT TOP AND BOTTOM AND AT INTERVALS NOT EXCEEDING 96 DIAMETERS OF THE REINFORCING BAR WITH REBAR POSITIONERS. BARS SHALL BE ANCHORED IN PLACE PRIOR TO GROUTING.
- VERTICAL REINFORCING BARS SHALL HAVE A MINIMUM CLEARANCE OF 3/4 OF AN INCH FROM THE MASONRY AND NOT LESS THAN ONE BAR DIAMETER BETWEEN BARS.
- VERTICAL CELLS THAT WILL BE GROUTED SHALL HAVE A VERTICAL ALIGNMENT TO MAINTAIN A CONTINUOUS UNOBSTRUCTED CELL AREA NOT LESS THAN 3"x4".
- GROUT SHALL BE PLACED IN LIFTS NOT TO EXCEED 5 FEET. THE TOTAL HEIGHT OF 8-INCH (NOMINAL) OR LARGER MASONRY TO BE GROUTED PRIOR TO THE ERECTION OF ADDITIONAL MASONRY SHALL NOT
- EXCEED 24 FEET. GROUTING SHALL BE STOPPED 1 1/2" BELOW THE TOP OF A COURSE SO AS TO FORM A KEY AT THE POUR
- JOINT. GROUTING OF MASONRY BEAMS OVER OPENINGS SHALL BE DONE IN ONE CONTINUOUS OPERATION. ALL BOLTS, ANCHORS, ETC., INSERTED IN THE WALLS, SHALL BE GROUTED SOLID INTO POSITION. CELLS AT ANCHOR LOCATIONS SHALL BE GROUTED TO MINIMUM 6" ABOVE AND 6" BELOW THE CENTERLINE OF

м	MASONRY REINFORCING LAP SPLICE LENGTH (IN.)									
	NUMBER OF REINFORCING LAYERS									
BAR		ONE LAYER		TWO LAYERS						
SIZE	NOMINA	AL WALL THIC	KNESS	NOMINAL WALL THICKNESS						
	8"	10"	12"	8"	10"	12"				
#4	25	25	25	31	31	31				
#5	31	31	31	48	48	48				
#6	57	52	52	98	98	98				
#7	79	61	61	177	121	121				
#8	112	86	74	-	149	149				

### STRUCTURAL STEEL:

- MATERIALS:
- A. STRUCTURAL STEEL WIDE FLANGE SHAPES: ASTM A992, Fy = 50 KSI B. STRUCTURAL STEEL CHANNELS, ANGLES, PLATES, ETC.: ASTM A36, Fy = 36 KSI C. STRUCTURAL TUBING (INCLUDES SQUARE, RECTANGULAR AND ROUND SECTIONS): ASTM A500, GRADE C, Fy = 50 KSI
- D. HIGH STRENGTH BOLTS: ASTM A325 UNLESS NOTED OTHERWISE E. ANCHOR RODS: ASTM F1554, GRADE 36, UNLESS NOTED OTHER WISE. GALVANIZE IN EXTERIOR WALLS AND EXTERIOR LOCATIONS.
- F. SHEAR STUDS: ASTM A108, Fy = 60 KSI
- G. DEFORMED BAR ACNHORS: ASTM A496, Fy = 70 KSI H. ELECTRODES: SERIES E70
- I. ALL STRUCTURAL STEEL SHALL BE DOMESTICALLY PRODUCED AND COMPLY WITH ALL FEDERAL AND STATE REQUIREMENTS.
- SPECIFICATIONS A. WELDING PERSONNEL AND PROCEDURES ARE TO BE QUALIFIED PER AWS D1.1. UNLESS SPECIFICALLY SHOWN OTHERWISE, THE DESIGN FABRICATION AND ERECTION IS TO BE GOVERNED BY THE LATEST **REVISION OF:** i. AISC SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR
- BUILDINGS ii. AISC CODE OF STANDARD PRACTICE
- iii. STRUCTURAL WELDING CODE, AWS D1.1 OF THE AMERICAN WELDING SOCIETY iv. SPECIFICATIONS FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS SUBMITTALS
- A. SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL WHICH INCLUDE ERECTION PLANS, CONNECTIONS, HOLES. THREADED FASTENER TYPES AND FINISHES. B. SUBMITTALS MUST BE THE ORIGINAL WORK OF THE FABRICATOR OR DETAILER. ELECTRONIC REPRODUCTIONS OF THESE DOCUMENTS WILL NOT BE REVIEWED. ANY DELAY CREATED BY THE FAILURE TO COMPLY WITH THIS PROVISION SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. C. THE SUBMITTAL MUST INCLUDE ALL REQUIRED FIELD VERIFICATION OF DETAILS AND DIMENSIONS.
- D. INDICATE MATERIAL SPECIFICATIONS, STRENGTHS AND FINISHES. INDICATE COMPLIANCE WITH ALL STATE AND FEDERAL REQUIREMENTS FOR DOMESTICALLY PRODUCED STEEL. RETAIN MILL CERTIFICATIONS AND DOMESTICALLY PRODUCED STEEL CERTIFICATIONS FOR ALL STRUCTURAL SHAPES FOR THE DURATION OF THE WARRANTY PERIOD OF THE STRUCTURE.
- CONNECTIONS A. FIELD CONNECTIONS ARE TO BE BOLTED, EXCEPT AS INDICATED OTHERWISE. SHOP CONNECTIONS MAY
- BE EITHER WELDED OR BOLTED. B. CONNECTIONS ARE TO BE DESIGNED BY THE FABRICATOR TO DEVELOP EITHER 100% OF THE FULL UNIFORM LOAD CAPACITY OF THE MEMBER OR THE FORCES SHOWN ON THE PLANS. THE MINIMUM CONNECTION CAPACITY SHALL BE 5.0 KIPS. DETAILS ARE PROVIDED SHOWING THE GENERAL ARRANGEMENT OF CONNECTIONS. COATINGS:
- A. DO NOT PAINT STEEL OR ANCHOR RODS WHICH WILL BE ENCASED IN 3" MINIMUM OF CONCRETE OR ANY STEEL WHICH IS TO RECEIVE SPRAY-APPLIED OR INTUMESCENT FIREPROOFING.
- B. PAINT ALL INTERIOR STEEL WITH TWO COATS OF RED-OXIDE PRIMER.
- C. HOT-DIP GALVANIZE ALL EXTERIOR STEEL INCLUDING LINTELS AND SHELF ANGLES. D. PROVIDE A FIELD-APPLIED COAT OF ASPHALTIC MASTIC FOR ANY BELOW GRADE STEEL, NOT COVER BY 3" OF CONCRETE OR MASONRY GROUT, INCLUDING BASE PLATES AND ANCHOR RODS.

### EPOXY ANCHORS:

- EPOXY ANCHORING SHALL NOT BE USED EXCEPT WHERE SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS, OR WHEN APPROVED IN ADVANCE BY THE STRUCTURAL ENGINEER. WHERE PERMITTED, EPOXY ANCHORING SHALL BE COMPLETED USING ONE OF THE FOLLOWING PRODUCTS:
- FOR USE IN CONCRETE:
- A. HIT HY-200 ADHESIVE ANCHOR, BY HILTI, INC. (ICC-ES REPORT #3187) FOR USE IN SOLID GROUTED MASONRY: A. HIT-70 WITH HAS ROD ANCHOR SYSTEM BY HILTI, INC. (ICC-ES REPORT #2682) B. HIT-70 WITH TZ ROD ANCHOR SYSTEM BY HILTI, INC. (ICC-ES REPORT #2682) C. SET-ADHESIVE SYSTEMS BY SIMPSON STRONG-TIE (ICC-ES REPORT #1772) D. CIA-GEL 7000 EPOXY BY USP STRUCTURAL CONNECTORS, INC. (ICC-ES REPORT #1702) ANCHOR RODS USED FOR EPOXY ANCHORING SHALL BE THE TYPE SPECIFIED IN THE REFERENCED
- ICC-ES REPORT. THE ANCHOR SIZE SHALL BE AS INDICATED ON THE PLANS. THE ANCHOR ROD EMBEDMENT SHALL BE AS INDICATED ON THE PLANS, OR APPROVED IN ADVANCE BY THE STRUCTURAL FNGINFFR
- ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE EPOXY MANUFACTURER'S RECOMMENDATIONS AND THE CURRENT ICC-ES REPORT DRILLING SHALL BE PERFORMED WITH A ROTARY HAMMER DRILL AND CARBIDE TIPPED DRILL BIT IN ACCORDANCE WITH INSTRUCTOR'S ACCOMPANYING ADHESIVE CARTRIDGES AND APPLICABLE ICC-ESR (ALTERNATE METHODS OF DRILLING ARE PROHIBITED UNLESS APPROVED IN ADVANCE BY THE STRUCTURAL ENGINEER.)

### **FOUNDATIONS - GENERAL:**

- THE FOUNDATION HAS BEEN DESIGNED IN ACCORDANCE WITH THE RECOMMENDATIONS MADE IN THE GEOTECHNICAL REPORT (GCI PROJECT #22-6-26622) PREPARED BY GEOTECHNICAL CONSULTANTS, INC., DATED JULY 6, 2022. FOOTINGS SHALL BEAR ON SOILS CAPABLE OF SUSTAINING A NET ALLOWABLE BEARING PRESSURE OF 3.0 KSF UNDER SERVICE LIVE AND DEAD LOAD. ISOLATED SPREAD FOOTINGS SHALL BEAR ON SOIL CAPABLE OF SUSTAINING A NET ALLOWABLE BEARING PRESSURE OF 3.0 KSF UNDER SERVICE LIVE AND DEAD LOAD. ALL FOOTINGS SHOULD BEAR ON STABLE, NATURAL NON-ORGANIC SOILS (EXTENDED THROUGH ANY EXISTING STONE LEFT IN PLACE) OR ON NEW, CONTROLLED FILL PLACED DIRECTLY OVER STABLE, NATURAL NON-ORGANIC SOILS (IF EXISTING STONE IS REMOVED).
- FOOTINGS MAY BE POURED INTO AN EARTH-FORMED TRENCH IF SOIL CONDITIONS PERMIT. ALL BEARING MATERIAL SHALL BE INSPECTED BY THE INDEPENDENT TESTING AGENCY PRIOR TO CONCRETE PLACEMENT. THE INDEPENDENT TESTING AGENCY SHALL BE THE SOLE JUDGE AS TO THE SUITABILITY OF THE BEARING MATERIAL. FOOTING ELEVATIONS SHALL BE ADJUSTED AS REQUIRED.
- BOTTOM OF EXTERIOR FOOTINGS SHALL BEAR <u>36"</u> TO <u>42</u>" BELOW FINAL GRADE. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO ADJUST BOTTOM OF FOOTING ELEVATIONS SHOWN IN THE DOCUMENTS AS REQUIRED TO ENSURE MINIMUM FOOTING EMBEDMENT AND TO REACH THE REQUIRED BEARING ELEVATION AS SHOWN IN THE GEOTECHNICAL ENGINEERING REPORT. FOUNDATION WALLS THAT RETAIN EARTH SHALL BE BRACED AGAINST BACKFILLING PRESSURES
- UNTIL FLOOR SLABS AT TOP AND BOTTOM ARE IN PLACE AND CURED.
- WHERE FOUNDATION WALLS ARE TO HAVE EARTH PLACED ON EACH SIDE, PLACE FILL SIMULTANEOUSLY SO AS TO MAINTAIN A COMMON ELEVATION ON EACH SIDE OF THE WALL. FOUNDATION CONCRETE SHALL HAVE REACHED A MINIMUM COMPRESSIVE STRENGTH OF 2,000 PSI
- BEFORE BEING LOADED. STRENGTHS SHALL BE VERIFIED BY TEST.

# **REINFORCED CONCRETE:**

MATERIALS: A. SPECIFICATIONS: IN GENERAL, COMPLY WITH ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE".

CAST-IN PLACE CONCRETE										
LOCATION	CLASS	ťc (PSI)	MIN. CEMENT (LBS)	MIN. AIR CONTENT	MAX. W/C RATIO	NOTES				
FOOTINGS	I	3,000	517	ENTRAPPED	.50					
PERIMETER WALL / PIERS / RETAINING WALLS	=	4,500	564	5% +/- 1%	.45					
INTERIOR SLAB ON GRADE	Ш	3,500	540	ENTRAPPED	.45					
EXTERIOR SLAB ON GRADE	IV	4,500	564	6% +/- 1%	.45					

B. SUBMIT CONCRETE MIX DESIGN FOR APPROVAL IN ACCORDANCE TO ACI 301. MIX DESIGNS SHALL INCLUDE ALL BACKUP DATA MATERIAL WITH COMPRESSIVE STRENGTH BREAKS BASED ON EXPERIENCE OR TRIAL MIX PER ACI 301. SUBMIT THREE (3) SETS FOR REVIEW. THE MIX DESIGNS MUST INCLUDE THE BATCH IDENTIFICATION NUMBER AND THE CLASS IDENTIFICATION FROM THE TABLE ABOVE. FAILURE TO INCLUDE BOTH OF THESE ITEMS WILL RESULT IN THE RETURN OF THE MIX DESIGNS WITHOUT REVIEW.

- FIELD MANUAL: PROVIDE AT LEAST ONE COPY OF THE ACI FIELD REFERENCE MANUAL, SP-15, IN THE FIELD OFFICE AT ALL TIMES.
- CONTINGENCIES: PROVIDE SUPPORTS AS REQUIRED TO MAINTAIN ALIGNMENT OF SCHEDULED REINFORCING. SUCH SUPPORTS ARE TO BE REFLECTED IN THE BID. THE USE OF CLAY BRICK IS NOT ACCEPTABLE.
- FOOTINGS:
- A. DOWELS IN FOOTINGS TO MATCH SIZE AND SPACING OF VERTICAL WALL REINFORCING. B. PROVIDE CONTROLLED LOW-STRENGTH MATERIAL (CLSM) UNDER FOUNDATIONS FOR ACCIDENTAL OVER-EXCAVATION, SOFT SPOTS AND TRENCHES.
- CONSTRUCTION JOINTS: A. PROVIDE CONSTRUCTION JOINTS AT ALL POUR STOP LOCATIONS. ALL CONSTRUCTION JOINTS ARE TO BE DOWELED, USE 3/4" SMOOTH DOWELS 1'-0" LONG EMBEDDED 6" EACH SIDE GREASE ONE END OR PROVIDE SLEEVE. UNLESS WHERE NOTED OTHERWISE ON DRAWINGS.

### **REINFORCING FOR CONCRETE:**

- REINFORCING SHALL CONFORM TO ASTM A615, GRADE 60 OR ASTM A706, UNLESS NOTED OTHERWISE. ALL WELDED REINFORCING BARS SHALL CONFORM TO ASTM A706.
- WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 (SHEETS FORM, NOT ROLLED)
- MINIMUM CONCRETE COVER, UNLESS NOTED OTHERWISE: A. UNFORMED SURFACE IN CONTACT WITH THE GROUND: 3 IN.
- B. FORMED SURFACES EXPOSED TO EARTH OR WEATHER: #6 BARS AND LARGER 2 IN.
- #5 BARS AND SMALLER 1 1/2 IN. C. FORMED SURFACES NOT EXPOSED TO EARTH OR WEATHER: BEAMS, GIRDERS, AND COLUMNS 1 1/2 IN. SLABS, WALLS, AND JOISTS
- 3/4 IN. #11 BARS AND SMALLER #14 AND #18 BARS 1 1/2 IN.
- 4. LAP SPLICES SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE, UNLESS NOTED OTHERWISE.

	CLASS B SPLICE	COMPRESSION SPLICE		CLASS B SPLICE	COMPRESSION SPLICE
BAR	LAP LENGTH	LAP LENGTH	BAR	LAP LENGTH	LAP LENGTH
SIZE	(INCHES)	(INCHES)	SIZE	(INCHES)	(INCHES)
#3	22	12	#8	72	30
#4	29	15	#9	81	34
#5	36	19	#10	89	38
#6	43	23	#11	98	42
#7	63	27			

COMPRESSION DOWEL EMBEDMENT: 22 BAR DIAMETERS, UNLESS NOTED OTHERWISE BASE PLATES, ANCHOR RODS, SUPPORT ANGLES, ETC., BELOW GRADE SHALL BE COVERED WITH A MINIMUM OF 3" OF CONCRETE.

### STRUCTURAL LUMBER

- SPECIFICATIONS AND STANDARDS: DESIGN AND DETAILING OF WOOD FRAMING AND CONNECTIONS SHALL CONFORM TO THE CURRENT EDITION OF THE OHIO BUILDING CODE AND THE EDITION OF THE "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION" ISSUED BY THE NATIONAL FOREST PRODUCTS ASSOCIATION REFERENCED THERE-IN.
- MATERIALS: THE MATERIALS USED FOR THE WORK OF THIS PROJECT ARE TO COMPLY WITH THE MINIMUM STANDARDS OF QUALITY LISTED BELOW; UNLESS SPECIFICALLY NOTED OTHERWISE IN THE CONTRACT DOCUMENTS.

MINIMUM STRUCTURAL PROPERTIES FOR DIMENSIONAL LUMBER						
		STRUCTURAL PROPERTIES				
LOCATION	SIZE	Fb (psi)	Fv (psi)	E (ksi)		
	2X4	875	135	1400		
JOISTS	2X6	875	135	1400		
	2X8	1200	175	1600		
	2X10	1050	175	1600		
	2X12	975	175	1600		

- ALL STRUCTURAL LUMBER SHALL BE KILN DRIED TO A MAXIMUM MOISTURE CONTENT OF 15%. ALL WOOD MEMBERS EXPOSED TO THE ELEMENTS SHALL BE PRESERVATIVE PRESSURE TREATED. ALL WOOD MEMBERS SECURED TO OR PLACED AGAINST CONCRETE, MASONRY, AND/OR EARTH ARE TO BE
- PRESERVATIVE PRESSURE TREATED FOR GROUND CONTACT. STRUCTURAL WOOD MEMBERS ARE NOT TO BE CUT, COPED, OR MODIFIED, OTHER THAN CUTTING TO LENGTH OR MAKING PROVISIONS FOR FASTENERS. MAKE ALL CUTS TRUE AND SQUARE FOR FULL
- BEARING AT STRUCTURAL JOINTS. CONNECT ALL WOOD FRAMING SECURELY TOGETHER WITH NAILS, SPIKES, OR FRAMING ANGLES, IN ACCORDANCE WITH TABLE 2304.9.1 OF THE OHIO BUILDING CODE. FASTENERS USED TO CONNECT PRESERVATIVE PRESSURE TREATED LUMBER SHALL BE OF STAINLESS STEEL OR HOT DIPPED GALVANIZED STEEL. PROVIDE PLYWOOD NAILING AS RECOMMENDED BY THE AMERICAN PLYWOOD
- ASSOC THE CONTRACTOR SHALL SUBMIT PRODUCT DATA TO THE ARCHITECT PRIOR TO THE START OF CONSTRUCTION INDICATING COMPLIANCE WITH THIS SECTION.

# **DELEGATED DESIGN (PEMB):**

ALL STRUCTURAL STEEL BUILDING ELEMENTS FROM THE COLUMN BASE PLATES UP, SHALL BE DESIGNED BY AN ENGINEER FAMILIAR WITH THE REQUIREMENTS OF THE CURRENT OHIO BUILDING CODE AND THE STANDARDS SET FORTH BY THE METAL BUILDING MANUFACTURER'S ASSOCIATION. ALL LOADS SHOWN ON THESE PLANS SHALL BE INTERPRETED AS MINIMUM STANDARDS. IF, THE DELEGATED ENGINEER'S CALCULATED LOADS DIFFER FROM WHAT IS SHOWN, THE HIGHER OF THE TWO SHALL GOVERN. THE DELEGATED ENGINEER SHALL SUBMIT FABRICATION AND INSTALLATION DRAWINGS BEARING THE SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER. THE SUBMITTAL SHALL INCLUDE THE FOLLOWING

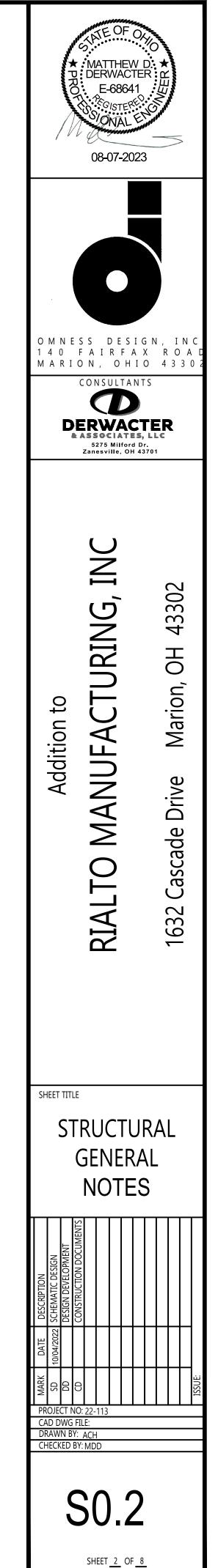
INFORMATION: DIMENSIONED PLAN LAYOUT

- SEQUENCING SCHEDULE
- STRUCTURAL CALCULATIONS С
- ERECTION DRAWINGS D.
- BUILDING REACTIONS
- THE MANUFACTURER SHALL IAS ACCREDITED FOR METAL BUILDING SYSTEMS AC 472. THE PRE-ENGINEERED METAL BUILDING SHALL BE DESIGNED FOR THE FOLLOWING DEFLECTION AND DRIFT

LIMITATIONS: - VERTICAL FRAME DEFLECTION: L/240 UNDER DESIGN SNOW LOAD OR ROOF LIVE LOAD, WHICHEVER IS MORE STRINGENT.

HORIZONTAL FRAME DRIFT: H/100 UNDER 10 YEAR MRI WIND LOAD. PURLIN/OPEN WEB STEEL JOISTS VERTICAL DEFLECTION: L/240 UNDER DESIGN SNOW LOAD OR ROOF LIVE LOAD, WHICHEVER IS MORE STRINGENT.

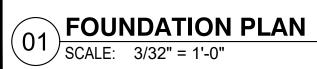
GIRT AND WIND POST HORIZONTAL DEFLECTION: L/240 UNDER WIND LOAD.

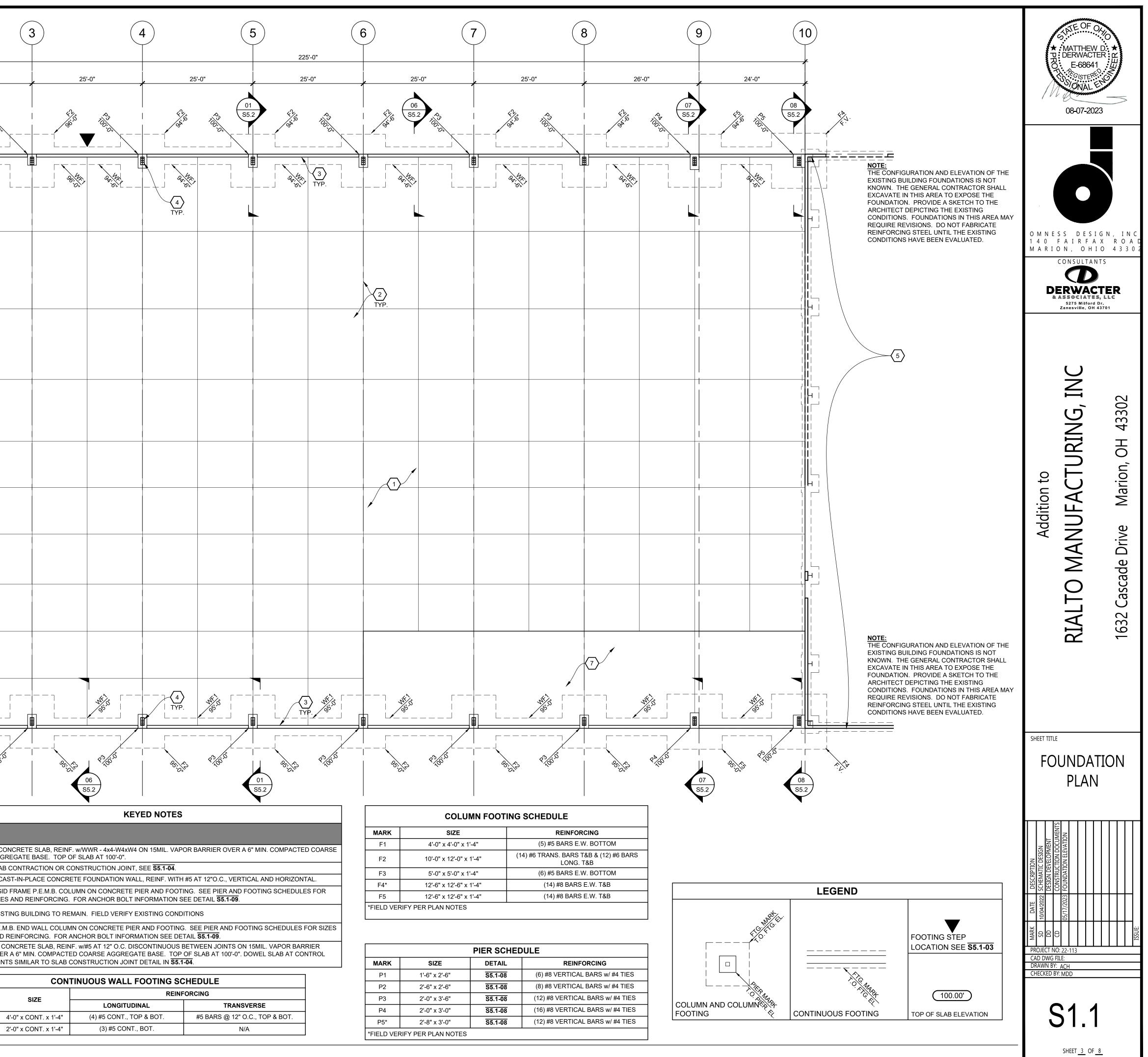


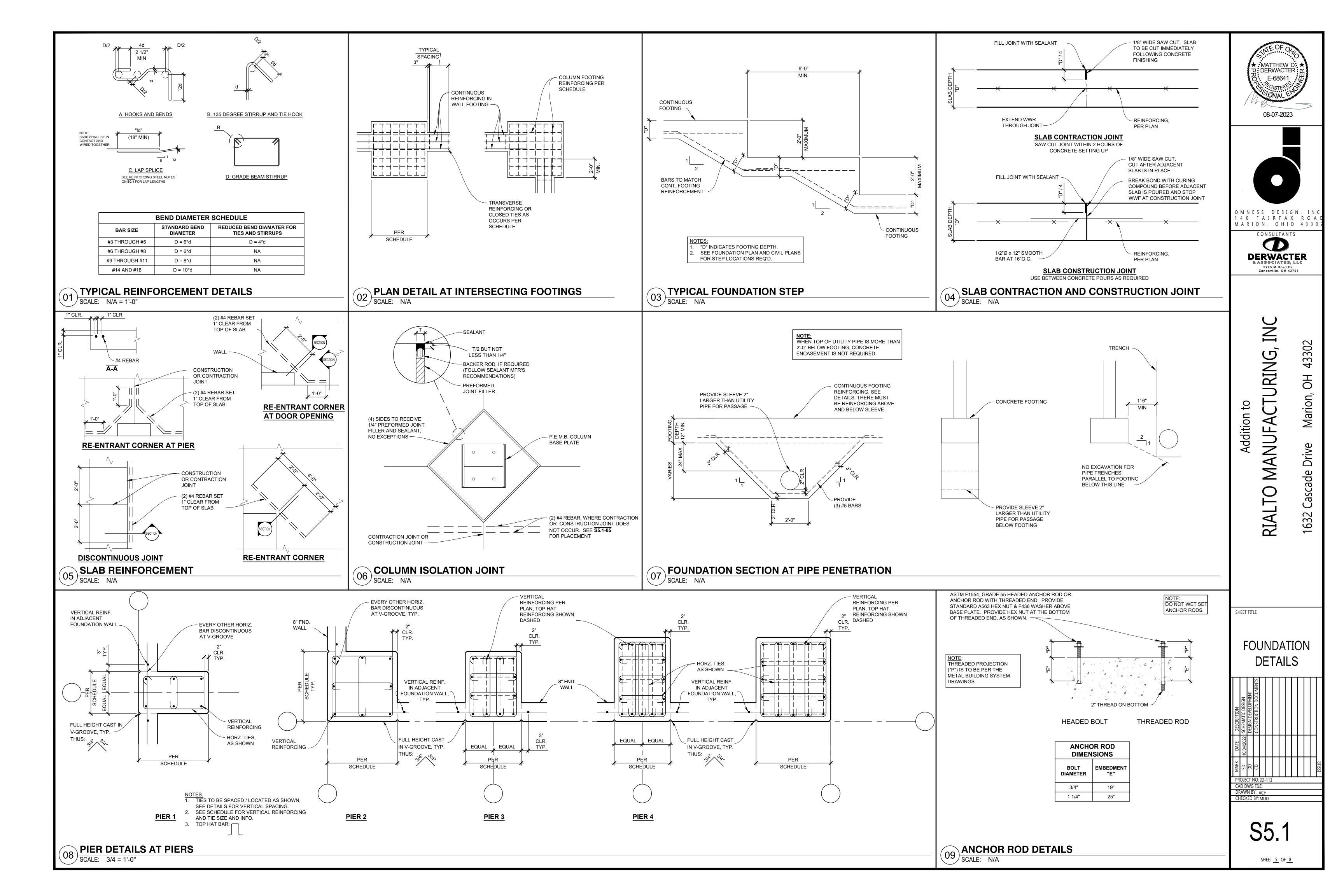
		1			2			3
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K			TYP.					
	22'-0"	P1000	01 10 <sup>1</sup> 05 10 <sup>1</sup> 05 10 <sup>1</sup> 1	P <sup>3</sup> 100				
A SEE SHEETS <b>SO.1</b> AND <b>SO.2</b> B ALL ELEVATIONS ARE REL FINISHED FLOOR TO MATC C COORDINATE DOOR OPEN D SEE DETAIL <b>S5.1-01</b> FOR T	<b>2</b> FOR GENERAL NOTE ATIVE TO A FINISH FLC CH THE FINISHED FLOC INGS WITH ARCHITEC	DOR SLAB ELEVATION OF DR ELEVATION OF THE A TURAL DRAWINGS.	F 100'-0" (REFERE			1 8" 0	CONCRETE GREGATE	BASE. TOP
DSEE DETAILS5.1-01 FOR TESTEPS IN FOOTING AS REG ELEVATION. SEES5.1-03 FFSEE DETAILS5.1-05 FOR RGSEE DETAILS5.1-07 FOR THSEE DETAILS5.1-02 FOR RISEE P.E.M.B. DRAWINGS F MATERIAL AND EMBEDMENT	QUIRED TO MAINTAIN F OR TYPICAL DETAIL. E-ENTRANT SLAB REIN YPICAL PIPE PENETRA EINFORCING AT INTER OR ANCHOR ROD DIAM	FROST DEPTH AND EMBI NFORCING, TYP. AT SLAE TIONS THROUGH FOUNI RSECTING FOOTINGS.	3 PENETRATIONS DATIONS.	5, DOOR OPENING	S, ETC.	4 RIC SIZ 5 EX 6 P.E AN 7 OV	CAST-IN-PL GID FRAME (ES AND RE ISTING BUII E.M.B. END V ID REINFOR CONCRETI (ER A 6" MIN INTS SIMILA	P.E.M.B. CO INFORCINO DING TO F WALL COLU CING. FOF E SLAB, RE I. COMPAC AR TO SLAE
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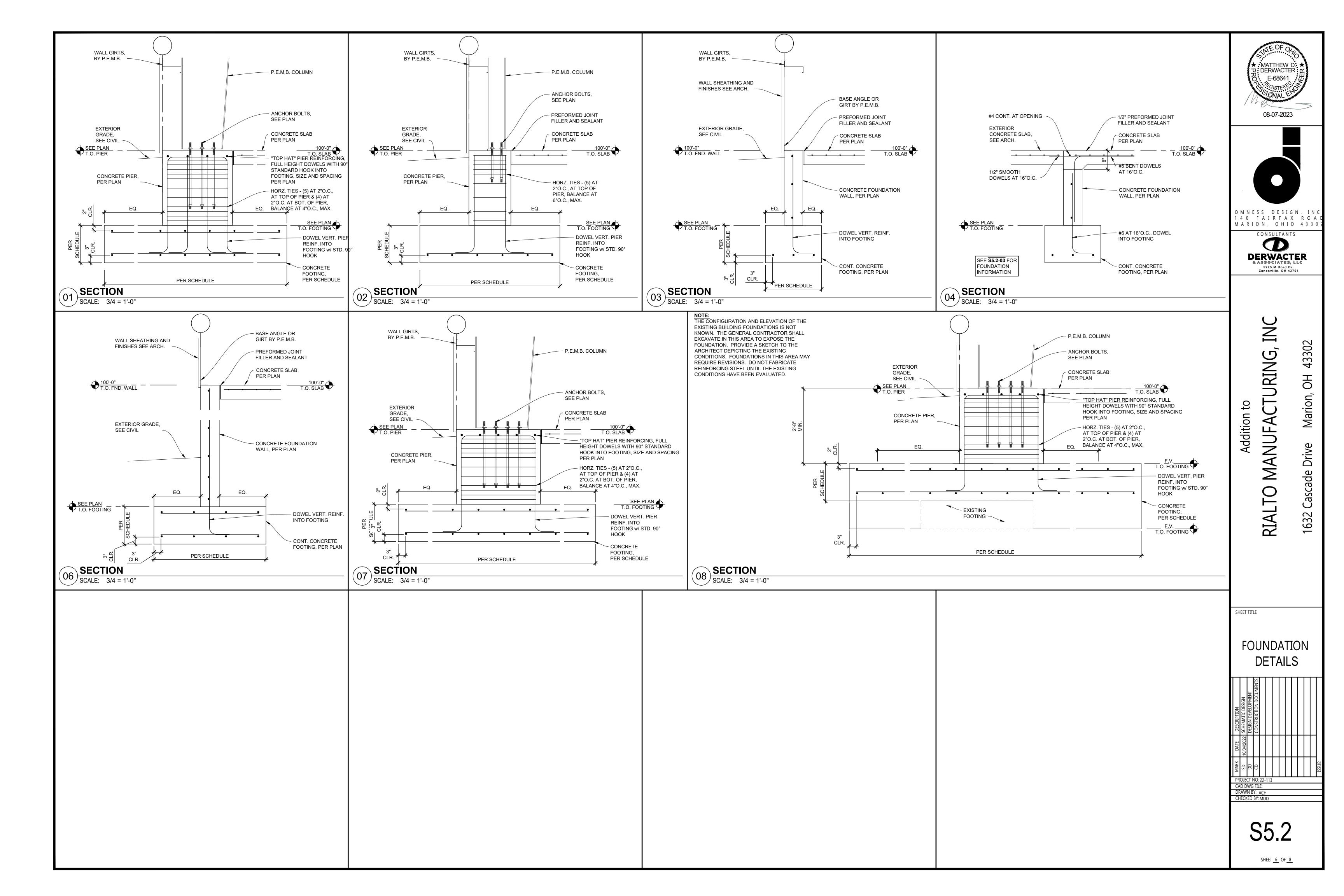
WF1

WF2









# GENERAL NOTES:

MATERIALS STRUCTURAL STEEL PLATE HOT ROLLED MILLS SHAPES HSS ROUND HSS RECTANGULAR COLD FORM SHAPES ROOF AND WALL SHEETING BOLTS CABLE RODS ASTM DESCRIPTION AS529 / A572 / A1011 A36 / A529 / A572 / A500 A500 A653 / A1011 A653 / A792 A307 / A325 / A490 A475 A529 / A572

2. STRUCTURAL PRIMER NOTE:

SHOP COAT PRIMER IS INTENDED TO PROTECT THE STEEL FRAMING FOR A SHORT PERIOD OF TIME. STORAGE IN EXTREME COLD TEMPERATURES OR WINTER SNOW CONDITIONS, INCLUDING TRANSPORTATION ON SALTED OR CHEMICALLY TREATED ROADS WILL ADVERSELY AFFECT THE DURABILITY AND LONGEVITY OF THE PRIMER. THE COAT OF SHOP PRIMER DOES NOT PROVIDE THE UNIFORMITY OF APPEARANCE, OR THE DURABILITY AND CORROSION RESISTANCE OF A FIELD APPLIED FINISH COAT OF PAINT OVER A SHOP PRIMER. MINOR ABRASIONS TO THE SHOP COAT PRIMER CAUSED BY HANDLING, LOADING, SHIPPING, UNLOADING AND ERECTION ARE UNAVOIDABLE AND ARE NOT THE RESPONSIBILITY OF THE METAL BUILDING MANUFACTURER. METAL BUILDING MANUFACTURER IS NOT RESPONSIBLE FOR THE DETERIORATION OF THE PRIMER OR CORROSION THAT MAY RESULT FROM ATMOSPHERIC AND ENVIRONMENTAL CONDITIONS NOR THE COMPATIBILITY OF THE PRIMER TO ANY FIELD APPLIED COATING.

# 3. BUILDING ERECTION NOTES:

THE GENERAL CONTRACTOR AND/OR ERECTOR IS RESPONSIBLE TO SAFELY AND PROPERLY ERECT THE METAL BUILDING SYSTEM IN CONFORMANCE WITH THESE DRAWINGS, OSHA REQUIREMENTS, AND EITHER MBMA OR CSA S16 STANDARDS PERTAINING TO PROPER ERECTION. TEMPORARY SUPPORTS SUCH AS GUYS, BRACES, FALSEWORK, CRIBBING, OR OTHER ELEMENTS FOR ERECTION ARE TO BE DETERMINED, FURNISHED, AND INSTALLED BY THE ERECTOR. THESE SUPPORTS MUST SECURE THE STEEL FRAMING, OR PARTLY ASSEMBLED STEEL FRAMING, AGAINST LOADS COMPARABLE IN INTENSITY TO THOSE FOR WHICH THE STRUCTURE WAS DESIGNED IN ADDITION TO LOADS RESULTING FROM THE ERECTION OPERATION. SECONDARY WALL AND ROOF FRAMING (GIRTS, PURLINS, AND/OR JOISTS) ARE NOT DESIGNED TO FUNCTION AS A WORKING PLATFORM OR TO PROVIDE AS AN ANCHORAGE POINT FOR A FALL ARREST / SAFETY TIE OFF.

## 4. SPECIAL INSPECTION:

SPECIAL INSPECTIONS AND TESTING THAT MAY BE REQUIRED BY GOVERNMENTAL OR OTHER AUTHORITY DURING CONSTRUCTION AND/OR STEEL FABRICATION (COLLECTIVELY, "INSPECTIONS") ARE NOT THE RESPONSIBILITY OF NBG, AND TO THE EXTENT REQUIRED IT SHALL BE THE RESPONSIBILITY OF THE BUILDER AND/OR OWNER. IN THE EVENT INSPECTIONS ARE REQUIRED, THE BUILDER AND/OR OWNER SHALL EMPLOY A THIRD PARTY QUALITY ASSURANCE TESTING AGENCY APPROVED BY THE RELEVANT AUTHORITY. IF SUCH REQUIREMENTS ARE NOT SPECIFICALLY INCLUDED IN NBG SALES DOCUMENTS, NO INSPECTIONS BY NBG OR AT ANY NBG FACILITY SHALL BE MADE. ALL NBG FACILITIES ARE ACCREDITED BY IAS AC472.

5. A325 & A490 BOLT TIGHTENING REQUIREMENTS:

IT IS THE RESPONSIBILITY OF THE ERECTOR TO ENSURE PROPER BOLT TIGHTNESS IN ACCORDANCE WITH APPLICABLE REGULATIONS. FOR PROJECTS IN THE UNITED STATES SEE THE RCSC SPECIFICATION FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS OR FOR PROJECTS IN CANADA, SEE THE CAN/CSA S16 LIMIT STATES DESIGN OF STEEL STRUCTURES FOR MORE INFORMATION.

THE FOLLOWING CRITERIA MAY BE USED TO DETERMINE THE BOLT TIGHTNESS (I.E., "SNUG-TIGHT" OR "FULLY-PRETENSIONED"), UNLESS REQUIRED OTHERWISE BY LOCAL JURISDICTION OR CONTRACT REQUIREMENTS:

 A) ALL A490 BOLTS SHALL BE "FULLY-PRETENSIONED".
 B) ALL A325 BOLTS IN PRIMARY FRAMING (RIGID FRAMES AND BRACING) MAY BE "SNUG-TIGHT", EXCEPT AS FOLLOWS: "FULLY-PRETENSION" A325 BOLTS IF:

- a) BUILDING SUPPORTS A CRANE SYSTEM WITH A CAPACITY GREATER THAN 5 TONS.
   b) BUILDING SUPPORTS MACHINERY THAT CREATES VIBRATION, IMPACT OR STRESS-REVERSALS ON THE CONNECTIONS. THE ENGINEER-OF-RECORD FOR
- THE PROJECT SHOULD BE CONSULTED TO EVALUATE FOR THIS CONDITION. c) THE PROJECT SITE IS LOCATED IN A HIGH SEISMIC AREA. FOR IBC-BASED CODES, "HIGH SEISMIC AREA" IS DEFINED AS "SEISMIC DESIGN CATEGORY" OF "D", "E", OR "F". SEE THE "BUILDING LOADS" SECTION OF THIS PAGE FOR THE DEFINED SEISMIC DESIGN CATEGORY FOR THIS PROJECT.
- d) ANY CONNECTION DESIGNATED IN THESE DRAWINGS AS "A325-SC" OR "SLIP-CRITICAL (SC)" CONNECTIONS MUST BE FREE OF PAINT, OIL, OR OTHER MATERIALS THAT REDUCE FRICTION AT CONTACT SURFACES. GALVANIZED OR LIGHTLY RUSTED SURFACES ARE ACCEPTABLE.

C) IN CANADA, ALL A325 AND A490 BOLTS SHALL BE "FULLY PRE-TENSIONED", EXCEPT FOR SECONDARY MEMBERS (PURLINS, GIRTS, OPENING FRAMING, ETC.) AND FLANGE BRACES.

SECONDARY MEMBER (PURLIN, GIRT, OPENING FRAMING, ETC.) AND FLANGE BRACE CONNECTIONS MAY ALWAYS BE "SNUG-TIGHT", UNLESS INDICATED OTHERWISE IN THESE DRAWINGS.

6. GENERAL DESIGN NOTES:

- 1) ALL STRUCTURAL STEEL SECTIONS AND WELDED PLATE MEMBERS ARE DESIGNED IN ACCORDANCE WITH ANSI/AISC 360 "SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS" OR THE CAN/CSA S16 "LIMIT STATES DESIGN OF STEEL STRUCTURES", AS REQUIRED BY THE SPECIFIED BUILDING CODE.
- 2) ALL WELDING OF STRUCTURAL STEEL IS BASED ON EITHER AWS D1.1 "STRUCTURAL WELDING CODE – STEEL" OR CAN/CSA W59 "WELDED STEEL CONSTRUCTION (METAL ARC WELDING)", AS REQUIRED BY THE SPECIFIED BUILDING CODE.
- 3) ALL COLD FORMED MEMBERS ARE DESIGNED IN ACCORDANCE WITH ANSI/AISI 100 OR THE CAN/CSA S136 "SPECIFICATIONS FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS". AS REQUIRED BY THE SPECIFIED BUILDING CODE.
- 4) ALL WELDING OF COLD FORMED STEEL IS BASED ON AWS D1.3 "STRUCTURAL WELDING CODE SHEET STEEL" OR CAN/CSA W59 "WELDED STEEL CONSTRUCTION (METAL ARC WELDING)", AS REQUIRED BY THE SPECIFIED BUILDING CODE.
- 5) THIS MANUFACTURING FACILITY IS IAS AC-472 ACCREDITED AND CAN/CSA A660 AND W47.1
- CERTIFIED (IF APPLICABLE) FOR THE DESIGN AND MANUFACTURING OF METAL BUILDING SYSTEMS.
   6) IF JOISTS ARE INCLUDED WITH THIS PROJECT, THEY ARE SUPPLIED AS A PART OF THE SYSTEMS ENGINEERED METAL BUILDING AND ARE FABRICATED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 1926.758 OF OSHA SAFETY STANDARDS FOR STEEL ERECTION DATED JANUARY 18, 2001.

THE DRAWINGS AND THE METAL BUILDING THEY REPRESENT ARE THE PRODUCT OF THE METAL BUILDING MANUFACTURER. THE REGISTERED PROFESSIONAL ENGINEER'S SEAL PERTAINS ONLY TO THE REQUIREMENTS LISTED HEREIN FOR THE MATERIALS DESIGNED AND SUPPLIED BY THE METAL BUILDING MANUFACTURER. THE REGISTERED PROFESSIONAL ENGINEER WHOSE SEAL APPEARS ON THESE DRAWINGS IS EMPLOYED OR ENGAGED BY THE METAL BUILDING MANUFACTURER AND DOES NOT SERVE AS OR REPRESENT THE PROJECT ENGINEER OF RECORD AND SHALL NOT BE CONSTRUED AS SUCH.

- 7. GLOSSARY OF ABBREVIATIONS:
- A.B. = ANCHOR RODS B.U. = BUILT-UP
- BS = BOTH SIDES
- DIA = DIAMETER
- F.S. = FAR SIDE FLG = FLANGE
- GA. = GAUGE H.S.B. = HIGH STRENGTH BOLTS
- HT. = HEIGHT
- LLV = LONG LEG VERTICAL

M.B. = MACHINE BOLTS MAX = MAXIMUM MBS = METAL BUILDING SUPPLIER MIN = MINIMUM N.S. = NEAR SIDE N/A = NOT APPLICABLE NIC = NOT IN CONTRACT O.A.L. = OVERALL LENGTH O.C. = ON CENTER PL = PLATE REQ'D = REQUIRED REV. = REVISION SIM = SIMILAR SL = STEEL LINE SLV = SHORT LEG VERTICAL TBD = TO BE DETERMINED TYP = TYPICAL U.N.O. = UNLESS NOTED OTHERWISE

?? = PART MARK TO BE DETERMINED AND WILL BE UPDATED ON CONSTRUCTION DRAWINGS

# KIRBY BUILDING SYSTEMS 124 KIRBY DRIVE PORTLAND, TN 37148 PHONE: 615-325-4165

# PROJECT BUILDING LOADS

CERTIFICATION EXTENDS ONLY FOR THE LOADS SPECIFIED ON KIRBY'S PURCHASE ORDER TO THE STRUCTURAL COMPONENTS OF THE BUILDING DESIGNED AND SUPPLIED BY KIRBY BUILDING SYSTEMS, IF ERECTED AS INDICATED. KIRBY'S CUSTOMER IS TO CONFIRM THAT THESE LOADS COMPLY WITH THE REQUIREMENTS OF THE LOCAL BUILDING DEPARTMENT. NOTE THAT KIRBY'S ENGINEER IS NOT ACTING AS THE ENGINEER OF RECORD FOR THIS CONSTRUCTION PROJECT. DESIGN LOADS HAVE BEEN APPLIED IN ACCORDANCE WITH THE FOLLOWING.

DESIGN CODE: OHIO 2017 (IBC 2015)			
ROOF LIVE LOAD: 20.00 psf REDUCIBLE PER CODE	RISK CATEGORY: II - STANDARD BUILDINGS		
GROUND SNOW LOAD: 20.00 psf SNOW IMPORTANCE FACTOR, ls: 1.00	SNOW EXP. FACTOR, Ce: 1.00		
ULTIMATE DESIGN WIND SPEED: 115 NOMINAL DESIGN WIND SPEED: 89 WIND EXPOSURE: C	mph (Vult) mph (Vasd)		
DESIGN SUCTION / PRESSURE FOR WALL COMPO AND CLADDING NOT DESIGNED OR PROVIDED BY			
UL-90 : NO			
SEISMIC INFORMATION: Ss: 0.130 S	1: 0.060		
DESIGN (Sds / Sd1): 0.139/0.096	SITE CLASS: D		
SEISMIC IMP. FACTOR, le: 1.00	SEISMIC DESIGN CATEGORY: B		
ANALYSIS PROCEDURE: EQUIVALENT LA BASIC SFRS: NOT DETAILED FOR SEISMI			

STATE: OHIO COUNTY: MARION

## NOTES:

1) COLLATERAL DEAD LOADS, UNLESS OTHERWISE NOTED, ARE ASSUMED TO BE UNIFORMLY DISTRIBUTED. WHEN SUSPENDED SPRINKLER SYSTEMS, LIGHTING, HVAC EQUIPMENT, CEILINGS, ETC., ARE SUSPENDED FROM ROOF MEMBERS, CONSULT THE M.B.S. IF THESE CONCENTRATED LOADS EXCEED 500 POUNDS (USING THE WEB MOUNT DETAIL), OR 200 POUNDS (USING THE FLANGE MOUNT DETAIL), OR IF INDIVIDUAL MEMBERS ARE LOADED SIGNIFICANTLY MORE THAN OTHERS.

2) THE DESIGN OF STRUCTURAL MEMBERS SUPPORTING GRAVITY LOADS IS CONTROLLED BY THE MORE CRITICAL EFFECT OF ROOF LIVE LOAD OR ROOF SNOW LOAD, AS DETERMINED BY THE APPLICABLE CODE.

3) ALL WELDING MUST BE PERFORMED BY AWS QUALIFIED WELDERS FOR THE WELDING PROCESSES AND POSITIONS TO BE USED. ALL WELDING AND WELD PREP MUST BE COMPLETED AND VISUALLY INSPECTED TO AWS ACCEPTANCE CRITERIA (TABLE 6.1) IN ACCORDANCE WITH THE APPLICABLE AWS STANDARD. WELD ELECTRODES USED FOR ALL FIELD WELD PROCESSES MUST BE SELECTED FROM TABLE 3.1 IN AWS D1.1 FOR GROUP II MATERIAL GREATER THAN OR EQUAL TO 0.125" THICK OR TABLE1.2 IN AWS D1.3 FOR MATERIAL LESS THAN 0.125" THICK AND ALL FILLER MATERIAL MUST HAVE A Fu OF 70 KSI.

4) ALL EXTERIOR COMPONENTS (WINDOWS, DOORS, ETC) MUST MEET WIND LOADING REQUIREMENTS FOR THE BUILDING CODE LISTED ABOVE OR MUST BE ADEQUATELY PROTECTED DURING A HIGH WIND EVENT. ALL GLAZING AND OTHER APPLICABLE OPENINGS IN WINDBORNE DEBRIS REGIONS MUST BE IMPACT-RESISTANT OR PROTECTED WITH AN IMPACT-RESISTANT COVERING. IMPACT RESISTANT MATERIALS MUST MEET THE LARGE AND/OR SMALL MISSILE TEST OF ASTM E 1996 AND ASTM E 1886.

## BUILDING SPECIFIC LOADING INFORMATION

\* DEAD LOAD: NORMAL WEIGHT OF METAL BUILDING COMPONENTS, NOT INCLUDING PRIMARY FRAMING, AS SUPPLIED BY THE MANUFACTURER

\*\* Pm IS BASED ON THE MINIMUM ROOF SNOW LOAD CALCULATED PER BUILDING CODE OR THE CONTRACT-SPECIFIED ROOF SNOW LOAD, WHICHEVER IS GREATER. THIS VALUE, Pm, IS ONLY APPLIED IN COMBINATION WITH DEAD AND COLLATERAL LOADS. ROOF SNOW IN OTHER LOADING CONDITIONS IS DETERMINED PER THE SPECIFIED BUILDING CODE.

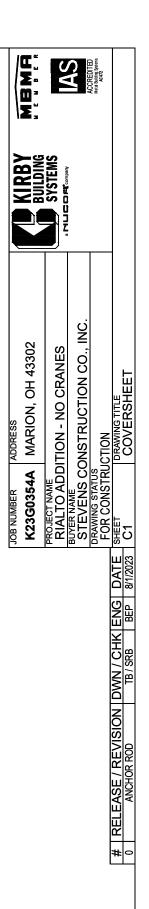
	ROOF DEAD	COLLATERAL DEAD		SNOW COEFFICIENT		SNOW LOAD		WIND		SEISMIC		
BLDG.	(psf) <b>*</b>	Pri (psf)	Sec (psf)	Ct	Cs	Ps (psf)	**Pm (psf)	Enclosure	GCpi	R	Cs	V (kips)
Α	3.00	5.00	5.00	1.00	1.00	14.00	20.00	Enclosed	+/-0.18	3.00	0.046	14.27
В	3.50	5.00	5.00	1.00	1.00	14.00	20.00	Enclosed	+/-0.18	3.00	0.046	5.84

# ENGINEER NOTES:

FOR OCCUPANCY (RISK) CATEGORY I OR II, IBC PROVISIONS INDICATE THAT SINGLE-STORY BUILDINGS SHALL HAVE "NO DRIFT LIMIT" PROVIDED THAT INTERIOR WALLS, PARTITIONS, CEILINGS, AND EXTERIOR WALL SYSTEMS HAVE BEEN DESIGNED TO ACCOMMODATE THE SEISMIC STORY DRIFTS. INTERIOR WALLS, PARTITIONS, CEILINGS, OR EXTERIOR WALL SYSTEMS NOT PROVIDED BY THE METAL BUILDING MANUFACTURER SHALL BE DESIGNED AND DETAILED BY OTHERS TO ACCOMMODATE THE SEISMIC STORY DRIFTS. SEISMIC DRIFT VALUES MAY BE OBTAINED FROM THE METAL BUILDING MANUFACTURER.

FRAMED OPENINGS HAVE BEEN DESIGNED TO SUPPORT WIND LOAD NORMAL TO THE WALL BASED ON THE STANDARD BUILDING CODE CRITERIA. FRAMED OPENINGS HAVE NOT BEEN DESIGNED FOR ANY ADDITIONAL MOMENT OR CATENARY FORCES FROM THE DOOR. ANY CHANGE TO THE INFORMATION SHOWN HERE WILL REQUIRE AN ENGINEERING INVESTIGATION AND POSSIBLE BUILDING REINFORCEMENT.

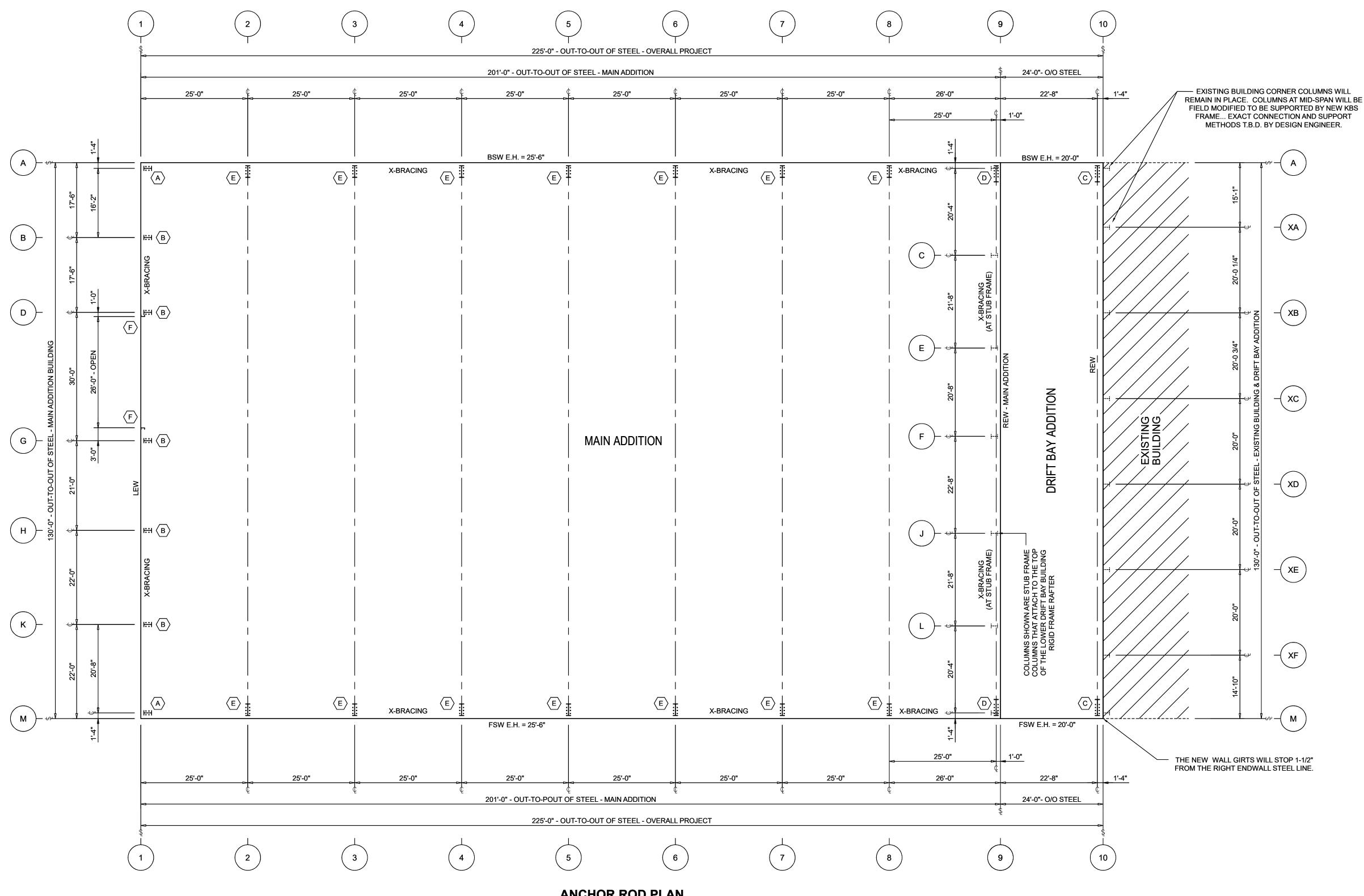
SHEET NUMBER	DESCRIPTION
C1	COVER SHEET(S)
F1	ANCHOR ROD PLAN



B - DRIFT	BAY ADDITION		
PRIMER			
		GP - GRAY PRIMER	
WALL SEC	-	GP - GRAY PRIMER	
ROOF SEC	ONDARY:	GP - GRAY PRIMER	
ROOF PANE	ELS		
TYPE:	24 Ga. STANE	DING SEAM 360 (SS3)	
	HIGH SYSTE	M w/ THERMAL SPACERS	
COLOR:	GALVALUME	PLUS (GM)	
WALL PANE	LS		
TYPE:	26 Ga. REVE	RSE R-PANEL	
COLOR:	PEARL GRAY	, PVDF (PG)	
SOFFIT PAN	IELS		
TYPE:	N/A		
COLOR:	N/A		
LINER PANE			
TYPE:	_ <u></u> 26 Ga. R-PAN		
COLOR:	POLAR WHIT		
TRIM COLO			
		ATE GRAY, PVDF (SG)	
		ATE GRAY, PVDF (SG)	
		ATE GRAY, PVDF (SG)	
		ATE GRAY, PVDF (SG)	
FRAMED OPE	INING FRIM: <u>5</u>	_ATE GRAY, PVDF (SG)	
-		IE PANEL TYPES OR COLORS ON THE ELEVATION DRAWINGS	S.
THE BUILDING CODE REQUIRI			
SURCHARGES FOR ANY LOWI			T
BUILDING MANUFACTURER IN			Ξ
CONSIDERED IN THE METAL E			
_			
	ge load (d)		
	FLAT-R	OOF SNOW LOAD (Pf)	
DRIFT WIDTH (Wd	)		
	-1		
THE CONDITIONS AT THE FOL DRIFT SURCHARGE LOADS:	LOWING LOCAT	TIONS PRODUCE	
	f): 72.96 Pf(psf	i): 14.00 Wd(ft): 17.58	
DRIFT BAY ONTO	/ (' f): 19.20 Pf(psf		-
			-

**BUILDING NAME DESIGNATION** 

A - MAIN ADDITION



ANCHOR ROD PLAN GENERAL NOTES: AN1: THE SPECIFIED ANCHOR ROD DIAMETER ASSUMES F1554 GRADE 36 UNLESS NOTED OTHERWISE. ANCHOR ROD MATERIAL OF EQUAL DIAMETER MEETING OR EXCEEDING THE STRENGTH REQUIREMENTS SET FORTH ON THESE DRAWINGS MAY BE UTILIZED AT THE DISCRETION OF THE FOUNDATION DESIGN ENGINEER. ANCHOR ROD EMBEDMENT LENGTH SHALL BE DETERMINED BY THE FOUNDATION DESIGN ENGINEER.

AN4: THE ANCHOR ROD LOCATIONS PROVIDED BY THE METAL BUILDING MANUFACTURER SATISFY PERTINENT REQUIREMENTS FOR THE DESIGN OF THE MATERIALS SUPPLIED BY THE METAL BUILDING MANUFACTURER. IT IS THE RESPONSIBILITY OF THE FOUNDATION ENGINEER TO MAKE CERTAIN THAT SUFFICIENT EDGE DISTANCE IS PROVIDED FOR ALL ANCHOR RODS IN THE DETAILS OF THE FOUNDATION DESIGN. AN5: DRAWINGS ARE NOT TO SCALE. SEE DETAILS FOR COLUMN ORIENTATION.

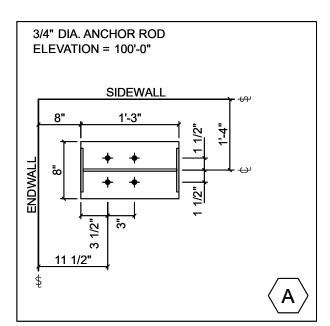
AN2: METAL BUILDING MANUFACTURER IS NOT RESPONSIBLE FOR PROJECT FOUNDATION DESIGN. THE FOUNDATION DESIGN IS THE RESPONSIBILITY OF A REGISTERED PROFESSIONAL ENGINEER, FAMILIAR WITH LOCAL SITE CONDITIONS. AN3: ANCHOR RODS, NUTS, FLAT WASHERS FOR ANCHOR RODS, EXPANSION BOLTS, AND CONCRETE/MASONRY EMBEDMENT PLATES ARE NOT BY THE METAL BUILDING MANUFACTURER.

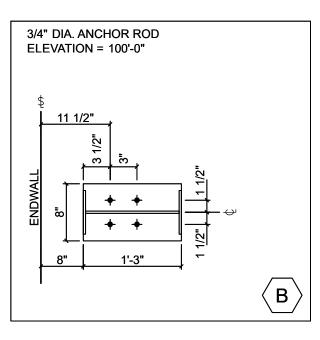
AN6: THE ANCHOR ROD PLAN INDICATES WHERE THE ANCHOR RODS ARE TO BE PLACED AS WELL AS THE FOOTPRINT OF THE METAL BUILDING. IT IS ESSENTIAL THAT THESE ANCHOR ROD PATTERNS BE FOLLOWED. IF THESE SETTINGS DIFFER FROM THE ARCHITECTURAL FOUNDATION PLANS, THE METAL BUILDING MANUFACTURER MUST BE CONTACTED IMMEDIATELY – BEFORE CONCRETE IS PLACED.

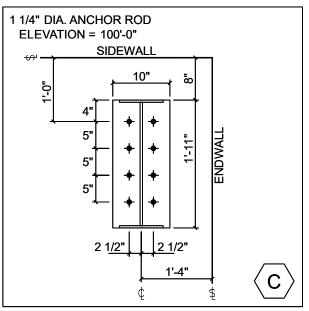
ANCHOR ROD PLAN NOTE: ALL BASE PLATES @ 100'-0" (U.N.) FINISHED FLOOR @ 100'-0"

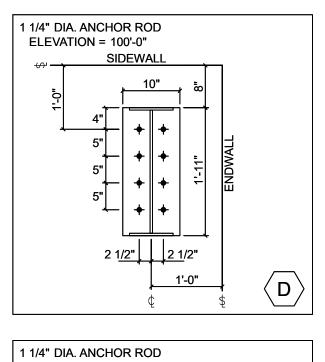
		ANC	HOR RODS	
BASE PLATE				PROJECTION
ANCHOR ROD SHAPE	QTY.	DIA.	MATERIAL	(*P)
	28	3/4"	F1554 GR 36	3"
		1"	F1554 GR 36	3"
FOUNDATION	116	1-1/4"	F1554 GR 36	3-1/2"
ENGINEER.		1-1/2"	F1554 GR 36	3-1/2"
	BASE PLATE ANCHOR ROD SHAPE AND EMBEDMENT LENGTH "D" IS TO BE DETERMINED BY THE FOUNDATION	BASE PLATE     QTY.       ANCHOR ROD SHAPE     QTY.       AND EMBEDMENT     28       LENGTH "D" IS TO BE     DETERMINED BY THE       FOUNDATION     116	BASE PLATE     QTY.     DIA.       ANCHOR ROD SHAPE     QTY.     DIA.       AND EMBEDMENT     28     3/4"       LENGTH "D" IS TO BE     1"       DETERMINED BY THE     116       FOUNDATION     116	BOTTOM OFBASE PLATEQTY.DIA.MATERIALANCHOR ROD SHAPE AND EMBEDMENT LENGTH "D" IS TO BE DETERMINED BY THE FOUNDATIONQTY.DIA.MATERIAL1161-1/4"F1554 GR 361161-1/4"F1554 GR 36

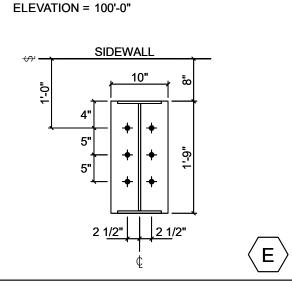
FINAL BASE PLATE LENGTHS MAY DIFFER +/- 2" FROM LENGTH SHOWN ON DETAILS. ANCHOR ROD LOCATIONS WILL REMAIN CONSISTENT U.N.O. 

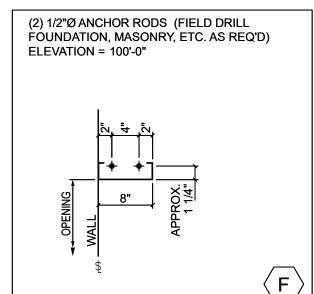


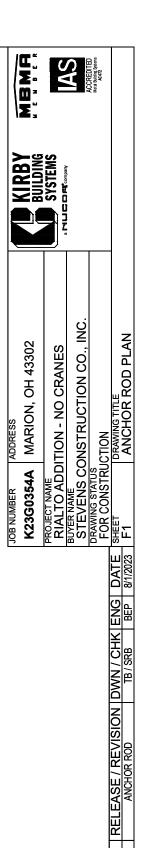




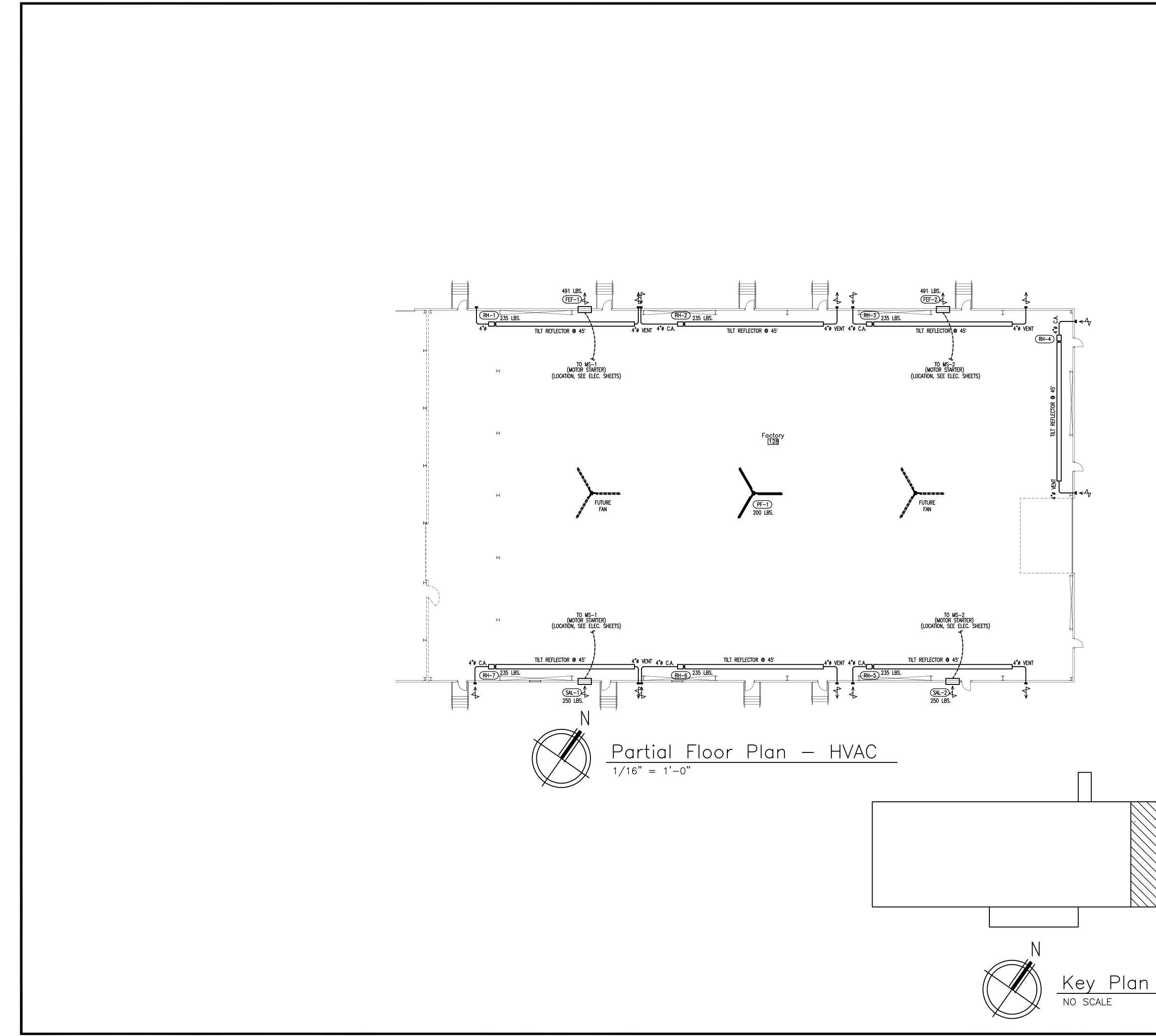


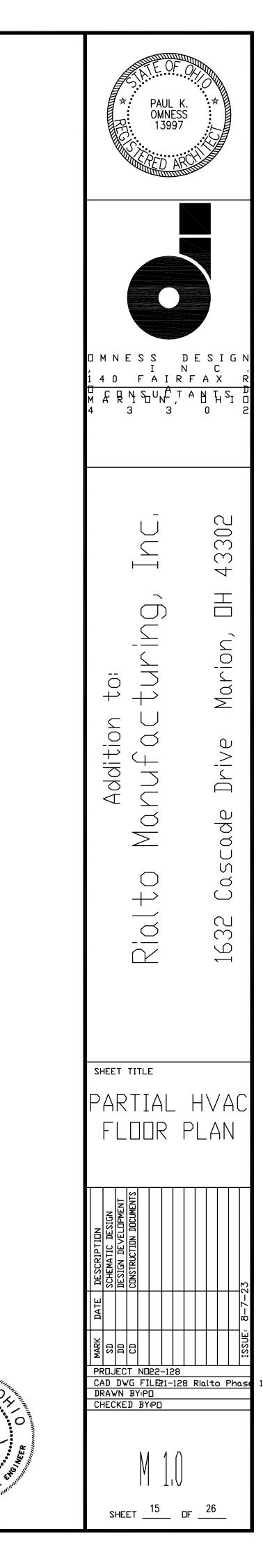




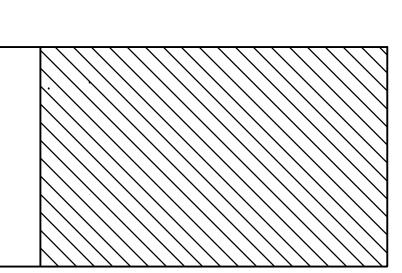


DESIGN ENGINEER: DATE:









#### MECHANICAL SPECIFICATIONS **INSULAT** GENERAL CONDITIONS A. SUBM A. REFERENCE 8. This Contractor shall make provisions to ensure oil return to 1. For purposes of clearness and legibility, Drawings are diagrammtic and although size and location of equipment are drawn to scale wherever possible, Contractor shall make use of all data in all of the Contract Documents and shall verify this information at the compressor as required. . Equipment manufacturer shall provide one year parts and labor warranty, and four year extended compressor warranty. Contractor 2. All shall submit terms of parts and labor contract with equipment supplier building site. Dimensions given in figures on the Drawings take for approval. precedence over scaled dimensions. Equipment manufacturer shall provide start-up, test, and submit 2. Drawings and Specifications to be considered cooperative, and anything report to Engineer. appearing in Specifications but not on Drawings or vice versa, shall be considered part of the Contract and must be executed. G. Every effort shall be made to minimize vibration and noise. H. Condensing unit must be installed level! B. QUALITY ASSURANCE AIR DISTRIBUTION 1. Codes and Permits - Deliver official record of approval, by governing 3. N agencies, to Engineer to transmit to Owner. A. EXHAUST FANS <u>Service</u> C. OPERATING INSTRUCTIONS 1. Submittals Refriger a. Submit detailed Shop Drawings clearly indicating make, model, location, type, and size. 1. Provide to Owner, after all equipment is in operation and at an Liquid agreeable time, competent instructors for the purpose of training Exposed Ductwork Owner's personnel in all phases of operation and maintenance of 2. Furnish and install, where show on Drawings, exhaust equipment and systems for both heating and cooling season. fans as manufactured by Greenheck. Conceale D. DAMAGE AND EMERGENCY REPAIRS 3. Exhaust fans as manufactured by Loren Cook, Penn, or Carnes will be acceptable providing construction, capacity Ductwork 1. Contractor will be held responsible for any damage that may be TYPES 0 incurred on any installed work of other trades, by any workman and operating characteristics are equal. employed in the installation of work under this Contract. Provide A S J B. LOW PRESSURE DUCTWORK covering under workbench or under any work involving cutting and 1. Ductwork shall be constructed of the following gauges, where velocity does not exceed 2500 FPM and static pressure does not excedd 2.0 WG. All is in accordance with ASHRAE and SMACNA Standards: fitting of materials being installed, so as not to damage surrounding A.P.F finished surfaces. TYPES ( D. MATERIALS IYPE II a. Rectangular Ducts: 1. Provide material and labor for that which is neither drawn nor A.P.F. specified but which is obviously a component part of and necessary to complete work which is customarily a part of work of similar <u>U.S. Gauge</u> <u>Galvanized Steel</u> <u>Largest Dimension</u> TYPE III character To 12" 13" to 30" 2. All materials, fixtures, and equipment shall be new, of the best grade, and installed according to manufacturer's recommendations. Additionally, the installation shall be according to the best standards J.M.S. b. Round Ducts: 0.V.S. of practices, complete with all accessories and connections necesary <u>U.S. Gauge</u> <u>Galvanized Steel</u> <u>Duct Diameter</u> for propercepration, and in compliance with effective State or Local Code requirements. K.F.G. To 13" 14" to 26" GAS FIRED FURNACE TYPE IN 2. All ductwork shall be constructed of galvanized steel complying with ASTM A527-71, lockforming quality. All toilet and shower room exhaust ducts shall be aluminum construction, and all joints welded or sealed with 3M Company #EC-1792 sealant. Sheetmetal must A. SUBMITTALS J.M.M. 1. Submit detailed Shop Drawings clearly indicating make, model, type, size, and location. 0.F.F. B. Furnish and install, where shown on Drawings, gas fired furnace as be fabricated so that the gauge of material being used is visible manufactured by York. Furnace shall be vertical model with DX cooling coil, single speed blower, tubular aluminized steel primary heat exchanger with stainless steel tube/aluminum fin secondary heat exchanger, and externally. 3. Duct fasteners shall comply with SMACNA MF-1. rotatable inducer. Furnace shall be design certified by A.G.A. Laboratories. 4. Provide hot dipped galvanized steel fasteners, anchors, rods, straps, trim and angles for support of ductwork. C. Cabinet shall be constructed of heavy gauge, cold rolled steel with insulated vestibule and back panels. Safety interlock switch, located 5. Provide turning vanes in all mitered elbows and where otherwise indicated. Vanes shall be 2" galvanized steel for up to and including 18" ducts and 4—1/2" for ducts over 18". Construction of vanes shall be double wall, fixed blade type for 90 degree elbows. in control box, automatically turns power off to unit when blower compartment door is removed. D. The controls shall have factory installed blower cooling relay, fan and 6. All joints and seams shall be sealed to SMACNA Class B Standards limit controls, factory wired 24 volt control transformer, and controller. (100% sealing) with Duro-Dyne SAS-UL-C siliconized acrylic water E. Gas burner shall have automatic gas controls, including the following: based duct séaler. 1. 100% safety shut-off. . GRILLES AND DIFFUSERS 2. Automatic safety pilot valve. 3. Automatic electric valve and gas pressure regulator. 1. Submittals 4. Solid state electronic direct spark ignitor. a. Submit detailed Shop Drawings clearly indicating make, model, 5. Gas fired furnace as manufactured by Carrier or Comfortmaker will be location, type, and size. acceptable providing construction, capacity, and operating characteristics are equal to the specified equipment. The cost for any modifications b. Furnish and install, where shown on Drawings, grilles and diffusers as manufactured by Price. to the building structure, the duct system, the natural gas piping system, the power wiring system, or the temperature control system (including interface points and interlock wiring) which is necessitated c. Grilles and diffusers as manufactured by Titus, Krueger, or Carnes will be acceptable providing construction, capacity, and by the substitution of the other listed manufacturers, shall be borne operating characteristics are equal. by the Mechanical Contractor making the substitution. 2. All grilles and diffusers shall have a factory applied off-white finish G. Equipment manufacturer shall warrant parts and workmanship for one unless otherwise noted on Plans. year from the date of substantial completion as determined by the 3. Ceiling Supply Diffusers: Fully adjustable air pattern, round or square with full flow damper. Diffusers shall be surface mount or lay—in Architect and/or Engineer. H. Unit shall be completely tested by the manufacturer before shipment. frame to fit ceiling construction being used. I. Every effort shall be made to minimize vibration, noise, and drafts 4. Egg Crate Return Grilles: Aluminum frame with aluminum core grid. through careful fabrication and erection. Egg crate grilles shall be surface mount, lay—in, or panel mounted to fit ceiling construction being used. AIR COOLED CONDENSING UNIT 5. Refer to Architectural Reflected Ceiling Plan for exact location of A. SUBMITTALS ceiling diffusers and ceiling construction being used. 1. Submit detailed Shop Drawings clearly indicating make, model, type, size, location, capacity at the operating suction and liquid temps, voltage, and required fuse size. 1. Furrnish filters as manufactured by Koch, model Multi-Pleat XL8. Media shall be reinforced glass fiber supported by galvanized steel grids formed to the configuration of the pleats. The media pack B. Furnish and install, where shown on Drawings, air cooled condensing unit as manufactured by York. Unit shall use refrigerant R-410A, be shall be sealed into a galvanized frame. Filter shall have a rated average atmospheric dust spot efficiency of not less than 35 to 40% and an average synthetic arrestance of 95% when tested in accordance with ASHRAE Standards 52–76. The filter shall be completely assembled and factory assembled. Unit shall be complete with single or multiple hermetic compressors, condensing coils, condenser fan, fan motors, fan guards, refrigerant reservoir, charging valves, valves, crankcase heater (if required), high and low pressure safety switches, capable of operating with variable face velocities up to 600 FPM liquid line sight glass, filter drier. strainers. contactors. and overload without impairing performance. It shall have an initial resistance protection for all motors and all controls to provide proper operation not to exceed the value selected from the capacity table and shall with pump down control. Unit shall have part winding and starters. The be classified by Underwriter Laboratories as Class II. entire unit shall be housed in a fully weather proof casing of outdoor 2. Spare Filters: One original and two sets of spare filters shall be supplied. One set is for use during the construction phase and a installation. Manufacturer shall furnish unit complete to provide oepration down to 40 degrees F outdoor temperature. set shall be installed for testing and balancing. One complete set C. Air cooled condensing unit as manufactured by Carrier or Comfortmaker of unused filters shall be turned over to the Owner at completion will be acceptable providing construction, capacity and operating characteristics are equal to the specified equipment. The cost for of the project. 3. Filters as manufactured by Cambridge, Continental or American for any modifications to the building structure, the power wiring system, or the temperature control system (including interface points Air Filter will be acceptable providing construction, capacity, and and interlock wiring) which is necessitated by the substitution of operating characteristics are equal. the other listed manufacturers, shall be borne by the Mechanical DUCTWORK AND ACCESSORIES Contractor making the substitution. A. Provide all sheetmetal work, as shown on the Drawings, in accordance with the latest edition of the ASHRAE guide and data book, SMACNA Standards and this Specification, the most demanding of which shall D. REFRIGERANT PIPING AND ACCESSORIES 1. All piping shall be Type "ACR" Hard Drawn Copper Tubing. All fittings shall be Wrought or Forged Brass Type approved for refrigerant piping and all elbows shall be long turn pattern. All pipe and fittings shall be assembled with Siflos or Easyflow Silver Solder be the minimum standard. Install ductwork indicated on Drawings making all neccesary changes in cross sections and offsets, whether or not specifically indicated. with approximate 1000 degrees F. . All changes in cross section shall be made without reducing the 2. Refrigerant piping shall be sized as shown on Drawings. Mechanical Contractor shall confirm pipe sizing with selected unit manufacturer design area of the duct. . Cap all open ends of ductwork until connected to grilles, diffusers, before proceeding with installation. and equipment to prevent entrance of debris, dust, etc. 3. Assembly and Workmanship: All tubing and fittings shall be carefully and thoroughly cleaned and polished with steel wool. Prior to heating, . Make changes in direction of ductwork, unless otherwise specified with coat all polished surfaces with a thin coat of flux. Heat fittings square elbows and double thickness turning vanes; full radius elbows and tubing with oxyacetylene torch. Provide continual flow of inert having inside radius equal to width of duct measured in plane of turn; gas (nitrogen) through tubing while brazing joints. Any overheated unsafe joints must be replaced before project is accepted. or one-third radius elbows with inside radius equal to one-third duct width and a single vane radius of two-thirds duct width. 4. Testing: Test all refrigerant piping as follows: . No pipe or other obstructions shall pass through air ducts. 3. Ducts shall not be hung from other ducts, pipe or conduit. a. Evacute entire system to 28 inch vacuum and hold said vacuum for 24 hours without leakage. 1. Duct dimensions are gross except of lined ducts where dimensions b. Charge piping with inert gas to a pressure of not more than 300 psi and no less than 200 psi and hold pressure for 24 are for net free area. I. All joints and seams in ducts shall be air—tight; poorly made joints, splits, visible holes at corners, etc. shall be reworked or new pieces hours without leakage. c. During above test, remove or bypass any valves, gauges, etc., of ductwork installed. Where excessive pulsating of ductwork or plenum subject to damage by pressure exerted during test. housing is found, additional stiffeners shall be added. Any cracking, in the coating around seams or joints, or in any other part of the formed duct that is apparent upon inspection, shall be sufficient to d. Triple evacuate entire system and purge each time with approriate refrigerant. Insert refrigerant dryer with valves bypass arrangement for moisture removal during triple purge and evacuation process. warrant rejection. Round duct joints in diameter through 60" shall be assembled and e. Test all joints, after charging system with an alcohol fired or sealed as follows: prestolite halide lead detector 1. Approved sealer is applied to the male end of the couplings and f. Contractor shall include the fee for inspection as required by fittings. After the joint is slipped together, sheetmetal screws are placed 1/2" from the joint bead for mechanical strength. Sealer is applied to the outside of the joint extending 1" on each side the Ohio Board of Building Standards Chapter BB-201 of Ohio Pressure Piping System Rules.

- 5. Refrigerant and Oil Charge: Charge entire system with accurate quantities of refrigerant (R-410A) and provide necessary oil for compressor and system requirements.
- 6. Specialties: Expansion valves, liquid line solenoid valves, liquid sight glass, strainers, hand valves, etc. are to be furnished by this Contractor in compliance with manufacturer's recommendation.
- 7. Miscellanous: Flexible pipe connections shall be furnished and installed where shown or required to permit free movement of piping and to prevent undue stress and vibrations at the compressor and air cooled condenser.
- 2. The duct sealer must be specifically formulated for the job of sealing the field joints for low-medium pressure systems. The sealer shall be compatible with plastic backed duct type so the two shall cure and bond together.

tape is immediately applied over the wet sealer.

the joint bead and covering the screw heads. Plastic backed

K. Install additional balancing dampers, where required by the Air Balance Contractor, to properly adjust the systems air volumes.

5								
INSULA	TION							
A. SUB	MITTALS							
1. S ir	Submit deta	ailed Sl oducts	nop Dra to be u	wings or des sed.	scriptive lite	erature	for	all
a A o fi ta s P	nd adhesive) STM E84, N f 25 and so ree to comp o pipe insui o pipe insui ct as activ pread ratir olyethylene	) fire ar NFPA 23 moke de ply with lation a ve air o ng and insulati	id smoke 55 and oveloped OSHA re nd cover ducts. A 150 sr on is ac	•	s as tested exceeding a n silicate sh above requ plenums an s shall hav ed as test	under pr flame all be a uirement d shafts e a 25 ed abo	spression spression sap swh flat ve,	ure tos ply icih me No
				shall conform			chedi	ule:
<u>Service</u>		<u>Type</u>	<u>Size</u>		<u>Cons. &amp;</u>	<u>Exp.</u>		
Refrige Liquid	rant & Suction	II	ALL	1/2"	A.P.F.			
Expose Ductwo		Ш	ALL	1"	A.S.J.			
Concea Ductwo		IV	ALL	2"	F.S.K.			
<u>TYPES</u>	OF COVERIN	<u>NG</u>						
F.S.K.	All Service Foil Scrim J.M. Aerotu	– Kra	ft	ng ArmaFlex A	۱P			
TYPES	OF INSULAT	ION		-				
TYPE II								
A.P.F.	Armstrong K = .27,	ArmaFl Density	ex AP P = 6.0#	ipe Insulation /ft3				
TYPE II	I							
J.M.S.	Johns-Mar Density =	nville Ri 4.25#/	gid "Spir ft₃ with	n—Glas"Duct A.S.J. Facing	Insulation			
0.V.S.	Owens-Co Density =	rning Ri 6.0 <b>#</b> /f <sup>.</sup>	igid Vapa t₃ with a	or Seal Duct A.S.J. Facing.	Insulation			
K.F.G.	Knauf Insu Density =			A.S.J. Facing.				
TYPE IN	/							
J.M.M.	Johns—Mar Density =	nville "N 0.6#/f	licrolite" t₃ with	Flexible Fiber F.S.K. Facing.	glass Duct	Insulatio	on,	
0.F.F.				berglass Duct F.S.K. Facing.				
K.F.G.	Knauf Con Density =	nmercia 3/4#/	l Duct V ft with	/rapped Insula A.S.J. Facing.	tion			

$\bigcirc$	
SYM.	М
PF-1	BIG AS

$\bigcirc$	FACTORY EXHAUST FAN SCHEDULE										
SYM.	MFR.	MODEL NO.	CAPA	CAPACITY		MOTO	DR	REMARKS			
51M.	MEIX.	MODEL NO.	CFM	S.P.	£	FLA	VOLTAGE				
FEF-1	GREENHECK	SBE-2L48	21730	0.25	3	4.8	460-3-60	WALL MOUNTED EXHAUST FAN W/ WALL HOUSING, WEATHER HOOD, BACKDRAFT DAMPER, BIRDSCREEN, MOTOR STARTER & VARIABLE FREQUENCY DRIVE.			
FEF-2	GREENHECK	SBE-2L48	21730	0.25	3	4.8	460-3-60	WALL MOUNTED EXHAUST FAN W/ WALL HOUSING, WEATHER HOOD, BACKDRAFT DAMPER, BIRDSCREEN, MOTOR STARTER & VARIABLE FREQUENCY DRIVE.			

DTE:	EXHAUS
	S

	VENTILATION FOR ACCEPTABLE INDOOR AIR QUALITY																		
AIR HANDLING UNIT TAG	CATEGORY	OCCUPANCY CATEGORY	PEOPLE OUTDOOR AIR RATE	AREA OUTDOOR AIR RATE	ZONE FLOOR AREA	NORMAL OCC.	PEAK OCC.	INTERM. USAGE	CORR. OCC.	CALC. OCC.	DEFAULT OCC.	DESIGN OCC.	PEOPLE OUTDOOR AIR		Breathing Zone Outdoor Airflow		ZONE AIR DISTRIBUTION EFFECTIVENESS		REQUIRED OUTDOOR AIR INTAKE FLOW
NUMBER	NUMBER		CFM/PERSON	CFM/SQ.FT.	SQ.FT.	PEOPLE	PEOPLE	FT.	PEOPLE	PEOPLE	PEOPLE	PEOPLE	CFM	CFM	CFM			CFM	CFM
FEF-1&2	43	FACTORY	10.0	0.18	28975	0	0	0	0	0	202.8	203	2030	5216	7246	3	0.8	9057	9057
OUTDOOR I	DESIGN TEMP.	- SUMMER	(DEG. F)(ASHRAE	1.0%): 95.0															

OUTDOOR DESIGN TEMP. - SUMMER (DEG. F)(ASHRAE 99.6%): -4.0 INDOOR DESIGN TEMP. - WINTER (DEG. F): 75.0 OUTDOOR DESIGN TEMP. - SUMMER (DEG. F): 70.0

RESTROOM EXHAUST FANS WILL EXHAUST PROPER CFM PER CODE VALUES

·					
		RA	DIANT	HEATE	R SCHEDULE
SYM.	MFR.	MODEL NO.	INPUT	VOLTAGE	REMARKS
RH-1	RE-VERBER-RAY	DES3-50-200	175,000 BTUH	120-1-60	COMPLETE WITH REFLECTORS AT 45°, TUBE HANGERS, REFLECTOR CENTER SUPPORTS, REFLECTOR END CAP, 1/2" FPT GAS INLET WITH SHUT-OFF VALVE, FLEXIBLE STAINLESS STEEL SUPPLY LINE AND BLOWER MOTOR , 1.7 AMPS @ IGNITION
RH-2	RE-VERBER-RAY	DES3-50-200	175,000 BTUH	120-1-60	COMPLETE WITH REFLECTORS AT 45°, TUBE HANGERS, REFLECTOR CENTER SUPPORTS, REFLECTOR END CAP, 1/2" FPT GAS INLET WITH SHUT-OFF VALVE, FLEXIBLE STAINLESS STEEL SUPPLY LINE AND BLOWER MOTOR , 1.7 AMPS @ IGNITION
RH-3	RE-VERBER-RAY	DES3-50-200	175,000 BTUH	120-1-60	COMPLETE WITH REFLECTORS AT 45°, TUBE HANGERS, REFLECTOR CENTER SUPPORTS, REFLECTOR END CAP, 1/2" FPT GAS INLET WITH SHUT-OFF VALVE, FLEXIBLE STAINLESS STEEL SUPPLY LINE AND BLOWER MOTOR , 1.7 AMPS @ IGNITION
RH-4	RE-VERBER-RAY	DES3-50-200	175,000 BTUH	120-1-60	COMPLETE WITH REFLECTORS AT 45°, TUBE HANGERS, REFLECTOR CENTER SUPPORTS, REFLECTOR END CAP, 1/2" FPT GAS INLET WITH SHUT-OFF VALVE, FLEXIBLE STAINLESS STEEL SUPPLY LINE AND BLOWER MOTOR , 1.7 AMPS @ IGNITION
RH-5	RE-VERBER-RAY	DES3-50-200	175,000 BTUH	120-1-60	COMPLETE WITH REFLECTORS AT 45°, TUBE HANGERS, REFLECTOR CENTER SUPPORTS, REFLECTOR END CAP, 1/2" FPT GAS INLET WITH SHUT-OFF VALVE, FLEXIBLE STAINLESS STEEL SUPPLY LINE AND BLOWER MOTOR , 1.7 AMPS @ IGNITION
RH–6	RE-VERBER-RAY	DES3-50-200	175,000 BTUH	120-1-60	COMPLETE WITH REFLECTORS AT 45°, TUBE HANGERS, REFLECTOR CENTER SUPPORTS, REFLECTOR END CAP, 1/2" FPT GAS INLET WITH SHUT-OFF VALVE, FLEXIBLE STAINLESS STEEL SUPPLY LINE AND BLOWER MOTOR , 1.7 AMPS @ IGNITION
RH-7	RE-VERBER-RAY	DES3-50-200	175,000 BTUH	120-1-60	COMPLETE WITH REFLECTORS AT 45°, TUBE HANGERS, REFLECTOR CENTER SUPPORTS, REFLECTOR END CAP, 1/2" FPT GAS INLET WITH SHUT-OFF VALVE, FLEXIBLE STAINLESS STEEL SUPPLY LINE AND BLOWER MOTOR , 1.7 AMPS @ IGNITION

NOTE: INSTALL HEATERS PER MANUFACTURERS INSTRUCTIONS W/ REQUIRED CLEARANCE TO COMBUSTIBLES.

	PROPELLER FAN SCHEDULE										
TD .	MODEL NO.	CAPA	<b>NCITY</b>		MOTO	)R	REMARKS				
FR.	MODEL NO.	MODEL NO.	RPM	S.P.	P. HP AMPS VOLTAGE						
s fans	PF8-10	148	0.25"	1.0	15 BRKR	120/1/60	HANG FROM STRUCTURE WITH PROPER ACCESSORIES AND INCLUDE WALL CONTROL. 10'-0"Ø				

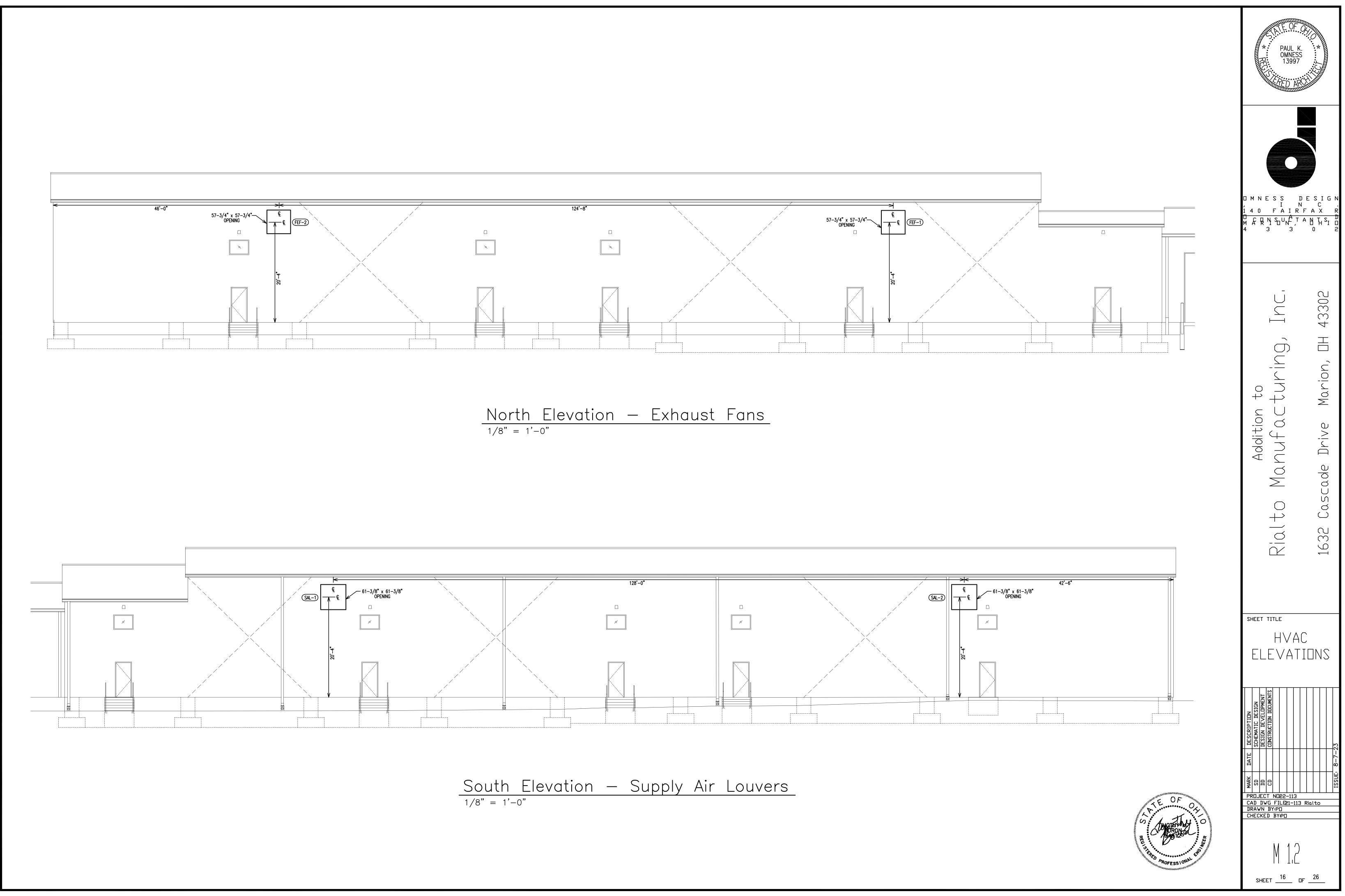
JST FANS & LOUVERS SIZED AT 1.5 CFM/SQFT WHICH EXCEEDS REQUIRED VENTILATION CFM.

$\supset$	SUPPLY AIR LOUVER SCHEDULE									
SYM.	MFR.	MODEL NO.	CFM	SIZE	REMARKS					
AL-1	RUSKIN	ELC6375DX	21730	60x60	WITH RUSKIN MOTOR-OPERATED DAMPER.					
AL-2	RUSKIN	ELC6375DX	21730	60x60	WITH RUSKIN MOTOR-OPERATED DAMPER.					

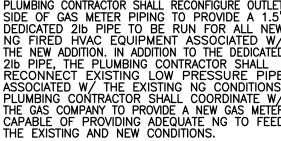


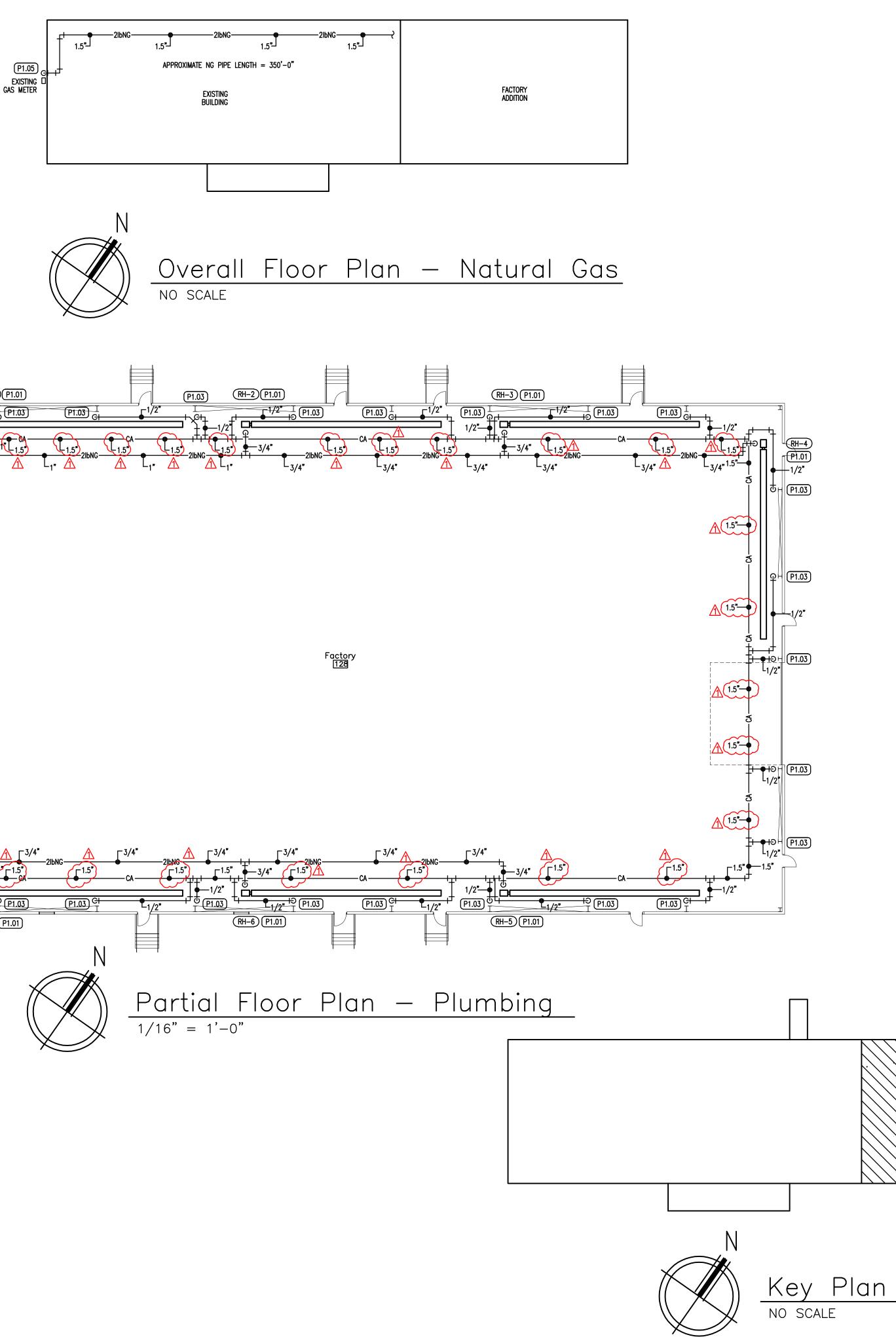
* PAUL K. OMNESS 13997	
DMNESS D I MNESS D I A O FAIRF A SUNFTA 4 3 3	
Rialto Manufacturing, Inc.	1632 Cascade Drive Marion, DH 43302
SHEET TITLE HVAC S( AND DET	
	ISSUE: 8-7-23
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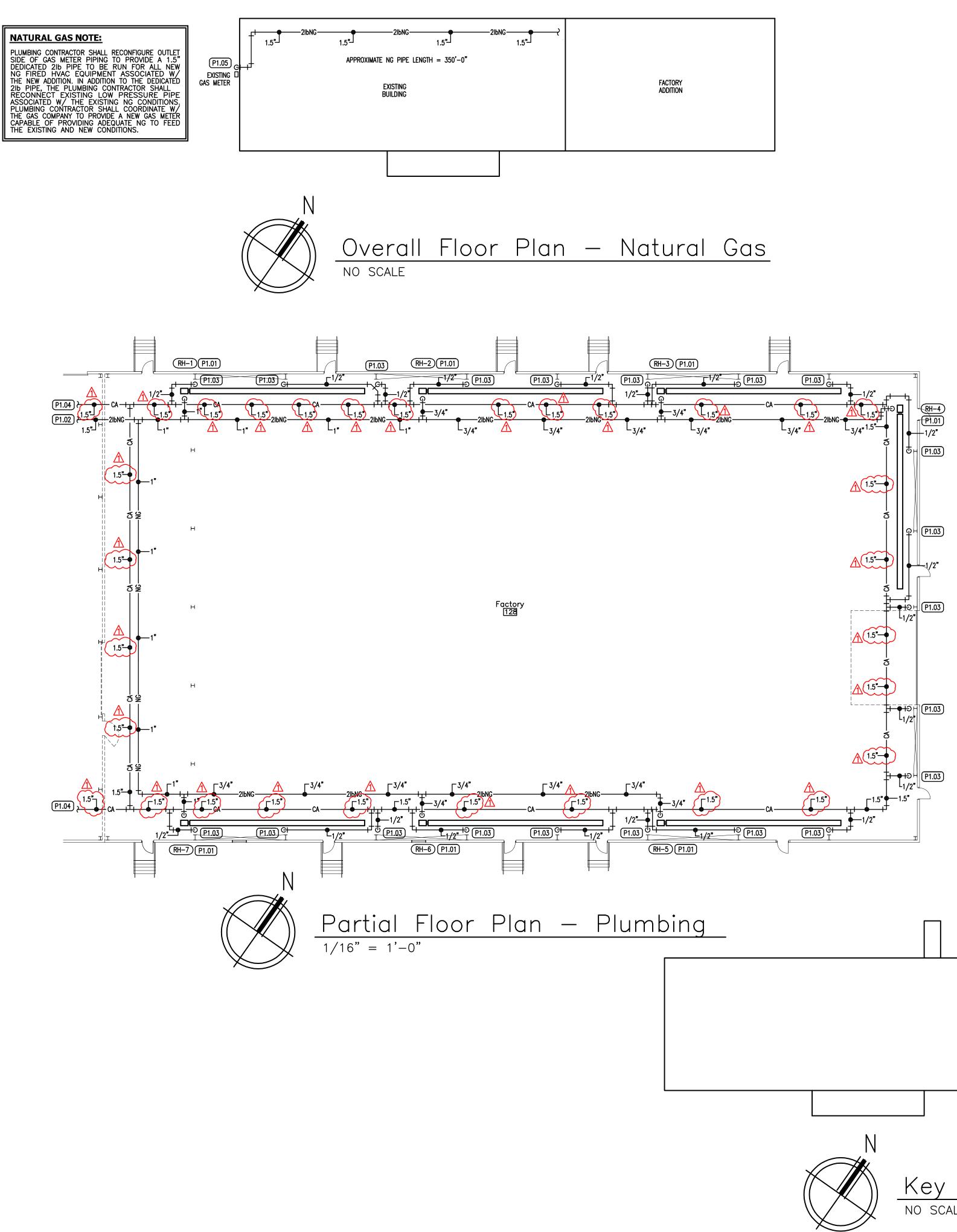
SHEET <u>17</u> DF <u>26</u>



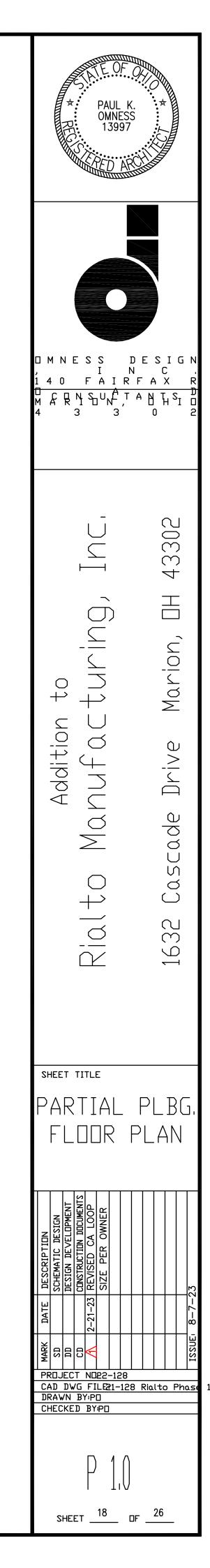


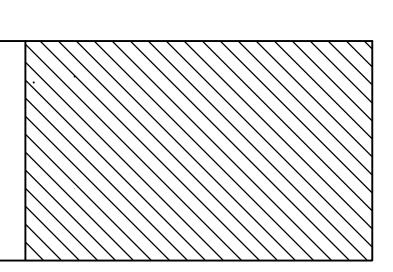






	NATURAL GAS CODED NOTES
(P1.01)	3/4" 216 NATURAL GAS FROM CEILING SPACE DOWN TO RADIANT HEATER W/ GAS COCK, UNION, 6" DRIP LEG & REGULATOR AS REQUIRED.
P1.02	SEE OVERALL FLOOR PLAN - NATURAL GAS FOR CONTINUATION OF 1.5" 21b NATURAL GAS LINE.
P1.03	1/2" COMPRESSED AIR DROP W/ QUICK CONNECT FITTING AS REQUIRED.
P1.04	MAKE 1.5" COMPRESSED AIR CONNECTION TO EXISTING LINE AS REQUIRED.
(P1.05)	1.5" 215 NATURAL GAS DOWN ON WALL AND MAKE CONNECTION AT EXISTING NATURAL GAS METER. SEE NATURAL GAS NOTE FOR MORE INFORMATION.





### GENERAL CONDITIONS

#### A. REFERENCE

- For purposes of clearness and legibility, Drawings diagrammatic and although size and location of to scale wherever possible, Contractor shall mak all of the Contract Documents and shall verify building site. Dimensions given in figures on th precedence over scaled dimensions.
- Drawings and Specifications to be considered coor appearing in Specifications but not on Drawings considered part of the Contract and must be ex
   B. QUALITY ASSURANCE
- Codes and Permits Deliver official record of agencies, to Engineer to transmit to Owner.
   OPERATING INSTRUCTIONS
- Provide to Owner, after all equipment is in oper agreeable time, competent instructors for the p Owner's personnel in all phases of operation ar
- equipment and systems for both heating and co D. DAMAGE AND EMERGENCY REPAIRS
- Contractor will be held responsible for any dama incurred on any installed work of other trades, employed in the installation of work under this covering under workbench or under any work in fitting of materials being installed, so as not to finished surfaces.
   E. MATERIALS
- Provide material and labor for that which is neit but which is obviously a component part of and work which is customarily a part of work of sind
- 2. All materials, fixtures, and equipment shall be ne and installed according to manufacturer's recom Additionally, the installation shall be according to of practices, complete with all accessories and for proper operation, and in compliance with eff Code requirements.
- Where piping passes through floor, ceiling or wal pipe and construction with fire stop putty.
   <u>PIPE AND PIPE FITTINGS</u>
- A. QUALITY ASSURANCE
  - 1. Welding Materials and Procedures: Conform to A Standards of the American Welding Society, OBB Obio Pressure Piping System Rules
  - Ohio Pressure Piping System Rules. 2. All piping systems in compliance with the Ohio System Rules must be performed by certified
- of welding certificate and mark all joints with a
- B. PRODUCTS1. PIPE AND TUBE
  - a. Steel Pipe: ASTM A53; Schedule 40 black. b. Ductile Iron Water Pipe: ANSI A21.51. c. Copper Water Tube: ASTM B88; type and te
  - d. PVC Plastic Pipe: ASTM D2665, Schedule 40
- PIPE AND TUBE JOINTS AND FITTINGS
   a. Malleable Iron Threaded Fittings: ASME B16.
   b. Malleable Iron Threaded Unions: Class 150.
- c. Ductile Iron Fittings: ANSI A21.10.
- d. Wrought Copper/Bronze Solder Joint Fittings (pressure fittings).
- e. Solder: ASTM B32, Grade 95TA.
- f. PVC Pipe Fittings: ASTM D2665 for Scheduleg. Solvent for PVC Jointing: ASTM D2564.
- C. INSTALLATION 1. General: Install pipe, tube and fittings in accord industry practices which will achieve permanently
  - systems, capable of performing each indicated s failure. Install each run with a minimum of jo with adequate and accessible unions for disasser replacement of valves and equipment. Reduce by use of reduced fittings. Align piping accurawith 1/16" misalignment tolerance.
- 2. Locate piping runs, except as otherwise indicated horizontally (pitched to drain) and avoid diagond possible. Orient horizontal runs parallel with we Locate runs as shown or described by diagrams or if not otherwise indicated, run piping in the does not obstruct usable space or block access building and its equipment. Hold piping close t construction, columns and other structural memb in finished and and occupied spaces, conceal p
- Electrical Equipment Spaces: Do not run piping vaults and other electrical or electronic equipm enclosures.
- Piping System Joints: Provide joints of the type piping system.
   a. Thread pipe and fittings shall have cut three
- a. Thread pipe and fittings shall have cut thre using sharp dies. Ream threaded ends to restore full inside diameter. Apply pipe joi joint tape (Teflon) where recommended by manufacturer, on male threads at each joi to leave not more than three threads expo
- b. Solder copper tube and fitting joints where accordance with recognized industry practic squarely, ream to full inside diameter, and tube ends and inside of fittings. Apply so areas of both tubes and fittings. Insert tu fitting, and solder in a manner which will of and circumference of joint. Wipe excess s before it hardens.
- c. Plastic Pipe/Tube Joints: Comply with manufacturer's and recommendations and with applicable industry sta Make solvent cemented joints ASTM D2865 and F402.

	PL	UME	BIN	G S	SPECIF	ICATIONS	
s are essentially		for installi	ing unic Iction a	ons. In nd stop	stall unions in a corrosion where	manufacturer's instructions manner which will prevent the "joining of ferrous and	3.
f equipment are drawn ke use of all data in this information at the he Drawings take	D. CLEAN 1. G	ING, FLUS Seneral: ( superfluou	HING, II Clean e Is mate	NSPECTI xterior rials ar	ON surfaces of install nd prepare for ap	led piping systems of plication of specified coatings clean water before proceeding	4.
operative, and anything or vice versa, shall be executed.	E. PIPING	with requi of joints, TEST	ired tes support	ts. In: ts and	spect each run of accessory items.	f each system for completion	5.
approval, by governing	2. F	Repair pipi disassemb required t	ng syst ly and o overc	ems se re—inst come le	allation, using new	the required piping test, by v materials to the extent se chemicals, stop—leak	D. D0 1.
ation and at an purpose of training nd maintenance of ooling season.	3. D	)rain test been com	water f pleted.	from pi		r testing and repair work has	2.
age that may be by any workman		on the fo	llowing	schedul	services shall be e: ATERIALS, JOINTS /		4.
Contract. Provide wolving cutting and damage surrounding	<u>Service</u> Natural	Gas	<u>Above</u> <u>Grade</u> X	<u>Below</u> <u>Grade</u>	<u>Pipe</u> Black Steel Schedule 40	<u>Joints &amp; Fittings</u> Malleable Iron Class 150	E. NA
ther drawn nor specified I necessary to complete milar character.	Sanitary and Ven	it	x	х	PVC ASTM D2665 Schedule 40	Solvent Weld (ASTM D2564) Cement) PVC Fittings	1. F. PL
ew, of the best grade, nmendations.	Domesti		Х	.,	Copper, Hard Type L	Soldered (Grade 95TA)	1.
o the best standards connections necessary fective State or Local	Domesti 3" & Lo Domesti	arger c Water		x x	Ductile Iron Water Pipe Copper, Soft	Push On Joints Soldered (Grade 95TA)	2.
ıll, close space between	2.5" & <u>PIPE HANG</u> A. PRODU	<u>ERS</u> ICTS	500		Туре К		3.
ASME Code, 1980 3C Chapter 4101:8		PIPE HANG a. Hange ring.		e sizes	1/2" to 1 1/2",	adjustable wrought steel	4 5.
Pressure Pressure velders. Provide copies certificate ID.		c. Mutipl	e or Tr hanger	apeze l	=	ıble wrought steel clevis. annels with welded spacers	6.
	B. INSTAL	or co LATION	ontinuol	us threa	ıded.	ooth ends, threaded one end, angers from wood trusses.	7.
mper as scheduled;	C. SPACIN	NG REQUIF	REMENTS	5	and copper piping	-	8.
3.	<u>S</u>	<u>lominal Pi</u> ize (inch) /2	pe		<u>oce Between</u> <u>oort (feet)</u> 6	<u>Hanger Rod</u> <u>Diameter (inch)</u> 3/8	9.
	3 2	/4 to 1 and 2 1 and 4	1/2 /2		6 10 12	3/8 3/8 5/8	
s: ASME B16.22		covering d	and adj	acent w	e minimum 1/2" ( ork. ne foot of each h	clear space between finished norizontal elbow.	G. TE 1.
e 40.	4. L	Jse hange piping is d	rs whic erected.	h are v	ertically adjustable	e 1 1/2" minimum after arallel and at same elevation,	<u>INSULA</u>
ance with recognized y—leakproof piping	PLUMBING	provide m			eze hangers.		A. SU 1.
service without piping bints and couplings, but mbly and maintenance/ sizes (where indicated)					or all water heater	rs, plumbing fixtures, floor	2.
itely at connections,		Submit det type, and STIC WATEF	size.		awings clearly indic	cating make, model, location,	
d, vertically and al runs wherever alls and column lines. s, details and notations	1. F	Provide wa	iter hea	iters sh	own on Drawings: Id steel jacketed s	storage tank with baked	
shortest route which s for servicing the to walls, overhead		on fi b. Tempe	inish. erature/	/Pressui	re relief valve, ASM	ME rated.	3. <u>Serv</u>
bers. Wherever possible piping from view. through transformer			lined s osi work	-	tank with anode r essure.	rod.	Dom Wate Dom
ent spaces and		f. Coppe			itoff upon pilot fa eating elements, f	ilure. actory wired with fused	Wate <u>TYPE</u>
e indicated in each eads full and clean			table in approved		n stat and high te	emperature cutout.	ASJ VB -
o remove burns and int compound, or pipe pipe/fitting int and tighten joint		A.O. Smith are accep	ı, Lochi			cribed on Drawings. er heaters of equal size	<u>TYPE</u> TYPE OFG
osed. indicated, in ce. Cut tube ends I clean outside of		again	nst tank	failure	due to corrosion	5-year limited warranty or due to metal failure sand, sediment, or sludge.	JFG KFG
older flux to joint ube full depth into draw solder full depth solder from joint	1. R	of drains,	ainage o soil an	and ven id waste	e piping shall mee	as possible. Actual location t the various building	TYPE APF
nufacturer's instructions industry standards. and F402.	2. S	conditions. Slope brand foot of ru of "Y" bra	Do a ch soil n. Mal Inches (	iny worl and wo ke char and 1/4	< necessary to co iste pipes at an in iges in direction o	nceal piping. ncline of at least 1/4" per f drainage piping by means bends except that sanitary	

- Provide cleanouts at base of all stacks, at changes of direction and as shown on Drawings. Cleanouts on undergroundlines shall extend up flush with finished floor or grade. Provide cleanouts not over 50 ft. o.c. along straight runs. Cleanouts shall be size of pipe to which it is installed up to 4" in diameter. Pipe over 4" in diameter shall have a 4" cleanout.
   Terminate vent pipes at least 12" above roof. Make each vent
- 4. Terminate vent pipes at least 12" above roof. Make each vent terminal water—tight with the roof by using sheet lead (4 psf) with base not less than 24" in all directions from center of pipe and full height of pipe and turned down 2" inside of pipe.
- 5. Lay all sanitary sewers with full length of each section resting on a solid bed. Lay pipe starting at upgrade with spigot end of pipe pointing in direction of flow. All sanitary sewers shall be collected separately as shown on Drawings
- DOMESTIC WATER SUPPLY SYSTEMS 1. Install water system as shown on Drawings with hot and cold water
- being supplied and connected to all fixtures and equipment. 2. Provide unions at all equipment valves, strainer, etc., to facilitate
- removal for repair or replacement without disturbing adjacent piping. 3. Provide temporary water service to area of construction for use of all trades. Plumbing Contractor shall be responsible for maintaining
- 4. Chlorinate all domestic water systems. Flush out domestic system then hold a solution mixture of 50 ppm of chlorina in the system for a
- hold a solution mixture of 50 ppm of chlorine in the system for a period of 24 hours. Drain and flush system until chlorine residual of .5 ppm. Chlorination shall be repeated if necessary and conform to AWWA Specifications C601-54 and be accepted by Local Health Dept. NATURAL GAS PIPING SYSTEM
- Connect to all building equipment requiring natural gas. Install drip leg and shut—off cock at each connection.
   PLUMBING FIXTURES AND EQUIPMENT
- Provide plumbing fixtures shown on Drawings and listed in Fixture Schedule. Fixtures as manufactured by Mansfield, Kohler, or Eljer are approved eaual.
- 2. All countertop sinks to be individually valved under sinks using Wolverine Ball Valves.
- 3. Faucets and Flush Valves to have renewable seats and discs and chrome plated trim. Delany and Watrous flush valves and Delta Faucets are acceptable on Base Bid.
- All fixtures to be supported as indicated on Fixture Schedule.After installation, all connecting piping to be flushed and valves
- After installation, all connecting piping to be flushed and valves properly adjusted. Labels, plaster, stains and other foreign material to be removed from all fixtures so they are acceptable in and operation. Caulk all Fixtures at wall and floors.
   Fixtures act to beight as shown in schedule and in leastion shown on
- 6. Fixtures set to height as shown in schedule and in location shown on Drawings, plumb, level and substantially supported. Immediately after the setting of any fixture, fitting or piping, protect it adequately without extra cost to the Owner. At all stages of the installation, pipe openings must be protected against the entrance of foreign material.
- Exposed piping to plumbing fixtures shall be chromium plated, iron pipe size, brass pipe and chromium plated stop valves where exposed and brass where concealed.
- 8. All fixtures shall be furnished and installed according to schedules on the Drawings. However, the Plumbing Contractor shall ascertain the correct amount of fixtures required by the plans as he will be held strictly responsible for furnishing and installing all items shown.
- 9. Contractor shall inform himself fully regarding peculiarities and limitations of space available for installation of all material and equipment to be installed under this Contract, and see that all equipment to be reached periodically for operation and maintenance is made easily accessible.
- TESTS
- 1. Sanitary, Waste, and Vent Piping: All sanitary, storm, and water piping shall be tested per State Plumbing Code and/or requirements of Local Authority.

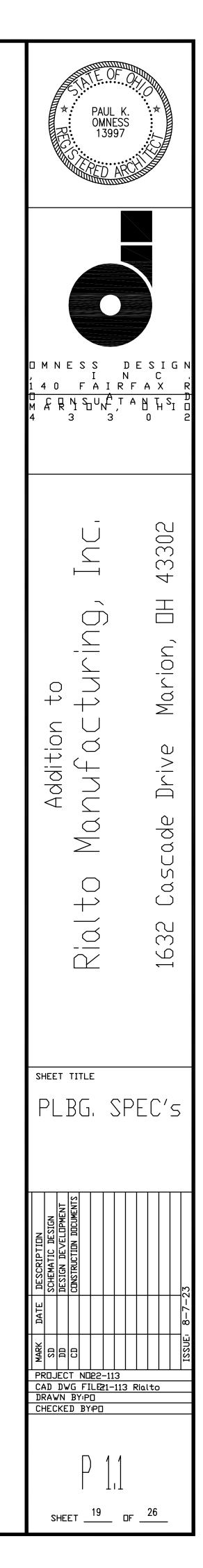
INSULATION A. SUBMITTALS

- Submit detailed Shop Drawings or descriptive literature for all insulation products to be used.
- All insulation and accessories shall have composite (insulation, jacket, and adhesive) fire and smoke hazard ratings as tested under procedure ASTM-E-84, NFPA 255 and UL 723, not exceeding a flame spread of 25 and smoke developed 50. All calcium silicate shall be asbestos free to comply with OSHA regulations. The above requirements apply to pipe insulation and coverings used in plenums and shafts which act as active air ducts. All other areas shall have a 25 flame spread rating and 150 smoke developed as tested above. No polyethylene insulation acceptable.

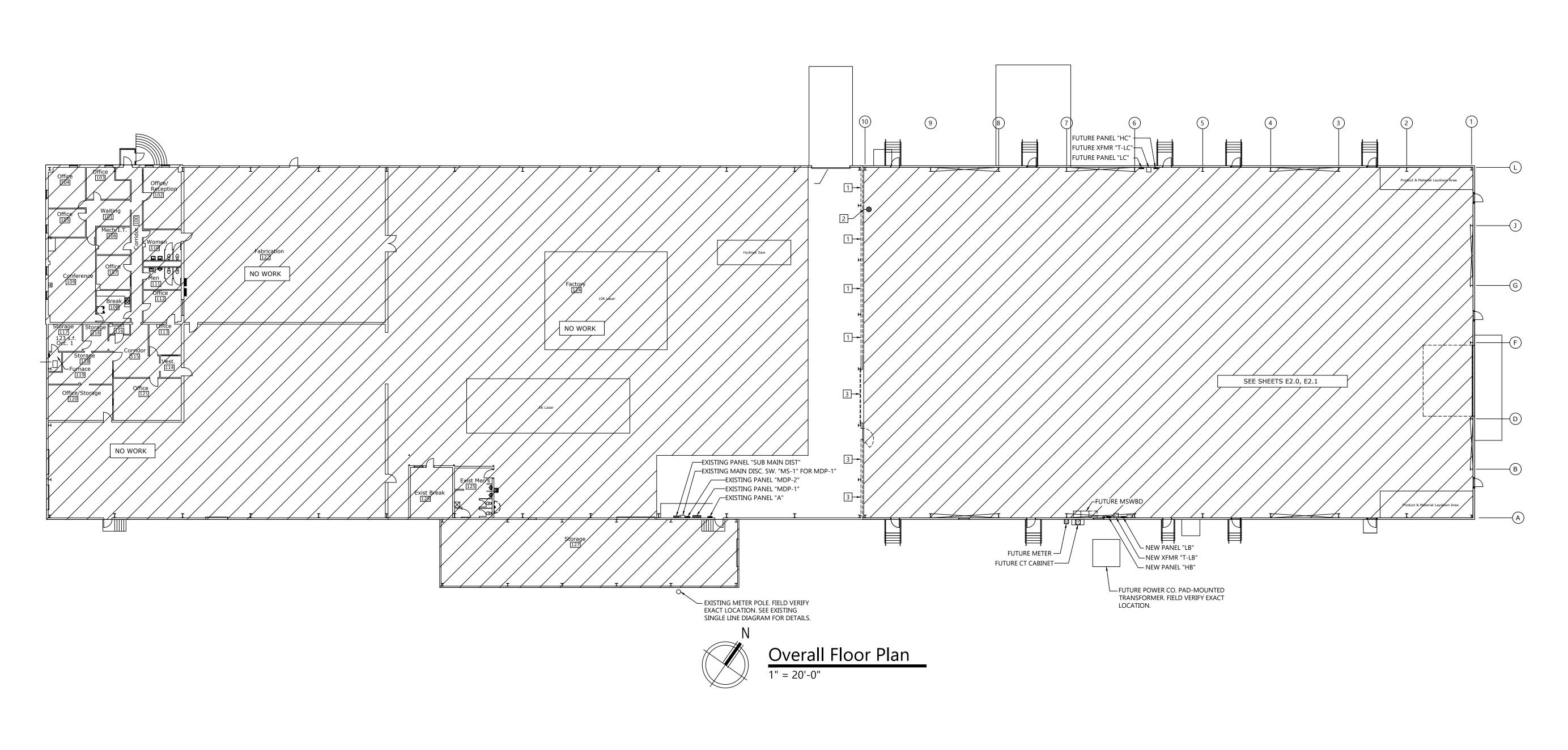
insulation	accept	table.			
3. Materials:	All insu	ulation wo	rk shall cont	form to the following	schedule:
<u>Service</u>	<u>Type</u>	<u>Size</u>	<u>Thickness</u>	<u>Cons. &amp; Exp.</u>	
Domestic Hot Water	 	2" and under	1 <b>"</b> 1 1/2"	VB A.S.J. VB A.S.J.	
Domestic Cold Water	 	ALL	1"	VB A.S.J.	
TYPES OF COVER	<u>ING</u>				
ASJ - All Service	e Jacke	, <del>t</del>			

ASJ — All Service Jacket VB — Vapor Barrier

- TYPES OF INSULATION
- TYPE I
- OFG Owens-Corning One Piece Fiberglass Pipe Insulation, K = .23, Density =  $4.0 \#/\text{ft}^3$ .
- G Johns—Manville "Micro—Lok" Fiberglass Pipe Insulation, K = .23, Density = 4.0#/ft<sup>3</sup>.
- FG Knauf Fiberglass Pipe Insulation, K = .23, Heavy Density.
- TYPE II APF — Armstrong Armaflex AP Pipe Insulation, K = .27 (1/2" on Domestic Hot and Cold Water Piping).







3

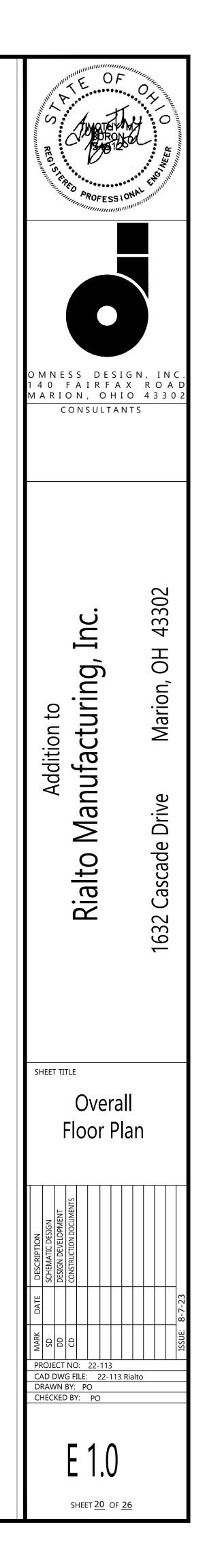
# DEMOLITION NOTES

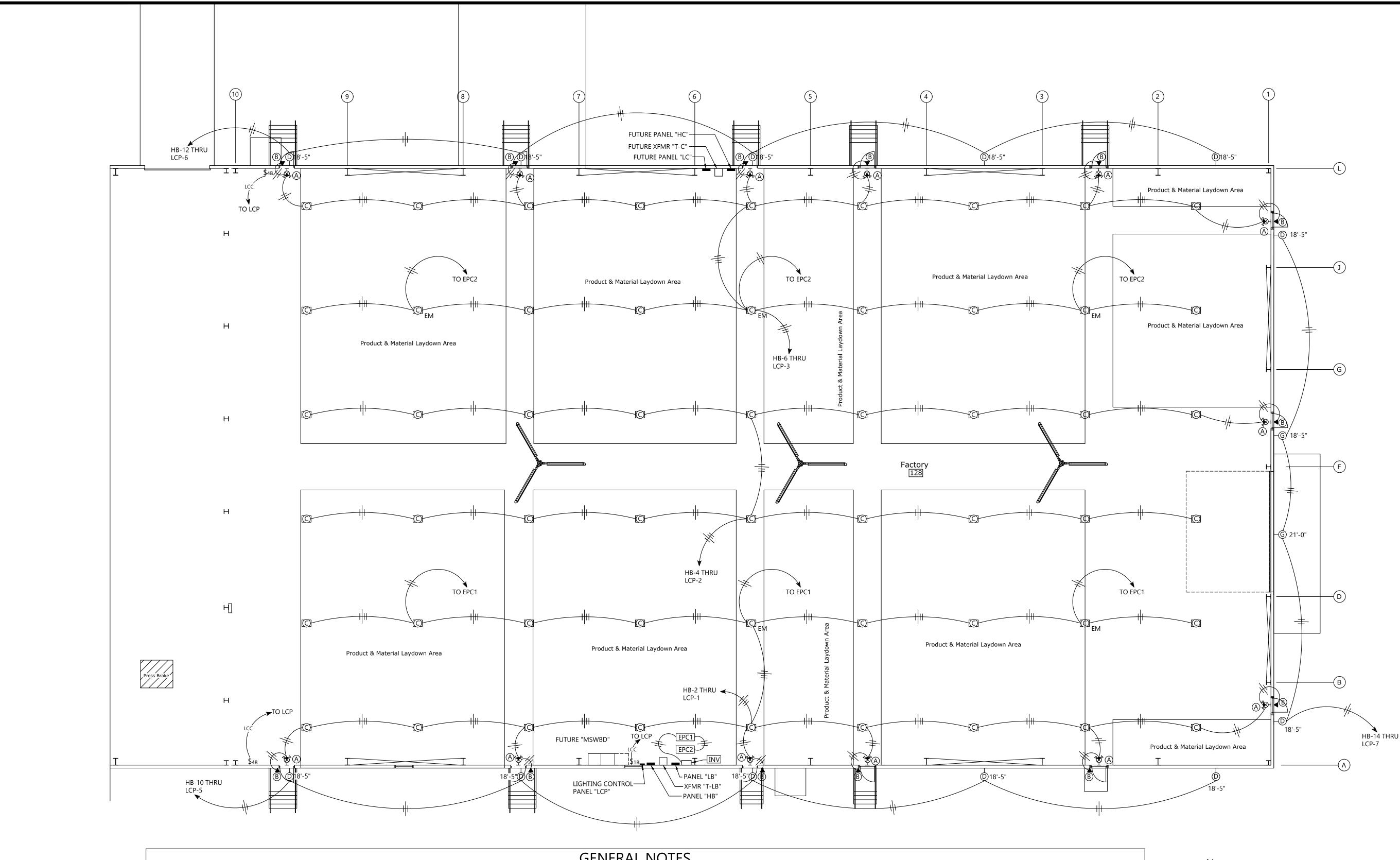
EXISTING WALL TO BE REMOVED BY OTHERS. EC TO REMOVE ALL AFFECTED ELECTRICAL ITEMS AND ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE. EC TO RECONNECT ANY REMAINING ACTIVE ELECTRICAL ITEMS WHOSE POWER WAS DISCONNECTED DUE TO ABOVE DEMOLITION. DISCONNECT AND REMOVE EXISTING WALL PACK. REMOVE ALL ASSOCIATED CONDUIT AND 2 WIRING BACK TO SOURCE. EC TO RECONNECT ANY REMAINING ACTIVE ELECTRICAL ITEMS WHOSE POWER WAS DISCONNECTED DUE TO ABOVE DEMOLITION.

EXISTING OVERHEAD DOOR TO BE REMOVED BY OTHERS. EC TO REMOVE ALL AFFECTED ELECTRICAL ITEMS AND ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE. EC TO RECONNECT ANY REMAINING ACTIVE ELECTRICAL ITEMS WHOSE POWER WAS DISCONNECTED DUE TO ABOVE DEMOLITION.

# DEMOLITION GENERAL NOTES

- ELECTRICAL CONTRACTOR TO FIELD VERIFY ALL EXISTING ELECTRICAL ITEMS AS REQUIRED PRIOR TO CONSTRUCTION.
- ELECTRICAL CONTRACTOR TO COORDINATE ALL PHASING WITH GC PRIOR TO DEMOLITION. MAINTAIN ALL EXISTING ELECTRICAL, TELEPHONE, TELEVISION, FIRE ALARM, ETC. UNTIL THE NEW SERVICE SERVICE IS COMPLETELY INSTALLED OR RELOCATED.
- RECONNECT ANY REMAINING ACTIVE ELECTRICAL ITEMS WHOSE POWER WAS DISCONNECTED DUE TO DEMOLITION WORK.
- . REMOVE ALL NON-ACTIVE EXPOSED CABLES.
- PROVIDE BLANK COVERPLATES OVER ALL UNUSED BOXES.
- PATCH ALL OPENINGS LEFT BY REMOVAL OF ELECTRICAL ITEMS TO MATCH EXISTING CONDITIONS AS DIRECTED BY ARCHITECT UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION. BRING ANY DISCREPANCIES TO ARCHITECT/ENGINEER PRIOR TO CONSTRUCTION.
- SCOPE OF WORK ONLY INCLUDES THE AREAS AND ITEMS OF WORK AS SHOWN. IT SPECIFICALLY EXCLUDES ANY CODE VIOLATIONS OUTSIDE THE SCOPE OF WORK. ELECTRICAL CONTRACTOR SHALL BRING ANY CODE VIOLATIONS OR SERIOUS HAZARDOUS CONDITIONS, WHICH ARE FOUND, TO THE ATTENTION OF THE OWNER & ENGINEER SO THAT CORRECTIVE ACTION CAN BE TAKEN.





- ALL ELECTRIC WORK SHALL BE IN STRICT ACCORDANCE WITH CURRENT NEC, NFPA, ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AND LOCAL AUTHORITY HAVING JURISDICTION.
- CONCEAL ALL WIRING TO THE GREATEST EXTENT POSSIBLE.
- FOR PURPOSES OF CLEARNESS AND LEGIBILITY, DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC AND ALTHOUGH SIZE AND LOCATION OF EQUIPMENT ARE DRAWN TO SCALE WHEREVER POSSIBLE, CONTRACTOR SHALL VERIFY THIS INFORMATION AT THE BUILDING SITE.
- . CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED PERMITS, ROUGH-IN/FINAL INSPECTION, ETC.
- ALL MATERIALS AND EQUIPMENT SHALL BE NEW, OF THE BEST GRADE, AND INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- WORKMANSHIP AND MATERIALS TO BE GUARANTEED FOR ONE YEAR FROM DATE OF FINAL ACCEPTANCE.
- ALL CONDUITS TO CONTAIN A GROUND WIRE SIZED PER TABLE 250-122.
- MINIMUM CONDUIT SIZE SHALL BE 3/4" FOR EMT OR PVC U.N.O. ALL WIRING SHALL BE INSTALLED IN POLYVINYL CHLORIDE (PVC) OR ELECTRIC METALLIC TUBING (EMT) CONDUIT. MC CABLE MAY BE USED FOR BRANCH CIRCUIT WIRING WHERE CONCEALED IN ACCORDANCE WITH NEC, BUT ALL HOMERUNS SHALL BE IN CONDUIT.
- EXTEND RACEWAYS PARALLEL AND PERPENDICULAR TO STRUCTURAL MEMBERS AND SURFACE CONTOURS AS MUCH AS IS PRACTICAL.

- THAN 100 FEET.
- 4. IDENTIFICATION TAGGING IS REQUIRED ON ALL PANELBOARD, JUNCTION BOXES, RELAYS, DISCONNECT SWITCHES, STARTERS, CONTROL PANELS, PUSHBUTTONS, AND MISC. ELECTRICAL DEVICES INSTALLED BY CONTRACTOR. USE ENGRAVED LAMACOID LABEL, 1" WIDE BY 2" LONG MINIMUM, BLACK WITH WHITE LETTERS, MINIMUM 3/4" HIGH.
- 5. CONTRACTOR SHALL COORDINATE THE PROPER INSTALLATION OF ALL POWER WIRING AND TEMPERATURE CONTROL WIRING (INCLUDING INTERLOCKS AND STARTERS) WITH PROPER SUBCONTRACTORS AS REQUIRED FOR A COMPLETE WORKING SYSTEM.
- 7. PANEL AND ELECTRICAL EQUIPMENT LOCATIONS SHALL BE COORDINATED WITH ALL CONTRACTORS PRIOR TO INSTALLATION TO INSURE THE INSTALLATION IS IN STRICT ACCORDANCE WITH ALL WORKING SPACE & DEDICATED ELECTRICAL SPACE REQUIREMENTS PER N.E.C. ART. 110.

# GENERAL NOTES

10. ALL WIRING TO BE A MINIMUM OF #12 AWG COPPER CONDUCTOR FOR POWER AND LIGHTING CIRCUITS UNLESS NOTED OTHERWISE. ALL WIRING TO BE COPPER TYPE THHN, XHHW, OR THWN, 600-V (75° C). ALUMINUM CONDUCTORS MAY BE USED FOR FEEDERS #1 SIZE AND LARGER.

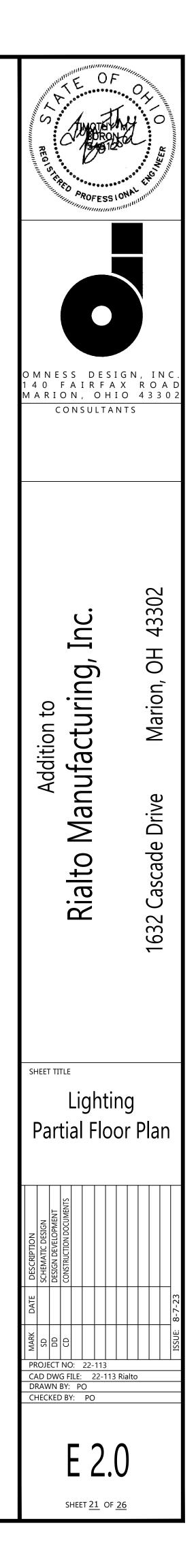
1. MINIMUM 14 AWG CONDUCTOR FOR CONTROL CIRCUITS.

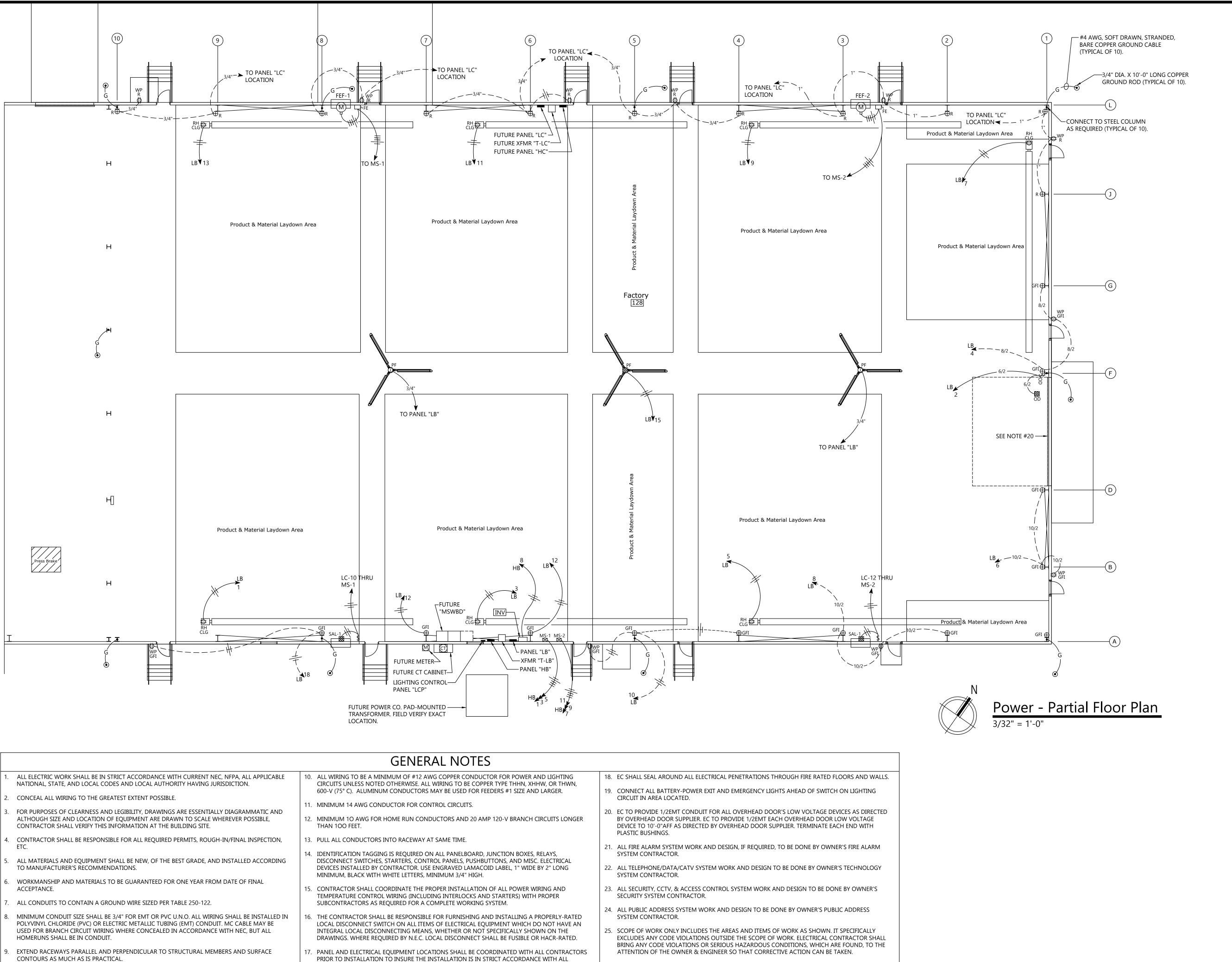
- 12. MINIMUM 10 AWG FOR HOME RUN CONDUCTORS AND 20 AMP 120-V BRANCH CIRCUITS LONGER
- 13. PULL ALL CONDUCTORS INTO RACEWAY AT SAME TIME.
- 5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING A PROPERLY-RATED LOCAL DISCONNECT SWITCH ON ALL ITEMS OF ELECTRICAL EQUIPMENT WHICH DO NOT HAVE AN INTEGRAL LOCAL DISCONNECTING MEANS, WHETHER OR NOT SPECIFICALLY SHOWN ON THE DRAWINGS. WHERE REQUIRED BY N.E.C. LOCAL DISCONNECT SHALL BE FUSIBLE OR HACR-RATED.

- 18. EC SHALL SEAL AROUND ALL ELECTRICAL PENETRATIONS THROUGH FIRE RATED FLOORS AND WALLS.
- 19. CONNECT ALL BATTERY-POWER EXIT AND EMERGENCY LIGHTS AHEAD OF SWITCH ON LIGHTING CIRCUIT IN AREA LOCATED.
- 20. ALL FIRE ALARM SYSTEM WORK AND DESIGN, IF REQUIRED, TO BE DONE BY OWNER'S FIRE ALARM SYSTEM CONTRACTOR.
- 21. ALL TELEPHONE/DATA/CATV SYSTEM WORK AND DESIGN TO BE DONE BY OWNER'S TECHNOLOGY SYSTEM CONTRACTOR.
- 22. ALL SECURITY, CCTV, & ACCESS CONTROL SYSTEM WORK AND DESIGN TO BE DONE BY OWNER'S SECURITY SYSTEM CONTRACTOR.
- 23. ALL PUBLIC ADDRESS SYSTEM WORK AND DESIGN TO BE DONE BY OWNER'S PUBLIC ADDRESS SYSTEM CONTRACTOR.
- 24. SCOPE OF WORK ONLY INCLUDES THE AREAS AND ITEMS OF WORK AS SHOWN. IT SPECIFICALLY EXCLUDES ANY CODE VIOLATIONS OUTSIDE THE SCOPE OF WORK. ELECTRICAL CONTRACTOR SHALL BRING ANY CODE VIOLATIONS OR SERIOUS HAZARDOUS CONDITIONS, WHICH ARE FOUND, TO THE ATTENTION OF THE OWNER & ENGINEER SO THAT CORRECTIVE ACTION CAN BE TAKEN.
- 25. SEE SHEET E3.0 FOR LOCATION OF LIGHTING CONTROL PANEL "LCP" & INVERTER.



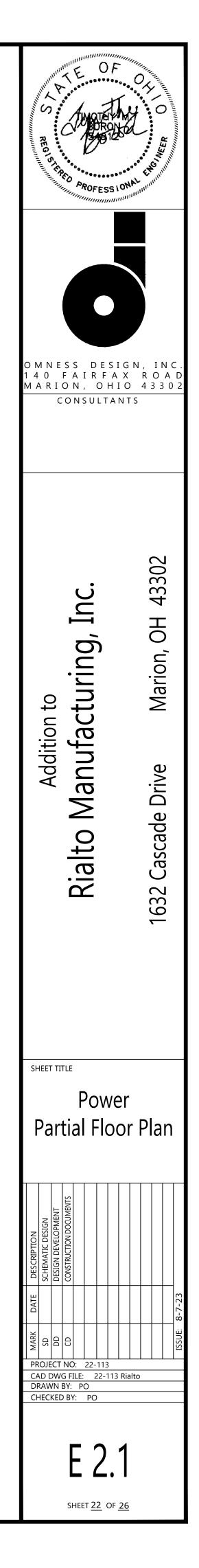
Lighting - Partial Floor Plan





1.	ALL ELECTRIC WORK SHALL BE IN STRICT ACCORDANCE WITH CURRENT NEC, NFPA, ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AND LOCAL AUTHORITY HAVING JURISDICTION.	10.	ALL WIRING TO BE A M CIRCUITS UNLESS NOT 600-V (75° C). ALUMIN
2.	CONCEAL ALL WIRING TO THE GREATEST EXTENT POSSIBLE.		
3.	FOR PURPOSES OF CLEARNESS AND LEGIBILITY, DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC AND	11.	MINIMUM 14 AWG CO
٦.	ALTHOUGH SIZE AND LOCATION OF EQUIPMENT ARE DRAWN TO SCALE WHEREVER POSSIBLE, CONTRACTOR SHALL VERIFY THIS INFORMATION AT THE BUILDING SITE.	12.	MINIMUM 10 AWG FC THAN 100 FEET.
4.	CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED PERMITS, ROUGH-IN/FINAL INSPECTION, ETC.	13.	PULL ALL CONDUCTOR
-		14.	IDENTIFICATION TAGG
5.	ALL MATERIALS AND EQUIPMENT SHALL BE NEW, OF THE BEST GRADE, AND INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.		DISCONNECT SWITCHE DEVICES INSTALLED BY
			MINIMUM, BLACK WIT
6.	WORKMANSHIP AND MATERIALS TO BE GUARANTEED FOR ONE YEAR FROM DATE OF FINAL	45	
	ACCEPTANCE.	15.	CONTRACTOR SHALL C
7.	ALL CONDUITS TO CONTAIN A GROUND WIRE SIZED PER TABLE 250-122.		SUBCONTRACTORS AS
8.	MINIMUM CONDUIT SIZE SHALL BE 3/4" FOR EMT OR PVC U.N.O. ALL WIRING SHALL BE INSTALLED IN	16	THE CONTRACTOR SH
0.	POLYVINYL CHLORIDE (PVC) OR ELECTRIC METALLIC TUBING (EMT) CONDUIT. MC CABLE MAY BE	10.	LOCAL DISCONNECT S
	USED FOR BRANCH CIRCUIT WIRING WHERE CONCEALED IN ACCORDANCE WITH NEC, BUT ALL		INTEGRAL LOCAL DISC
	HOMERUNS SHALL BE IN CONDUIT.		DRAWINGS. WHERE RE
9.	EXTEND RACEWAYS PARALLEL AND PERPENDICULAR TO STRUCTURAL MEMBERS AND SURFACE	17.	PANEL AND ELECTRICA
	CONTOURS AS MUCH AS IS PRACTICAL.		PRIOR TO INSTALLATIO
			WORKING SPACE & D

- TION TO INSURE THE INSTALLATION IS IN STRICT ACCORDANCE WITH ALL DEDICATED ELECTRICAL SPACE REQUIREMENTS PER N.E.C. ART. 110.



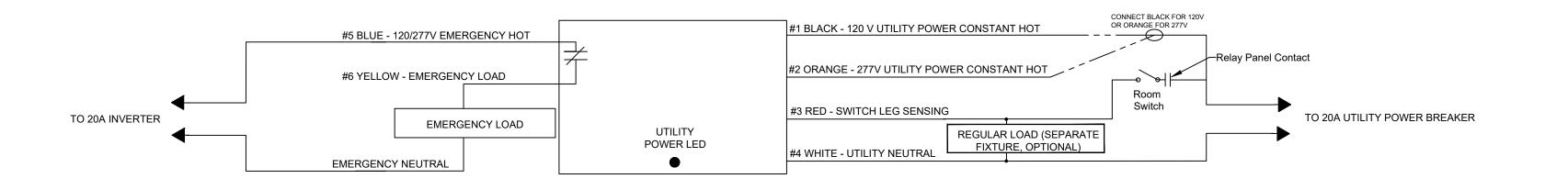
	LEGEND
SYMBOL	DESCRIPTION
H⊗¢	COMBINATION EXIT SIGN/EMERGENCY LIGHT
•	SINGLE POLE SWITCH WITH STAINLESS STEEL COVERPLATE. MOUNT AT 48"AFF TO
\$	CENTERLINE UNLESS OTHERWISE NOTED. 3-WAY, 4-WAY SINGLE POLE SWITCH WITH STAINLESS STEEL COVERPLATE. MOUNT AT
<b>\$</b> 3	48"AFF TO CENTERLINE UNLESS OTHERWISE NOTED.
\$ <sub>4B</sub>	NEXTLIGHT OPTIMA #CRC3014 OR EQUIVALENT 4-BUTTON LOW VOLTAGE WALL SWITCH WITH STAINLESS STEEL COVERPLATE. MOUNT T 48"AFF TO CENTERLINE UNLESS NOTED OTHERWISE. VERIFY COLOR WITH OWNER PRIOR TO ORDERING. PROGRAM AND LABEL SWITCH AS DIRECTED BY OWNER AND SWITCH SUPPLIER.
\$ <sub>1B</sub>	NEXTLIGHT OPTIMA #CRC3011 OR EQUIVALENT 1-BUTTON LOW VOLTAGE WALL SWITCH WITH STAINLESS STEEL COVERPLATE FOR MANUAL OVERRIDE. MOUNT T 48"AFF TO CENTERLINE UNLESS NOTED OTHERWISE. VERIFY COLOR WITH OWNER PRIOR TO ORDERING. PROGRAM AND LABEL SWITCH AS DIRECTED BY OWNER & LUMINAIRE SUPPLI
\$od	30A, 125V SINGLE POLE SWITCH WITH STAINLESS STEEL COVERPLATE FOR OVERHEAD DOOR. MOUNT NEXT TO OVERHEAD DOOR MOTOR AS DIRECTED BY OVERHEAD DOOR SUPPLIER.
EPC1,2	LVS INC. #EPC-A-1 OR EQUIVALENT EMERGENCY POWER CONTROL DEVICE SURFACE MOUNT EMERGENCY POWER CONTROL DEVICE AS DIRECTED BY EMERGENCY POWER CONTROL DEVICE SUPPLIER. PROVIDE ALL CONNECTIONS AS DIRECTED BY EMERGENCY POWER CONTROL DEVICE SUPPLIER AND AS REQUIRED FOR A COMPLETE WORKING SYSTEM. SEE EMERGENCY POWER CONTROL DEVICE WIRING DIAGRAM FOR ADDITIONAL INFORMATION.
INV	LVS INC. #CEPS-A-1000-277-3 OR EQUIVALENT 1000 WATT, 277V INVERTER WITH THREE (3 20A/1P CIRCUIT BREAKERS. SURFACE MOUNT INVERTER AS DIRECTED BY INVERTER SUPPLIER. PROVIDE ALL CONNECTIONS AS DIRECTED BY INVERTER SUPPLIER AND AS REQUIRED FOR A COMPLETE WORKING SYSTEM.
Φ	20A, 125V, DUPLEX RECEPTACLE WITH STAINLESS STEEL COVERPLATE. MOUNT AT 18"AFF TO CENTERLINE UNLESS OTHERWISE NOTED. <u>GFI</u> - GROUND FAULT INTERRUPTING <u>WP</u> - WEATHERPROOF COVER <u>RH/CLG</u> - CEILING MOUNT NEXT TO RADIANT HEATER (1.7FLA, 120V, 1PH) AS DIRECTED BY MC. FIELD VERIFY EXACT LOCATION PRIOR TO ROUGH-IN. <u>WP/R</u> - ROUGH-IN BOX FOR A "GFI" TYPE DUPLEX RECEPTACLE. PROVIDE A BLANK WEATHERPROOF COVER
⊕ GFI	TWO (2) 20A, 125V, DUPLEX RECEPTACLES MOUNTED IN THE SAME BOX WITH COMMON STAINLESS STEEL COVERPLATE. MOUNT AT 24"AFF TO CENTERLINE UNLESS OTHERWISE NOTED. (GFI - INDICATES BOTH DUPLEX RECEPTACLES TO BE "GFI" TYPE RECEPTACLES.)
⊕ R	ROUGH-IN BOX FOR A DOUBLE DUPLEX RECEPTACLE. PROVIDE A BLANK STAINLESS STEEL COVERPLATE. MOUNT AT 24"AFF TO CENTERLINE UNLESS OTHERWISE NOTED.
FEF-1,2 MP	FACTORY EXHAUST FAN EF-1,2 (3HP, 480V, 3PH). CONNECT AS DIRECTED BY MC.
8	POINT OF CONNECTION TO ELECTRICAL EQUIPMENT. VERIFY EXACT LOCATION WITH RESPECTIVE EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN.
	POINT OF CONNECTION TO PROPELLER FAN (750W, 120V, 1PH). CONNECT AS DIRECTED B
	FAN SUPPLIER. POINT OF CONNECTION TO OVERHEAD DOOR POWER (1HP, 120V, 1PH). CONNECT THRU
🔀 OD	DOOR CONTROLLER AND CONNECT TO MOTOR AS DIRECTED BY OVERHEAD DOOR SUPPLIER.
🔀 SAL-1,2	POINT OF CONNECTION TO SUPPLY AIR LOUVER SAL-1,2 (1FLA, 120V, 1PH). CONNECT AS DIRECTED BY MC. INTERLOCK WITH RESPECTIVE EXHAUST FAN MOTOR STARTER AS DIRECTED BY MC.
4	DISCONNECT SWITCH. FRAME SIZE/# OF POLES/# OF FUSES/VOLTAGE RATING/ ENCLOSURE TYPE.
۲ FE	30A/3P/NF/250V/NEMA 1 DISCONNECT SWITCH FOR FACTORY EXHAUST FAN. INSTALL AT LOCATION AS DIRECTED BY MC.
🔀 MS-1,2	MOTOR STARTER MS-1,2 FURNISHED BY MC AND INSTALLED AND WIRED BY EC AS
	DIRECTED BY MC. JUNCTION BOX
U <sub>PF</sub>	ROUGH IN JUNCTION BOX FOR FUTURE PROPELLER FAN. CEILING MOUNT AT LOCATION AS DIRECTED BY MC. FIELD VERIFY LOCATION WITH MC PRIOR TO ROUGH-IN.
	POWER PANEL
	CONDUIT CONCEALED
	INSTALL CONDUIT AT 30" BELOW CONCRETE SLAB TO TOP OF CONDUIT.
A3	CONDUIT HOME RUN WITH CIRCUIT NUMBER
i	HOT, NEUTRAL, GROUND
LCC	NEXLIGHT 2-WIRE DATA BUS - BELDEN 6200UE or equal, 1/2"C FOR LIGHTING CONTROL
10/2	2-#10CU, 1-#10CU GND, 3/4"C.
<u> </u>	2-#8CU, 1-#10CU GND, 1"C
<u> </u>	2-#6CU, 1-#10CU GND, 1"C
<u> </u>	3/4" CONDUIT WITH PULL WIRE
	1" CONDUIT WITH PULL WIRE
1" BFG	BELOW FINISHED GRADE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
BFC	
	BELOW FINISHED CEILING
EC	
MC PC	
	PLUMBING CONTRACTOR

# LUMINAIRE SCHEDULE

TYPE	MFG	CAT NO.	VOLT	AMPS	
A	CHLORIDE OR EQUIVALENT - COMBINATION LED EXIT SIGN/ EMERGENCY LIGHT WITH REMOTE CAPABILITY & 90 MINUTE BATTERY BACK-UP	VLTCR3R	120/277	INTEGRAL	U
В	CHLORIDE OR EQUIVALENT - LED REMOTE EMERGENCY LIGHT WITH TWIN HEADS	VLL2RGO	120/277	INTEGRAL	W
с	DAYBRITE - 24,000 LUMEN LED INDUSTRIAL HIGH BAY LUMINAIRE	FBZ-24L-840-UNV-LFA-WC6/5 [HARD WIRED]	UNV	(1) 151.0W LED, 4000K	CEI OF LUI
C/EM	DAYBRITE - 24,000 LUMEN LED INDUSTRIAL HIGH BAY LUMINAIRE CONNECTED TO INVERTER THROUGH EMERGENCY POWER CONTROL DEVICE TO ACT AS AN EMERGENCY LIGHT.	FBZ-24L-840-UNV-LFA-WC6/5 [HARD WIRED]	UNV	(1) 151.0W LED, 4000K	CEI OF LUI
D	STONCO - WALL PACK	LPW32-90-NW-G3-3-UNV-XX-BAC	UNV	(1) 90.0W LED/4000K	WA LUI

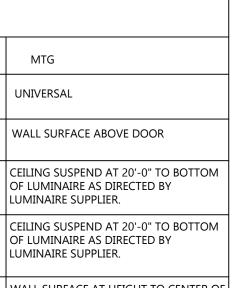
NOTES: 1. SUBSCRIPT "NL" INDICATES LUMINAIRE TO BE CONNECTED AHEAD OF SWITCH TO ACT AS A "NIGHT LIGHT". 2. CONNECT ALL BATTERY-POWER EXIT AND EMERGENCY LIGHTS AHEAD OF SWITCH ON LIGHTING CIRCUIT IN AREA LOCATED. 3. VERIFY LED LAMP COLORS OF ALL LUMINAIRE WITH OWNER & ARCHITECT PRIOR TO ORDERING. 4. EQUIVALENT LUMINAIRES AS MANUFACTURED BY LITHONIA & COOPER. EQUIVALENT MANUFACTURER SHALL PROVIDE LIGHTING CALCULATION FOR EACH SPACE.

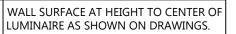
LIGHTING CONTROL PANEL "LCP" SCHEDULE											
RELAY NUMBER	LOCATION OF RELAY CIRCUIT	PANEL "HB" CKT. NO.									
1	FACTORY 128 TYPE "C" & "C1" LUMINAIRES	2									
2	FACTORY 128 TYPE "C" & "C1" LUMINAIRES	4									
3	FACTORY 128 TYPE "C" LUMINAIRES	6									
4	SOUTH BUILDING TYPE "D" LUMINAIRES	10									
5	NORTH BUILDING TYPE "D" LUMINAIRES	12									
6	EAST BUILDING TYPE "D" LUMINAIRES	14									
7	SPARE	-									
8-16	SPARE	-									
<ol> <li><u>NOTES:</u></li> <li>EC TO PROVIDE AN EXTRA HOT WIRE FOR RELAY NUMBERS 1,2,3, BYPASSING LIGHTING CONTROL PANEL, TO FEED THE COMBINATION EXIT SIGNS/EMERGENCY LIGHTS AND EMERGENCY LIGHTS CONNECTED TO THE INVERTER AS REQUIRED FOR A COMPLETE WORKING SYSTEM.</li> <li>LIGHTING CONTROL PANEL "LCP" TO BE A NEXLIGHT #NXL-R16s 16-RELAY PANEL WITH TIME CLOCK, NO DIMMING, AND NEMA 1 SURFACE MOUNTED CABINET.</li> <li>EC TO PROGRAM LIGHTING CONTROL PANEL AS DIRECTED BY OWNER AND LIGHTING CONTROL SYSTEM SUPPLIER. PROVIDE A COMPLETE WORKING SYSTEM.</li> <li>EC TO PROVIDE FOUR (4) HOURS OF TRAINING TO THE OWNER.</li> <li>COORDINATE ALL WORK WITH BOB HENNINGE OF BRIGHT FOCUS SALES AT (216) 233-8809 OR (216) 751-8384 EXT. 209</li> </ol>											

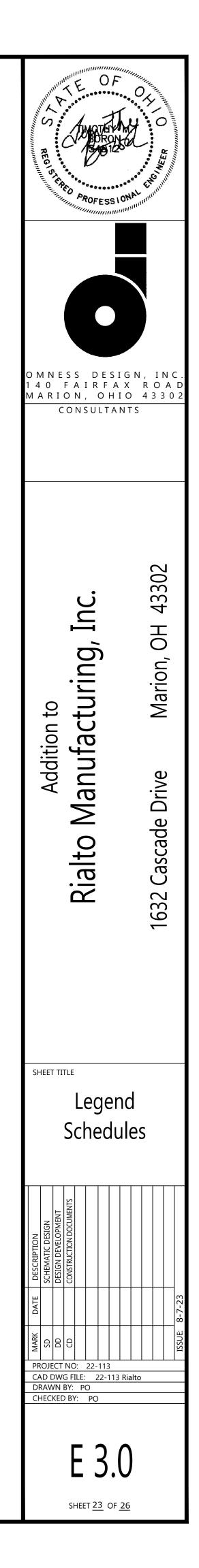


# EMERGENCY POWER CONTROL DEVICE WIRING DIAGRAM

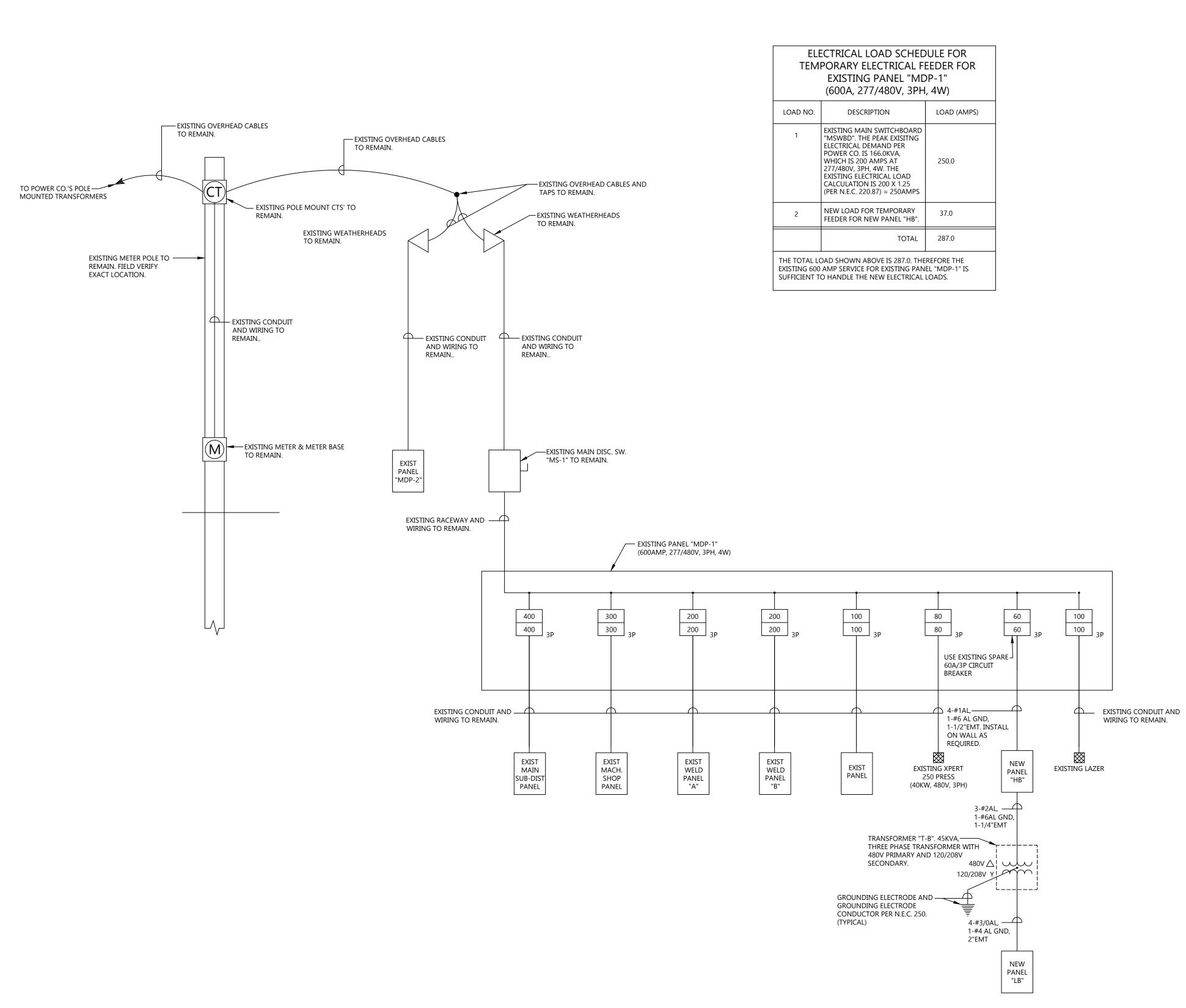
N.T.S.







1



NTS

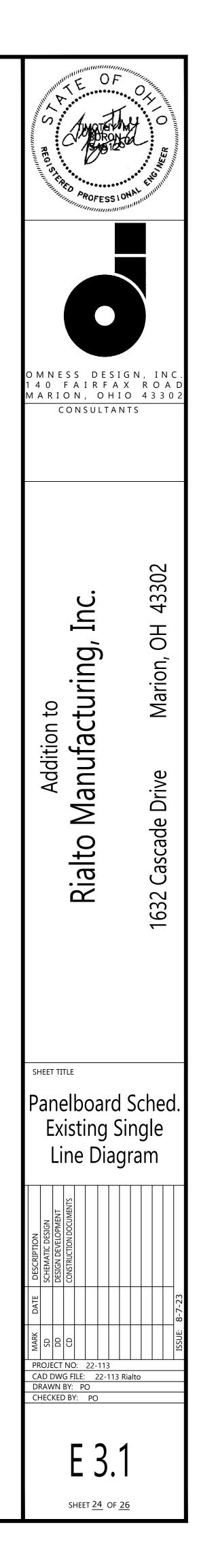
TEMPORARY ELECTRICAL FEEDER FOR EXISTING PANEL "MDP-1" (600A, 277/480V, 3PH, 4W)								
LOAD NO.	DESCRIPTION	LOAD (AMPS)						
1	EXISTING MAIN SWITCHBOARD "MSWBD". THE PEAK EXISITNG ELECTRICAL DEMAND PER POWER CO. IS 166.0KVA, WHICH IS 200 AMPS AT 277/480V, 3PH, 4W. THE EXISTING ELECTRICAL LOAD CALCULATION IS 200 X 1.25 (PER N.E.C. 220.87) = 250AMPS	250.0						
2	NEW LOAD FOR TEMPORARY FEEDER FOR NEW PANEL "HB".	37.0						
	TOTAL	287.0						
THE TOTAL LOAD SHOWN ABOVE IS 287.0. THEREFORE THE EXISTING 600 AMP SERVICE FOR EXISTING PANEL "MDP-1" IS SUFFICIENT TO HANDLE THE NEW ELECTRICAL LOADS.								

PANEL: NEW PA	NEL "HB"		TYPE:		NEMA 1		N	NOUNTIN	IG: SURFACE	
FEATURES: X	GROUND BUS	X	SOLID N	IEUTRAL	X	MAIN	LUGS ON	ΙLΥ		
SERVICE: 400	AMPS	277/480	) vc	OLTS -	3 Pł	HASE	_4W	/IRE <u>6</u>	0 HZ 22,000	A.I.C.
LOAD		WIRE SIZE	CB/P	CIRC. NO.	АВС	CIRC. NO.	CB/P	WIRE SIZE	LOAD	
328 KEF-1, 128	•	12	20/3	1	•	2	20/1	12	LTG., 128	2564
328 KEF-1, 128	•	12	20/3	3	<b>││∳│</b>	4	20/1	12	LTG., 128	2564
328 KEF-1, 128	•	12	20/3	5	]	6	20/1	12	LTG., 128	2564
328 KEF-2, 128	•	12	20/3	7	<b>│∮│</b>	8	20/1	12	INVERTER	1000
328 KEF-2, 128	•	12	20/3	9	<b>]   ∳  </b>	10	20/1	12	LTG., SOUTH BLDG.	690
328 KEF-2, 128	•	12	20/3	11	<b>]     ∳</b>	12	20/1	12	LTG., NORTH BLDG.	690
3432 XFMR "T-B"	•	4	80/3	13	<b>┤┥││</b>	14	20/1	12	LGT., EAST BLDG.	552
2958 XFMR "T-B"	•	4	80/3	15	<b>││∳│</b>	16	65/3	-	SPARE	-
2568 XFMR "T-B"	•	4	80/3	17	<b>│││</b> ∳	18	65/3	-	SPARE	-
SPARE	•	-	80/3	19	<b>┤┥││</b>	20	65/3	-	• SPARE	-
SPARE	•	-	80/3	21	<b>││∳│</b>	22	65/3	-	SPARE	-
SPARE	•	-	80/3	23	<b>│││∳</b>	24	65/3	-	SPARE	-
SPARE	•	-	50/3	25	<b>│∮│</b>	26	65/3	-	• SPARE	-
SPARE	•	-	50/3	27	<b>││∳│</b>	28	20/1	-	SPARE	-
SPARE	•	-	50/3	29	<b>│││</b> ∳	30	20/1	-	SPARE	-
SPARE		-	20/1	31	<b>│∮│</b>	32	20/1	-	SPARE	-
SPARE		-	20/1	33	<b>││∳│</b>	34	20/1	-	SPARE	-
SPARE		-	20/1	35	]	36	20/1	-	SPARE	-
SPARE		-	20/1	37	<b>]∮  </b>	38	20/1	-	SPARE	_
SPARE		-	20/1	39	<b>││∳│</b>	40	20/1	-	SPARE	-
SPARE		-	20/1	41	<u>]</u> <b>       </b>	42	20/1	-	SPARE	-
LOADS:	A = 10,204W	,		В	= 8,868	W		С	= 8,478W	
TOTAL LOAD:	3 X PHA = = 37 AMP	30,612								

# 

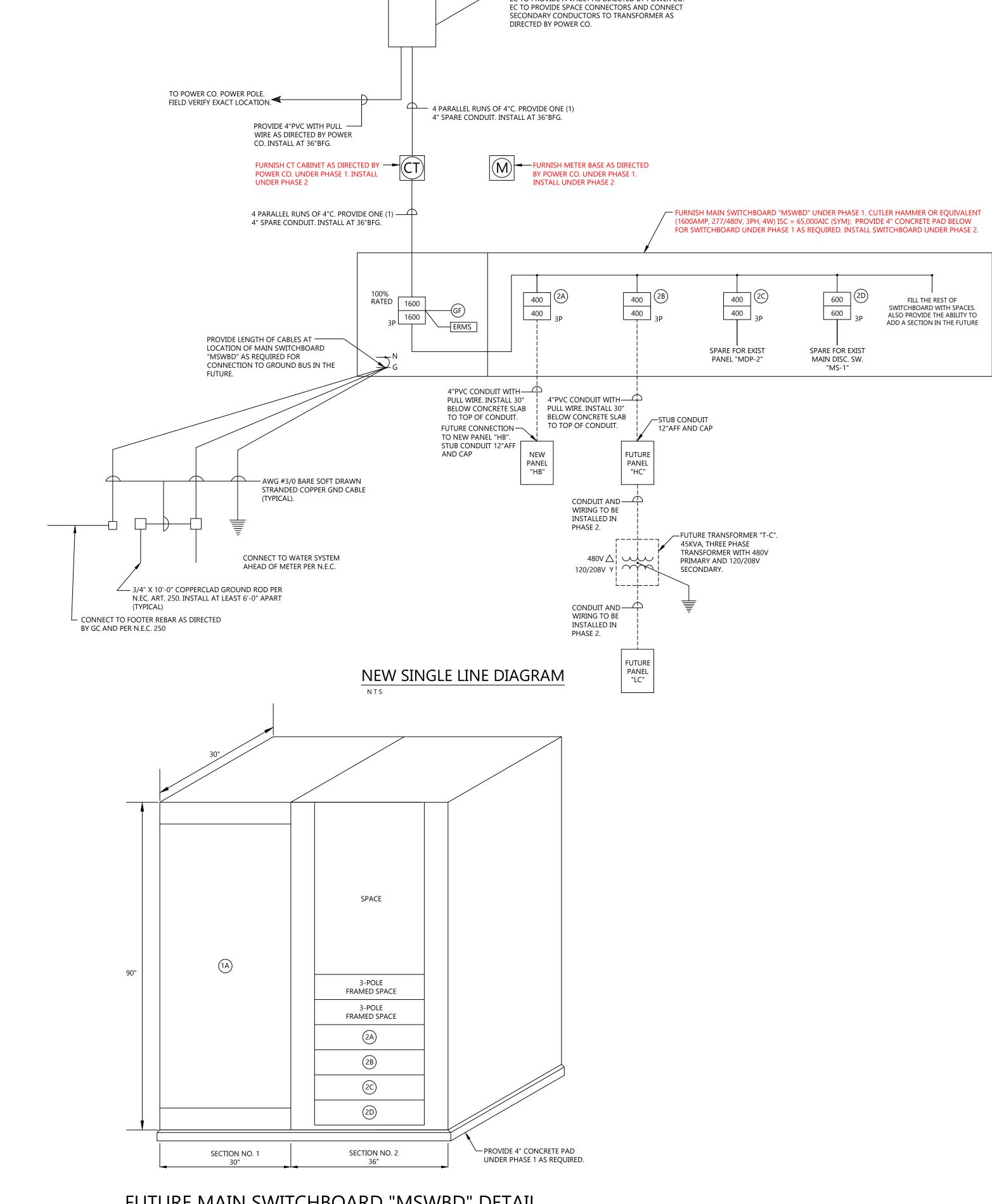
		NEL "LB"							NG: <u>SURFAC</u>	E	
FEATURES:	X GROU	JND BUS	( SOLID	NEUTRAL	. X	MAIN	CIRCUIT I	BREAKER			
SERVICE:	A	AMPS 120/	208	VOLTS	PH	HASE	W	/IRE <u>6</u>	0 HZ	22,000	A.I.C.
L	.OAD	WIR SIZE	E CB/P	CIRC. NO.	АВС	CIRC. NO.	CB/P	WIRE SIZE		LOAD	
204 RH, 1	28	12	2 20/*	1 1	•	2	30/1	6	OD, 128		1920
204 RH, 1	28	12	2 15/	1 3	<b>││∳│</b>	4	20/1	8	REC., 128		900
204 RH, 1	28	12	2 15/	1 5	▋┃┃♠	6	20/1	10	REC., 128		900
204 RH, 1	28	12	2 20/	1 7	<b>] ∳    </b>	8	20/1	10	REC., 128		900
204 RH, 1	28	12	2 20/	1 9	<b>││∳│</b>	10	20/1	12	REC., 128		900
204 RH, 1	28	12	2 20/	1 11	<u></u> <u></u> ]  ∳	12	20/1	12	REC., 128		720
204 RH, 1	28	12	2 20/	1 13	<b>   </b>	14	20/1	-	SPARE		-
750 PF, 12	28	12	2 15/	1 15	<b>││∳│</b>	16	20/1	-	SPARE		-
SPAR	E	-	15/	1 17	<u></u> ]  ∳	18	20/1	12	REC., 128		540
SPAR	E	-	15/	1 19	<b>   </b>	20	20/1	-	SPARE		-
SPAR	E	-	20/*	1 21	<b>│ │ ♦ │</b>	22	20/1	-	SPARE		-
SPAR	E	-	20/	1 23	<u> </u>	24	20/1	-	SPARE		-
SPAR	E	-	20/*	1 25	<b>│♦│</b>	26	20/1	-	SPARE		-
SPAR	E	-	20/*	1 27	<u></u> <b>       </b>	28	20/1	-	SPARE		-
SPAR	E	-	20/*	1 29	<u> </u>	30	30/1	-	SPARE		-
SPAR	E	-	20/*	1 31	<b>│♦│</b>	32	20/1	-	SPARE		-
SPAR	E	-	20/	1 33	<u> </u>	34	20/1	-	SPARE		-
SPAR	E	-	20/*	1 35	<b>│<b>│││</b></b>	36	20/1	-	SPARE		-
SPAR	E	-	20/*	1 37	<b>│<b>∮│</b></b>	38	20/1	-	SPARE		-
SPAR	E	-	20/*	1 39	<b>│<b>│││</b></b>	40	20/1	-	SPARE		-
SPAR	E	-	20/*	1 41		42	20/1	-	SPARE		-
LOADS:	A =	3,432W		E	3 = 2,958	W		C	= 2,568W		
TOTAL LOA <u>NOTES:</u> 1.		3 X PHA = 10,2 = 29 AMPS @ <sup>-</sup>		OLTS, 3PH	H, 4W						

# EXISTING SINGLE LINE DIAGRAM

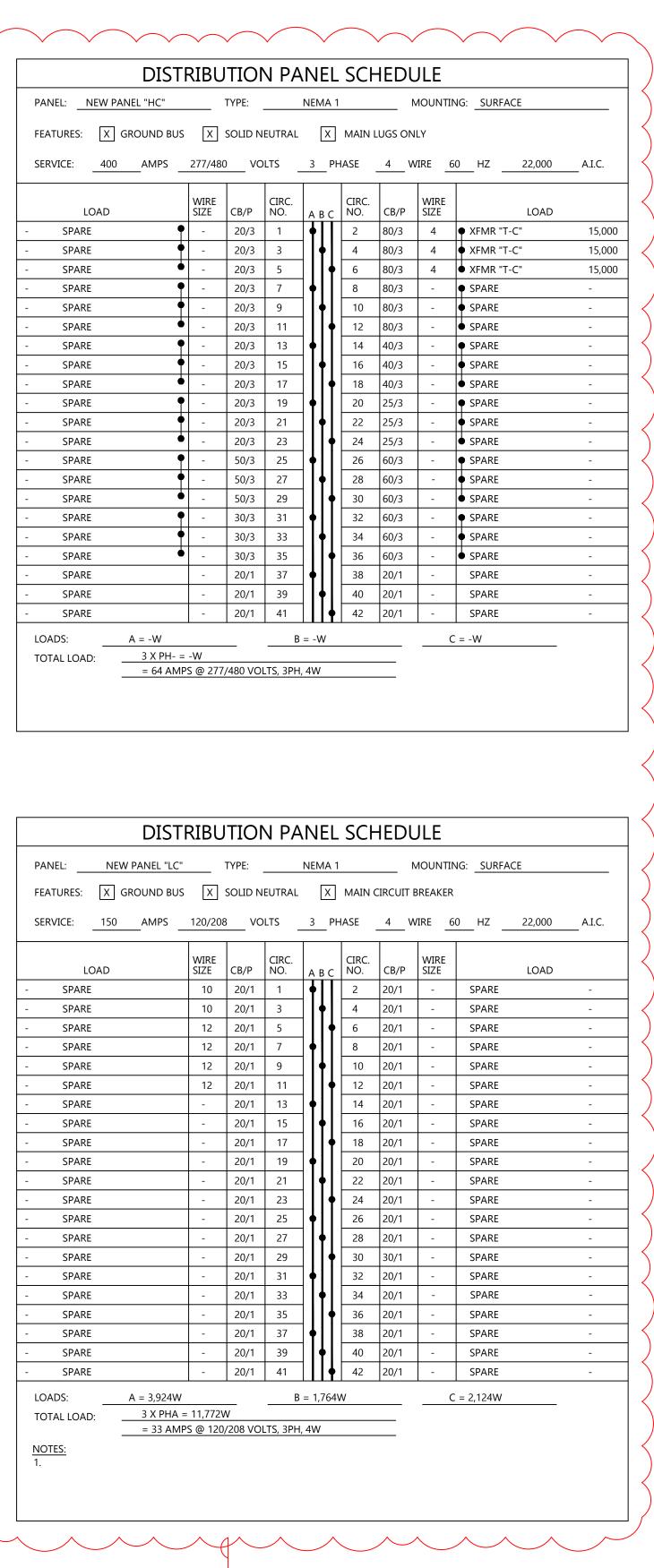


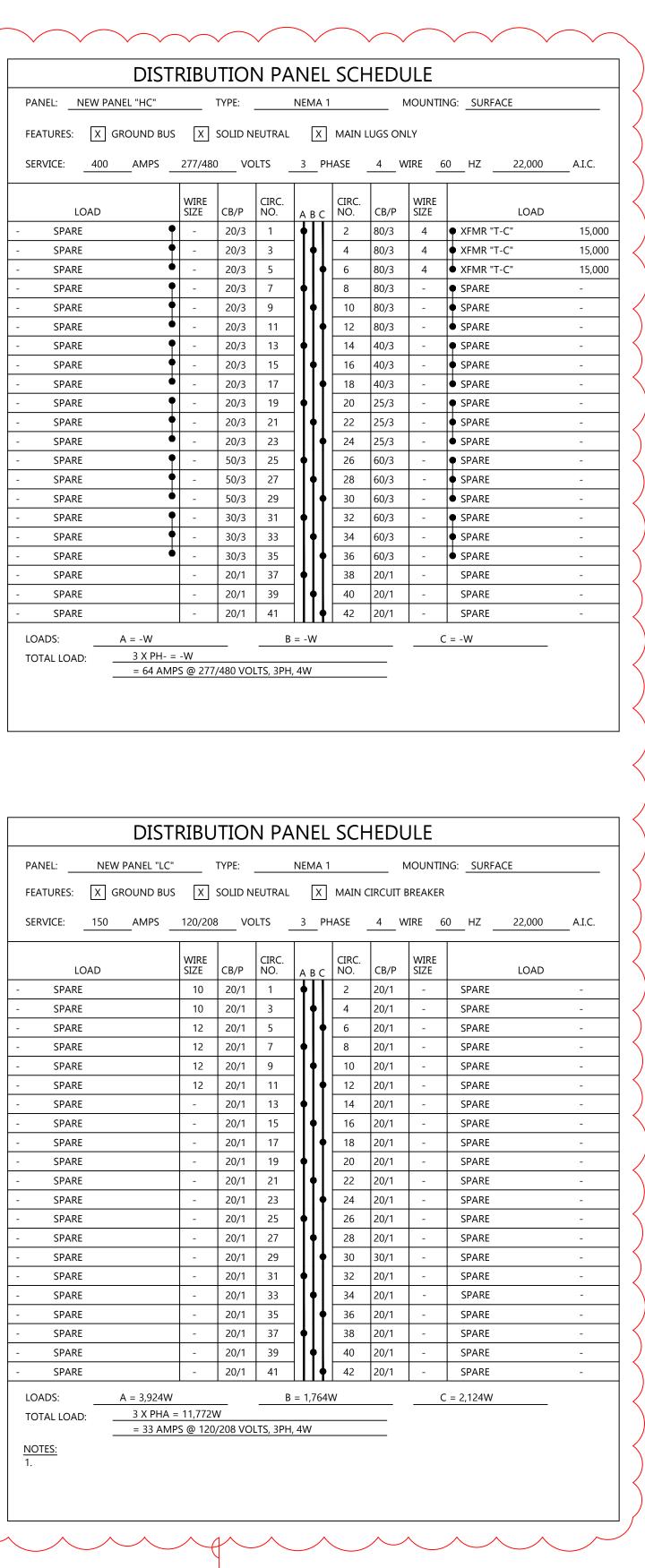
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# FUTURE POWER CO. PAD-MOUNTED TRANSFORMER. EC TO PROVIDE A VAULT AS DIRECTED BY POWER CO.





- FURNISH PANELS UNDER PHASE 1 AND INSTALL THEM UNDER PHASE 2.



- WORK INCLUDED: WORK INCLUDED IS SUBJECT TO THE GENERAL CONDITIONS AND INSTRUCTIONS TO BII THE ENTIRE OPERATION. THE CONTRACTORS AND/OR SUBCONTRACTORS FOR THIS PORTION OF THE WOR REQUIRED TO REFER ESPECIALLY THERETO.
- 1.a. THE WORK COVERED UNDER THIS SPECIFICATION SHALL INCLUDE ALL LABOR, MATERIALS, TOOLS, EQUIPM AND SERVICES NECESSARY FOR, OR INCIDENTAL TO PROPER INSTALLATION AND COMPLETION OF ELECT WORK AS INDICATED ON THE DRAWINGS OR HEREIN SPECIFIED, OR BOTH.
- 1.b. THE CONTRACT DOCUMENTS ARE COMPLIMENTARY AND WHAT IS CALLED FOR BY ONE SHALL BE AS BINE IF CALL FOR BY ALL. IF THE DRAWINGS AND SPECIFICATIONS ARE IN CONFLICT, THE MOST COMPREHENSI OF WORK AND BETTER QUALITY MATERIAL AS CALLED FOR IN ONE DOCUMENT SHALL BE USED FOR BIDE PURPOSED. CONFLICT IN THE DRAWINGS AND SPECIFICATIONS SHALL BE SUBMITTED TO THE ARCHITECT-ENGINEER FOR CLARIFICATION. MISUNDERSTANDING OF DRAWINGS AND SPECIFICATIONS S CLARIFIED BY THE ARCHITECT/ENGINEER WHOSE DECISION SHALL BE FINAL.
- 1.c. ALL PORTIONS OF OTHER SECTIONS OF SPECIFICATIONS AND DRAWINGS WHICH CAN BE MADE TO APPL BE CONSIDERED A PART OF THE SPECIFICATIONS. THE ELECTRICAL CONTRACTOR SHALL REVIEW OTHER S OF THE SPECIFICATIONS AND DRAWINGS AND INCLUDE IN HIS BID ALL ELECTRICAL WORK REQUIRED TO COMPLETE ALL WORK.
- 1.d. WHERE THE LETTER "EC" IS USED IN THESE SPECIFICATIONS IT IS RELATIVE TO THE ELECTRICAL CONTRACT
- 1.e. ANY APPARATUS, APPLIANCE, MATERIAL, OR WORK NOT SHOWN ON THE DRAWINGS, BUT MENTIONED SPECIFICATIONS, OR VICE-VERSA, OR ANY INCIDENTAL ACCESSORIES NECESSARY TO MAKE THE WORK CO AND PERFECT ON ALL RESPECTS AND REDO FOR OPERATION EVEN IF NOT PARTICULARLY SPECIFIED, SHA FURNISHED, DELIVERED AND INSTALLED BY THE EC WITHOUT ADDITIONAL EXPENSE TO THE OWNER.
- 1.f. MINOR DETAILS NOT USUALLY SHOWN OR SPECIFIED, BUT NECESSARY FOR PROPER INSTALLATION AND OPERATION, SHALL BE INCLUDED IN THE EC'S ESTIMATE, THE SAME AS IF HEREIN SPECIFIED OR SHOWN.
- 1.g. WITH SUBMISSION OF BID, THE EC SHALL GIVE WRITTEN NOTICE TO THE ARCHITECT OF ANY MATERIALS APPARATUS BELIEVED INADEQUATE OR UNSUITABLE, IN VIOLATION OF LAWS, ORDINANCES, RULES, AND NECESSARY ITEMS OR WORK OMITTED. IN THE ABSENCE OF SUCH WRITTEN NOTICE, IT IS MUTUALLY AGF THE EC HAS INCLUDED THE COST OF ALL REQUIRED ITEMS IN HIS PROPOSAL, AND THAT HE WILL BE RESF FOR THE APPROVED SATISFACTORY FUNCTIONING OF OF THE ENTIRE SYSTEM WITHOUT EXTRA COMPEN
- ELECTRICAL DRAWINGS: THE DRAWINGS CONSTITUTE AN INTEGRAL PART OF THESE SPECIFICATIONS. TH DRAWINGS INDICATE THE GENERAL LAYOUT OF EQUIPMENT AND ALL DIMENSIONS AND CLEARANCES SHOU VERIFIED IN THE FIELD. ALL DISCREPANCIES OF DIMENSIONS TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT-ENGINEER FOR DISPOSITION.
- ELECTRICAL DRAWINGS: THE ARCHITECT/ENGINEER SHALL RESERVE THE RIGHT TO MAKE MINOR ADJUSTMI LOCATIONS OF OUTLETS, SWITCHES, FIXTURES, CONDUIT, ETC., AND EQUIPMENT WHERE HE CONSIDERS SUC ADJUSTMENTS DESIRABLE IN THE INTEREST OF CONCEALING WORK OR PRESENTING A BETTER APPEARANCE EXPOSED. ANY SUCH CHANGES SHALL BE ANTICIPATED AND REQUESTED SUFFICIENTLY IN ADVANCE AS TO I CAUSE EXTRA WORK ON THE PART OF THE CONTRACTOR, OR UNDULY DELAY THE WORK, COORDINATE WOR ADVANCE WITH ALL OTHER TRADES AND REPORT IMMEDIATELY AND ANY DIFFICULTIES WHICH CAN BE ANTI
- ADDENDA: THE DRAWINGS MAY BE SUPERSEDED BY LATER REVISED OR DETAILED DRAWINGS OR SPECIFICA ADDENDA. REFER TO GENERAL CONDITIONS AND INSTRUCTIONS TO BIDDERS.
- SHOP DRAWINGS: BEFORE WORK IS DONE ON ANY ITEM OF EOUIPMENT, SUBMIT SIX (6) COPIES OF EACH C FOLLOWING: SHOP DRAWINGS, CATALOG CUTS, MANUFACTURER'S CATALOG NUMBERS AND FULL AND COI INFORMATION FOR REVIEW. SUBMIT SHOP DRAWINGS CONTAINING OR MARKED WITH IDENTIFICATION AN INFORMATION DESCRIBED BELOW. ANY SHOP DRAWINGS NOT IN COMPLIANCE WITH THESE REOUIREMEN RETURNED, WITHOUT REVIEW, FOR CORRECTION AND RESUBMITTAL. ASSEMBLE AND SUBMIT IN LOGICALLY ARRANGED FOLDERS, ALL INSTRUCTION BULLETINS, LUBRICATION SCHEDULES, OPERATION INSTRUCTIONS, LISTS, PAMPHLETS FOR ELECTRICAL EQUIPMENT AND APPARATUS FURNISHED.
- 5.a. SHOP DRAWING IDENTIFICATION: INCLUDE PROJECT NAME AND ARCHITECT-ENGINEER'S JOB NUMBER, A NAME, NUMBER AND INTENDED USE AS DESIGNATED BY THE CONTRACT DRAWINGS AND SPECIFICATION AS "LIGHTING PANEL "LP-6".
- 5.b. SHOP DRAWING INFORMATION: INCLUDE FOLLOWING DATA: MANUFACTURER'S MODEL NUMBER OR CA NUMBER, SIZE AND PERFORMANCE CURVES AND DATA. INDICATE OPERATING POINT ON CURVES AND TA DATA FOR EACH PIECE OF EQUIPMENT THAT CURVES OR DATA REPRESENT. INDICATION OF ALL PERFORM DATA, CONSTRUCTION MATERIAL FINISHES AND MODIFICATIONS TO MANUFACTURER'S STANDARD DESIC SPECIFIED, ROUGHING-IN, FOUNDATION, AND SUPPORT POINTS DIMENSIONS IF APPLICABLE.
- OPERATING MANUALS AND PARTS LISTS: IN ADDITION TO REQUIREMENTS OF GENERAL CONDITIONS, IN THE FOLLOWING: NAME, ADDRESS, AND TELEPHONE NUMBER OF LOCAL SUPPLIER OR MANUFACTURER'S REPRESENTATIVE FOR EACH PIECE OF EQUIPMENT. ASSEMBLE MANUALS IN SEPARATE BINDER OR BINDERS F SYSTEM. INCLUDE CHARTS OR DIAGRAMS SHOWING ESSENTIAL FEATURES OF THE SYSTEM, AND INCLUDE A DESCRIPTION OF THE SYSTEM. SUBMIT TWO (2) COPIES OF ABOVE BEFORE BINDING IN OPERATING MANUAL ARCHITECT-ENGINEER FOR APPROVAL.
- **RECORD DRAWINGS:** RECEIVE FROM THE ARCHITECT-ENGINEER A COMPLETE SET OF DRAWINGS. NOTE IN RI PENCIL ON THIS SET ANY DEVIATIONS OF INSTALLATION. SUBMIT MARKED SET OF DRAWINGS TO THE ARCHITECT-ENGINEER.
- COORDINATION AND SCHEDULING: ALL PHASES AND SCHEDULING OF WORK TO BE CLOSELY COORDINATED WITH THE OWNER AND AUTHORIZED IN WRITING BY THE OWNER AT LEAST ONE WEEK PRIOR TO THE EXECUTION OF ANY WORK
- SUPERVISION: THE CONTRACTOR SHALL HAVE AN EXPERIENCED SUPERINTENDENT CONSTANTLY ON THE SITE TO SUPERVISE ALL WORK OF ELECTRICAL CONTRACT.
- **10. <u>TEMPORARY ELECTRICAL SERVICE</u>:** TEMPORARY ELECTRIC SERVICE SHALL BE PROVIDED AS REQUIRED.

# SPECIFICATIONS

IDDERS OF RK ARE	11.	AL	TERATIONS AND REHABILITATION OF EXISTING I	NSTALLATIONS:							
PMENT	11		REMOVE EXISTING ELECTRICAL EQUIPMENT, DEVICE: REQUIRED.	S, OUTLETS, CONDUIT AND WIRING AS INDICATED OR							
RICAL	11.b.		CAP CONDUIT ENDS, PROVIDE COVERS FOR OPENINGS LEFT IN PANELBOARDS, OUTLETS, AND RACEWAYS TO PROVIDE A FINISHED FLUSH-APPEARANCE WHERE WORK HAS BEEN REMOVED.								
NDING AS SIVE SCOPE DING	11.c.		WHERE WALLS ARE REMOVED, CUT OFF CONDUITS REMOVED, AS CLOSE TO THE FLOOR AS PRACTICABI	WHICH PROJECT FROM THE FLOOR INTO THE WALL BEING .E.							
SHALL BE	11.d.		TAKE POSSESSION OF WIRING, CONDUIT AND MISC REUSED. PROMPTLY REMOVE THESE MATERIALS FRO ARCHITECT/ENGINEER.	ELLANEOUS ELECTRICAL EQUIPMENT REMOVE AND NOT OM JOB SITE UNLESS OTHERWISE DIRECTED BY THE							
LY SHALL SECTIONS	11.e.		EQUIPMENT, OUTLETS OR RECEPTACLES (TO REMAIN	NG REMOVED BACK TO THE SOURCE OF SUPPLY. IF OTHER N) ARE SUPPLIED BY THE SAME FEEDER OR CIRCUIT, PROVIDE R RECEPTACLES IN SERVICE AND REMOVE UNUSED PORTIONS DX AND TAPE ENDS OF CONDUCTORS.							
TOR. IN THE	11		DISCONNECT AND REMOVE OR RELOCATE ELECTRIC INTERFERENCE EXISTS AT FACILITIES TO BE EXTENDE	AL ITEMS AFFECTED BY DEMOLITION WORK AND WHERE							
OMPLETE ALL BE	11.g.			F CONNECTION, DISCONNECTION OR RELOCATION ARE NOT AND WORKMANSHIP COMPATIBLE WITH THE EXISTING IFACTURER AND THE OWNER.							
OR D ANY	11			INSTALLED IN THE EXISTING BUILDING, THE LAYOUT BEING GENERAL CONTRACTOR THROUGHOUT IN THE REMOVAL OF							
REED THAT PONSIBLE ISATION.	12.		ATERIALS: PROVIDE MATERIALS AND EQUIPMENT BE E CUSTOMARY, REQUIRED, OR SPECIFIED.	ARING CERTIFICATION OF UL WHERE SUCH LABELS OR STAMPS							
HE ULD BE	13.	CE		NSES AND PERMITS AND, AT COMPLETION OF WORK, AVING LOCAL JURISDICTION. PAY ALL CHARGES AND PECTION CERTIFICATES AS DIRECTED.							
MENTS IN CH E WHERE	14.	CO AN CA	D 120 VOLT RECEPTACLE CIRCUITS. PERFORM CONT	IND. PERFORM OPERATIONAL TESTS ONLY ON ALL LIGHTING INUITY TESTS ON ALL POWER AND CONTROL CIRCUITS. TEST GER BETWEEN EACH PHASE AND GROUND, WITH TEST							
NOT DRK IN TICIPATED. TATION	15.	CO ME	NNECTIONS. TEST RESISTANCE AT VARIOUS POINTS	FOR CONTINUITY AND TIGHT ELECTRICAL AND MECHANICAL USING BIDDLE GROUND OHMER, OR OTHER STANDARD CE IS 5 OHMS. CONNECT SYSTEM GROUND TO WATER METER							
OF THE MPLETE ND TS WILL BE Y PARTS	16.	INS DA WI HA REI	TE OF FINAL ACCEPTANCE AND LEAVE HIS WORK IN THIN THE GUARANTEE PERIOD, THIS CONTRACTOR S VE ALL DAMAGES TO OTHER WORK OR FURNISHING PAIRED AND/OR REPLACED AT HIS EXPENSE, TO THE	HIS WORKMANSHIP AND MATERIALS INCLUDING: AND CONTROLS FOR A PERIOD OF ONE (1) YEAR FROM THE PERFECT ORDER AT COMPLETION. SHOULD DEFECTS DEVELOP SHALL, UPON NOTICE OF SAME, REMEDY THE DEFECTS AND G CAUSED BY THE DEFECTS OR THE WORK CORRECTING SAME CONDITION BEFORE SUCH DAMAGE. THE DATE OF FINAL OF THE OWNER ON THE FINAL PAYMENT OF THIS CONTRACT.							
AND BY	17. RACEWAY AND FITTINGS: USE ELECTRIC METALLIC TUBING (EMT) CONDUIT EXCEPT AS OTHERWISE INDICA										
N, SUCH	<b>18.</b> <u>CONDUIT SIZE:</u> MINIMUM CONDUIT SIZE 1/2 INCH, EXCEPT WHERE OTHER SIZES ARE SPECIFICALLY INDICATED.										
ATALOG ABULAR MANCE	19.	MC	DUNTING HEIGHTS: UNLESS OTHERWISE INDICATE								
SIGN			OUTLET ELE								
NCLUDE			LIGHTING SWITCHES	4'-0" ABOVE FINISHED FLOOR TO CENTERLINE							
FOR EACH BRIEF L TO THE			RECEPTACLE OUTLETS IN OFFICES AND FINISHED AREAS	2'-0" ABOVE FLOOR TO CENTERLINE. COORDINATE MOUNTED HEIGHTS WITH OWNER PRIOR TO ROUGH-IN.							
			LIGHTING PANELBOARDS	6'-8" FROM TOP OF PANEL TO ABOVE FINISHED FLOOR.							
RED			FIRE ALARM PULL STATION	4'-0" ABOVE FINISHED FLOOR TO CENTERLINE							

FIRE ALARM HORN/STROBE OR STROBE ONLY 6'-8" ABOVE FINISHED FLOOR OR 6" BELOW

FINISHED CEILING TO CENTERLINE.

AS INDICATED ON DRAWINGS

8'-0" ABOVE FINISHED FLOOR TO CENTERLINE

0'-9" BELOW FINISHED CEILING TO CENTERLINE

DEVICES

EMERGENCY LIGHT OUTLETS

BRACKET AND SPECIAL OUTLETS

EXIT LIGHT OUTLETS

- 20. CONDUCTOR TYPES: TYPE THHN 75 DEGREES "C" RATING, FOR LIGHTING, POWER AND CONTROL, NO. 8 AWG AND SMALLER. USE STRANDED WIRE FOR NO. 10 AWG AND LARGER.
- **1. GROUNDING:** GROUND RODS-COPPERWELD STEEL COMPANY. CONNECT-ORS-BURNDY, THOMAS & BETTS OR O.Z. THERMITE WELDING-CADWELD OR THERMOWELD. GROUND THE FOLLOWING: RECEPTACLES, SWITCH BOXES, LUMINARIES AND OTHER ELECTRICAL DEVICES AS REQUIRED BY NEC.
- 22. <u>POWER DISTRIBUTION PANELBOARDS:</u> MANUFACTURERS SHALL BE G.E., SIEMENS/I-T-E, SQUARE D OR CUTLER HAMMER. COMPLETELY FACTORY BUILT AND TESTED, TOTALLY ENCLOSED, DEAD FRONT TYPE PANELBOARDS. NEATLY TYPED DIRECTORY, WITH A CLEAR PLASTIC COVER. IN FRAME INSIDE EACH. PANELBOARD DOOR. FULL-CAPACITY INSULATED SOLID NEUTRAL. SEPARATE GROUND BUS WITH LUGS AS REQUIRED IN ADDITION TO NEUTRAL BUS.
- 23. CIRCUIT BREAKER PANELBAORD: MANUFACTURERS SHALL BE GE, SIEMENS/ITE, SQUARE D OR CUTLER HAMMER. MOLDED CASE CIRCUIT BREAKERS, THERMAL MAGNETIC, QUICK-MAKE, QUICK-BREAK, AMBIENT COMPENSATED OR FACTORY-CALIBRATED FOR PANELBOARD INSTALLATION. HANDLES ARRANGED FOR PADLOCKING IN OFF POSITION. ALL MULTIPOLE BREAKERS TO BE COMMON TRIP. HANDLE TIES WILL NOT BE ACCEPTED. SPACES TO BE COMPLETE WITH BUSES AND HARDWARE READY FOR CIRCUIT BREAKER
- SAFETY AND DISCONNECT SWITCHES: SAFETY AND DISCONNECT SWITCHES SHALL BE AS MANUFACTURED BY GENERAL ELECTRIC, SQUARE D, SIEMENS/ITE OR CUTLER HAMMER. FRONT-OPERATED, TYPE HD, SINGLE THROW, QUICK-MAKE, QUICK-BREAK, HP RATED, VISIBLE BLADE, SWITCHING UNIT. FUSIBLE TYPE TO BE PROVIDED WITH FUSE TERMINALS TO ACCOMMODATE TYPE OF FUSES INDICATED.
- **25. FUSES:** PROVIDE FUSES AS FOLLOWS: FUSES 600 VOLTS AND LOWER. FOR MOTOR CIRCUITS, UL CLASS K-5, DUAL ELEMENT, 200,000 AIC SYMMETRICAL BUSS FRS FUSETRON, 600 VOLT RATING, BUS FRN FUSETRON, 250 VOLT RATING, OR SHAWMUT EQUIVALENT. FOR PANELBOARD SERVICES, UL CLASS RK-5, 200,000AIC SYMMETRICAL. OR BUSS LPN LOW PEAK, 250 VOLT RATING, OR SHAWMUT EQUIVALENT, AS INDICATED ON THE DRAWINGS. FURNISH ONE SET OF SPARE FUSES FOR EACH SIZE REQUIRED.
- WIRING DEVICES: PROVIDE SPECIFICATION GRADE DEVICES AS INDICATED, OR EQUIVALENT, HUBBELL, PASS AND SEYMOUR, OR GENERAL ELECTRIC. SWITCHES TO BE RATED AT 20 AMPERES, 120 TO 277VOLTS, AC, WITH SHALLOW PLASTIC BODY, SCREW OR PRESSURE TERMINALS SUITABLE FOR NO. 12 AND NO. 10 WIRES, UNLESS OTHERWISE NOTED. ALL WALL SWITCHES AND 20 AMPERE CONVENIENCE RECEPTACLES TO HAVE AN IVORY FINISH. VERIFY COLOR OF ALL DEVICES AND COVERPLATES WITH OWNER PRIOR TO ORDERING. ELECTRICAL CONTRACTOR TO VERIFY THE TYPES AND STYLES OF PARTITIONS TO INSURE PROPER DEVICES BEFORE INSTALLATION. WIRE DEVICES AND COVERPLATES TO BE AS FOLLOWS:
- 26.a. WALL SWITCHES: STANDARD TYPE, PASS & SEYMOUR NO. CS20AC1-W, CS20AC3-W, OR CS20AC4-1 OR EQUIVALENT WHITE QUIET FLUSH TYPE TOGGLE SWITCH. VERIFY COLOR WITH OWNER PRIOR TO ORDERING.
- 26.b. RECEPTACLES: 26.b.1. DUPLEX TYPE - PASS & SEYMOUR CR20-W, 20 AMPERES, 125 VOLTS, 3-WIRE, OR EQUIVALENT WHITE GROUNDING TYPE, NEMA CONFIGURATION 5-20R. VERIFY COLOR WITH OWNER PRIOR TO ORDERING.
- 26.b.2. GROUND FAULT INTERRUPTING TYPE PASS & SEYMOUR 2091-W 20 AMPERES, OR EQUIVALENT 125 VOLTS, 3-WIRE, WHITE, GROUND FAULT INTERRUPTING TYPE, NEMA CONFIGURATION 5-20R. VERIFY COLOR WITH OWNER PRIOR TO ORDERING.

26.c. COVERPLATES:

- 26.c.1. ALL COVERPLATES FOR INDOORS AND SIMILAR FINISHED AREA WIRING DEVICES TO BE #302 STAINLESS STEEL WITH BRUSHED SATIN FINISH AND FACE OPENINGS FOR THE INTENDED DEVICE.
- 27. ALL **FIRE ALARM SYSTEM** WORK AND DESIGN, IF REQUIRED, TO BE DONE BY OWNER'S FIRE ALARM SYSTEM CONTRACTOR.
- 18. ALL **TELEPHONE/DATA/CATV SYSTEM** WORK AND DESIGN TO BE DONE BY OWNER'S TECHNOLOGY SYSTEM CONTRACTOR.
- 9. ALL SECURITY, CCTV, & ACCESS CONTROL SYSTEM WORK AND DESIGN TO BE DONE BY OWNER'S SECURITY SYSTEM CONTRACTOR.
- 0. ALLOWANCES: ALLOWANCE FOR \$10,000 TO BE INCLUDED IN BASE BID FOR SERVICE WORK BEYOND THE SCOPE SHOWN. USE ALLOWANCE TO BE AUTHORIZED OWNER IN WRITING. UNUSED PORTION TO REVERT TO OWNER.
- . SCOPE OF WORK: SCOPE OF WORK ONLY INCLUDES THE AREAS AND ITEMS OF WORK AS SHOWN. IT SPECIFICALLY EXCLUDES ANY CODE VIOLATIONS OUTSIDE THE SCOPE OF WORK. ELECTRICAL CONTRACTOR SHALL BRING ANY CODE VIOLATIONS OR SERIOUS HAZARDOUS CONDITIONS, WHICH ARE FOUND, TO THE ATTENTION OF THE OWNER & ENGINEER SO THAT CORRECTIVE ACTION CAN BE TAKEN

