

COMcheck Software Version 4.1.5.5
Envelope Compliance Certificate

Project Information
 Energy Code: 90.1 (2013) Standard
 Project Title: Shell Building - Harbor Freight
 Location: Erwin, North Carolina
 Climate Zone: 4a
 Project Type: New Construction
 Vertical Cladding Wall Area: 1767 sq ft
 Performance Sim. Specs: EnergyPlus 8.1.0.009 (EPV: USA_NC_Raleigh-Durham.Int.AP.723060_TMY3.epv)

Contractor Site: Shell Lane, Erwin, NC 28339
 Owner/Agent: [Redacted]
 Designer/Contractor: Het Design, 6405 Wilkinson Blvd., Suite 100, Belmont, NC 28012, 704.342.1686, tmj@hetdesign.com

Building Area	Floor Area
1-Retail - Nonresidential	16000

Envelope Assemblies	Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor
Roof 1 Metal Building, Standing Seam, Liner System with Thermal Blocks (a), (Bldg Use 1 - Retail)		1571	36.0	0.0	0.031	0.037
Floor 1 Slab-On-Grade (Unheated, (Bldg Use 1 - Retail) (d))		530	---	---	0.730	0.520
NORTH Exterior Wall 4 - Foot Wall, Other Metal Building Wall, (Bldg Use 1 - Retail) (d)		3320	---	---	0.059	0.040
Window 1 Metal Frame with Thermal Break Fixed, Perf. Specs., Product ID Pending, SHGC 0.55, PF 0.40, VT 0.80, (Bldg Use 1 - Retail) (c)		42	---	---	0.380	0.400
Door 4 Class 0 - 50% glazing Metal Frame, Entrance Door, Perf. Specs., Product ID Pending, SHGC 0.55, PF 0.40, VT 0.80, (Bldg Use 1 - Retail) (c)		45	---	---	0.770	0.770
EAST Exterior Wall 1 - Side Wall, Other Metal Building Wall, (Bldg Use 1 - Retail) (d)		1767	---	---	0.059	0.060
Door 1 Insulated Metal, Sliding, (Bldg Use 1 - Retail)		24	---	---	0.500	0.500
SOUTH Exterior Wall 3 - Rear Wall, Other Metal Building Wall, (Bldg Use 1 - Retail) (d)		267	---	---	0.059	0.060
Door 2 Insulated Metal, Sliding, (Bldg Use 1 - Retail)		24	---	---	0.500	0.500
Door 3 Unheated Single-Layer Metal, Non-Sliding, (Bldg Use 1 - Retail)		80	---	---	1.200	0.500

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Section # & Req. ID	Framing / Rough-in Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
5.4.3.2 (R117)	Factory built and site-assembled fenestration and doors are labeled or certified as meeting air leakage requirements.	U-_____	U-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.4.3.4 (R141)	Vestibules are installed where building entrances separate conditioned spaces from the exterior, and meet exterior envelope requirements. Doors have self-closing devices, and are >= 7 ft high, >= 10 ft wide for adjoining floor area >= 4000 sq ft. Vestibule floor area <= 7 50 sq ft, or 2 percent of the adjoining conditioned floor area.	U-_____	U-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
5.5.4.3a (R147)	Vertical fenestration U-Factor.	U-_____	U-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.5.4.3b (R149)	Skylight fenestration U-Factor.	U-_____	U-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.5.4.4.1 (R110)	Vertical fenestration SHGC value.	SHGC-_____	SHGC-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.5.4.4.2 (R111)	Skylight SHGC value.	SHGC-_____	SHGC-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.8.2.1, 5.8.2.2, 5.8.2.3, 5.8.2.4 (R112)	Fenestration products rated (U-factor, SHGC, and VT) in accordance with NFRC or energy code details are used.	U-_____	U-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.2.2 (R113)	Fenestration and door products are labeled, or a signed and dated certificate listing the U-factor, SHGC, VT, and air leakage rate has been provided by the manufacturer.	U-_____	U-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.5.3.6 (R144)	U-factor of opaque doors associated with the building thermal envelope meets requirements.	U-_____	U-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.4.3.1 (R115)	Continuous air barrier is wrapped, sealed, caulked, gasketed, and/or taped in an approved manner, except in semi-enclosed spaces in climate zones 1-6.	U-_____	U-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:
 1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

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Section # & Req. ID	Insulation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
5.8.1.2 (R116)	Foundation vents do not interfere with insulation.	U-_____	U-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.1.8 (R117)	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.	U-_____	U-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:
 1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

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Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor
WEST Exterior Wall 2 - Side Wall, Other Metal Building Wall, (Bldg Use 1 - Retail) (d)	1767	---	---	0.059	0.060

(a) Budget U-Factors are used for software baseline calculations ONLY, and are not code requirements.
 (b) Other components require supporting documentation for proposed U-factors.
 (c) Fenestration product performance must be certified in accordance with NFRC and requires supporting documentation.
 (d) Slab-On-Grade proposed and budget U-factors shown in table are U-factors.
 (e) Thermal spacer block with minimum R-3.5 must be installed above the purlin/batt, and the roof deck secured to the purlin.

Envelope PASSSES: Design 0.4% 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 (2013) standard requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Timothy Johnston - Principal Signature: [Signature] Date: 03/27/24

Section # & Req. ID	Plan Review	Complies?	Comments/Assumptions
4.2.2, 5.4.3.1.1, 5.7 (R11)	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.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
4.2.2, 4.8.1.1, 4.8.1.2, 4.7 (R12)	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 conductors sized in accordance with approved plans and branch circuits sized for maximum drop of 3%.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.5.4.2.3 (R117)	In buildings > 2,500 ft ² , any enclosed spaces directly under a roof with ceiling heights > 15 ft, and used as an office, lobby, atrium, concourse, corridor, storage (including nonrefrigerated warehouse, gymnasium, fitness/exercise area, playing area, gymnasium seating area, conversion exhibit/sewing space, courtroom, automotive service, fire station engine room, manufacturing consolidation and bay areas, retail, library reading and stack areas, distribution/office area, transportation baggage and seating areas, or workshop), the following requirements apply: The daylight zone under skylights is >= half the floor area and (d) the skylight area to daylight zone is >= 3 percent with a skylight VT >= 0.40 (d) the minimum skylight effective aperture >= 1 percent. The skylight has a measured haze value > 50 percent.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.

Additional Comments/Assumptions:
 1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

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Section # & Req. ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
4.8.2 (R119)	At least 50% of all 120 volt 15- and 20-amp receptacles are controlled by an automatic control device.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.

Additional Comments/Assumptions:
 1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

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Section # & Req. ID	Final Inspection	Complies?	Comments/Assumptions
5.4.3.3 (R11)	Weatherstrips installed on all loading stock cargo doors in Climate Zones 4-8.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.

Additional Comments/Assumptions:
 1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

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COMcheck Software Version 4.1.5.5
Inspection Checklist
Energy Code: 90.1 (2013) Standard

Requirements: 100.0% 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, 5.4.3.1.1, 5.7 (R11)	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.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
4.2.2, 4.8.1.1, 4.8.1.2, 4.7 (R12)	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 conductors sized in accordance with approved plans and branch circuits sized for maximum drop of 3%.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.5.4.2.3 (R117)	In buildings > 2,500 ft ² , any enclosed spaces directly under a roof with ceiling heights > 15 ft, and used as an office, lobby, atrium, concourse, corridor, storage (including nonrefrigerated warehouse, gymnasium, fitness/exercise area, playing area, gymnasium seating area, conversion exhibit/sewing space, courtroom, automotive service, fire station engine room, manufacturing consolidation and bay areas, retail, library reading and stack areas, distribution/office area, transportation baggage and seating areas, or workshop), the following requirements apply: The daylight zone under skylights is >= half the floor area and (d) the skylight area to daylight zone is >= 3 percent with a skylight VT >= 0.40 (d) the minimum skylight effective aperture >= 1 percent. The skylight has a measured haze value > 50 percent.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.

Additional Comments/Assumptions:
 1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

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Section # & Req. ID	Insulation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
4.2.4 (R116)	Installed roof insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.8.1.2 (R117)	Above-grade wall insulation installed per manufacturer's instructions.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
4.2.4 (R116)	Installed above-grade wall insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.8.1.2 (R117)	Above-grade wall insulation installed per manufacturer's instructions.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
4.2.4 (R116)	Installed floor insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports. For concrete slabs, verification may need to occur during framing inspection.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.8.1.2 (R117)	Roof insulation installed per manufacturer's instructions. Insulation is installed only where the ceiling slope is <= 3:12.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.1.3 (R117)	Roof insulation installed per manufacturer's instructions. Insulation is installed only where the ceiling slope is <= 3:12.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
4.2.4 (R116)	Installed above-grade wall insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.8.1.2 (R117)	Above-grade wall insulation installed per manufacturer's instructions.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
4.2.4 (R116)	Installed floor insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.8.1.1 (R110)	Building envelope insulation is labeled with R-value or insulation certificate has been provided listing R-value and other relevant data.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.1.9 (R118)	Building envelope insulation extends over the full area of the component at the proposed rated R or U value.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.1.4 (R111)	Eaves are baffled to deflect air to above the insulation.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.1.5 (R112)	Insulation is installed in substantial contact with the inside surface separating conditioned spaces from unconditioned spaces.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.1.4 (R111)	Decompressed equipment installed in building envelope assemblies does not compress the adjacent insulation.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.1.7.1 (R115)	Attics and mechanical rooms have insulation protected where adjacent to attic or equipment access.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:
 1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

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Section # & Req. ID	Insulation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
4.2.4 (R116)	Installed roof insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.8.1.2 (R117)	Above-grade wall insulation installed per manufacturer's instructions.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
4.2.4 (R116)	Installed above-grade wall insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.8.1.2 (R117)	Above-grade wall insulation installed per manufacturer's instructions.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
4.2.4 (R116)	Installed floor insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports. For concrete slabs, verification may need to occur during framing inspection.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.8.1.2 (R117)	Roof insulation installed per manufacturer's instructions. Insulation is installed only where the ceiling slope is <= 3:12.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.1.3 (R117)	Roof insulation installed per manufacturer's instructions. Insulation is installed only where the ceiling slope is <= 3:12.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
4.2.4 (R116)	Installed above-grade wall insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.8.1.2 (R117)	Above-grade wall insulation installed per manufacturer's instructions.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
4.2.4 (R116)	Installed floor insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.8.1.1 (R110)	Building envelope insulation is labeled with R-value or insulation certificate has been provided listing R-value and other relevant data.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.1.9 (R118)	Building envelope insulation extends over the full area of the component at the proposed rated R or U value.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.1.4 (R111)	Eaves are baffled to deflect air to above the insulation.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.1.5 (R112)	Insulation is installed in substantial contact with the inside surface separating conditioned spaces from unconditioned spaces.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.1.4 (R111)	Decompressed equipment installed in building envelope assemblies does not compress the adjacent insulation.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.1.7.1 (R115)	Attics and mechanical rooms have insulation protected where adjacent to attic or equipment access.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:
 1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

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Section # & Req. ID	Final Inspection	Complies?	Comments/Assumptions
5.4.3.3 (R11)	Weatherstrips installed on all loading stock cargo doors in Climate Zones 4-8.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.

Additional Comments/Assumptions:
 1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

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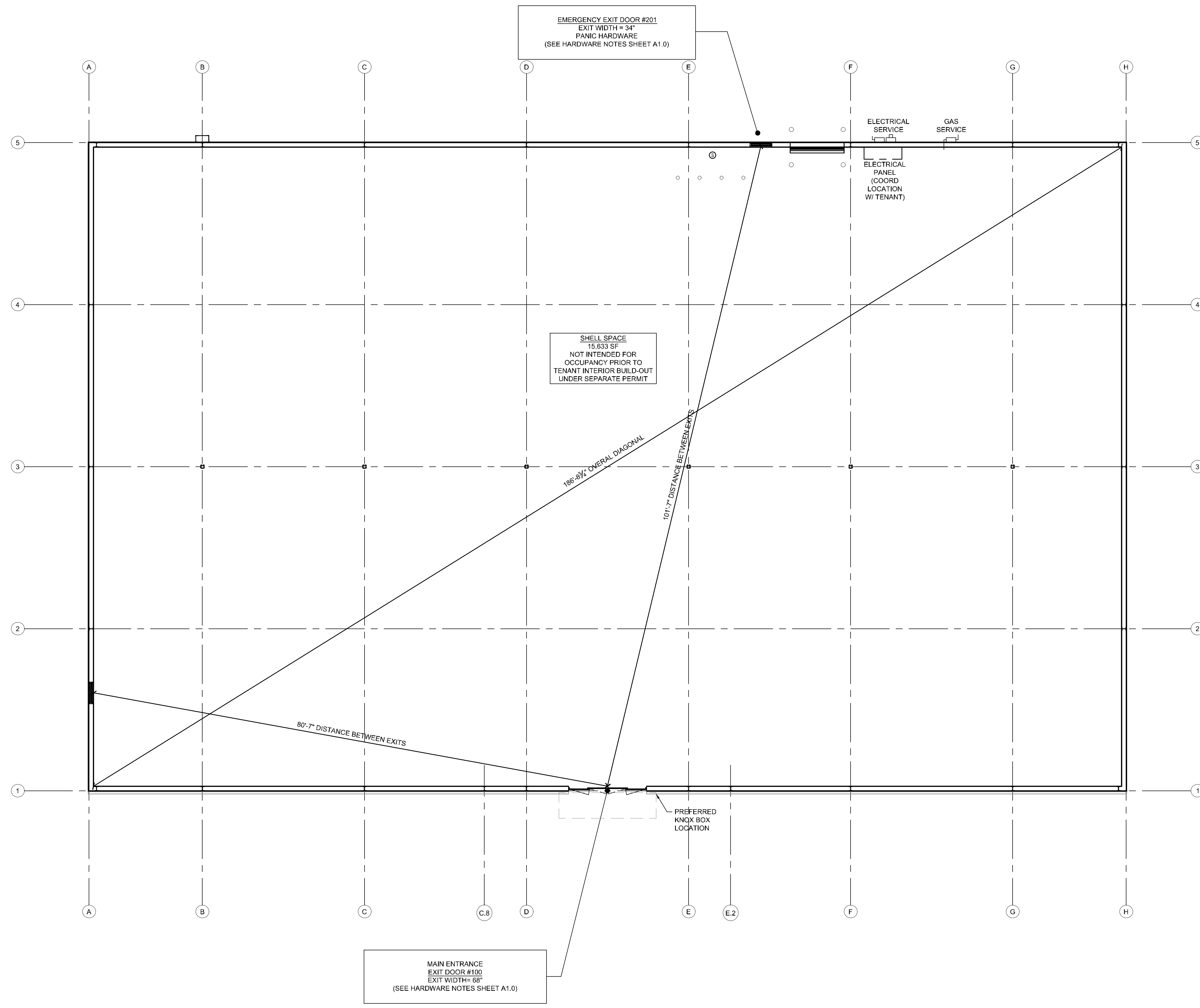
Section # & Req. ID	Footing / Foundation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
4.2.4 (R116)	Installed below-grade wall insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
4.2.4 (R116)	Installed below-grade wall insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.8.1.2 (R117)	Slab edge insulation installed per manufacturer's instructions.	R-_____	R-_____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

FIRE ALARM SERVICE:
 TENANT SHALL PROVIDE AND INSTALL A FIRE ALARM SYSTEM WITHIN THE LEASED SPACE AS PART OF TENANT BUILD-OUT. UNDER SEPARATE PERMIT.

FIRE EXTINGUISHER NOTE:
 GC TO PROVIDE 2A-10BC FIRE EXTINGUISHERS DURING CONSTRUCTION OF SHELL BUILDING PER THE LOCAL FIRE MARSHAL'S DIRECTION.
 TENANT IS RESPONSIBLE FOR PROVIDING FIRE EXTINGUISHERS AT TIME OF INTERIOR BUILD-OUT (SEPARATE PERMIT) AS REQUIRED FOR FINAL OCCUPANCY.

FIRE SEPARATION DISTANCES:
 ALL FIRE SEPARATION DISTANCES TO PROPERTY LINES EXCEED 20'-0". SEE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
 NO EXTERIOR FIRE RATED WALLS REQUIRED OR PROVIDED.

KNOX BOX NOTE:
 IF A KNOX BOX ENTRY SYSTEM IS REQUIRED BY THE CODES GOVERNING THE CONSTRUCTION OF THE PROJECT, PROVIDE A RECESSED KNOX BOX BY THE CONTRACTOR PRIOR TO THE COMPLETION OF THE PROJECT. LOCATE PER LOCAL CODE REQUIREMENTS. KNOX BOX CONTACT - 866-625-4863



HELT DESIGN

ARCHITECTURE INTERIORS

6405 W. WILKINSON BLVD, STE. 100
 BELMONT, NC 28012
 704.342.1686
 HELTDESIGN.COM
 INFO@HELTDESIGN.COM
 PROJECT NAME:

HARBOR FREIGHT TOOLS

FOR STOCKS & TAYLOR CONSTRUCTION

PROJECT NO: 23174

PROJECT ADDRESS:

46 SHRIJI LANE
 ERWIN, NC 28339

SEAL: 04/19/22

CORPORATE ENTITY:
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 COVER SHEET

SHEET NUMBER:
 T1.0

DOOR SCHEDULE

DOOR NO.	DOOR				FRAME		HDW NOTES	REMARKS
	W	H	T	TYPE	MATL	FINISH		
100	12'-0"	7'-8"		A	GLASS/ALUM.	ANOD. ALUM.	SUPPLIED BY DORMA	BI-PARTING ELECTRIC DOOR PACKAGE W/ INTEGRAL TRANSOM BY DORMA. SEE T1.0 FOR VENDOR INFORMATION. MINIMUM WINDOW FRAME HEIGHT OF 10' ABOVE FINISH FLOOR. ALL GLAZING TO BE 1" INSULATED TEMPERED GLASS. G.C. TO COORDINATE FINAL DOOR AND FRAME DIMENSIONS WITH DORMA.
200	3'-0"	7'-0"	1 3/4"	B	HOLLOW METAL	PAINTED	2	
300	3'-0"	7'-0"	1 3/4"	B	HOLLOW METAL	PAINTED	3	
400	8'-0"	10'-0"	1/2"	C	METAL	GALV.	4	CHAIN OPERATE INSULATED SERVICE DOOR FURNISHED AND INSTALLED BY O.H. DOOR VENDOR. VERIFY OPENING SIZE IN FIELD BEFORE ORDERING DOOR

HARDWARE NOTES

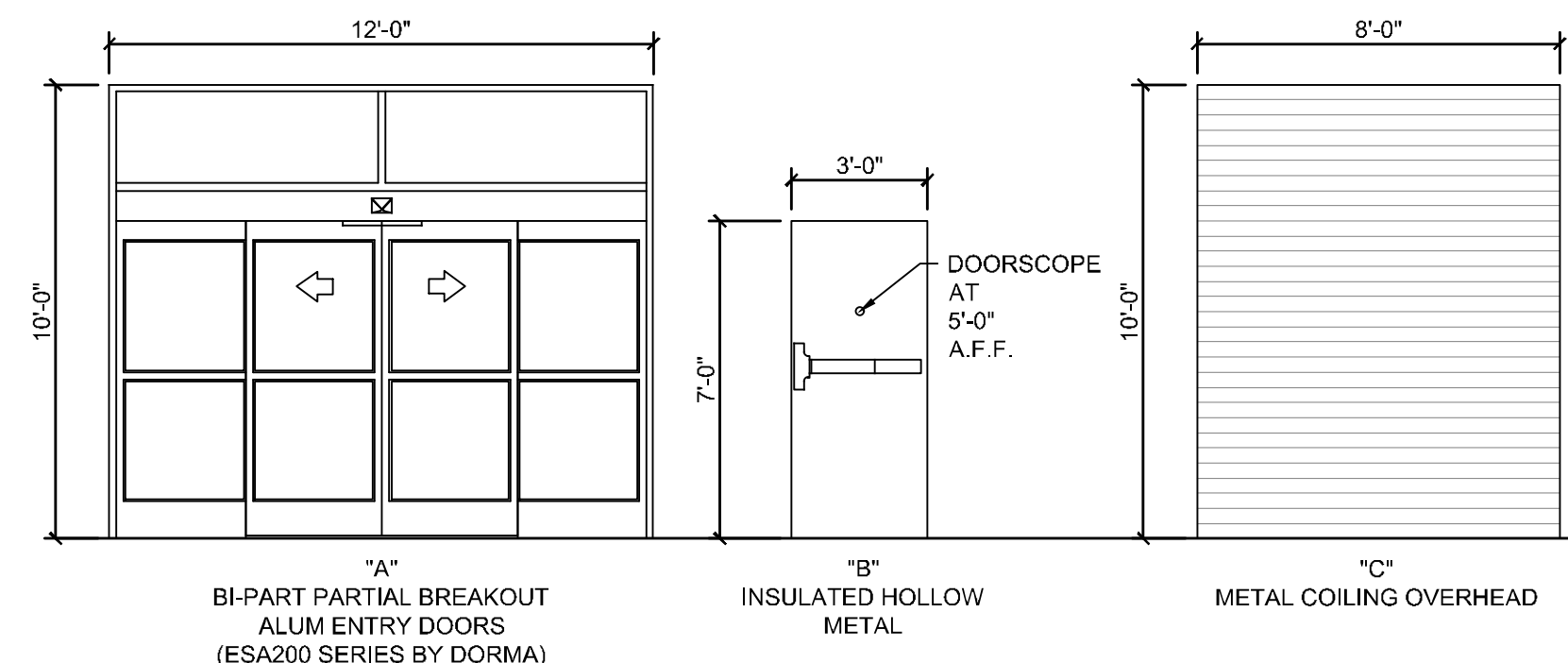
GROUP 2 - (SINGLE EXIT DOORS)
 -1 1/2" PAIR HINGES: MCKINNEY MP 79, 4 1/2" X 4 1/2", 26D
 -EXIT DEVICE - VON DUPRIN GUARD-X 2670-US28
 -CYLINDER CORE: FALCON C207-SC-C26D
 -CONST CORE: FALCON C607 CCA 7-PIN
 -HOUSING: FALCON C953 (CKVY -PN) 626
 -CLOSER: FALCON SCT1 RW / PA-689 (MTD. INSIDE)
 -KICKPLATE: ROCKWOOD K1050 - 10X34 US38D
 -DOOR STOP: ROCKWOOD 472-26D STOP W/ KEEPER
 -DOOR BOTTOM: PEMKO 315-CN MILL 36"
 GASKETING: PEMKO 303 AV (1) 36", (2) 84"
 THRESHOLD: PEMKO 171-A MILL 36"
 DOOR PULL: ROCKWOOD 131-26D (MTD. INSIDE)
 LATCH GUARD: DON-JO NLP-110 (EXTERIOR)
 DRIP EDGE: PEMKO 346C RAIN DRIP 40" (EXTERIOR)

GROUP 3 - (SINGLE EXIT DOORS)
 -1 1/2" PAIR HINGES: MCKINNEY MP 79, 4 1/2" X 4 1/2", 26D
 -EXIT DEVICE - VON DUPRIN GUARD-X 2670-US28
 -CYLINDER CORE: FALCON C207-SC-C26D
 -CONST CORE: FALCON C607 CCA 7-PIN
 -HOUSING: FALCON C953 (CKVY -PN) 626
 -CLOSER: FALCON SCT1 RW / PA-689 (MTD. INSIDE)
 -KICKPLATE: ROCKWOOD K1050 - 10X34 US38D
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 THRESHOLD: PEMKO 171-A MILL 36"
 DOOR PULL: ROCKWOOD 131-26D (MTD. INSIDE)
 LATCH GUARD: DON-JO NLP-110 (EXTERIOR)
 DRIP EDGE: PEMKO 346C RAIN DRIP 40" (EXTERIOR)
 DOOR VIEWER: DOORSCOPE DS2000 AL.S

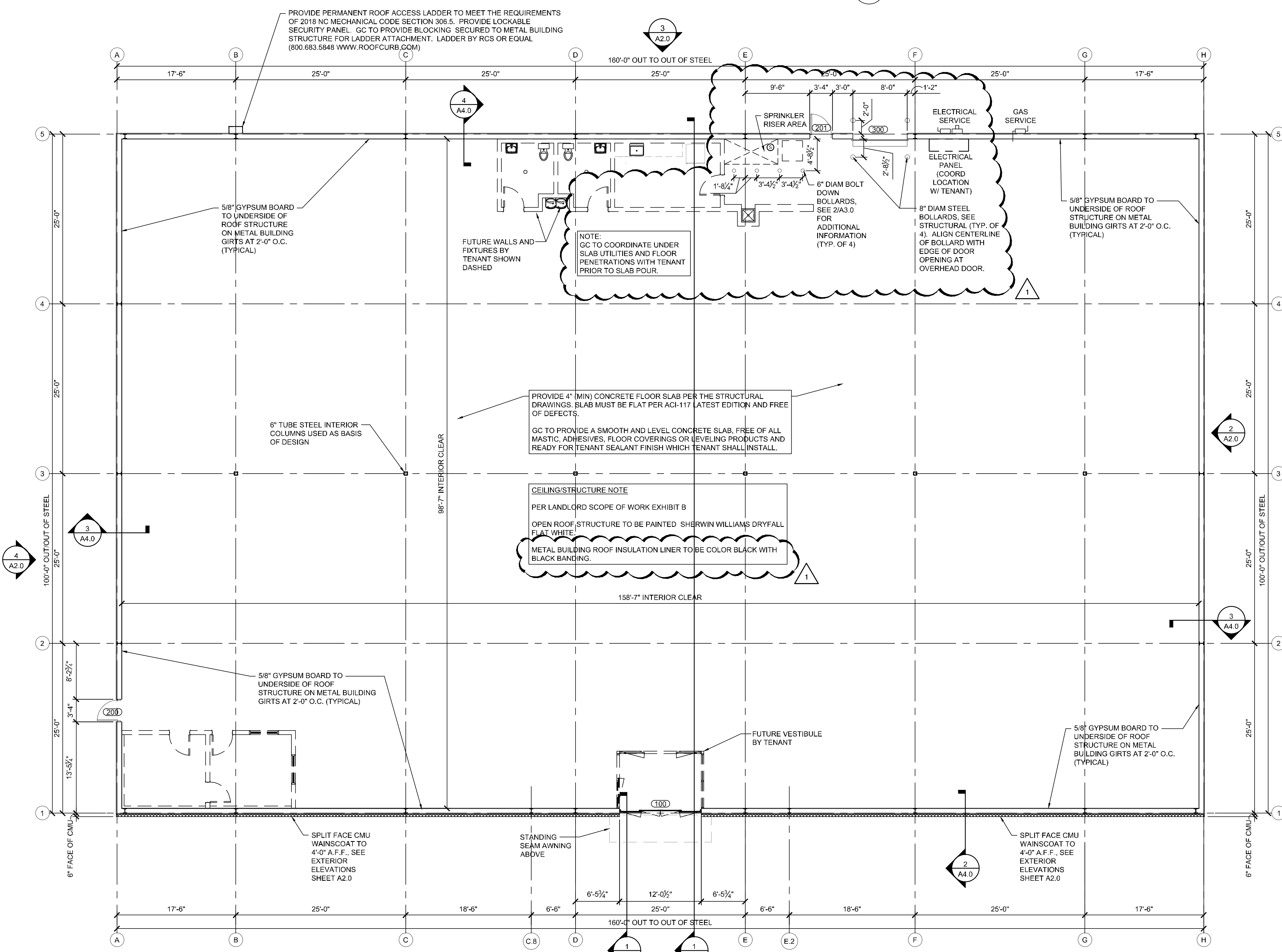
GROUP 4 - (OVERHEAD DOOR)
 DOOR PANELS: 2 3/4" INSULATED STEEL INTERLOCKING FLAT SLAT CURTAIN W/ ENDOCKS @ BOTH ENDS BY VENDOR SCHLAGE KS41F1200
 CYLINDER CORE: FALCON C649 (HCK. 1H4-626, SCHLAGE 80-035-GRN, 24 GA MIN. GALVANIZED STEEL BY VENDOR, HAND CHAIN BY VENDOR
 LOCKING: CHAIN KEEPER (BY VENDOR) WITH PADLOCK (SUPPLIED BY GC)
 BOTTOM BAR: EXTRUDED ALUMINUM BAR BY VENDOR
 WEATHER SEALS: BY VENDOR

DOOR SCHEDULE NOTES:

- ALL NEW DOORS AND HARDWARE SHALL COMPLY WITH CURRENT ADA REGULATIONS. ALL OPERABLE PARTS ON DOORS SHALL BE EASY TO GRASP WITH ONE HAND AND NOT REQUIRE GRASPING, PINCHING OR TWISTING OF THE WRIST TO OPERATE.
- ALL EXTERIOR DOORS TO BE 20 GA. MINIMUM. EXTERIOR DOOR FRAMES TO BE ALL WELDED 16 GA. MINIMUM.
- ALL DOOR HARDWARE SHALL BE LEVER TYPE OR PANIC HARDWARE.
- EXTERIOR DOORS SHALL BE OPERABLE FROM THE INSIDE WITHOUT THE USE OF A KEY, SPECIAL KNOWLEDGE OR EFFORT.
- OPENINGS SHALL BE A MINIMUM OF 32" WIDE WHEN DOOR IS AT A RIGHT ANGLE TO CLOSED POSITION.
- BOTTOM 10" OF ALL DOORS SHALL HAVE A SMOOTH, UNINTERRUPTED SURFACE FOR OPENING BY WHEELCHAIR FOOT REST.
- MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED 5 LBS. FOR EXTERIOR DOORS, AND 3 LBS FOR INTERIOR DOORS WITH A PUSH OR PULL EFFORT BEING APPLIED AT RIGHT ANGLES TO HINGED DOOR AND AT THE CENTER PLANE OF SLIDING OR FOLDING DOORS. COMPENSATING DEVICES OR AUTOMATIC DOOR OPERATIONS MAY BE UTILIZED TO MEET THE ABOVE STANDARDS, WHEN FIRE DOORS ARE REQUIRED. THE MAXIMUM EFFORT TO OPERATE THE DOORWAY MAY BE INCREASED NOT TO EXCEED 14 LBS. W/ CLOSURE.
- ALL HARDWARE LISTED TO BE SUPPLIED BY LISTED MANUFACTURER OR EQUAL.
- ALL DOOR HARDWARE TO BE BRUSHED CHROME FINISH.
- EXTERIOR DOORS & FRAMES, EXCLUDING OVERHEAD DOOR, TO BE PRIMED @ PAINTED TO MATCH THE ADJACENT FINISH ON THE EXTERIOR. 1 COAT PRIMER & 2 COATS PAINT. INTERIOR SHALL BE PRIMED AND PAINTED. 1 COAT PRIMER & 2 COATS PAINT, INDUSTRIAL ENAMEL SHERWIN WILLIAMS SW7667 CITYSCAPE (SEMI-GLOSS).
- BI-PARTING DOOR AND THRESHOLDS TO BE PROVIDED AND INSTALLED BY DOOR VENDOR.
- PROVIDE 8" HIGH WHITE VINYL NUMBERS STATING STREET ADDRESS IN HELVETICA FONT STYLE ON TRANSOM AT MAIN ENTRY DOOR.
- G.C. TO PROVIDE READILY VISIBLE SIGNAGE POSTED ON THE EGRESS SIDE OR ADJ. TO ALL EGRESS DOORS STATING: THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED.
- THRESHOLDS AT EGRESS DOORS SHALL BE NO MORE THAN 1/2" (MAX) HEIGHT AFF.



2 DOOR TYPES
SCALE: 1/4"=1'-0"



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

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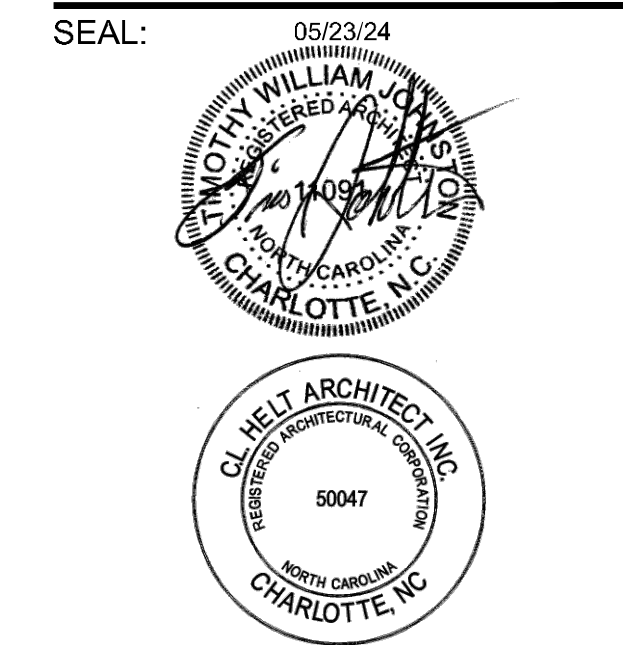
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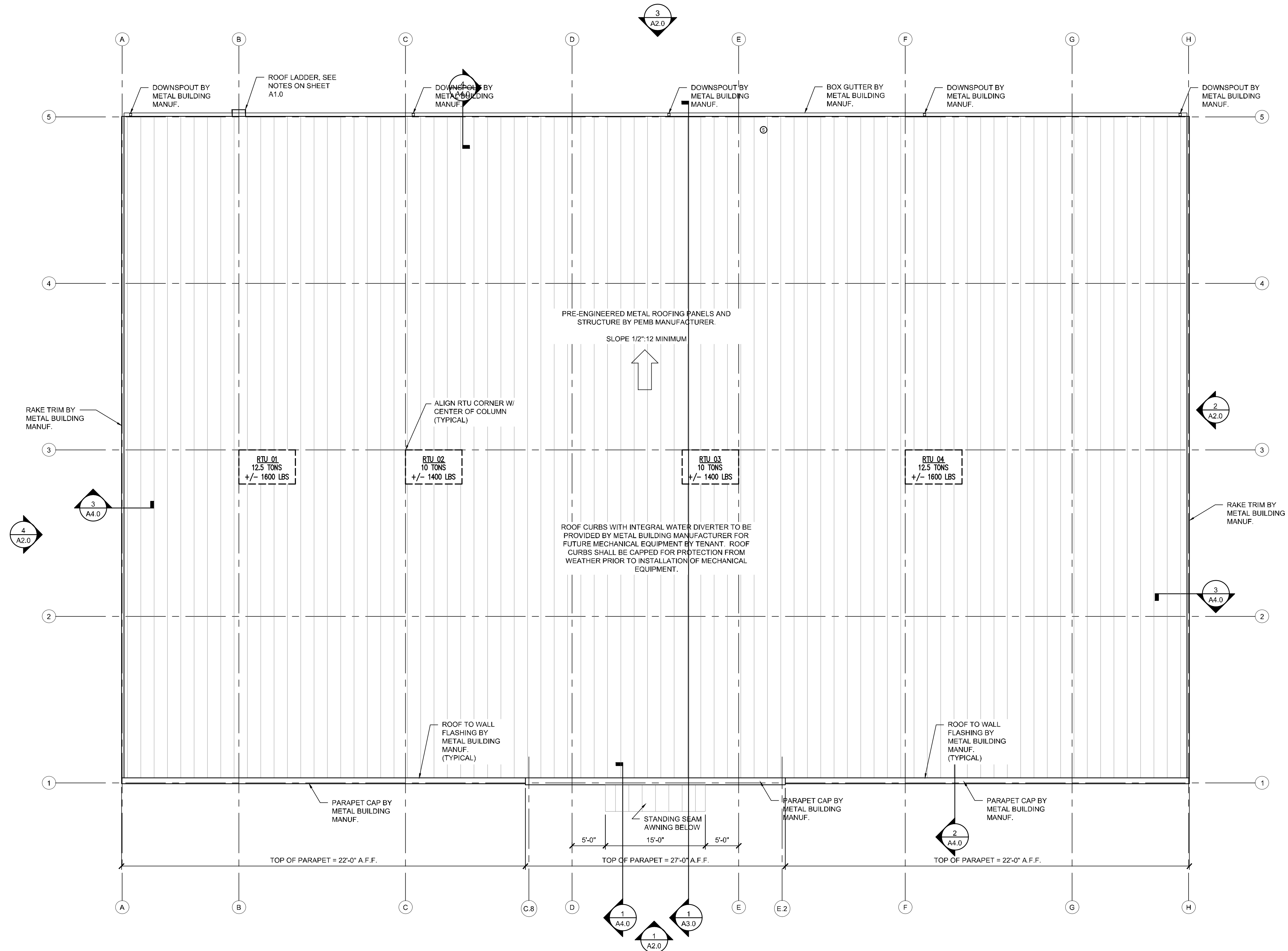
DATE: 04/19/24

SHEET TITLE:
FLOOR PLAN

SHEET NUMBER:
A1.0

DOWNSPOUT & GUTTER CALCULATIONS:

DOWNSPOUTS SPACING TO BE DETERMINED BY METAL BUILDING ENGINEER, BASED ON LOCAL TYPICAL AND MAXIMUM RAINFALL AMOUNTS, WITH DOWNSPOUTS PLACED EQUALLY APART TYP. NO DOWNSPOUT MAY BE PLACED WITHIN 12" OF A DOOR FRAME.



1
A1.1 ROOF PLAN
SCALE 1/8" = 1'-0"

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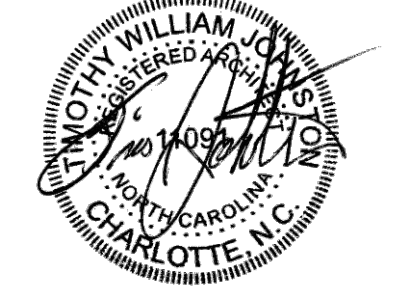
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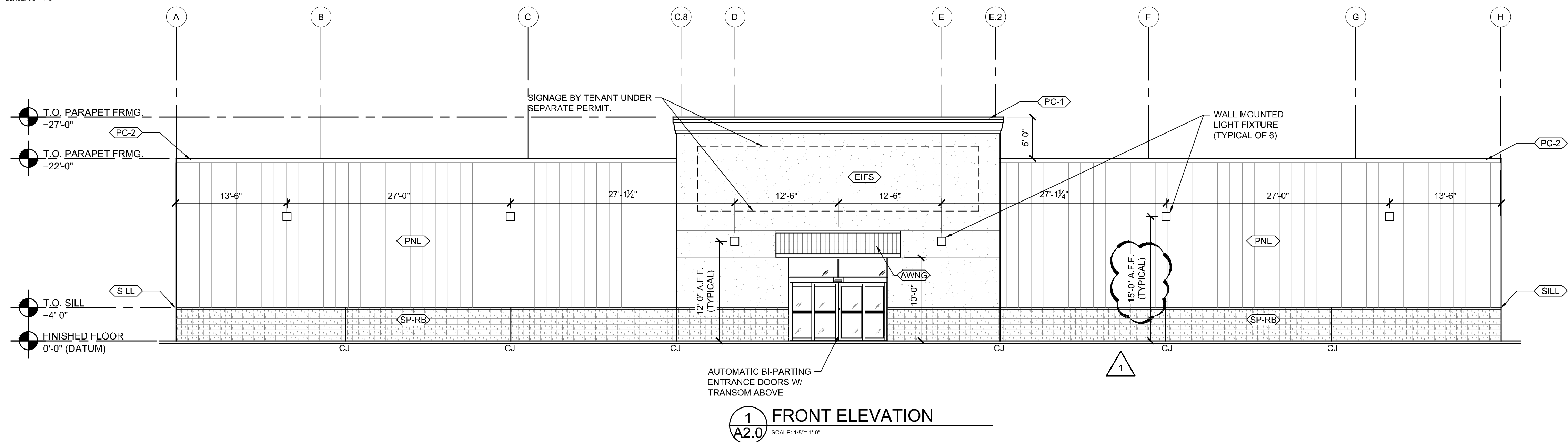
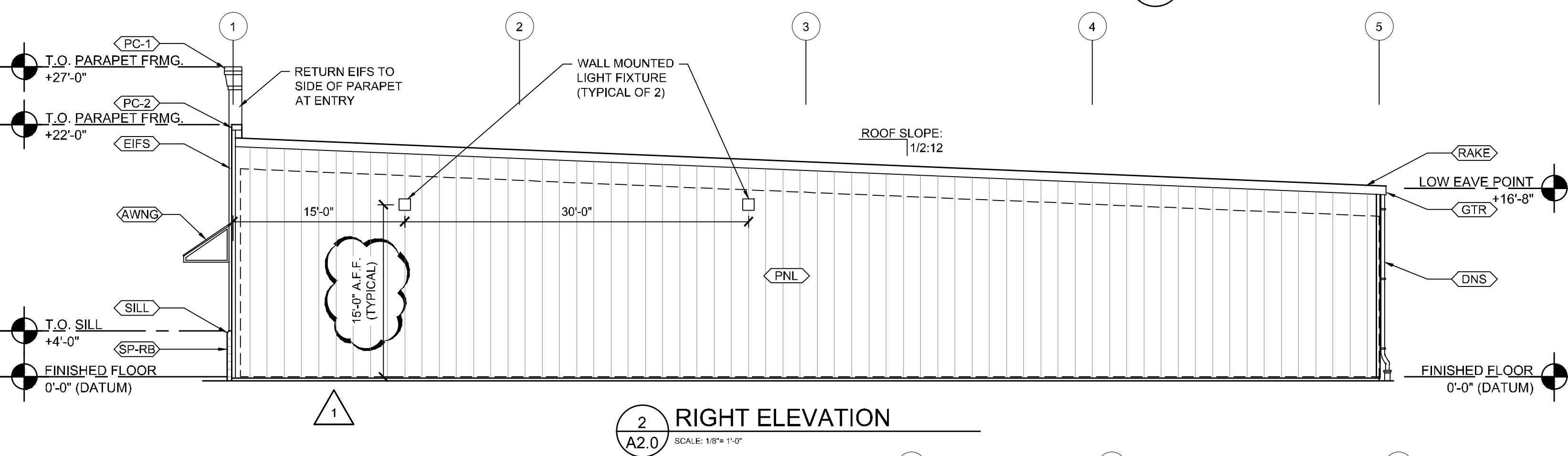
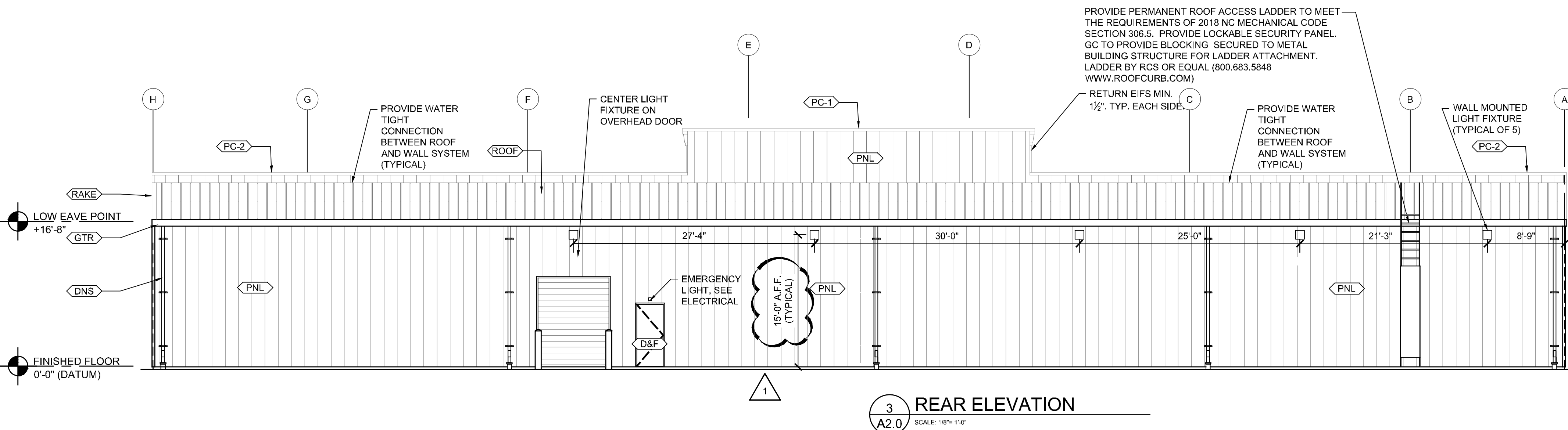
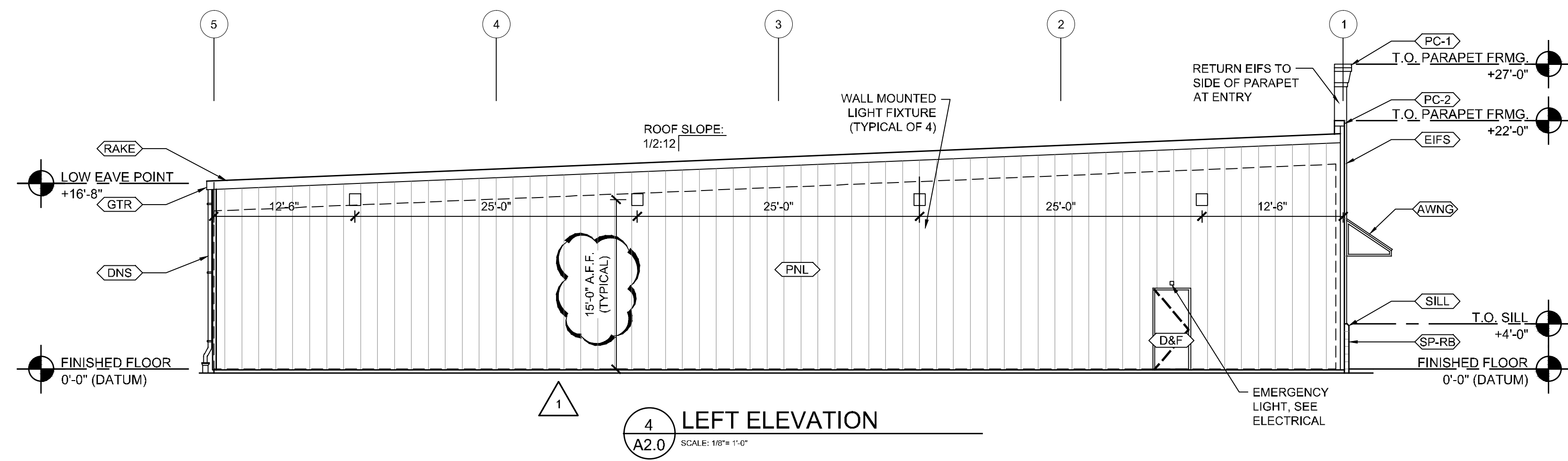
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DATE: 04/19/24

SHEET TITLE:
ROOF PLAN

SHEET NUMBER:
A1.1



ELEVATION LEGEND		
KEYNOTE	DESCRIPTION	COLOR
<SP-RB>	SPLIT FACED CMU VENEER - RUNNING BOND	EQUAL TO SHERWIN WILLIAMS - SW7067 CITYSCAPE
<EIFS>	EIFS - COLOR 1 (FINISH - PRODUCT STO 310)	EQUAL TO SHERWIN WILLIAMS - SW4081 'SAFETY RED'
<PNL1>	26 GAUGE MBCI PBR METAL WALL PANEL (PROVIDED BY METAL BUILDING MANF.)	MBCI SIGNATURE 200 - 'ASH GRAY'
<RF-1>	24 GAUGE DOUBLE LOCK 3" METAL ROOF SYSTEM (PROVIDED BY METAL BUILDING MANF.)	MBCI SIGNATURE 200 - 'GALVALUME'
<SILL>	SPLIT FACED CMU SILL BLOCK	EQUAL TO SHERWIN WILLIAMS - SW7067 CITYSCAPE
<RAKE>	RAKE TRIM (PROVIDED BY METAL BUILDING MANF.)	MBCI SIGNATURE 200 - 'CHARCOAL GRAY'
<PC-1>	24 GAUGE KYNAR COATED METAL COPING (PROVIDED BY METAL BUILDING MANF.)	EQUAL TO SHERWIN WILLIAMS - SW4081 'SAFETY RED'
<PC-2>	24 GAUGE KYNAR COATED METAL COPING (PROVIDED BY METAL BUILDING MANF.)	MBCI SIGNATURE 200 - 'CHARCOAL GRAY'
<DNS>	PRE-FINISHED METAL DOWNSPOUT (SIZED & PROVIDED BY METAL BUILDING MANF.)	MBCI SIGNATURE 200 - 'ASH GRAY'
<GTR>	PRE-FINISHED METAL GUTTER (SIZED & PROVIDED BY METAL BUILDING MANF.)	MBCI SIGNATURE 200 - 'ASH GRAY'
<AWNG>	STANDING SEAM METAL AWNING	EQUAL TO MBCI SIGNATURE 200 - 'COBALT BLUE'
<D&F>	N/A	STEEL DOOR & HOLLOW METAL FRAME
PAINTING NOTES: CMU - (1) COAT OF S-W LOXON BLOCK SURFACER A24W200 (OR EQUAL), COATING, A5-400 SERIES (OR EQUAL) METAL - (2) COATS OF S-W METALTEX ACRYLIC SEMI-GLOSS (B42 SERIES)		
A	STOREFRONT TYPE (REFER TO SHEET A-3.0)	
500	DOOR NUMBER (REFER TO SHEET A-1.0)	
CJ	MASONRY CONTROL JOINT - RAKE & CAULK JOINT (MATCH BLOCK COLOR)	

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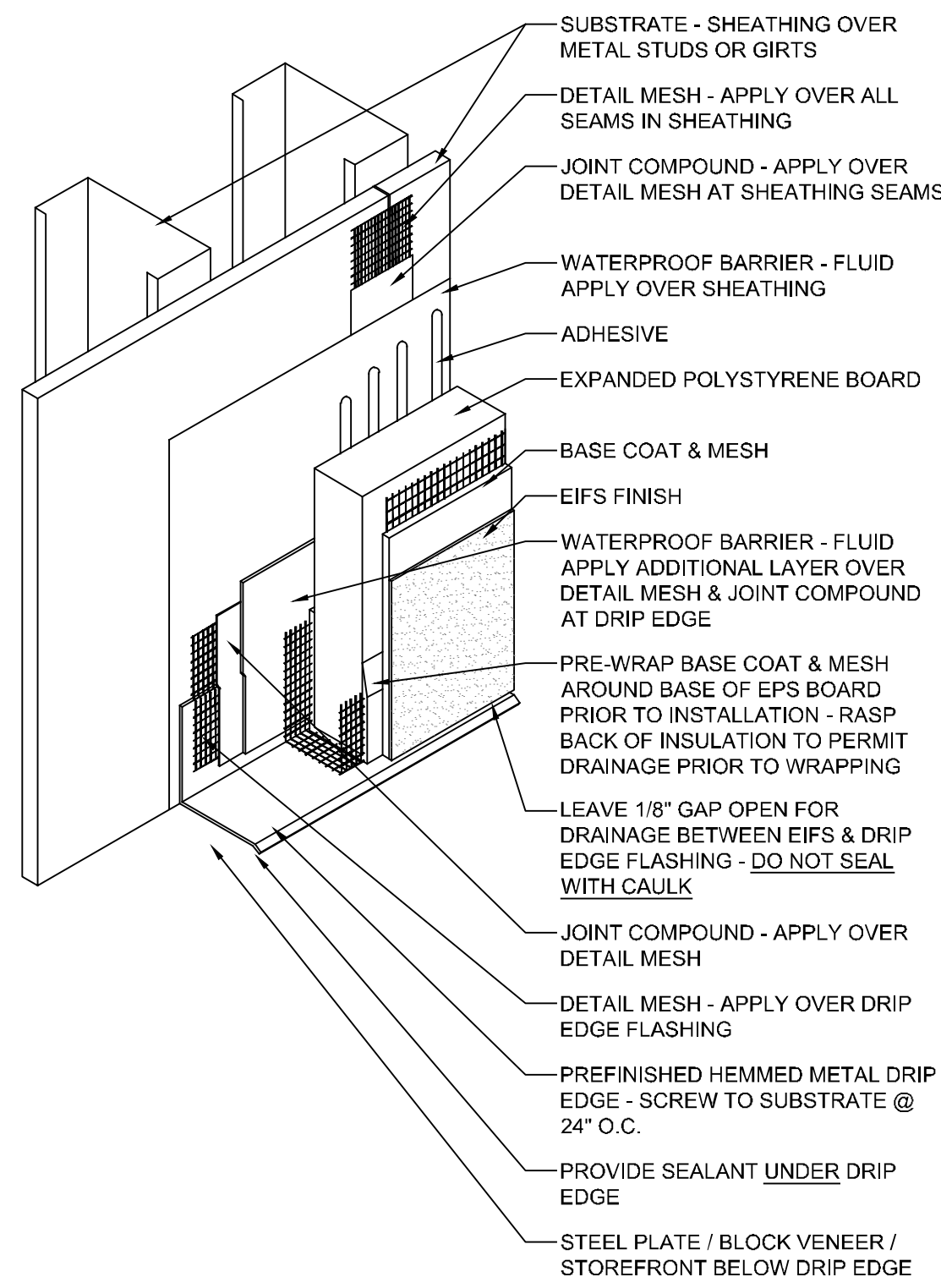
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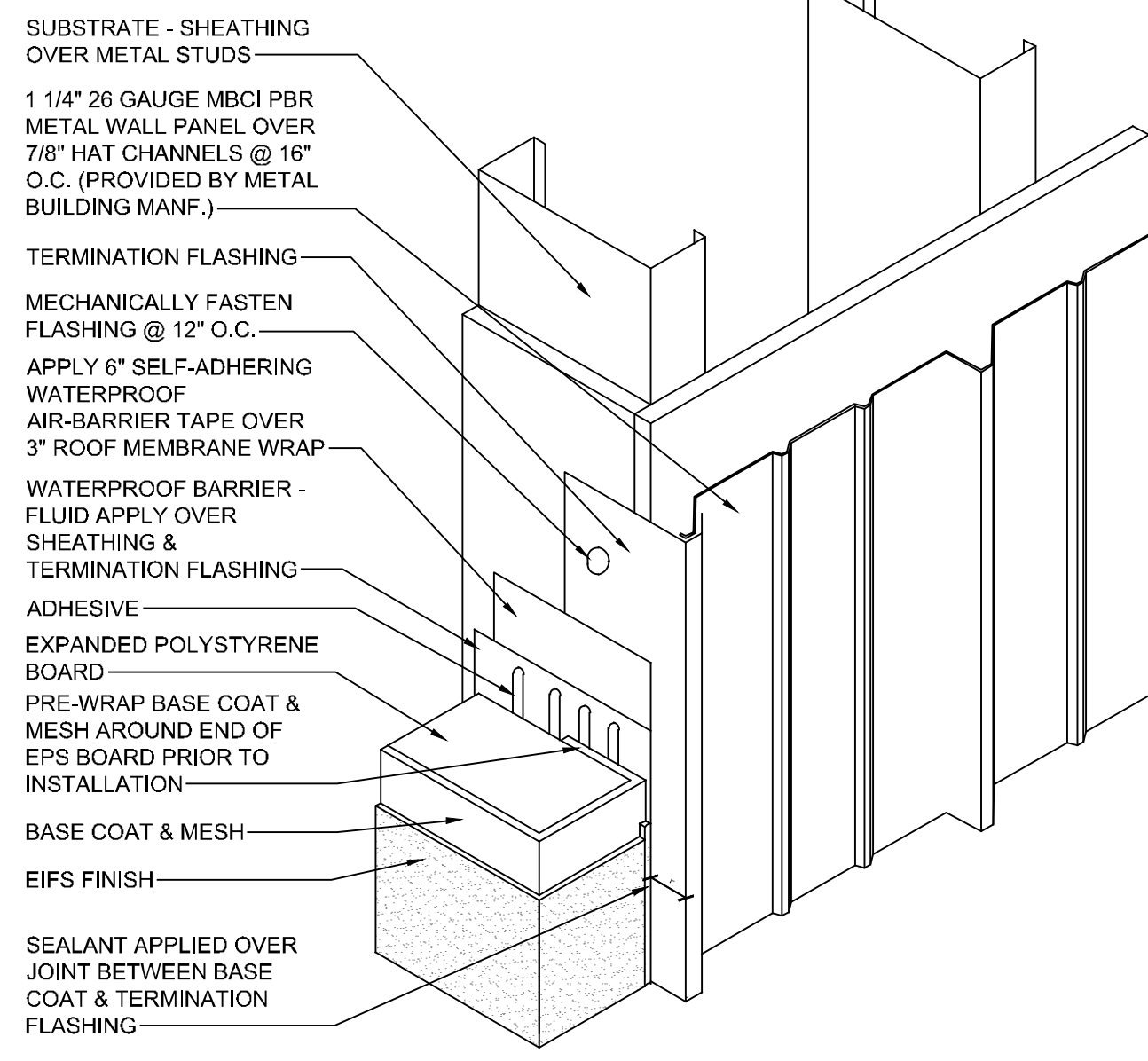
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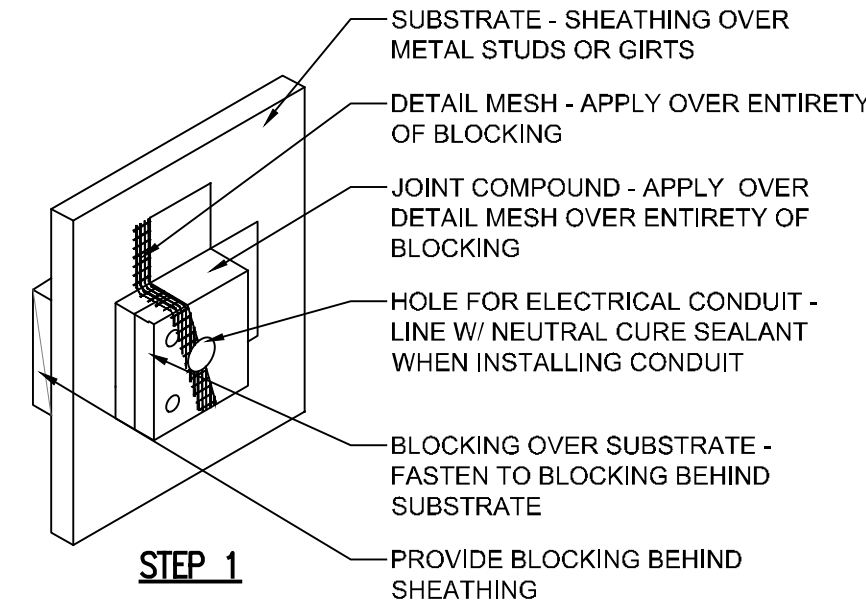
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A2.0



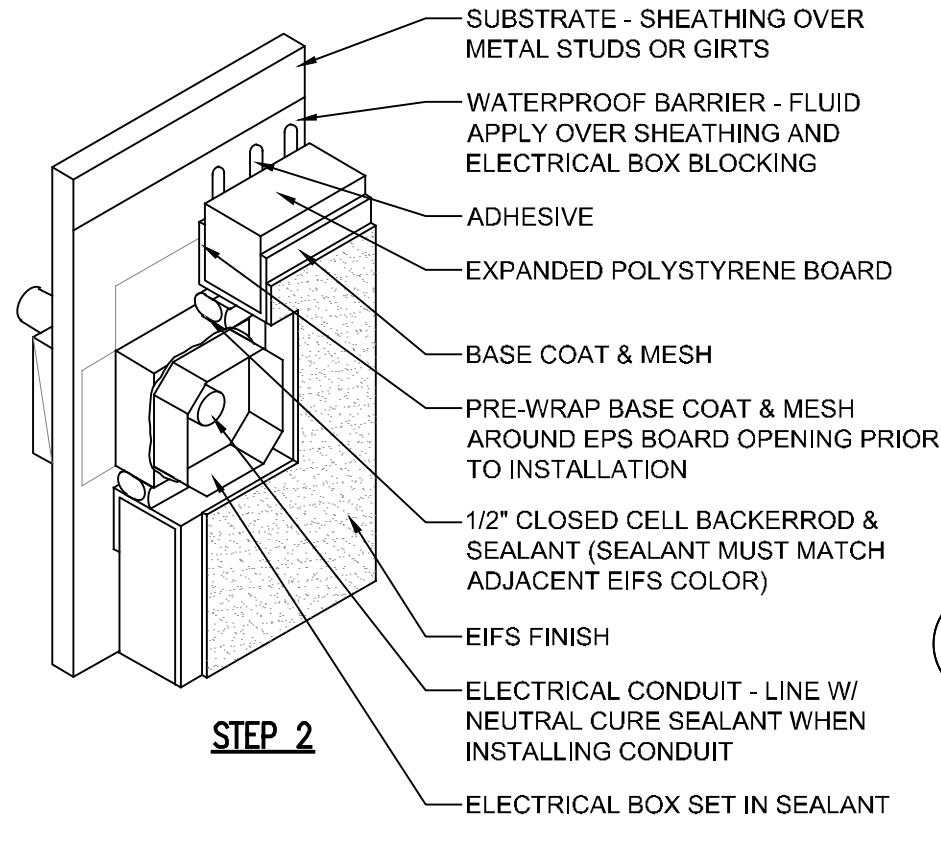
1 EIFS DRIP EDGE / ATTACHMENT
 SCALE: NOT TO SCALE



2 EIFS TERMINATION DETAIL
 NOT TO SCALE

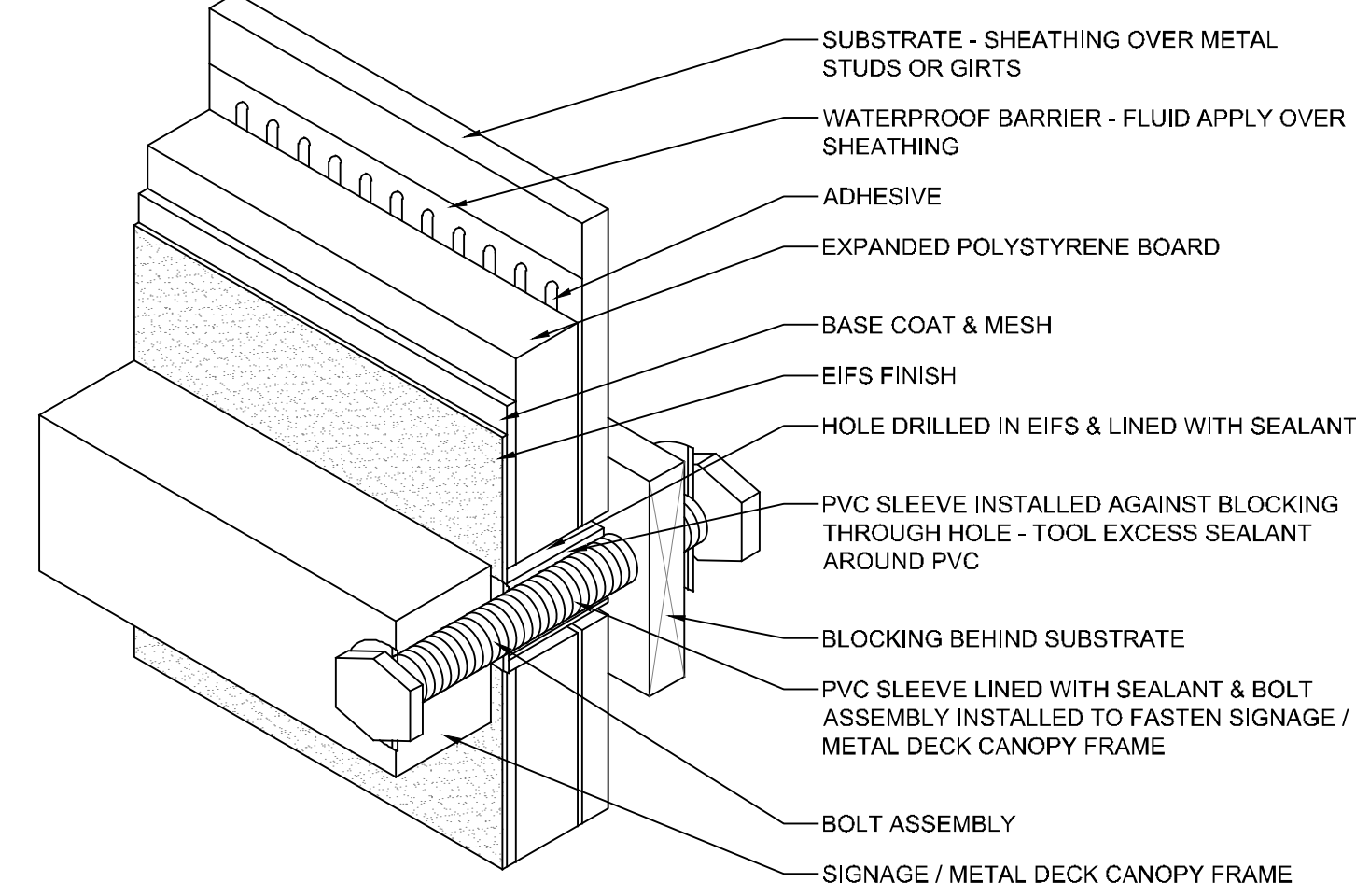


STEP 1

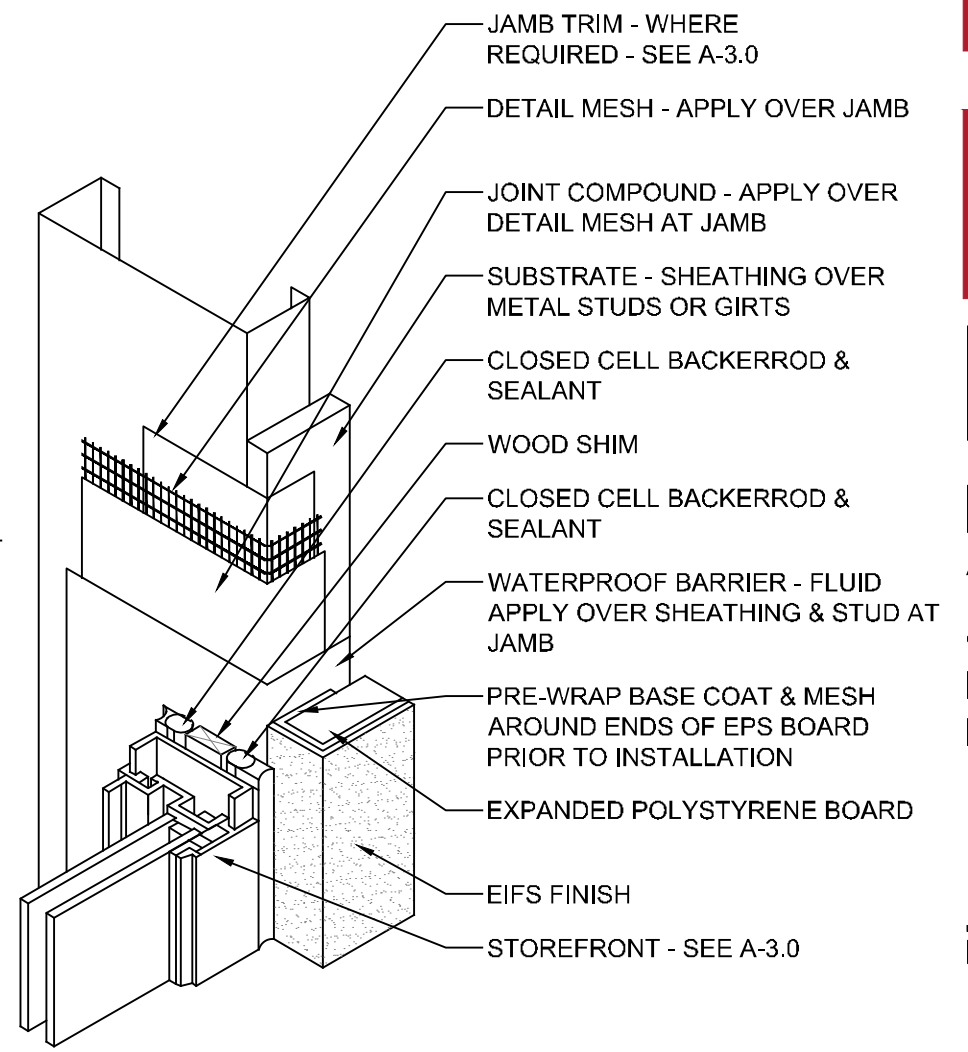


STEP 2

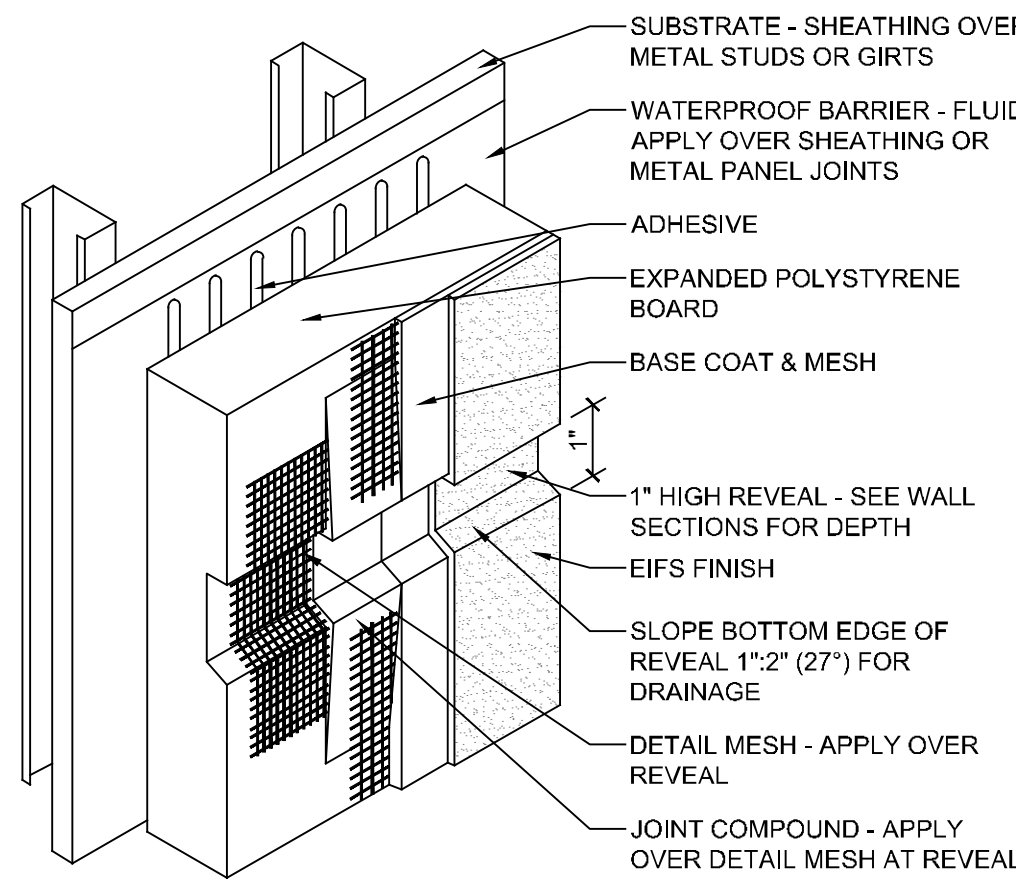
3 EIFS ELECTRICAL BOX DETAIL
 SCALE: NOT TO SCALE



4 EIFS SIGN/METAL DECK CANOPY ANCHORAGE DETAIL
 SCALE: NOT TO SCALE



5 EIFS JAMB DETAIL
 SCALE: NOT TO SCALE



6 EIFS REVEAL DETAIL
 SCALE: NOT TO SCALE

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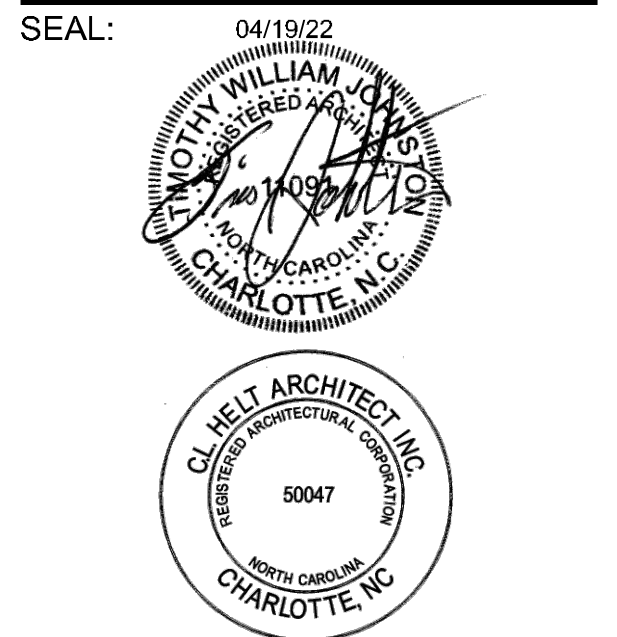
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 EIFS DETAILS

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A2.1

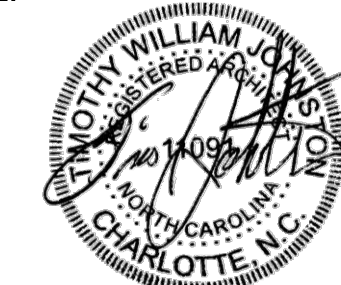
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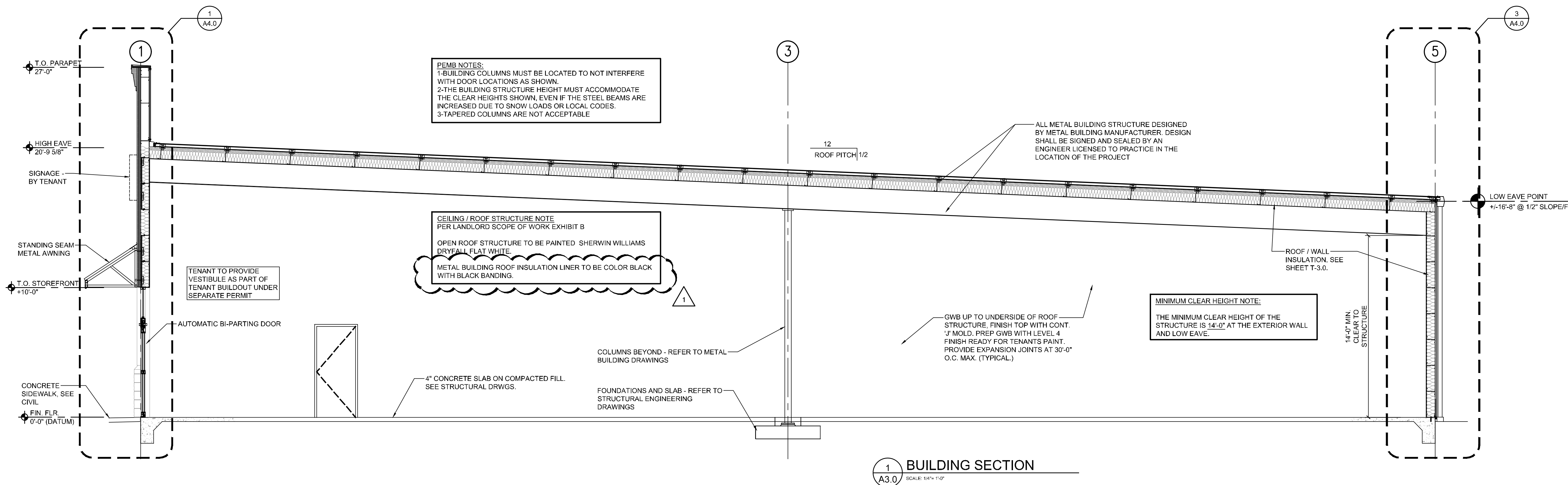
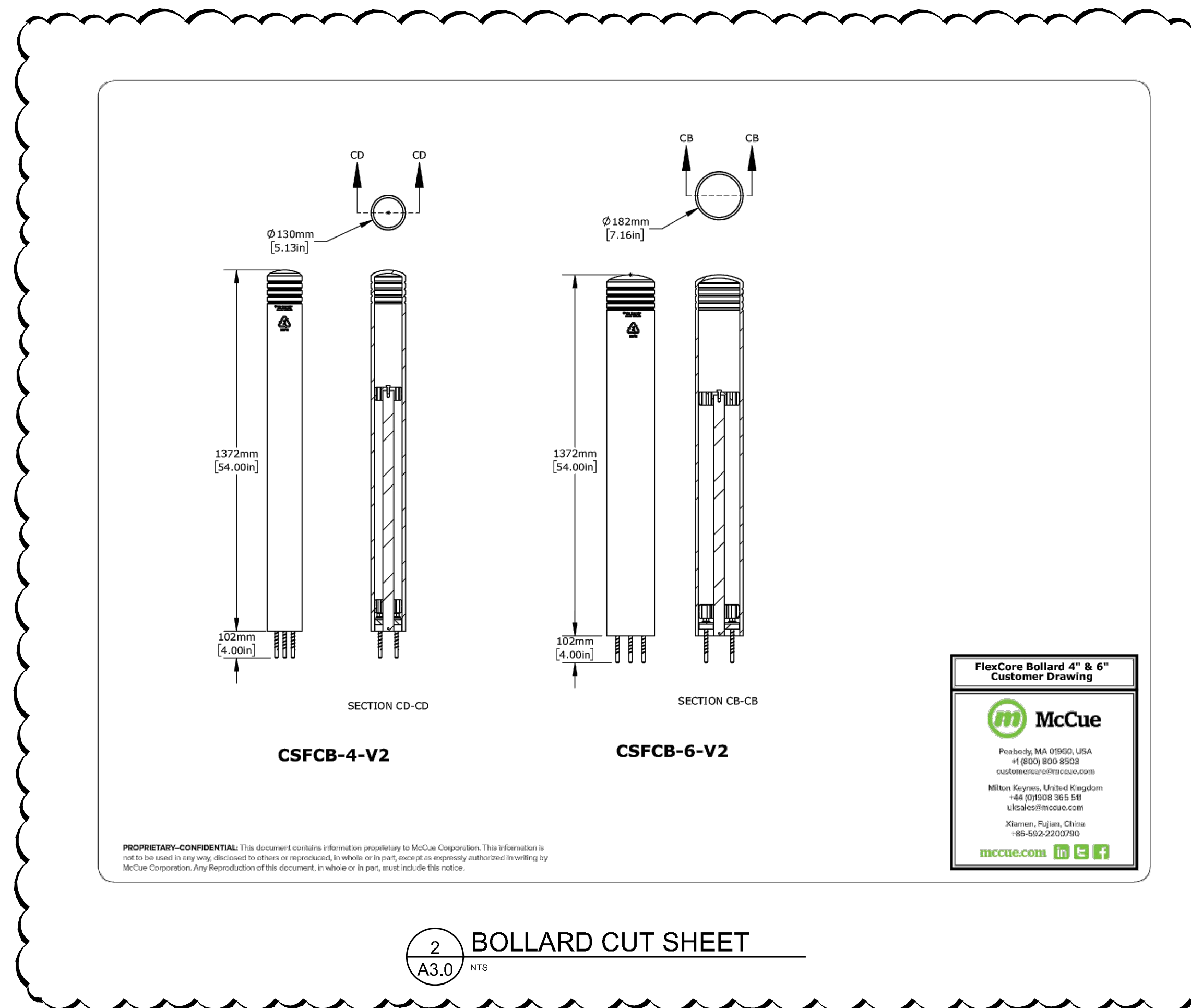
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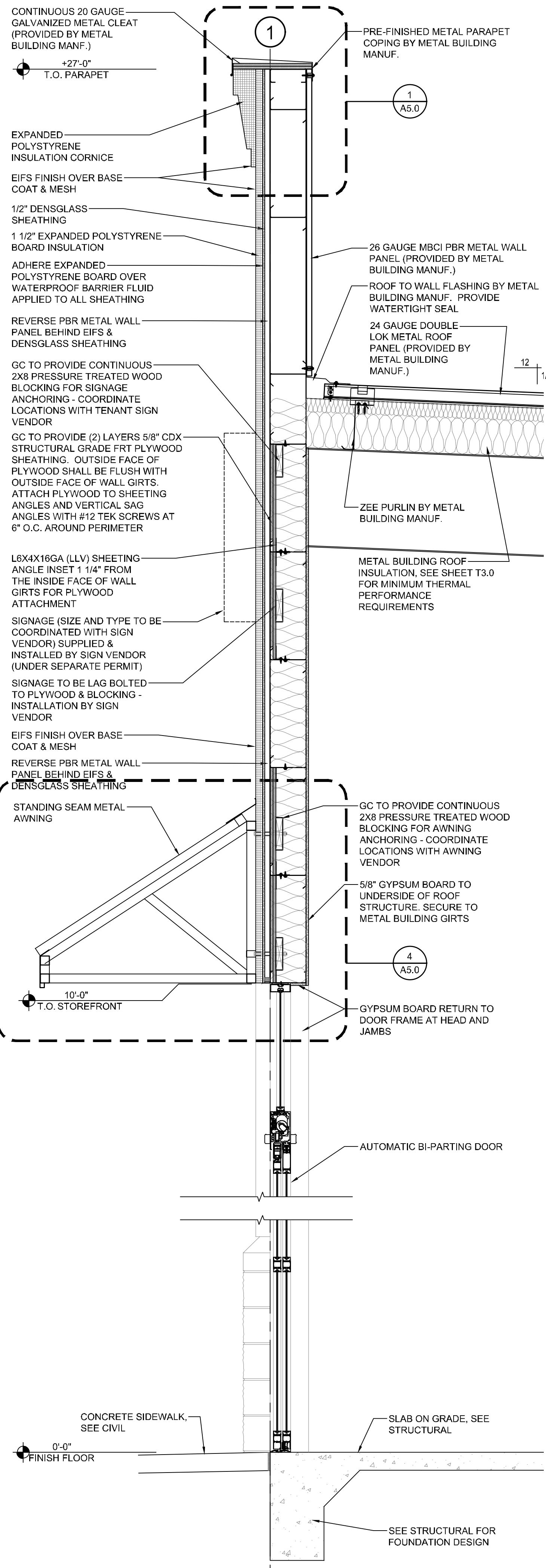
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SHEET TITLE:
BUILDING SECTIONS

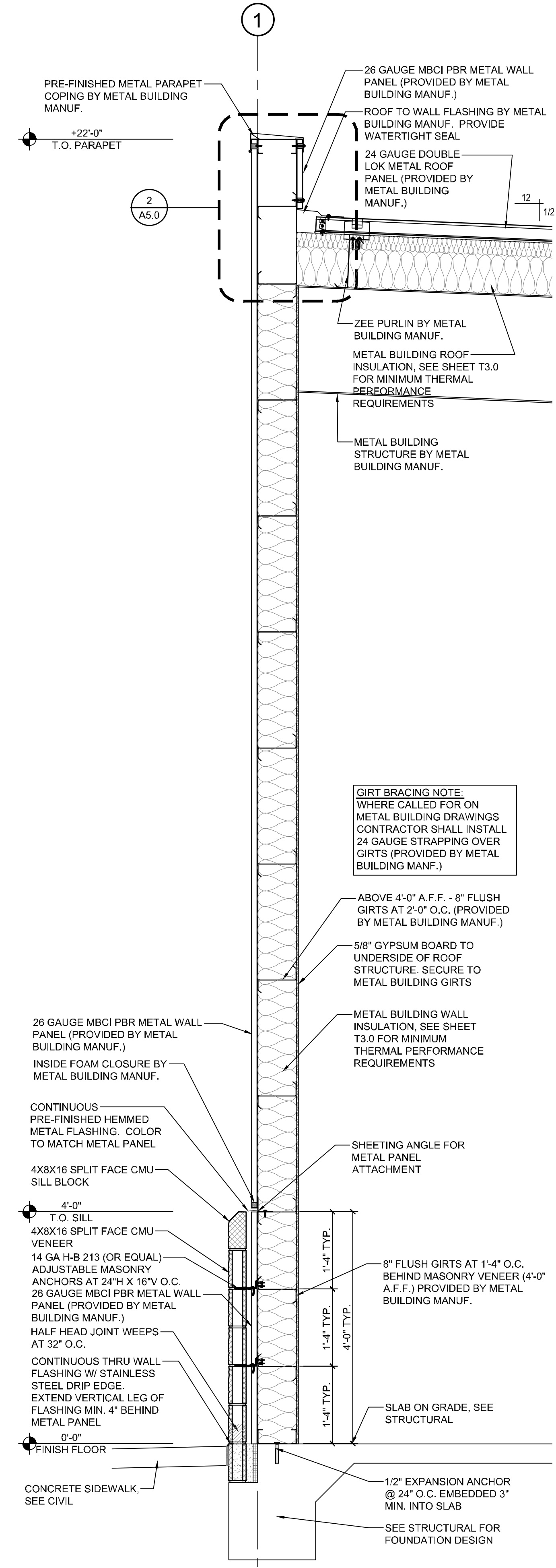
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A3.0

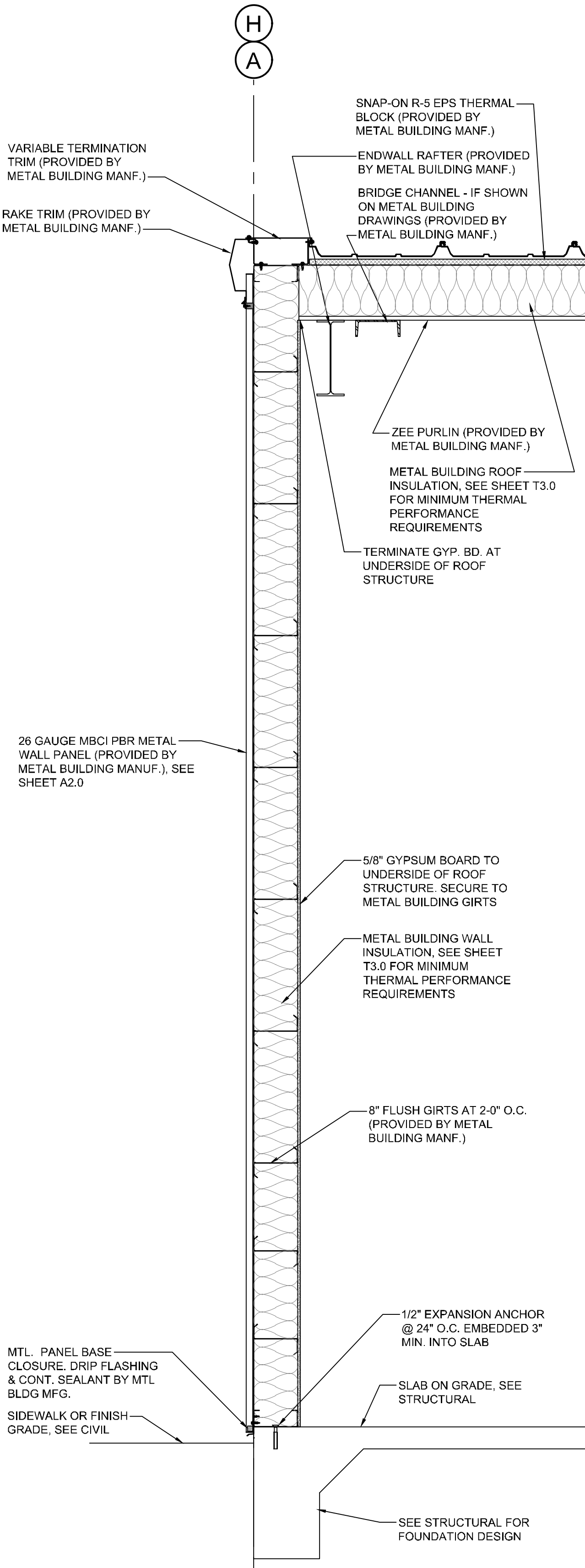




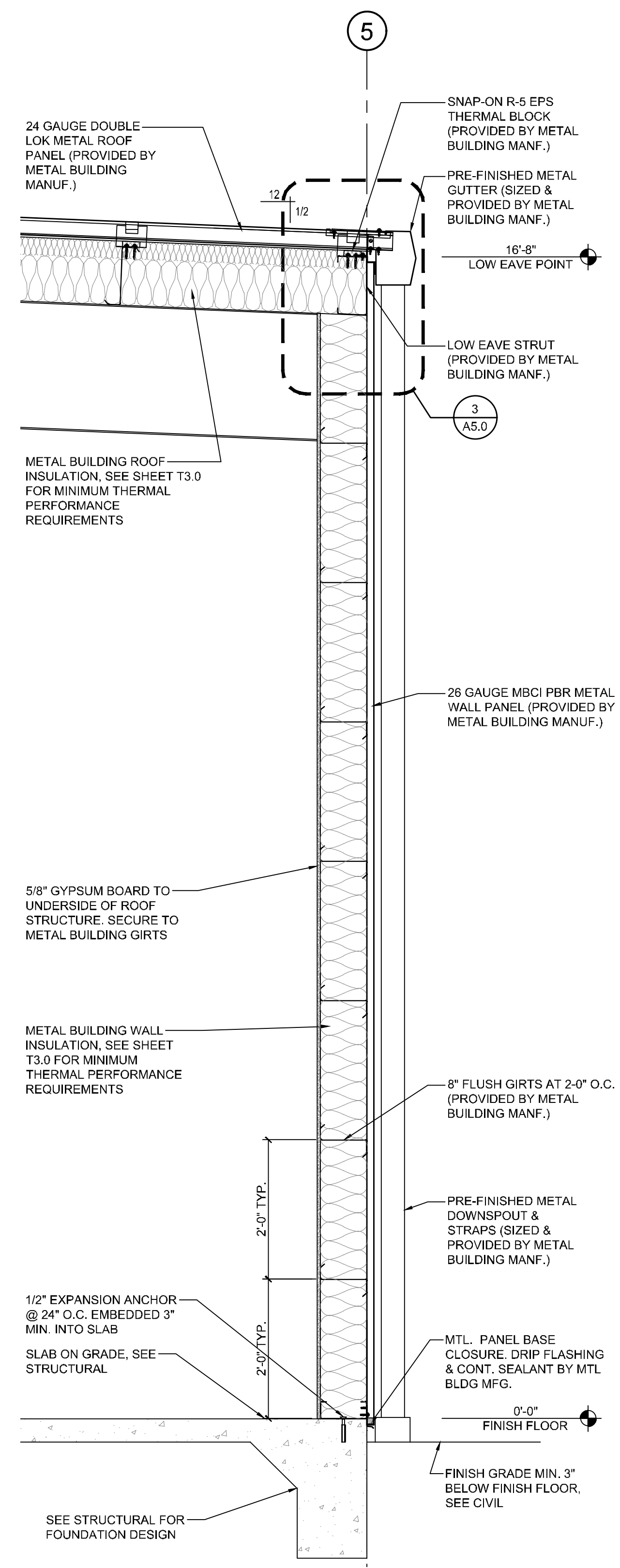
1 WALL SECTION
SCALE: 1/4" = 1'-0"



2 WALL SECTION
SCALE: 1/4" = 1'-0"



3 WALL SECTION
SCALE: 1/4" = 1'-0"



4 WALL SECTION
SCALE: 1/4" = 1'-0"

MASONRY VENEER FLASHING & WEEPS
LOCATE NEOPRENE THRU-WALL FLASHING AT FIRST BED JOINT BELOW FINISH FLOOR. PROVIDE HALF HEAD JOINT WEEPS @ 32" O.C. IN HEAD JOINTS AT THRU WALL FLASHING.
WHEN TOP OF SIDEWALK COVERS BED JOINTS BELOW FINISH FLOOR THEN THRU WALL FLASHING IS TO BE LOCATED AT FIRST BED JOINT ABOVE SIDEWALK. PROVIDE HALF HEAD JOINT WEEPS @ 32" O.C. IN HEAD JOINTS AT THRU WALL FLASHING. GROUT FILL VOIDS, AIR SPACE AND CMU BELOW FLASHING.

SIDEWALK TO BUILDING NOTE:
WHERE SIDEWALKS ABUTT THE BUILDING, PROVIDE A 1/4" ASPHALTIC EXPANSION JOINT WITH BACKERROD & GRAY SEALANT.

CEILING/ROOF STRUCTURE NOTE
PER LANDLORD SCOPE OF WORK EXHIBIT B
OPEN ROOF STRUCTURE TO BE PAINTED SHERWIN WILLIAMS DRYFALL FLAT WHITE. METAL BUILDING ROOF INSULATION LINER TO BE COLOR BLACK WITH BLACK BANDING.

PEMB INSULATION NOTE:
GC IS RESPONSIBLE FOR COORDINATING, PROVIDING AND INSTALLING PEMB WALL AND ROOF INSULATION UNLESS PREVIOUS COORDINATION HAS BEEN MADE WITH METAL BUILDING MANUFACTURER TO PROVIDE AND INSTALL. SEE SHEET T3.0 FOR INSULATION REQUIREMENTS.

FOUNDATION INSULATION:
PROVIDE CONTINUOUS PERIMETER FOUNDATION INSULATION WITH PROTECTION BOARD OR COATING. SEE INSULATION NOTE SHEET T3.0 FOR SPECIFICATIONS. INSULATION SHALL BE PLACED ON THE OUTSIDE OF THE SLAB / FOUNDATION WALL AND SHALL EXTEND FROM THE TOP OF THE SLAB FOR A MINIMUM OF 24" OR TO THE TOP OF THE FOOTING, WHICHEVER IS LESS.

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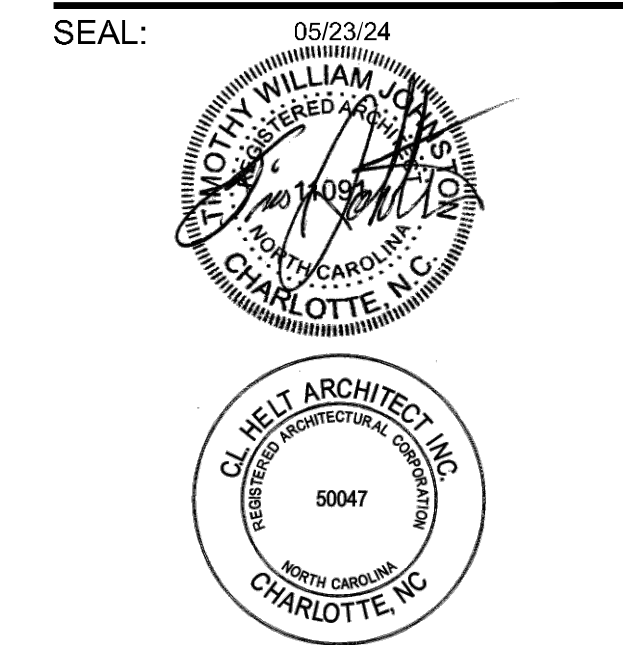
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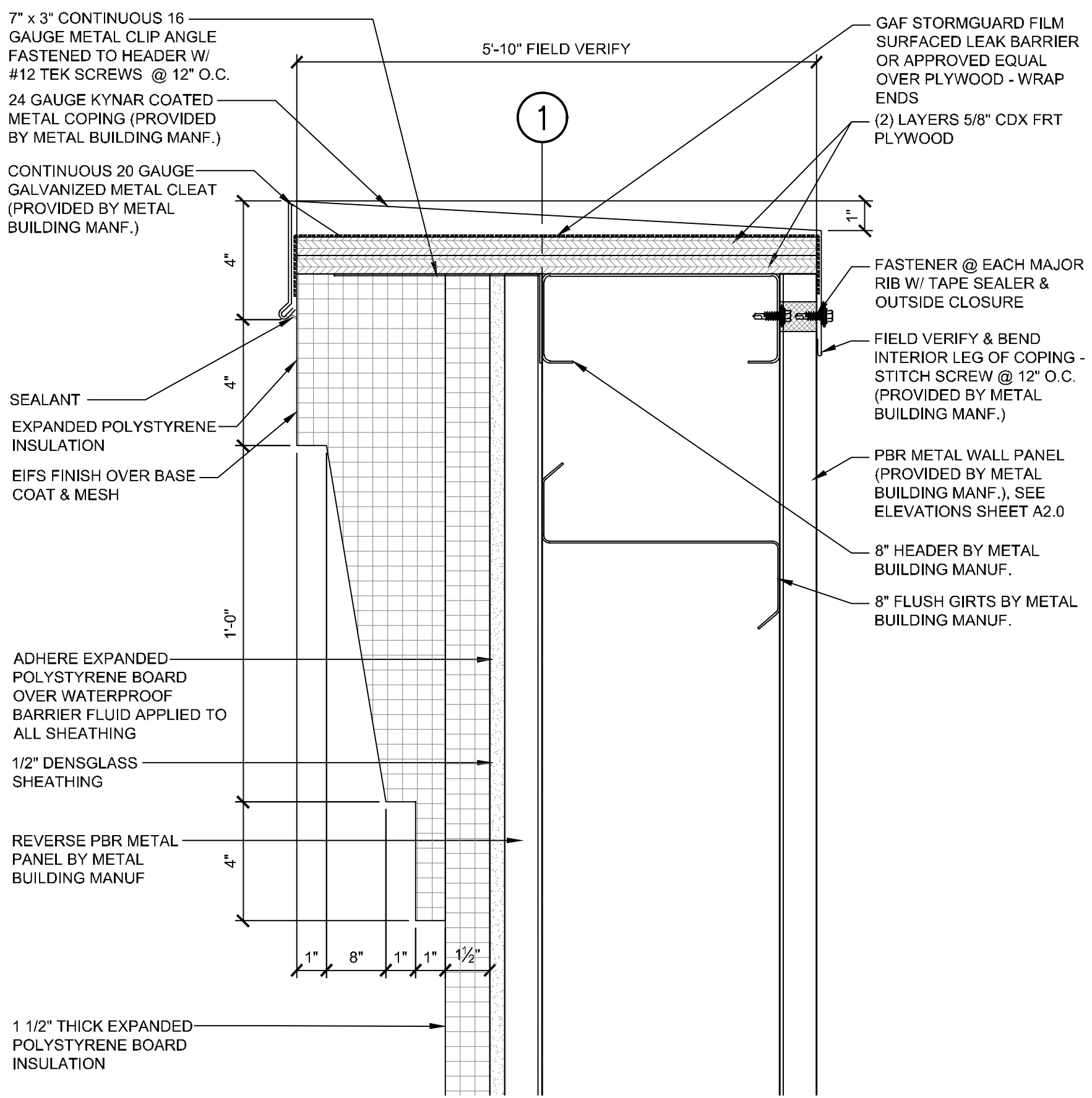
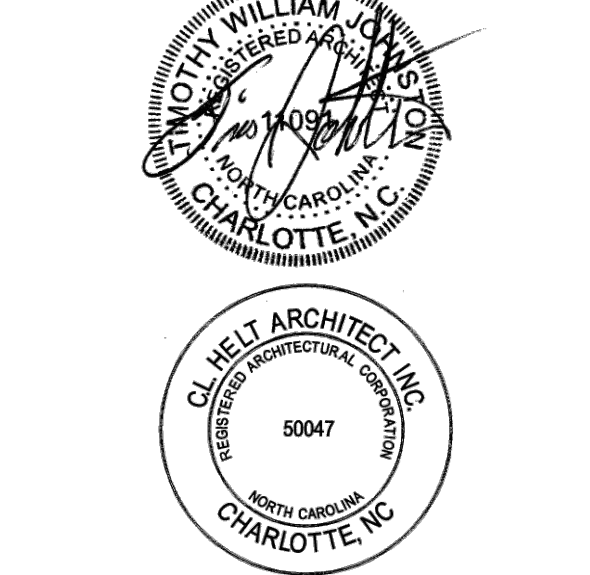
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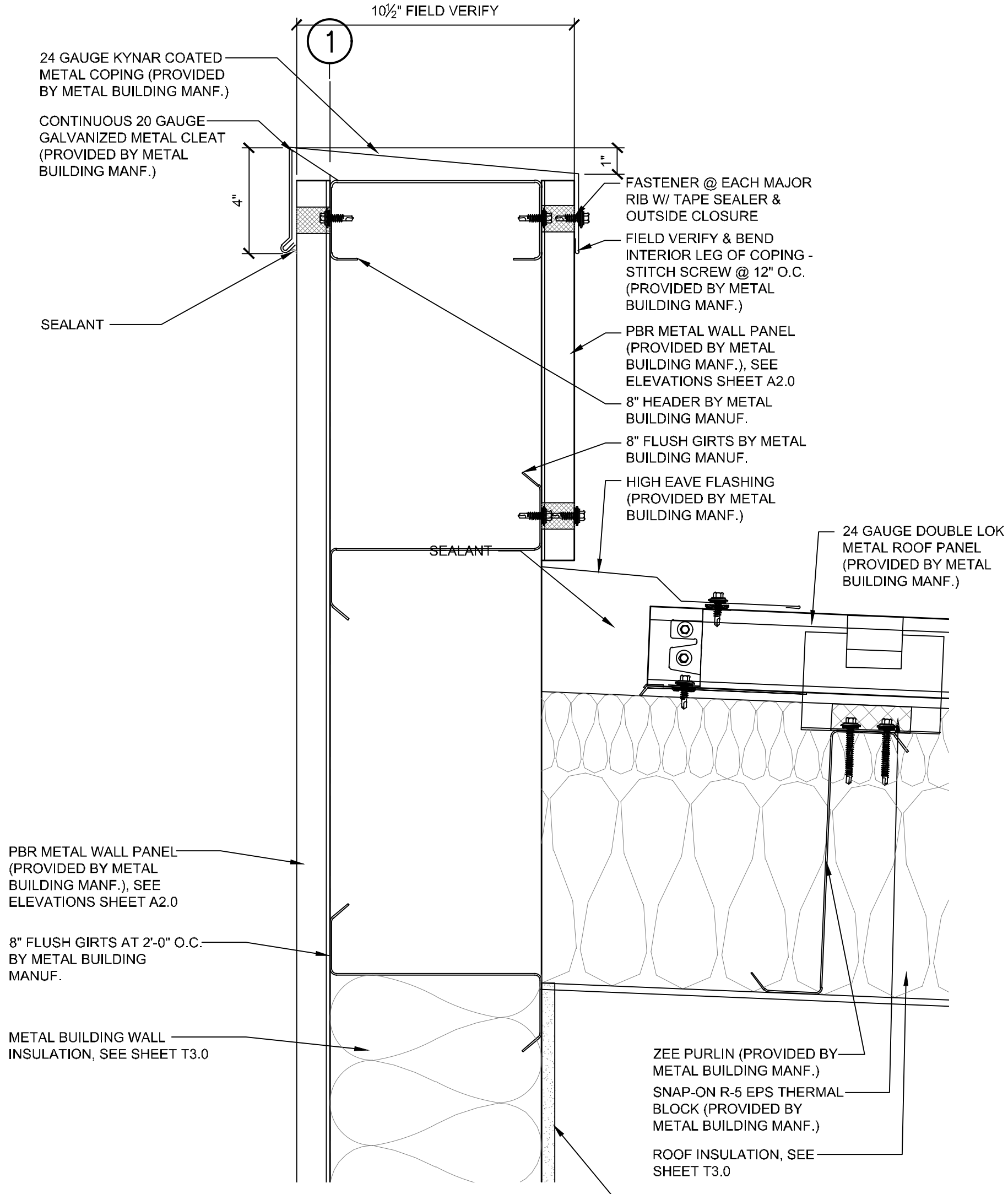
DATE: 04/19/24

SHEET TITLE:
WALL SECTIONS

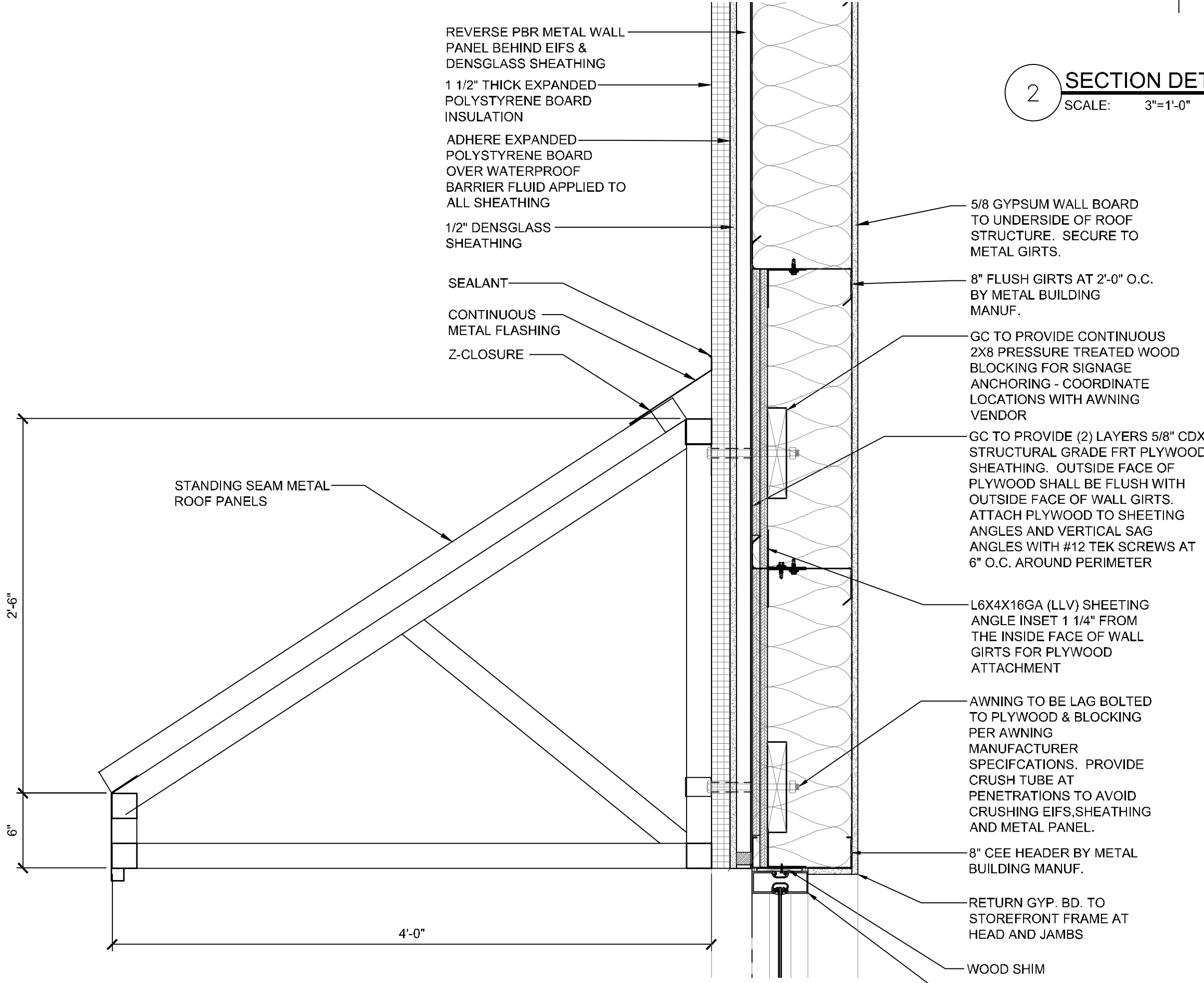
SHEET NUMBER:
A4.0



1 SECTION DETAIL
SCALE: 3"=1'-0"

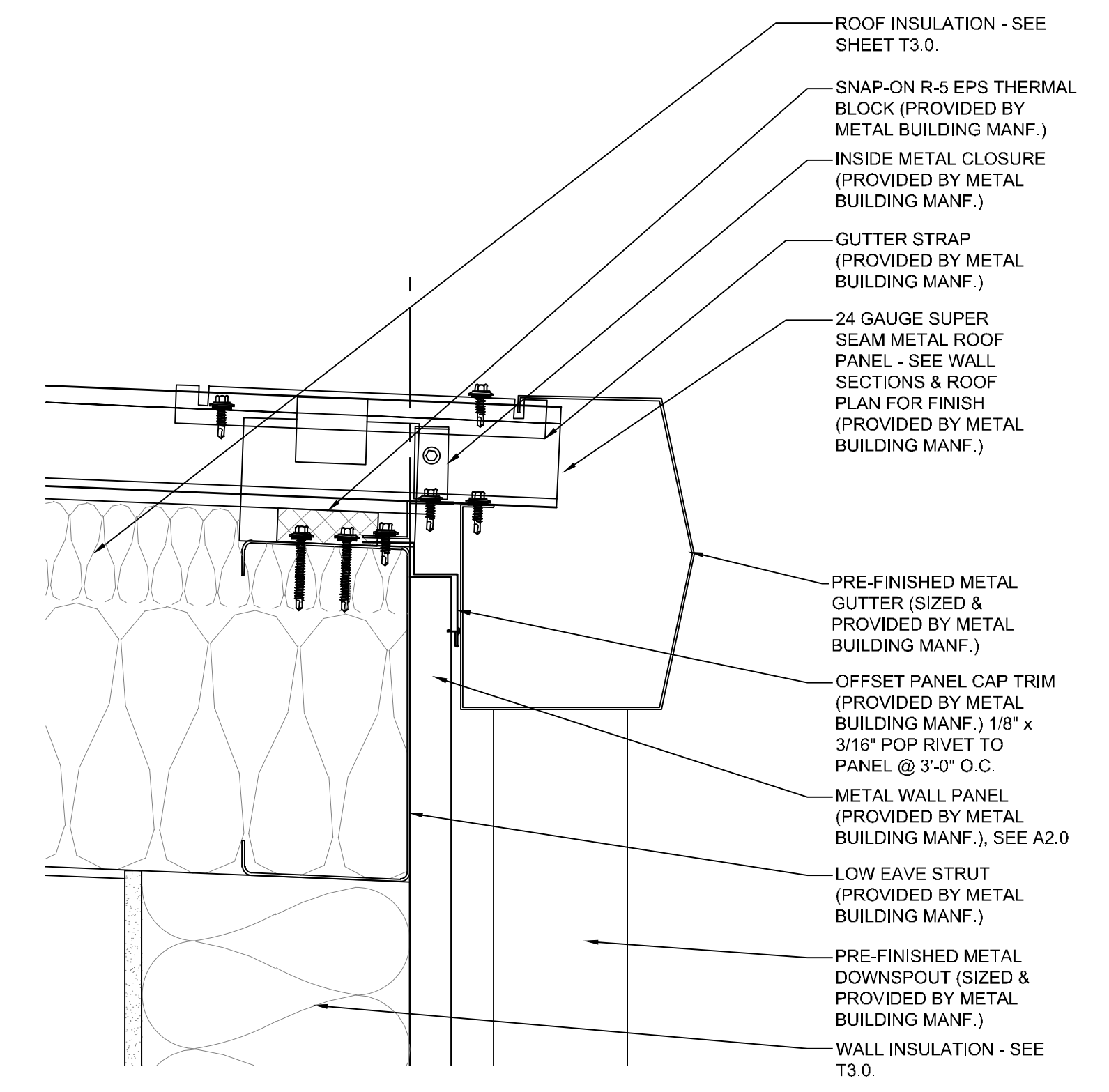


2 SECTION DETAIL
SCALE: 3"=1'-0"



G.C. SHALL CONTRACT WITH AWNING VENDOR TO ENGINEER, FABRICATE AND INSTALL STANDING SEAM METAL CANOPY IN ACCORDANCE WITH THE 2018 NCSBC SECTION 3105.

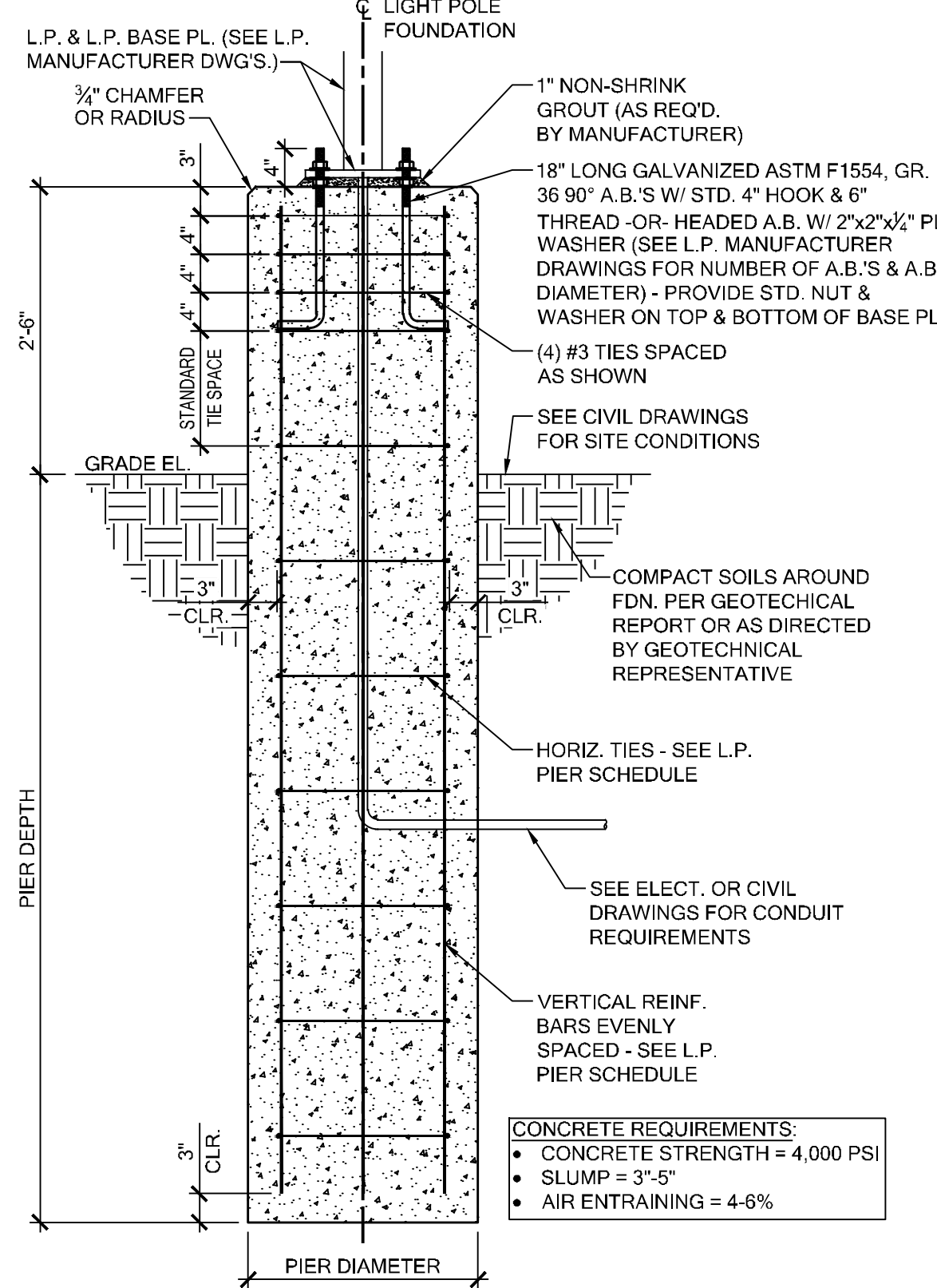
4 SECTION DETAIL
SCALE: 3"=1'-0"



3 SECTION DETAIL
SCALE: 3"=1'-0"

ULTIMATE WIND SPEED (MPH)	PIER DIAMETER (IN.)	PIER DEPTH (FT.)	VERTICAL REINFORCING BARS	HORIZONTAL TIES
-115	2'-0"	5'-6"	(6) #5	#3 @ 12" O.C.
120	2'-0"	5'-9"	(6) #5	#3 @ 12" O.C.
-130	2'-0"	6'-0"	(6) #5	#3 @ 12" O.C.
-140	2'-0"	7'-0"	(6) #5	#3 @ 12" O.C.
-150	2'-0"	7'-3"	(8) #5	#3 @ 12" O.C.
-160	2'-0"	7'-6"	(8) #5	#3 @ 12" O.C.

← THIS PROJECT



5 LIGHT POLE BASE DETAIL
SCALE: 3/4"=1'-0"

GENERAL STRUCTURAL NOTES:

- THE GENERAL STRUCTURAL NOTES ARE INTENDED TO AUGMENT THE DRAWINGS AND SPECIFICATIONS. SHOULD CONFLICTS EXIST BETWEEN THE DRAWINGS AND SPECIFICATIONS AND THE GENERAL STRUCTURAL NOTES, THE STRICTEST PROVISION SHALL GOVERN.
- GOVERNING CODE: 2018 NORTH CAROLINA BUILDING CODE
- DESIGN WIND SPEED: 120 MPH (ASCE7-16)
EXPOSURE CLASSIFICATION: C
RISK CATEGORY: II
ROOF LIVE LOAD: 20 PSF
ASSUMED COLLATERAL LOAD: 5 PSF
GROUND SNOW LOAD: 10 PSF
- SEISMIC DESIGN VALUES:
(SEE METAL BUILDING DRAWINGS)
- MECHANICAL FRAMING LOADS, OPENINGS, AND STRUCTURE IN ANY WAY RELATED TO MECHANICAL REQUIREMENTS ARE SHOWN FOR BIDDING PURPOSES ONLY. CONTRACTOR SHALL OBTAIN APPROVAL OF MECHANICAL AND OTHER TRADES BEFORE PROCEEDING WITH SUCH PORTION OF THE WORK. EXCESS COST RELATED TO VARIATION IN MECHANICAL REQUIREMENTS TO BE BORNE BY MECHANICAL 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 PROCEDURE AND SEQUENCE, AND TO INSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS, OR TIE-DOWNS WHICH MIGHT BE NECESSARY. SUCH MATERIAL SHALL REMAIN THE CONTRACTOR'S PROPERTY AFTER THE COMPLETION OF THE PROJECT.
- IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND CONDITIONS RELATING TO EXISTING CONSTRUCTION AND EXISTING SERVICE ON THE SITE.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND LOCATIONS OF COLUMNS, WALLS, OPENINGS, ETC. WITH THE ARCHITECTURAL DRAWINGS PRIOR TO PROCEEDING WITH THE WORK.
- ALL SITE PREPARATION FOR BUILDING FOUNDATIONS AND SLABS SHALL BE IN ACCORDANCE WITH THE DETAILS INDICATED ON THE CONTRACT DRAWINGS AND WITH THE RECOMMENDATIONS OF THE PROJECT REPORT OF GEOTECHNICAL INVESTIGATION.
- SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT FOR ALL STRUCTURAL COMPONENTS PRIOR TO FABRICATION. STRUCTURAL DRAWINGS SHALL NOT BE REPRODUCED FOR SHOP DRAWINGS OR ERECTION PLANS. SHOP DRAWINGS SHALL BE REVIEWED AND APPROVED BY THE CONTRACTOR FOR ALL DIMENSIONS, ELEVATIONS, AND ERECTION PROCEDURE PRIOR TO SUBMITTING TO ARCHITECT. PROVIDE AMPLE TIME FOR SHOP DRAWING REVIEW TO TAKE PLACE. REFER TO THE PROJECT SPECIFICATIONS FOR OTHER SUBMITTAL REQUIREMENTS.
- THE ENGINEER'S APPROVAL OF SHOP DRAWINGS SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR DEVIATIONS, ERRORS, OR OMISSIONS FROM THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
- NO CONSTRUCTION LOADS THAT EXCEED THE SAFE LOAD CARRYING CAPACITY OF THE STRUCTURAL MEMBERS SHALL BE APPLIED TO THE STRUCTURE. NOTIFY STRUCTURAL ENGINEER AND ARCHITECT OF ANY UNUSUAL OR EXCESSIVE LOADS OCCURRING DURING CONSTRUCTION. DO NOT APPLY CONSTRUCTION LOADS UNTIL STRUCTURAL COMPONENTS ARE PROPERLY CONNECTED AND ALL NECESSARY TEMPORARY BRACING IS IN PLACE.
- WORK NOT INDICATED ON THE DRAWINGS BUT REASONABLY IMPLIED TO BE SIMILAR TO THAT AT SIMILAR LOCATIONS SHALL BE REPEATED. UNLESS OTHERWISE NOTED, ALL SECTIONS AND DETAILS SHOWN ON THESE DRAWINGS ARE TYPICAL AT SIMILAR LOCATIONS AND CONDITIONS.

FOUNDATION & GEOTECHNICAL NOTES:

- THE FOUNDATION HAS BEEN DESIGNED IN ACCORDANCE WITH THE RECOMMENDATIONS MADE IN "GEOTECHNICAL ENGINEERING REPORT" PREPARED BY TERRACON, DATED MARCH 7, 2024.
- PREPARE FOUNDATION SUBSTRATE IN ACCORDANCE WITH WRITTEN RECOMMENDATIONS OF "GEOTECHNICAL ENGINEERING REPORT".
- SPREAD FOOTINGS SHALL BEAR ON SOIL CAPABLE OF SUSTAINING A NET ALLOWABLE BEARING PRESSURE OF 1.5 KSF FOR INDIVIDUAL COLUMN FOOTING AND 1.5 KSF FOR CONTINUOUS WALL FOOTING UNDER FULL SERVICE LIVE AND DEAD LOAD.
- FOOTINGS SHALL BE POURED INTO AN EARTH-FORMED TRENCH IT SOIL CONDITIONS PERMIT.
- BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BEAR A MINIMUM OF 12" BELOW FINAL GRADE OR TO A DEPTH BELOW THE LOCAL FROST DEPTH. CONTRACTOR SHALL VERIFY THE LOCAL FROST DEPTH AND NOTIFY THE E.O.R. OF ANY DISCREPANCIES.
- FOUNDATION WALLS THAT RETAIN EARTH SHALL BE BRACED AGAINST BACKFILLING PRESSURES UNTIL FLOOR SLABS AT TOP AND BOTTOM ARE IN PLACE.
- 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.
- COMPACT BACKFILL IN ACCORDANCE WITH "GEOTECHNICAL ENGINEERING REPORT".
- PERFORM DENSITY AND MOISTURE CONTENT TESTS OF COMPACTED FILL MATERIALS IN ACCORDANCE WITH ASTM D2992 AND ASTM D3017, AS REQUIRED BY GEOTECHNICAL ENGINEER.
- FOOTINGS SHALL EXTEND DOWN TO A LOWER ELEVATION THAN INDICATED ON THE DRAWINGS IF NECESSARY TO REACH ADEQUATE BEARING MATERIAL.
- SLOPE SIDES OF EXCAVATIONS, OR SHORE, SHEET, AND BRACE SIDE SLOPES TO ENSURE SLOPE STABILITY AND SAFETY. ADEQUATELY PROTECT ALL EXCAVATION SLOPES.
- REMOVE ALL MATERIAL CONTAINING ROOTS, DEBRIS OR OTHER DELETERIOUS MATERIAL FROM THE SITE.
- PROVIDE ADEQUATE DRAINAGE OR DEWATERING TO ALLOW PROPER FINISHING OF EXCAVATIONS AND TO KEEP WATER FROM COLLECTING IN THE BOTTOM OF EXCAVATIONS. FOUNDATIONS SHALL BE PLACED IN THE DRY. DO NOT PLACE FOOTINGS IN WATER.
- PROVIDE NOTICE AND ALLOW SUFFICIENT TIME FOR FOOTING EXCAVATIONS TO BE INSPECTED BY THE GEOTECHNICAL ENGINEER PRIOR TO POURING CONCRETE.

CONCRETE NOTES:

- SPECIFICATIONS AND STANDARDS:
UNLESS SPECIFICALLY SHOWN OTHERWISE ALL CONCRETE WORK, DETAILS, FABRICATION, AND PLACEMENT OF BARS AND CONCRETE SHALL BE GOVERNED BY THE LATEST REVISIONS OF:
A. ACI 301, ACI 315, AND ACI 318
B. CRSI RECOMMENDED PRACTICE FOR PLACING REINFORCEMENT BARS
C. ACI 306 AND ACI 305 FOR WINTER AND HOT WEATHER CONCRETE RESPECTIVELY.
THE CONTRACTOR SHALL AT ALL TIMES HAVE A COPY OF THE RELEVANT SPECIFICATIONS QUOTED ABOVE ON THE SITE AND THE SUPERVISORY PERSONNEL SHALL BE THOROUGHLY FAMILIAR WITH THE CONTENTS THEREOF.
- CONCRETE REQUIREMENTS AND LOCATION IN JOB:
CEMENT SHALL BE TYPE I PORTLAND CEMENT, ASTM C-150.

CLASS	LOCATION	F _c	REQUIREMENTS
I	FOOTINGS	3000 PSI	3" TO 5" SLUMP
II	INTERIOR SLAB	4000 PSI	3" TO 5" SLUMP (SEE HFT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS)
III	EXTERIOR CONCRETE	3500 PSI	5% +/- 1% ENT. AIR (3" TO 5" SLUMP)
IV	MASONRY GROUT	3500 PSI	8" TO 10" SLUMP PEA GRAVEL MIX
- REINFORCING STEEL SHALL BE ASTM-615, GRADE 60. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185.
- UNLESS OTHERWISE DETAILED, SPLICES SHALL BE IN ACCORDANCE WITH ACI 318 LATEST EDITION.
- WHERE CONCRETE IS CAST AGAINST EARTH, REINFORCING STEEL SHALL HAVE A MINIMUM CONCRETE COVER OF 3". WHEN FORMED BUT EXPOSED TO EARTH OR WEATHER, REINFORCING STEEL SHALL HAVE A MINIMUM CONCRETE COVER OF 1 1/2" FOR #5 BARS OR SMALLER AND 2" FIR BARS LARGER THAN #5. IN ALL OTHER CONDITIONS PROVIDE 1" COVER UNLESS NOTED OTHERWISE ON DRAWINGS.
- EMBEDS SHALL BE IN PLACE BEFORE PLACING CONCRETE.
- ALL EXTERIOR CORNERS ON EXPOSED CONCRETE, EXCEPT COLUMNS, SHALL HAVE 3/4" 45 DEG. CHAMFERS. CORNERS ON COLUMNS SHALL HAVE 1" 45° CHAMFERS, UNLESS NOTED.
- UNDER NO CIRCUMSTANCES SHALL FORMS BE LEFT IN PLACE PERMANENTLY.
- ALL EMBEDDED ITEMS (EXCEPT REINFORCING STEEL & ANCHOR BOLTS) SHALL BE GALVANIZED.
- SEE HFT STANDARDS FOR JOINT FILLER/SEALANT SPECIFICATIONS. FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS FOR SURFACE PREPARATION AND INSTALLATION OF JOINT FILLER/SEALANT.
- EPOXY FOR SETTING DOWELS AND ANCHOR RODS INTO EXISTING CONCRETE SHALL BE A TWO COMPONENT STRUCTURAL EPOXY INJECTION GEL SUCH AS "POWER-FAST" AS MANUFACTURED BY POWERS RAWL. INSTALLATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH ALL MANUFACTURER'S SPECIFICATIONS.
- ROUGHEN CONCRETE AT FOOTINGS BEFORE POURING PIERS, PADS, OR WALLS, IN ACCORDANCE WITH ACI-318, CHAPTER 11.
- PROVIDE (2) #4 BARS x 4'-0" LONG IN CONCRETE SLABS AND MATS AT ALL RE-ENTRANT CORNERS.
- DO NOT INSTALL REENTRANT CORNER BARS OR HAIRPINS ACROSS CONTROL JOINTS. ROTATE BARS OR SHORTEN BARS AS REQUIRED TO AVOID CONTROL JOINT. NOTIFY ARCHITECT E.O.R. OF ANY MODIFICATION TO REENTRANT BARS AND HAIRPINS THAT IS NOT SHOWN ON THESE DRAWINGS.
- REINFORCEMENT SHALL BE ADEQUATELY SUPPORTED AND TIED IN PLACE PRIOR TO CONCRETE PLACEMENT. PROVIDE ANY STANDEES, BOLSTERS, CARRYING BARS, OR ADDITIONAL BARS AS MAY BE NECESSARY TO ADEQUATELY SUPPORT THE REINFORCEMENT IN ITS PROPER POSITION.
- UNLESS NOTED OTHERWISE ON THE DRAWINGS, DOWELS SHALL MATCH CORRESPONDING VERTICAL REINFORCEMENT.
- FILL ALL PLUMBING SLOTS WITH CONCRETE TO THE SAME DEPTH AS THE FLOOR SLAB AFTER PIPING IS INSTALLED.
- ALL SAW CUTTING OF CONTROL JOINTS SHALL BE ACCOMPLISHED WITH A "SOFF-CUT" SAW AND VACUUM SYSTEM EQUIPPED WITH A NEW BLADE AND PLATE, AS SOON AS THE SLAB WILL SUPPORT THE WEIGHT OF THE SAW AND OPERATOR.
- LAP WELDED WIRE FABRIC A MINIMUM OF 12".
- REFER TO ARCHITECTURAL AND HFT SPECIFICATIONS FOR FINISHING OF CONCRETE SLAB.
- CONFIRM THERE IS NO SLAG OR FLY ASH IN THE MIX - THESE MATERIALS WILL AFFECT THE POLISHING PROCESS.
- SEE HFT SPECIFICATIONS FOR PROPER CONCRETE CURING MATERIALS AND PROCEDURES.
- USE ONE SOURCE FOR CEMENT, AGGREGATES, AND POZZOLANS THROUGHOUT THE JOB. MONITOR AND CONTROL INCOMING MATERIAL CONSISTENCY. DO NOT USE CALCIUM CHLORIDE-BASED ADMIXTURES. NON-CHLORIDE ADMIXTURES MAY BE USED.
- WASH OUT ALL DRUMS BEFORE LOADING. KEEP SLUMPS CONSISTENT WITH A MAXIMUM OF 5. MINIMIZE DRIVER ADDED WATER MAINTAINING A MAXIMUM 0.53 WATER CONTENT RATIO.
- PLACE CONCRETE TO ACHIEVE AS TRUE AND SMOOTH A TOP SURFACE AS POSSIBLE. MOUNDS OR DIPS ARE NOT ACCEPTABLE. GO SHALL CONTROL OVERALL FLATNESS AND LEVELNESS, INCLUDING ON SLOPING AREAS TO WITHIN TOLERANCES PERMITTED BY SPECIFICATION - ASTM E1155.

FLATNESS / LEVELNESS REQUIREMENTS
 FLOOR FLATNESS (FF) = MIN. 35
 FLOOR LEVELNESS (FL) = MIN. 30

PRE-ENGINEERED METAL BUILDING

- THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, COORDINATION, FABRICATION, AND ERECTION OF THE PRE-ENGINEERED METAL BUILDING SUPERSTRUCTURE INCLUDING COLUMN BASE PLATES AND ANCHORAGE. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS DETAILING ASPECTS OF THE METAL BUILDING CONSTRUCTION AND DESIGN CALCULATIONS FOR REVIEW PRIOR TO FABRICATION. SHOP DRAWINGS AND CALCULATIONS SHALL BEAR THE SEAL AND SIGNATURE OF A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT.
- SHOP DRAWING REVIEW IS FOR CONFORMANCE TO DESIGN INTENT ONLY. THE ARCHITECT AND STRUCTURAL ENGINEER ASSUME NO RESPONSIBILITY FOR THE DESIGN OF THE METAL BUILDING SUPERSTRUCTURE AS A RESULT OF SHOP DRAWING REVIEW.
- G.C. TO COORDINATE THE INTEGRATION OF THE METAL BUILDING COMPONENTS WITH THE ARCHITECTURAL FOUNDATION REQUIREMENTS. DEVIATIONS TO BE COORDINATED BEFORE ERECTION COMMENCES.
- MECHANICAL DUCTS, PIPES AND EQUIPMENT ARE SUPPORTED BY THE ROOF GIRDERS AND PURLINS. THE ROOF GIRDERS, PURLINS, AND ANY AUXILIARY COMPONENTS SHALL BE DESIGNED TO SUPPORT SUCH LOADS. ALL INFORMATION (WEIGHTS AND LOCATIONS) PERTAINING TO MECHANICAL EQUIPMENT SUSPENDED FROM THE BUILDING ROOF SHALL BE SUBMITTED TO THE PRE-ENGINEERED METAL BUILDING ENGINEER FOR APPROVAL.
- DESIGN LOADS FOR PRE-ENGINEERED METAL BUILDING SHALL BE IN ACCORDANCE WITH LOCAL CODES AND DESIGN CONDITIONS. G.C. TO VERIFY LOADS WITH LOCAL BUILDING OFFICIALS AND GEOTECHNICAL REPORTS.

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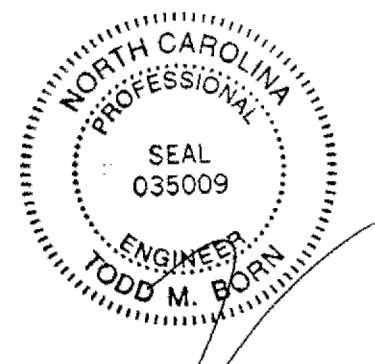
HARBOR
FREIGHT TOOLS
 FOR
STOCKS & TAYLOR
CONSTRUCTION

PROJECT NO: 23174

PROJECT ADDRESS:

46 SHRIJI LANE
 ERWIN, NC 28339

SEAL:



May 24, 2024

TO THE BEST OF THE ENGINEER'S KNOWLEDGE AND UNDERSTANDING, THE PREPARED DRAWINGS AND SPECIFICATIONS COMPLY WITH THE CODES AND REGULATIONS GOVERNING THE PRACTICE OF PROFESSIONAL ENGINEERING IN THE STATE OF NORTH CAROLINA. THE ENGINEER'S OFFICE HAS REVIEWED THE DRAWINGS FOR THE STRUCTURAL FOUNDATION PORTION OF THIS DRAWING.

JOB #: 24.055

CORPORATE ENTITY:

C.L. HELT, ARCHITECT, INC. A NORTH
 CAROLINA PROFESSIONAL CORPORATION
 DBA HELT DESIGN.

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DRAWING RELEASE:

NO.	DATE	DESCRIPTION

DRAWN BY: TMB
 CHECKED BY: TMB

DATE: 05/21/24

SHEET TITLE:
STRUCTURAL NOTES
SHEET

SHEET NUMBER:

S001

STATEMENT OF SPECIAL INSPECTIONS

REQUIRED SPECIAL INSPECTIONS AND TESTS OF SOILS				
TYPE	APPLICABLE TO THIS PROJECT	CONTINUOUS	PERIODIC	REFERENCED STANDARD
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	X	---	X	
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	X	---	X	
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	X	X		
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	X	X		
5. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	X	---	X	

REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION				
TYPE	APPLICABLE TO THIS PROJECT	CONTINUOUS	PERIODIC	REFERENCED STANDARD
1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	X	---	X	ACI 318: CH. 20, 25.2, 25.3, 26.6.1 - 26.6.3
2. REINFORCING BAR WELDING:				
a. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706.				AWS D1.4 ACI 318: 26.6.4
b. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 1/16".				
c. INSPECT ALL OTHER WELDS.				
3. INSPECT ANCHORS CAST IN CONCRETE.	X	---	X	ACI 318: 17.8.2
4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS:	X	X	---	
a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS.				ACI 318: 17.8.2.4 ACI 318: 17.8.2
b. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.a.				
5. VERIFY USE OF REQUIRED DESIGN MIX.	X	---	X	ACI 318: CH. 19, 26.4.3, 26.4.4
6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	---	X	ASTM C172 ASTM C31 ACI 318: 26.5, 26.12
7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	---	X	ACI 318: 26.5
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	X	---	X	ACI 318: 26.5.3 - 26.5.5
9. INSPECT PRESTRESSED CONCRETE FOR:				
a. APPLICATION OF PRESTRESSING FORCES; AND				ACI 318: 26.10
b. GROUTING OF BONDED PRESTRESSING TENDONS.				
10. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS.				ACI 318: 26.9
11. VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.				ACI 318: 26.11.2
12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	X	---	X	ACI 318: 26.11.1.2(b)

REQUIRED SPECIAL INSPECTIONS AND TESTS OF STRUCTURAL STEEL				
TYPE	APPLICABLE TO THIS PROJECT	CONTINUOUS	PERIODIC	REFERENCED STANDARD
1. VERIFY CORRECT FRAMING SHAPES AND SIZES ARE INSTALLED IN PROPER LOCATIONS.				AISC360, N5
2. WELDING:				
a. VERIFY QUALIFIED WELDERS WITH APPROVE WELDING CERTIFICATES.				
b. VERIFY WELD FILLER MATERIAL.				
c. VERIFY PROPER WELDING TECHNIQUES.				
d. VERIFY PROPER MEMBER FIT-UP PRIOR TO WELDING.				
1. FILLET WELDS.				
2. PARTIAL JOINT PENETRATION (PJP) WELDS.				
3. COMPLETE JOINT PENETRATION (CJP) WELDS.				
e. POST-WELD INSPECTION:				
1. VERIFY WELDS CLEANED.				
2. VERIFY PROPER SIZE, LENGTH AND LOCATION OF WELDS.				
3. VERIFY WELDS ALL WELDS MEET VISUAL ACCEPTANCE CRITERIA.				
4. COMPLETE JOINT PENETRATION (CJP) WELDS TO BE ULTRASONIC TESTED PER AISC360, SECTION N5.5.				
5. VERIFY PROPER ARC STRIKES.				
6. VERIFY K-AREA.				
7. VERIFY BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED).				
8. VERIFY REPAIR ACTIVITIES.				
3. HIGH-STRENGTH BOLTING:	X	---	X	
a. VERIFY MANUFACTURER'S CERTIFICATIONS FOR FASTENER MATERIALS.	X	---	X	
b. VERIFY FASTENERS ARE MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS.	X	---	X	
c. VERIFY PROPER BOLTED CONNECTIONS:	X	---	X	
1. SNUG-TIGHT BOLTED JOINTS.	X	---	X	
i. VERIFY PROPER BOLTING PROCEDURE USED AT BOLTED JOINTS.	X	---	X	
ii. VERIFY PROPER FASTENER ASSEMBLIES ARE USED AT BOLTED JOINTS.	X	---	X	
2. PRE-TENSIONED AND SLIP-CRITICAL BOLTED JOINTS.				
i. VERIFY PROPER BOLTING PROCEDURE USED AT BOLTED JOINTS.				
ii. VERIFY PROPER FASTENER ASSEMBLIES ARE USED AT BOLTED JOINTS.				
iii. VERIFY JOINT BROUGHT TO SNUG-TIGHT CONDITION PRIOR TO THE PRETENSIONING OPERATION.				
4. VERIFY FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING.				
v. VERIFY FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH THE RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES.				

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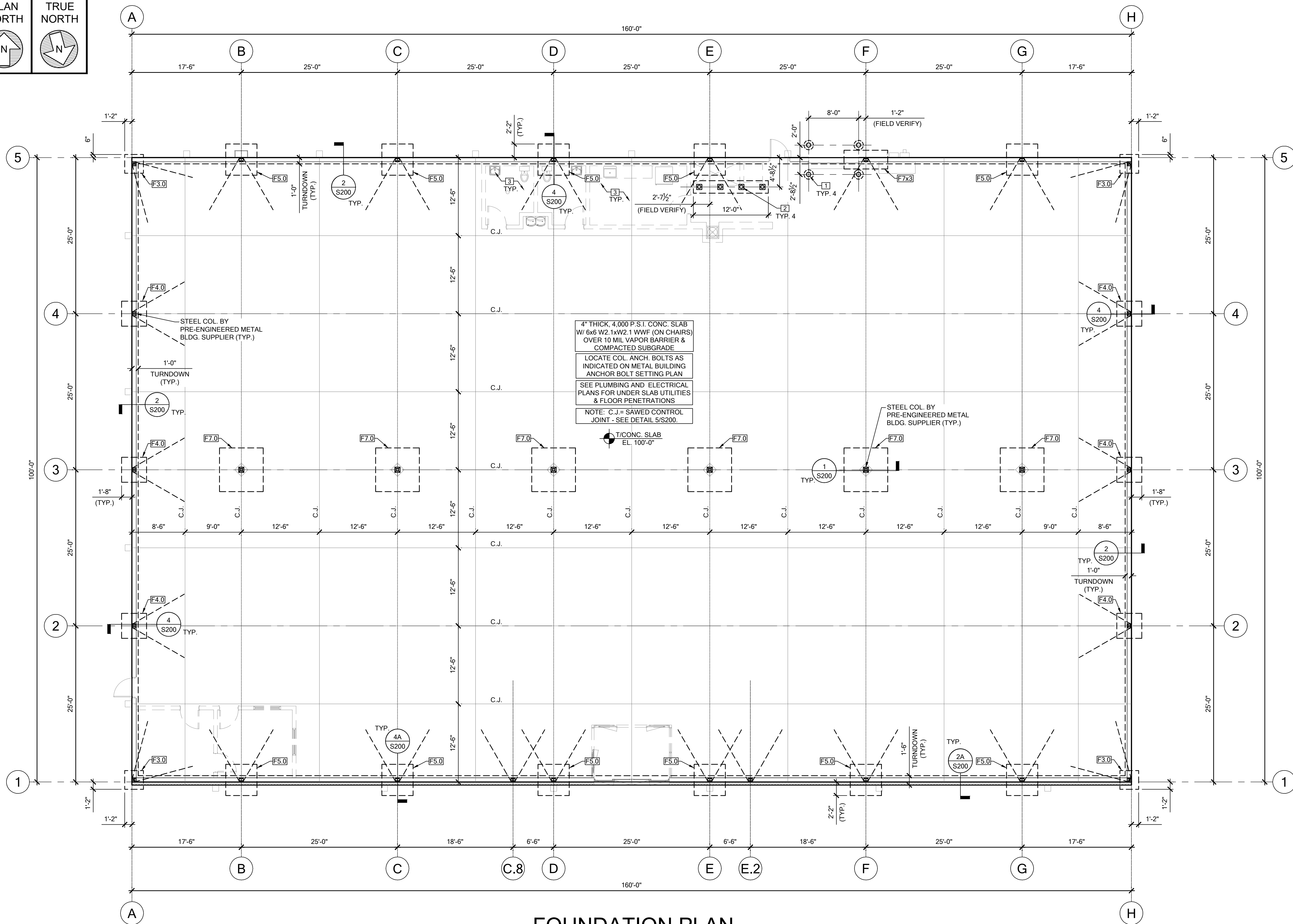
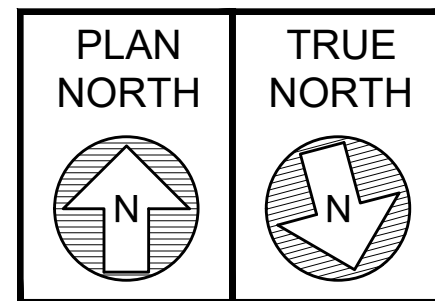
DRAWING RELEASE:

NO.	DATE	DESCRIPTION

DRAWN BY: TMB CHECKED BY: TMB
DATE: 05/21/24

SHEET TITLE:
STATEMENT OF
SPECIAL INSPECTIONS

SHEET NUMBER:
S002



FOUNDATION PLAN

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

FOUNDATION SCHEDULE				
MARK	SIZE (L x W x D)	REINFORCING	T/FTG. EL.	REMARKS
F3.0	3'-0" x 3'-0" x 1'-0"	(4) #5 EA. WAY (BOTTOM ONLY)	98'-0"	
F4.0	4'-0" x 4'-0" x 1'-0"	(5) #5 EA. WAY (BOTTOM ONLY)	98'-0"	
F5.0	5'-0" x 5'-0" x 1'-0"	(6) #5 EA. WAY (BOTTOM ONLY)	98'-0"	
F7x3	7'-0" x 3'-0" x 1'-0"	(4) #5 EA. WAY LONG. (BOTTOM ONLY) (8) #5 EA. WAY TRAV. (BOTTOM ONLY)	98'-0"	
F7.0	7'-0" x 7'-0" x 2'-0"	(9) #5 EA. WAY (TOP & BOTTOM)	99'-4"	

NOTE:
G.C. RESPONSIBLE FOR BORINGS @ FINAL BLDG. LOCATION CHOSEN. VERIFY GRADING PER CIVIL DRAWINGS. G.C. TO CONTACT ARCHITECT/STRUCTURAL ENGINEER TO DETERMINE IF STEPPED FOOTINGS ARE TO BE PROVIDED FOR GRADE CHANGES AT PERIMETER OF BLDG.
GEOTECHNICAL INVESTIGATION RECOMMENDATIONS OF THE SOIL BELOW THE BUILDING AND PARKING LOT ARE TO BE FOLLOWED, AS WELL AS ANY ACCORDANCE WITH DOT STANDARDS FOR SITE WORK, AS REQUIRED.
PROVIDE A FOUNDATION DRAIN AT THE BUILDING PERIMETER THAT COMPLIES WITH IBC SECTION 1807.4.2 WHEN GRADE EXCEEDS THE FINISHED FLOOR. PERFORATED PLASTIC PIPE IS ACCEPTABLE.

FOUNDATION DESIGN INFORMATION

ALL FOUNDATION DESIGN IS BASED ON ALLOWABLE SOIL BEARING PRESSURE AS SPECIFIED IN FOUNDATION NOTES ON DWG. S001. ALL RECOMMENDATIONS FOR FILL, SITE PREPARATION, SUBGRADE COMPACTION, ETC. AS SPECIFIED IN THE GEOTECHNICAL REPORT SHALL BE FOLLOWED.

FOUNDATION LEGEND	
SYMBOL	DESIGN DESCRIPTION
FX.X	INDICATES CONCRETE FOOTING. SEE FOUNDATION SCHEDULE ON THIS DWG. FOR FOOTING SIZE & REINFORCING REQUIREMENTS.
###-##	INDICATES TOP OF SLAB, TOP OF FOOTING, OR TOP OF GRADE ELEVATION.
C.J.	INDICATES SAWED CONTROL JOINT - SEE DETAIL 5/S200. KEYED CONSTRUCTION JOINT CAN BE USED AT THE CONTRACTOR'S DISCRETION AT ALL SAWED CONTROL JOINTS UNLESS NOTED.

FOUNDATION NOTES	
1.	SEE SHEETS S001 FOR GENERAL STRUCTURAL NOTES. SEE SHEET S002 FOR CONCRETE SPECIFICATIONS.
2.	TOP OF CONCRETE SLAB ELEVATION AS NOTED IN PLAN FOR REFERENCE ONLY. SEE CIVIL DRAWINGS FOR ACTUAL ELEVATION ABOVE MEAN SEA LEVEL.
3.	SEE 7/S200 FOR TYPICAL FOUNDATION REINFORCING AT BUILDING CORNERS.
4.	G.C. SHALL COORDINATE AND NOTIFY E.O.R. OF ANY CONDITIONS THAT WILL REQUIRE FOOTING STEPS OR LOWER FOOTINGS THAN INDICATED ON FOUNDATION PLAN. THESE CONDITIONS INCLUDE, BUT ARE NOT LIMITED TO, CONFLICTS WITH FINAL GRADING AROUND BUILDING PERIMETER, CONFLICTS WITH BELOW GRADE UTILITIES & PLUMBING, AND UNSUITABLE BEARING MATERIAL.
5.	ALL FOOTINGS ARE CENTERED UNDER BEARING WALLS, COLUMNS, GIRDER TRUSSES, ETC., UNLESS NOTED OTHERWISE.
6.	RECESSED SLABS, SLAB STEPS, AND SLOPED SLABS SHOWN ON THESE DRAWINGS SHALL BE VERIFIED WITH THE ARCHITECTURAL DRAWINGS BY THE G.C. THE G.C. SHALL ALSO BE RESPONSIBLE FOR COORDINATING ANY REQUIRED SLAB RECESSES, SLAB STEPS, AND SLOPED SLABS FOR FLOORING, EQUIPMENT, DRAINS, ETC. WITH THE ARCHITECTURAL AND M.E.P. DRAWINGS PRIOR TO CONSTRUCTION.
7.	MAINTAIN SLAB THICKNESS AT ALL FLOOR SLOPES AND DEPRESSIONS.

PLAN KEY NOTES	
1	8"Ø SCH. 40 PIPE BOLLARD FILLED W/ CONCRETE - SEE DETAIL 8, DWG. S200 FOR DETAILS - SAW CUT CONC. SLAB FOR INTERIOR BOLLARD INSTALLATION - G.C. SHALL VERIFY EXACT BOLLARD LOCATION
2	6"Ø BOLT-DOWN SCH. 40 PIPE BOLLARD FILLED W/ CONCRETE - FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR ANCHORING TO SLAB - PROVIDE 24-IN WIDE x 12-FT LONG x 12-IN THICK, THICKENED SLAB W/ #4 BARS @ 12" O.C. (EA. WAY) AS SHOWN IN PLAN FOR ANCHORING BOLLARDS - G.C. SHALL VERIFY EXACT BOLLARD LOCATION AND THICKENED SLAB LOCATION
2	G.C. SHALL COORDINATE PLUMBING ROUGH-INS FOR BATHROOM AND BREAK AREA PRIOR TO INSTALLATION OF CONCRETE SLAB - ANY SLAB LEAVE-OUTS MUST BE REVIEWED AND APPROVED BY E.O.R. PRIOR TO CONSTRUCTING

CONTRACTOR/SUB-CONTRACTOR NOTE:
ANY DISCREPANCY OR ERROR IN DIMENSIONS OR NOTES SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN PROFESSIONAL FOR CLARIFICATION PRIOR TO COMMENCEMENT OF CONSTRUCTION.



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BELMONT, NC 28012
704.342.1686
HELTDDESIGN.COM
INFO@HELTDDESIGN.COM
PROJECT NAME:

HARBOR FREIGHT TOOLS FOR STOCKS & TAYLOR CONSTRUCTION

PROJECT NO: 23174

PROJECT ADDRESS:

46 SHRIJI LANE
ERWIN, NC 28339

SEAL:



CORPORATE ENTITY:
C.L. HELT, ARCHITECT, INC. A NORTH CAROLINA PROFESSIONAL CORPORATION
DBA HELT DESIGN.

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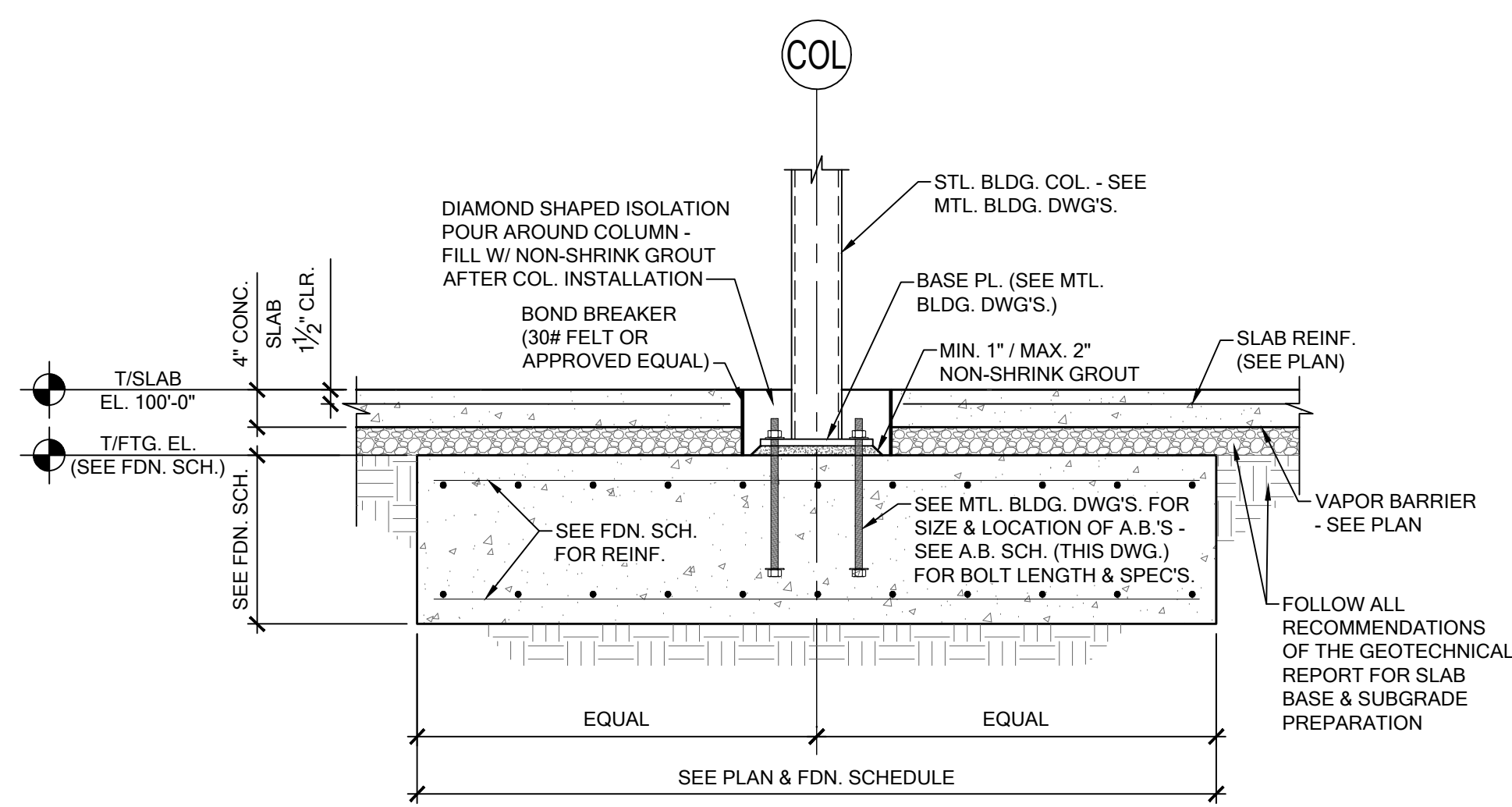
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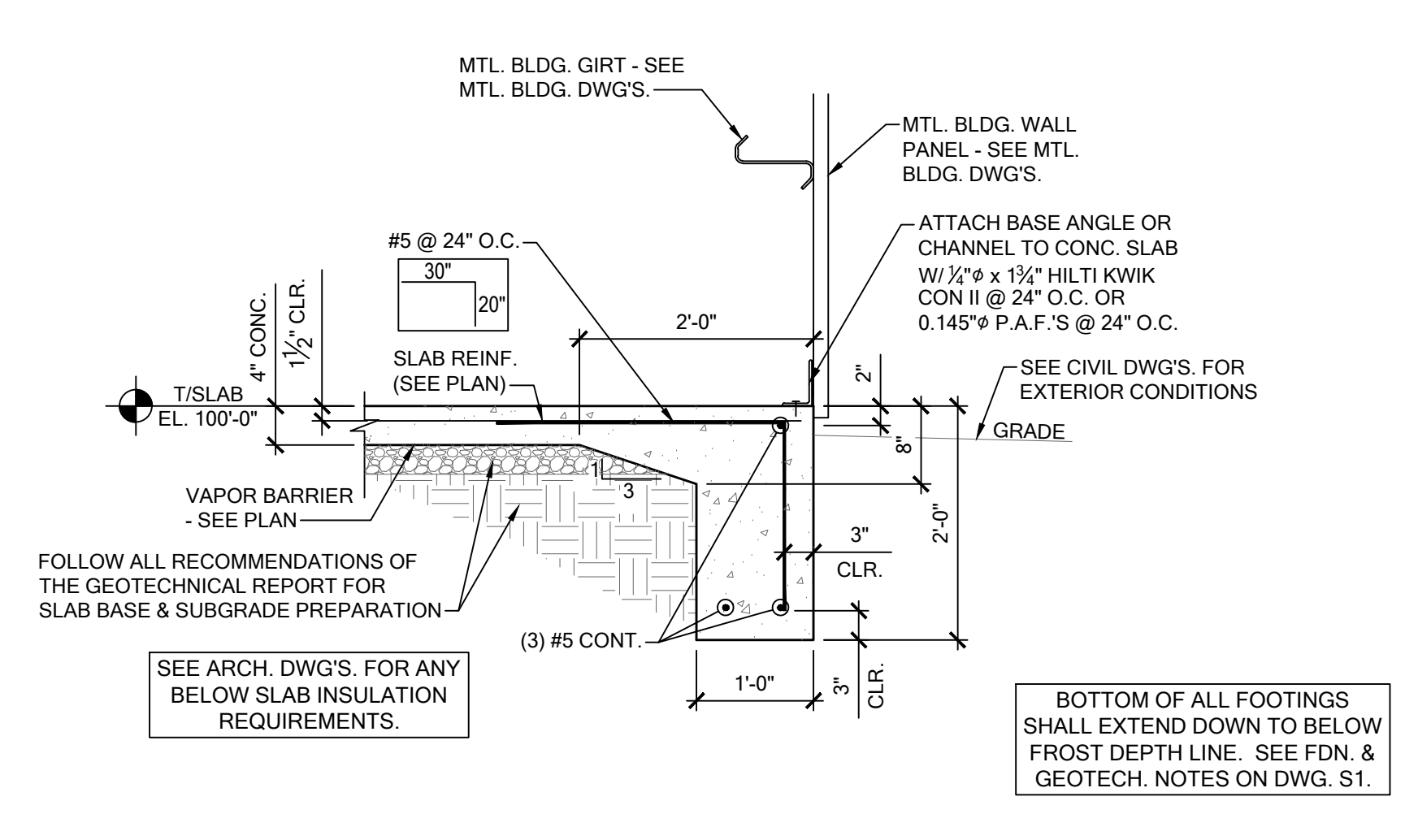
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SHEET TITLE:
FOUNDATION PLAN,
SCHEDULE & NOTES

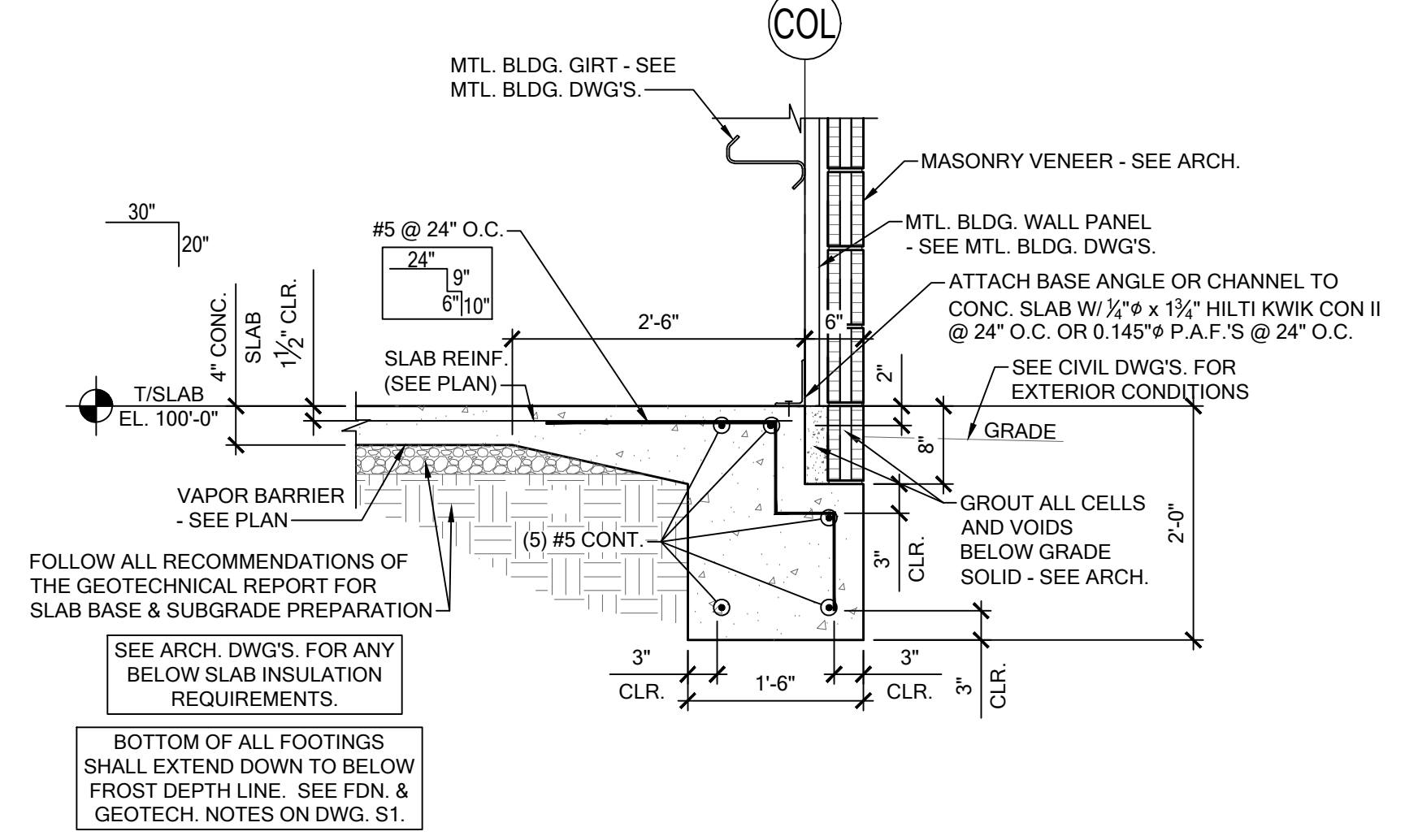
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S100



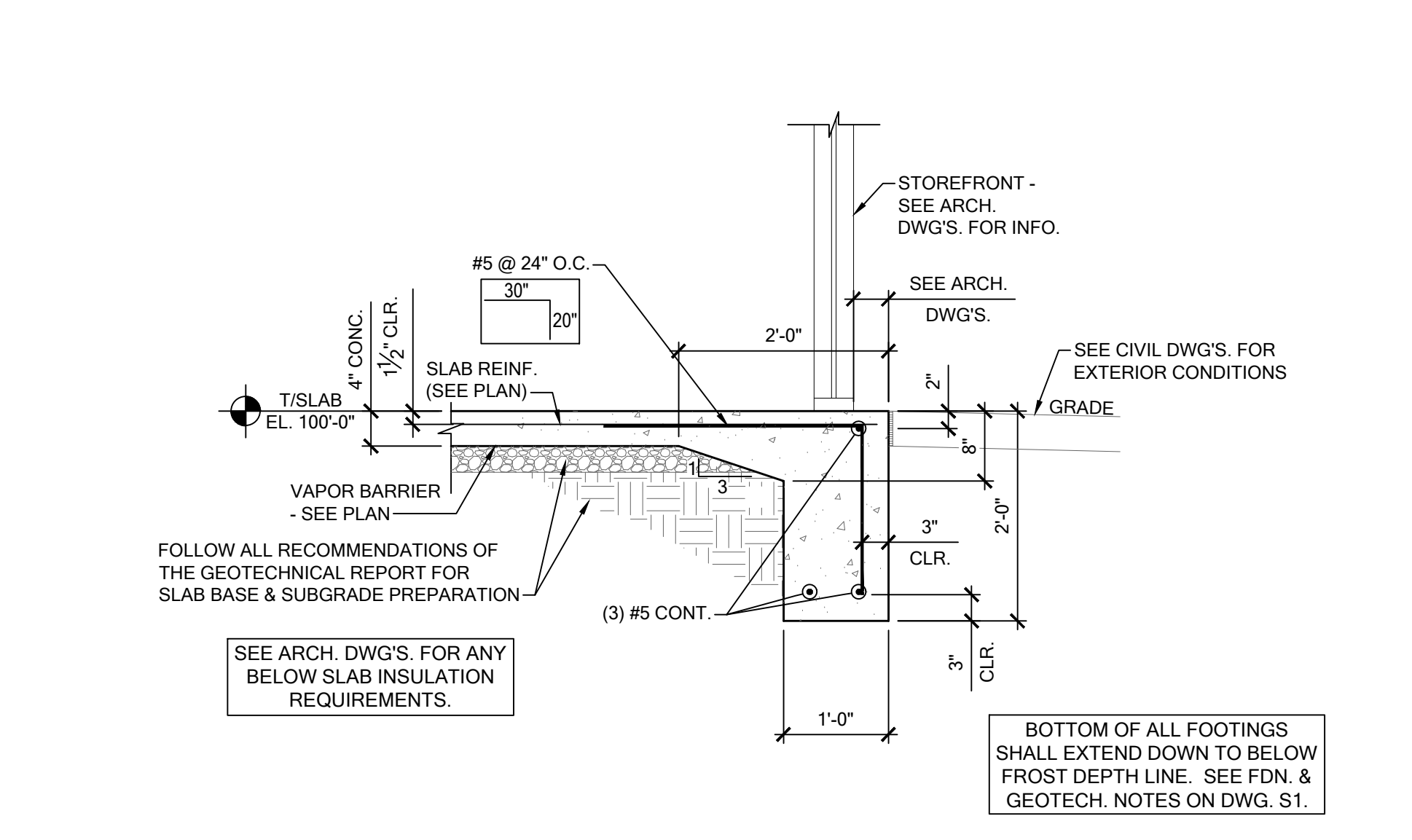
1 TYPICAL FDN. SECTION @ INTERIOR COLUMN
SCALE: 3/4" = 1'-0"



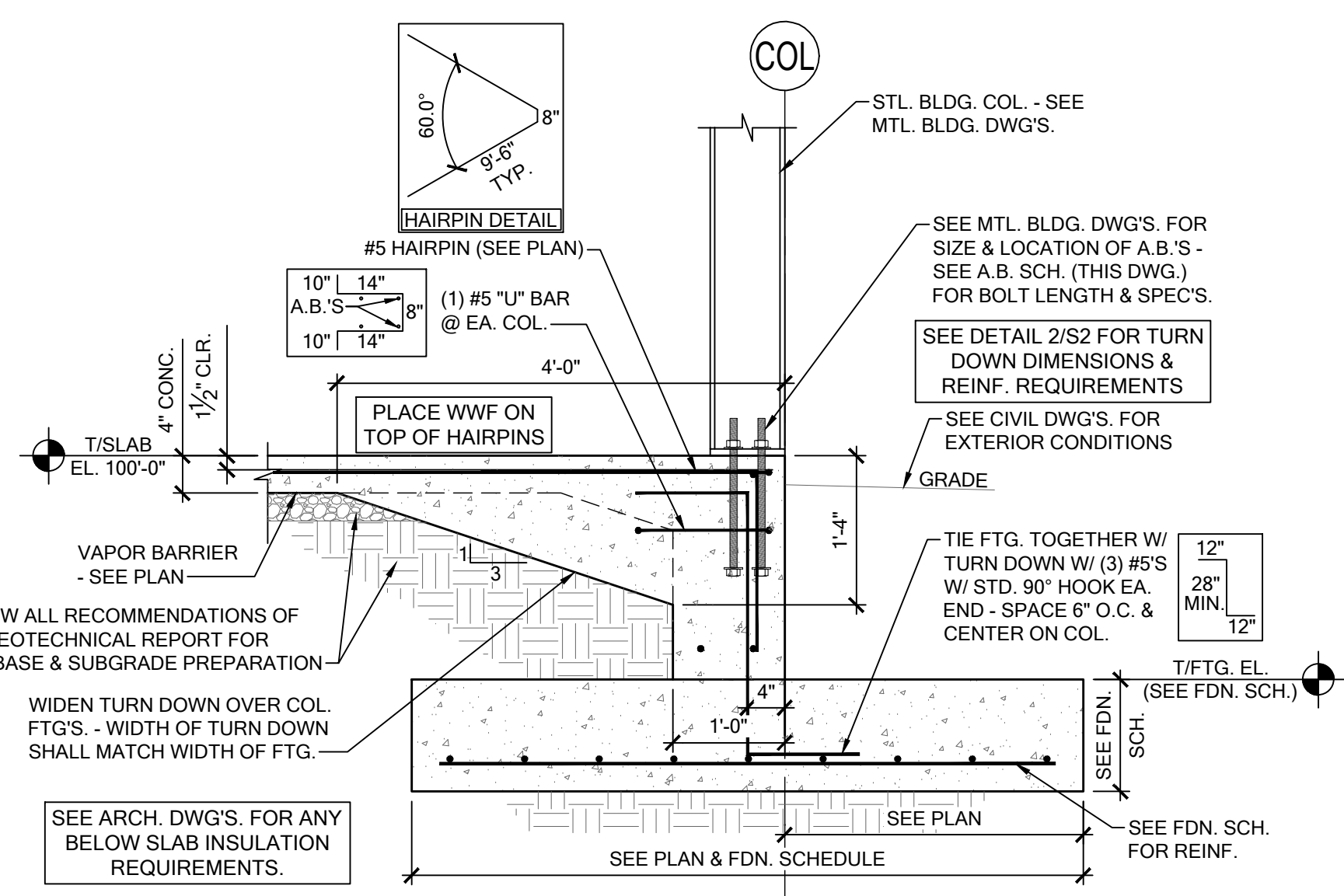
2 TYPICAL FDN. SECTION @ TURN DOWN
SCALE: 3/4" = 1'-0"



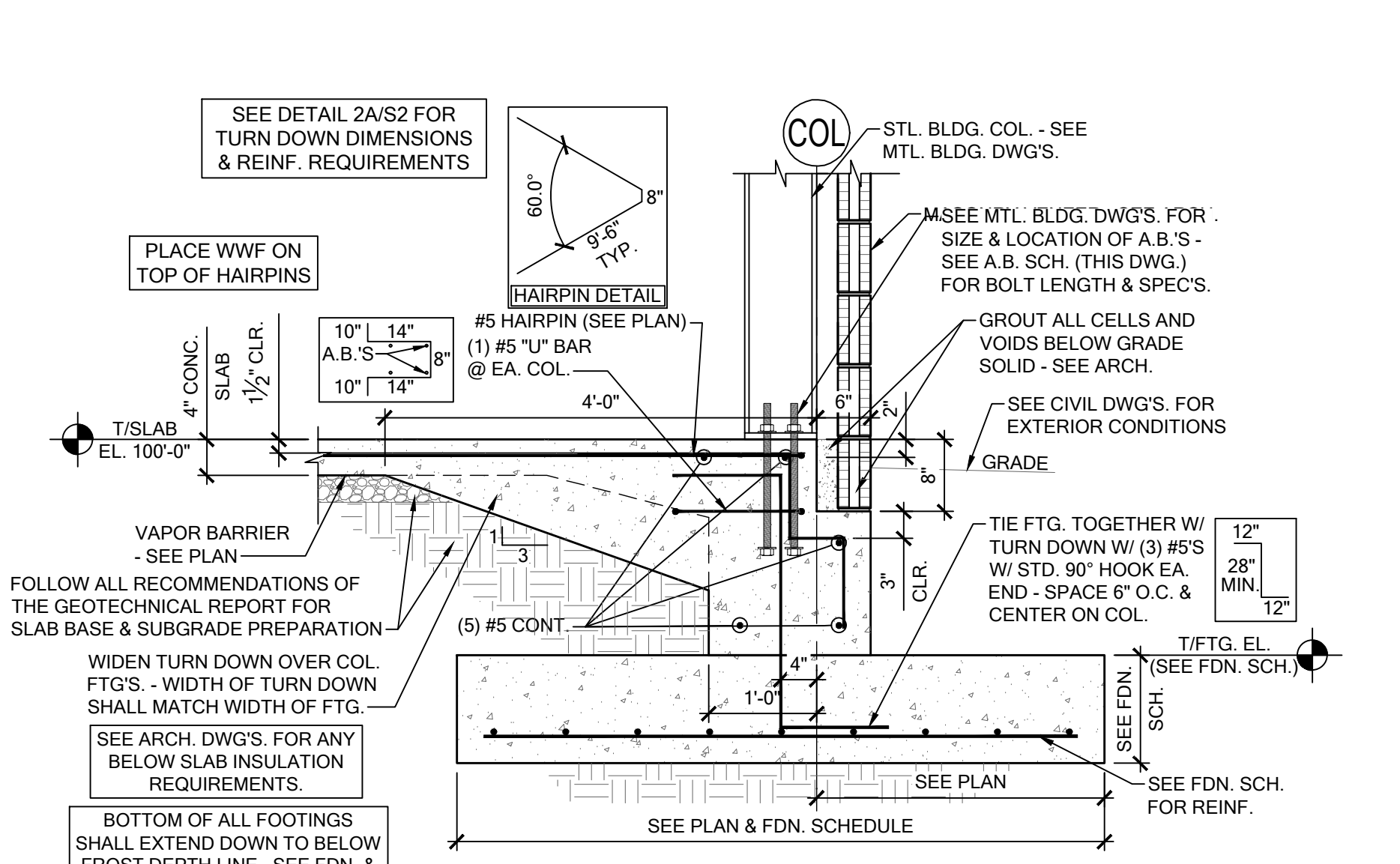
2A TYPICAL FDN. SECTION @ TURN DOWN W/ BRICK LEDGE
SCALE: 3/4" = 1'-0"



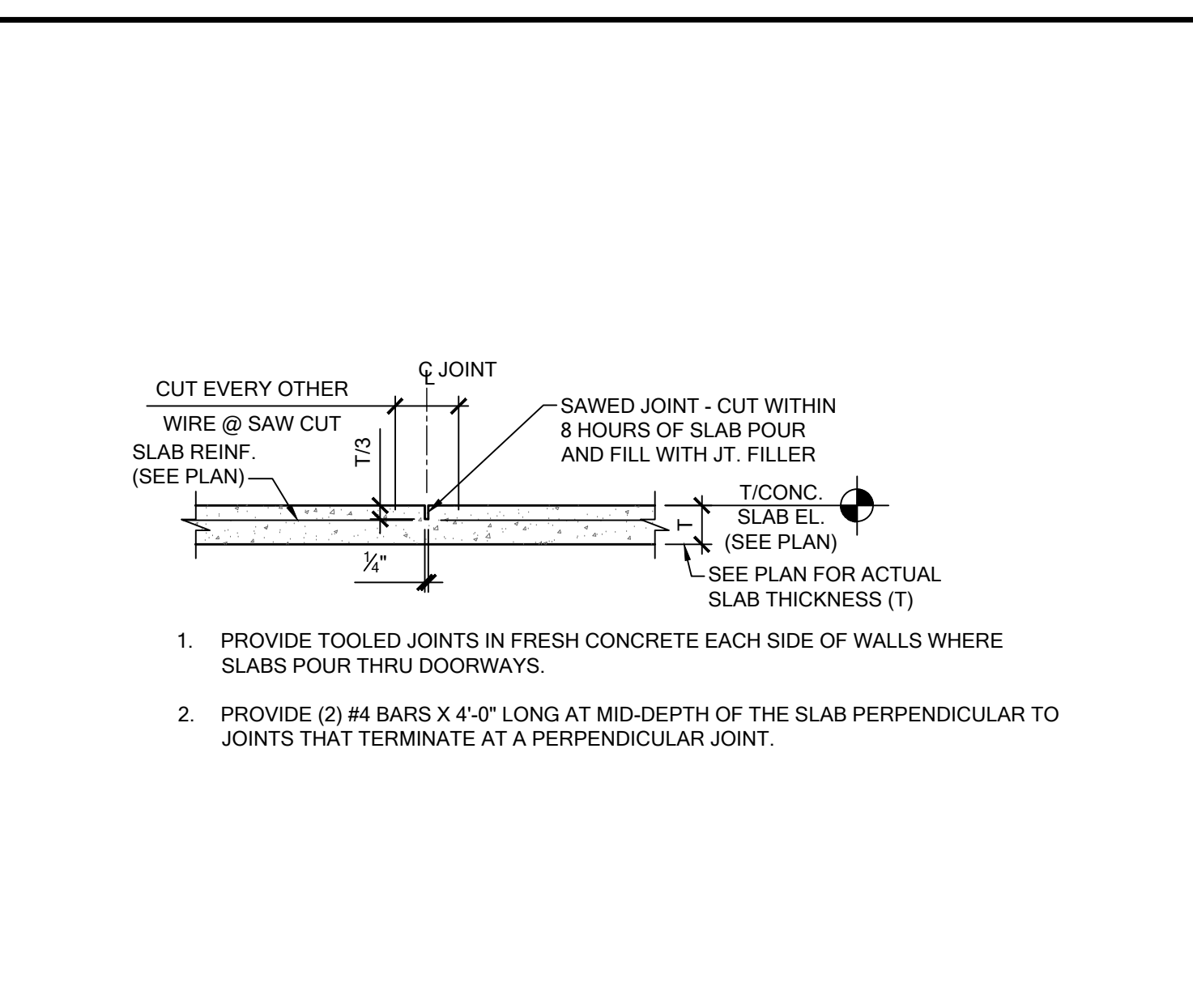
3 TYPICAL FDN. SECTION @ STOREFRONT
SCALE: 3/4" = 1'-0"



4 TYPICAL FDN. SECTION @ PERIMETER COLUMN
SCALE: 3/4" = 1'-0"



4A TYPICAL FDN. SECTION @ PERIMETER COLUMN W/ BRICK LEDGE
SCALE: 3/4" = 1'-0"



5 SAWED CONTROL JOINT DETAIL
SCALE: N.T.S.

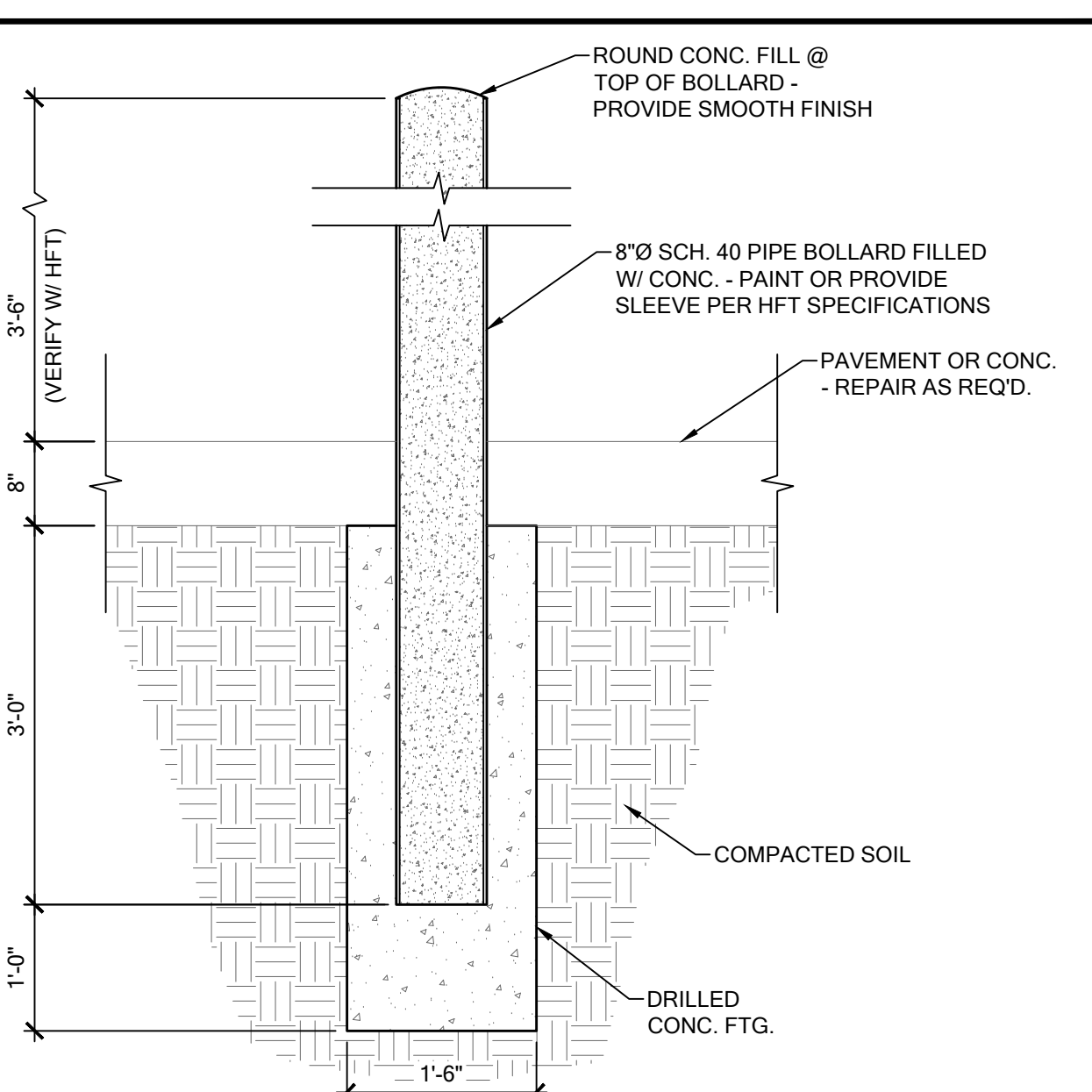
6 ANCHOR BOLT SCHEDULE
SCALE: N.T.S.

BOLT DIA. (Ø) (IN)	BOLT LENGTH (L)	THREAD LENGTH (T) & MAX PROJ.
3/8"	8"	3"
1/2"	9"	3"
5/8"	1'-4"	4"
3/4"	1'-4"	4"
7/8"	1'-5"	4"
1"	1'-6"	4"
1 1/8"	1'-7"	5"
1 1/4"	1'-9"	6"
1 3/8"	1'-11"	6"
1 1/2"	2'-1"	7"
1 3/4"	2'-4"	7"
2"	2'-8"	8"
2 1/4"	3'-0"	9"
2 1/2"	3'-4"	10"

7 REBAR BEND & SPLICE DETAIL
SCALE: N.T.S.

BAR SIZE	REQ'D LAP SPLICE, EMBEDMENT, AND HOOKED REINF. STEEL (INCHES)			CONCRETE		
	BEND	LENGTH	LAP SPLICE	TENSION SPLICE	OTHER BARS	COMPRESSION SPLICE
#3	2 1/4"	4 1/4"	9 1/4"	1'-6"	2'-4"	1'-10"
#4	3"	5 5/8"	12 1/2"	2'-0"	3'-11"	2'-5"
#5	3 3/4"	7"	15 1/2"	2'-6"	3'-11"	3'-0"
#6	4 1/2"	8 1/16"	18 1/2"	3'-0"	4'-8"	3'-7"
#7	5 1/4"	9 13/16"	21 3/4"	3'-6"	6'-9"	5'-3"

*ALL REBAR SHALL BE GRADE 60.



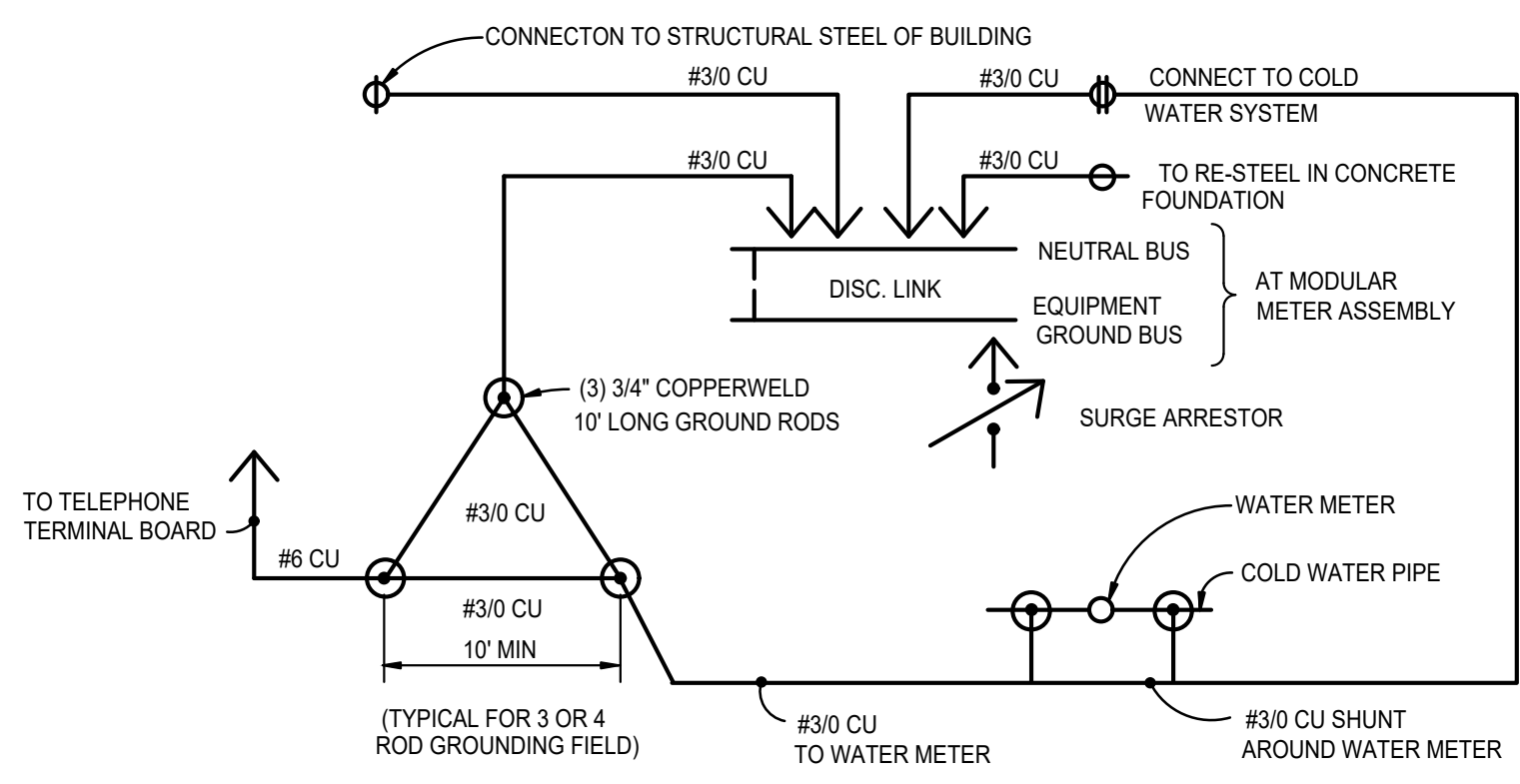
8 TYPICAL BOLLARD DETAIL
SCALE: 3/4" = 1'-0"



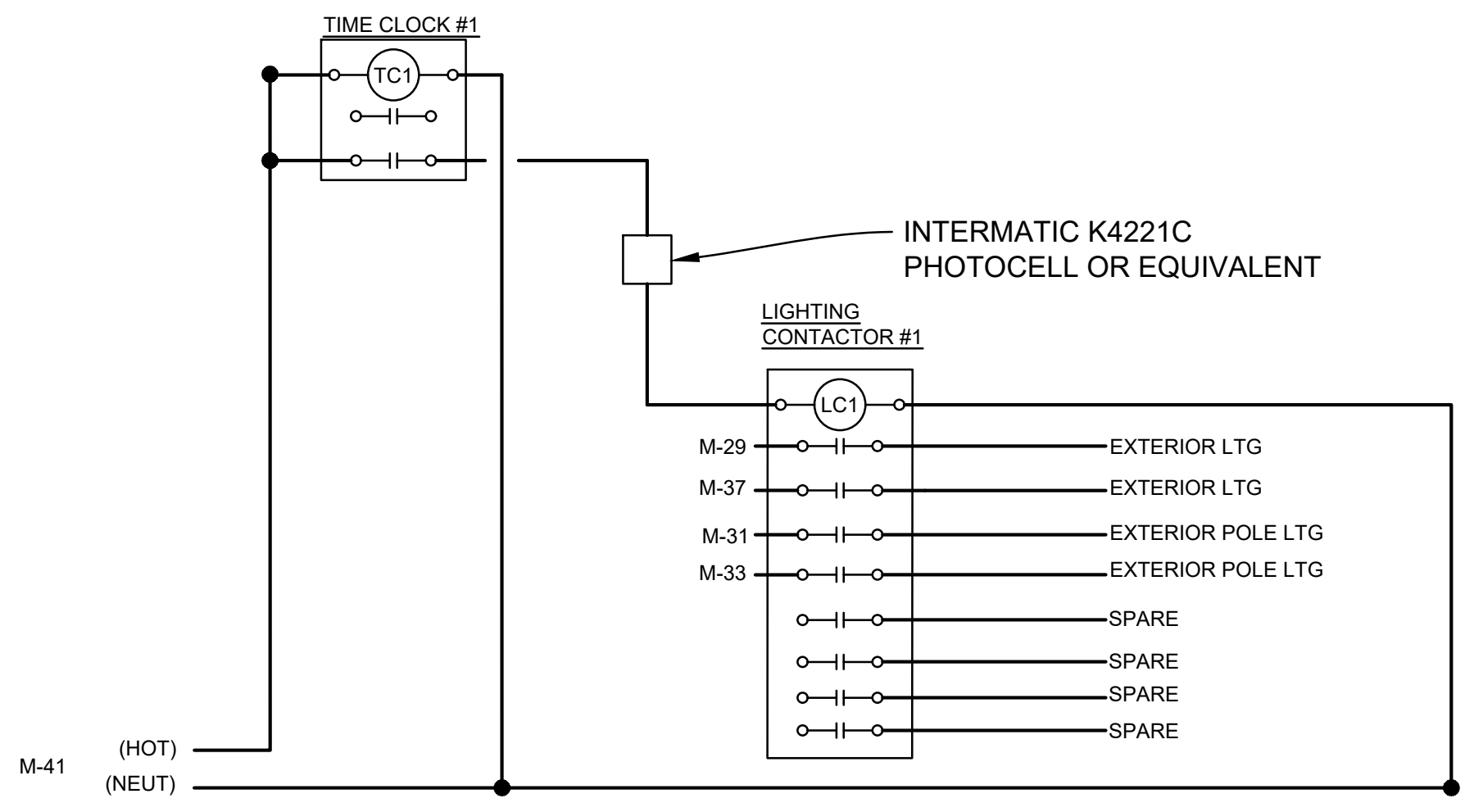
NO.	DATE	DESCRIPTION



ELECTRICAL DEVICE LEGEND	
SYMBOL	DESCRIPTION
⊕	WIRED JUNCTION BOX
⊕	WALL MOUNTED JUNCTION BOX
⊕	DUPLEX RECEPTACLE, 3 WIRE GRD. TYPE, 20A
⊕	DUPLEX RECEPTACLE, WEATHERPROOF, 20A
⊕	GROUND FAULT PROTECTED DUPLEX RECEPTACLE, 20A
⊕	DUPLEX RECEPTACLE WITH ISOLATED GROUND
⊕	CONTROLLED QUADRAPLEX RECEPTACLE
⊕	QUADRAPLEX WALL RECEPTACLE, 20A
⊕	DUPLEX RECEPTACLE, MOUNTED ABOVE COUNTER
⊕	WALL MOUNTED NEMA L5-20R 20 AMP TWIST LOCK RECEPTACLE
⊕	FLOOR MOUNTED DUPLEX RECEPTACLE, 20A
⊕	FLOOR MOUNTED (RECESSED) TWIST LOCK RECEPTACLE
⊕	CEILING MOUNTED DUPLEX RECEPTACLE, 20A
⊕	PUSHBUTTON STATION
⊕	LOW VOLTAGE BUZZER TRANSFORMER
⊕	DOOR BUZZER
⊕	TOGGLE SWITCH - SINGLE, 3-WAY & 4-WAY
⊕	OCCUPANCY SENSOR (TWO POLE WHERE NOTED)
⊕	VACANCY SENSOR
⊕	SWITCHED CIRCUIT
⊕	UNSWITCHED CIRCUIT
⊕	MANUAL MOTOR STARTING SWITCH W/ PILOT LIGHT
⊕	DATA OUTLET - CATEGORY 6
⊕	PEOPLE COUNTER DEVICE
⊕	SAFETY SWITCH
⊕	MAGNETIC MOTOR STARTER
⊕	COMBINATION STARTER/SAFETY SWITCH
⊕	MOTOR OUTLET - 1 PHASE
⊕	MOTOR OUTLET - 3 PHASE
⊕	FIRE ALARM HORN/STROBE SIGNAL DEVICE
⊕	CEILING MOUNTED FIRE ALARM HORN/STROBE SIGNAL DEVICE
⊕	POLE MOUNTED (HUNG FROM STRUCTURE) FIRE ALARM HORN/STROBE SIGNAL DEVICE
⊕	FIRE ALARM STROBE SIGNAL DEVICE
⊕	DUCT MTD. SYSTEM SMOKE DETECTOR W/ REMOTE INDICATORS
⊕	FIRE ALARM PULL STATION
⊕	SYSTEM SMOKE DETECTOR
⊕	FIRE ALARM BOOSTER BOX
⊕	KEY PAD
⊕	HOLD UP BUTTON
⊕	POWER PACK
⊕	CEILING MOUNTED VACANCY SENSOR.
⊕	WALL MOUNTED, LOW VOLTAGE, MANUAL-ON SWITCH
⊕	THERMOSTAT
⊕	TEMPERATURE SENSOR



1 GROUNDING DETAIL
N.T.S.



Panel Wiring Schedule (3-Phase)

Ckt. No.	Zone	Load Description	Brkr. Size	Brkr. Opts.	N.E.C. kVA	Phase	N.E.C. kVA	Brkr. Opts.	Brkr. Size	Load Description	Zone	Ckt. No.
1					0.000	A	0.000					2
3		FUTURE HVAC UNIT	80/3	HACR	0.000	B	0.000	HACR	80/3	FUTURE HVAC UNIT		4
5					0.000	C	0.000					6
7					0.000	A	0.000					8
9		FUTURE HVAC UNIT	50/3	HACR	0.000	B	0.000	HACR	50/3	FUTURE HVAC UNIT		10
11					0.000	C	0.000					12
13					0.000	A	0.000					14
15		SPARE	150/3		0.000	B	0.000		150/3	SPARE		16
17					0.000	C	0.000					18
19					0.000	A	0.000					20
21		SPARE	100/3		0.000	B	0.000		100/3	SPARE		22
23					0.000	C	0.000					24
25		RECEPT - INTERIOR			0.180	A	0.000			SPARE		26
27		RECEPT - EXT. GFI			0.180	B	0.000			SPARE		28
29		LTS - WALL PACK			0.984	C	0.000			SPARE		30
31		SITE LIGHT POLES			0.436	A	0.000			SPARE		32
33		SITE LIGHT POLES			0.436	B	0.000			SPARE		34
35		SPARE			0.000	C	0.000			SPARE		36
37		LTS - WALL PACK			0.861	A	0.000			SPARE		38
39		PYLON SIGN			0.000	B	0.000			SPARE		40
41		PHOTOCELL/CONTACTOR			0.000	C	0.000			SPARE		42

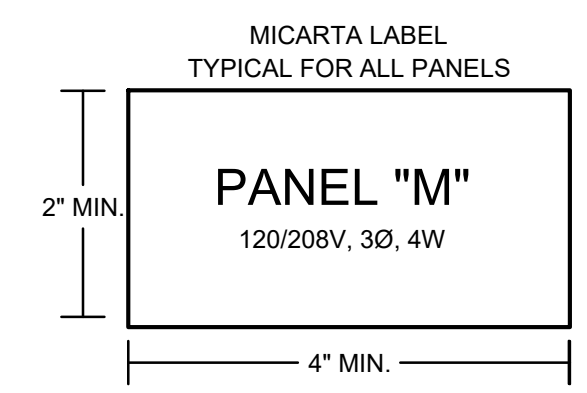
Notes:
 * All circuit breakers to be 20-Amp, 1-Pole unless otherwise noted.
 ** All Phases to be balanced to within 10% using Actual Load Totals.
 E Existing Circuit to remain
 IG Isolated Ground Circuit

Breaker Options:
 AS Powerlink AS Breaker
 LO Handle lock-on device
 ST Shunt Trip Type
 AUX Auxiliary Contacts
 PA Handle Padlock Attachment
 GFCI Ground Fault Circuit Interrupter
 HACR Heating, A/C & Refrigeration
 SF Subfeed
 AFCI Arc Fault Circuit Interrupter

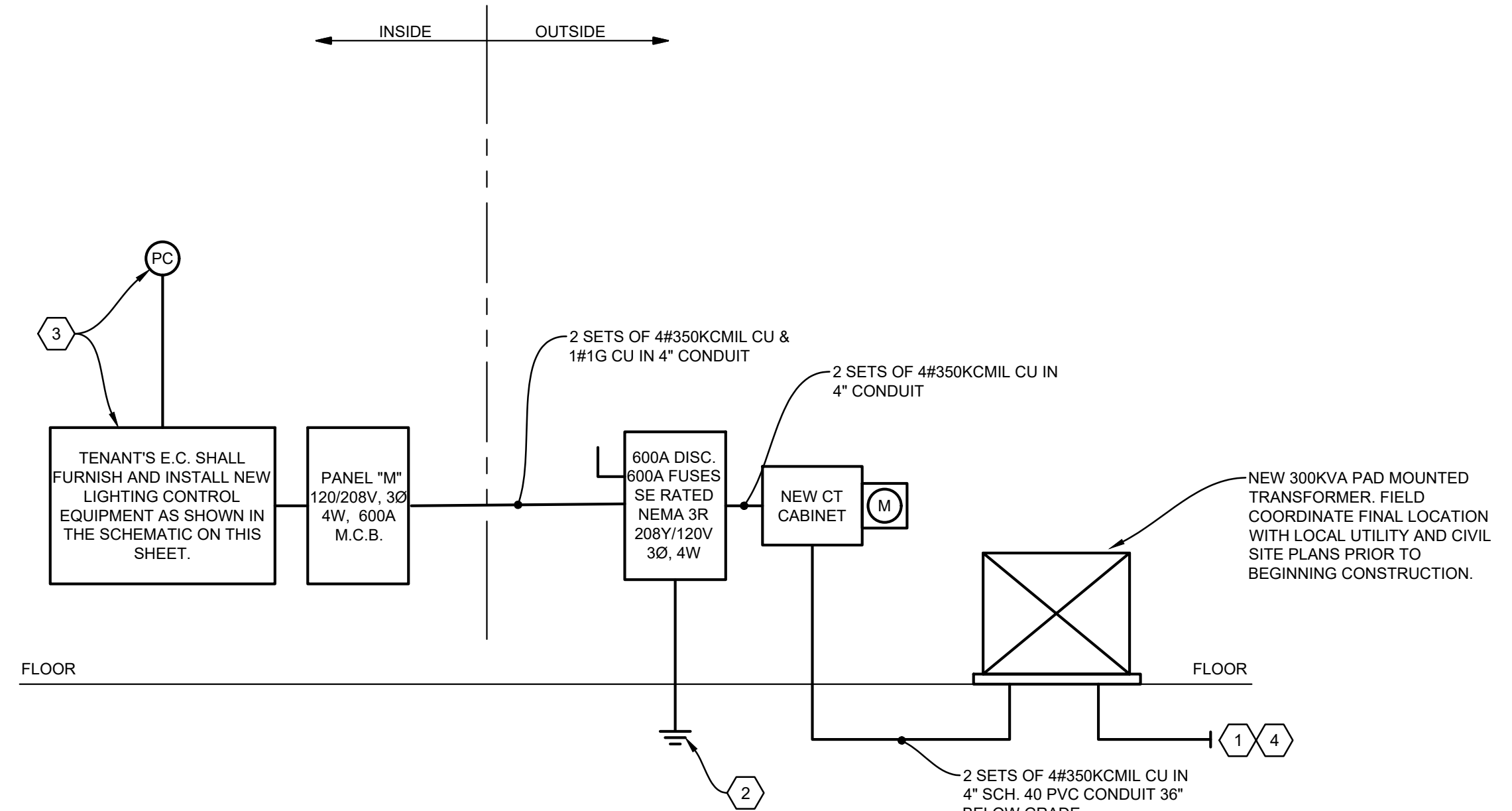
Connected Load: 8.5 amps
 NEC Demand Feeder Load: 10.4 amps

ELECTRIC LOAD SUMMARY				
208Y/120V SERVICE				
DESCRIPTION	N.E.C. CONNECTED KVA	NEC DEMAND NOTES	N.E.C. DEMAND FACTOR	N.E.C. DEMAND KVA
LIGHTING (CONTINUOUS)	2.717	[1]	1.25	3.396
TRACK LIGHT DEMAND ALLOWANCE	-	[2]	-	0.000
SHOW WINDOW DEMAND ALLOWANCE	-	[3]	-	0.000
KIT APPLIANCE	0.000	[4]	1.00	0.000
RECEPTACLES	0.360	[5]	-	0.360
MOTORS	0.000	[6]	-	0.000
HVAC SYSTEM	0.000	[6]	-	0.000
HVAC SYSTEM - NON COINCIDENT	0.000	[7]	0.00	0.000
ELECTRIC WATER HEATER	0.000	-	1.00	0.000
EV CHARGING	0.000	-	1.25	0.000
MISCELLANEOUS	0.000	-	1.00	0.000
	3.077			3.756
N.E.C. DEM. KVA X 1000 / SYS. VOLTAGE X 1.732 = MINIMUM FEEDER AMPERAGE				
3.756 X 1000 / 208 X 1.732 = 10.4 AMPS				

LOAD SUMMARY NOTES:
 [1] POWER FACTOR IS ALREADY INCLUDED IN LIGHTING LOAD.
 [2] 150VA/2FT OF LINE VOLTAGE TRACK + SUM LOW VOLTAGE XFRRMS - CONNECTED LOAD
 [3] 200VA/1F - ACTUAL CONNECTED LOAD
 [4] KIT APPLIANCE DEMAND FACTOR PER NEC 220-56
 [5] 0.0 < 10KW = 100%, REMAINING = 50%
 [6] 125% OF THE LARGEST MOTOR OR COMPRESSOR IN SYSTEM APPLIED ON ONE UNIT.
 [7] EQUIPMENT WILL NOT BE OPERATING WHILE SYSTEM IS AT MAXIMUM DEMAND.



- RISER DIAGRAM CODED NOTES
- E.C. SHALL COORDINATE WITH THE LOCAL POWER COMPANY, SOUTH RIVER ELECTRIC MEMBERSHIP, TO OBTAIN NEW 600A 120/208V WYE SERVICE.
 - PROVIDE A CU GROUNDING ELECTRODE CONDUCTOR TO BUILDING STEEL, UNDERGROUND METAL WATERPIPE AND CONCRETE ENCASED ELECTRODE PER NEC 250-50. SEE DETAIL 1 ON THIS SHEET FOR MORE INFORMATION.
 - PROVIDE DUAL CHANNEL DIGITAL TIMECLOCK WITH PHOTOCELL TO CONTROL EXTERIOR LIGHTING. TORK MODEL DW200B.
 - VERIFY SHORT CIRCUIT REQUIREMENTS WITH LOCAL UTILITY COMPANY, SOUTH RIVER ELECTRIC MEMBERSHIP.



3 ELECTRICAL RISER DIAGRAM
N.T.S.

FIELD VERIFY ALL CONDITIONS

DESIGN DRAWINGS ARE SCHEMATIC. THIS CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING OR AWARD OF CONTRACT TO INSPECT EXISTING FIELD CONDITIONS. THIS CONTRACT SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS.

THE CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER OR OWNER PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE ARCHITECT, ENGINEER OR OWNER AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTORS COST.

BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES. THE PLANS AND SPECIFICATIONS NOT WITHSTANDING, THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.

PROJECT NAME:

HARBOR FREIGHT TOOLS
FOR
STOCKS & TAYLOR CONSTRUCTION

PROJECT NO: 23174

PROJECT ADDRESS:

46 SHRIJI LANE
ERWIN, NC 28339

SEAL:



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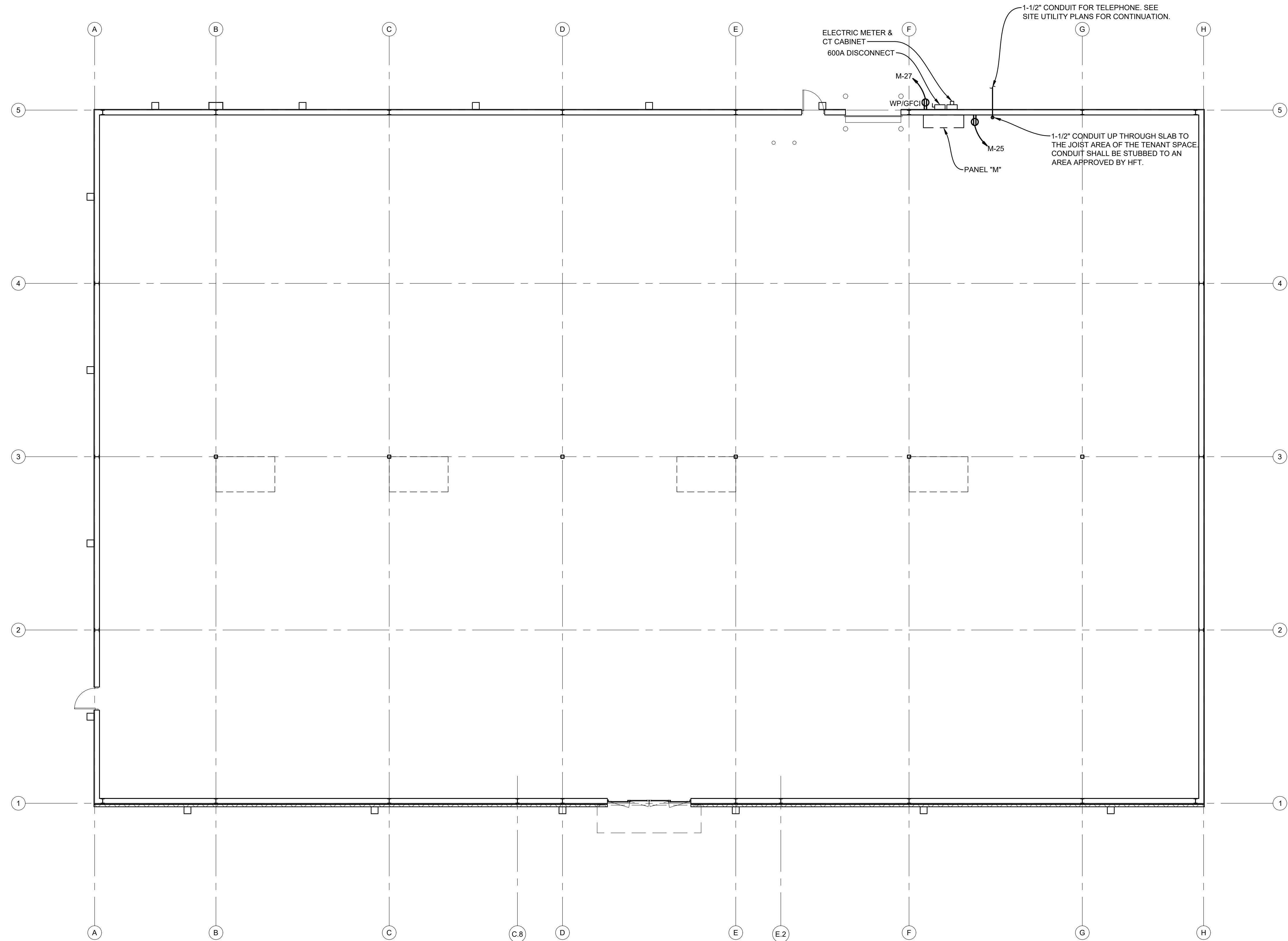
NO.	DATE	DESCRIPTION

DRAWN BY: CF CHECKED BY: SH

DATE: 04/19/24

SHEET TITLE: ELECTRICAL COVERSHEET

SHEET NUMBER: E-1



PROJECT NAME:

**HARBOR
 FREIGHT TOOLS**
 FOR
 STOCKS & TAYLOR
 CONSTRUCTION

PROJECT NO: 23174

PROJECT ADDRESS:
 46 SHRIJI LANE
 ERWIN, NC 28339

SEAL:



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NO.	DATE	DESCRIPTION

DRAWN BY: CF CHECKED BY: SH

DATE: 04/19/24

SHEET TITLE:
 ELECTRICAL SHELL PLAN

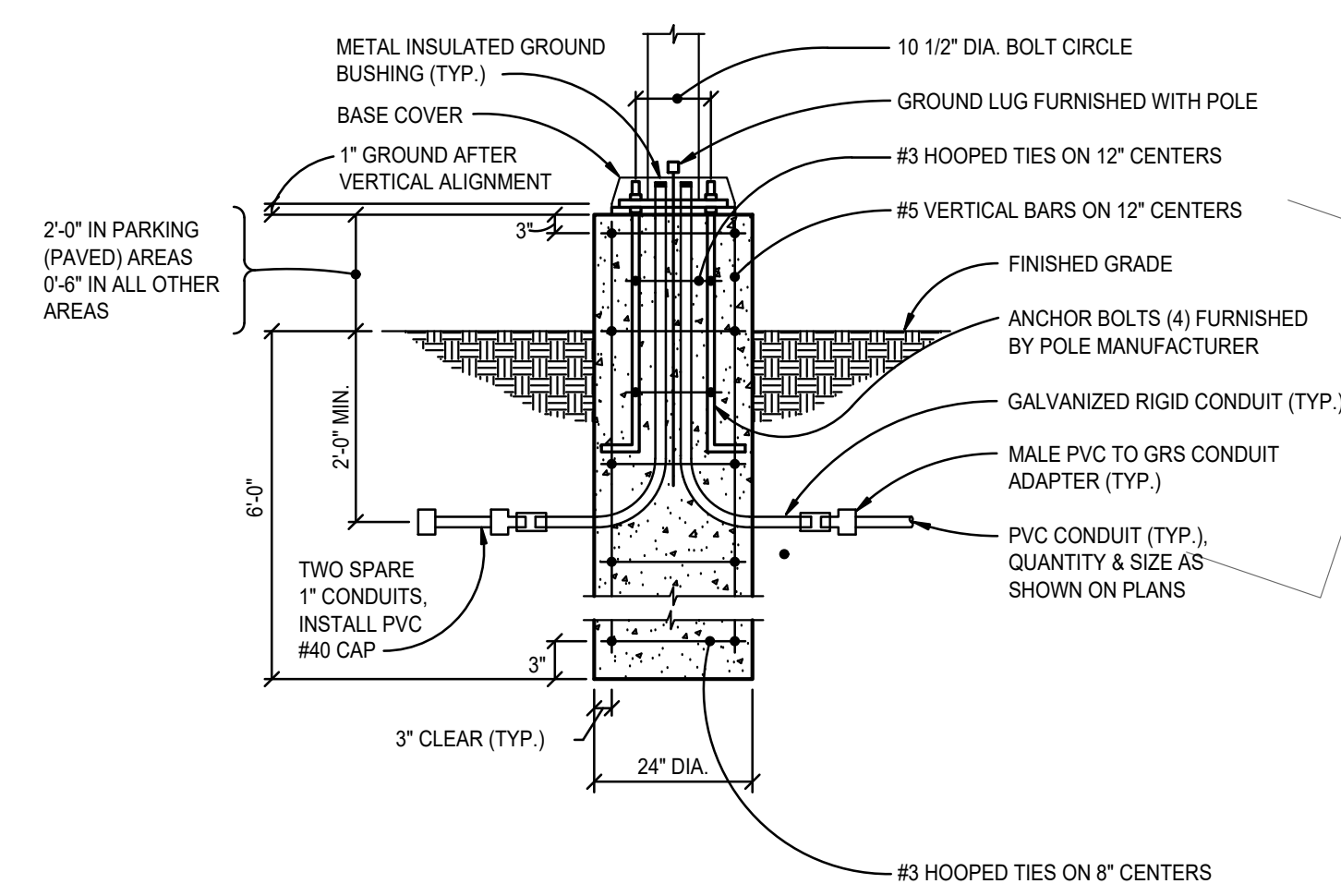
SHEET NUMBER:

E-2

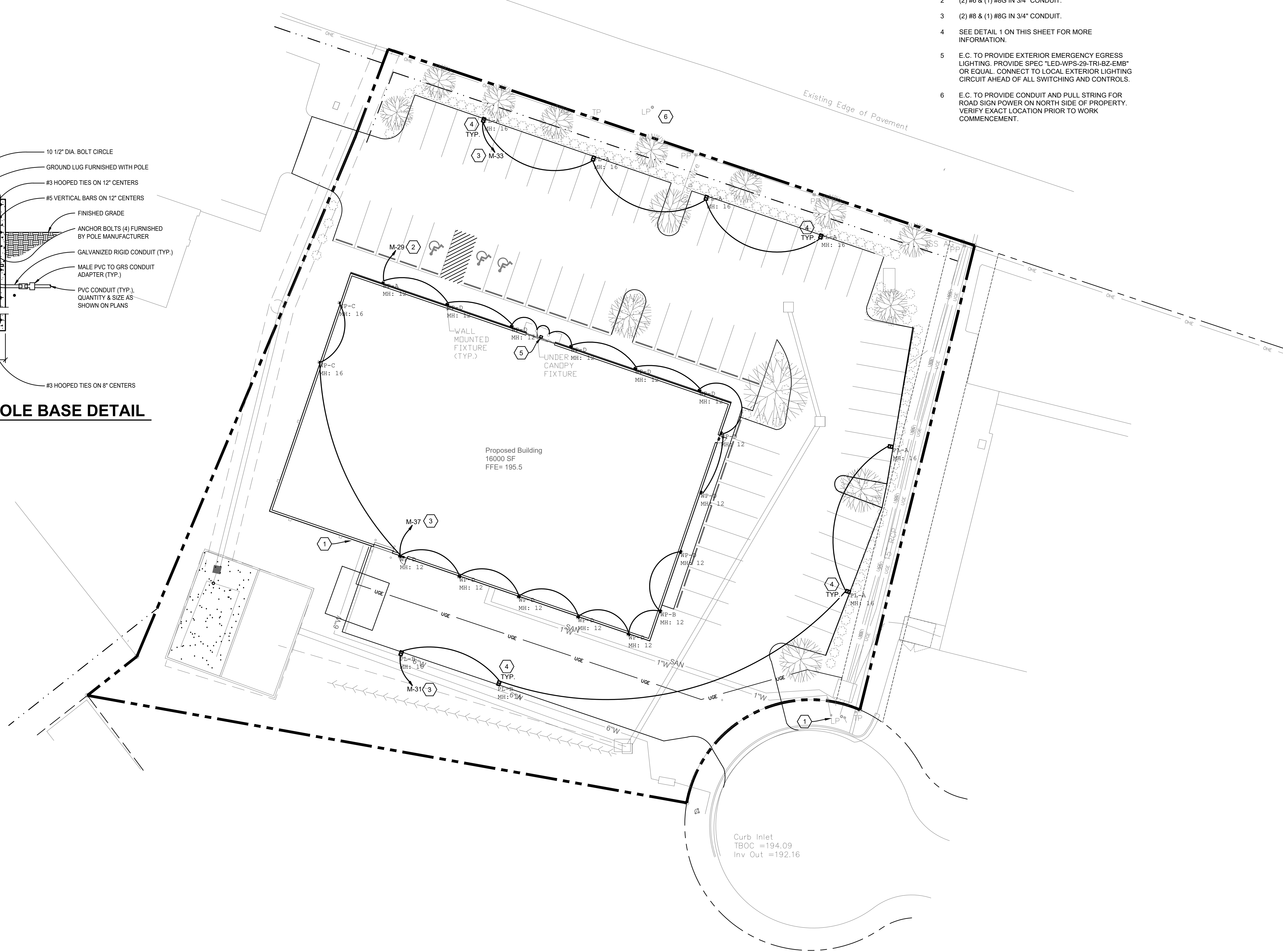
Luminaire Schedule										
Symbol	Qty	Label	Arrangement	LLF	Description	Lum. Watts	Total Watts	Lum. Lumens	[MANUFAC]	
PL-A	6	PL-A	SINGLE	0.890	LITH # RZR-PLD-IV-FT-80LED-350mA-40K-HS-RTA-16'-6E-DM19-F-B-C-COLOR	85.4	512.4	9255	U.S. ARCHITECTURAL LIGHTING	
PL-B	2	PL-B	SINGLE	0.890	LITH # RZR-PLD-IV-40LED-875mA-40K-RTA-16'-6E-DM19-F-B-C-COLOR	108	216	14189	U.S. ARCHITECTURAL LIGHTING	
WP-B	1	WP-B	SINGLE	0.890	LITH # WDGE4 LED P2 70CRI R3 40K	109.02	109.02	15911	Lithonia Lighting	
WP-A	1	WP-A	SINGLE	0.890	LITH # WDGE2 LED P5 40K 80CRI VF	48.44	48.44	5998	Lithonia Lighting	
WP-D	13	WP-D	SINGLE	0.890	LITH # WDGE4 LED P3 70CRI R4 40K	124.86	1623.18	18524	Lithonia Lighting	
WP-C	2	WP-C	SINGLE	0.890	LITH # WDGE1 LED P1 40K 80CRI VF	10.0002	20.0004	1227	Lithonia Lighting	



- SITE PLAN CODED NOTES**
- COORDINATE TELEPHONE/DATA REQUIREMENTS WITH LOCAL TELE/COMM PROVIDER. VERIFY EXACT LOCATIONS AND REQUIREMENTS IN FIELD PRIOR TO WORK COMMENCEMENT.
 - (2) #6 & (1) #8G IN 3/4" CONDUIT.
 - (2) #6 & (1) #8G IN 3/4" CONDUIT.
 - SEE DETAIL 1 ON THIS SHEET FOR MORE INFORMATION.
 - E.C. TO PROVIDE EXTERIOR EMERGENCY EGRESS LIGHTING. PROVIDE SPEC 'LED-WPS-29-TRI-BZ-EMB' OR EQUAL. CONNECT TO LOCAL EXTERIOR LIGHTING CIRCUIT AHEAD OF ALL SWITCHING AND CONTROLS.
 - E.C. TO PROVIDE CONDUIT AND PULL STRING FOR ROAD SIGN POWER ON NORTH SIDE OF PROPERTY. VERIFY EXACT LOCATION PRIOR TO WORK COMMENCEMENT.



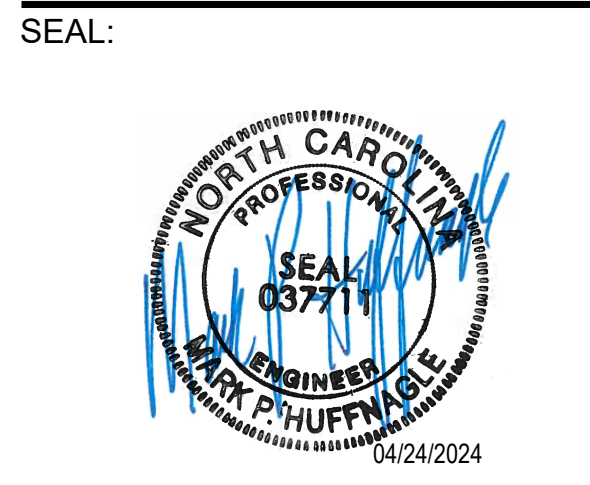
1 SITE LIGHTING POLE BASE DETAIL
N.T.S.



PROJECT NAME:
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FOR
STOCKS & TAYLOR CONSTRUCTION

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DRAWING RELEASE:

NO.	DATE	DESCRIPTION

DRAWN BY: CF
CHECKED BY: SH
DATE: 04/24/24

SHEET TITLE:
ELECTRICAL SITE PLAN

SHEET NUMBER:
E-3

ELECTRICAL SPECIFICATIONS

GENERAL CONDITIONS:

- A. THE REQUIREMENTS AS SET FORTH UNDER GENERAL CONDITIONS, INSTRUCTIONS TO BIDDERS AND GENERAL REQUIREMENTS ARE A PART OF THIS CONTRACT.
- B. BIDS SHALL BE BASED ON A COMPLETE/FULL SET OF DRAWINGS.
- C. CONTRACTOR MUST READ THE ENTIRE SPECIFICATIONS COVERING OTHER BRANCHES OF WORK AND IS RESPONSIBLE FOR COORDINATION OF THE WORK WITH WORK PERFORMED BY OTHER TRADES.

SCOPE OF WORK:

- A. CONTRACTOR SHALL VISIT SITE PRIOR TO BIDDING. BIDS SHALL SERVE AS EVIDENCE OF KNOWLEDGE OF EXISTING CONDITIONS. ALL REQUIREMENTS INCLUDING MODIFICATIONS WHICH ARE REQUIRED TO MEET THE INTENT OF THE DRAWINGS AND SPECIFICATIONS ARE TO BE OBTAINED BY ELECTRICAL CONTRACTOR PRIOR TO AND INCLUDED IN BID PRICE. FIELD VERIFY ALL EXISTING ELECTRICAL AND TELEPHONE EQUIPMENT, LOCATIONS, CONDITIONS ETC. FAILURE TO VISIT THE SITE SHALL NOT RELIEVE THE CONTRACTOR FROM ANY RESPONSIBILITY IN THE PERFORMANCE OF THE ELECTRICAL WORK.
- B. FURNISH ALL LABOR, MATERIALS, TESTING, EQUIPMENT, INCIDENTALS AND TOOLS TO PERFORM ELECTRICAL WORK SHOWN, NOTED OR SCHEDULED FOR A COMPLETE AND FINISHED INSTALLATION.
 - 1. MATERIALS, PRODUCTS AND EQUIPMENT, INCLUDING ALL COMPONENTS THEREOF, SHALL BE NEW AND AS SUCH APPEAR ON THE UNDERWRITERS LABORATORIES LIST OF APPROVED ITEMS AND SHALL BE SIZED IN CONFORMITY WITH REQUIREMENTS OF THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND OTHER APPLICABLE CODES, WHICHEVER ARE MORE STRINGENT.
- C. THE WORK IS TO BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NEC AND ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES.
- D. INCLUDE ANY LABOR AND MATERIALS NOT SPECIFICALLY MENTIONED, BUT NECESSARY TO PROVIDE A COMPLETE AND FULLY OPERATIVE ELECTRICAL SYSTEMS.

PERMITS:

- A. SECURE AND PAY FOR ALL REQUIRED PERMITS, FEES, ASSESSMENTS AND INSPECTION CERTIFICATES THAT RELATE TO THE ELECTRICAL CONTRACT.
- B. FURNISH APPROVED CERTIFICATE OF FINAL INSPECTION, AND TURN OVER TO OWNER AT COMPLETION OF PROJECT.

DRAWINGS AND SPECIFICATIONS:

- A. THIS ELECTRICAL PLANS ARE DIAGRAMMATIC, NOT SHOWING EVERY ITEM IN EXACT LOCATION OR DETAIL. MEASUREMENTS AND LOCATIONS MUST BE FIELD VERIFIED AND COORDINATED WITH ARCHITECTURAL, PLUMBING, HVAC, FIRE PROTECTION, FIRE ALARM, STRUCTURAL, AND OTHER BUILDING DRAWINGS.

SHOP DRAWINGS:

- A. SUBMIT FIVE COPIES OF MATERIAL LISTS AND SHOP DRAWINGS FOR MAJOR EQUIPMENT TO THE OWNER'S CONSTRUCTION MANAGER FOR APPROVAL PRIOR TO ORDERING EQUIPMENT. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS EARLY ENOUGH IN PROJECT TO ALLOW AMPLE TIME FOR OWNERS REVIEW WITHOUT CAUSING TIME DELAYS OR CONFLICTS IN THE JOB PROGRESS. SUBMITTALS SHALL BE IN ACCORDANCE WITH GENERAL CONDITIONS AND THE MANUFACTURERS LISTED ON THE DRAWINGS AND SHALL BEAR THE STAMP OF THE CONTRACTOR SHOWING THAT HE HAS REVIEWED AND APPROVED THEM AND THAT THEY ARE IN CONFORMANCE WITH THE CONTRACT DRAWINGS. LACK OF SUCH CONTRACTOR'S APPROVAL WILL BE CAUSE FOR REJECTION WITHOUT REVIEW BY THE OWNER.
- B. WHERE TRADE NAMES, BRANDS OF MANUFACTURERS OF EQUIPMENT OR MATERIALS ARE SHOWN ON THE DRAWINGS OR SPECIFICATIONS THE EXACT EQUIPMENT SHALL BE USED ON THE PROJECT. THE USE OF ANY UNAUTHORIZED EQUIPMENT SHALL BE SUBJECT TO REMOVAL/REPLACEMENT AT THE REQUEST OF THE OWNER'S CONSTRUCTION MANAGER (AT THE ELECTRICAL CONTRACTORS EXPENSE).

CONDUITS:

- A. CONDUIT SHALL BE STANDARD STEEL RIGID, IMC OR EMT (THIN WALL) ACCORDING TO LOCAL CODE AND LANDLORD REQUIREMENTS. CONDUIT SHALL BE CONCEALED IN FINISHED AREAS, EXCEPT AS OTHERWISE APPROVED BY ARCHITECT. EMT CONNECTIONS SHALL BE COMPRESSION OR SET SCREW TYPE.
- B. FLEXIBLE CONDUIT OR TYPE MC CABLE SHALL BE USED FOR FINAL CONNECTIONS TO LIGHT FIXTURES, MOTORS AND VIBRATING EQUIPMENT ONLY; AND WHERE SO USED TO BE GROUNDED WITH A SEPARATE FULL SIZED GREEN GROUNDING CONDUCTOR. FINAL TYPE MC/FLEX CONNECTIONS SHALL BE LIMITED TO 6'-0" IN LENGTH. (ARRANGE CIRCUITS SO AS TO AVOID THE USE OF JUNCTION BOXES ABOVE DRYWALL CEILING AREAS, JUNCTION BOXES LOCATED ABOVE LAY-IN CEILINGS ARE ACCEPTABLE.)

- 1. MINIMUM SIZES OF CONDUITS SHALL BE 3/4" FOR STANDARD CONDUIT, AND 1/2" FOR FLEX CONDUIT (1/2" STANDARD CONDUIT AND 3/8" MC CABLE MAY BE USED AS SPECIFIED ABOVE, IF ACCEPTABLE WITH LANDLORD AND LOCAL CODES, ELECTRICAL CONTRACTOR SHALL FIELD COORDINATE WITH LANDLORD & INSPECTION AGENCIES PRIOR TO INSTALLATION). ELECTRIC METALLIC TUBING (EMT) SHALL BE GALVANIZED OR ELECTRO-GALVANIZED. FITTINGS SHALL BE SET SCREW OR COMPRESSION TYPE, FITTING SHALL BE AS MANUFACTURED BY REGEL, STEEL CITY, RACO, T & B, EFCOR OR EQUAL. EMT SHALL BE USED FOR FEEDERS AND BRANCH CIRCUITS RUN ABOVE SUSPENDED CEILINGS OR CONCEALED IN INTERIOR PARTITIONS.
- 2. PAINTING OF ELECTRICAL CONDUITS, ETC., IF REQUIRED, WILL BE BY GENERAL CONTRACTOR.
- C. THE USE OF ROMEX OR BX IS NOT PERMITTED.
- D. MAXIMUM CONDUIT HANGER SPACING SHALL BE 8'-0" FOR 3/4" THRU 1 1/4" AND 10'-0" FOR 1 1/2" THRU 4" CONDUITS. DO NOT SUPPORT CONDUIT FROM THE CEILING SYSTEM.

- E. LEAVE A #10 AWG PULL WIRE OR NYLON PULL STRING IN ALL EMPTY CONDUITS.
- F. SECURE ALL RACEWAYS TO THE BUILDING STRUCTURE IN A RIGID AND SECURE MANNER, USING FASTENERS SUCH AS "CADDY CLIPS" OR EQUAL.
- G. FLASH AND COUNTERFLASH ALL RACEWAYS WHICH PENETRATE THE ROOF OR USE PITCH POCKETS. INSURE THAT PENETRATIONS ARE COMPLETELY WEATHERPROOF. ALL RACEWAY SYSTEMS EXPOSED TO THE WEATHER SHALL BE WEATHERPROOF. PRIOR APPROVAL BY LANDLORD IS REQUIRED TO ADD ADDITIONAL EQUIPMENT LOADS TO STRUCTURE OR TO MAKE HOLES IN EXISTING ROOF. NOTIFY LANDLORD'S ROOFING CONTRACTOR AT LEAST 72 HOURS PRIOR TO ANY REQUIRED ROOF WORK.

WIRE:

- A. WIRE SHALL BE SINGLE CONDUCTOR COPPER WITH 600 VOLT INSULATION. MINIMUM WIRE SIZE SHALL BE #12 AWG, ALL WIRE AND CABLE SHALL BE NEW AND SHALL BE BROUGHT TO THE SITE IN UNBROKEN PACKAGES. ALL WIRING OF ANY TYPE SHALL BE IN CONDUIT. NO STRANDED WIRE ALLOWED FOR #10 AND #12 AWG SIZES. (INCREASE CONDUCTOR BY ONE SIZE FOR EVERY 150' INCREMENT OF DISTANCE FROM THE PANEL BOARD FOR 120 VOLT CIRCUITS.)

- 1. GENERAL WIRING SHALL BE THW OR THHN. (ALUMINUM CONDUCTORS ARE NOT PERMITTED.)
- B. WIRE CONNECTORS SHALL BE EQUAL TO SCOTCHLOCK FOR #8 AND SMALLER, AND EQUAL TO T & B 'LOCK-TITE' FOR #6 AND LARGER.
- C. THE USE OF SHARED NEUTRALS IS ACCEPTABLE FOR LIGHTING AND RECEPTACLE CIRCUITS IF INSTALLED IN ACCORDANCE WITH N.E.C. #310, AND LOCAL CODES.
- D. ALL WIRING TO BE COLOR CODED AS FOLLOWS:

120/208 VOLT SYSTEM NEUTRAL - WHITE PHASE A OR L1-BLACK PHASE B OR L2-RED PHASE C OR L3-BLUE GROUND-GREEN	277/480 VOLT SYSTEM NEUTRAL - WHITE WITH TRACER OR GRAY PHASE A OR L1 - BROWN PHASE B OR L2-ORANGE PHASE C OR L3-YELLOW GROUND-GREEN WITH TRACER
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LIGHTING:

- A. LIGHTING FIXTURES AND LAMPS SHALL BE FURNISHED AS SCHEDULED ON THE LIGHTING FIXTURE SCHEDULE. FLUORESCENT FIXTURES SHALL HAVE HPF BALLASTS WITH EFFICIENCY FACTORS IN ACCORDANCE WITH LOCALLY ADOPTED ENERGY CODE.
- B. LIGHT FIXTURES SHALL BE SUPPORTED FROM THE BUILDING STRUCTURAL VIA ALL THREAD AND UNI-STRUT, AND NOT SUPPORTED BY CEILING SYSTEM.

WIRED GROUND SYSTEM:

- A. FURNISH AND INSTALL A COMPLETE WIRED GROUNDING SYSTEM FOR ELECTRICAL EQUIPMENT AND CIRCUITS AS SHOWN ON THE DRAWINGS AND DESCRIBED GENERALLY BELOW.
- B. ALL GROUNDING CONDUCTORS SHALL BE GREEN, WHERE EXPOSED IN PANEL, SWITCHBOARD, OUTLET, BOXES, ETC.
- C. ALL ENCLOSURES AND NON-CURRENT CARRYING METALS TO BE GROUNDED. CONDUIT SYSTEM TO BE ELECTRICALLY CONTINUOUS. ALL LOCK NUTS MUST CUT THROUGH ENAMELED OR PAINTED SURFACES ON ENCLOSURES. WHERE ENCLOSURES AND NON-CURRENT CARRYING METALS ARE ISOLATED FROM THE CONDUIT SYSTEM, USE BONDING JUMPEERS WITH APPROVED CLAMPS.
- D. RUN A SEPARATE GROUNDING CONDUCTOR IN EACH CONDUIT, #12 MINIMUM, OR AS SHOWN ON DRAWINGS. FOR PANEL FEEDERS BOND THE GROUNDING CONDUCTOR TO THE CONDUIT, WHERE ENTERING AND LEAVING THE CONDUIT. ALL GROUND CLAMPS SHALL BE PENN-UNION OR EQUAL, SIMILAR TO "GPI" TYPE. CONDUIT GROUND BUSHINGS SHALL BE THOMAS & BETTS OR EQUAL, SIMILAR TO #3800 SERIES WITH NYLON INSULATED THROAT.
- E. ALL DEVICES SHALL BE BONDED TO THE CONDUIT SYSTEM. USE A BONDING JUMPER BETWEEN THE OUTLET BOX AND THE DEVICE GROUNDING TERMINAL. METAL-TO-METAL CONTACT BETWEEN THE DEVICE YOKE AND THE OUTLET BOX IS NOT ACCEPTABLE AS A BOND FOR EITHER SURFACE MOUNTED BOXES OR FLUSH TYPE BOXES. ALL JUNCTION BOXES, OUTLET BOXES AND PULL BOXES SHALL BE BONDED TO THE CONDUIT SYSTEM. ALL FLEXIBLE CONDUIT SHALL BE JUMPERED WITH A GROUND CONDUCTOR.

WIRE DEVICES:

- A. COLOR OF WIRING DEVICES AND COVERPLATES SHALL BE SELECTED BY ARCHITECT. (SEE PLAN NOTES FOR ADDITIONAL INFORMATION).
 - 1. RECEPTACLES SHALL BE 20 AMP, 3-WIRE GROUNDING TYPE EQUAL TO HUBBELL 5362.
 - 2. SWITCHES SHALL BE 20 AMP SPECIFICATION GRADE, RATED AT 120 OR 277 VOLT, AS REQUIRED.
 - 3. SPECIAL DEVICES SHALL BE A SPECIFICATION GRADE.
 - 4. FLOOR BOXES TO BE HUBBELL #5627/29 WITH ALUMINUM COVER (OR EQUAL BY "STEEL CITY") AND HUBBELL 5362 RECEPTACLE (UNLESS OTHERWISE NOTED)
 - 5. EQUAL BY ARROW-HART, GENERAL ELECTRIC, BRYANT, PASS & SEYMOUR, OR SIERRA.

PANELBOARDS AND SAFETY SWITCHES:

- A. PROVIDE BRANCH CIRCUIT PANELS WHICH SHALL BE OF THE BOLTED CIRCUIT BREAKER TYPE WITH SOLID COPPER BUSSING FULL SIZED NEUTRAL, 25% GROUND BUSSING, OVERALL HINGED/LOCKABLE DOOR, AND TYPEWRITTEN DIRECTORY INSIDE DOOR. ALL SERVICE ENTRANCE EQUIPMENT SHALL BEAR THE MANUFACTURER'S LABEL WHICH SHALL STATE THAT THE EQUIPMENT IS RATED FOR SERVICE ENTRANCE APPLICATION IN ACCORDANCE WITH N.E.C. #230-70. LOAD BALANCE ALL ELECTRICAL PHASES AT PANELS AND SWITCHBOARDS. TWO AND THREE POLE BREAKERS SHALL BE COMMON TRIP TYPE. WHEN USED AS SWITCHES IN 120V. AND 277V. LIGHTING CIRCUITS, FURNISH TYPE "SMD" BREAKERS IN ACCORDANCE WITH N.E.C. #240-63B. SQUARE D OR EQUAL BY SIEMENS ITE, CUTLER-HAMMER, OR GENERAL ELECTRIC (OR APPROVED EQUAL).

- B. PROVIDE SAFETY AND DISCONNECT SWITCHES, FUSED OR NONFUSED, AS CALLED FOR ON DRAWINGS AND AS REQUIRED BY CODE. (FUSES AS MANUFACTURED BY BUSSMAN, CHASE SHAWMUT, ECONOMY FUSE CO., OR LITTLE FUSE CO. ARE ACCEPTABLE). DISCONNECT SWITCHES THAT ARE INSTALLED AT AIR CONDITIONING EQUIPMENT, HEAT PUMPS, ETC SHALL BE FUSED IN ACCORDANCE WITH THE EQUIPMENT'S NAME PLATE REQUIREMENTS PER N.E.C. 440-21 & 110-3B. SWITCHES SHALL BE HEAVY DUTY, QUICK MAKE/QUICK BREAK TYPE, FUSIBLE OR NON-FUSIBLE, WEATHERPROOF AS INDICATED ON THE DRAWINGS, OR AS REQUIRED BY LOCAL CODES. LOAD AND HORSEPOWER RATED AS MANUFACTURED BY SQUARE D, SIEMENS ITE, CUTLER HAMMER, OR GENERAL ELECTRIC (OR APPROVED EQUAL).

- C. MANUAL MOTOR STARTERS WITH OVERLOAD PROTECTION MAY BE USED FOR FRACTIONAL HORSEPOWER MOTORS THAT DO NOT REQUIRE AUXILIARY CONTROL. SINGLE PHASE STARTERS SHALL BE SQUARE D OR EQUAL. THREE PHASE STARTERS SHALL BE PROVIDED WITH OVERLOAD DEVICE IN EACH PHASE MATCHED TO MOTOR NAMEPLATE RATING. MAGNETIC MOTOR STARTERS (MINIMUM SIZE #1) SHALL BE USED FOR ALL SINGLE PHASE AND THREE PHASE MOTORS RATED ABOVE 1/2 HP OR THAT REQUIRE AUXILIARY CONTROL. PROVIDE CONTROL DEVICES (CONTACTS, TRANSFORMERS, ETC.) IN STARTERS AS REQUIRED FOR INTERLOCKS, COORDINATION WITH MECHANICAL AND/OR TEMPERATURE CONTROL CONTRACTORS. COMBINATION STARTERS, WHEN USED, SHALL CONTAIN FUSIBLE SWITCHES.

BOXES:

- A. OUTLET BOXES AND COVERS SHALL BE GALVANIZED, ONE-PIECE PRESSED STEEL KNOCKOUT.
- B. JUNCTION, PULL BOXES AND COVERS SHALL BE GALVANIZED STEEL, CODE GAUGE SIZE.
- C. INSTALL BOXES RIGIDLY ON BUILDING STRUCTURE AND SUPPORT INDEPENDENTLY OF THE CONDUIT SYSTEM. ALSO PROVIDE SUITABLE/PROPER BOX EXTENSIONS TO EXTEND BOXES TO FINISHED FACES OF WALLS ETC. ALL OUTLET BOXES TO HAVE SUITABLE BLOCKING BEHIND THEM TO MINIMIZE THE DEFLECTION THAT OCCURS WHEN PLUGGING/UNPLUGGING INTO THESE DEVICES.
- D. WHERE A 277 VOLT LIGHT SWITCH IS GANGED WITH A 120 VOLT RECEPTACLE PROVIDE A SUITABLE DIVIDER OR SEPARATE JUNCTION BOXES IN ACCORDANCE WITH NEC AND LOCAL CODES.
- E. ELECTRICAL CONTRACTOR SHALL LABEL ALL JUNCTION BOXES, NOT LOCATED IN WALLS, WITH TYPE OF CABLING WITHIN BOX (IE: "FIRE ALARM SIGNAL CIRCUIT" OR "LIGHTING CIRCUIT X-XX"). LABELING SHALL BE LOCATED ON BOX COVER AND APPLIED WITH PERMANENT BLACK MARKER.

SERVICES:

- A. ELECTRICAL CONTRACTOR SHALL PROVIDE TEMPORARY SERVICE FROM LANDLORD'S DESIGNATED LOCATION AND PROVIDE LIGHTING, POWER AND WIRING AS REQUIRED TO FACILITATE APPLICABLE TEMPORARY NEEDS, AND FURNISH EXTENSION CORDS. ANY TEMPORARY WIRING, FUSES, ETC., SHALL BE REMOVED UPON COMPLETION OF THE PROJECT. PROVIDE GROUND FAULT PROTECTION AS REQUIRED BY N.E.C. AND LOCAL CODES.
- B. PROVIDE ELECTRICAL SERVICE AS SHOWN ON THE DRAWINGS, FIELD VERIFY EXACT REQUIREMENTS PRIOR TO BIDS. ALL WORK NOT SPECIFICALLY NOTED AS BEING BY THE LANDLORD OR POWER COMPANY SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. CLOSELY COORDINATE ENTIRE INSTALLATION WITH LANDLORD AND POWER COMPANY AS REQUIRED. (PROVIDE EQUIPMENT THAT IS COMPATIBLE WITH AVAILABLE FAULT CURRENT LEVELS, PROVIDE "CABLE LIMITERS" IF NECESSARY FOR SYSTEM COORDINATION). FIELD VERIFY EXACT TYPE, SIZE, LOCATION, REQUIREMENTS, ETC. OF EXISTING POWER AND TELEPHONE FACILITIES PRIOR TO BIDDING PROJECT.
- C. MAKE PROVISIONS FOR NEW TELEPHONE SERVICE AS REQUIRED, AND AS INDICATED ON THE DRAWINGS.
- D. CONDUIT SYSTEM FOR TELEPHONE DISTRIBUTION WITHIN TENANT'S PREMISES SHALL BE PROVIDED AS REQUIRED FOR A COMPLETE TELEPHONE SYSTEM. OUTLET BOXES SHALL BE 4" SQUARE MINIMUM WITH SINGLE DEVICE COVER AND TELEPHONE PLATE. CLOSELY FIELD COORDINATE WITH TENANTS CONSTRUCTION MANAGER TO AVOID CONFLICTS.

STEP-DOWN TRANSFORMER: (IF APPLICABLE)

- A. PROVIDE DRY-TYPE TRANSFORMER AS MANUFACTURED BY SQUARE "D", HEAVY DUTY, ACME, GENERAL ELECTRIC, SIEMENS ITE OR OTHER EQUIVALENT MANUFACTURERS, OF THE ENCLOSED VENTILATED TYPE WITH KVA AND VOLTAGE RATINGS AS CALLED FOR ON THE DRAWINGS WITH COILS DESIGNED FOR 150 DEGREE C RISE ABOVE A 40 DEGREE C AMBIENT WITH 100% OF RATED LOAD CONNECTED TO THE SECONDARY, CLASS 220 DEGREE C INSULATION AND A MINIMUM OF SIX STANDARD FULL CAPACITY TAPS (TWO ABOVE AND FOUR BELOW NORMAL). TRANSFORMER SHALL BE IN ACCORDANCE WITH THE U.S. DEPARTMENT OF ENERGY (DOE) 2016 EFFICIENCY STANDARDS. SOUND LEVEL/DECIBELS SHALL BE IN ACCORDANCE WITH "NEMA" STANDARDS, AND INSTALLATION SHALL INCLUDE "KORFOUND" OR EQUAL VIBRATION-DAMPENING MOUNTS AND FLEXIBLE STEEL CONDUIT FOR PRIMARY AND SECONDARY CONNECTIONS TO MINIMIZE SOUND TRANSMISSION. MOUNT TRANSFORMER ON SEPARATE VIBRATION ISOLATORS. THESE ARE ADDITIONAL VIBRATION ISOLATORS AND ARE USED IN CONJUNCTION WITH ANY INTEGRAL FACTORY INSTALLED VIBRATION ISOLATORS.

LIGHTING CONTACTOR AND TIMER SWITCHES:

- A. CONTACTORS FOR CONTROL OF LIGHTING AND SIGNS SHALL BE SQUARE "D", CLASS 8903, TYPE "L", ELECTRICALLY HELD. EQUIVALENT PRODUCTS BY OTHER MANUFACTURERS ARE PERMITTED.
- B. ELECTRONIC DIGITAL TIME SWITCHES SHALL BE USED FOR CONTROL OF SHOW WINDOW LIGHTING, SIGNS, AND IF REQUIRED/DESIRED OTHER LIGHTING. THE ELECTRONIC DIGITAL TIMER SHALL BE A TORK MODEL DWZ100A OR EQUIVALENT WITH A 7-DAY FORMAT, 365 DAY ADVANCED HOLIDAY SCHEDULE, CAPABLE OF DIFFERENT SETTINGS EACH DAY OF THE WEEK, AND HAVE AN ASTRONOMIC FEATURE.

INSTALLATION:

- A. ALL ELECTRIC WORK SHALL BE INSTALLED SO AS TO BE READILY ACCESSIBLE FOR OPERATING, SERVICING, MAINTAINING AND REPAIRING. HANGERS SHALL INCLUDE ALL MISCELLANEOUS STEEL SUCH AS CHANNELS, RODS, ETC., NECESSARY FOR THE INSTALLATION OF WORK AND SHALL BE FASTENED TO BUILDING STEEL, CONCRETE OR MASONRY, BUT NOT PIPING OR DUCTWORK. ALL CONDUIT SHALL BE CONCEALED WHEREVER POSSIBLE. EXPOSED CONDUITS SHALL BE IN STRAIGHT LINES PARALLEL WITH OR AT RIGHT ANGLES TO COLUMN LINES OR BEAMS AND SEPARATED AT LEAST 3 INCHES FROM WATER LINES WHEREVER THEY RUN ALONGSIDE OR ACROSS SUCH LINES. ALL CONDUCTORS SHALL BE IN CONDUIT, DUCTS OR OTHER CODE APPROVED RACEWAYS.

- B. ALL LINE AND LOW VOLTAGE POWER AND CONTROL WIRING (EXCEPT HVAC LOW VOLTAGE WIRING) INCLUDING CONNECTIONS TO MOTORS, DAMPERS, INTERLOCKING, ETC., SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. (ALL LINE VOLTAGE WIRING, CONDUIT, AND FINAL CONNECTIONS FROM THE POWER SOURCE THRU THE STARTER/DISCONNECT ETC. TO THE MOTOR OR EQUIPMENT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. ALL HVAC RELATED LOW VOLTAGE CONTROL WIRING, CONDUIT AND FINAL CONNECTIONS IS THE RESPONSIBILITY OF THE MECHANICAL/TEMPERATURE CONTROL CONTRACTOR, UNLESS OTHERWISE NOTED ON THE PLANS).

- C. THE ELECTRICAL CONTRACTOR SHALL DO ALL CUTTING, CHASING OR CHANNELING AND PATCHING REQUIRED FOR ANY WORK UNDER THE ELECTRICAL DIVISION. ANY CUTTING SHALL HAVE PRIOR APPROVAL OF THE LANDLORD. FINISHES SHALL EXTEND AT LEAST TWO (2") INCHES ABOVE SLEEVED FLOOR AND ALL SLEEVES, OPENINGS, ETC., THROUGH FIRE RATED WALLS AND FLOORS SHALL BE FIRE SEALED WITH CALCIUM SILICATE, SILICONE "RTV" FOAM, "3M" FIRE RATED SEALANTS OR EQUAL BY HILTI AFTER CONDUIT/CABLES INSTALLATION SO AS TO RETAIN THE FIRE RATING.

- D. THE ELECTRICAL CONTRACTORS, INSOFAR AS THE WORK IS CONCERNED, SHALL AT ALL TIMES KEEP THE PREMISES IN A NEAT AND ORDERLY CONDITION AND, AT THE COMPLETION OF THE WORK, SHALL PROPERLY CLEAN UP AND CART AWAY ANY DEBRIS AND EXCESS MATERIAL.

- E. THE FOLLOWING EQUIPMENT SHALL BE IDENTIFIED WITH ENGRAVED BAKELITE NAMEPLATES AS TO NAME AND/OR FUNCTION: DISTRIBUTION PANELS, LIGHTING PANELS, MOTOR STARTERS AND DISCONNECT SWITCHES. NAMEPLATES TO BE APPROXIMATELY 1" X 2" IN SIZE AND BE FASTENED WITH POP RIVETS OR SCREWS.

- F. THE LOCATION OF OUTLETS AND EQUIPMENT SHOWN ON THE DRAWINGS ARE APPROXIMATE AND THE ARCHITECT/TENANT CONSTRUCTION MANAGER SHALL HAVE THE RIGHT TO RELOCATE ANY OUTLETS OR FIXTURES BEFORE THEY ARE INSTALLED WITHOUT ADDITIONAL COST.

- G. ELECTRICAL CONTRACTOR SHALL RECORD ALL FIELD CHANGES IN THE WORK, AS THE JOB PROGRESSES, AND TURN THIS AS BUI INFORMATION OVER TO THE OWNER AT THE COMPLETION OF THE PROJECT.

- H. ELECTRICAL CONTRACTOR SHALL PROTECT ALL FIXTURES/EQUIPMENT AGAINST DAMAGE FROM LEAKS, ABUSE, ETC., AND PAY COST OF REPAIR OR REPLACEMENT OF FIXTURES OR EQUIPMENT MADE NECESSARY BY FAILURE TO PROVIDE SUITABLE SAFEGUARDS OR PROTECTION.

- I. ELECTRICAL CONTRACTOR SHALL MAKE ALL FINAL ELECTRICAL CONNECTIONS AS REQUIRED FOR A COMPLETE AND OPERATING SYSTEM. AFTER ALL EQUIPMENT HAS BEEN INSPECTED AND APPROVED, THOROUGHLY CLEAN ALL EQUIPMENT PROVIDED UNDER THIS WORK JUST PRIOR TO COMPLETION OF PROJECT.

- J. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ANY/ALL NECESSARY ELECTRICAL DEMOLITION WORK THAT IS REQUIRED TO FACILITATE THE NEW INSTALLATION, FIELD COORDINATE PRIOR TO BIDS. REMOVE AND/OR MODIFY EQUIPMENT, ETC. AS REQUIRED FOR A COMPLETE INSTALLATION. ANY EQUIPMENT OR DEVICE REMAINING IN USE AFTER PART OF THE EQUIPMENT OR DEVICES HAVE BEEN REMOVED ARE TO BE RECONNECTED TO EXISTING OR NEW CIRCUITS AND LEFT IN WORKING ORDER. FEEDERS TO PANELS AND WIRING TO OTHER EQUIPMENT TO BE ROUTED CONCEALED IN FINISHED AREAS. COORDINATE ANY DISRUPTION OF ELECTRICAL OR TELEPHONE SERVICES WITH LANDLORD AND TENANT CONSTRUCTION MANAGER TO AVOID CONFLICTS.

GUARANTEE:

- A. MATERIALS, EQUIPMENT AND INSTALLATION SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE. DEFECTS WHICH APPEAR DURING THAT PERIOD SHALL BE CORRECTED AT THE ELECTRICAL CONTRACTOR'S EXPENSE.
- B. FOR THE SAME PERIOD, ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO PREMISES CAUSED BY DEFECTS IN WORKMANSHIP OR IN THE WORK OR EQUIPMENT FURNISHED AND/OR INSTALLED BY THE ELECTRICAL CONTRACTOR.

FINALLY:

- A. IT IS THE INTENT THAT THE FOREGOING WORK SHALL BE COMPLETE IN EVERY RESPECT AND THAT ANY MATERIAL OR WORK NOT SPECIFICALLY MENTIONED OR SHOWN ON THE DRAWINGS, BUT NECESSARY TO FULLY COMPLETE THE WORK SHALL BE FURNISHED.



PROJECT NAME:

**HARBOR
FREIGHT TOOLS**
FOR
STOCKS & TAYLOR
CONSTRUCTION

PROJECT NO: 23174

PROJECT ADDRESS:

46 SHRIJI LANE
ERWIN, NC 28339

SEAL:



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DRAWING RELEASE:

NO.	DATE	DESCRIPTION

DRAWN BY: CF
CHECKED BY: SH

DATE: 04/19/24

SHEET TITLE:
**ELECTRICAL
SPECIFICATIONS**

SHEET NUMBER:

E-4

FIELD VERIFY ALL CONDITIONS

DESIGN DRAWINGS ARE SCHEMATIC. THIS CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING OR AWARD OF CONTRACT TO INSPECT EXISTING FIELD CONDITIONS. THIS CONTRACT SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS.

THE CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER OR OWNER PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE ARCHITECT, ENGINEER OR OWNER AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTORS COST.

BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES. THE PLANS AND SPECIFICATIONS NOT WITHSTANDING, THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.

PLUMBING EQUIPMENT SCHEDULE				
TAG	MFGR.	MODEL	DESCRIPTION	REMARKS
BFP	WATTS	LF909	BACKFLOW PREVENTER	1-1/2" SIZE, REDUCED PRESSURE ZONE WITH AIR GAP PIPED TO FLOOR DRAIN.
HB	WATTS	HY-420	HOSE BIBB	NON-FREEZE KEY OPERATED WALL HYDRANT WITH CHROME PLATED FACE, INTEGRAL VACUUM BREAKER, PROVIDE WITH LOCKABLE COVER.

SECTION 15200
PLUMBING

A. SCOPE OF WORK

- THIS CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT, SERVICES, TOOLS, TRANSPORTATION AND FACILITIES NECESSARY FOR, REASONABLY IMPLIED AND INCIDENTAL TO, THE FURNISHING, INSTALLATION, COMPLETION AND TESTING OF ALL THE WORK FOR THE PLUMBING SYSTEMS AS SHOWN ON THE DRAWINGS, CALLED FOR IN THE SPECIFICATIONS, AND AS REQUIRED BY JOB CONDITIONS, TO INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING. (REFER TO RESPONSIBILITY SCHEDULE FOR EXACT RESPONSIBILITIES)
 - COMPLETE SANITARY PIPING SYSTEMS OF WASTE, DRAINS, AND VENTS.
 - COMPLETE COLD AND HOT WATER PIPING SYSTEMS, APPURTENANCES AND INSULATION.
 - PLUMBING FIXTURES AND EQUIPMENT AS SCHEDULED.
 - COMPLETE NATURAL GAS PIPING SYSTEMS (AS APPLICABLE, REFER TO PLANS).
 - TESTS AND ADJUSTMENTS.

- BEFORE STARTING WORK, THIS CONTRACTOR SHALL EXAMINE THE ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL PLANS AND SPECIFICATIONS TO SEQUENCE, COORDINATE, AND INTEGRATE THE VARIOUS ELEMENTS OF THE PLUMBING SYSTEM, MATERIALS, AND EQUIPMENT WITH OTHER CONTRACTORS TO AVOID INTERFERENCES AND CONFLICTATIONS.
- RELOCATION OF EXISTING WATER, GAS, WASTE, VENT, OR DRAINAGE LINES TO FACILITATE STORE DESIGN CRITERIA MUST BE INCLUDED IN BID PROPOSAL.

B. GENERAL PIPING REQUIREMENTS

- GENERALLY, SANITARY AND POTABLE WATER TAPS WILL BE PROVIDED BY THE LANDLORD. FIELD VERIFY EXACT CONNECTION POINTS PRIOR TO SUBMITTING BID AND NOTIFY THE TENANT'S CONSTRUCTION MANAGER IF CONDITIONS ARE NOT AS SHOWN ON THE PLANS OR AS STATED IN THE SPECIFICATIONS. CONTRACTOR MUST VERIFY THE OPERABILITY OF ENTIRE SYSTEM PRIOR TO TIE IN AS FOLLOWS:
 - Snake sanitary for a distance of 100 feet and report any blockage.
 - Test water pressure to insure minimum of 50 PSI.
- INSTALL ALL NECESSARY PIPE HANGERS, SADDLES, AND CARRIERS TO PROPERLY SUPPORT ALL PIPING AND FIXTURES. HANGERS SHALL SUIT TYPE OF PIPING PROVIDED AND BE SPACED AT A MAXIMUM SPAN OF 5 FEET. PROVIDE SWAY AND SEISMIC BRACING WHERE REQUIRED BY CODES.
- ESCUTCHEONS SHALL BE CHROME PLATED, SIZE AS REQUIRED AND PLACED AT ALL PIPE PENETRATIONS AT WALLS, FLOORS, AND CEILINGS IN FINISHED AREAS.
- FLASHING SHALL BE SEALED WATERTIGHT AND PERFORMED IN ACCORDANCE TO THE LANDLORD'S CRITERIA. USE A LANDLORD APPROVED ROOFING CONTRACTOR WHERE APPLICABLE.

C. PIPING

- SANITARY PIPING - NO PVC ALLOWED (STORM PIPING AS REQUIRED)
 - WASTE, DRAIN AND VENT PIPING SHALL BE SERVICE WEIGHT, CAST IRON SOIL PIPE. VENT PIPING ABOVE FLOOR 2" OR SMALLER MAY BE GALVANIZED STEEL.
 - JOINTS: BELOW FLOOR SLAB - COMPRESSION TYPE PLASTIC SEAL (HUB AND SPIGOT), ABOVE FLOOR SLAB - NEOPRENE SEALING SLEEVE WITH STAINLESS STEEL SHIELD AND CLAMP WITH APPROVED NEOPRENE - BASED LUBRICANT, (HUBLESS). GALVANIZED VENT - SCREWED JOINTS WITH TEFLOW TAPE ON MALE THREADS.
 - PITCH WASTE LINES 2" AND SMALLER NOT LESS THAN 1/4" PER FOOT. PITCH LARGER MAINS NOT LESS THAN 1/8" PER FOOT.
 - INSTALL A CLEANOUT AT BASE OF EACH SOIL STACK, AT EACH CHANGE IN DIRECTION, AT INTERVALS NOT OVER 50 FEET, AND ELSEWHERE AS SHOWN ON DRAWINGS OR REQUIRED BY LOCAL CODE. CLEANOUTS SHALL NOT BE INSTALLED IN PUBLIC AREAS WITHOUT SPECIFIC PERMISSION BY TENANT'S CONSTRUCTION MANAGER; BUT WHERE NECESSARY, THE WALL COVERS ARE TO BE STAINLESS STEEL AND THE FLOOR COVERS ARE TO BE BRASS (FLUSH WITH FINISHED FLOOR). PROVIDE COVERS WITH INSET AREA FOR CARPETED FLOOR LOCATIONS. ALL CLEAN-OUT LOCATIONS SHALL BE APPROVED BY THE TENANT'S CONSTRUCTION MANAGER.
 - INSULATE ALL HORIZONTAL RUNS OF PIPING LOCATED IN CEILING SPACES WHEN APPLICABLE. INSULATION TO BE AS SPECIFIED FOR WATER PIPING.
 - INSULATE THE TRAP, SANITARY AND SUPPLY PIPES UNDER LAVATORY WITH 1/2" ARMSTRONG "ARMAFLEX" PIPING INSULATION OR TRUEBRO MODEL 102W "HANDI LAV GUARD" INSULATION KIT.
- CONDENSATE PIPING SHALL BE TYPE "L" DRAWN COPPER TUBE WITH 95-5 TIN-ANTIMONY SOLDERED JOINTS AND WROUGHT COPPER FITTINGS WITH DIELECTRIC SEPARATION BETWEEN DISSIMILAR METALS.
- POTABLE WATER PIPING:
 - BELOW GRADE: TYPE "K", ANNEALED TEMPERED COPPER TUBE FOR PIPE SIZES 2 INCHES AND SMALLER. BRAZE ALL JOINTS.
 - ABOVE GRADE: TYPE "L" DRAWN COPPER TUBE WITH WROUGHT COPPER FITTINGS AND 95-5 TIN-ANTIMONY SOLDER.
 - INSTALL AIR CHAMBER SHOCK ABSORBERS IN PIPING SYSTEM TO PREVENT NOISE AND DAMAGE DUE TO WATER HAMMER.
 - ALL BRANCH PIPING SYSTEM SHALL HAVE ACCESSIBLE SERVICE VALVE. PROVIDE SHUT OFF VALVES IN THE SUPPLY PIPING TO EVERY FIXTURE. PROVIDE ACCESS DOORS WHERE NECESSARY.
 - PROVIDE WATER METER AND REMOTE READER PER LANDLORD'S CRITERIA OR LOCAL UTILITIES REQUIREMENTS IF APPLICABLE. REFER TO PLANS TO DETERMINED IF WATER METER IS REQUIRED.
 - SECURE PIPE AT ANGLE STOPS.
 - PROVIDE FLEXIBLE INSERTS AT ALL PIPE PENETRATIONS THROUGH FRAMING TO KEEP PIPES FROM HITTING FRAME WHEN IN OPERATION.

D. INSULATION

- INSULATE ALL WATER AND INTERIOR CONDENSATE PIPING WITH 1" THICK (K=0.23 @ 75 F) SNAP-ON FIBERGLASS PIPE INSULATION WITH AN ALL SERVICE JACKET TO MEET LOCAL CODES AND UL FLAME SPREAD RATING OF 25 AND SMOKE DEVELOPED RATINGS OF 50. APPROVED MANUFACTURER: MANVILLE MICRO-LOK.

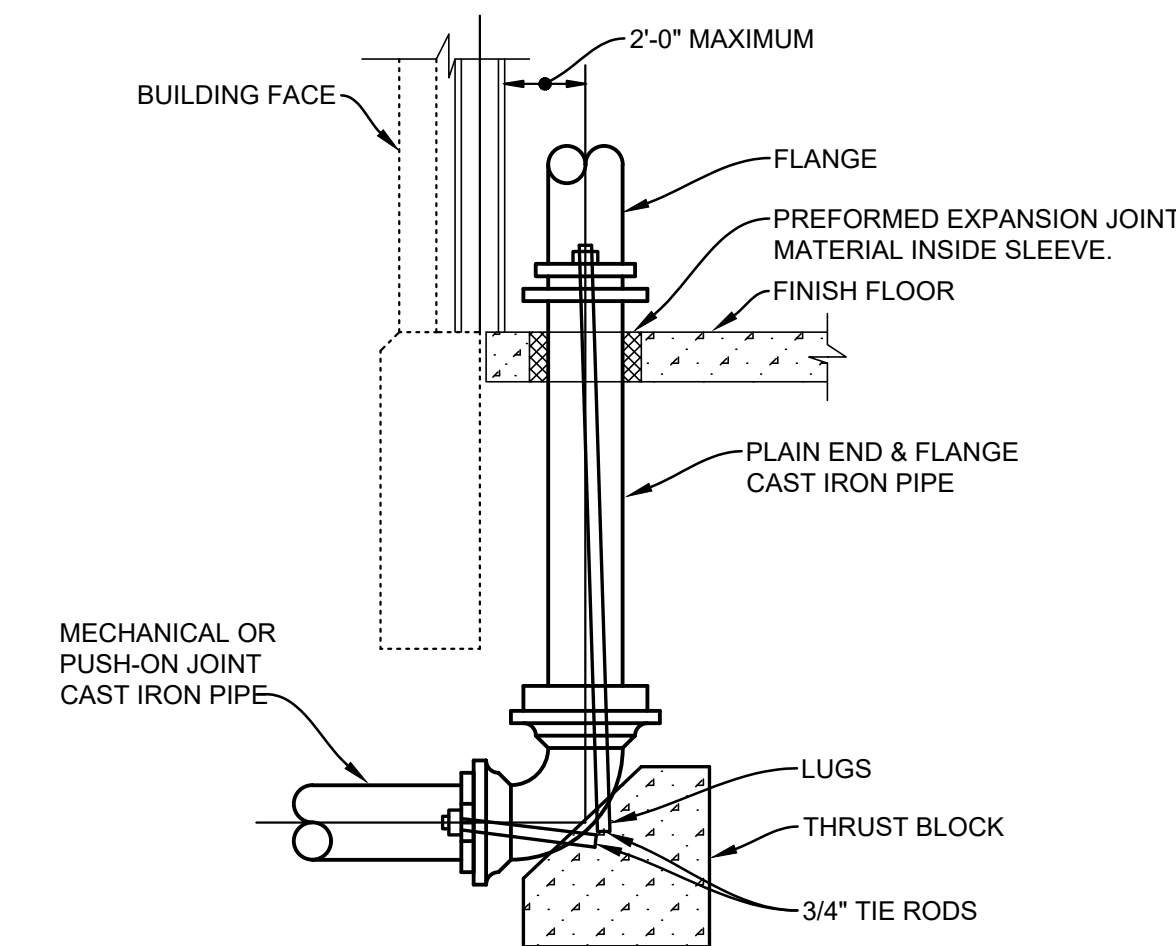
E. TEST & STERILIZATION

- LEAKAGE TESTS SHALL BE PER NYC ECCC C402.5, MINIMUM AS FOLLOWS:
 - TEST POTABLE WATER PIPING AND CONDENSATE PIPING AT 125 PSIG FOR SIX HOURS. PER NYC 2014 PC 312.5
 - TEST DRAIN, WASTE, VENT PIPING BY A 10" WATER COLUMN FOR TWO HOURS. ALL JOINTS SHALL BE GAS AND WATER TIGHT. PER NYC 2014 PC 312
 - TEST GAS PIPING PER NYC 2014 FGC SECTIONS 107.3.1 - 107.3.3
 - STERILIZE POTABLE HOT & COLD WATER LINES UPON COMPLETION OF SYSTEM. STERILIZE WATER SYSTEM IN ACCORDANCE WITH NYC 2014 PC 610.

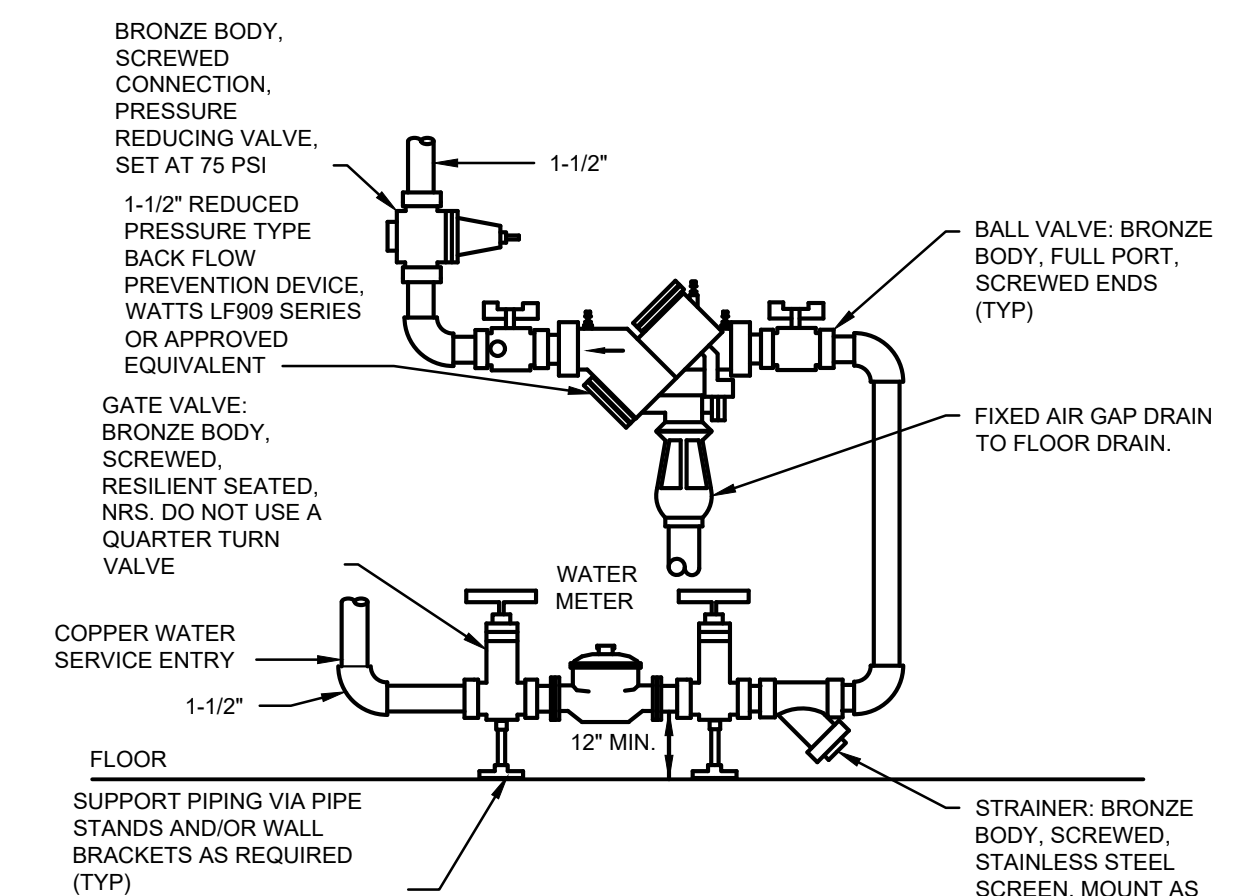
PLUMBING SYMBOLS (NOT ALL SYMBOLS USED)			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
—DCW—	DOMESTIC COLD WATER	⊘	SHUT-OFF VALVE
—(E)DCW—	EXISTING DOMESTIC COLD WATER	⊘	PIPE FLEX CONNECTION
—DHW—	DOMESTIC HOT WATER	⊘	BALL VALVE
—(E)DHW—	EXISTING DOMESTIC HOT WATER	⊘	Y-TYPE STRAINER
—110" DHW—	110" DOMESTIC HOT WATER	⊘	GAS COCK (PLUG VALVE)
—110" DHWR—	110" DOMESTIC HOT WATER RETURN	⊘	CHECK VALVE
—SAN—	SANITARY LINE	⊘	BACKFLOW PREVENTER
—(E)SAN—	EXISTING SANITARY LINE	⊘	BALANCE VALVE
—GRE—	GREASE SANITARY LINE	⊘	COMB. BALANCE & SHUT-OFF VALVE
—D—	CONDENSATE LINE	⊘	DRAIN VALVE
—V—	VENT LINE	⊘	PRESSURE RELIEF VALVE
—(E)V—	EXISTING VENT LINE	⊘	PRESSURE REDUCING VALVE
—G—	GAS LINE	⊘	PRESSURE REDUCING VALVE
—W—	WATER SERVICE LINE	⊘	VALVE WITH TAMPER SWITCH
—140"—	140" F. WATER	⊘	SOLENOID VALVE
—TW—	TEMPERED WATER	⊘	SHOCK ABSORBER
⊘	REDUCER	⊘	HOSE BIBB
⊘	FLOOR OR AREA DRAIN	⊘	PIPE ANCHOR
⊘	CURB BOX AND VALVE	⊘	PIPE GUIDE OR SLEEVE
⊘	CAPPED LINE	⊘	FLOW DETECTOR SWITCH
⊘	PIPE UNION	⊘	PRESSURE GAUGE WITH GAGE COCK
⊘	P-TRAP (PLAN VIEW)	⊘	TEMPERATURE GAUGE
⊘	PIPE TEE DROP	⊘	REDUCE BACKFLOW PREVENTER
⊘	PIPE TEE RISE	⊘	CONNECT TO EXISTING
⊘	PIPE DROP		
⊘	PIPE RISE		
⊘	TRAP PRIMER		
⊘	STACK LETTER		
⊘	RISER NUMBER		

FOR SERVICE LINES 6" AND LARGER

LOCATE FLANGE AT 12" AFF. FLANGE TO BE PLUMB, LEVEL WITH 3/4" TIE RODS.



A WATER SERVICE LINE SCHEMATIC
N.T.S.



DETAIL SHOWS GENERAL SCHEMATIC REQUIREMENTS. INSTALL ITEMS FURNISHED BY WATER COMPANY. PAY ANY FEES REQUIRED BY WATER COMPANY. FURNISH AND INSTALL ITEMS NOT PROVIDED BY THE WATER COMPANY. PROVIDE BACKFLOW PREVENTER OF TYPE AND MANUFACTURER APPROVED BY LOCAL AUTHORITIES. PROVIDE PRESSURE REDUCING VALVE ONLY IF PRESSURE EXCEEDS 80 PSI - VERIFY. STRAINER AND REDUCING VALVE MAY BE INSTALLED IN VERTICAL PIPE IF SPACE LIMITATIONS REQUIRE IT. CLEAN STRAINER BEFORE TURNING BUILDING OVER TO OWNER. PROVIDE ANY REQUIRED CERTIFICATION OF TESTING OF THE BACKFLOW PREVENTER TO LOCAL AUTHORITIES.

B BACKFLOW PREVENTER SCHEMATIC
N.T.S.



PROJECT NAME:

**HARBOR
FREIGHT TOOLS**
FOR
**STOCKS & TAYLOR
CONSTRUCTION**

PROJECT NO: 23174

PROJECT ADDRESS:

46 SHRIJI LANE
ERWIN, NC 28339

SEAL:



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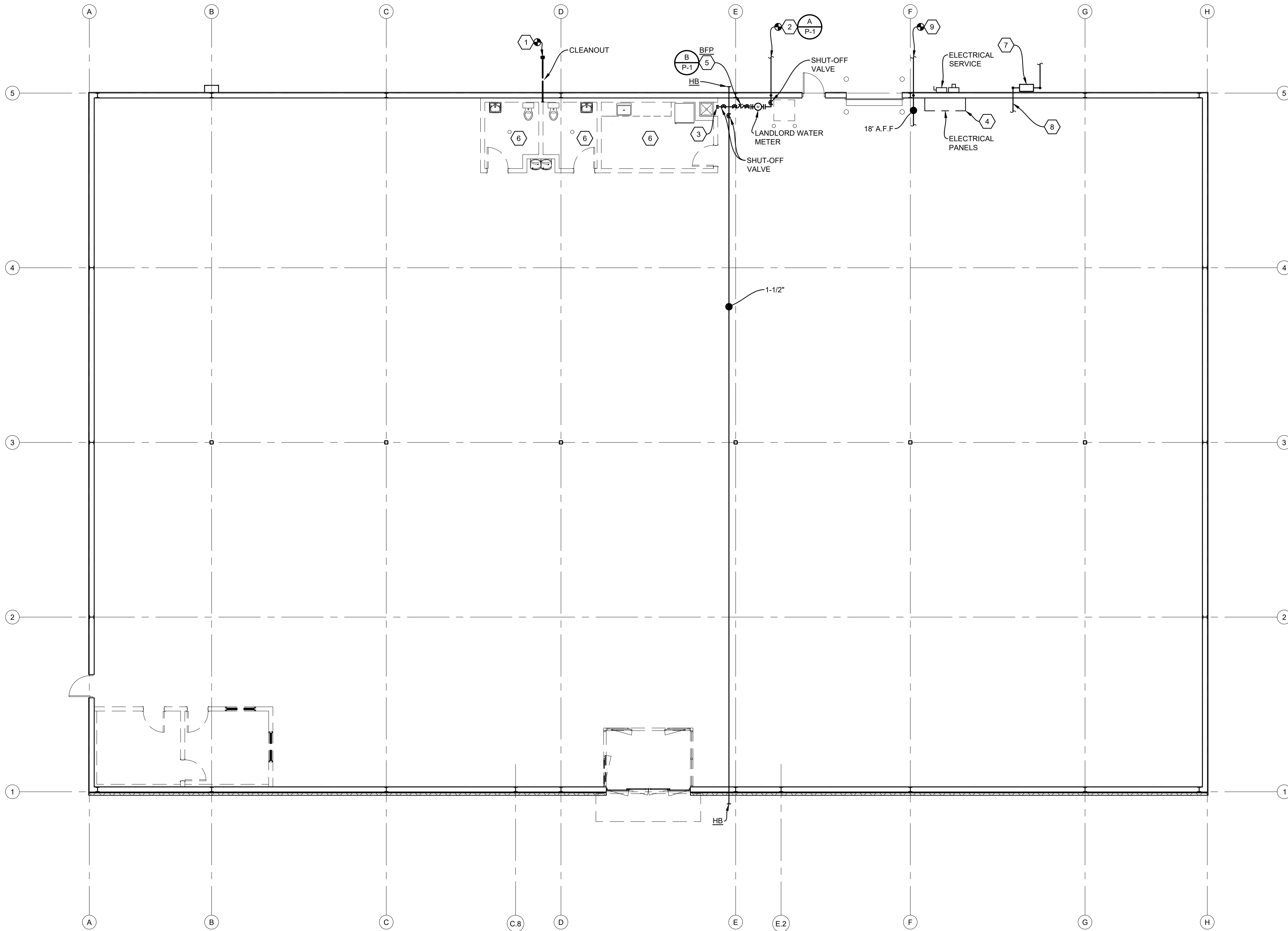
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CHECKED BY: BM

DATE: 04/19/24

SHEET TITLE:
**PLUMBING DETAILS AND
SCHEDULES**

SHEET NUMBER:

P-1



CODED NOTES:

- 1 NEW SANITARY STUB FOR FUTURE TENANT. FIELD VERIFY EXACT STUB IN LOCATION AND INVERT ELEVATION. REFER TO CIVIL SITE PLANS FOR SEWER LINE CONTINUATION.
- 2 CONNECT TO 1-1/2" LANDLORD PROVIDED WATER SERVICE LINE. NEW WATER SERVICE LINE SHALL BE TRENCHED INTO THE BUILDING BELOW THE FREEZING DEPTH PRIOR TO ENTERING THE BUILDING.
- 3 CAPPED 1-1/2" WATER SERVICE LINE. FUTURE EXTENSION TO PLUMBING FIXTURES BY TENANT. FIELD VERIFY EXACT LOCATION.
- 4 NO PLUMBING WORK SHALL BE ROUTED OVER ELECTRICAL EQUIPMENT.
- 5 NEW LANDLORD REDUCED PRESSURE ZONE BACK FLOW PREVENTER. BACK FLOW PREVENTER TO FOLLOW ALL LOCAL PLUMBING CODES AND JURISDICTION REQUIREMENTS. FIELD VERIFY EXACT LOCATION IN ACCORDANCE WITH MANUFACTURER REQUIRED CLEARANCES.
- 6 FUTURE RESTROOM AND ASSOCIATED PLUMBING FIXTURES AS PART OF TENANT FIT-OUT SCOPE.
- 7 PROVIDE NEW NATURAL GAS SERVICE AND GAS METER. COORDINATE GAS LOAD WITH TENANT ENGINEER. P.C. TO FIELD VERIFY DELIVERY PRESSURE AND EXACT METER LOCATION PRIOR TO CONSTRUCTION. P.C SHALL COORDINATE WITH ENGINEER FOR GAS PIPING.
- 8 GAS PIPING ROUTE DETERMINED BY FUTURE TENANT AND FUTURE TENANT EQUIPMENT.
- 9 NEW FIRE PROTECTION MAIN STUB FOR FUTURE TENANT. FIELD VERIFY EXACT STUB IN LOCATION. REFER TO CIVIL SITE PLANS FOR FIRE LINE CONTINUATION.

PLUMBING GENERAL NOTES:

- A PLUMBING WORK SHALL BE DONE IN ACCORDANCE WITH LOCAL PLUMBING CODE, LOCAL AND AUTHORITY HAVING JURISDICTION.
- B PIPING LAYOUTS ON DRAWINGS ARE SCHEMATIC. EXACT LOCATIONS ARE TO BE COORDINATED WITH FIELD CONDITIONS AND THE WORK OF OTHER TRADES.
- C PLUMBING FIXTURES, ACCESSORIES, AND MATERIALS PROVIDED FOR WATER SERVICE LINES SHALL BE LEAD FREE.
- D PIPING EXTERIOR WALLS SHALL BE INSTALLED BETWEEN THE INSULATION AND THE INTERIOR WALL FINISHING MATERIAL.
- E INSULATE HOT AND COLD WATER LINES, AND CONDENSATE DRAINAGE PIPING WHERE APPLICABLE PER CORRESPONDING SPECIFICATIONS.
- F CORRESPONDING BACK FLOW DEVICES TO COMPLY WITH ASME112.14.1, CSA B181.1, OR CSA B181.2.

PROJECT NAME:

**HARBOR
FREIGHT TOOLS**
FOR
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PROJECT NO: 23174

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DRAWN BY: EC CHECKED BY: BM

DATE: 04/19/24

SHEET TITLE:
PLUMBING SHELL PLAN

SHEET NUMBER:

P-2