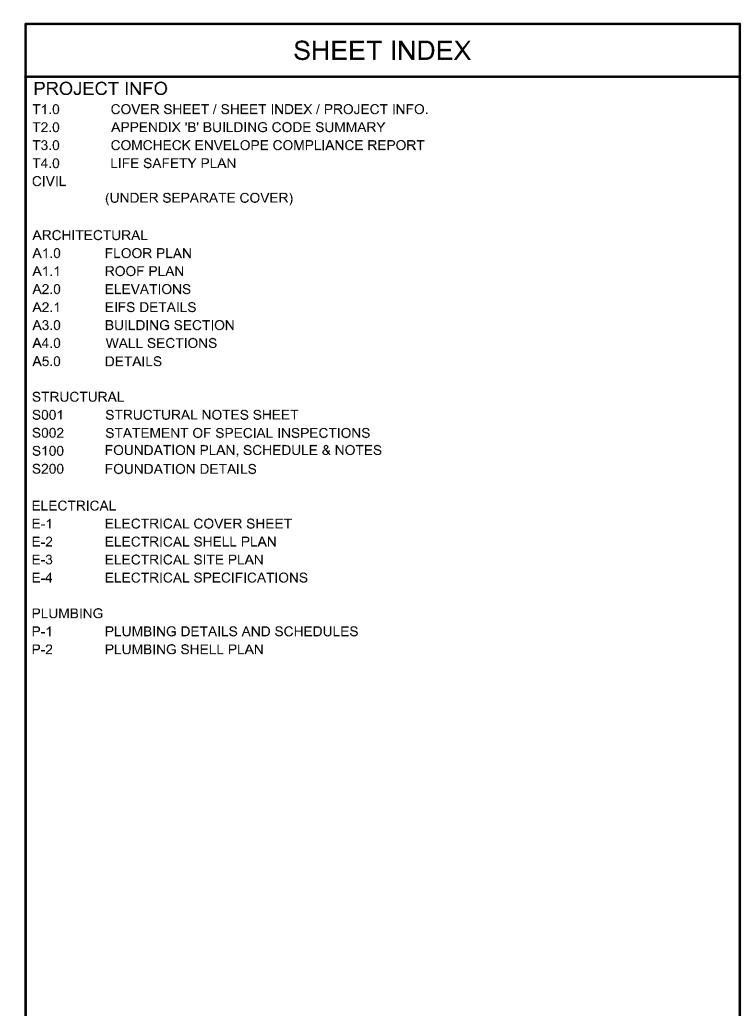
HARBOR FREIGHT TOOLS 'SHELL BUILDING' ERWIN, NC

ARCHITECT:	STRUCTURAL ENGINEER:	PME ENGINEER:
HELT DESIGN 6405 W. WILKINSON BLVD SUITE 100 BELMONT, NC 28012	TODD M. BORN, P.E. 1522 MYRTLE OAKS TRAIL OVIEDO, FL 32765	M CONSULTANTS, PLLC 750 BROOKSEDGE BLVD. WESTERVILLE, OHIO 43081 NC FIRM # P-1046
ATTN: JAMES ZINK PH: 704-342-1686 EM: JAMESZ@HELTDESIGN.COM	ATTN: TODD BORN PH: 704.578.7213 EM: TBORN@BORN-ENGINEERS.COM	ATTN: CHRIS FETTER PH: 614.423.3976 EM: CFETTER@MENGINEERING.US.CO

HFT VENDORS:			
BI-PARTING DOOR VENDOR	OVERHEAD DOOR VENDOR	DOOR HARDWARE VENDOR	EXTERIOR / SITE LIGHTING
DORMAKABA DORMA DRIVE, DRAWER AC REAMSTOWN, PA 17567 CONTACT: ANTHONY RODRIGUEZ T: (847) 390-2213 EMAIL: anthony.rodriguez@dormakaba.com	CORNELL IRON 140 MAFFET STREET WILKES-BARRE, PA 18705 CONTACT: KRISTA BONAVINA T: (800) 882-6773 X 1620 EMAIL: kbonavina@cornellstorefronts.com	COOK AND BOARDMAN, LLC 345 MASON ROAD LaVERGNE, TN 37086 CONTACT: AMY BAKER T: (855) 447-8600 x4508 EM: harborfreightteam@cookandboardman.com	AMA LIGHTING 813 DOWNTOWNER BLVD., SUITE A MOBILE, AL 36609 CONTACT: ROBERT DEWEESE T: 850-500-4956 EM: RDEWEESE@AMALIGHTING.COM

ABBI	REVIATIONS:		
ABV AFF A/C ARCH @	ABOVE ABOVE FINISHED FLOOR AIR CONDITIONING ARCHITECT(URAL) AT	MECH MISC M.R. MULL	MECHANICAL MISCELLANEOUS MOISTURE RESISTANT MULLION
BLK BOT BLDG	BLOCK(ING) BOTTOM BUILDING	NIC NTS NUM	NOT IN CONTRACT NOT TO SCALE NUMBER
CLG © CIRC CLR	CEILING CENTER LINE CIRCUIT CLEAR	OFF OC OPN'G OPH OD	OFFICE ON CENTER(S) OPENING OPPOSITE HAND OUTSIDE DIAMETER
COL CONC C.M.U. CONST CONT CTR	COLUMN CONCRETE CONCRETE MASONRY UNIT CONSTRUCTION CONTINUOUS COUNTER	PEMB PNT P-LAM PLWD	PRE-ENGINEERED METAL BUILDING PAINT(ED) PLASTIC LAMINATE PLYWOOD
DTL DIA DIM	DETAIL DIAMETER DIMENSION	POL PROJ [®]	POLISHED PROJECT PLATE
DN DWG EA ELEV EQ EQPT EXIST	DOWN DRAWING EACH ELEVATION EQUAL EQUIPMENT EXISTING	RE REF REM REQ'D REV RM RO RD	REFERENCE REFRIGERATOR REMOVE(D)(ABLE) REQUIRED REVISION(S) REVISED ROOM ROUGH OPENING ROUND
EXP EXT EIFS FT (') FIN FL FD FLUR FUR F.R. F.E.	EXPOSED EXTERIOR EXT. INSUL. FINISH SYSTEM FEET, FOOT FINISH(ED) FLOOR(ING) FLOOR DRAIN FLUORESCENT FURRED(ING) FIRE RATED FIRE EXTINGUISHER	SCH SEC SHT SIM SC SPEC SS STO STRUCT SUSP	SCHEDULE SECTION SHEET SIMILAR SOLID CORE SPECIFICATION(S) STAINLESS STEEL STORAGE STRUCTURAL SUSPENDED TELEPHONE
GWB HDW HDWD	GYPSUM WALL BOARD HARDWARE HARDWOOD	TYP THRU	TYPICAL THROUGH
HVAC HM	HEATING/VENTILATION/ AIR CONDITIONING HOLLOW METAL	VCT VEST	VINYL COMPOSITION TILE VESTIBULE
IN (") ID INSUL INT	INCH INSIDE DIAMETER INSULATION INTERIOR	W/ W/O WD WDB	WITH WITHOUT WOOD WOOD BASE
MANUF	MANUFACTURE(R) MANUFACTURE(R)		



NOTICE TO CONTRACTOR
All construction must comply with current NC Building Codes

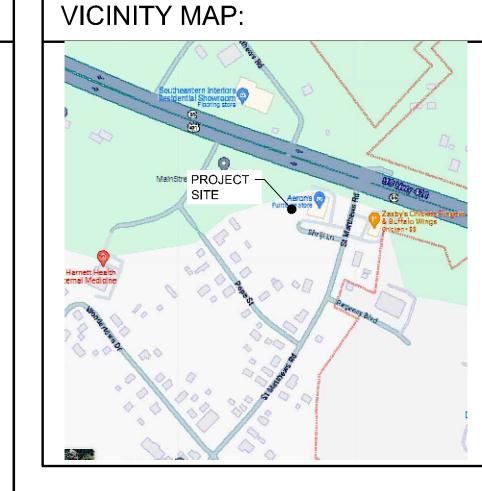
COUNTY

NORTH CAROLINA

and is subject to field inspection and verification

Reviewed for Code

06/03/2024



ULTIMATE WIND SPEED - 120 MPH Risk category II
WIND EXPOSURE CATEGORY - C
INFORMATION ABOVE ACQUIRED FROM 2018 NORTH
CAROLINA STATE BULDING CODE - BASED ON ADDRESS
PROVIDED ON THIS SHEET.

ALL TRADES INCLUDING BUT NOT LIMITED TO METAL BUILDING MANUFACTURERS AND STOREFRONT MANUFACTURERS, ARE TO VERIFY WIND SPEED PRIOR TO INDIVIDUAL DESIGN ASPECTS AND NOTIFY ARCHITECT PRIOR TO DESIGN IF CONFLICTING INFORMATION IS RECEIVED.

HELT

DESIGN ARCHITECTURE INTERIORS

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HELTDESIGN.COM
INFO@HELTDESIGN.COM
PROJECT NAME:

HARBOR FREIGHT TOOLS

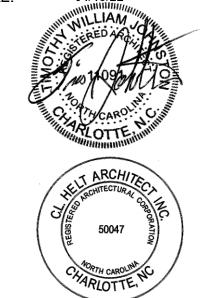
STOCKS & TAYLOR
CONSTRUCTION

PROJECT NO: 23174

PROJECT ADDRESS:

46 SHRIJI LANE ERWIN, NC 28339

SEAL:



CORPORATE ENTITY:

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DATE:

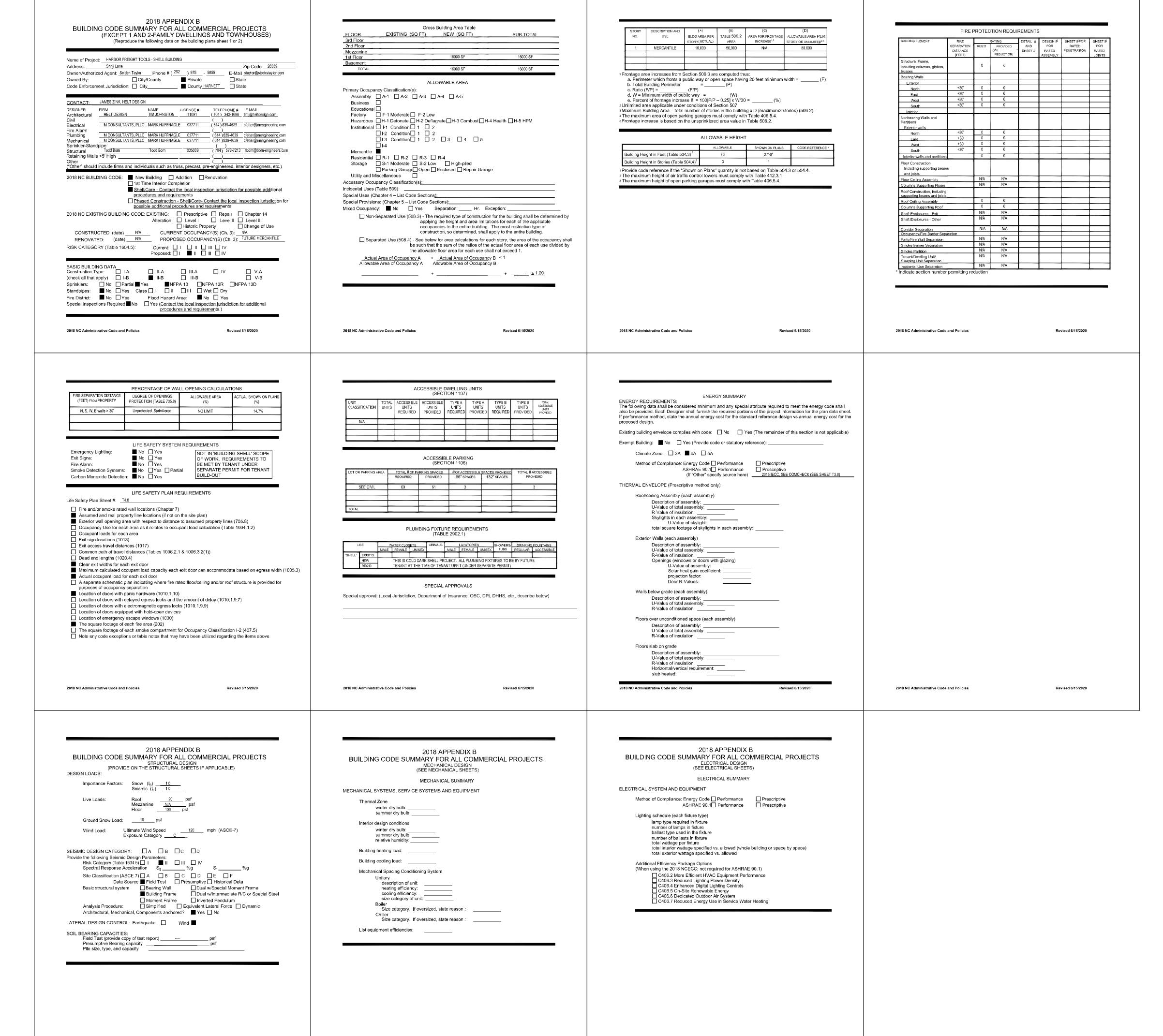
04/19/24

SHEET TITL

COVER SHEET

SHEET NUMBER:

T1.0



2018 NC Administrative Code and Policies

2018 NC Administrative Code and Policies

Revised 6/15/2020

2018 NC Administrative Code and Policies

Revised 6/15/2020



H E L T

D E S I G N
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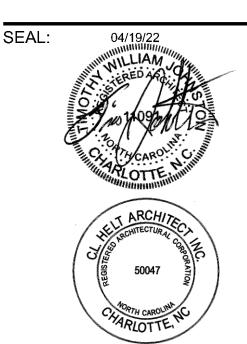
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DRAWN BY: CHECKED BY: **MF 17**

DATE:

04/19/24

SHEET TITLE:

APPENDIX 'B'
CODE SUMMARY

SHEET NUMBER:

T2.0



Door 4: Glass (> 50% glazing):Metal Frame, Entrance Door, Perf.

1 - Retail] (c)

Specs.: Product ID Pending, SHGC 0.58, PF 0.40, VT 0.60, [Bldg. Use

Exterior Wall 1 - Side Wall: Other Metal Building Wall, [Bldg. Use 1 -

Exterior Wall 3 - Rear Wall: Other Metal Building Wall, [Bldg. Use 1 - Retail] (b)

Door 3: Uninsulated Single-Layer Metal, Non-Swinging, [Bldg. Use 1 -

Door 1: Insulated Metal, Swinging, [Bldg. Use 1 - Retail]

Door 2: Insulated Metal, Swinging, [Bldg. Use 1 - Retail]

Project Title: Shell Building - Harbor Freight Report date: 03/27/24 Project Title: Shell Building - Harbor Freight Data filename: G:_Projects\Retail & Salon_Harbor Freight Tools\23174 HFT-NC-ERWIN-size(Proto)-Stocks and Page 1 of 11
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0.770 0.770

0.500 0.500

0.059

80 --- -- 1.200 0.500

Section # & Req.ID	Framing / Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
5.4.3.2 [FR1] ³	Factory-built and site-assembled fenestration and doors are labeled or certified as meeting air leakage requirements.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
5.4.3.4 [FR4] ³	Vestibules are installed where building entrances separate conditioned space from the exterior, and meet exterior envelope requirements. Doors have self-closing devices, and are >=7 ft apart (>= 16 ft apart for adjoinging floor area >= 40000 sq.ft.). Vestibule floor area <=7 50 sq.ft. or 2 percent of the adjoining conditioned floor area.			□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply.
5.5.4.3a [FR8] ¹	Vertical fenestration U-Factor.	U	U	□Complies □Does Not □Not Observable □Not Applicable	See the Envelope Assemblies table for values.
5.5.4.3b [FR9] ¹	Skylight fenestration U-Factor.	U	U	□Complies □Does Not □Not Observable □Not Applicable	See the Envelope Assemblies table for values.
5.5.4.4.1 [FR10] ¹	Vertical fenestration SHGC value.	SHGC:	SHGC:	□Complies □Does Not □Not Observable □Not Applicable	See the Envelope Assemblies table for values.
5.5.4.4.2 [FR11] ¹	Skylight SHGC value.	SHGC:	SHGC:	□Complies □Does Not □Not Observable □Not Applicable	See the Envelope Assemblies table for values.
5.8.2.1, 5.8.2.3, 5.8.2.4, 5.8.2.5 [FR12] ²	Fenestration products rated (U- factor, SHGC, and VT) in accordance with NFRC or energy code defaults are used.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
5.8.2.2 [FR13] ¹	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.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
5.5.3.6 [FR14] ²	U-factor of opaque doors associated with the building thermal envelope meets requirements.	U Swinging Nonswinging	U Swinging Nonswinging	□Complies □Does Not □Not Observable □Not Applicable	See the Envelope Assemblies table for values.
5.4.3.1 [FR15] ¹	Continuous air barrier is wrapped, sealed, caulked, gasketed, and/or taped in an approved manner, except in semiheated spaces in climate zones 1-6.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3) Report date: 03/27/24 Project Title: Shell Building - Harbor Freight Data filename: G:_Projects\Retail & Salon_Harbor Freight Tools\23174 HFT-NC-ERWIN-size(Proto)-Stocks and Page 5 of 11
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Section # & Req.ID	Insulation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
5.8.1.7.2 [IN16] ²	Foundation vents do not interfere with insulation.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
5.8.1.8 [IN17]³	Insulation intended to meet the roof insulation requirements cannot be installed on top of a suspended ceiling. Mark this requirement compliant if insulation is installed accordingly.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
Addition	al Comments/Assumptions:				

1.7.2	Foundation vents do not interfere		□Complies	Requirement will be met	5.4.3.3	Weatherseals installed on all loading	Complies	Exception:	lequirement does not	apply.
6] ²	with insulation.		Does Not	nequirement will be mee	[FI1] ¹	dock cargo doors in Climate Zones 4-8.	□Does Not □Not Observable		requirement abes not	арріў.
			□Not Applicable				□Not Applicable			
7]3	Insulation intended to meet the roof insulation requirements cannot be installed on top of a suspended ceiling. Mark this requirement compliant if insulation is installed accordingly.		□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met	Addition	al Comments/Assumptions:				
	al Comments/Assumptions:			1						
LIOIIL	ar commence/Assumptions.									
	1 High Impact (Tier 1)	2 Medium Impact (Tier 2)	3 Low Impact (T	ier 3)		1 High Impact (Tier 1)	2 Medium Imp	act (Tier 2)	3 Low Impact (Tie	3)
						_ [g.,pace (e. 1)		. , ,	The contract of the	

	Gross Area or Perimeter	Cavity R-Value R	Cont. Proposed -Value U-Factor	Budget U- Factor _(a)	771	COMcheck Softw Inspection		
ST terior Wall 2 - Side Wall: Other Metal Building Wall, [Bldg. Use 1 - tail] (b)	1767		0.059	0.060	Paguirer	Energy Code: 90.1 (2	013) Standar	d
(a) Budget U-factors are used for software baseline calculations ONL (b) 'Other' components require supporting documentation for propose (c) Fenestration product performance must be certified in accordance (d) Slab-On-Grade proposed and budget U-factors shown in table are (e) Thermal spacer block with minimum R-3.5 must be installed abov	ed U-factors. e with NFRC and red e F-factors.	quires supportir			Text in the	ne "Comments/Assumptions" colum ent, the user certifies that a code r	n is provided by t equirement will b	the user in the COMcheck Requirements on the met and how that is documented, or the table, a reference to that table is provided.
velope PASSES: Design 0.4% better than code	30 01				# & Req.ID	1.5	Complies?	Comments/Assumptions
velope Compliance Statement npliance Statement: The proposed envelope design represe cifications, and other calculations submitted with this permit signed to meet the 90.1 (2013) Standard requirements in COI ndatory requirements listed in the Inspection Checklist.	application. The	proposed env	elope systems have	been	4.2.2, 5.4.3.1.1, 5.7 [PR1] ¹	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.	□Does Not □Not Observable □Not Applicable	Requirement will be met.
nothy Johnston - Principal me - Title Signature	Shoth	(M)	03/27/24 Date		4.2.2, 8.4.1.1, 8.4.1.2, 8.7 [PR6] ²	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the electrical systems and equipment and document where exceptions are claimed. Feeder connectors sized in accordance with approved plans and branch circuits sized for maximum drop of 3%.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
					5.5.4.2.3 [PR7] ²	In buildings > 2,500 ft2, any enclosed spaces directly under a roof with ceiling heights > 15 ft. and used as ar office, lobby, atrium, concourse, corridor, storage (including nonrefrigerated warehouse), gymnasium, fitness/exercise area, playing area, gymnasium seating area, convention exhibit/event space, courtroom, automotive service, fire station engine room, manufacturing corridor/transition and bay areas, retail, library reading and stack areas, distribution/sorting area, transportation baggage and seating areas, or workshop, the following requirements apply: The daylight zone under skylights is >= half the floor area and (a) the skylight area to daylight zone is >= 3 percent with a skylight VT >= 0.40 or (b) the minimum skylight effective aperture >= 1 percent. The skylights have a measured haze value > 90 percent.	□Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply.
						al Comments/Assumptions:		

Section #	Rough-In Electrical Inspection	Complies?	Comments/Assump
[EL10] ² 20-	Amp receptacles are controlled by automatic control device.	Complies	Exception: Requirement does not app
Additional C	Comments/Assumptions:	4	
	1 High Impact (Tier 1)	2 Medium Impa	act (Tier 2) 3 Low Impact (Tier 3)

Report date: 03/27/24

ection #	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
Req.ID I.2 _10] ²	At least 50% of all 125 volt 15- and 20-Amp receptacles are controlled by an automatic control device.	□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply.
ditiona	al Comments/Assumptions:		
	1 High Impact (Tier 1)	2 Medium Imp	act (Tier 2) 3 Low Impact (Tier 3)

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

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Report date: 03/27/24

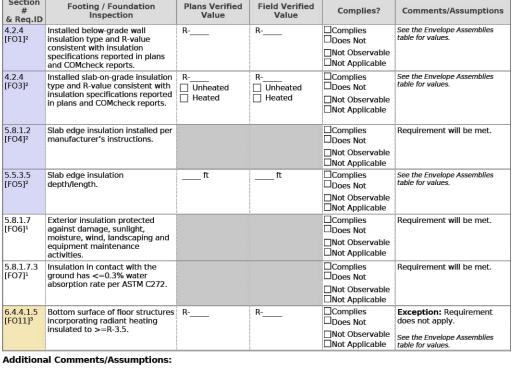
Project Title: Shell Building - Harbor Freight

Section # & Req.ID	Footing / Foundation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
4.2.4 [FO1] ²	Installed below-grade wall insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	R	R	□Complies □Does Not □Not Observable □Not Applicable	See the Envelope Assemblies table for values.
4.2.4 [FO3] ²	Installed slab-on-grade insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	R Unheated Heated	R Unheated Heated	□Complies □Does Not □Not Observable □Not Applicable	See the Envelope Assemblies table for values.
5.8.1.2 [FO4] ²	Slab edge insulation installed per manufacturer's instructions.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
5.5.3.5 [FO5] ²	Slab edge insulation depth/length.	ft	ft	□Complies □Does Not □Not Observable □Not Applicable	See the Envelope Assemblies table for values.
5.8.1.7 [FO6] ¹	Exterior insulation protected against damage, sunlight, moisture, wind, landscaping and equipment maintenance activities.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
5.8.1.7.3 [FO7] ¹	Insulation in contact with the ground has <=0.3% water absorption rate per ASTM C272.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
6.4.4.1.5 [FO11] ³	Bottom surface of floor structures incorporating radiant heating insulated to >=R-3.5.	R	R	□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply. See the Envelope Assemblies table for values.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3) Project Title: Shell Building - Harbor Freight Report date: 03/27/24 Data filename: G:_Projects\Retail & Salon_Harbor Freight Tools\23174 HFT-NC-ERWIN-size(Proto)-Stocks and Page 4 of 11
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Section # k Req.ID	Insulation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
.2.4 N2]¹	Installed roof insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports. For some ceiling systems, verification may need to occur during Framing Inspection.	R Above deck Metal Attic	R Above deck Metal Attic	□Complies □Does Not □Not Observable □Not Applicable	See the Envelope Assemblies table for values.
.8.1.2, .8.1.3 N3] ¹	Roof insulation installed per manufacturer's instructions. Blown or poured loose-fill insulation is installed only where the ceiling slope is <= 3:12.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
.2.4 N6] ¹	Installed above-grade wall insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	R- Mass Metal Steel Wood	R Mass Metal Steel Wood	□Complies □Does Not □Not Observable □Not Applicable	See the Envelope Assemblies table for values.
.8.1.2 N7] ¹	Above-grade wall insulation installed per manufacturer's instructions.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
.2.4 N8]²	Installed floor insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	R Mass Steel Wood	R	□Complies □Does Not □Not Observable □Not Applicable	See the Envelope Assemblies table for values.
.8.1.1 N10] ²	Building envelope insulation is labeled with R-value or insulation certificate has been provided listing R-value and other relevant data.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
.8.1.9 N18]²	Building envelope insulation extends over the full area of the component at the proposed rated R or U value.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
.8.1.4 N11] ²	Eaves are baffled to deflect air to above the insulation.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
.8.1.5 N12]²	Insulation is installed in substantial contact with the inside surface separating conditioned space from unconditional space.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
.8.1.6 N13]²	Recessed equipment installed in building envelope assemblies does not compress the adjacent insulation.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
.8.1.7.1 N15] ²	Attics and mechanical rooms have insulation protected where adjacent to attic or equipment access.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3) Project Title: Shell Building - Harbor Freight Report date: 03/27/24 Data filename: G:_Projects\Retail & Salon_Harbor Freight Tools\23174 HFT-NC-ERWIN-size(Proto)-Stocks and Page 8 of 11
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ASHKAL (www.ashrae.org). For personal use only. Additional reproduction, distribution, or transmission in either print or digital form is not permitted without ASHRAE's prior written permission. Normative Appendix A Table A3.2.3 Assembly U-Factors for Metal Building Walls Assembly R-6.5 R-9.8 R-13 R-15.8 R-19 R-22.1 R-25 R-32 R-38 1.180 0.136 0.094 0.072 0.060 0.050 0.044 0.039 0.030 0.026 insulation only Single R-10 0.084 0.066 0.054 0.047 0.041 0.036 0.033 0.027 0.023 R-19 Single layer R-25a 0.059 Double layer R-25 + R-10 0.047 R-25 + R-16 0.042 R-25 + R-10^c 0.039 R-30 + R-16 0.039 (Multiple R-values are listed in order from inside to outside.) a. A minimum R-0.375 thermal spacer block or thermal break strip is required when installed without continuous insulation.
b. A minimum R-0.75 thermal spacer block or thermal break strip is required when installed without continuous insulation.

c. A minimum R-3 thermal spacer block is required.

ANSI/ASHRAE/IES Standard 90.1-2016 (I-P)

INSULATION SYSTEM NOTE

ALL CUTS MADE IN THE INSULATION SYSTEM IN ORDER TO MAKE ATTACHMENTS TO THE BUILDING STRUCTURE, OR FOR ANY OTHER REASON, SHALL BE OF THE MINIMUM SIZE REQUIRED TO PERFORM THE WORK NEEDED AND SHALL BE SEALED IN ACCORDANCE WITH THE MANUFACTURER REQUIREMENTS TO MAINTAIN A SEALED AIR BARRIER AND VAPOR BARRIER SYSTEM.

ALL SOURCES OF AIR LEAKAGE IN THE BUILDING THERMAL ENVELOPE (VERTICAL AND HORIZONTAL) SHALL BE SEALED IN COMPLIANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS IN ORDER TO COMPLY WITH ENERGY CODE SEALED AIR BARRIER REQUIREMENTS.

INSULATION NOTES:

CLIMATE ZONE: 4A THE FOLLOWING ARE MINIMUM STANDARDS FOR INSULATION:

ALL EXPOSED INSULATION SHALL HAVE A MAX. 25 FLAME SPREAD. PAPER FACED IS NOT PERMITTED.

PEMB ROOF INSULATION

GC TO PROVIDE A PEMB INSULATION LINER SYSTEM (R-36 MIN) WITH THERMAL BLOCKS. SYSTEM REQUIREMENTS ARE TO BE R-25 CAVITY INSULATION + R-11 INSTALLED PERPENDICULAR OVER PURLINS WITH R-5 THERMAL BLOCKS PROVIDED AT EACH PURLIN. GC TO FOLLOW ALL MANUFACTURERS' INSTALLATION INSTRUCTIONS. ALL SEAMS SHALL BE SEALED PER MANUFACTURER'S REQUIREMENTS TO MAINTAIN VAPOR AND AIR BARRIER OF THE COMPLETE INSULATION SYSTEM. LINER AND BANDING TO BE WHITE IN COLOR.

PEMB WALL INSULATION

WALL ASSEMBLY HAVING A MIN U FACTOR OF .059 IS REQUIRED. U FACTOR IS ESTABLISHED USING ASHRAE VALUES PROVIDED IN TABLE A3.2.3 USING R-25 SINGLE LAYER CAVITY FILL SYSTEM WITH NO COMPRESSED INSULATION.

GC TO PROVIDE PEMB SINGLE LAYER IN CAVITY NON COMPRESSED R-25 INSULATION SYSTEM AND INSTALL PER MANUFACTURER'S REQUIREMENTS. PROVIDE TABS ON INTERIOR SURFACE OF METAL PANEL TO PREVENT INSULATION SAGGING. PROVIDE THERMAL BREAK STRIP MIN. R-0.375 AT EACH GIRT, BETWEEN GIRT AND PANEL. PROVIDE INTERIOR VAPOR BARRIER WITH MIN. 6" OVERLAP TO MAINTAIN VAPOR AND AIR BARRIERS OF THE COMPLETE INSULATION SYSTEM.

FOUNDATION INSULATION

-PERIMETER INSULATION NOT REQUIRED

GLAZING PERFORMANCE VALUES

U-FACTOR = 0.54 SHGC = 0.30



S ARCHITECTURE INTERIORS

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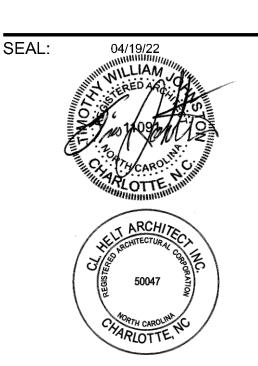
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NO. DATE DESCRIPTION

CHECKED BY: DRAWN BY:

DATE: 04/19/24

SHEET TITLE:

COMCHECK **ENVELOPE**

SHEET NUMBER:

COMPLIANCE

Project Title: Shell Building - Harbor Freight Data filename: G:\ Projects\Retail & Salon\ Harbor Freight Tools\23174 HFT-NC-ERWIN-size(Proto)-Stocks and Page 11 of 11 Taylor\Comcheck\HFT Erwin comcheck.cck 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.

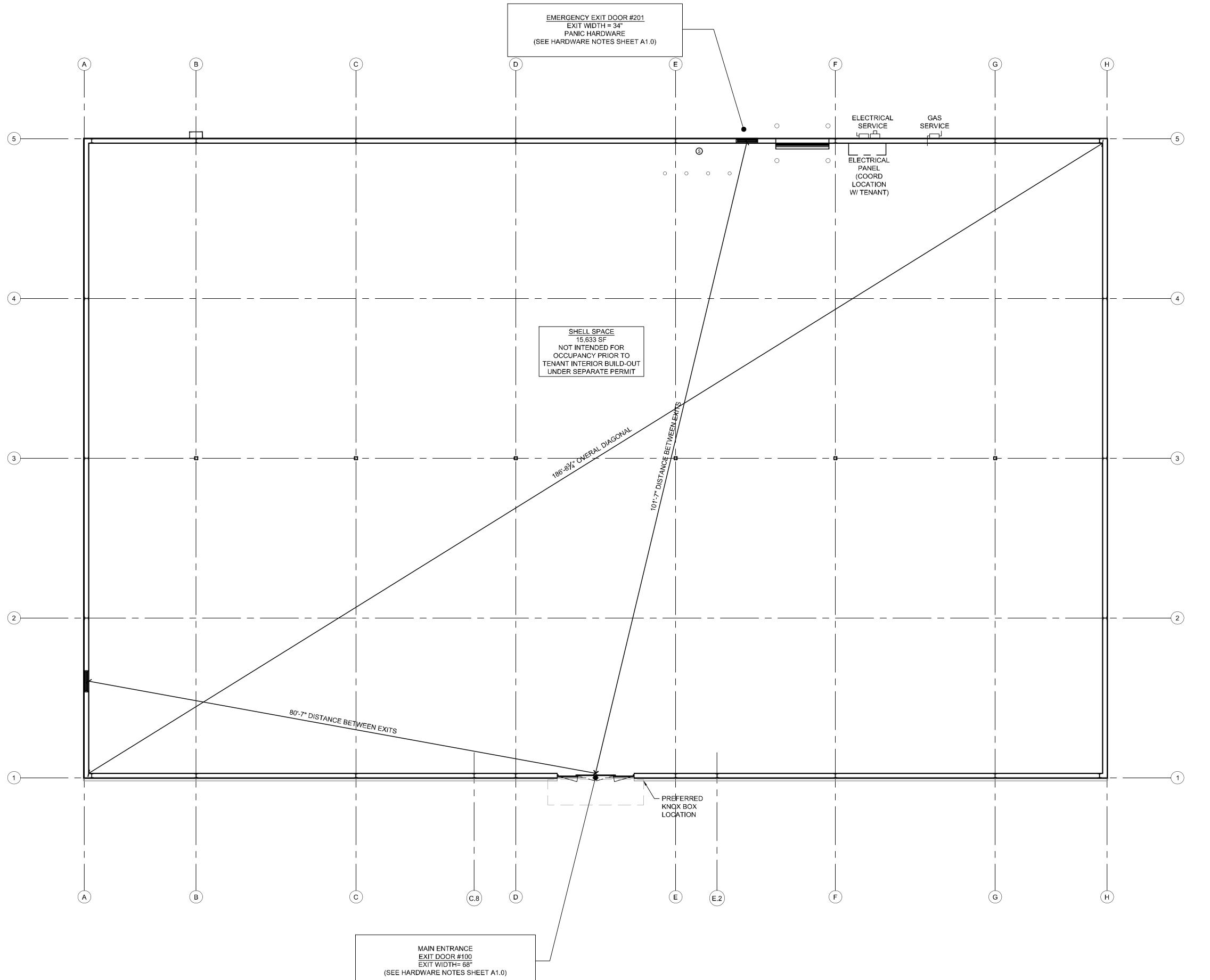
TENANT IS RESPONSIBLE FOR PROVIDING FIRE EXTINGUISHERS AT TIME OF INTERIOR BUILD-OUT (SEPARATE PERMIT) AS REQUIRED FOR FINAL OCCUPANCY. FIRE SEPARATION DISTANCES:

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 - 866-625-4563





ARCHITECTURE INTERIORS

6405 W. WILKINSON BLVD, STE. 100 BELMONT, NC 28012

704.342.1686 HELTDESIGN.COM INFO@HELTDESIGN.COM PROJECT NAME:

HARBOR FREIGHT TOOLS

STOCKS & TAYLOR CONSTRUCTION

PROJECT NO: 23174

PROJECT ADDRESS:

46 SHRIJI LANE **ERWIN, NC 28339**



CORPORATE ENTITY:

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COVER SHEET

	DOOR SCHEDULE										
DC	OR			DO	OOR			FRAN	⁄ΙΕ	HDW	REMARKS
N	0.	W	Ι	Т	TYPE	MAT'L	FINISH	MAT'L	FINISH	NOTES	REMARKS
1	00	12'-0"	7'-8"		А	GLASS/ALUM.	ANOD. ALUM.	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.
2	00	3'-0"	7'-0"	1 3/4"	В	HOLLOW METAL	PAINTED	HOLLOW METAL	PAINTED	2	
3	00	3'-0"	7'-0"	1 3/4"	В	HOLLOW METAL	PAINTED	HOLLOW METAL	PAINTED	3	
4	00	8'-0"	10'-0"	1/2"	С	METAL	GALV.	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 (C/KWY -PIN) 626
-CLOSER: FALCON SC71 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 (C/KWY -PIN) 626 -CLOSER: FALCON SC71 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) DOOR VIEWER: DOORSCOPE DS2000 AL.S

GROUP 4 - (OVERHEAD DOOR)

DOOR PANELS: 2 3/4" INSULATED STEEL INTERLOCKING FLAT SLAT CURTAIN W/ ENDLOCKS @ BOTH ENDS BY VENDOR SCHLAGE KS41F1200 CYLINDER CORE: FALCON C649 (IHCK, IHK)-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.

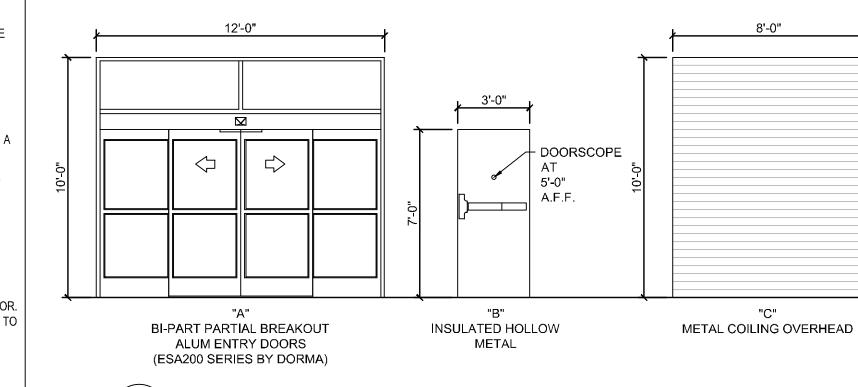
 ALL EXTERIOR DOORS TO BE 20 GA. MINIMUM, EXTERIOR DOOR FRAMES TO BE ALL WELDED 16 GA. MINIMUM.

 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/
- ALL HARDWARE LISTED TO BE SUPPLIED BY LISTED MANUFACTURER OR EQUAL.
- ALL DOOR HARDWARE TO BE BRUSHED CHROME FINISH.

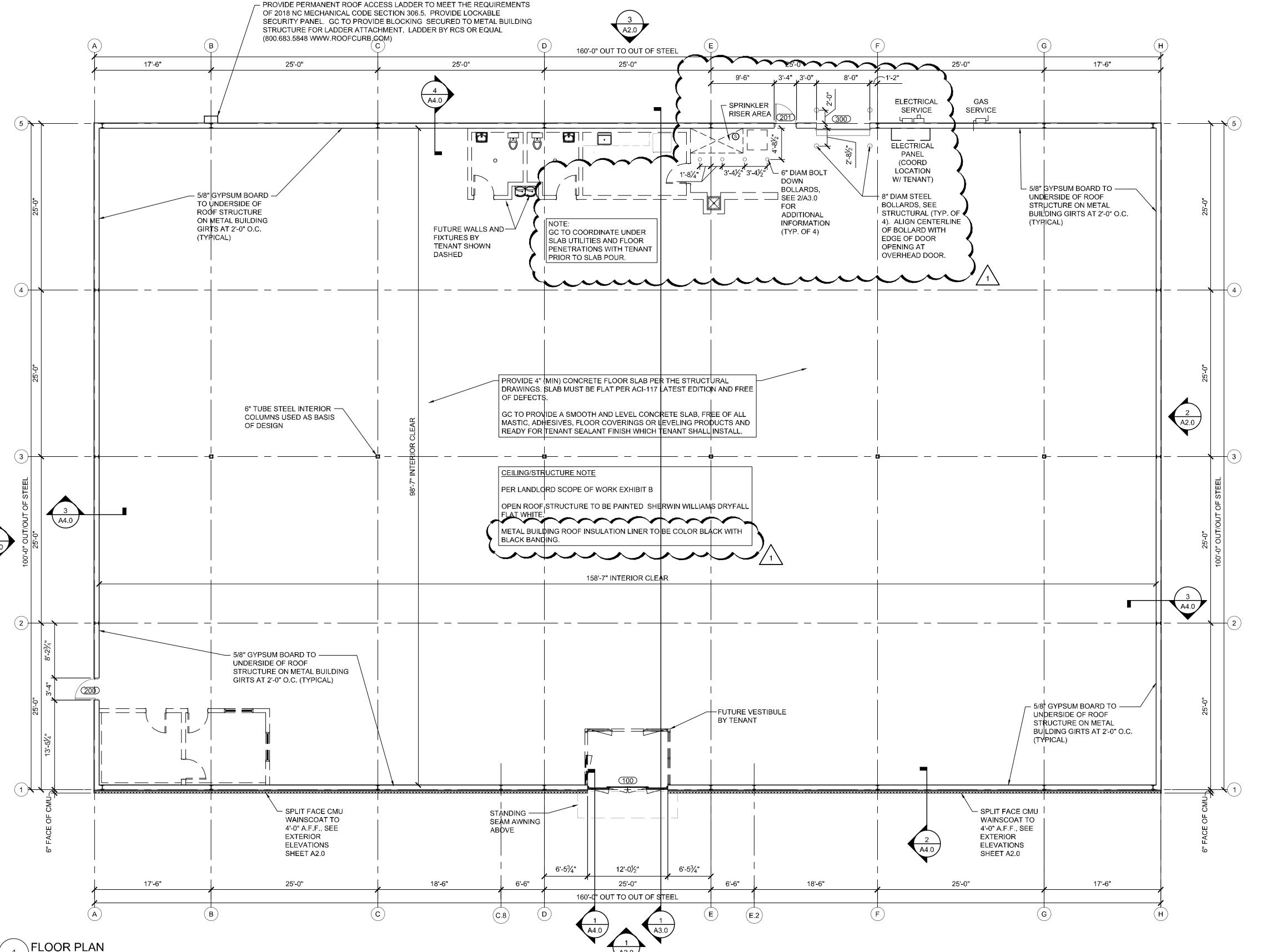
 O. EXTERIOR DOORS & FRAMES, EXCLUDING OVERHEAD DOOR, TO BE PRIMED @ PAINTED TO MATCH THE ADJACENT FINISH ON THE EXTERIOR, 1 COAT PRIMER & 2 COATS PAINT. INTERIOR SHALL BE PRIMED AND PAINTED, 1 COAT PRIMER & 2 COATS PAINT, INDUSTRIAL ENAMEL SHERWIN WILLIAMS SW7067 CITYSCAPE (SEMI-GLOSS).
- BI-PARTING 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.



(ESA200 SERIES BY DORMA)

DOOR TYPES

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





D E S I G N

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INFO@HELTDESIGN.COM
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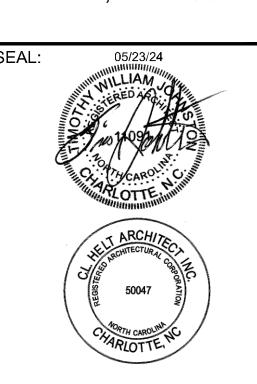
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STOCKS & TAYLOR
CONSTRUCTION

PROJECT NO: 23174

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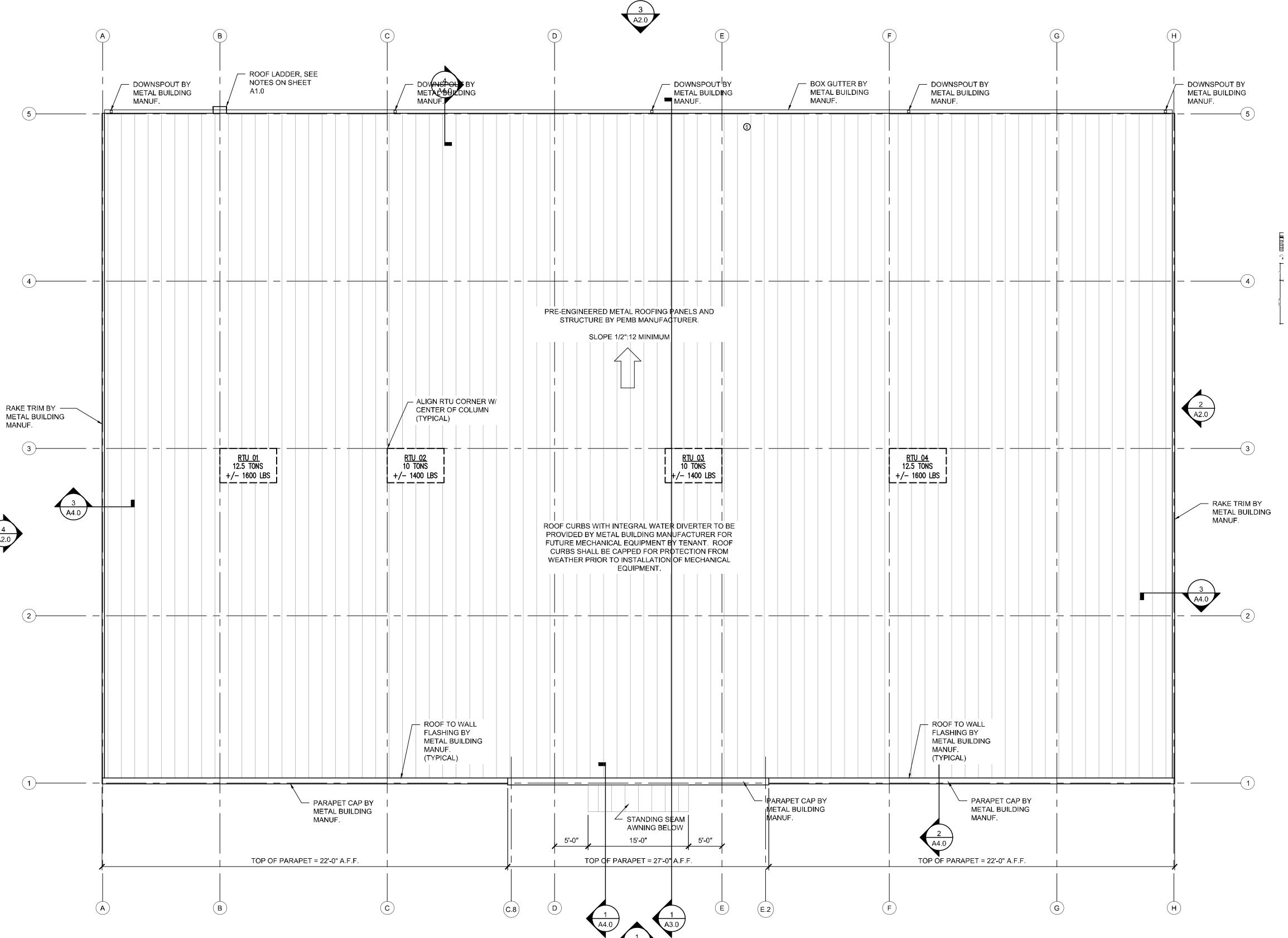
SHEET TITLE:
FLOOR PLAN

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.



ROOF PLAN

A1.1 SCALE: 1/8"= 1'-0"

H E L T

DESIGN ARCHITECTURE INTERIORS

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BELMONT, NC 28012 704.342.1686

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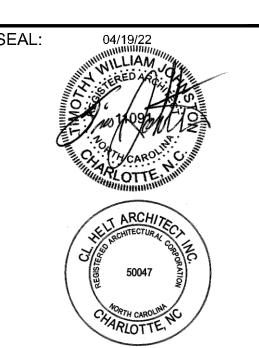
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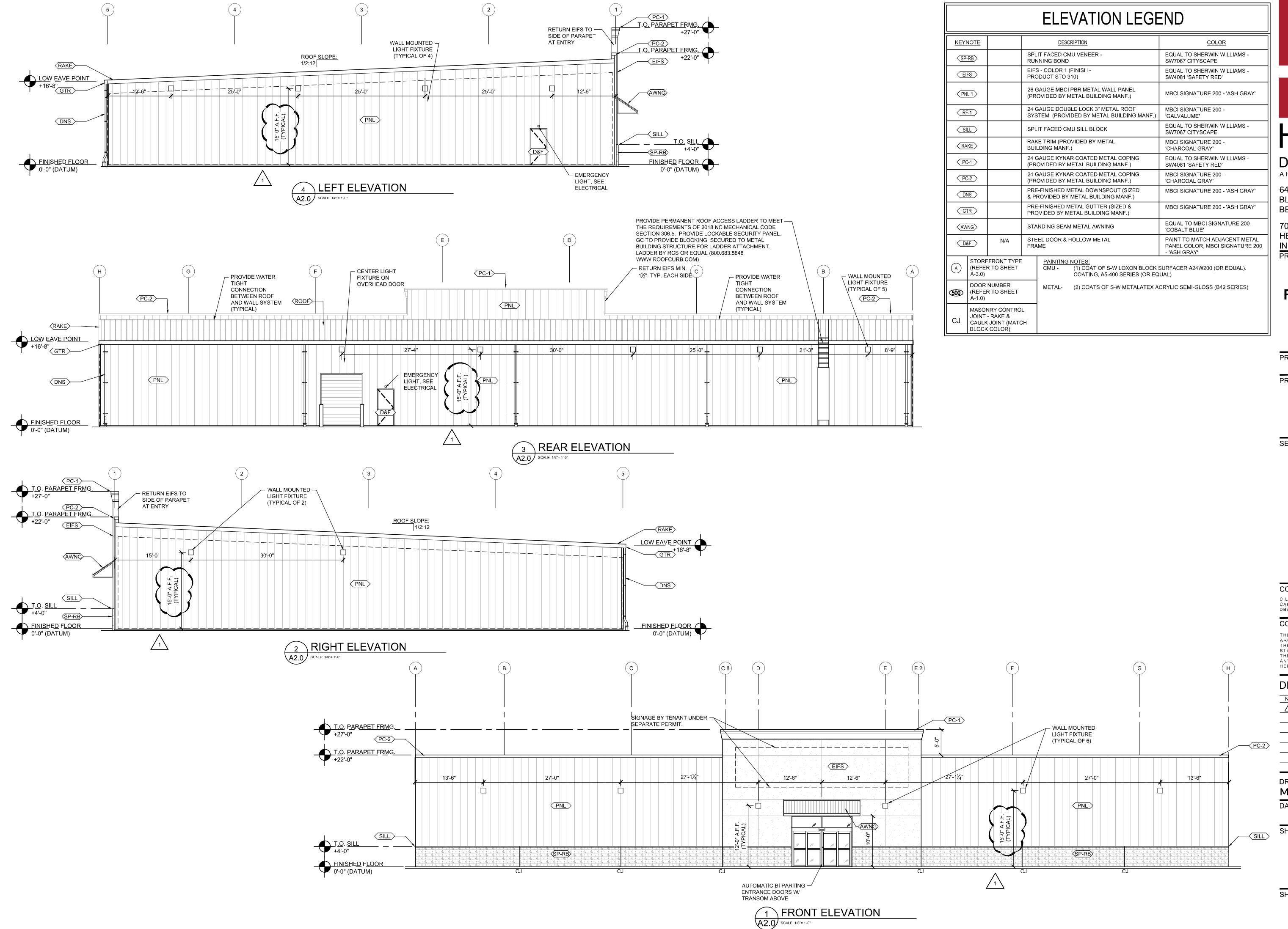
DATE:

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SHEET TITLE:
ROOF PLAN

SHEET NUMBER:

A1.1



HELT

DESIGN

ARCHITECTURE INTERIORS

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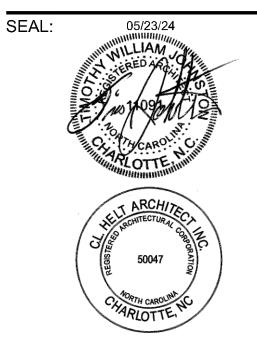
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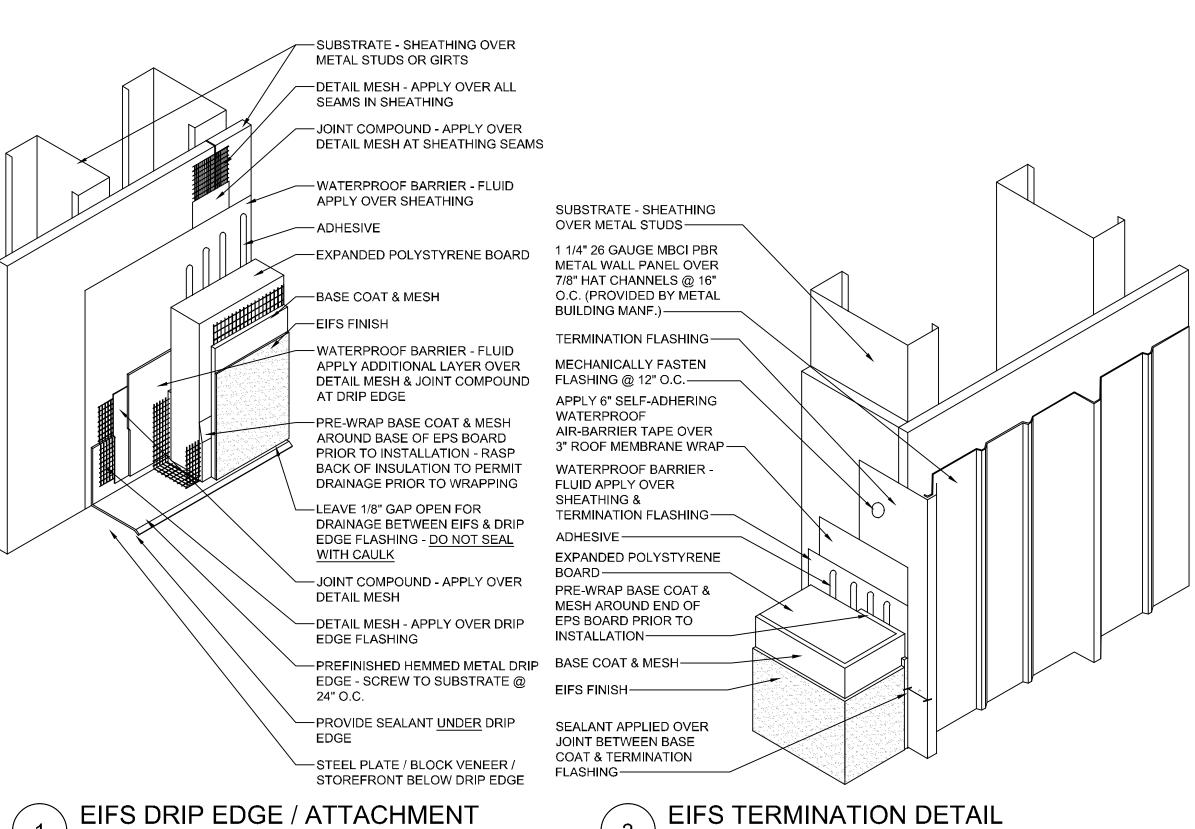
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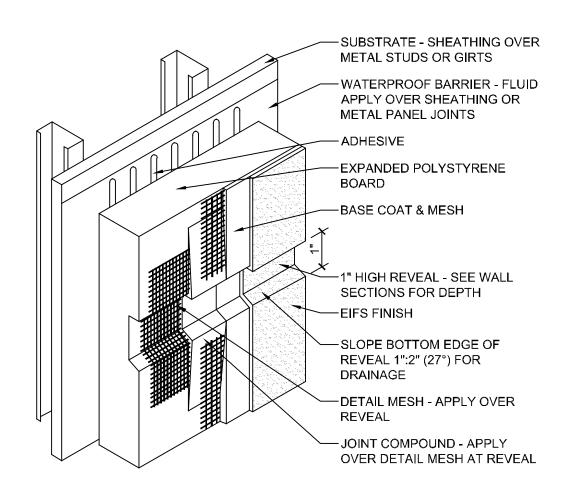
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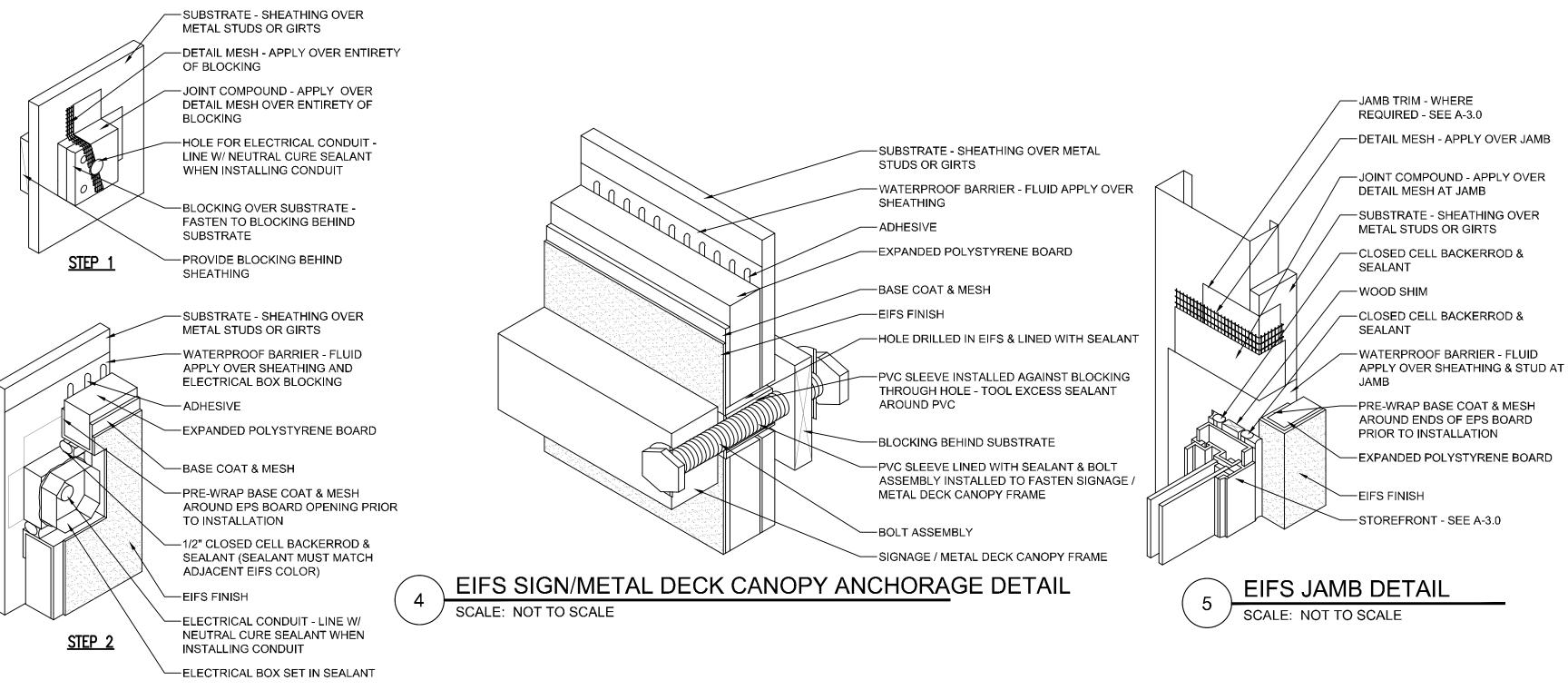
A2.0



SCALE: NOT TO SCALE







EIFS ELECTRICAL BOX DETAIL

ESIGN

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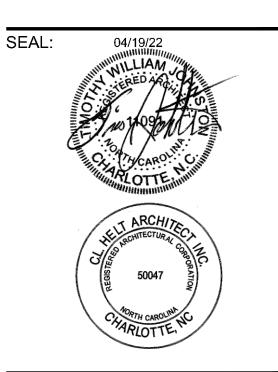
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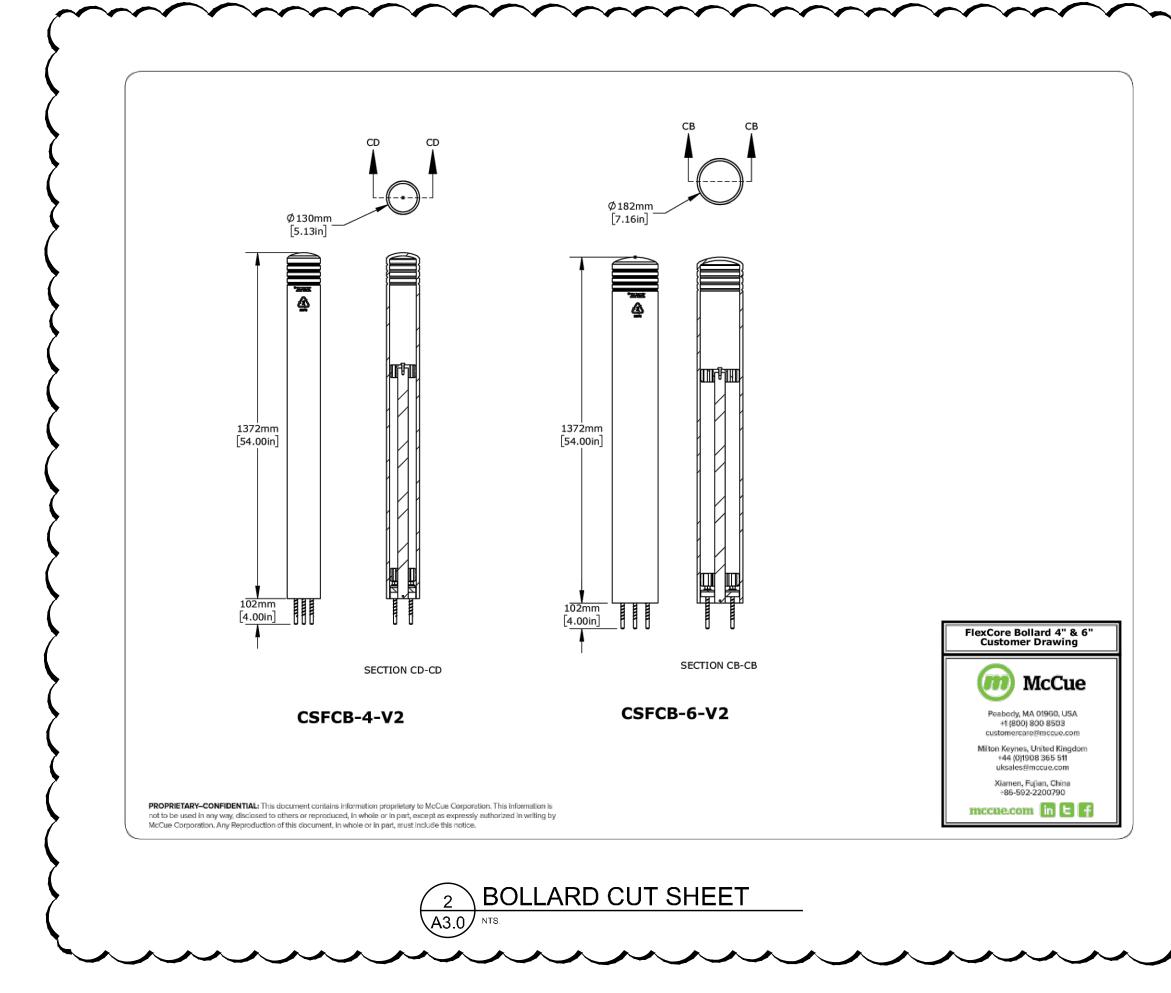
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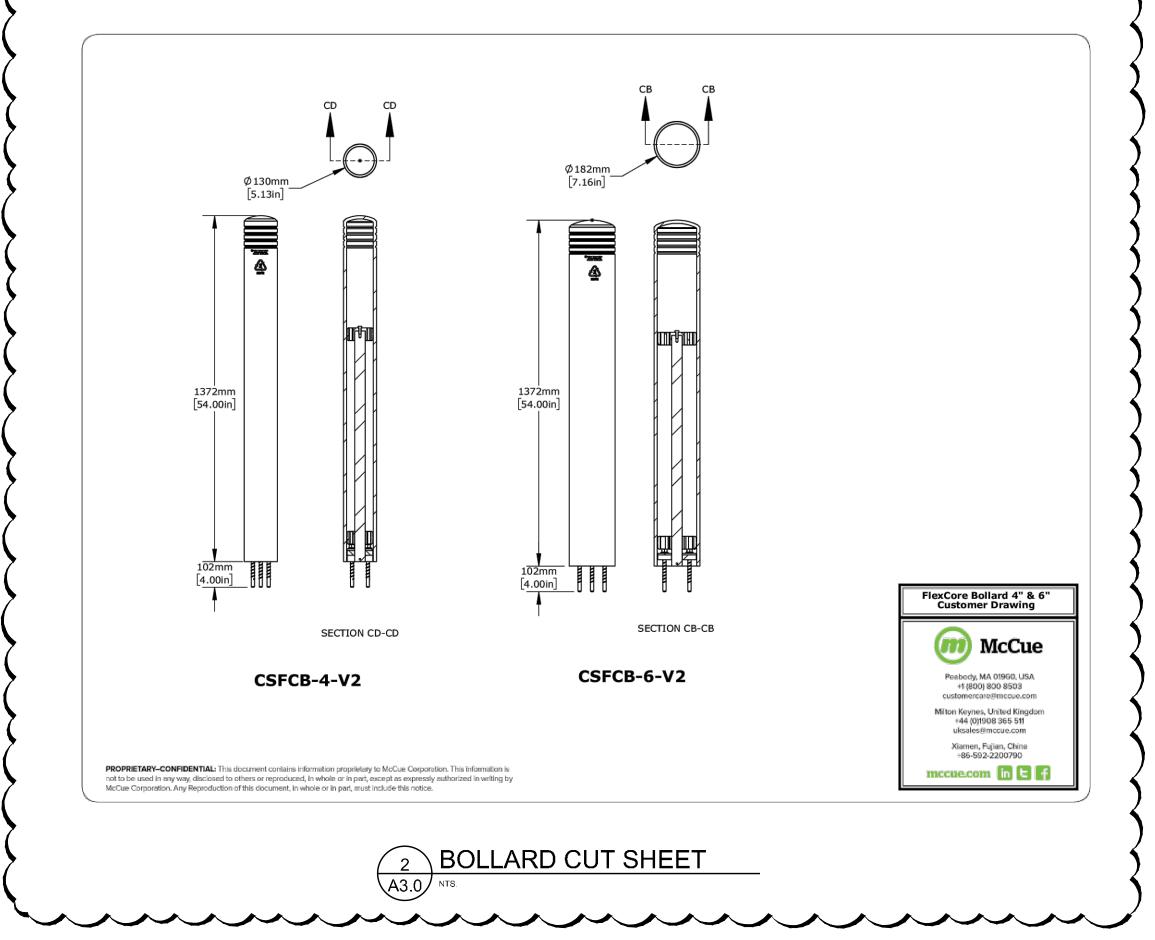
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EIFS DETAILS







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SEAL: 05/23/24



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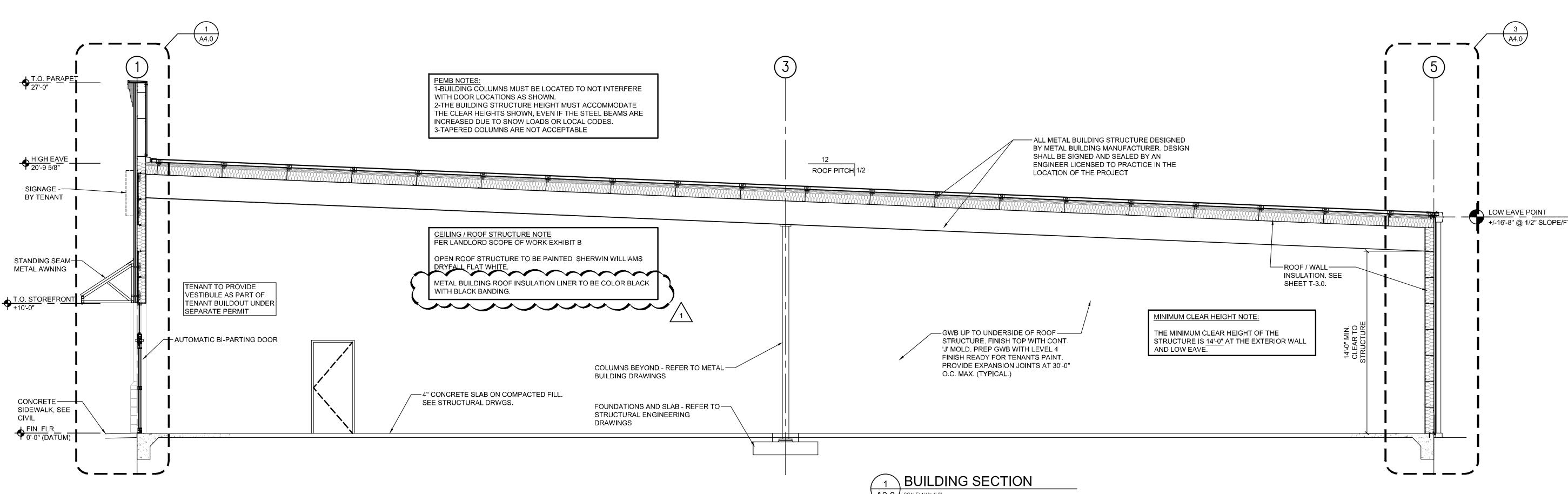
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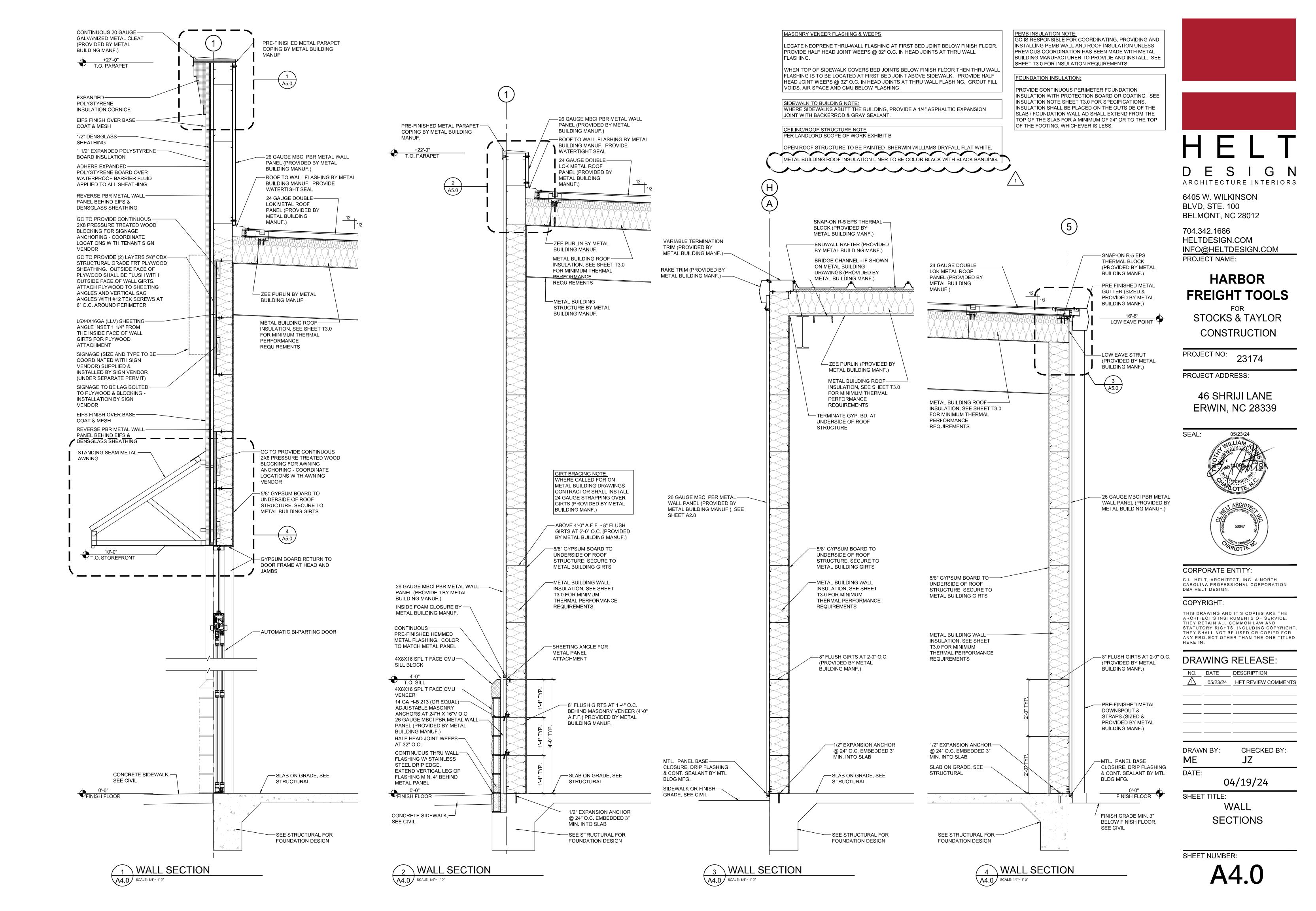
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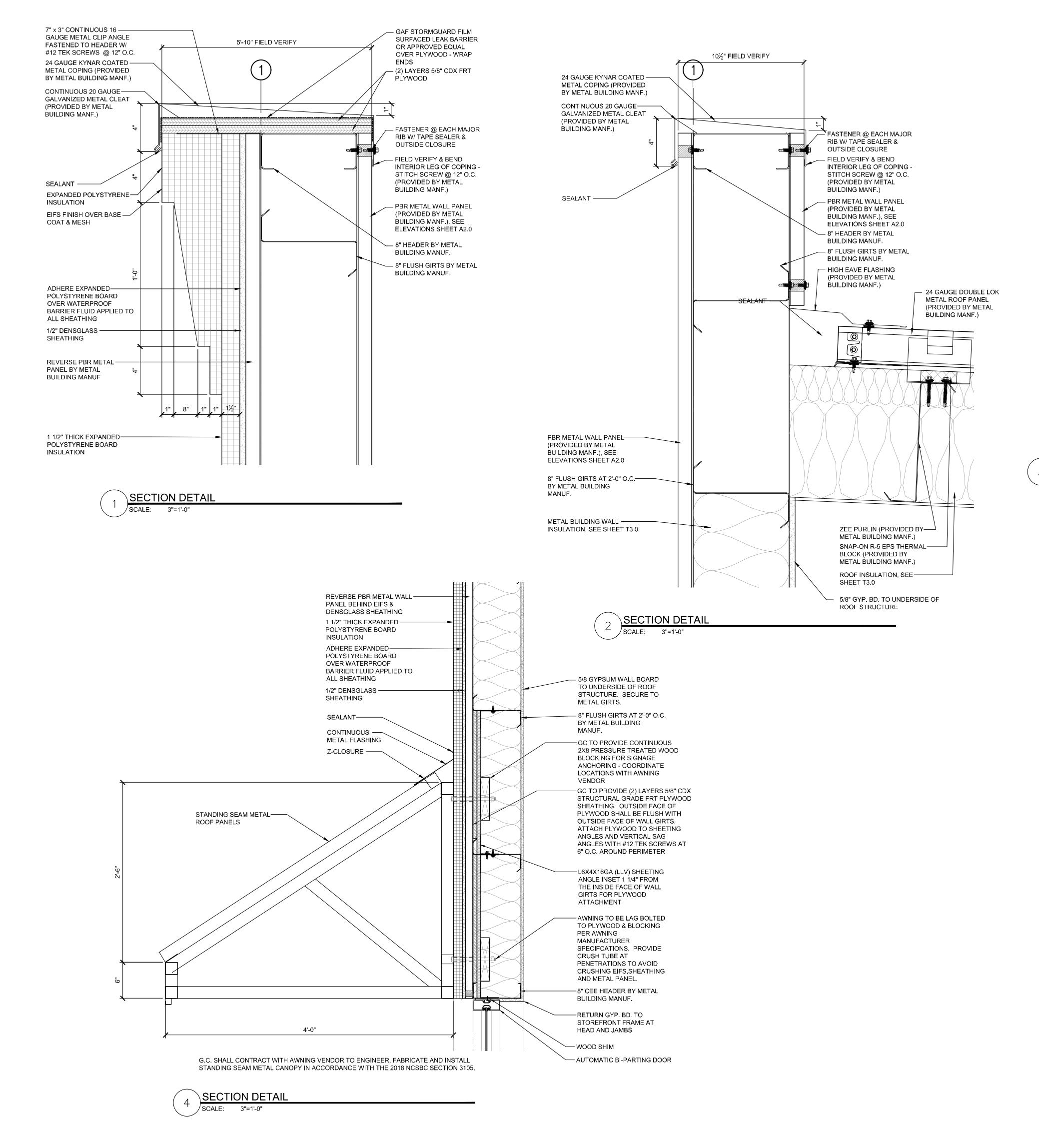
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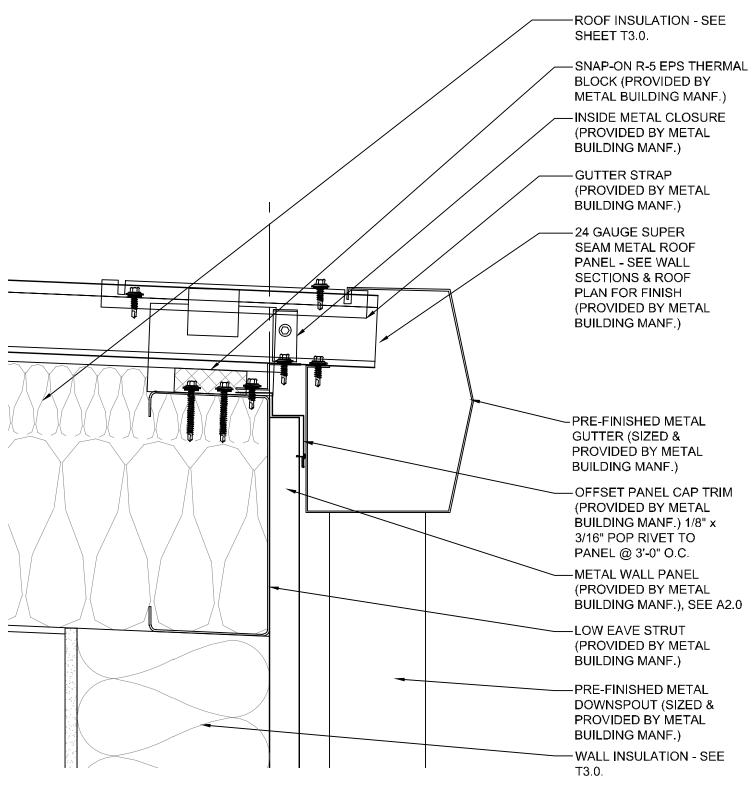
SHEET TITLE:

BUILDING SECTIONS









SECTION DETAIL

LIGHT POLE BASE FOUNDATION PIER SCHEDULE ULTIMATE WIND SPEED PIER DIAMETER (IN.) PIER DEPTH (FT.) REINFORCING BARS HORIZONTAL TIES 115 2'-0" 5'-6" (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" 0.G. <u>150 2'-0" 7'-3" (8) #5 #3 @ 12" 0.6.</u> <u>160 2'-0" 7'-6" (8) #5 #3 ⊚ 12" 0.C.</u> C LIGHT POLE FOUNDATION L.P. & L.P. BASE PL. (SEE L.P. MANUFACTURER DWG'S.)— ³∕₄" CHAMFER GROUT (AS REQ'D. OR RADIUS -BY MANUFACTURER) -18" LONG GALVANIZED ASTM F1554, GR. 36 90° A.B.'S W/ STD. 4" HOOK & 6" THREAD -OR- HEADED A.B. W/ 2"x2"x1/4" PL. WASHER (SEE L.P. MANUFACTURER DRAWINGS FOR NUMBER OF A.B.'S & A.B. DIAMETER) - PROVIDE STD. NUT & WASHER ON TOP & BOTTOM OF BASE PL. -(4) #3 TIES SPACED AS SHOWN - SEE CIVIL DRAWINGS FOR SITE CONDITIONS COMPACT SOILS AROUND FDN. PER GEOTECHICAL REPORT OR AS DIRECTED BY GEOTECHNICAL **REPRESENTATIVE** —HORIZ. TIES - SEE L.P. PIER SCHEDULE — SEE ELECT. OR CIVIL DRAWINGS FOR CONDUIT REQUIREMENTS VERTICAL REINF. BARS EVENLY SPACED - SEE L.P. PIER SCHEDULE CONCRETE REQUIREMENTS: CONCRETE STRENGTH = 4,000 PSI

• SLUMP = 3"-5"

• AIR ENTRAINING = 4-6%

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

PIER DIAMETER



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DATE:

04/19/24

SHEET TITLE:

DETAILS

SHEET NUMBER:

A5.0

GENERAL STRUCTURAL NOTES:

- I. 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.
- 2. GOVERNING CODE: 2018 NORTH CAROLINA BUILDING CODE
- 3. 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
- 4. SEISMIC DESIGN VALUES: (SEE METAL BUILDING DRAWINGS)
- 5. 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.
- 6. 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 3. REINFORCING STEEL SHALL BE ASTM-615, GRADE 60. WELDED BUILDING AND IT'S 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.
- 7. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION.
- 8. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND CONDITIONS RELATING TO EXISTING CONSTRUCTION AND EXISTING SERVICE ON THE SITE.
- 9. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND LOCATIONS OF COLUMNS, WALLS, OPENINGS, ETC. WITH THE ARCHITECTURAL DRAWINGS PRIOR TO PROCEEDING WITH THE
- 10. 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.
- 11. 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.
- 12. 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.
- 13. 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.
- 14. WORK NOT INDICATED ON THE DRAWINGS BUT REASONABLY IMPLIED TO BE SIMILAR TO THAT AT SIMILAR LOCATIONS SHALL BE 15. REINFORCEMENT SHALL BE ADEQUATELY SUPPORTED AND TIED REPEATED. UNLESS OTHERWISE NOTED, ALL SECTIONS AND DETAILS SHOWN ON THESE DRAWINGS ARE TYPICAL AT SIMILAR LOCATIONS AND CONDITIONS.

FOUNDATION & GEOTECHNICAL NOTES:

- 1. THE FOUNDATION HAS BEEN DESIGNED IN ACCORDANCE WITH THE RECOMMENDATIONS MADE IN "GEOTECHNICAL ENGINEERING REPORT" PREPARED BY TERRACON, DATED MARCH 7, 2024.
- 2. PREPARE FOUNDATION SUBSTRATE IN ACCORDANCE WITH WRITTEN RECOMMENDATIONS OF "GEOTECHNICAL ENGINEERING REPORT".
- 3. 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.
- 4. FOOTINGS SHALL BE POURED INTO AN EARTH-FORMED TRENCH IT SOIL CONDITIONS PERMIT.
- 5. 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.
- 6. FOUNDATION WALLS THAT RETAIN EARTH SHALL BE BRACED AGAINST BACKFILLING PRESSURES UNTIL FLOOR SLABS AT TOP AND 23. USE ONE SOURCE FOR CEMENT, AGGREGATES, AND POZZOLANS BOTTOM ARE IN PLACE.
- 7. 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.
- 8. COMPACT BACKFILL IN ACCORDANCE WITH "GEOTECHNICAL **ENGINEERING REPORT"**
- 9. PERFORM DENSITY AND MOISTURE CONTENT TESTS OF COMPACTED FILL MATERIALS IN ACCORDANCE WITH ASTM D2992 AND ASTM D3017, AS REQUIRED BY GEOTECHNICAL ENGINEER.
- 10. FOOTINGS SHALL EXTEND DOWN TO A LOWER ELEVATION THAN INDICATED ON THE DRAWINGS IF NECESSARY TO REACH ADEQUATE BEARING MATERIAL.
- 11. SLOPE SIDES OF EXCAVATIONS, OR SHORE, SHEET, AND BRACE SIDE SLOPES TO ENSURE SLOPE STABILITY AND SAFETY. ADEQUATELY PROTECT ALL EXCAVATION SLOPES.
- 12. REMOVE ALL MATERIAL CONTAINING ROOTS, DEBRIS OR OTHER DELETERIOUS MATERIAL FROM THE SITE.
- 13. 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.
- 14. 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
- 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.

C. ACI 306 AND ACI 305 FOR WINTER AND HOT WEATHER CONCRETE

- 2. CONCRETE REQUIREMENTS AND LOCATION IN JOB: CEMENT SHALL BE TYPE I PORTLAND CEMENT, ASTM C-150. CLASS LOCATION **REQUIREMENTS**
- FOOTINGS 3" TO 5" SLUMP II INTERIOR SLAB 4000 PSI 3" TO 5" SLUMP (SEE HFT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS)
- (3" TO 5" SLUMP) IV MASONRY GROUT 3500 PSI 8" TO 10" SLUMP PEA GRAVEL MIX

5% +/- 1% ENT. AIR

4. UNLESS OTHERWISE DETAILED, SPLICES SHALL BE IN ACCORDANCE WITH ACI 318 LATEST EDITION.

WIRE FABRIC SHALL CONFORM TO ASTM A-185.

III EXTERIOR CONCRETE 3500 PSI

- 5. 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 1½" FOR #5 BARS OR SMALLER AND 2" FIR BARS LARGER THAN #5. IN ALL OTHER CONDITIONS PROVIDE 1" COVER UNLESS NOTED OTHERWISE ON DRAWINGS.
- 6. EMBEDS SHALL BE IN PLACE BEFORE PLACING CONCRETE.
- 7. 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.
- 8. <u>UNDER NO CIRCUMSTANCES</u> SHALL FORMS BE LEFT IN PLACE PERMANENTLY.
- 9. ALL EMBEDDED ITEMS (EXCEPT REINFORCING STEEL & ANCHOR BOLTS) SHALL BE GALVANIZED.
- 10. SEE HFT STANDARDS FOR JOINT FILLER/SEALANT SPECIFICATIONS. FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS FOR SURFACE PREPARATION AND INSTALLATION OF JOINT FILLER/SEALANT.
- 11. 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.
- 12. ROUGHEN CONCRETE AT FOOTINGS BEFORE POURING PIERS, PADS, OR WALLS, IN ACCORDANCE WITH ACI-318, CHAPTER 11
- 13. PROVIDE (2) #4 BARS x 4'-0" LONG IN CONCRETE SLABS AND MATS AT ALL RE-ENTRANT CORNERS.
- 14. 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.
- 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.
- 16. UNLESS NOTED OTHERWISE ON THE DRAWINGS, DOWELS SHALL MATCH CORRESPONDING VERTICAL REINFORCEMENT.
- 17. FILL ALL PLUMBING SLOTS WITH CONCRETE TO THE SAME DEPTH AS THE FLOOR SLAB AFTER PIPING IS INSTALLED.
- 18. 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.
- 19. LAP WELDED WIRE FABRIC A MINIMUM OF 12".
- 20. REFER TO ARCHITECTURAL AND HFT SPECIFICATIONS FOR FINISHING OF CONCRETE SLAB.
- 21. CONFIRM THERE IS NO SLAG OR FLY ASH IN THE MIX THESE MATERIALS WILL AFFECT THE POLISHING PROCESS.
- 22. SEE HFT SPECIFICATIONS FOR PROPER CONCRETE CURING MATERIALS AND PROCEDURES.
- THROUGHOUT THE JOB. MONITOR AND CONTROL INCOMING MATERIAL CONSISTENCY. DO NOT USE CALCIUM CHLORIDE-BASED ADMIXTURES. NON-CHLORIDE ADMIXTURES MAY BE USED.
- 24. 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.
- 25. PLACE CONCRETE TO ACHIEVE AS TRUE AND SMOOTH A TOP SURFACE AS POSSIBLE. MOUNDS OR DIPS ARE NOT ACCEPTABLE. GC 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

- 1. 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.
- 2. 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
- 3. G.C. TO COORDINATE THE INTEGRATION OF THE METAL BUILDING COMPONENTS WITH THE ARCHITECTURAL FOUNDATION REQUIREMENTS. DEVIATIONS TO BE COORDINATED BEFORE ERECTION COMMENCES.
- 4. 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.
- 5. 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

STOCKS & TAYLOR CONSTRUCTION

PROJECT NO:

PROJECT ADDRESS:

46 SHRIJI LANE **ERWIN, NC 28339**

SEAL:



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

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SHEET TITLE: STRUCTURAL NOTES SHEET

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	X		X			
DESIGN BEARING CAPACITY.						
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED	X		Х			
PROPER MATERIAL.						
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	X	Х				
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING	X	Х				
PLACEMENT AND COMPACTION OF COMPACTED FILL.						
5. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT	X		X			
SITE HAS BEEN PREPARED PROPERLY.						

TYPE	APPLICABLE TO THIS PROJECT	CONTINUOUS	PERIODIC	REFERENCED STANDARD
I. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	Х		Х	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
b. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16".				ACI 318: 26.6.4
c. INSPECT ALL OTHER WELDS.				
B. INSPECT ANCHORS CAST IN CONCRETE.	X		Х	ACI 318: 17.8.2
4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS:	Х	Х		
a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED				ACI 318: 17.8.2.4
ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS.				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,	X		X	ASTM C172
PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE				ASTM C31
OF THE CONCRETE.				ACI 318: 26.5, 26.12
7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X		X	ACI 318: 26.5
3. 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				ACI 318: 26.11.2
FROM BEAMS AND STRUCTURAL SLABS.				
2. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE	X		X	ACI 318: 26.11.1.2(b)
MEMBER BEING FORMED.				/(C) 010. 20.11.1.2(b)

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:				AISC360: N5.4
1. VERIFY WELDS CLEANED.				A100000. No.4
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.				
VERIFY BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED).				
8. VERIFY REPAIR ACTIVITIES.				
3. HIGH-STRENGTH BOLTING:	X		Χ	
a. VERIFY MANUFACTURER'S CERTIFICATIONS FOR FASTENER MATERIALS.				
b. VERIFY FASTENERS ARE MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS.	X		Χ	
c. VERIFY PROPER BOLTED CONNECTIONS:	X		Χ	
1. SNUG-TIGHT BOLTED JOINTS.	Х		X	
i. VERIFY PROPER BOLTING PROCEDURE USED AT BOLTED JOINTS.	X		X	
ii. VERIFY PROPER FASTENER ASSEMBLIES ARE USED AT BOLTED JOINTS.	X		Х	
PRE-TENSIONED AND SLIP-CRITICAL BOLTED JOINTS.				
i. VERIFY PROPER BOLTING PROCEDURE USED AT BOLTED JOINTS.				AISC360: N5.5
ii. VERIFY PROPER FASTENER ASSEMBLIES ARE USED AT BOLTED JOINTS.				
iii. VERIFY JOINT BROUGHT TO SNUG-TIGHT CONDITION PRIOR TO THE				
PRETENSIONING OPERATION.				
iv. 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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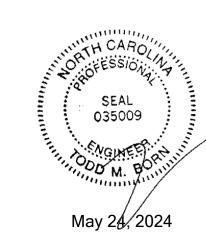
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HARBOR FREIGHT TOOLS

STOCKS & TAYLOR CONSTRUCTION

PROJECT ADDRESS:

46 SHRIJI LANE **ERWIN, NC 28339**



CORPORATE ENTITY:

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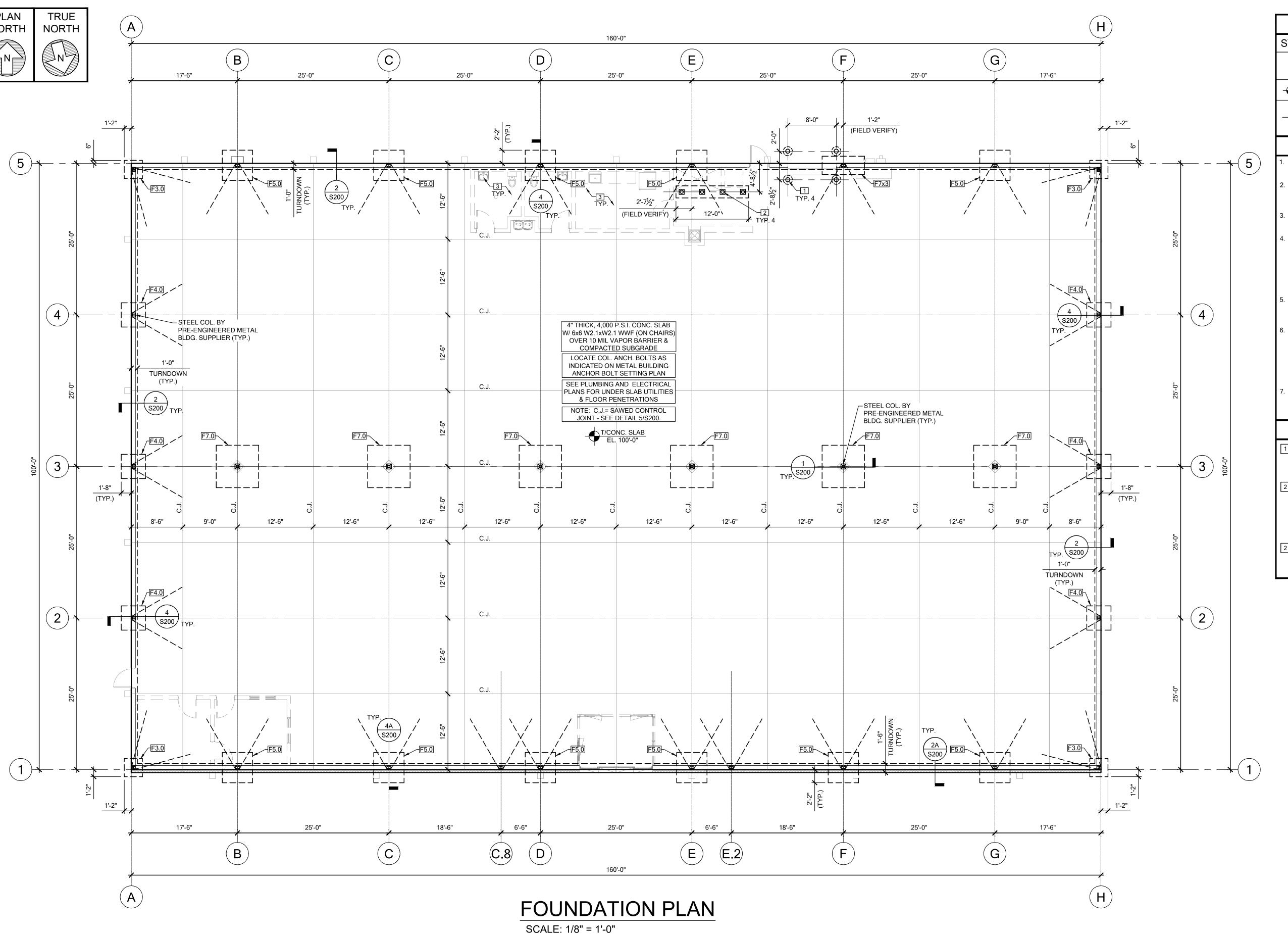
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STATEMENT OF SPECIAL INSPECTIONS



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"	FOUNDATION SCHEDULE						
F4.0 4'-0" x 4'-0" x 1'-0" (5) #5 EA. WAY (BOTTOM ONLY) 98'-0"							
[FEQ. FLOT V FLOT V 1 OT (6) #5 EA WAY (ROTTOM ONLY) 001 OT							
F7x3 7'-0" x 3'-0" x 1'-0" (4) #5 EA. WAY LONG. (BOTTOM ONLY) 98'-0"							
F7.0 7'-0" x 7'-0" x 2'-0" (9) #5 EA. WAY (TOP & BOTTOM) 99'-4"							

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.

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 LEGEND SYMBOL DESIGN DESCRIPTION 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. 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.

- TOP OF CONCRETE SLAB. ELEVATION AS NOTED IN PLAN FOR REFERENCE ONLY. SEE CIVIL DRAWINGS FOR ACTUAL ELEVATION ABOVE MEAN SEA LEVEL
- SEE 7/S200 FOR TYPICAL FOUNDATION REINFORCING AT BUILDING CORNERS.
- 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.
- S. 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.
- MAINTAIN SLAB THICKNESS AT ALL FLOOR SLOPES AND DEPRESSIONS.

PLAN KEY NOTES

- 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.

$\mathsf{H} \mathsf{E} \mathsf{L} \mathsf{T}$

DESIGN

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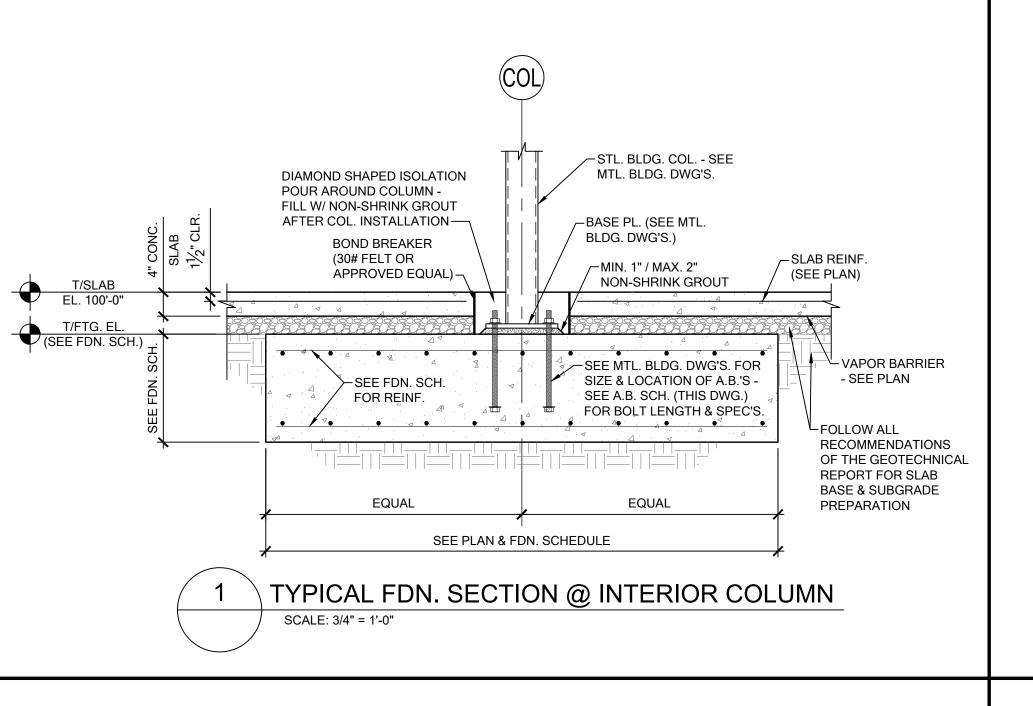
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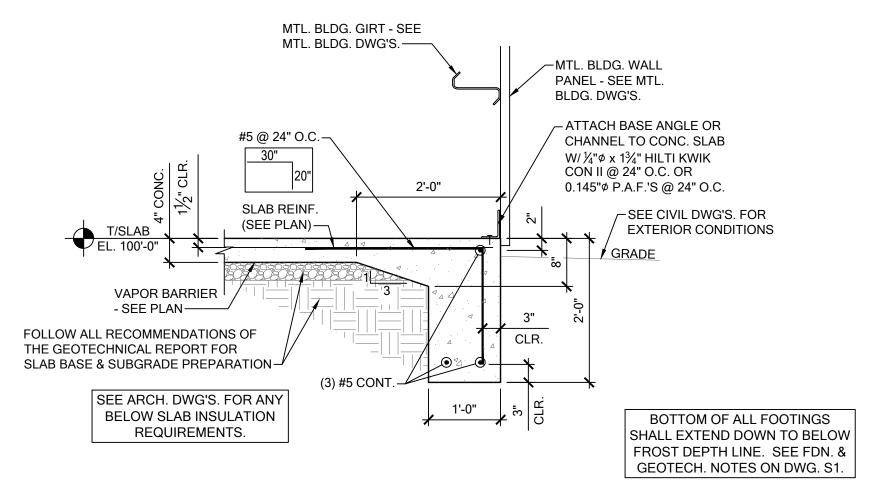
SHEET TITLE:
FOUNDATION

FOUNDATION PLAN, SCHEDULE & NOTES

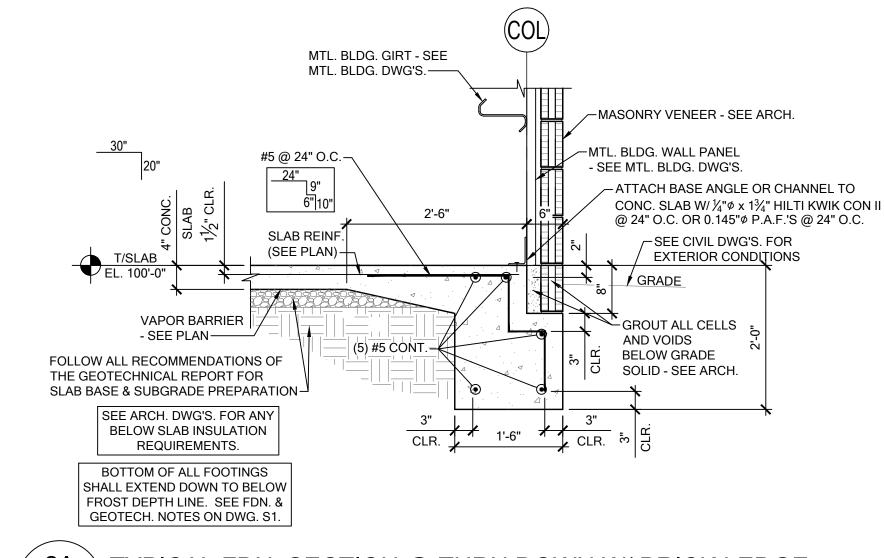
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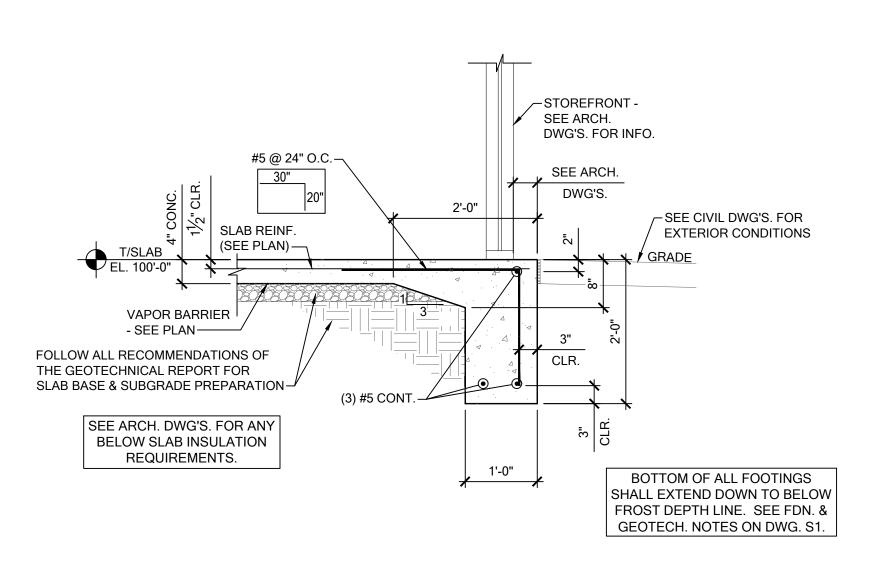


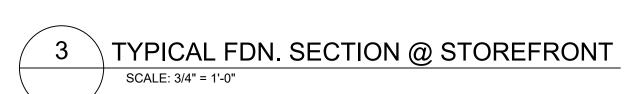


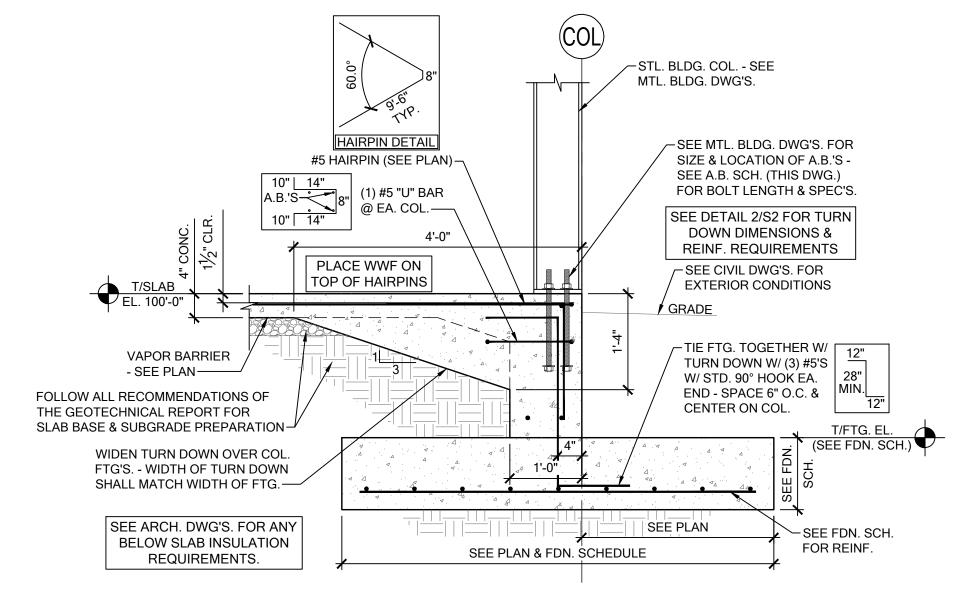




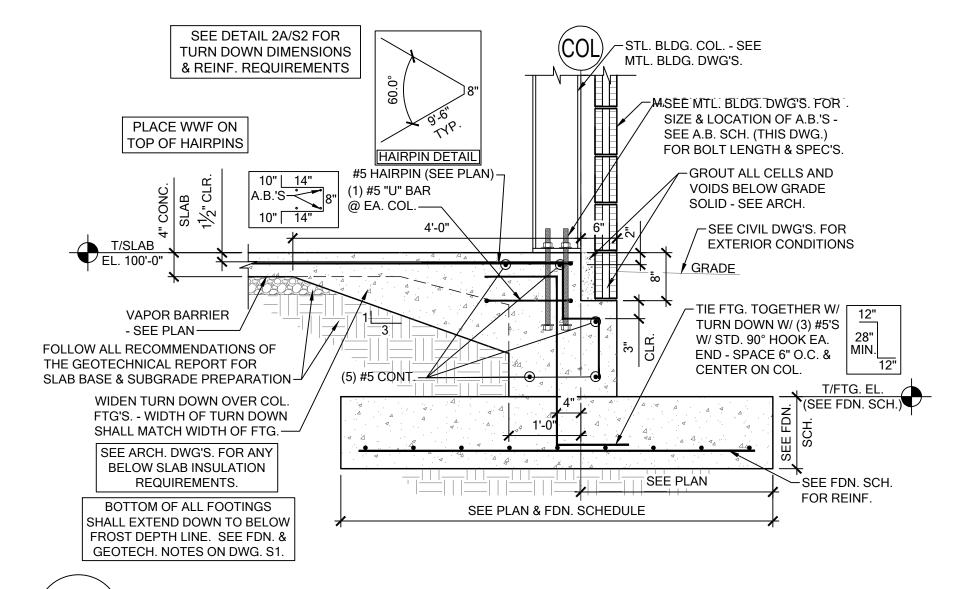
TYPICAL FDN. SECTION @ TURN DOWN W/ BRICK LEDGE SCALE: 3/4" = 1'-0"



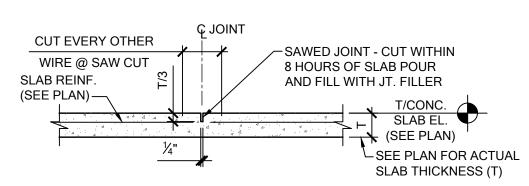




TYPICAL FDN. SECTION @ PERIMETER COLUMN SCALE: 3/4" = 1'-0"

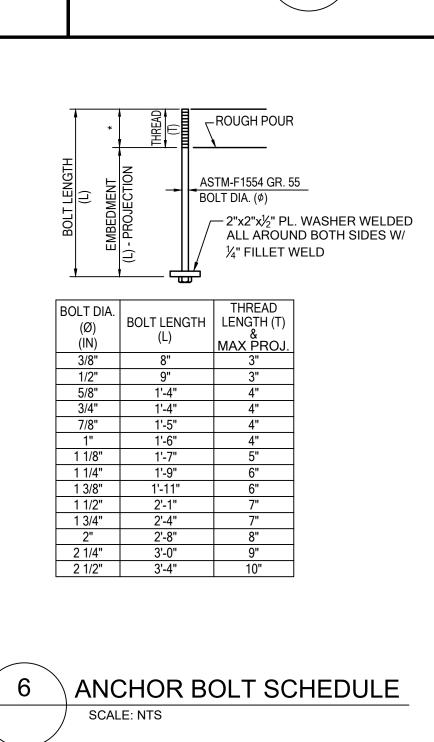


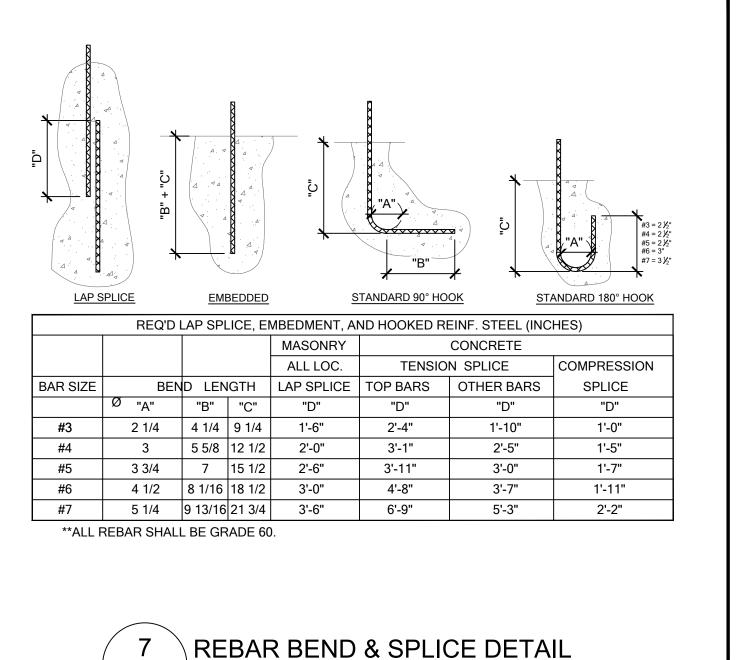
TYPICAL FDN. SECTION @ PERIMETER COLUMN W/ BRICK LEDGE SCALE: 3/4" = 1'-0"



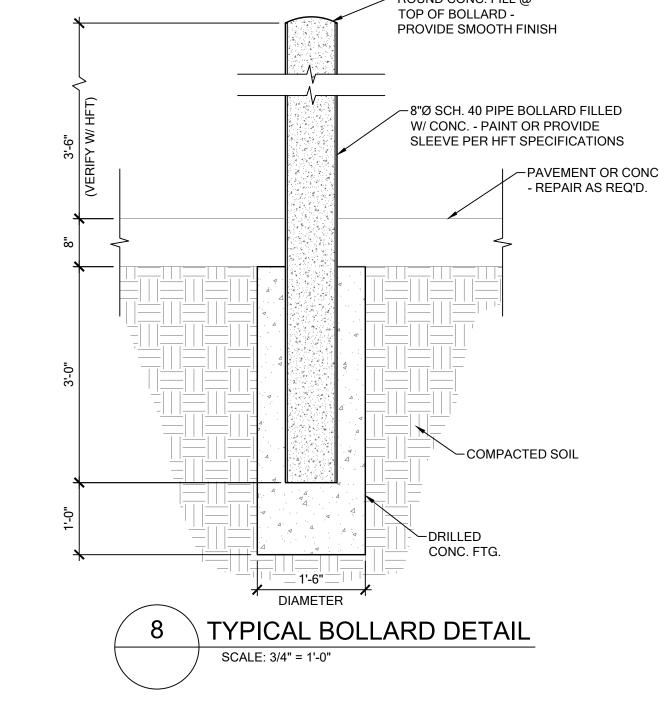
- PROVIDE TOOLED JOINTS IN FRESH CONCRETE EACH SIDE OF WALLS WHERE SLABS POUR THRU DOORWAYS.
- 2. PROVIDE (2) #4 BARS X 4'-0" LONG AT MID-DEPTH OF THE SLAB PERPENDICULAR TO
- JOINTS THAT TERMINATE AT A PERPENDICULAR JOINT.

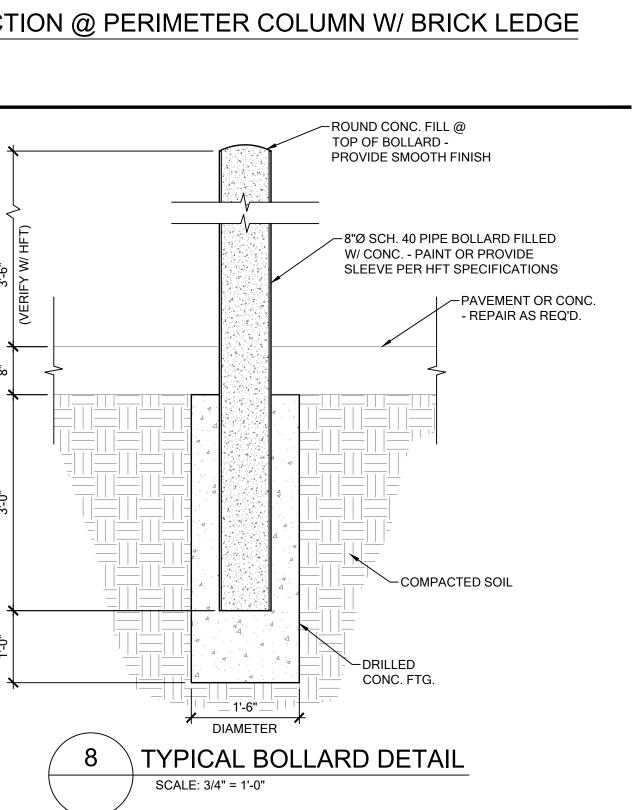






SCALE: NTS







FREIGHT TOOLS

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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DATE:

05/21/24

SHEET TITLE: **FOUNDATION DETAILS**

ELECTRICAL DEVICE LEGEND

ALL SYMBOLS <u>DO NOT</u> NECESSARILY APPLY

MOUNTING HGT. TO CENTERLINE UNLESS OTHERWISE NOTED

SYMBOL	DESCRIPTION
<u> </u>	WIRED JUNCTION BOX
Ю	WALL MOUNTED JUNCTION BOX
\Rightarrow	DUPLEX RECEPTACLE, 3 WIRE GRD. TYPE, 20A
₩ P	DUPLEX RECEPTACLE, WEATHERPROOF,20A
 GFI	GROUND FAULT PROTECTED DUPLEX RECEPTACLE, 20A
☐IG	DUPLEX RECEPTACLE WITH ISOLATED GROUND
_ фст	CONTROLLED QUADRAPLEX RECEPTACLE
-	QUADRAPLEX WALL RECEPTACLE, 20A
₹	DUPLEX RECEPTACLE, MOUNTED ABOVE COUNTER
ŀĐ	WALL MOUNTED NEMA L5-20R 20 AMP TWIST LOCK RECEPTACLE
\odot	FLOOR MOUNTED DUPLEX RECEPTACLE, 20A
lacktriangledown	FLOOR MOUNTED (RECESSED) TWIST LOCK RECEPTACLE
	CEILING MOUNTED DUPLEX RECEPTACLE, 20A
•	PUSHBUTTON STATION
\boxtimes	LOW VOLTAGE BUZZER TRANSFORMER
	DOOR BUZZER
$\Theta \Theta^3 \Theta^4$	TOGGLE SWITCH - SINGLE, 3-WAY & 4-WAY
OS	OCCUPANCY SENSOR (TWO POLE WHERE NOTED)
VS	VACANCY SENSOR
	SWITCHED CIRCUIT
	UNSWITCHED CIRCUIT
-	MANUAL MOTOR STARTING SWITCH W/ PILOT LIGHT
\triangleleft \forall	DATA OUTLET - CATEGORY 6
PC I	PEOPLE COUNTER DEVICE
<u> </u>	SAFETY SWITCH
	MAGNETIC MOTOR STARTER
	COMBINATION STARTER/SAFETY SWITCH
¹	MOTOR OUTLET - 1 PHASE
¹ ⊗	MOTOR OUTLET - 3 PHASE
E⊲	FIRE ALARM HORN/STROBE SIGNAL DEVICE
	CEILING MOUNTED FIRE ALARM HORN/STROBE SIGNAL DEVICE
EQ P	POLE MOUNTED (HUNG FROM STRUCTURE) FIRE ALARM HORN/STROBE SIGNAL DEVICE
EO	FIRE ALARM STROBE SIGNAL DEVICE
<u> </u>	DUCT MTD. SYSTEM SMOKE DETECTOR W/ REMOTE INDICATORS
E	FIRE ALARM PULL STATION
(\$)	SYSTEM SMOKE DETECTOR
ВВ	FIRE ALARM BOOSTER BOX
KP	KEY PAD
HUB	HOLD UP BUTTON
P	POWER PACK
©	CEILING MOUNTED VACANCY SENSOR.
\$LV	WALL MOUNTED, LOW VOLTAGE, MANUAL-ON SWITCH
T	THERMOSTAT
6	TEMPERATURE SENSOR

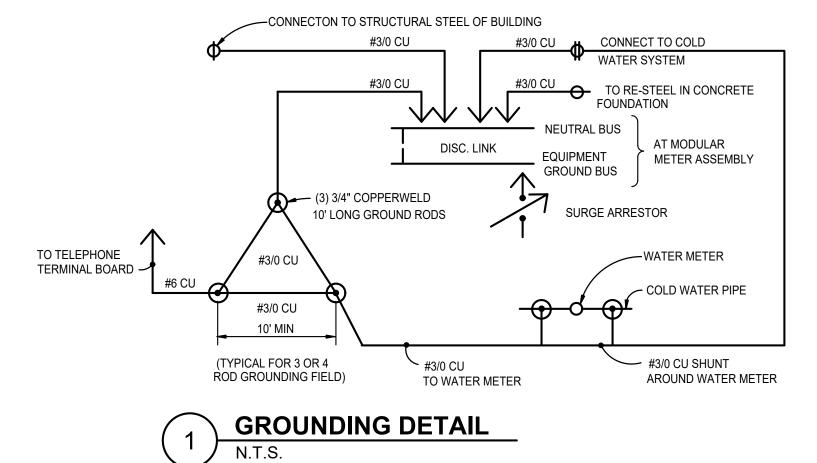
TEMPERATURE SENSOR

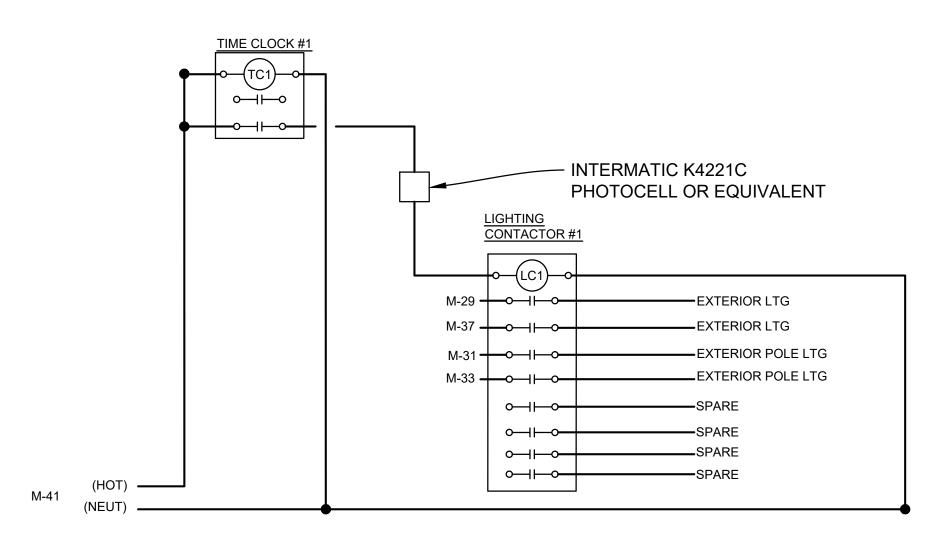
CONDITIONS.

INTENT.

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





MICARTA LABEL TYPICAL FOR ALL PANELS PANEL "M" 120/208V, 3Ø, 4W ------ 4" MIN. ----

RISER DIAGRAM CODED NOTES

- 1 E.C. SHALL COORDINATE WITH THE LOCAL POWER
- 2 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
- PROVIDE DUAL CHANNEL DIGITAL TIMECLOCK WITH
- 4 VERIFY SHORT CIRCUIT REQUIREMENTS WITH LOCAL UTILITY COMPANY, SOUTH RIVER ELECTRIC

Panel Wiring Schedule (3-Phase)

C. TO CONFIRM HVAC BREAKER

SIZES WITH FUTURE TENANT PRIOF TO PURCHASE AND INSTALLATION.

Panelb				Voltage	208Y/	120	Phase	3		Options/Notes		
Panel '		NQ		OCPD	M.L.		Wire	4				
NEMA	Type	1	_	Mounting	SURF	ACE	Buss	600A		AIC Rating	65,0)00
Ckt.			Brkr.	Brkr.	N.E.C.		N.E.C.	Brkr.	Brkr.			Ckt.
No.	Zana	Load Description		Opts.	kVA	Phase	kVA	Opts.	Size	Load Description	Zana	
NO.	Zone	Load Description	Size *	Opis.	KVA **	Phase	KVA **	Opis.	Size	Load Description	Zone	No.
			*						_ ^			<u> </u>
1					0.000	Α	0.000					2
3		FUTURE HVAC UNIT	80/3	HACR	0.000	В	0.000	HACR	80/3	FUTURE HVAC UNIT		4
5					0.000	С	0.000					6
7					0.000	Α	0.000					8
9		FUTURE HVAC UNIT	50/3	HACR	0.000	В	0.000	HACR	50/3	FUTURE HVAC UNIT		10
11					0.000	С	0.000	1				12
13					0.000	Α	0.000					14
15		SPARE	150/3		0.000	В	0.000		150/3	SPARE		16
17					0.000	С	0.000					18
19					0.000	Α	0.000					20
21		SPARE	100/3		0.000	В	0.000	1	100/3	SPARE		22
23					0.000	С	0.000	1				24
25		RECEPT - INTERIOR			0.180	Α	0.000			SPARE		26
27		RECEPT - EXT. GFI			0.180	В	0.000			SPARE		28
29		LTS - WALL PACK			0.984	С	0.000			SPARE		30
31		SITE LIGHT POLES			0.436	Α	0.000			SPARE		32
33		SITE LIGHT POLES			0.436	В	0.000			SPARE		34
35		SPARE			0.000	С	0.000			SPARE		36
37		LTS - WALL PACK			0.861	Α	0.000			SPARE		38
39		PYLON SIGN			0.000	В	0.000			SPARE		40
41		PHOTOCELL/CONTACTOR			0.000	С	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. LO Handle lock-on device N.E.C. Connected Totals: Ph.A 1.477 kVA ST Shunt Trip Type N.E.C. Connected Totals: Ph.B 0.616 kVA AUX Auxiliary Contacts N.E.C. Connected Totals: Ph.C 0.984 kVA PA Handle Padlock Attachment Total 3.077 kVA GFCI Ground Fault Circuit Interrupter

E Existing Circuit to remain IG Isolated Ground Circuit

HACR Heating, A/C & Refrigeration Connected Load: 8.5 amps SF Subfeed NEC Demand Feeder Load: 10.4 amps AFCI Arc Fault Circuit Interrupter

Breaker Options:
AS Powerlink AS Breaker

ELECTRIC	LOAD SU	JMMAR	RY	
208	Y/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	= MININ	MUM FEEDER	AMPERAGE	
3.756 X 1000 208 X 1.732	_ = 10.4	AMPS		٧

LOAD SUMMARY NOTES:

INSIDE

PANEL "M"

4W, 600A

M.C.B.

ELECTRICAL RISER DIAGRAM

120/208V, 30

TENANT'S E.C. SHALL

FURNISH AND INSTALL NEW

EQUIPMENT AS SHOWN IN

LIGHTING CONTROL

THE SCHEMATIC ON THIS

SHEET.

FLOOR

- [1] POWER FACTOR IS ALREADY INCLUDED IN LIGHTING LOAD. [2] 150VA/2FT OF LINE VOLTAGE TRACK + SUM LOW VOLTAGE XFRMS - CONNECTED LOAD
- [3] 200VA/LF ACTUAL CONNECTED LOAD
- [4] KIT APPLIANCE DEMAND FACTOR PER NEC 220-56

OUTSIDE

- [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.

2 SETS OF 4#350KCMIL CU & 1#1G CU IN 4" CONDUIT

600A DISC.

600A FUSES

SE RATED

NEMA 3R

208Y/120V

3Ø, 4W

-2 SETS OF 4#350KCMIL CU IN

-NEW 300KVA PAD MOUNTED

COORDINATE FINAL LOCATION

WITH LOCAL UTILITY AND CIVIL

BEGINNING CONSTRUCTION.

TRANSFORMER. FIELD

SITE PLANS PRIOR TO

FLOOR

2 SETS OF 4#350KCMIL CU IN

4" SCH. 40 PVC CONDUIT 36"

BELOW GRADE.

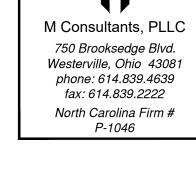
4" CONDUIT

NEW CT

CABINET



- COMPANY, SOUTH RIVER ELECTRIC MEMBERSHIP, TO
- PHOTOCELL TO CONTROL EXTERIOR LIGHTING. TORK MODEL DW200B.



PROJECT NAME:

HARBOR FREIGHT TOOLS

STOCKS & TAYLOR CONSTRUCTION

PROJECT NO:

PROJECT ADDRESS:

46 SHRIJI LANE **ERWIN, NC 28339**

SEAL:



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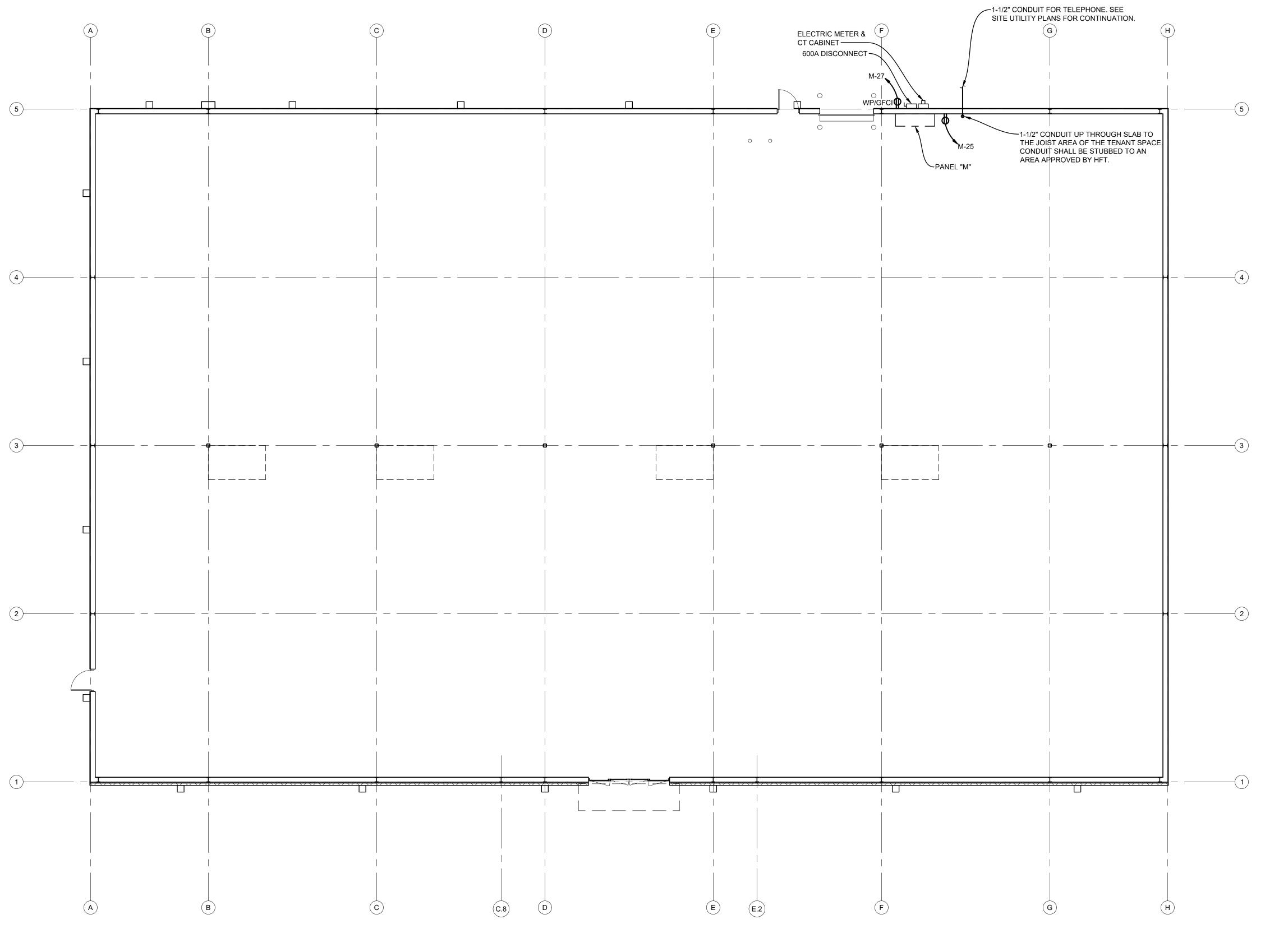
SHEET TITLE: ELECTRICAL COVERSHEET



- OBTAIN NEW 600A 120/208V WYE SERVICE.







PROJECT NAME:

HARBOR FREIGHT TOOLS

FOR STOCKS & TAYLOR CONSTRUCTION

PROJECT NO: 23174

PROJECT ADDRESS:

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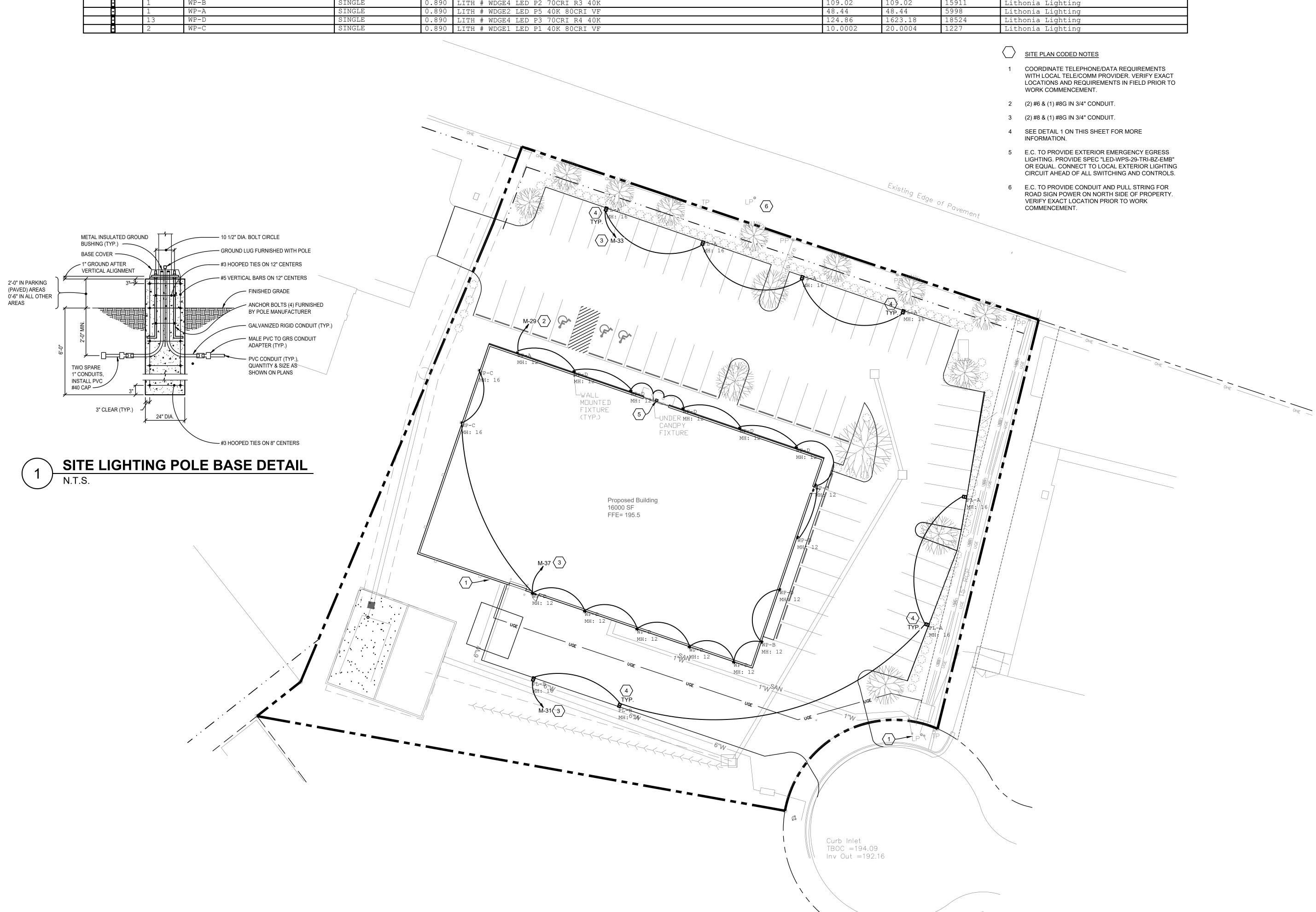
DATE:

04/19/24

SHEET TITLE: ELECTRICAL SHELL PLAN

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





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HARBOR FREIGHT TOOLS

STOCKS & TAYLOR CONSTRUCTION

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SEAL:



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CHECKED BY: DRAWN BY:

DATE:

04/24/24

SHEET TITLE: ELECTRICAL SITE PLAN

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, ASSESMENTS 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 OWNER'S 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"
- 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.

- 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:

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**

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 JUMPERS 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 "GPL" 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).
- EQUAL TO HUBBELL 5362.

1. RECEPTACLES SHALL BE 20 AMP, 3-WIRE GROUNDING TYPE

- 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 #B-2527/29 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 "SWD" BREAKERS IN ACCORDANCE WITH N.E.C. #240-83B. 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, COORDINATE 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 OR 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. SLEEVES SHALL EXTEND AT LEAST TWO (2") INCHES ABOVE FINISHED 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 BUILT" INFORMATION OVER TO THE OWNER AT THE COMPLETION OF THE
- 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

STOCKS & TAYLOR CONSTRUCTION

PROJECT ADDRESS:

46 SHRIJI LANE **ERWIN, NC 28339**



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DRAWING RELEASE:

NO.	DATE	DESCRIPTION

FIELD VERIFY ALL CONDITIONS

DESIGN DRAWINGS ARE SCHEMATIC. THIS CONTRACTOR SHALL VISIT THE

SITE PRIOR TO BIDDING OR AWARD OF CONTRACT TO INSPECT EXISTING

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 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

BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTORS

FIELD CONDITIONS. THIS CONTRACT SHALL INCLUDE ALL LABOR AND

MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING

CONDITIONS.

INTENT.

DRAWN BY:

CHECKED BY:

DATE: 04/19/24

SHEET TITLE: **ELECTRICAL**

	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.			
НВ	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

- 1. 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)
- a. COMPLETE SANITARY PIPING SYSTEMS OF WASTE, DRAINS, AND VENTS.
- b. COMPLETE COLD AND HOT WATER PIPING SYSTEMS, APPURTENANCES AND INSULATION.
- c. PLUMBING FIXTURES AND EQUIPMENT AS SCHEDULED.
- d. COMPLETE NATURAL GAS PIPING SYSTEMS (AS APPLICABLE, REFER TO PLANS).e. TESTS AND ADJUSTMENTS.
- 2. 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 CONFRONTATIONS.

3. 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

- 1. 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:
- a. SNAKE SANITARY FOR A DISTANCE OF 100 FEET AND REPORT ANY BLOCKAGE.b. TEST WATER PRESSURE TO INSURE MINIMUM OF 50 PSI.
- 2. INSTALL ALL NECESSARY PIPE HANGERS, SADDLES, AND CARRIERS TO PROPERLY SUPPORT ALL PIPING AND
- 2. 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.
- 3. ESCUTCHEONS SHALL BE CHROME PLATED, SIZE AS REQUIRED AND PLACED AT ALL PIPE PENETRATIONS AT WALLS, FLOORS, AND CEILINGS IN FINISHED AREAS.
- 4. FLASHING SHALL BE SEALED WATERTIGHT AND PERFORMED IN ACCORDANCE TO THE LANDLORD'S CRITERIA. USE A LANDLORD APPROVED ROOFING CONTRACTOR WHERE APPLICABLE.

C. PIPING

- 1. SANITARY PIPING NO PVC ALLOWED (STORM PIPING AS REQUIRED)
- a. WASTE, DRAIN AND VENT PIPING SHALL BE SERVICE WEIGHT, CAST IRON SOIL PIPE. VENT PIPING ABOVE FLOOR 2" OR SMALLER MAY BE GALVANIZED STEEL.
- b. 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.
- c. PITCH WASTE LINES 2" AND SMALLER NOT LESS THAN 1/4" PER FOOT. PITCH LARGER MAINS NOT LESS THAN 1/8" PER FOOT.
- d. 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.
 e. INSULATE ALL HORIZONAL RUNS OF PIPING LOCATED IN CEILING SPACES WHEN APPLICABLE.
- INSULATION TO BE AS SPECIFIED FOR WATER PIPING.

 f. 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.

3. POTABLE WATER PIPING:

- a. BELOW GRADE: TYPE 'K', ANNEALED TEMPERED COPPER TUBE FOR PIPE SIZES 2 INCHES AND SMALLER. BRAZE ALL JOINTS.
- b. ABOVE GRADE: TYPE 'L' DRAWN COPPER TUBE WITH WROUGHT COPPER FITTINGS AND 95-5 TIN-ANTIMONY SOLDER.
- c. INSTALL AIR CHAMBER SHOCK ABSORBERS IN PIPING SYSTEM TO PREVENT NOISE AND DAMAGE DUE TO WATER HAMMER.
- d. 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.
- THE SUPPLY PIPING TO EVERY FIXTURE. PROVIDE ACCESS DOORS WHERE NECESSARY.

 e. 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. f. SECURE PIPE AT ANGLE STOPS.
- g. PROVIDE FLEXIBLE INSERTS AT ALL PIPE PENETRATIONS THROUGH FRAMING TO KEEP PIPES FROM HITTING FRAME WHEN IN OPERATION.

D. INSULATION

d. 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

- a. LEAKAGE TESTS SHALL BE PER NYCECC C402.5, MINIMUM AS FOLLOWS:
- TEST POTABLE WATER PIPING AND CONDENSATE PIPING AT 125 PSIG FOR SIX HOURS. PER NYC 2014

 TEST POTABLE WATER PIPING AND CONDENSATE PIPING AT 125 PSIG FOR SIX HOURS. PER NYC 2014

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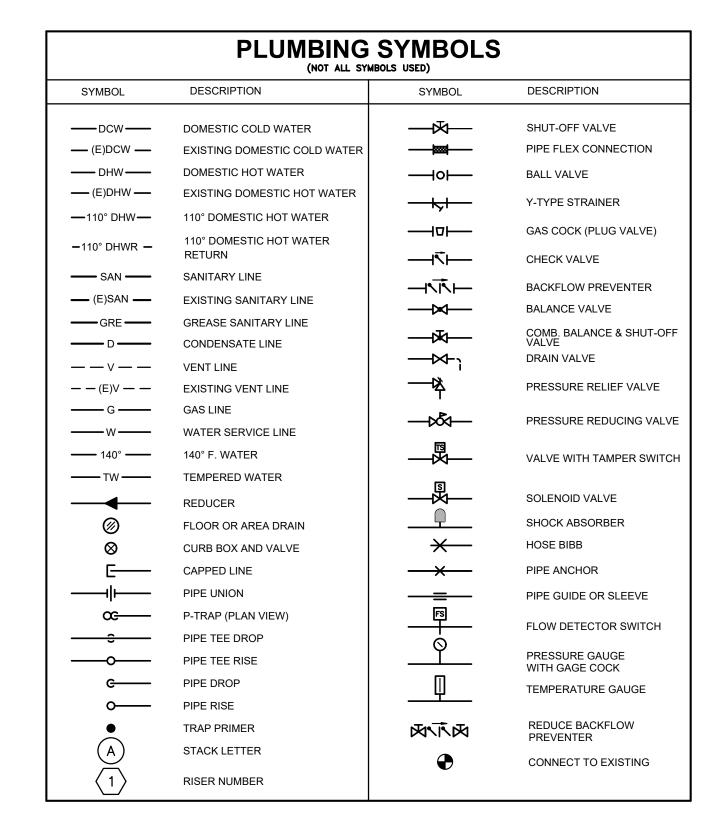
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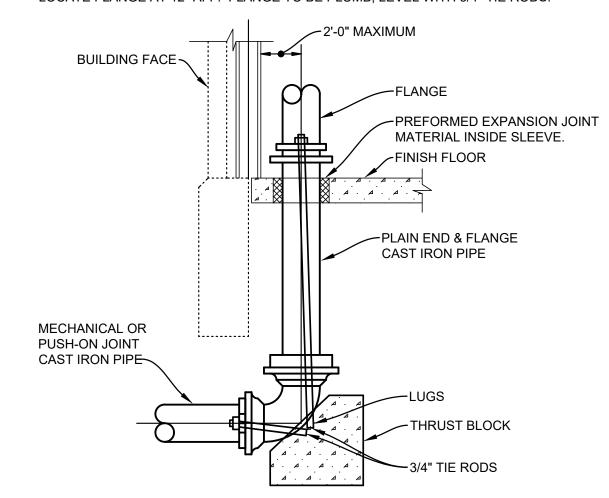
 TEST POTABLE WATER PIPING AND CONDENSATE PIPING AT 125 PSIG FOR SIX HOURS.

 TEST POTABLE WATER PIPING AND CONDENSATE PIPING AT 125 PSI
- 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
- 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.

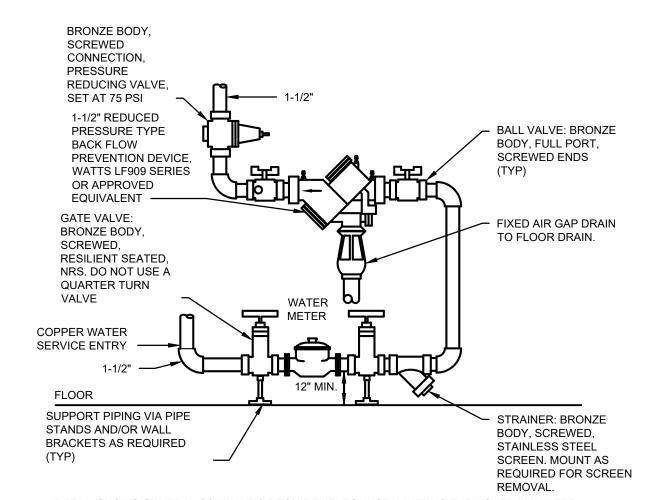


FOR SERVICE LINES 6" AND LARGER

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



(A) WATER SERVICE LINE SCHEMATIC



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.





PROJECT NAME:

HARBOR FREIGHT TOOLS

STOCKS & TAYLOR
CONSTRUCTION

ROJECT NO:

PROJECT ADDRESS:

46 SHRIJI LANE ERWIN, NC 28339

SEAL:



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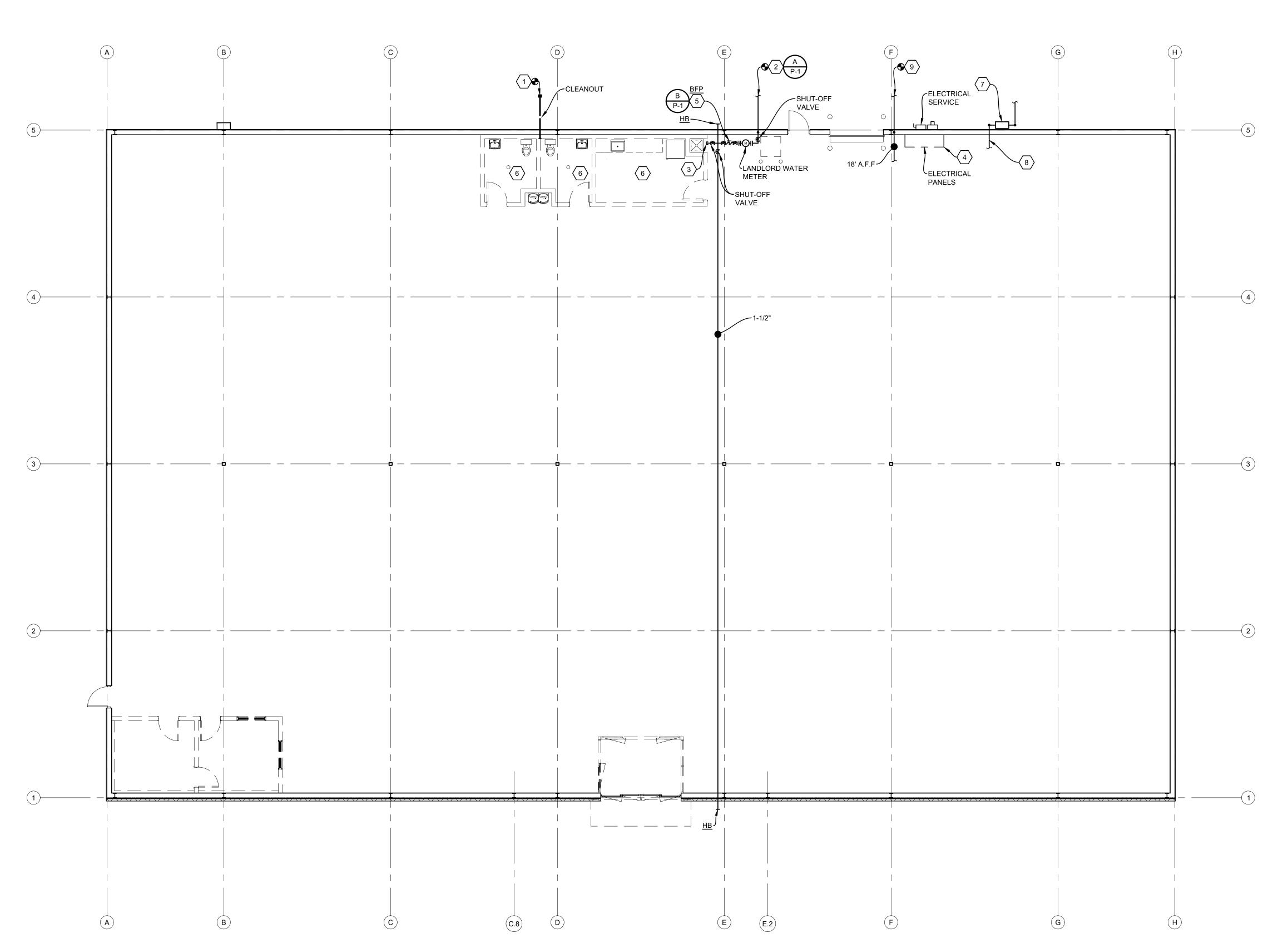
DATE:

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

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:

CHECKED BY:

DATE:

04/19/24

SHEET TITLE:
PLUMBING SHELL PLAN

SHEET NUMBER:

P-2

HARBOR FREIGHT TOOLS

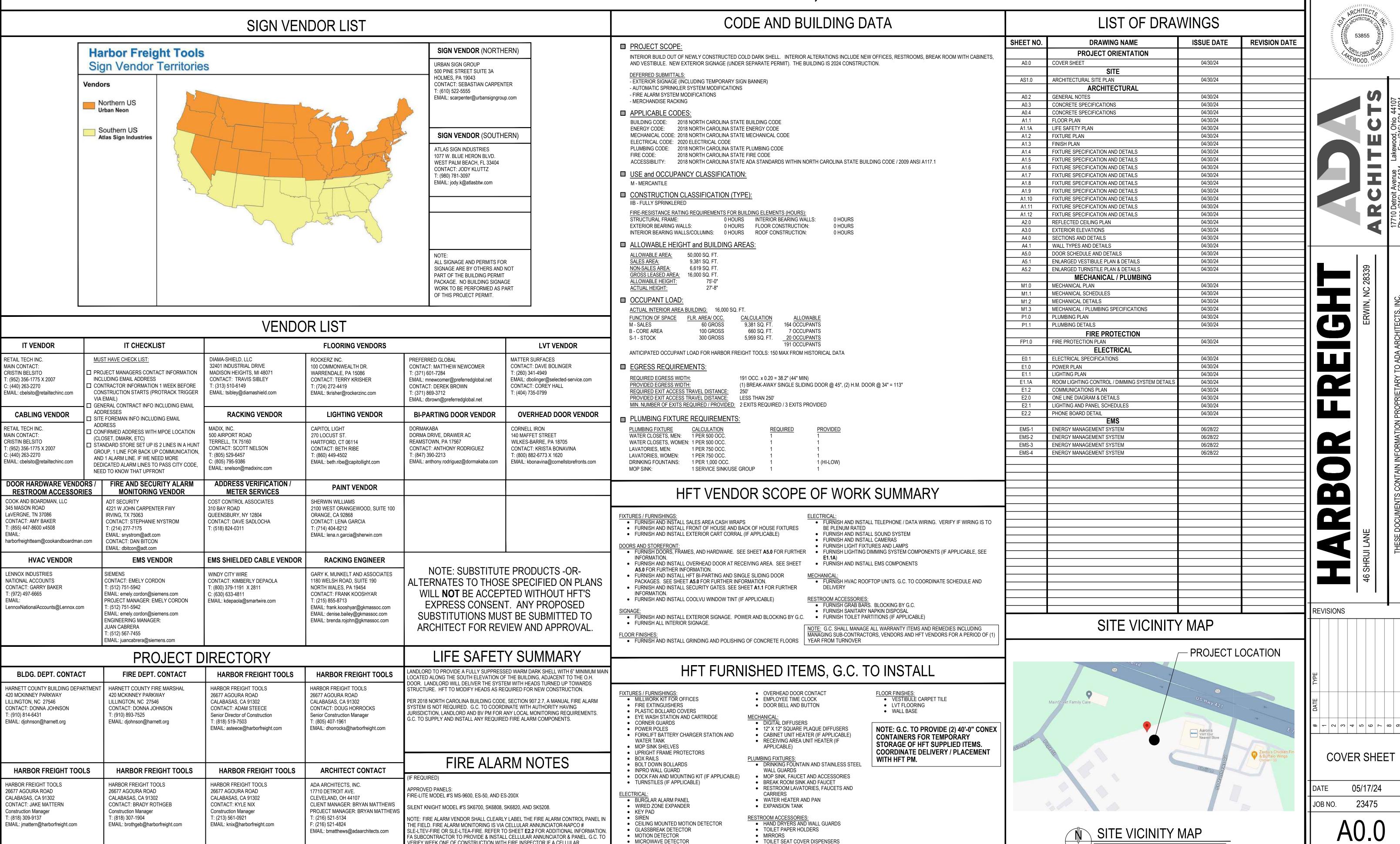
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VERIFY WEEK ONE OF CONSTRUCTION WITH FIRE INSPECTOR IF A CELLULAR

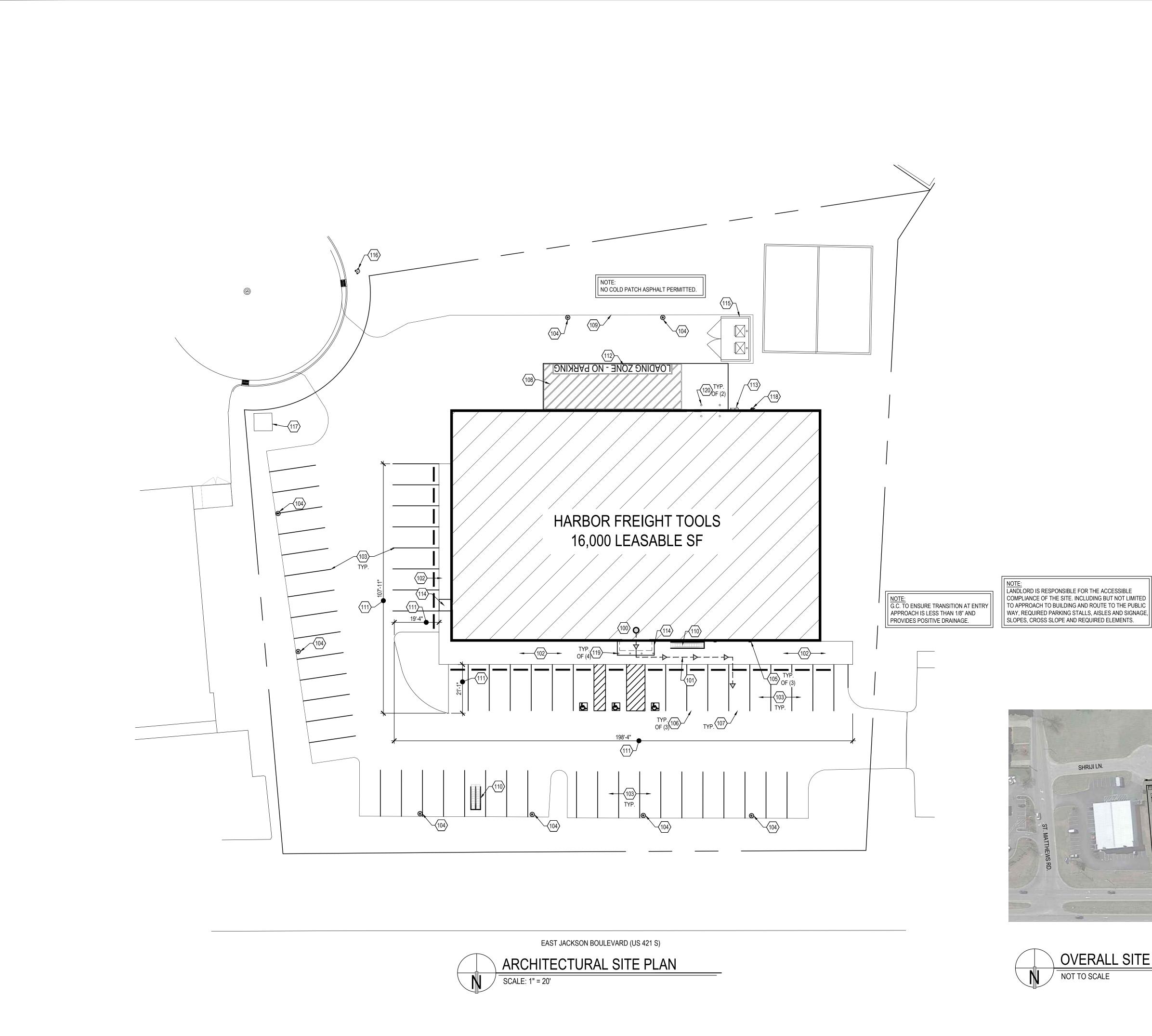
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ERWIN, NC 28339

SCALE = NTS



 MICROWAVE DETECTOR EXTERIOR DOOR CONTACTS

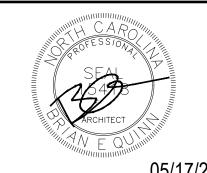


GENERAL NOTES

NO ADDITIONAL SITE CHANGES ARE REQUIRED, EXCEPT WHERE NOTED OTHERWISE ON ARCHITECTURAL FLOOR PLANS.

100 SERIES SITE PLAN KEY NOTES

- 100. MAIN TENANT ENTRANCE DOORS. SEE SHEET A1.1 AND A5.0 FOR ADDITIONAL
- INFORMATION. 101. ACCESSIBLE PATH OF TRAVEL.
- 102. EXISTING CONCRETE SIDEWALK BY LANDLORD UNDER A SEPARATE PERMIT. 103. EXISTING PARKING STRIPING.
- 104. EXISTING SITE LIGHTING BY LANDLORD UNDER A SEPARATE PERMIT. 105. EXISTING ACCESSIBLE PARKING SIGNAGE BY LANDLORD UNDER A SEPARATE PERMIT.
- 106. EXISTING ACCESSIBLE PARKING SYMBOL TO REMAIN.
- 107. EXISTING ACCESSIBLE AISLE STRIPING TO REMAIN.
- 108. AREA OF STRIPING TO DESIGNATE NO PARKING. STRIPING SHALL BE 4" WIDE, COLOR:
- P-7. DIAGONAL STRIPING @ 45°, 3'-0" O.C. 109. EXISTING CURB AT REAR OF DRIVE.
- 110. APPROXIMATE LOCATION OF CART CORRAL.
- 111. PAINT VERTICAL FACE OF CURB AND 6" HORIZONTAL EDGE OF CURB P-7. 112. PAINT 3'-0" HIGH WHITE LETTERING STATING "LOADING ZONE - NO PARKING," FONT:
- 113. APPROXIMATE LOCATION OF ELECTRIC METER AND DISCONNECT. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
- 114. LOCATION OF EXISTING FROST SLAB BY LANDLORD UNDER A SEPARATE PERMIT. 115. EXISTING DUMPSTER LOCATION BY LANDLORD UNDER A SEPARATE PERMIT.
- 116. EXISTING FIRE HYDRANT.
- 117. EXISTING PAD MOUNTED TRANSFORMER.
- 118. APPROXIMATE LOCATION OF GAS METER. SEE PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
- 119. 6" Ø BOLLARD. SEE SHEET **A1.1** AND DETAIL **3/A4.1** FOR ADDITIONAL INFORMATION.
- 120. 8"Ø BOLLARD. SEE SHEET **A1.1** AND DETAIL **3/A4.1** FOR ADDITIONAL INFORMATION.



REVISIONS

ARCHITECTURAL SITE PLAN

05/17/24

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►HARBOR FREIGHT TOOLS

OVERALL SITE PLAN NOT TO SCALE

 ALL WORK AND MATERIALS DESCRIBED HEREIN ARE THE RESPONSIBILITY OF EITHER THE LANDLORD OR THE TENANT'S GENERAL CONTRACTOR. THE TERMS "GENERAL CONTRACTOR", "CONTRACTOR", OR "SUBCONTRACTOR" REFER TO THOSE ENGAGED (SEE WORK RESPONSIBILITY CHART) TO PERFORM THE

ALL RULES AND REGULATIONS, SCOPE OF WORK AND PROCEDURES INDICATED WILL BE PERFORMED BY THE SPECIFIC GENERAL CONTRACTOR, THEIR AGENTS, SUBCONTRACTORS, AND SUPPLIERS TO PROVIDE A TOTAL AND COMPLETE PROJECT FOR THE TENANT. WORK SHOWN IN THESE NOTES IS TO BE PERFORMED BY THE SPECIFIC GENERAL CONTRACTOR OR SUBCONTRACTORS, AGENTS AND / OR SUPPLIERS ONLY, WHETHER OR NOT THE WORK IS

3. BOTH THE LANDLORD AND THE TENANT'S GENERAL CONTRACTOR ARE REQUIRED TO HAVE ALL SUBCONTRACTORS REVIEW THESE NOTES PRIOR TO BIDDING AND TO FAMILIARIZE ALL PERSONS AND SUBCONTRACTORS WORKING ON THIS PROJECT WITH THESE GENERAL NOTES AND THE CONTRACT DOCUMENTS NOTED, LANDLORD'S DESIGN CRITERIA (IF APPLICABLE) AND THE EXECUTED LEASE AGREEMENT BETWEEN LANDLORD AND TENANT. ANY DISCREPANCY BETWEEN THESE CONTRACT DOCUMENTS AND THE LEASE OR DESIGN CRITERIA INFORMATION IS TO BE REPORTED TO TENANT'S ARCHITECT PRIOR TO THE START OF ANY WORK. BOTH GENERAL CONTRACTORS SHALL BE RESPONSIBLE FOR FULLY ACQUAINTING THEMSELVES WITH THE CONTENT AND SCOPE OF THESE DOCUMENTS. WORK DECLARED UNACCEPTABLE BY THE TENANT AND LANDLORD SHALL BE CORRECTED IN A MANNER AND TO A DEGREE OF QUALITY AS ACCEPTABLE BY THE TENANT AND LANDLORD.

4. BOTH GENERAL CONTRACTORS, AS APPLICABLE, AND ALL SUBCONTRACTORS ARE REQUIRED TO CHECK AND VERIFY ALL DIMENSIONS AND FIELD CONDITIONS AT BUILDING SITE AND PREMISES AND NOTIFY THE LANDLORD, THE LANDLORD'S REPRESENTATIVE AND TENANT'S PROJECT ARCHITECT OR TENANT'S CONSTRUCTION REPRESENTATIVE OF ANY AND ALL DISCREPANCIES AND LIST ANY WORK NOT YET COMPLETED BEFORE STARTING WORK. IF A GENERAL CONTRACTOR IS REQUIRED TO INSTALL A BARRICADE DURING THE CONSTRUCTION PHASE OF THIS PROJECT, SUCH BARRICADE TO MEET THE LATEST BARRICADE DESIGN REQUIREMENTS OF THE TENANT, INCLUDING THE PAINTING OF SUCH BARRICADE AND ANY SIGNAGE ADDITIONALLY, THIS BARRICADE MUST BE MOVED OUT AS REQUIRED FOR WORK AND / OR REMOVED AT THE END OF THE CONSTRUCTION TIME PERIOD. CHECK WITH THE LANDLORD TO VERIFY IF A BARRICADE HAS PREVIOUSLY BEEN INSTALLED ON THESE PREMISES IN ANTICIPATION OF CONSTRUCTION BY THE TENANT; IF THIS IS THE CASE, DO NOT INCLUDE ANY COST FOR THE ACTUAL BARRICADE BUT DO INCLUDE COSTS FOR MOVING SUCH BARRICADES IN AND OUT.

ALL CONTRACTORS SHALL CHECK AND VERIFY ALL FIELD CONDITIONS AND SHALL HAVE SOLE RESPONSIBILITY FOR VERIFICATION OF CLEAR HEIGHTS WITHIN THE PREMISES; ANY DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT IMMEDIATELY. A GENERAL CONTRACTOR IS TOTALLY RESPONSIBLE FOR ALL "HOLD" DIMENSIONS AND IS TO CONTACT THE ARCHITECT, THE TENANT AND THE TENANT'S CONSTRUCTION REPRESENTATIVE OF ANY DISCREPANCIES VERBALLY AND ALSO IN WRITING, FIRST, PRIOR TO BUILDING WALLS, IF THERE IS A QUESTION. TENANT'S FIXTURES FIT INTO PLACE WITH NO ROOM FOR ERROR. CONTRACTOR MUST REVIEW ENTIRE SET OF CONTRACT DOCUMENTS FOR CEILING HEIGHTS.

6. WHEN BIDDING THIS PROJECT, EACH CONTRACTOR SHALL BE RESPONSIBLE FOR VISITING THE SITE PRIOR TO BIDDING AND VERIFYING EXISTING CONDITIONS AS REFLECTED IN THESE CONTRACT DOCUMENTS. ANY EXTRA WORK REQUIRED BUT NOT INCLUDED IN THE DOCUMENTS SHALL BE REPORTED TO

7. ALL WORK ON THIS PROJECT SHALL BE IN ACCORDANCE WITH ALL CODES, SUB-CODES, BUILDING DEPARTMENT REQUIREMENTS AND HEALTH DEPARTMENT REQUIREMENTS. GENERAL CONTRACTOR TO CONTACT LOCAL BUILDING OFFICIALS FOR SPECIFIC REQUIREMENTS FOR THIS USE.

THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR AND HAVE CONTROL OVER CONSTRUCTION MEANS. METHODS. TECHNIQUES. SEQUENCES. AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT, INCLUDING ANY AND ALL OSHA REQUIREMENTS, UNLESS CONTRACT DOCUMENTS GIVE OTHER SPECIFIC INSTRUCTIONS CONCERNING THESE MATTERS.

THE GENERAL CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT, AND THE SUBCONTRACTORS FOR THE GENERAL CONTRACTOR SHALL PAY FOR AND OBTAIN ALL PERMITS REQUIRED FOR THE WORK NOTED ON THESE PLANS. THIS INCLUDES COSTS FOR ALL INSPECTIONS BY AUTHORITIES HAVING JURISDICTION, BUILDING DEPARTMENT AND HEALTH DEPARTMENT PERMIT COSTS, AND PERMIT COSTS FOR FIXTURING SUPPLIED BY TENANT (IF

10. ALL CLEARANCES OF PIPES AND DUCTWORK INSTALLED BY THE GENERAL CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT, OR SUBCONTRACTORS MUST BE MAINTAINED FOR ADEQUATE HEIGHTS REQUIRED FOR CEILING SYSTEM AND LIGHT FIXTURES. CONTRACTOR MUST REVIEW ENTIRE SET OF CONTRACT DOCUMENTS FOR CEILING HEIGHTS. GENERAL CONTRACTOR (OR DESIGNATED AUTHORIZED CONTRACTOR AT GENERAL CONTRACTOR'S EXPENSE) TO REMOVE OR REPLACE AS REQUIRED ANY AND ALL EXISTING P.V.C. PIPING WITH LOCAL CODE ALLOWABLE MATERIALS

11. ALL WORK TO BE COMPLETED FOLLOWING LANDLORD'S CONSTRUCTION "RULES AND REGULATIONS", IF APPLICABLE, THE GENERAL CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT. IS RESPONSIBLE DURING THE BIDDING PROCEDURES. FOR CONTACTING THE LANDLORD'S REPRESENTATIVE FOR A COPY OF THESE "RULES AND REGULATIONS" AND TO INCLUDE ANY COSTS IN THE WORK QUOTED TO THE LANDLORD.

12. GENERAL CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT, AGREES THAT IN THE PERFORMANCE OF TENANT'S WORK AT THE PREMISES, ALL WORK SHALL BE PERFORMED IN A MANNER WHICH WILL NOT CREATE ANY WORK STOPPAGE, PICKETING, LABOR DISRUPTION OR DISPUTE OR VIOLATE LANDLORD'S LABOR CONTRACTS AFFECTING THE BUILDING OR INTERFERE WITH THE BUSINESS OF LANDLORD. IN THE EVENT OF THE OCCURRENCE OF ANY WORK STOPPAGE, PICKETING, LABOR DISRUPTION OR DISPUTE RESULTING FROM ACTIONS OR OMISSIONS OF GENERAL CONTRACTOR OR SUBCONTRACTORS OR ANY SUBTENANT OR CONCESSIONAIRE. OR THEIR RESPECTIVE EMPLOYEES. CONTRACTORS OR SUBCONTRACTORS. GENERAL CONTRACTOR SHALL, IMMEDIATELY UPON NOTICE FROM TENANT, CEASE THE CONDUCT GIVING RISE TO SUCH CONDITION. THIS CLAUSE MUST BE PART OF ALL GENERAL CONTRACTOR / SUBCONTRACTOR AGREEMENTS AND IF SUCH CLAUSE IS NOT INCLUDED, IT WILL NOT RELIEVE THE GENERAL CONTRACTOR OF THE

13. ALL CONTRACTORS, WHETHER WORKING FOR THE LANDLORD OR THE TENANT, SHALL BE BONDED, LICENSED CONTRACTORS POSSESSING GOOD LABOR RELATIONS AND MUST BE CAPABLE OF QUALITY WORKMANSHIP, IN HARMONY WITH OTHER CONTRACTORS WORKING ON THE PROJECT. THE TENANT IS TO BE NOTIFIED IN WRITING OF THE NAMES, ADDRESSES, DAYTIME PHONE, FAX, AND EMERGENCY PHONE NUMBERS OF ALL SUBCONTRACTORS AND SUPPLIERS WORKING ON THIS PROJECT. GENERAL CONTRACTOR MUST ATTEST THAT NO PRODUCTS CONTAINING ASBESTOS OR HAZARDOUS MATERIAL WERE KNOWINGLY USED ON THIS PROJECT.

14. PRIOR TO COMMENCEMENT OF ANY WORK, THE GENERAL CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT, SHALL CONTACT AND MEET WITH LANDLORD'S TENANT COORDINATOR AND TENANT'S PROJECT MANAGEMENT REPRESENTATIVE FOR A PRE CONSTRUCTION MEETING, AT WHICH TIME, HE /SHE WILL PRESENT TO ALL PARTIES A LIST OF NAMES, ADDRESSES, BUSINESS PHONE, FAX AND EMERGENCY TELEPHONE NUMBERS OF THE SUBCONTRACTORS FOR THIS PROJECT. THE GENERAL CONTRACTOR WILL COMPLETE THE CHECKLIST FORM (CONTRACTOR INFORMATION FORM) REQUIRED FOR EACH TENANT'S SPACE THAT CONTRACTOR WILL BE WORKING ON AS REQUIRED UNDER LEASE OBLIGATION. THE CHECKLIST FORM INCLUDING SCHEDULE INFORMATION AS WELL AS GENERAL CONTRACTOR AND SUBCONTRACTORS INFORMATION IS TO BE SUBMITTED TO THE LANDLORD'S REPRESENTATIVE UPON ARRIVAL AT THE JOB SITE.

15. THE GENERAL CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT, SHALL HAVE AT ALL TIMES, AT THE PREMISES, LANDLORD APPROVED CONTRACT DOCUMENTS, BUILDING DEPARTMENT AND HEALTH DEPARTMENT (IF APPLICABLE) APPROVED PERMIT DRAWINGS.

THE GENERAL CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT, IS TO ARRANGE WITH THE LANDLORD FOR THE BUILDING, WHERE BUILDING EQUIPMENT AND MATERIALS ARE TO BE LOCATED AND HOW TRUCK TRAFFIC IS TO BE ROUTED TO AND FROM THE BUILDING.

17. AN APPROVAL BY THE TENANT WILL ONLY BE VALID IF IN WRITING AND SIGNED BY THE TENANT OR BY THE TENANT'S DESIGNATED REPRESENTATIVE FOR SUCH PURPOSE. THE GENERAL CONTRACTOR. WHETHER WORKING FOR THE LANDLORD OR THE TENANT. WILL BE RESPONSIBLE FOR OBTAININ APPROVAL FROM TENANT'S ARCHITECT ON ALL STRUCTURAL CHANGES DURING THE COURSE OF THE CONSTRUCTION PHASE OF PROJECT, AS WELL AS VERIFICATION OF CORRECT INSTALLATION AND SPECIFICATION FOR MISCELLANEOUS STEEL FOR MECHANICAL SYSTEMS. STEEL FOR MEZZANINES (IF APPLICABLE), DUCTS, ETC. THE LANDLORD'S ARCHITECT AND THE LANDLORD ARE NOT INVOLVED NOR WILL THEY TAKE ANY RESPONSIBILITY FOR TENANT'S STRUCTURE, ANY STRUCTURAL WORK ON PROJECT TO INCLUDE BUT NOT BE LIMITED TO MECHANICAL EQUIPMENT SUPPORTS. HANGING SYSTEMS, CONCRETE

18. ALL FINISH AND EXPOSED WOOD SHALL BE KILN DRIED, MILL QUALITY FINISH AND SHALL RECEIVE A FIRE RETARDANT COATING OR TREATMENT IF REQUIRED BY CODE OR THE LOCAL FIRE MARSHALL. NO WOOD OR COMBUSTIBLE MATERIAL SHALL BE USED ABOVE THE SUSPENDED CEILING UNLESS NONCOMBUSTIBLE LUMBER IS USED AND IS SPECIFICALLY ALLOWED BY APPLICABLE BUILDING CODES, THE FIRE MARSHALL AND ALL AGENCIES HAVING JURISDICTION. IF FIRE TREATED WOOD IS REQUIRED FOR FIXTURING ITEMS, THE GENERAL CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT, IS RESPONSIBLE FOR EXECUTING THIS WORK AS PER BUILDING OFFICIALS' REQUIREMENTS.

19. THE GENERAL CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT, SHALL FURNISH AND INSTALL, AS REQUIRED, BEGINNING WITH THE CONSTRUCTION PHASE, HAND OPERATED FIRE EXTINGUISHERS, U.L. RATED, AS PER LOCAL CODE REQUIREMENTS: PLACEMENT AS APPROVED BY TENANT AND LOCAL BUILDING OFFICIAL.

20. ALL CEILINGS SHALL BE UNDERWRITERS APPROVED AND OF THE NON COMBUSTIBLE TYPE. SEE CEILING SPECIFICATION WITHIN THE CONTRACT

THE GENERAL CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT, SHALL BE RESPONSIBLE FOR DAILY REMOVAL, OR AS REQUIRED BY LANDLORD. OF TRASH, RUBBISH AND SURPLUS MATERIALS RESULTING FROM CONSTRUCTION. THE CONTRACTORS AND SUBCONTRACTORS PARTICIPATING IN THE PERFORMANCE OF TENANT'S WORK SHALL REMOVE AND DISPOSE OF, AT LEAST ONCE A WEEK AND MORE FREQUENTLY AS TENANT MAY DIRECT, ALL DEBRIS AND RUBBISH CAUSED BY OR RESULTING FROM THE PERFORMANCE OF TENANT'S WORK AND, UPON COMPLETION THEREOF, REMOVE ALL TEMPORARY STRUCTURES, SURPLUS MATERIALS, DEBRIS AND RUBBISH OF WHATEVER KIND REMAINING IN THE BUILDING WHICH HAD BEEN BROUGHT IN OR CREATED BY THE CONTRACTOR AND SUBCONTRACTORS IN THE PERFORMANCE OF TENANT'S WORK. THIS CONTRACTOR MUST MAINTAIN A CLEAR PATH OF EGRESS FROM THE PREMISES FREE FROM TRASH AND RUBBISH AT ALL TIMES. ALL REMOVAL OF CONSTRUCTION DEBRIS TO AN APPROVED DUMPING SITE TO BE INCLUDED IN THE GENERAL CONTRACTOR'S WORK.

22. ALL EXITS SHALL BE UNOBSTRUCTED AT ALL TIMES DURING CONSTRUCTION AND OCCUPANCY.

23. THE GENERAL CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT, SHALL FURNISH AND PAY FOR ALL TEMPORARY UTILITY SERVICES DURING THE COURSE OF CONSTRUCTION.

24. EACH CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT, AND SUBCONTRACTOR PARTICIPATING IN THE PERFORMANCE OF TENANT'S WORK SHALL (A) MAKE APPROPRIATE ARRANGEMENTS WITH LANDLORD FOR TEMPORARY UTILITY CONNECTIONS INCLUDING WATER AND ELECTRICITY, AS AVAILABLE WITHIN THE BUILDING, WHICH CONNECTIONS SHALL BE AT SUCH LOCATIONS AS SHALL BE DETERMINED BY LANDLORD, (B) PAY THE COST OF THE CONNECTIONS AND OF PROPER MAINTENANCE AND REMOVAL OF SAME, AND (C) PAY ALL UTILITY CHARGES INCURRED AT THE PREVAILING RATES OF THE UTILITY COMPANY PROVIDING SUCH SERVICE TO THE BUILDING, DURING THE COURSE OF CONSTRUCTION UP TO AND INCLUDING THE DATE OF "TURN OVER" TO THE TENANT.

25. IT IS THE GENERAL CONTRACTOR'S REQUIREMENT, WHETHER WORKING FOR THE LANDLORD OR THE TENANT, THROUGH ITS SUBCONTRACTORS, TO RECONFIGURE AND BRING IN NEW UTILITY SERVICES AS REQUIRED, TO MEET THE NEEDS OF THESE SPECIFIC CONTRACT DOCUMENTS.

26. THE GENERAL CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT, AND ALL SUBCONTRACTORS WORKING ON THIS PROJECT ARE RESPONSIBLE FOR CONTACTING THE PUBLIC UTILITY COMPANIES SUPPLYING UTILITIES TO THE AREA WHERE THE PROJECT IS LOCATED. IN ORDER TO VERIFY LOCATIONS OF UTILITIES. UNDERGROUND OR OVERHEAD. AND SECURE THE PROPER PROCEDURES WHILE WORKING ADJACENT TO, ABOVE OR NEAR SUCH UTILITIES TO AVOID ANY PROBLEMS WITH EXPLOSIONS, DISCONNECTION, REMOVALS, ETC.

27. THE GENERAL CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT, SHALL APPLY FOR ALL UTILITY METERS AND NOTIFY THE UTILITY COMPANY OF THE NAME, ADDRESS AND PHONE NUMBERS OF THE TENANT FOR PERMANENT SERVICES. TENANT'S G.C. UNLESS OTHERWISE NOTED SHALL BRING IN ALL ADDITIONAL SERVICES, ADEQUATE FOR TENANT'S NEEDS AS REQUIRED, INCLUDING, BUT NOT LIMITED TO ELECTRIC, SPRINKLER, SOIL (WASTE), AND DOMESTIC WATER LINES (WHEN APPLICABLE).

28. THE GENERAL CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT, AND / OR IT'S ELECTRICAL SUBCONTRACTOR SHALL VERIFY ALL EQUIPMENT SPECIFICATIONS AND REQUIREMENTS WITH THE TENANT OR THE TENANT'S CONSTRUCTION REPRESENTATIVE PRIOR TO START OF CONSTRUCTION. THIS CONTRACTOR TO VERIFY AMPERAGE / VOLTAGE SPECIFICATIONS, WIRING SIZES AND REQUIREMENTS (SERVICE AND PANEL SPECIFICATION) WITH THE EQUIPMENT SUPPLIERS.

29. ALL PLUMBING AND ELECTRICAL ROUGH-IN TO BE NEW AND ELECTRICAL SERVICE CONDUIT AND WIRE TO THE DEMISED PREMISES TO BE EXTENDED TO THE POINT OF NEW PANELS BY THE CONTRACTOR AS NECESSARY IS SHOWN ON CONTRACT DOCUMENTS. GENERAL CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT. TO FIELD VERIFY THAT THESE UTILITY LINES ARE AT OR ADJACENT TO TENANT'S SPACE AS NOTED AND AT THE SIZE SPECIFIED BASED ON GENERAL CONTRACTOR'S OR SUBCONTRACTOR'S PRE-BID REVIEW OF PREMISES. IF THE UTILITIES ARE NOT IN LOCATIONS AS NOTED ON THE CONTRACT DOCUMENTS OR OF A SIZE LARGER OR SMALLER THAN NOTED, THIS CONTRACTOR IS TO MODIFY THE SERVICE ACCORDINGLY WITH EITHER NEW CONDUIT AND / OR NEW COPPER SERVICE WIRE EXTENDING BACK TO LANDLORD'S ELECTRICAL / METER ROOM SERVICE POINT, AND INCLUDE SUCH

30. THE ELECTRICAL SUBCONTRACTOR IS TO PROVIDE A CIRCUIT DIRECTORY WITH PROPER PHASING AND BALANCING, WHICH IS TO CONFORM TO THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND UNDERWRITER'S CODE. THE SIGN(S) JUNCTION BOX PERMIT IS TO BE INCLUDED IN THE WORK FOR THE ELECTRICAL SUBCONTRACTOR AND THE BOX IS TO BE SUPPLIED BY THIS CONTRACTOR AND PROPERLY LABELED.

31. THE GENERAL CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT, IS TO PROVIDE SHOP DRAWINGS OF ALL MILLWORK AND FIXTURES, PRIOR TO START OF CONSTRUCTION, FOR APPROVAL BY THE TENANT'S ARCHITECT.

32. THE PROPER RECEIPT OF ALL NEW MATERIALS AND EQUIPMENT AT THE JOB SITE IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT, AND / OR ITS SUBCONTRACTORS (IF ANY). SECURE AND SAFE STORAGE OF ALL NEW AND EXISTING MATERIALS AND EQUIPMENT TO REMAIN (IF ANY) WILL BE PROVIDED BY THE GENERAL CONTRACTOR. GENERAL CONTRACTOR TO IMMEDIATELY ADVISE TENANT OR TENANT'S REPRESENTATIVE OF ALL DAMAGED OR DEFICIENT SHIPMENTS OF MATERIALS AND FOUIPMENT. WHETHER SUPPLIED BY TENANT OR DIRECTLY BY CONTRACTOR OR IT'S SUPPLIERS. GENERAL CONTRACTOR TO COMPLETE AND SUBMIT ALL NECESSARY PAPERWORK AND ARRANGE INSPECTIONS OF DAMAGED GOODS AS PER TENANT CONSTRUCTION DEPT. REQUIREMENTS. NOTIFY TENANT, OR TENANT'S REPRESENTATIVE OF ANY POSSIBLE DELAYS. INCOMPLETE ORDERS AND DELAYS ARE TO BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE SUPPLIER AND THE ARCHITECT. SUBMIT CONFIRMATION OF ALL ORDERS, DELIVERY DATES, AND A FULL WRITTEN SCHEDULE TO TENANT'S ARCHITECT.

33 ALL EXISTING TO REMAIN AND NEW BUILDING ENTRY GLASS AND DOORS. STOREFRONT AND INTERIOR GLAZING, IF APPLICABLE MUST COMPLY WITH ALL APPLICABLE CODES, LANDLORD'S CRITERIA, LANDLORD'S AND TENANT'S CONTRACT DOCUMENTS AND SAFETY GLAZING STANDARDS, GENERAL CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT, TO VERIFY IN FIELD ALL EXISTING GLAZING TO REMAIN MEETS OR EXCEEDS SUCH CODES, STANDARDS, ETC.. INCLUDING BUT NOT LIMITED TO TYPE, SUPPORT, FRAMING METHODS, ETC.. AND UPGRADE IF OR AS REQUIRED. ALL STOREFRONTS TO BE INSTALLED BY GLAZING SUBCONTRACTORS CAREFULLY FOLLOWING REQUIREMENTS AND DETAILS FOR DESIGN AGAINST WIND LOAD CONSIDERATIONS, EVEN THOUGH SUCH INSTALLATION OF STOREFRONT GLAZING MAY BE IN AN ENCLOSED BUILDING. GENERAL CONTRACTOR TO VERIFY EXISTING STRUCTURAL SUPPORT/ HANGING CONDITIONS FOR STOREFRONT AND IF STRUCTURAL SPANS ABOVE FOR SUCH HANGING EXCEED NORMAL HANGING SUPPORT DETAILS OR SPAN AND / OR WIND LOAD CALCULATIONS ARE REQUIRED DUE TO LOCAL BUILDING DEPARTMENT REQUIREMENTS, THIS CONTRACTOR IS TO HIRE A LOCAL STRUCTURAL CONSULTANT TO DESIGN SUCH SUPPORT SYSTEM HANGERS AND COMPLETE ALL STRUCTURAL CALCULATIONS / DRAWINGS IN THOSE AREAS WHERE SUCH INFORMATION IS REQUIRED AND TO INCLUDE SUCH COSTS IN THE BID TO THE TENANT.

34. ANY SUBSTITUTIONS OF FINISH MATERIALS MUST BE APPROVED BY THE TENANT'S ARCHITECT IN WRITING. THE GENERAL CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT, IS RESPONSIBLE FOR SUBMITTING TWO (2) SAMPLES OF EACH SUBSTITUTION.

35. ALL THE FLOOR FINISHES, WITHIN THE PREMISES, OR AT THE TRANSITION BETWEEN LANDLORD FLOOR FINISHES AND TENANT'S FLOOR FINISHES (AT ENTRY OR REAR DOOR, IF APPLICABLE) ARE TO BE SMOOTH AND LEVEL TO AVOID TRIPPING HAZARDS AND BE WITHIN THE REQUIREMENTS OF BARRIER FREE DESIGN IF AN EXPANSION JOINT COVER IS REQUIRED. SLICH COVER IS TO BE LEVEL AND SMOOTH WITH TENANT'S FLOOR FINISH FLEVATION AND WILL NOT PROJECT ABOVE SUCH FLOOR FINISH ELEVATION. IF THE EXISTING SLABS ARE NOT LEVEL, THE GENERAL CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT, IS REQUIRED TO COMPLETE FLASH PATCHING THROUGHOUT TO OBTAIN A SMOOTH AND LEVEL CONCRETE SLAB.

36. SHOULD AN EXPANSION JOINT OCCUR IN THE LEASED PREMISES, GENERAL CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT, IS RESPONSIBLE FOR ALL CONSTRUCTION AFFECTED BY SUCH JOINT, INCLUDING FURNISHING AND INSTALLING A LEVEL, SLAB HEIGHT EXPANSION JOINT COVER, INCLUDING FLOOR, WALLS AND CEILING. GENERAL CONTRACTOR SHALL MAINTAIN INTEGRITY OF ALL SUCH EXPANSION JOINTS IN A MANNER CONSISTENT WITH ACCEPTABLE CONSTRUCTION DESIGN PRACTICES

37. ANY SCAFFOLDING, SAFETY RAILINGS, BARRICADES AND / OR PROTECTION DEVICES REQUIRED FOR THE PROJECT WILL BE FURNISHED AND PAID FOR BY THE GENERAL CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT, AS PART OF THE BASE BID. PROTECTION OF WORK IN PLACE -WORK IN PLACE THAT IS SUBJECT TO DAMAGE BECAUSE OF OPERATIONS BEING CARRIED ON ADJACENT THERETO SHALL BE COVERED, BOARDED UP, OR SUBSTANTIALLY ENCLOSED WITH ADEQUATE PROTECTION. ALL FORMS OF PROTECTION SHALL BE CONSTRUCTED IN A MANNER SUCH THAT, UPON COMPLETION, THE ENTIRE WORK WILL BE DELIVERED TO THE OWNER IN PROPER, WHOLE, AND UNBLEMISHED CONDITION. ALL SUCH WORK SHALL BE COORDINATED WITH THE TENANT'S REPRESENTATIVE. THE TENANT'S ARCHITECT IS NOT RESPONSIBLE FOR JOB SITE SAFETY OR EXISTING CONDITIONS AT THE JOB SITE AND SINCE ALL WORK IS BY GENERAL CONTRACTOR FOR THE TENANT "FIT-OUT", THEIR REPRESENTATIVES WILL BE REQUIRED TO DO ALL SUPERVISION, OBSERVATIONS AND JOB SITE SAFETY.

38. THE STRUCTURAL SYSTEM OF THE BUILDING HAS BEEN DESIGNED TO CARRY A MAXIMUM LIVE LOAD AS SPECIFIED IN THE LANDLORD'S CRITERIA, AND THE LANDLORD'S OR TENANT'S GENERAL CONTRACTOR AND / OR THEIR SUBCONTRACTOR AND / OR ANY AND ALL MATERIAL SUPPLY HANDLERS SHALL NOT IMPOSE ANY LOADING FOR ANY OF THE TENANT'S WORK ON A TEMPORARY OR PERMANENT BASIS WHICH CAN EXCEED SUCH SPECIFIED LOAD.

39. ANY ALTERATIONS, ADDITIONS, DRILLING, WELDING OR OTHER ATTACHMENT OR REINFORCEMENTS TO LANDLORD'S STRUCTURE TO ACCOMMODATE TENANT'S WORK SHALL NOT BE PERFORMED WITHOUT, IN EACH INSTANCE, GENERAL CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT, OBTAINING LANDLORD'S PRIOR WRITTEN APPROVAL, AND THIS CONTRACTOR SHALL LEAVE LANDLORD'S STRUCTURE AS STRONG AS, OR STRONGER THAN, THE ORIGINAL DESIGN AND WITH FINISHES UNIMPAIRED. ONLY UTILIZE LANDLORD'S DESIGNATED ROOFING CONTRACTOR FOR ALL ROOF PENETRATIONS, FLASHING

40. SPRINKLER SYSTEM DESIGN AND / OR LAYOUT MODIFICATION, (IF APPLICABLE) TO BE PROVIDED BY THE DESIGNATED SPRINKLER SUBCONTRACTOR AND ALL SUBMISSIONS TO THE FIRE MARSHAL AND BUILDING INSPECTOR FOR THE NECESSARY APPROVAL ARE THE RESPONSIBILITY OF THE SPRINKLER SUBCONTRACTOR, GENERAL CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT, TO VERIFY WITH THE LANDLORD OR LANDLORD'S CRITERIA IF SPRINKLER CONTRACTOR IS TO BE LANDLORD'S APPROVED OR DESIGNATED CONTRACTOR. APPROVALS BY LANDLORD, LANDLORD'S INSURANCE UNDERWRITER AND THE BUILDING INSPECTOR AND FIRE MARSHAL WILL BE REQUIRED.

41. THE MECHANICAL SUBCONTRACTOR IS RESPONSIBLE FOR VISITING THE SITE PRIOR TO SUBMITTING A BID FOR THE WORK ON THIS PROJECT. THE CONTRACTOR MUST BECOME FAMILIARIZED WITH THE FIELD CONDITIONS, AND THE SCOPE OF WORK, CONTRACTOR TO ENGINEER, FURNISH AND INSTALL ANY / ALL REQUIRED FIRE ALARM, SMOKE EVACUATION, SMOKE DETECTION SYSTEMS, INCLUDING ANY / ALL PARTS AND LABOR (OR MODIFY EXISTING AS REQUIRED). TO MEET LOCAL CODES, LANDLORD REQUIREMENTS AND FIRE MARSHAL SPECIFICATION, WHETHER SUCH WORK IS OR IS NOT SHOWN IN THE CONSTRUCTION DOCUMENTS. IF A SMOKE EVACUATION AND / OR DETECTION SYSTEM OCCURS FOR THIS SPACE, IT SHALL BE LEFT INTACT DURING CONSTRUCTION AND ANY NEW WORK. MODIFICATION AND REWIRING TO BE COMPLETED DURING CONSTRUCTION PHASE TO POINT OF NEW PANELS. IF SMOKE DETECTORS ARE REQUIRED TO BE HARD WIRED TO LANDLORD FIRE ALARM SYSTEM, THEY ARE TO BE PER LANDLORD'S SYSTEM. CONTRACTOR TO CONTACT LANDLORD OR APPROVED AGENTS FOR PURCHASE AND INSTALLATION OF DETECTORS AT G.C. EXPENSE. G.C. AND / OR ITS FIRE ALARM SUBCONTRACTOR TO CONTACT LANDLORD FOR FINAL POINT OF CONNECTION TO LANDLORD'S FIRE ALARM JUNCTION BOX AND PERFORM WORK AT CONTRACTOR'S EXPENSE.

42. THE GENERAL CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT, WILL FURNISH AND INSTALL A COMPLETE MECHANICAL SYSTEM TO INCLUDE BUT NOT BE LIMITED TO MECHANICAL EQUIPMENT, INSTALLED AND MOUNTED WITH DISCONNECT AND WIRING, HANGERS AND DUNNAGE FOR SAME (INCLUDING THE HIRING OF A LOCAL STRUCTURAL ENGINEER TO DESIGN SUCH DUNNAGE HANGERS). DUCTWORK, COLLARS, DIFFUSERS, REGISTERS. CONTROLS. TIME CLOCKS. ETC... WHETHER OR NOT SUCH WORK IS OR IS NOT SHOWN OR DELINEATED IN THE CONTRACT DOCUMENTS. GENERAL CONTRACTOR'S MECHANICAL CONTRACTOR(S) ARE REQUIRED TO COORDINATE WITH ALL OTHER CONTRACTORS ON JOB TO MAINTAIN TENANT'S CEILING HEIGHT, LIGHT FIXTURE LOCATION, SPRINKLER BRANCH LINES, ETC.

43. ALL METAL FRAMING, GYPSUM BOARD, PARTITIONS, SOFFITS AND FACADES BY THE GENERAL CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT, UNLESS OTHERWISE NOTED.

44. ALL GYPSUM BOARD TO BE FIRE TAPED AND SPACKLED THREE (3) COATS, SANDED AND READY TO RECEIVE PAINT OR WALL COVERING. ALL EXISTING GYPSUM BOARD TO BE REPAIRED TO "LIKE NEW" CONDITION.

45. ALL SWITCH, OUTLET PLATES, COVERS, GRILLES, DIFFUSERS, METAL TRIM (BUCKS, ETC.), ACCESSORIES TO BE FINISHED IN SAME COLOR / WALL COVERING AS ADJACENT WALL FINISHES, UNLESS NOTED OTHERWISE.

46. ALL WORK THAT NEEDS TO BE COMPLETED BY THE GENERAL CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT. BELOW OR ABOVE THE PREMISES MAY HAVE TO BE DONE IN OTHER TENANT'S DEMISED PREMISES AND SUCH WORK NEEDS TO BE DONE IN COORDINATION WITH THE TENANTS BELOW, OR ABOVE, INCLUDING ANY OVERTIME WORK OR PAYMENT FOR SECURITY THAT MAY BE NECESSARY. THE COST FOR THIS WORK, INCLUDING OVERTIME, MUST BE INCORPORATED IN THE BASE BID.

47. THE CONSTRUCTION DRAWINGS LISTED IN THESE CONTRACT DOCUMENTS HAVE BEEN PREPARED BASED ON THE BEST INFORMATION AVAILABLE TO TENANT DURING PREPARATION OF THE CONTRACT DOCUMENTS. IN THE EVENT THAT PROBLEMS ARISE DURING THE COURSE OF THE PROJECT, DUE TO UNKNOWN SITE CONDITIONS OR CODE AND LANDLORD REQUIREMENTS (IF ANY) THAT CONFLICT WITH THE CONTRACT DOCUMENTS. THE GENERAL CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT, SHALL INFORM THE TENANT'S ARCHITECT IMMEDIATELY. ANY CHANGES THAT WILL BE REQUIRED, WILL BE DELINEATED BY TENANT ARCHITECT.

48. QUALITY STANDARDS: ALL SUCH WORK SHALL BE PERFORMED IN A FIRST-CLASS WORKMANLIKE MANNER AND SHALL BE IN GOOD AND USABLE CONDITION AT THE DATE OF COMPLETION THEREOF. GENERAL CONTRACTOR. WHETHER WORKING FOR THE LANDLORD OR THE TENANT. SHALL REQUIRE AT PERSON PERFORMING ANY SUCH WORK TO GUARANTEE THE SAME TO BE FREE FROM ANY AND ALL DEFECTS IN WORKMANSHIP AND MATERIALS FOR ONE (1) YEAR FROM THE DATE OF ISSUANCE OF THE CERTIFICATE OF OCCUPANCY, TENANT SHALL ALSO REQUIRE ANY SUCH PERSON TO BE RESPONSIBLE FOR THE REPLACEMENT OR REPAIR WITHOUT ADDITIONAL CHARGE, OF ANY AND ALL WORK DONE OR FURNISHED BY OR THROUGH SUCH PERSON, WHICH SHALL BECOME DEFECTIVE WITHIN ONE (1) YEAR AFTER COMPLETION OF THE WORK. THE CORRECTION OF SUCH WORK SHALL INCLUDE, WITHOUT ADDITIONAL CHARGE, ALL EXPENSES AND DAMAGES IN CONNECTION WITH SUCH REMOVAL, REPLACEMENT OR REPAIR OF ANY PART OF THE WORK WHICH MAY BE DAMAGED OR DISTURBED THEREBY. ALL WARRANTIES OR GUARANTEES AS TO MATERIALS OR WORKMANSHIP ON OR WITH RESPECT TO TENANT'S WORK SHALL BE CONTAINED IN THE CONTRACT OR SUBCONTRACT WHICH SHALL INSURE TO THE BENEFIT OF BOTH LANDLORD AND TENANT. AS THEIR RESPECTIVE INTERESTS APPEAR AND CAN BE DIRECTLY ENFORCED BY EITHER. GENERAL CONTRACTOR TO HAVE THIS CLAUSE IN EVERY SUBCONTRACTOR AGREEMENT FOR THE PROJECT AND IF SUCH CLAUSE IS NOT INCLUDED, IT WILL NOT RELIEVE THE GENERAL CONTRACTOR OF THE REQUIREMENTS OR WORK STATED HEREIN. G.C. SHALL MANAGE ALL WARRANTY ITEMS AND REMEDIES INCLUDING MANAGING SUB-CONTRACTORS. VENDORS AND HFT VENDORS FOR A PERIOD

49. TENANT'S WORK SHALL BE COORDINATED WITH THAT OF LANDLORD AND OTHER TENANTS IN THE BUILDING TO SUCH EXTENT THAT TENANT'S WORK WILL NOT INTERFERE WITH OR DELAY COMPLETION OF OTHER CONSTRUCTION WORK IN THE BUILDING.

50. UPON COMPLETION OF ALL CONSTRUCTION AND PRIOR TO TURNOVER OF THE SPACE, THE GENERAL CONTRACTOR, WHETHER WORKING FOR THE LANDLORD OR THE TENANT, IS RESPONSIBLE FOR HAVING THE SPACE CLEANED. ANY CLEANING WHICH IS NOT DONE AT THE TIME OF TURNOVER AND NEEDS TO BE DONE BY THE TENANT, WILL BE BACK CHARGED TO THE GENERAL CONTRACTOR.

51. ALL OF THE SUBCONTRACTORS QUOTING ON THEIR SPECIFIC SCOPE OF WORK/SERVICES TO CONTACT THE LOCAL BUILDING DEPARTMENT/AGENCY TO DISCUSS CODE ISSUES/IDIOSYNCRASIES REGARDING THEIR SERVICES AND THE QUOTE ASSOCIATED WITH THE SERVICES TO THE GENERAL CONTRACTOR. WHETHER WORKING FOR THE LANDLORD OR THE TENANT FOR THIS PROJECT. THIS CONTRACTOR TO BE FAMILIAR WITH THE SITE WHERE SLICH. SERVICES/WORK WILL BE PERFORMED. THIS SPECIFIC LISE AND THE IDIOSYNCRASIES ASSOCIATED WITH THE LIFE. SAFETY AND HEALTH ASSOCIATED WITH THIS WORK AND TO INDICATE ON THE QUOTE ANY ITEMS REQUIRED THAT ARE NOT NECESSARILY SHOWN ON THE DRAWINGS/SPECIFICATIONS.

52. CONSTRUCTION SHOWN TO REMAIN AS EXISTING SHALL BE REPAIRED, IF NECESSARY, IN A MANNER THAT WILL BE CONSISTENT WITH THE NEW CONSTRUCTION, AND PAINTED TO MATCH THE OVERALL COLOR SCHEME, UNLESS OTHERWISE NOTED.

53. THE CONSTRUCTION SITE SHALL BE CLEANED AND TRASH REMOVED DAILY.

54. ALL FINISHES TO BE AS NOTED AND SHALL NOT HAVE SMOKE DEVELOPED RATINGS GREATER THAN 450.

55. INTERIOR FINISHES OF WALLS AND CEILINGS IN ALL ROOMS OR ENCLOSED SPACES SHALL HAVE A CLASS C FLAME SPREAD INDEX 76-200; SMOKE DEVELOPED INDEX 0-450. INTERIOR FINISHES OF EXIT ENCLOSURES AND EXIT PASSAGEWAYS SHALL HAVE A CLASS B FLAME SPREAD INDEX 26-75; SMOKE DEVELOPED INDEX 0-450. ASTM E 84. IFC TABLE 803.3.

56. MATERIALS USED AS INTERIOR TRIM SHALL HAVE A MINIMUM CLASS C FLAME SPREAD AND SMOKE DEVELOPED INDEX AND SHALL COMPLY WITH ASTM E 84. COMBUSTIBLE TRIM SHALL NOT EXCEED 10% OF THE AGGREGATE WALL OR CLG. ARE IN WHICH IT IS LOCATED. IFC 804

57. INTERIOR WALL AND CEILING FINISHES SHALL COMPLY WITH NFPA 286 TESTING MEASURES. INTERIOR FLOOR FINISHES SHALL COMPLY WITH NFPA 253 WITH A CLASS 2 CRITICAL RADIANT FLUX > 0.22 WATTS / CM2. FLOOR FINISHES IN EXIT / ACCESS CORRIDORS SHALL BE CLASS 1 CRITICAL RADIANT FLUX > 0.45

58. INTERIOR FINISH MATERIALS SHALL BE APPLIED SO THAT THEY WILL NOT BECOME READILY DETACHED WHERE SUBJECTED TO 200 DEGREES F. FOR NOT LESS THAN 30 MINUTES. IFC 803.2.

59. THE REQUIRED FLAME SPREAD OR SMOKE DEVELOPED INDEX OF SURFACES IN EXISTING BUILDINGS MAY BE ACHIEVED BY APPLICATION OF APPROVED FIRE RETARDANT COATINGS AND SHALL COMPLY WITH NFPA 703. IFC 803.4.

60. FIRE EXTINGUISHERS SHALL BE LOCATED AT THE DIRECTION OF THE FIRE DEPARTMENT, PROVIDED & INSTALLED BY HFT GENERAL

61. AT THE TIME OF SUBMITTING A BID, THE GENERAL CONTRACTOR IS TO HAVE CONFIRMED ALL FIELD MEASUREMENTS AND HAVE REVIEWED ALL FIELD CONDITIONS. 62. G.C. SHALL VERIFY ALL RELEVANT DIMENSIONS, ELEVATIONS, ANGLES, AND EXISTING CONDITIONS BEFORE PROCEEDING WITH THE AFFECTED WORK AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES IMMEDIATELY. ALL DISCREPANCIES SHALL BE RESOLVED PRIOR TO CONTRACTOR PROCEEDING WITH

63. THE CONTRACT WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, TOOLS, LABOR AND SERVICES NECESSARY FOR COMPLETION OF THE

64. THE GENERAL CONTRACTOR SHALL PERFORM ALL WORK IN CONFORMITY WITH THOSE LAWS HAVING JURISDICTION WHETHER OR NOT SUCH WORK IS SPECIFICALLY SHOWN ON THESE DRAWINGS. INCLUDING ALL SEISMIC REQUIREMENTS. THE GENERAL CONTRACTOR SHALL PROCURE AND PAY FOR ALL NECESSARY BUILDING PERMITS AND SHALL BE REIMBURSED FOR GENERAL BUILDING PERMIT COSTS BY OWNER. BUSINESS LICENSE COSTS ARE NOT

65. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR FOR THE QUALITY OF WORKMANSHIP AND FOR COMPLIANCE WITH THE DESIGN. THE GENERAL CONTRACTOR SHALL CORRECT ALL ERRORS AND DEVIATIONS AS REQUESTED BY THE OWNER.

66. THE GENERAL CONTRACTOR SHALL CONTACT THE OWNER / HFT IMMEDIATELY IF THEY ENCOUNTER ANY HAZARDOUS MATERIALS.

67. EXACT LOCATIONS OF PIPING, DUCTWORK, CONDUIT AND FIXTURES SHALL BE COORDINATED BETWEEN CONTRACTORS AND SUBCONTRACTORS TO AVOID INTERFERENCE.

68. ALL SPRINKLER HEADS SHOWN ARE CONCEPTUAL ONLY. GENERAL CONTRACTOR TO HIRE A LICENSED SPRINKLER CONTRACTOR TO DESIGN AND INSTALL / MODIFY SPRINKLER SYSTEM. HEAD REPLACEMENT TO MEET ALL LOCAL AND NATIONAL CODES INCLUDING NFPA-13.

69. AFTER COMPLETION OF THE WORK, PARTS OF THE BUILDING SHALL BE CLEANED WHERE EVER SUCH CLEANING IS REQUIRED. INCLUDING AREAS OF THE BUILDING MADE DIRTY BY CONSTRUCTION WORK. THE GENERAL CONTRACTOR SHALL REMOVE FROM THE PREMISES TRASH, RUBBISH, TOOLS, EQUIPMENT AND EXCESS MATERIALS. THE BUILDING IS TO BE LEFT IN PERFECTLY CLEAN CONDITION.

70. ALL ELECTRICAL WORK SHALL CONFORM TO LOCAL CODES, THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, & NFPA 72.

EACH CONTRACTOR SHALL COORDINATE ARCHITECTURAL DRAWINGS WITH THE PLUMBING, MECHANICAL AND ELECTRICAL DRAWINGS AND ALL SPECIFICATIONS BEFORE PROCEEDING WITH THE WORK AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES OR CONFLICTS IMMEDIATELY. ALL DISCREPANCIES SHALL BE RESOLVED PRIOR TO THE CONTRACTOR PROCEEDING WITH AFFECTED WORK.

72. ALL ADDITIONAL MATERIALS, EQUIPMENT, LABOR, ETC. NOT SHOWN BUT REQUIRED FOR PROPER COMPLETION OF PROJECT SHALL BE PROVIDED BY

73. EXIST. PORTIONS OF THE BUILDING SHALL COMPLY WITH PROVISIONS OF EXISTING OCCUPANCIES, AS PER SET FORTH IN NFPA 101 LIFE SAFETY CODE,

IBC CHAPTER 34 OR IEBC AS REQUIRED BY LOCAL AUTHORITY HAVING JURISDICTION.

74. GENERAL CONTRACTOR SHALL DISTRIBUTE ALL NECESSARY DRAWINGS AND/OR COPIES OF CONSTRUCTION DOCUMENTS FOR REVISIONS AND/ OR DISTRIBUTION TO PARTIES DURING CONSTRUCTION PHASE AT NO ADDITIONAL COST TO THE OWNER. GENERAL CONTRACTOR IS TO PROVIDE A SCHEDULE AND PROJECT CALENDAR TO HFT PROJECT MANAGER TO SHARE WITH OTHER VENDORS

(E.G.-FIXTURE SUPPLIER, FLOORING SUPPLIER/INSTALLER, SIGNAGE MANUFACTURER, LIGHTING SUPPLIER AND MISCELLANEOUS LOW VOLTAGE INSTALLERS). 76. GENERAL CONTRACTOR TO FURNISH THE HFT REP. WITH AS-BUILT DRAWINGS UPON COMPLETION OF PROJECT.

77. UPON COMPLETION OF CONSTRUCTION, GENERAL CONTRACTOR TO SUBMIT RECORD DRAWINGS OF THE PREMISES TO LANDLORD. THIS SUBMITTAL SHALL ALSO INCLUDE TEST AND BALANCE REPORTS WITH THE HFT ARCHITECT / ENGINEER OF RECORD APPROVAL.

SIGNAGE PERMITTING DRAWINGS TO BE SUBMITTED SEPARATELY. ALL SIGNAGE TO COMPLY WITH LANDLORD TENANT CRITERIA AND STATE/LOCAL CODES. COORDINATE WITH SIGNAGE VENDOR FOR ANY SPECIFIC CRITERIA TO BE USED.

79. GENERAL CONTRACTOR SHALL ENGAGE A PROFESSIONAL CLEANING COMPANY TO CLEAN THE ENTIRE STORE THREE TIMES TO INCLUDE PRIOR TO FIXTURING, PRIOR TO MERCHANDISING AND THE NIGHT BEFORE SOFT OPENING. MAINTAIN AN ACCEPTABLE LEVEL OF CLEANLINESS AT ALL TIMES IN BETWEEN. GC TO ENSURE ALL CONSTRUCTION MATERIALS ARE REMOVED. FLOORS ARE CLEANED WITH A WALK-BEHIND SCRUBBER, HIGH-DUSTING OF LIGHT FIXTURES IS PERFORMED AND ALL ROOMS TO BE CLEANED. GC SHALL COORDINATE AND MANAGE THE CLEANING OF ALL FLOORING WITH THE APPROPRIATE WALK-BEHIND SCRUBBER THE NIGHT BEFORE GRAND OPENING. GC SHALL COORDINATE ALL CLEANINGS WITH STORE OPERATIONS.

LVT INSTALLATION NOTES

SUBFLOOR PREPARATIONS SHOULD BE DONE WITH THE PERMANENT HVAC SET AT A MINIMUM OF 68°F (20°C). 2. IT IS RECOMMENDED THAT LYT FLOOR COVERING INSTALLATION SHALL NOT BEGIN UNTIL ALL OTHER TRADES ARE COMPLETED.

THE BUILDING MUST BE ENCLOSED AND THE HVAC IN CONTINUOUS OPERATION. THE LVT AND ADHESIVE MUST BE CONDITIONED TO ROOM TEMPERATURE FOR 7 DAYS PRIOR TO INSTALLATION. DURING THE INSTALLATION AND CONTINUOUS FOLLOWING COMPLETION OF THE INSTALLATION. THE AMBIENT AIR RELATIVE HUMIDITY MUST BE BETWEEN 10% - 65% WITH THE FLOOR AND ROOM TEMPERATURE BETWEEN 55 - 85 DEGREES FAHRENHEIT. THE INDOOR TEMPERATURE SHOULD NEVER FALL BELOW 55 DEGREES FAHRENHEIT OR ABOVE 85 DEGREES FAHRENHEIT REGARDLESS OF THE AGE OF THE

INSTALLATION. STORE CARTONS OF TILE OR PLANK PRODUCTS FLAT AND SQUARELY ON TOP OF ONE ANOTHER. PREFERABLY, LOCATE MATERIAL IN THE "CENTER" OF THE INSTALLATION AREA (I.E. AWAY FROM VENTS, DIRECT SUNLIGHT, ETC.) STORING CARTONS IN DIRECT SUNLIGHT MAY AFFECT PROPER ACCLIMATION BY INDUCING THERMAL EXPANSION / CONTRACTION.

AREAS TO RECEIVE LYT FLOORING SHOULD BE ADEQUATELY ILLUMINATED DURING ALL PHASES OF THE INSTALLATION PROCESS. . CONTROLLED ENVIRONMENTS ARE CRITICAL. DO NOT INSTALL LVT FLOORING PRODUCTS UNTIL THE WORK AREA CAN BE TEMPERATURE CONTROLLED. 3 PORTABLE HEATERS ARE NOT ACCEPTABLE

ALSO LEAVE A RESIDUE ON THE SUBSTRATE 5. THE PERMANENT HVAC SYSTEM MUST BE OPERATIONAL AND FUNCTIONAL AND SET TO A MINIMUM OF 55°F OR A MAXIMUM OF 85°F FOR A MINIMUM OF 7 DAYS PRIOR TO, DURING, AND CONTINUOUS AFTER INSTALLATION. THE INDOOR TEMPERATURE SHOULD NEVER FALL BELOW 55 DEGREES FAHRENHEIT OR ABOVE 85 DEGREES FAHRENHEIT REGARDLESS OF THE AGE OF THE INSTALLATION.

4. KEROSENE HEATERS SHOULD NEVER BE USED WHERE FLOOR COVERING PRODUCTS WILL BE INSTALLED. THEY HEAT THE AIR. NOT THE SUBSTRATE. THEY

GENERAL NOTES

05/17/24 Job no.

Harbor Freight Tools Retrofit Concrete Repair Specification

PART 1 GENERAL

This specification covers the furnishing of all labor, equipment and materials required to repair or replace spalled, deteriorated or structurally damaged concrete surfaces. Depth of repairs shall be adequate to restore concrete member or slab to original dimensions after proper preparation to sound concrete. Full depth slab replacements shall be anchored to adjacent slabs per ACI requirements. The General Contractor shall repair or replace all concrete surfaces as shown on contract drawings or as specified herein.

1.02 REFERENCES

- A. Applicable Standards and Codes:
- ACI 302, "Guide for Concrete Floor and Slab Construction."
- 2. ACI 304, "Guide for Measuring, Mixing, Transporting and Placing Concrete." 3. ACI 305, "Hot Weather Concreting."
- 4. ACI 306, "Cold Weather Concreting."
- 5. ACI 318, "Standard Building Code Requirements for Reinforced Concrete."
- 6. ACI 503, "Standard Specification for Repairing Concrete with Epoxy Mortars."
- 7. ACI 504, "Guide to Sealing Joints in Concrete Structures." 8. ACI 506, "Guide to Shotcrete."
- 9. ACI 546, "Guide for Repair of Concrete Bridge Superstructures."
- 10. ICRI Guideline 3732, "Selecting and Specifying Concrete Surface Preparation."
- 11. ICRI Guideline 3733, "Guide for Selecting and Specifying Materials for Repair of Concrete Surfaces."

1.03 OUALITY ASSURANCE

A. Material manufacturers shall be ISO 9001/9002 registered or provide proof of documented quality assurance system. Quality system must be independent auditing registrar. ISO 9001/9002 certification shall be included with material submittals. The material supplier shall provide job service as required to assure proper handling and installation of materials. The field representative shall instruct as needed to assure that handling, mixing, placing, finishing, and curing of materials are in accordance with specification.

- B. The General Contractor shall have experience and proficiency specific to the repair type and shall be approved by Harbor Freight.
- C. Prior to the start of concrete repairs or slab replacement, the General Contractor shall conduct a meeting to review the detailed requirements for scope of work. Surface preparation, proposed equipment, procedures, material mixing, placing and finishing procedures and site conditions shall be discussed and approved by the Harbor Freight project manager and architect, prior to beginning work.

The General Contractor shall require the attendance of all involved parties including but not limited to the General Contractor's superintendent, repair contractor, concrete contractor, ready mix producer, testing laboratory, material supplier representative and proposed equipment supplier representative.

Minutes of the meeting shall be recorded, typed, and printed by the General Contractor and distributed to all parties concerned, including the Harbor Freight and Architect, within 5 days of the meeting.

1.04 PRE-BID INSPECTION

A. The General Contractor shall visit the site prior to bid submittal to determine the extent of the required repairs or slab replacement. Final bid shall include all required repairs, including total quantities and unit costs for each repair, or a total cost for slab replacement.

1.05 MATERIAL STORAGE AND HANDLING

cementitious base compound. Provide the following: "Euco V-100" by Euclid Chemical

C. Accessory Products

- 1. Bonding Agents: a. Epoxy/Cement Bonding Agent (and Protective Coating for Reinforcing Steel): Product shall
- be a water-based epoxy resin designed for bonding repair materials to existing concrete or for adhesion and corrosion protection of reinforcing members (24 hour maximum open time). Provide the following: "Duralprep AC" by Euclid Chemical
- b. Polyvinyl Acetate, Rewettable Type: Product shall be a resin adhesive for bonding repair materials to existing concrete when the repair is interior and dry conditions will exist after the repair is complete. Provide the following: "Tammsweld" by Euclid Chemical
- c. Latex, Non-Rewettable Type: Product shall be an acrylic latex bonding adhesive to bond the repair material to existing concrete. Provide the following: "Akkro-7T" by Euclid Chemical
- d. Latex, Non-Rewettable Type: Product shall be a styrene butadiene copolymer bonding adhesive to bond the repair material to existing concrete. Provide the following: "SBR Latex" by Euclid Chemical
- e. Epoxy Adhesive: The compound shall be a two component, 100 percent solids, 100 percent reactive compound suitable for use on dry or damp surfaces and meet the requirements of ASTM C 881. Provide the following: "Dural #452 Epoxy" by Euclid Chemical
- 2. Curing and Sealing Compound: The compound shall meet the moisture retention, solids content, and non-yellowing requirements of ASTM C-309 or C-1315 when applied at the manufacturer's recommended application rate per gallon. Provide the following:
- a. Interior Cure: "Kurez DR VOX" by Euclid Chemical b. Exterior Cure: "Super Aqua Cure VOX" or "Super Diamond Clear VOX" by Euclid Chemical

- a. Single Component Polyurethane (Gun and Pourable Grade): Provide the following:
- "Eucolastic 1 NS / SL" by Euclid Chemical b. Polyurea Joint Filler: The product shall conform to the requirements of ACI 302, and be a UV resistant, fast setting, semi-rigid, polyurea. Provide the following:
- "Euco QWIKjoint UVR" by Euclid Chemical c. Crack Repair: Two-component, low viscosity hybrid urethane repair liquid used to mend cracks in concrete, repair spalled joints and repair damaged or uneven concrete surfaces. "Euco QWIKstitch" by Euclid Chemical

PART 3 **EXECUTION**

Unless otherwise specified, the General Contractor shall apply all materials in strict accordance with the

manufacturer's instructions which are made part of this specification.

A. Refer to manufacturer's literature for material yields and coverage rate. Actual usage will vary depending on the profile and planeness of the repair surface and should be verified by the General Contractor. The General Contractor shall install the material at the thicknesses specified herein or on drawings and shall be familiar with site conditions to determine appropriate material quantities.

A. Materials shall be delivered in the original, unopened containers. It shall be labeled with the manufacturer's name, product name and lot number. Store materials at the job site under dry conditions and at temperatures between 50oF (10oC) and 90oF (32oC).

1.06 SITE CONDITIONS

A. Job conditions shall be maintained at standards that allow material placement within temperature and cleanliness requirements. Unusual conditions as uncovered during work shall be brought to the attention of Harbor Freight for analysis and disposition. These conditions include but are not limited to poor quality base concrete, severely corroded reinforcing steel, random cracks, and deep oil penetration.

1.07 ENVIRONMENTAL CONDITIONS

- A. Repair materials shall not be applied without protection in temperature below 45°F (7°C), or when the temperature is expected to fall below 45°F (7°C) during the curing period unless otherwise specified by the material manufacturer. Patching material shall not be applied to frozen surfaces.
- B. All materials used for the repair work must be VOC compliant. The manufacturer shall supply the appropriate material safety data sheets upon request.

1.08 SHORING AND SUPPORT

A. When removal and patching of deteriorated structural concrete may cause temporary weakness, excessive deflections, or structural instability, shoring or other suitable supports shall be provided until completion and adequate curing of repairs.

PART 2 **PRODUCTS**

2.01 MATERIALS

- A. Horizontal Repairs and Overlays:
 - 1. Thicknesses Less Than 1/2" (13mm): Product shall be a one component, trowel applied, latex and micro-silica modified cementitious base compound. Provide the following: "Thin-Top Supreme" by Euclid Chemical
 - 2. Thicknesses Greater Than 1/2" (13mm): Product shall be a one component, trowel applied, latex and micro-silica modified cementitious base compound. Provide the following: "Concrete Top Supreme" by Euclid Chemical
 - 3. Rapid Repairs: Product shall be a one component, cementitious material for patching and repairing concrete, meeting the requirements of ASTM C-928. Provide the following: "Versa-Speed" by Euclid Chemical
 - 4. Repair of Existing Trench In-Fills over 1" Thick (25mm): Product shall be a one part, microsilica modified patching and repair material for concrete. Provide the following: "Eucocrete" by Euclid Chemical
 - 5. Underlayment for Soft Floor Coverings: Product shall be a one component, free-flowing, selfleveling, pumpable compound designed as an underlayment for subsequent placement of floor coverings. Provide the following: "EucoFloor SL160" by Euclid Chemical
 - 6. Self-Leveling, Polishable Wearing Surface: Product shall be a one component, free flowing, selfleveling cementitious based compound designed as an underlayment for subsequent placement of floor coverings or as a wearing surface. Provide the following: "LevelTop" by Increte Systems (Euclid Chemical)

B. Vertical/Overhead Repairs 1. General Repairs: Product shall be a one component, trowel applied, and latex modified

- A. Cleaning: The surface of the existing concrete should be clean and the pores free of any dirt or material that will be detrimental to the bond of the repair material.
- B. Surface Preparation: Concrete surfaces must be clean and rough. All oil, dirt, debris, paint, and unsound concrete must be removed. The surface must be prepared mechanically using a scabbler, bush hammer, chipping hammer, shotblast or scarifier which will give a surface profile of a minimum 1/8" (3 mm) and expose the coarse aggregate of the concrete. For overlays, the concrete surface shall be roughened to the correct CSP profile (Concrete Surface Profile) and thickness recommended by the International Concrete Repair Institute (ICRI) Publication 03732, "Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays." The final step in cleaning shall be the complete removal of all dust, dirt, and residue by pressure washing and/or vacuum.
- C. Cracks: All cracks greater than 1/8" in width shall be routed to a minimum 3/8" by 3/8". Thoroughly clean with oil free compressed air or vacuum and place bond breaker tape along the bottom of the joint. Crack must be dry before installation of the sealant. Do not rout cracks less than 1/8" width.
- D. Joints: Existing joints shall be maintained by forming at joint locations or saw cutting over joint locations. Edges shall be sawcut to 1/4" (6 mm) deeper than the overlay thickness and notched at the edge of the overlay to provide a locked in perimeter. Chip the edge with a handheld chipping hammer to provide the wedge-shaped notch.

3.03 BONDING/PRIMING

A. After the concrete surface has been prepared, cleaned and dry, prime all areas with the bonding agent specified by the manufacturer. Apply bonding agent (or a product bond coat) by scrubbing the material into the concrete surface to penetrate the pores of the concrete. Follow the manufacturer's recommended coverage rate. Rougher surfaces may require a stiff broom to apply the bonding agent while a relatively smooth surface will allow use of roller or squeegee application.

3.04 MIXING OF REPAIR MATERIAL

A. Follow the mixing instructions provided by the material manufacturer. Small quantities may be mixed with a drill and "jiffy" mixer. Use a paddle type mortar mixer for typical jobs. For large or pumped jobs, bulk bagged material mixed in a ready-mix truck or a mixer/pump combination may be used where material workability permits. All materials should be in the proper temperature range of 60°F (15°C) to 90°F (32°C). Add the appropriate amount of water for the batch size and then add the dry product. Mix for 3 to 5 minutes. If pea gravel is added, mix an additional 2-3 minutes after its addition. The mixed product should be transported by buggy or pumped to the repair area and placed immediately. For multiple component materials, be sure the proper ratios of Part A, Part B and Part C are thoroughly mixed.

3.05 PLACING OF REPAIR MATERIAL

A. Trench In-fill: 1. In-fill trenches with "Eucocrete" pre-packaged concrete by Euclid Chemical or 4000 psi ready mixed concrete. Trench shall exhibit straight, full-depth sawcuts at the interface of existing concrete to in-fill area. Install 15 mil vapor barrier by Stego at base of area to be in-filled. In-fill concrete shall be doweled into existing slab using #4 bars spaced 16" on center. Bars shall have minimum 4" embedment in existing concrete and come to within 3" of the opposite face of existing concrete. Place, consolidate, finish and cure in-fill concrete to match finish, color and elevation of adjacent concrete. Honor all control joints per ACI 302 recommendations. Use an evaporation retarder under hot or windy conditions to prevent surface drying.

B. Self- Leveling Wear Surface:

1. Surface Prep: The concrete surface must be free of unbound cementitious by-products, loose dirt, oil, grease, or other contamination. Any animal or petroleum contamination should be removed with Increte Systems' Grease-A-Way. Exterior surfaces should be acid etched using a 5 to 1 solution of water to muriatic acid. Interior surfaces should be prepared by mechanical means



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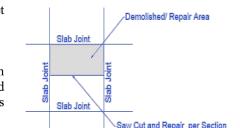
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(shot-blast, sand-blast or by rotary sander). Before installing Level Top, all concrete subfloors must be primed with two coats of Increte Systems Bond-Crete primer. Alternately, the concrete can be primed with Increte HP EPOXY and broadcast to refusal with clean and dry silica sand. Once the epoxy has dried, remove excess silica sand. Level Top SP should only be installed when ambient and substrate surface temperatures are between 50° F and 90° F. Optimum temperature installation is approximately 70° F.

- 2. Application: Add one 50-pound bag of LEVEL TOP to 5 quarts of cool water. Mix in a clean damp paddle mixer (mortar mixer). Mix for a minimum three minutes and adjust the water by adding up to 1 pint, as required. A drill and paddle mixer may also be used. Add colorant to water prior to the addition of powder when using integral colorants.
- 3. Thickness: For maximum economy, set gauge rake at 1/8-inch thickness. LEVEL TOP may be applied up to an inch thick as is. For pours greater than 1 inch use with extender aggregates. LEVEL TOP may also be used as an excellent patch/repair compound.
- 4. Staining/Sealing/Polishing: LEVEL TOP shall be chemically hardened with Increte's Pro-Polish Densifiers and polished to a high gloss finish. Use Pro-Polish Guard to protect your polished
- C. Vertical/Overhead Trowel Applied: Product should be placed in lifts 1" (25mm) to 2" (50 mm) in thickness. Trowel into place and allow stiffening before the next lift. Multiple lifts may be placed if the previous lift is well textured. If additional lifts will be placed after the product has hardened, crosshatch the surface of the previous lift to provide for a secure bond for the next lift.
- D. Joints: Fill joints with joint filler no sooner than 28 days after material placement. Install joint sealant in accordance with printed instructions. Moving joints, as in the case of expansion joints, should be brought up through the overlay by saw-cutting or with the use of a divider strip
- 3.06 FULL DEPTH, PARTIAL SLAB REPAIR (INTERIOR OR EXTERIOR)
 - A. Slab defects that exhibit severe pitting or spalling, which exceeds a third of the slab panel area or ³/₄" in depth, or as recommended by Harbor Freight and Architect. The "Suggested Concrete Mix for Full Depth Slab Replacement" (see Section 3.07), may be used upon approval of Harbor Freight and Architect. Avoid traffic on newly placed concrete for a minimum of 7 days. If early turnaround is required, the "Alternate High Strength - Early Set Concrete Mix" (this section), may be used upon approval of Harbor Freight and Architect.
 - B. Preparation: Submit all procedures and products to Harbor Freight and Architect for review and approval prior to starting work.
 - C. The intent of the slab replacement is that the repair area shall be encompassed by existing slab joints on at least 3 adjacent sides (See sketch of floor plan). Verify exact repair area size and location with Harbor Freight and Architect before commencing work. Saw cut at outer edges of pitted or spalled areas. The cuts should be symmetrical in nature and made perpendicular and parallel to the slab joints creating a rectangular repair area. The General Contractor should avoid any over-cutting at saw cut intersections.

- 1. Normal set concrete shall be designed to meet 4000 psi compressive strength within 28 days. (see concrete mix requirements - Section 3.07).
- 2. Alternate "High Strength-Early Set" concrete mix shall meet
- 4000 psi compressive strength within 24 hours (see below). 3. Compact existing subgrade, if required.
- 4. Replace vapor retarder, if required.
- 5. Construction joints in slab on ground shall be butt joints with round smooth dowels, epoxy adhered to existing slab, and greased on the other half for new slab installation. All dowels



3.14 - Full Depth Slab Replacemen

greased on the other half for new slab installation. All dowels shall be installed straight and evenly spaced per manufacturer's instructions

- 5. Install concrete flush with the surface of the floor. Apply finish to match adjacent concrete. Do not add additional water to the surface during the finishing operation. If additional liquid is required,
- 6. Curing and Protection: Cure all concrete surfaces with one of the curing compounds specified herein. Keep repair area protected from other trades and weather for a minimum of 3 days after material is placed.
- 7. Re-cut original joint through repair. Repair material shall not permanently bridge joints. Either maintain original joint during repair with and insert or cut as soon as repair material will not ravel
- 8. Re-fill control joints and re-seal expansion joints

Suggested Concrete Mix for Full Depth Complete Slab Replacement		
Materials	Concrete mix	
Cement	517-564 lbs.	
Fly ash/slag	Prohibited	
Coarse aggregate	12 cubic feet +/50 (#57 stone)	
Fine aggregate	7 cubic feet +/- (adjust as necessary)	
Water content	250 – 300lbs.	
Air content (Entrapped Air - Interior Only)	3.0% (max.)	
Air Content (Entrained Air -Exterior Only)	5.0% +/- 1.0% (Max.)	
Water Reducer (Type A/F)	3oz10oz./100wt +/- (Mid-Range)	
Water / Cement Ratio	0.53 (max.)	
Macro Synthetic Fiber (Tuf-Strand SF)	3.0 lbs – 5.0 lbs / cubic yard (min.) **	
Initial Slump (Water)	2"	
Final slump (with water reducer)	5.5" (max.)	
Maximum Shrinkage	≤0.04% @ 28 days	

A. For cementitious repair materials, clean tools and equipment with brush and water before the material hardens. For repair materials containing epoxy, clean with solvent, such as xylene, xylol or toluene. Do not allow the epoxy to harden on equipment.

END OF SECTION

**Macro Synthetic Fiber dosage as specified, unless otherwise noted by Engineer or Record

shall be installed straight and spaced evenly per manufacturer's instructions.

- 6. Install concrete flush with the surface of the floor. Apply finish to match adjacent concrete. Do not add additional water to the surface during the finishing operation. If additional liquid is required,
- 7. Curing and Protection: Cure all concrete surfaces with one of the curing compounds specified herein. Keep repair area protected from other trades and weather for a minimum of 3 days after material is placed.
- 8. Re-cut original joint through repair. Repair material shall not permanently bridge joints. Either maintain original joint during repair with and insert or cut as soon as repair material will not ravel
- 9. Re-fill control joints and re-seal expansion joints

Alternate High Strength - Early Set Concrete Mix

Materials	Prototype Concrete Mix
Cement	728-800 lbs.
Coarse Aggregate	11 Cubic Feet +/50
Fine Aggregate	7 Cubic Feet +/- (Adjust as Necessary)
Water Content	291 – 320 lbs.
Air Content (Entrapped Air - Interior Only)	3.0% (Max.)
Air Content (Entrained Air - Exterior Only)	5.0% +/- 1.0% (Max.)
Mid-Range Water Reducing Admixture (Type A/F)	3oz - 10oz/100wt +/-
High-Range Water Reducing Admixture (Type F/G)	3oz - 6oz/100wt +/- (Polycarboxylate)
Non-Chloride Accelerating Admixture	28oz - 40oz/100wt +/- (add at jobsite)
W/cm	0.40 (Max)
Initial Slump (Water)	2"
Final Slump	5.5" (Max)

3.07 FULL DEPTH. COMPLETE SLAB REPLACEMENT (INTERIOR)

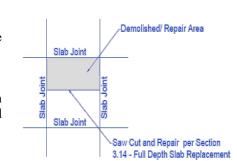
- A. Slab defects that exhibit severe pitting or spalling over most of the interior slab surface, or as directed by Harbor Freight and Architect. Avoid traffic on newly placed concrete for a minimum of 7 days. The "Suggested Concrete Mix for Full Depth Complete Slab Replacement" mix may be used upon approval of Harbor Freight and Architect (see information in this section).
- B. Preparation: Submit all procedures and products to Harbor Freight and Architect for review and approval prior to starting work.
- C. The intent of slab replacement is that the repair area shall be encompassed by existing slab joints on at least 3 adjacent sides (See sketch of floor plan). Verify exact repair area size and location with Harbor Freight and Architect before commencing work. Saw cut at outer edges of pitted or spalled areas. The cuts should be symmetrical in nature and made perpendicular and parallel to the slab joints creating a rectangular repair area. The General Contractor should avoid any over-cutting at saw cut intersections.

1. Concrete shall be designed to meet 4000 psi compressive strength within 28 days (see concrete mix below).

2. Compact existing subgrade, if required.

3. Replace vapor retarder, if required.

4. Construction joints in slab on ground shall be butt joints with round smooth dowels, epoxy adhered to existing slab, and



POLISHED CONCRETE SPECIFICATION

PART I - GENERAL

1.01 SUMMARY, THIS SPECIFICATION INCLUDES THE FOLLOWING:

INTERIOR CONCRETE JOINT FILLER, LIQUID DENSIFIER / SEALER AND POLISHING PROCESS

- A. GENERAL: DO NOT COMMENCE INSTALLATION OF SEMI-RIGID POLYUREA JOINT FILLER, LIQUID DENSIFIER / SEALER AND POLISHING PROCESSES UNTIL THE BUILDING IS COMPLETELY ENCLOSED, PERMANENT POWER AND LIGHTING IS OPERATING AND THE BUILDING IS THERMOSTATICALLY CONTROLLED. INSTALLATION OF THESE MATERIALS SHALL COMMENCE APPROXIMATELY TWO WEEKS PRIOR TO "FIXTURE DATE."
- PART II EXECUTION

2.01 JOINT FILLER INSTALLATION: COMPLY WITH ACI 302 AS APPLICABLE TO MATERIALS,

- SURFACE CLEANING OF JOINTS: CLEAN JOINTS IMMEDIATELY BEFORE INSTALLING JOINT FILLER. REMOVE FOREIGN MATERIAL THAT COLIL D INTERFERE WITH ADJESTION OF JOINT FILLER BY BRUSHING GRINDING BLAST CLEANING MECHANICAL ABRADING OR A COMBINATION OF THESE METHODS TO PRODUCE A CLEAN, SOUND SUBSTRATE CAPABLE OF DEVELOPING OPTIMUM BOND WITH JOINT FILLER. REMOVE LOOSE PARTICLES REMAINING FROM ABOVE CLEANING OPERATIONS BY VACUUMING OR BLOWING OUT JOINTS WITH OIL-FREE COMPRESSED AIR. ALSO REMOVE ALL LAITANCE AND FORM-RELEASE AGENTS FROM CONCRETE SURFACE. CLEAN NONPOROUS SURFACES WITH CHEMICAL CLEANERS OR OTHER MEANS THAT DO NOT STAIN, HARM SUBSTRATES, OR LEAVE RESIDUES COULD INTERFERE WITH ADHESION OF JOINT SEALANTS. ALL SURFACES TO BE FILLED SHALL BE CLEAN AND DRY.
- MIXING: JOINT FILLER IS A TWO-PART PRODUCT REQUIRING MACHINE MIXING AND PLACING. PREMIX PART "B" SEPARATELY BEFORE USING. FOLLOW PUMP MANUFACTURER'S EQUIPMENT
- INSTRUCTIONS. PLACEMENT: FOR PROPER LOAD TRANSFER, JOINTS MUST BE FILLED FULL DEPTH, BUT IN NO CASE SHOULD THE JOINT FILLER BE ANY LESS THAN 1" DEEP IN THE JOINT, NO BACKER ROD IS ALLOWED. JOINTS SHOULD BE OVERFILLED AND SHAVED LEVEL WITH THE SURFACE. GIVING THE FLOOR JOINTS A FLAT SMOOTH APPEARANCE
- JOINT FILLER SEPARATION: THE APPROVED JOINT FILLING APPLICATOR SHALL INCLUDE IN THEIR BID A COST PER LINEAR FOOT TO MAKE ONE RETURN TRIP TO REFILL JOINTS IF JOINT FILLER SIDEWALL SEPARATION OR SPLITTING EXCEEDS 1/16", OR IF SURFACE PROFILE IS CONCAVE, CHATTERED OR IF VOIDS OCCUR. THIS SHALL TAKE PLACE ONE WEEK PRIOR TO GRAND OPENING, OR AT OWNER'S REQUEST.
- 2.02 INITIAL CLEANING FOR LIQUID DENSIFIER AND SEALER APPLICATION: THOROUGHLY CLEAN THE INTERIOR SALES FLOOR SLAB PRIOR TO THE INITIAL APPLICATION OF LIQUID DENSIFIER/SEALER AND POLISHING PROCESS, COMPLETELY REMOVE THE REMNANTS OF THE DISSIPATING OR REMOVABLE CURING COMPOUND FROM THE FLOOR SURFACE. THE FOLLOWING FLOOR STRIPPER OR REMOVAL SOLUTION SHALL BE APPLIED TO THE FLOOR AT THE PROPER RATIO TO THOROUGHLY STRIP. CLEAN AND REMOVE ALL CURING COMPOUND RESIDUE: 1. KUREZ DR VOX (SLAB FIRST): EUCLID "EUCO CLEAN & STRIP" 1. KUREZ RC (SLAB LAST): EUĆLID "KUREZ OFF"
- 2.03 POLISHING PROCESS AND APPLICATION OF LIQUID DENSIFIER / SEALER: PRIOR TO APPLICATION, INSPECT INTERIOR SALES FLOOR SLAB TO ENSURE THAT SLAB IS CLEAN AND FREE OF DUST. GREASE, OILS, OR OTHER CONTAMINANTS THAT MIGHT PROHIBIT THE PROPER APPLICATION AND PENETRATION OF THE LIQUID DENSIFIER AND SEALER.
- MOCK-UP TEST SLAB: THE FOLLOWING PROCESS IS PROVIDED AS A GUIDE. MANY FACTORS, INCLUDING, BUT NOT LIMITED TO INTERIOR FLOOR SLAB FINISH, HARDNESS AND FLATNESS WILL DETERMINE THE INITIAL RESIN BOND DIAMOND TOOLING, INCLUDING ADDITIONAL GRINDING AND/OR POLISHING OPERATIONS REQUIRED TO MEET THE REQUIREMENTS SPECIFIED HEREIN. TRAINED APPLICATOR SHALL PROVIDE A MOCK-UP TEST SLAB. INCLUDING APPLICATION OF LIQUID DENSIFIER/SEALER TO A DESIGNATED AREA OF THE INTERIOR FLOOR SLAB (BACK OF BUILDING) USING THE SAME FOUIPMENT, RESIN BOND DIAMOND TOOLING, AND METHODS AS WILL BE USED TO POLISH THE INTERIOR FLOOR SLAB. INTERIOR SALES FLOOR POLISHING AND APPLICATION OF LIQUID DENSIFIER/SEALER SHALL NOT COMMENCE UNTIL OWNER HAS ACCEPTED THE MOCK-UP TEST SLAB. VERIFY PRESENCE OF CURING AND SEALING COMPOUND BY APPLYING WATER TEST TO THE
 - SURFACE OF SLAB. a. IF WATER BEADS, CURING AND SEALING COMPOUNDS ARE PRESENT AND MUST BE
- REMOVED FROM THE SLAB. COMPLETELY REMOVE THE REMNANTS OF THE DISSIPATING OR REMOVABLE CURING COMPOUND FROM THE FLOOR SURFACE. THE FOLLOWING FLOOR STRIPPER OR REMOVAL SOLUTION SHALL BE APPLIED TO THE FLOOR AT THE PROPER RATIO TO THOROUGHLY STRIP, CLEAN AND REMOVE ALL CURING COMPOUND RESIDUE: "EUCO CLEAN & STRIP" BY EUCLID CHEMICAL b. IF WATER SOAKS INTO THE SURFACE INDICATING CURING AND SEALING COMPOUNDS ARE NOT PRESENT, MOVE TO STEP 3.
- GRINDING/POLISHING EQUIPMENT SHALL BE EQUIPPED WITH 200 GRIT RESIN BOND DIAMOND TOOLING TO VERIFY IF SURFACE WILL OPEN TO ACCEPT LIQUID DENSIFIER/SEALER. IF SLAB OPENS TO ACCEPT LIQUID DENSIFIER/SEALER. PROCEED WITH PROJECT. IF SLAB DOES NOT OPEN, DROP TO LOWER GRIT RESIN BOND DIAMOND TOOLING, AND REPEAT (100 GRIT. 80 GRIT. 50 GRIT). FOLLOW PROCESS AND DROP RESIN BOND DIAMOND TOOLING AS NEEDED UNTIL SLAB ACCEPTS DENSIFIER.
- 3. ALL GRIND, HONE AND POLISH STEPS SHALL INCLUDE A 2 PASS PROCESS OVERLAPPING PREVIOUS PASS BY A MINIMUM OF 6"
- INITIAL GRIND AND HONE PROCESS: START INITIAL GRIND WITH APPROPRIATE RESIN BOND DIAMOND TOOLING AS DETERMINED
- OPERATE MACHINES AT 400 SQUARE FEET AN HOUR (WALK PACE). WITH HIGH TO MAXIMUM DRUM AND HEAD SPEED (TYPICALLY 300 RPM ON DRUM AND 1250 RPM ON PLANETARIES).
- ONCE COMPLETED, CLEAN OPENED FLOOR THOROUGHLY, AND THEN APPLY EUCO DIAMOND HARD TO REJECTION. ALLOW THE SURFACE TO DRY. 4. RESIN BOND DIAMOND TOOLING SHALL BE INCREASED AT SAME OUTPUT RATES AND HEAD
- SPEEDS UP TO 400 GRIT HONING. C. FINAL POLISHING PROCESS:
- CLEAN FLOOR AND MACHINE OF ACCUMULATED LAITANCE. 2. MOUNT 800 GRIT RESIN BOND DIAMOND TOOLING AND RUN MACHINES AT 300 SQUARE FEET
- AN HOUR PACE WITH DRUM AND HEAD SPEEDS AT HIGH TO MAXIMUM 3. APPLY EUCO DIAMOND HARD LIGHTLY AT 700 SQUARE FEET PER GALLON JUST PRIOR TO
- 4. CLEAN FLOOR AND BURNISH WITH 1500 GRIT DIAMOND PAD AT 500 SQUARE FEET PER HOUR WITH A 27" BURNISHER AT 2500 RPM.
- POLISH RESUILTS: PERFORM POLISHING PROCESS TO REACH A SPECIFIED OVERALL GLOSS VALUE (SOGV) OF ≥35 AS MEASURED WITH A HORIBA IG-320, AND A SPECIFIED MINIMUM GLOSS READING (SMGV) OF ≥30. THE APPROVED APPLICATOR SHALL TAKE FOUR GLOSS MEASUREMENT READINGS AT 90° FROM EACH OTHER, AND THEN AVERAGED FOR ONE READING AT EACH LOCATION. A MINIMUM OF 25 READINGS SHALL BE TAKEN THROUGHOUT THE INTERIOR SALES FLOOR. THE OVERALL MEASUREMENT SHALL BE REPORTED TO GENERAL CONTRACTOR WITHIN 24 HOURS OF THE POLISHING PROCESS. GLOSS SHALL BE CONSIDERED A QUANTITATIVE VALUE THAT EXPRESSES THE DEGREE OF REFLECTION WHEN LIGHT HITS THE CONCRETE FLOOR SURFACE. GLOSS MEASUREMENTS WILL BE TAKEN INDEPENDENT OF AMBIENT LIGHTING AND WILL BE TAKEN WITHIN A SEALED MEASUREMENT WINDOW LOCATED BENEATH THE TEST

DUSTING MINIMIZATION PROCESS TO BE PERFORMED ON ALL FLORIDA PROJECTS AND AS NEEDED AT OTHER LOCATIONS:

- A. DUSTING FLOOR: DUSTING IS AN ASPECT OF WEAK CONCRETE AT THE SURFACE OF A FLOOR OR SLAB. DUSTING (THE DEVELOPMENT OF A FINE, POWDERY MATERIAL THAT EASILY RUBS OFF THE SURFACE OF HARDENED CONCRETE), IS THE RESULT OF A THIN, WEAK SURFACE LAYER. CALLED LAITANCE. WHICH IS COMPOSED OF WATER. CEMENT. AND FINE PARTICLES. THIS LAITANCE, THE WEAKEST, MOST PERMEABLE AND LEAST WEAR-RESISTANT MATERIAL IS AT THE TOP SURFACE, EXACTLY WHERE THE STRONGEST, MOST IMPERMEABLE, AND MOST WEAR-RESISTANT CONCRETE IS NEEDED. IF IT IS DETERMINED THAT THE PROJECT FLOOR IS DUSTING, USE THE FOLLOWING PROCEDURE TO HELP MINIMIZE A DUSTING SURFACE.
- 1. APPLICATION OF WATER-BASED MAGNESIUM SILICOFLUORIDE DUSTPROOFER AND DENSIFIER:
- a. COAT DILUTION 1ST COAT 1 PART SURFHARD TO 2 PARTS WATER
- 2ND COAT 1 PART SURFHARD TO 1 PART WATER
- 3RD COAT 2 PARTS SURFHARD TO 1 PART WATER b. COVERAGE RATE UNDILUTED SURFHARD
- DILUTED SURFHARI 1ST COAT 900 FT²/GAL (22.1 M²L)
- 300 FT²/GAL (7.4 M²l 2ND COAT: 400 FT²/GAL (9 8 M²L) 200 FT²/GAL (4.9 M²L) 3RD COAT: 225 FT²/GAL (5.5 M²L) 150 FT²/GAL (3.7 M²/L)
- SURFACE PREPARATION: THE SURFACE TO BE TREATED SHOULD BE CLEAN, FREE OF CURING COMPOUNDS, SEALERS, PAINT OR ANY OTHER CONTAMINANTS THAT COULD PROHIBIT PENETRATION OF SURFHARD. FOR BEST PERFORMANCE, CONCRETE SHOULD BE DRY BEFORE APPLYING SURFHARD. NEW CONCRETE SURFACES SHOULD BE AT LEAST 7 DAYS OLD PRIOR TO APPLICATION. EXTREMELY SOFT AND POROUS SURFACES SHOULD BE SATURATED WITH WATER PRIOR TO APPLICATION. WHEN THE SURFACE IS DRY, APPLY THE 1ST COAT OF SURFHARD AND PROCEED AS INDICATED UNDER PLACEMENT BELOW. THIS PRE-WETTING CONCENTRATES THE CHEMICAL AT THE TOP LEVEL OF THE CONCRETE. THE FINAL APPLICATION WILL HARDEN AT THE TOP SURFACE AND YIELD MAXIMUM WEARING AND RESISTANCE QUALITIES. IN SOME INSTANCES, OR IN SOME SELECTED AREAS, A SURFACE MAY REQUIRE AN ADDITIONAL APPLICATION OF UNDILUTED SURFHARD TO COMPLETE HARDENING AND DUSTPROOFING.
- MIXING: SURFHARD IS EASILY DILUTED IN WATER WITH MILD AGITATION.
- PLACEMENT: FLOOD EACH COAT OF SURFHARD ONTO THE SURFACE AND SPREAD WITH A SOFT FIBER BROOM, SQUEEGEE, OR MOP. ALLOW THE SOLUTION TO SOAK INTO THE CONCRETE FOR 10 TO 15 MINUTES AND REDISTRIBUTE ANY PUDDLES THAT REMAIN. TREATED SURFACES SHOULD BE THOROUGHLY DRY BETWEEN COATS. DRYING TIME MAY VARY FROM 4 TO 12 HOURS DEPENDING ON TEMPERATURE, HUMIDITY, AND WHETHER THE CONCRETE IS INDOORS OR OUTDOORS. AS VARIOUS COATS OF SURFHARD ARE APPLIED, EACH SUCCEEDING COAT WILL YIELD INCREASED COVERAGE BECAUSE THE CONCRETE SURFACE IS IN THE PROCESS OF HARDENING. AFTER THE THIRD COAT THE FLOOR SHOULD BE THOROUGHLY FLUSHED WITH WATER AND SCRUBBED WITH A STIFF BROOM TO REMOVE ANY RESIDUAL MATERIAL. IF THE FLOOR SHOULD SHOW PATCHES OF WHITE UPON DRYING, IMMEDIATELY FLOOD WITH WATER AND SCRUB THE FLOOR WITH A MECHANICAL SCRUBBER, RINSE AND DRY. DO NOT ATTEMPT FURTHER TREATMENT.
- f. NOTE: ALL THREE COATS MAY NOT BE NECESSARY TO HARDEN THE FLOOR. IF THE FLOOR SHOULD SHOW PATCHES OF WHITE ON DRYING, IMMEDIATELY FLOOD WITH WATER AND SCRUB THE FLOOR WITH A MECHANICAL SCRUBBER, RINSE AND DRY. DO NOT ATTEMPT FURTHER

APPLICATION OF PENETRATING EPOXY SEALER:

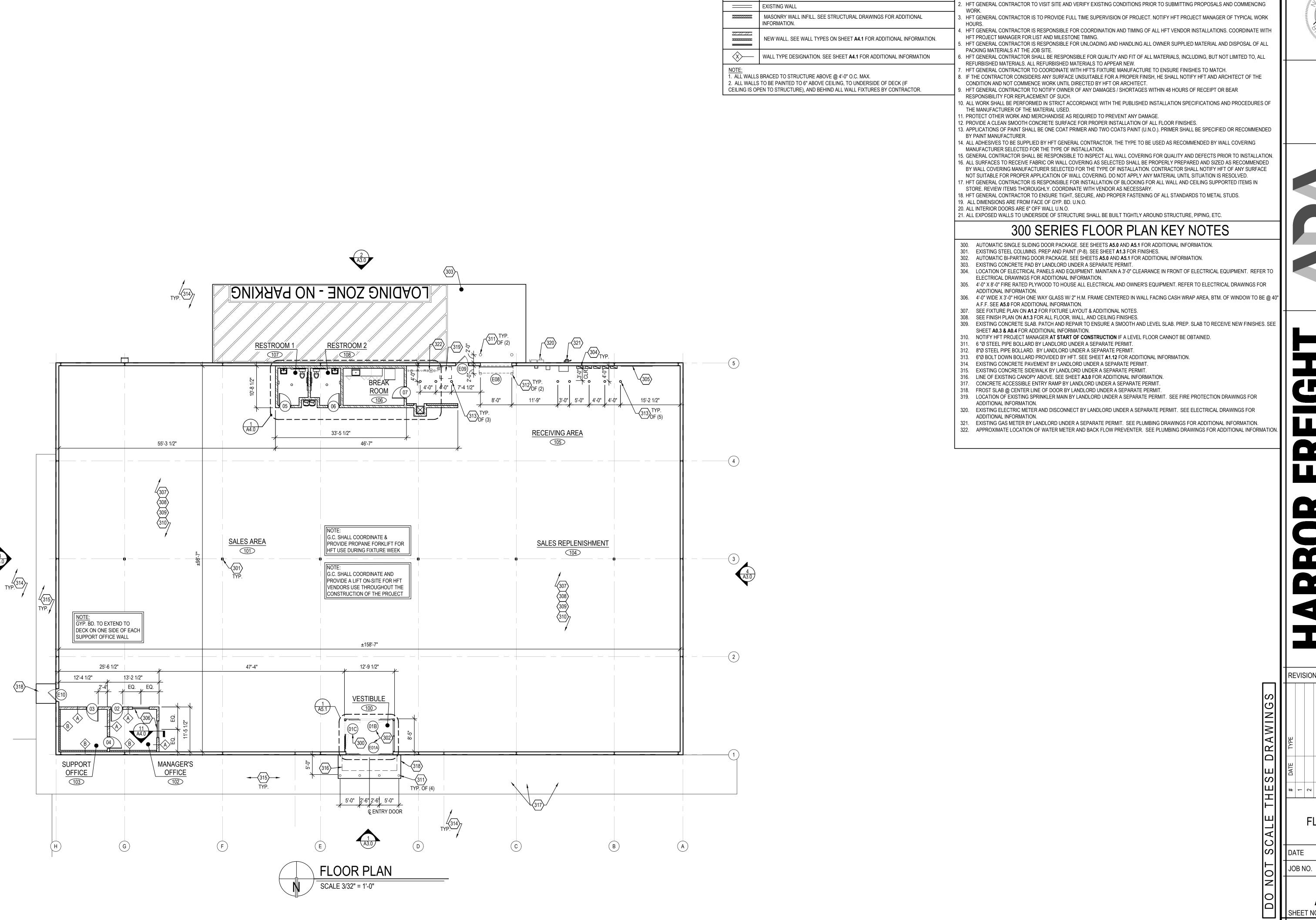
- a. CONCRETE SURFACE FIRST COAT SECOND COAT TROWELED SMOOTH 250 TO 300 (6.1 TO 7.4) 400 TO 600 (9.8 TO 14.7)
- b. MATERIAL REQUIREMENTS: A TWO COAT APPLICATION USING A COVERAGE RATE OF 200 FT2/GAL (4.9 M2/L) WILL REQUIRE APPROXIMATELY 5 GAL (18.9 L) OF MATERIAL PER 1000 FT2 (92.9 M2) OF AREA. TWO COATS ARE RECOMMENDED FOR BEST RESULTS. THE CONCRETE SURFACE TEXTURE GREATLY AFFECTS COVERAGE RATES AND FINAL APPEARANCE. DO NOT APPLY AT LESS THAN 150 FT2/GAL (3.7 M2/L). APPLY A SECOND COAT IF A THICKER FILM IS DESIRED. ALLOW THE FIRST COAT TO DRY TACK FREE (BUT WAIT NO MORE THAN 24 HOURS) BEFORE THE SECOND COAT IS APPLIED
- C. SURFACE PREPARATION: NEW CONCRETE MUST BE A MINIMUM OF 28 DAYS OLD AND POSSESS AN OPEN SURFACE TEXTURE WITH ALL CURING COMPOUNDS AND SEALERS REMOVED. THE CONCRETE MUST BE CLEAN AND SOUND. ALL OIL, DIRT, DEBRIS, PAINT AND UNSOUND CONCRETE MUST BE REMOVED. PRESSURE WASHING AND/OR POWER SCRUBBING IS RECOMMENDED. THE CONCRETE SURFACE CAN BE DAMP OR DRY AT THE TIME OF APPLICATION OF EUCO #512 VOX EPOXY SEALER. HOWEVER, BEST RESULTS ARE OBTAINED WHEN THE CONCRETE
- d. MIXING: ALL MATERIALS SHOULD BE IN THE PROPER TEMPERATURE RANGE OF 60°F TO 90°F (16°C TO 32°C). PRE-MIX PART A AND ADD THE ENTIRE CONTAINER OF PART B TO ALL THE PART A. MIX FOR 2 TO 3 MINUTES USING A MECHANICAL (DRILL) MIXER. THE EPOXY MUST BE WELL MIXED TO ENSURE PROPER CHEMICAL REACTION. AFTER MIXING, PLACE IMMEDIATELY.
- e. PLACEMENT: TO APPLY THE SEALER TO CONCRETE, USE A PUMP-UP OR AIRLESS SPRAYER FOR BEST RESULTS. A SHORT NAP ROLLER OR LAMB'S WOOL APPLICATOR MAY ALSO BE USED.

f. CLEAN-UP: CLEAN TOOLS AND EQUIPMENT WITH WARM, SOAPY WATER BEFORE THE MATERIAL DRIES.

REVISIONS

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FLOOR PLAN NOTES

REFER TO GENERAL NOTES ON SHEET A0.2 FOR ADDITIONAL INFORMATION

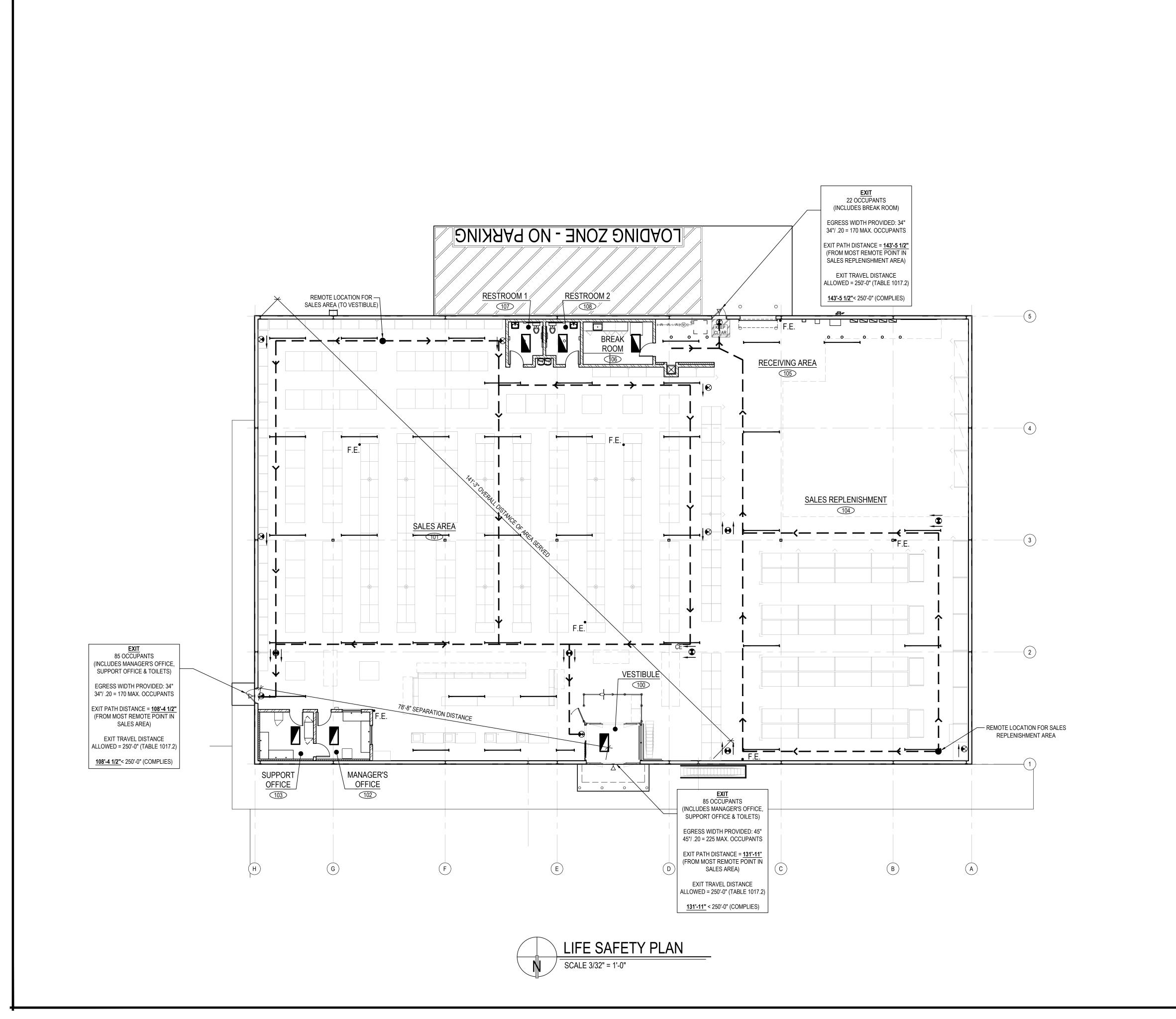
WALL LEGEND

SYMBOL DESCRIPTION

REVISIONS

FLOOR PLAN

05/17/24 23475



OCCUPANCY CALCULATIONS

USE and OCCUPANCY CLASSIFICATION:

USE: M - MERCANTILE CLASS: IIB - FULLY SPRINKLERED

BUILDING CODE: 2018 NORTH CAROLINA STATE BUILDING CODE ENERGY CODE: 2018 NORTH CAROLINA STATE ENERGY CODE MECHANICAL CODE: 2018 NORTH CAROLINA STATE MECHANICAL CODE

ELECTRICAL CODE: 2020 ELECTRICAL CODE PLUMBING CODE: 2018 NORTH CAROLINA STATE PLUMBING CODE

FIRE CODE: 2018 NORTH CAROLINA STATE FIRE CODE ACCESSIBILITY: 2018 NORTH CAROLINA STATE ADA STANDARDS WITHIN NORTH CAROLINA STATE BUILDING CODE / 2009 ANSI A117.1

OCCUPANT LOAD:

ACTUAL INTERIOR AREA BUILDING: 16,000 SQ. FT.

B - CORE AREA 100 GROSS 660 SQ. FT. 7 OCCUPANTS S-1 - STOCK 300 GROSS 5,959 SQ. FT. 20 OCCUPANTS

ANTICIPATED OCCUPANT LOAD FOR HARBOR FREIGHT TOOLS: 150 MAX FROM HISTORICAL DATA

EGRESS REQUIREMENTS:

191 OCC. x 0.20 = 38.2" (44" MIN)

(1) BREAK-AWAY SINGLE SLIDING DOOR @ 45", (2) H.M. DOOR @ 34" = 113" PROVIDED EGRESS WIDTH

REQUIRED EXIT ACCESS TRAVEL DISTANCE: 250'
PROVIDED EXIT ACCESS TRAVEL DISTANCE: LESS THAN 250'

MIN. NUMBER OF EXITS REQUIRED / PROVIDED: 2 EXITS REQUIRED / 3 EXITS PROVIDED

AREA OCCUPANT LOAD ALLOWANCES AND EGRESS DOOR OCCUPANT LOAD CALCULATIONS

SALES AREA OCCUPANCY: SALES AREA....

. (2) SINGLE OCCUPANCY = 2 OCCUPANTS RESTROOMS (ACCESSORY) OFFICE (ACCESSORY)... 308 S.F. / 100 = 3 OCCUPANTS **169 OCCUPANTS** <u>TOTAL =</u>....

169 OCCUPANTS / 2 EXITS = 85 OCCUPANTS SALES REPLENISHMENT AREA OCCUPANCY:

STOCK AREA.....BREAK ROOM (ACCESSORY). 5,959 / 300 = 20 OCCUPANTS . 176 S.F. / 100 = 2 OCCUPANTS

22 OCCUPANTS 22 OCCUPANTS / 1 EXIT = 22 OCCUPANTS

9,381 / 60 = 164 OCCUPANTS

78'-8" (COMPLIES)

EXIT SEPARATION

OVERALL DIAGONAL DIMENSION OF SALES AREA: 141'-3" SEPARATION DISTANCE REQUIRED OF EXITS: 1/3 OF MAXIMUM OVERALL BUILDING DIMENSION

(SPACE IS FULLY EQUIPPED WITH AUTOMATIC SPRINKLERS) CALCULATED MINIMUM SEPARATION DISTANCE:

MINIMUM SEPARATION DISTANCE OF EXITS PROVIDED:

LEGEND

$-\! \rightarrow$	EGRESS PATHWAY
\otimes	EXIT SIGN, SEE LIGHTING PLAN
	EMERGENCY LIGHT LOCATIONS, SEE LIGHTING PLAN
т	EMEDOENOV EVTEDIOD LIQUEL OCATIONIC CEE LIQUEINO DI ANI

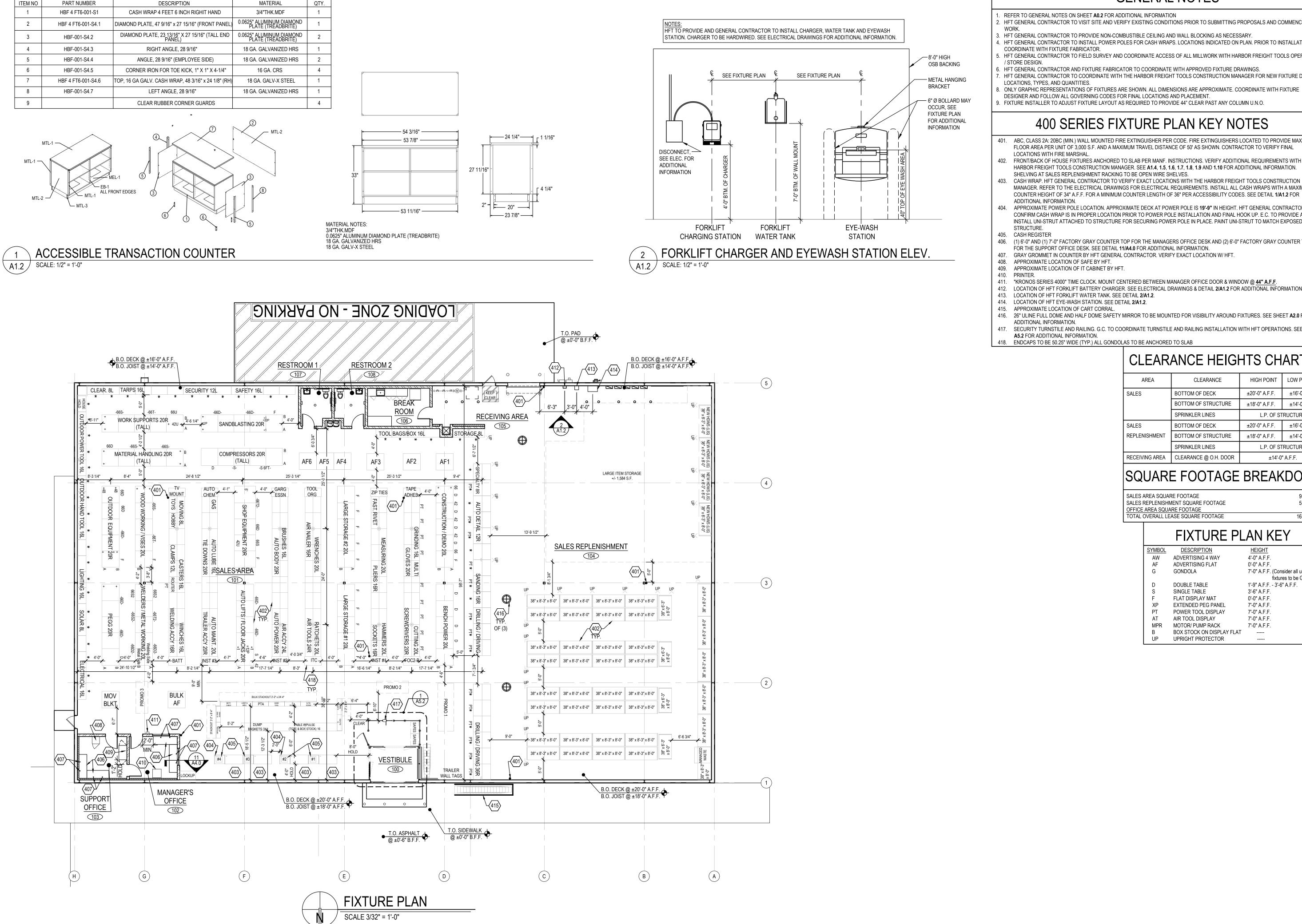
EMERGENCY EXTERIOR LIGHT LOCATIONS, SEE LIGHTING PLAN FIRE EXTINGUISHER, ABC, CLASS 2A: 20BC (MIN.) WALL MOUNTED FIRE

EXTINGUISHER PER CODE. FIRE EXTINGUISHERS LOCATED TO PROVIDE MAXIMUM FLOOR AREA PER UNIT OF 3,000 S.F. AND A MAXIMUM TRAVEL DISTANCE OF 50' AS SHOWN. CONTRACTOR TO VERIFY FINAL LOCATIONS WITH FIRE MARSHAL.

REVISIONS

LIFE SAFETY PLAN

05/17/24 23475



GENERAL NOTES

- REFER TO GENERAL NOTES ON SHEET A0.2 FOR ADDITIONAL INFORMATION HFT GENERAL CONTRACTOR TO VISIT SITE AND VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING PROPOSALS AND COMMENCING
- COORDINATE WITH FIXTURE FABRICATOR.
- HFT GENERAL CONTRACTOR TO FIELD SURVEY AND COORDINATE ACCESS OF ALL MILLWORK WITH HARBOR FREIGHT TOOLS OPERATIONS / STORE DESIGN.
- HFT GENERAL CONTRACTOR AND FIXTURE FABRICATOR TO COORDINATE WITH APPROVED FIXTURE DRAWINGS.
- LOCATIONS, TYPES, AND QUANTITIES. ONLY GRAPHIC REPRESENTATIONS OF FIXTURES ARE SHOWN. ALL DIMENSIONS ARE APPROXIMATE. COORDINATE WITH FIXTURE
- DESIGNER AND FOLLOW ALL GOVERNING CODES FOR FINAL LOCATIONS AND PLACEMENT.). FIXTURE INSTALLER TO ADJUST FIXTURE LAYOUT AS REQUIRED TO PROVIDE 44" CLEAR PAST ANY COLUMN U.N.O.

400 SERIES FIXTURE PLAN KEY NOTES

- 401. ABC, CLASS 2A: 20BC (MIN.) WALL MOUNTED FIRE EXTINGUISHER PER CODE. FIRE EXTINGUISHERS LOCATED TO PROVIDE MAXIMUM FLOOR AREA PER UNIT OF 3,000 S.F. AND A MAXIMUM TRAVEL DISTANCE OF 50' AS SHOWN. CONTRACTOR TO VERIFY FINAL LOCATIONS WITH FIRE MARSHAL.
- 402. FRONT/BACK OF HOUSE FIXTURES ANCHORED TO SLAB PER MANF. INSTRUCTIONS. VERIFY ADDITIONAL REQUIREMENTS WITH THE HARBOR FREIGHT TOOLS CONSTRUCTION MANAGER. SEE A1.4, 1.5, 1.6, 1.7, 1.8, 1.9 AND 1.10 FOR ADDITIONAL INFORMATION. SHELVING AT SALES REPLENISHMENT RACKING TO BE OPEN WIRE SHELVES.
- MANAGER. REFER TO THE ELECTRICAL DRAWINGS FOR ELECTRICAL REQUIREMENTS. INSTALL ALL CASH WRAPS WITH A MAXIMUM ADDITIONAL INFORMATION.
- CONFIRM CASH WRAP IS IN PROPER LOCATION PRIOR TO POWER POLE INSTALLATION AND FINAL HOOK UP. E.C. TO PROVIDE AND INSTALL UNI-STRUT ATTACHED TO STRUCTURE FOR SECURING POWER POLE IN PLACE. PAINT UNI-STRUT TO MATCH EXPOSED STRUCTURE.
- FOR THE SUPPORT OFFICE DESK. SEE DETAIL 11/A4.0 FOR ADDITIONAL INFORMATION.
- 407. GRAY GROMMET IN COUNTER BY HFT GENERAL CONTRACTOR. VERIFY EXACT LOCATION W/ HFT. 408. APPROXIMATE LOCATION OF SAFE BY HFT.
- 409. APPROXIMATE LOCATION OF IT CABINET BY HFT.
- 411. "KRONOS SERIES 4000" TIME CLOCK. MOUNT CENTERED BETWEEN MANAGER OFFICE DOOR & WINDOW @ 44" A.F.F.
- 412. LOCATION OF HFT FORKLIFT BATTERY CHARGER. SEE ELECTRICAL DRAWINGS & DETAIL 2/A1.2 FOR ADDITIONAL INFORMATION.
- 413. LOCATION OF HFT FORKLIFT WATER TANK. SEE DETAIL **2/A1.2**. 414. LOCATION OF HFT EYE-WASH STATION. SEE DETAIL 2/A1.2.
- 415. APPROXIMATE LOCATION OF CART CORRAL.
- 416. 26" ULINE FULL DOME AND HALF DOME SAFETY MIRROR TO BE MOUNTED FOR VISIBILITY AROUND FIXTURES. SEE SHEET A2.0 FOR
- ADDITIONAL INFORMATION. 417. SECURITY TURNSTILE AND RAILING. G.C. TO COORDINATE TURNSTILE AND RAILING INSTALLATION WITH HFT OPERATIONS. SEE SHEET
- **A5.2** FOR ADDITIONAL INFORMATION. 418. ENDCAPS TO BE 50.25" WIDE (TYP.) ALL GONDOLAS TO BE ANCHORED TO SLAB

CLEARANCE HEIGHTS CHART

AREA	CLEARANCE	HIGH POINT	LOW POINT
SALES	BOTTOM OF DECK	±20'-0" A.F.F.	±16'-0" A.F.F.
	BOTTOM OF STRUCTURE	±18'-0" A.F.F.	±14'-0" A.F.F.
	SPRINKLER LINES	L.P. OF S1	RUCTURE
SALES	BOTTOM OF DECK	±20'-0" A.F.F.	±16'-0" A.F.F.
REPLENISHMENT	BOTTOM OF STRUCTURE	±18'-0" A.F.F.	±14'-0" A.F.F.
	SPRINKLER LINES	L.P. OF S1	RUCTURE
RECEIVING AREA	CLEARANCE @ O.H. DOOR	±14'-0" A.F.F.	

SQUARE FOOTAGE BREAKDOWN

SALES AREA SQUARE FOOTAGE	9,381 S.F.
SALES REPLENISHMENT SQUARE FOOTAGE	5,959 S.F.
OFFICE AREA SQUARE FOOTAGE	660 S.F
TOTAL OVERALL LEASE SQUARE FOOTAGE	16,000 S.F.

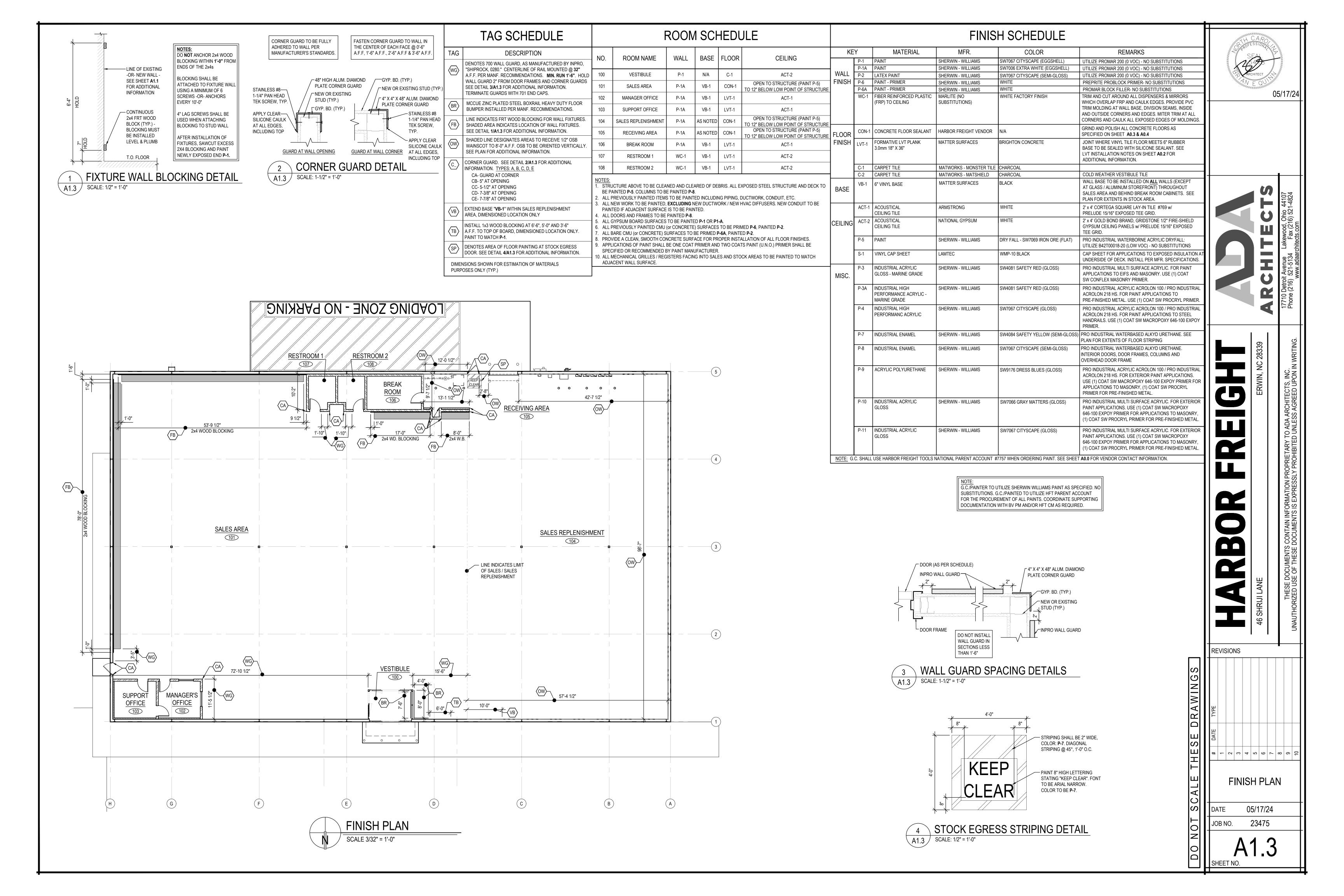
FIXTURE PLAN KEY

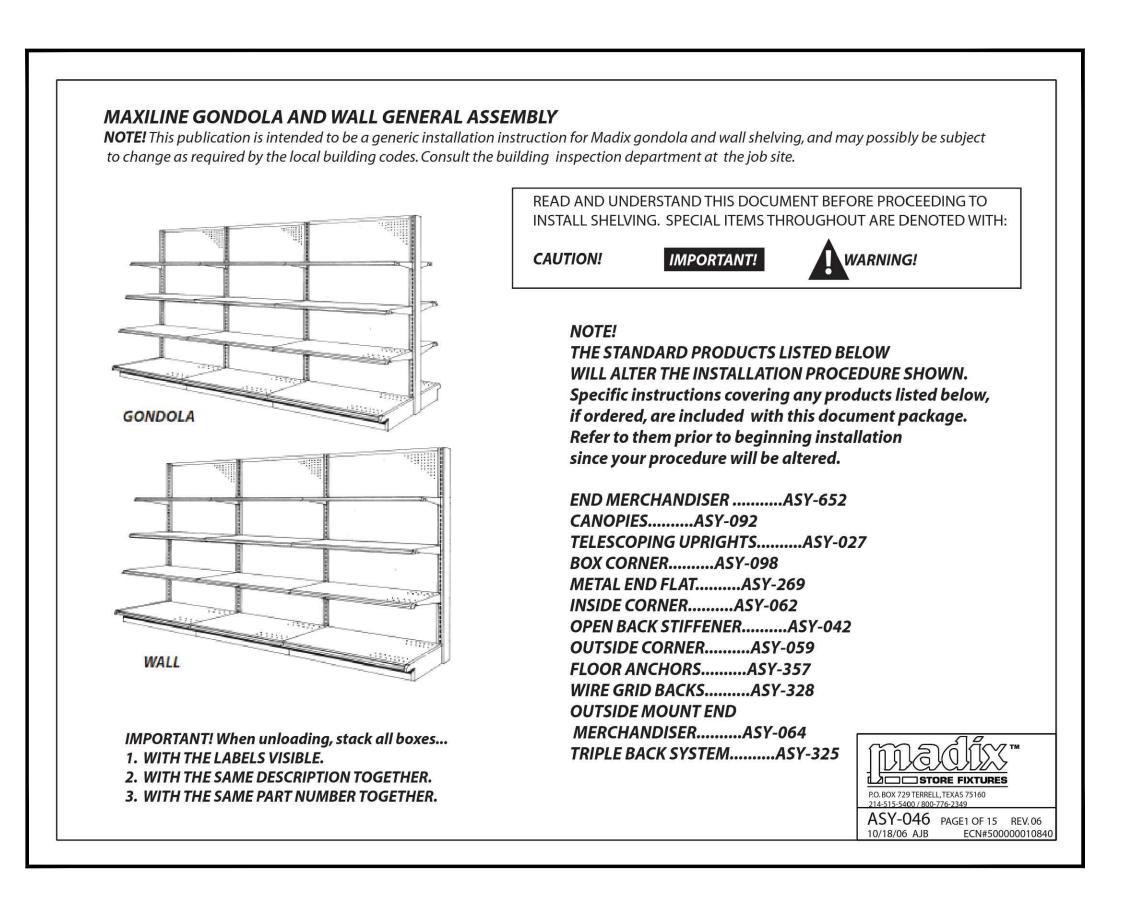
SYMBOL	DESCRIPTION	<u>HEIGHT</u>
AW	ADVERTISING 4 WAY	4'-0" A.F.F.
AF	ADVERTISING FLAT	0'-0" A.F.F.
G	GONDOLA	7'-0" A.F.F. (Consider all unmarked
		fixtures to be Gondola's)
D	DOUBLE TABLE	1'-9" A.F.F 3'-6" A.F.F.
S	SINGLE TABLE	3'-6" A.F.F.
F	FLAT DISPLAY MAT	0'-0" A.F.F.
XP	EXTENDED PEG PANEL	7'-0" A.F.F.
PT	POWER TOOL DISPLAY	7'-0" A.F.F.
ΑT	AIR TOOL DISPLAY	7'-0" A.F.F.
MPR	MOTOR/ PUMP RACK	7'-0" A.F.F.
В	BOX STOCK ON DISPLAY FLAT	
UP	UPRIGHT PROTECTOR	

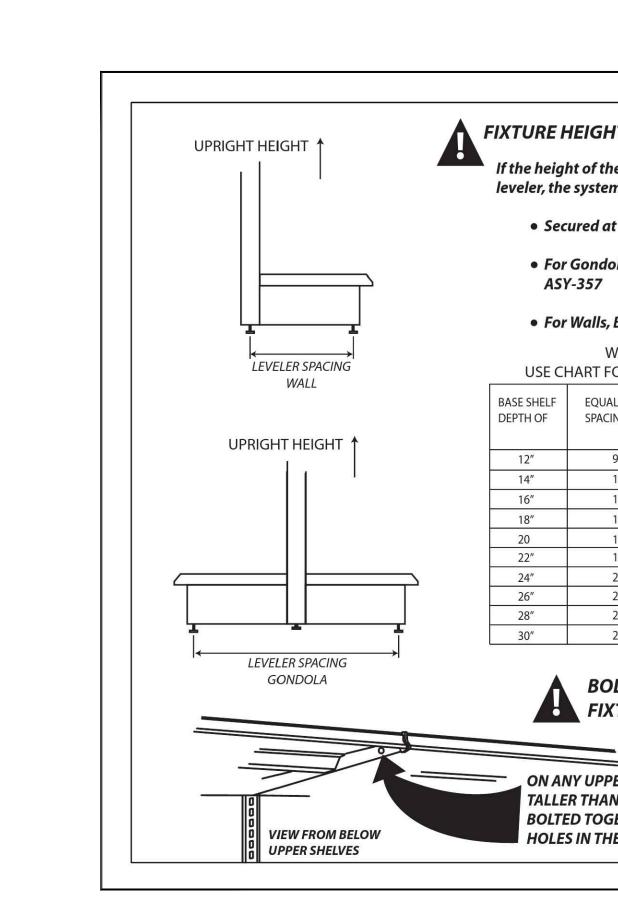
REVISIONS

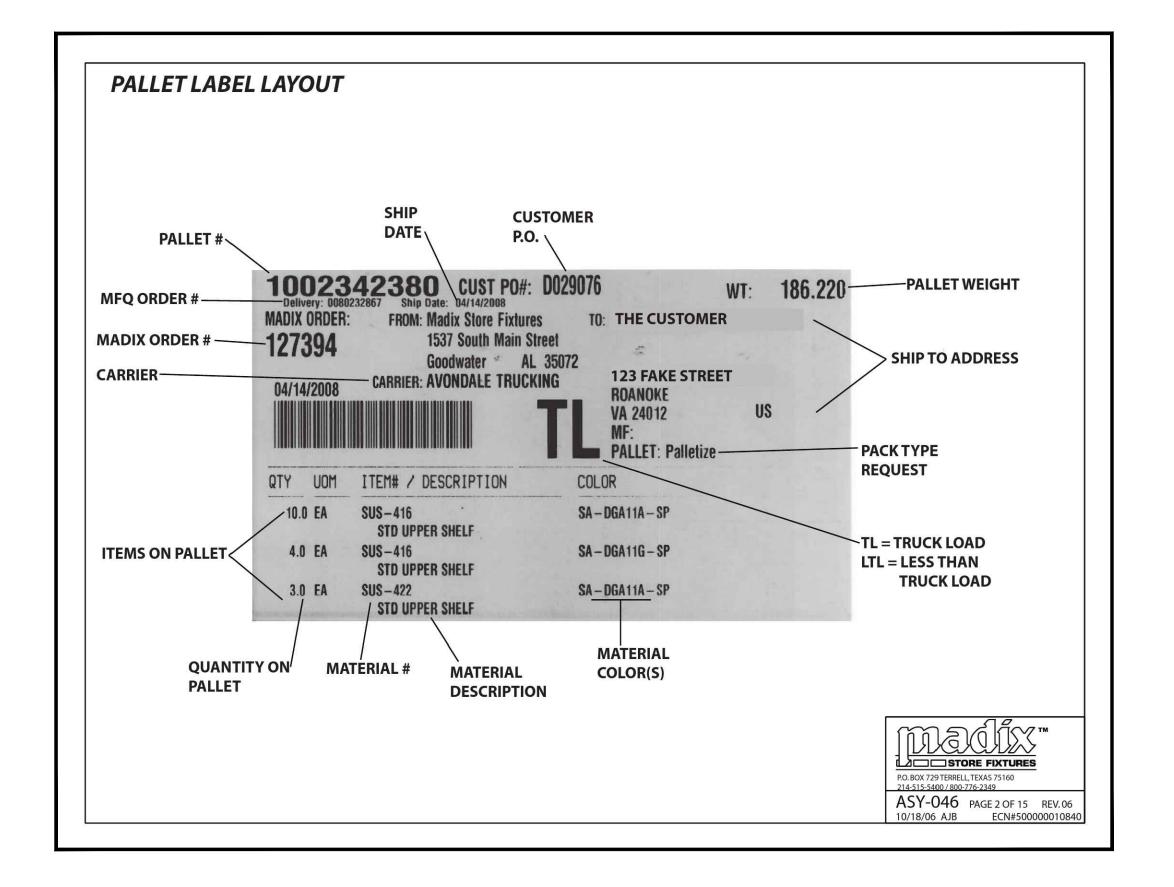
FIXTURE PLAN

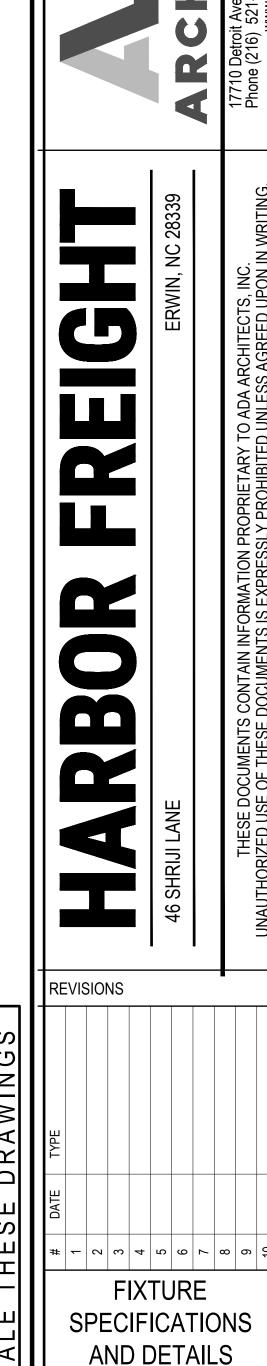
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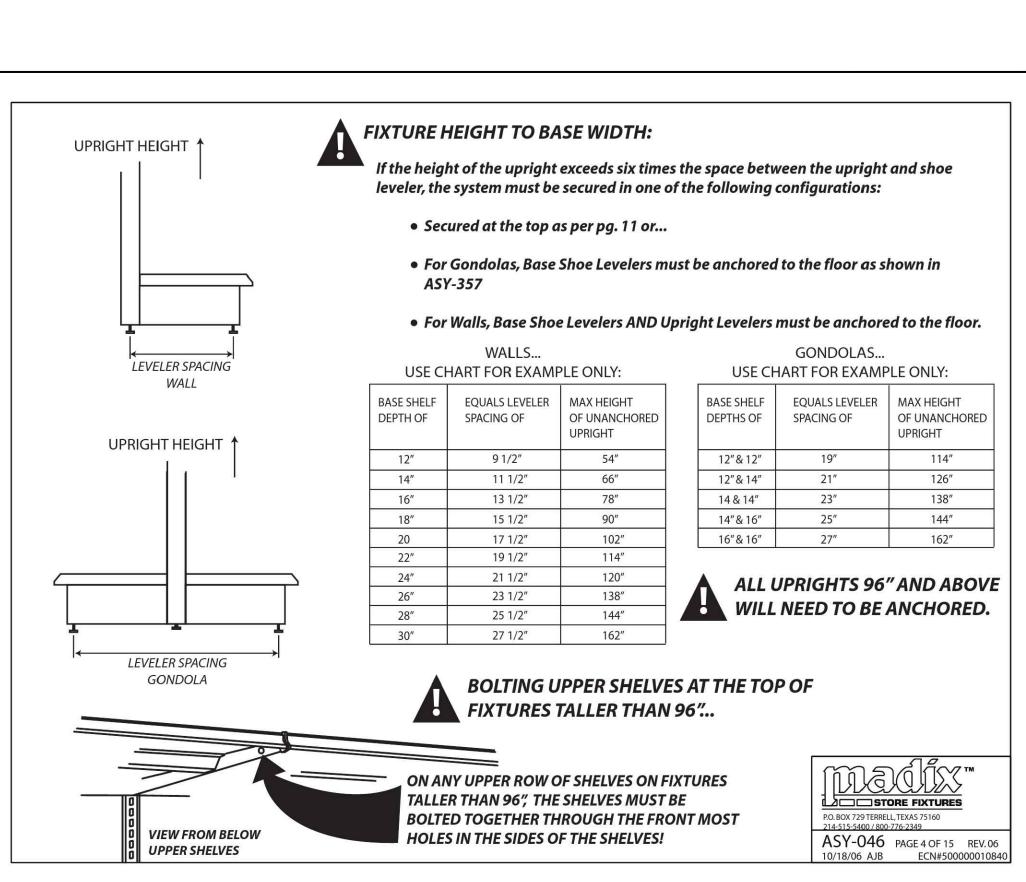


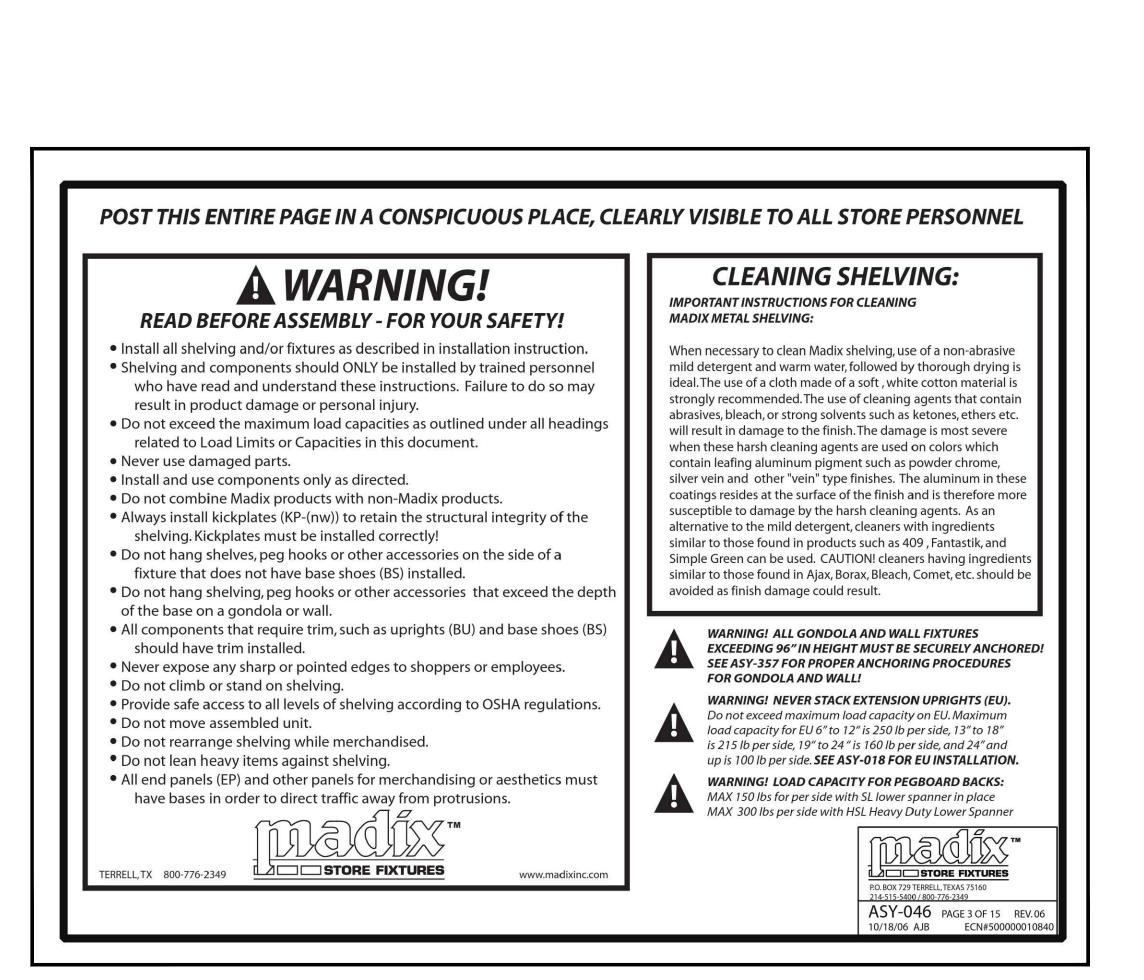


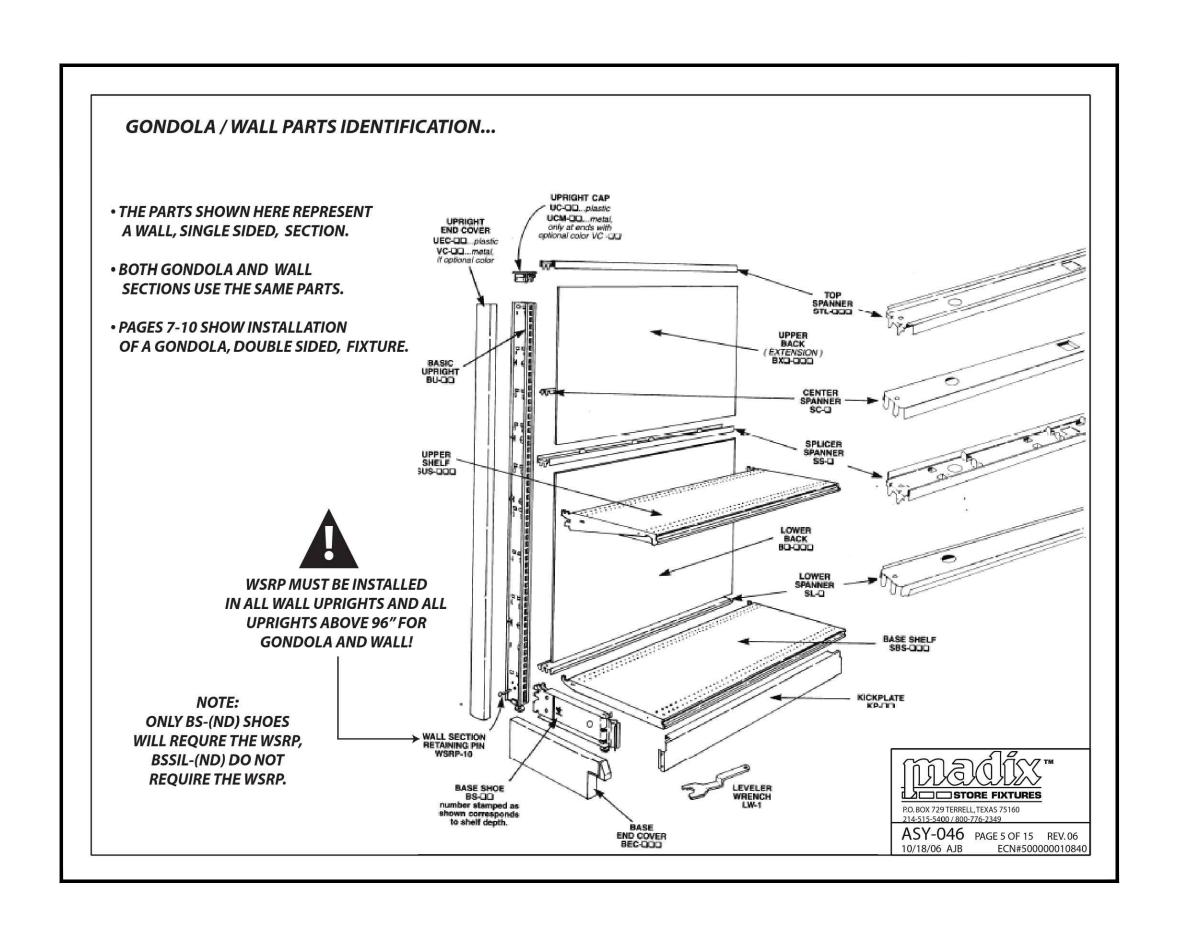
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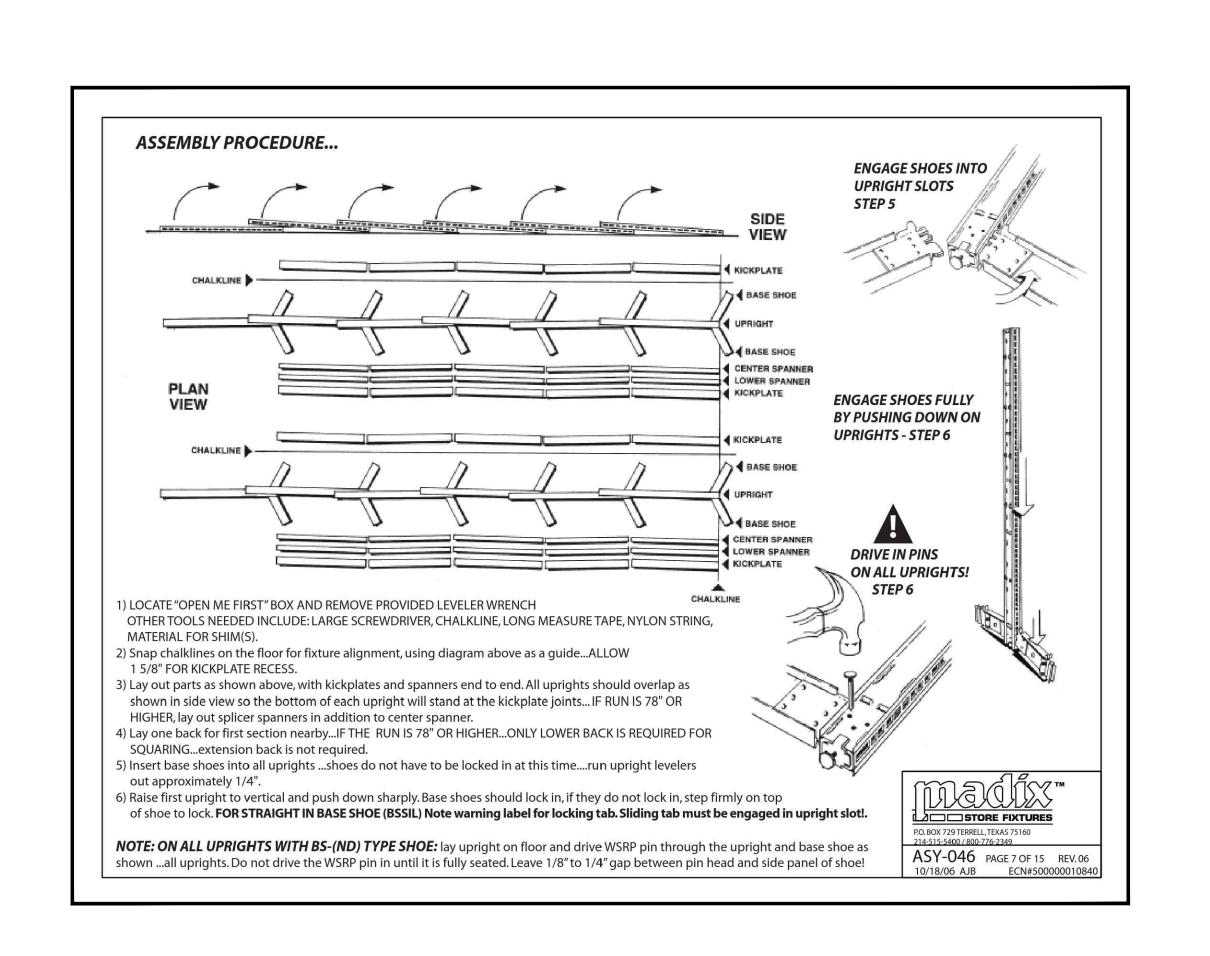
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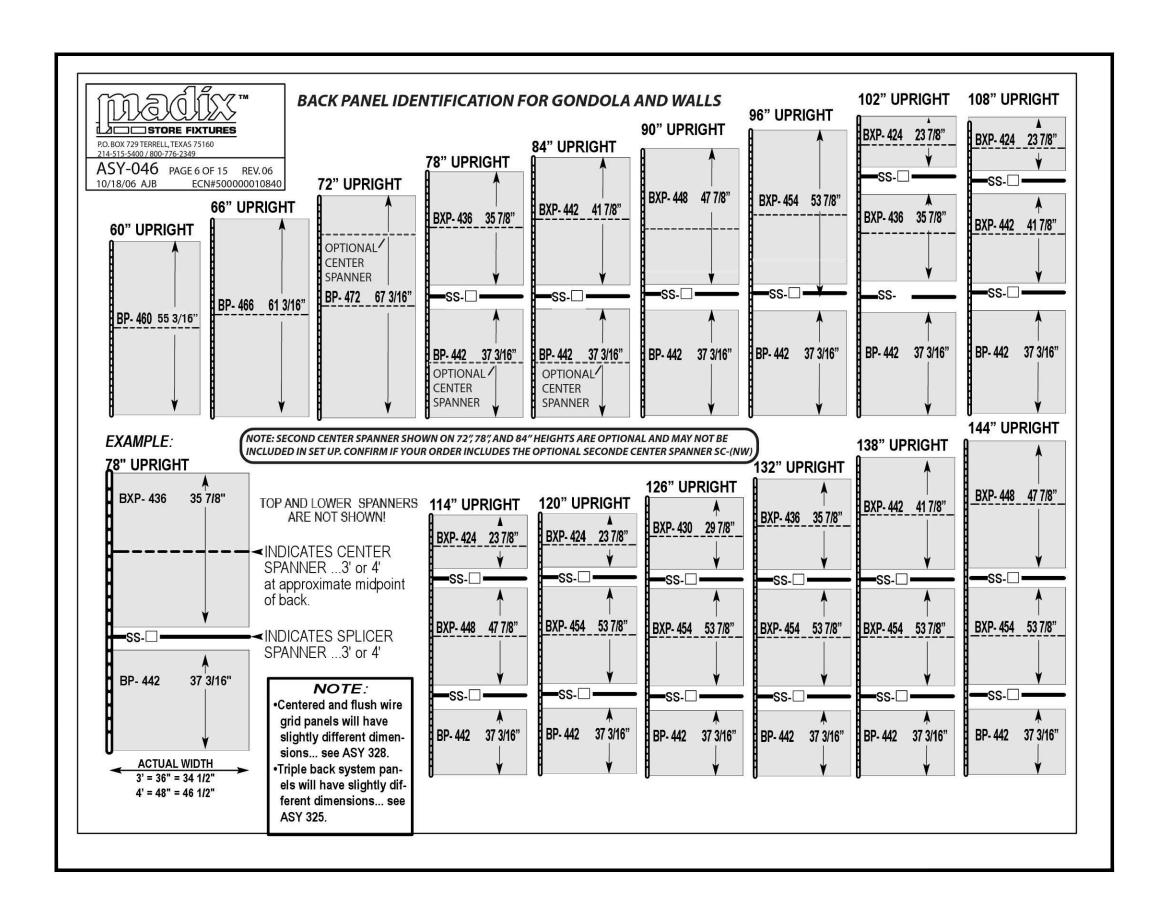
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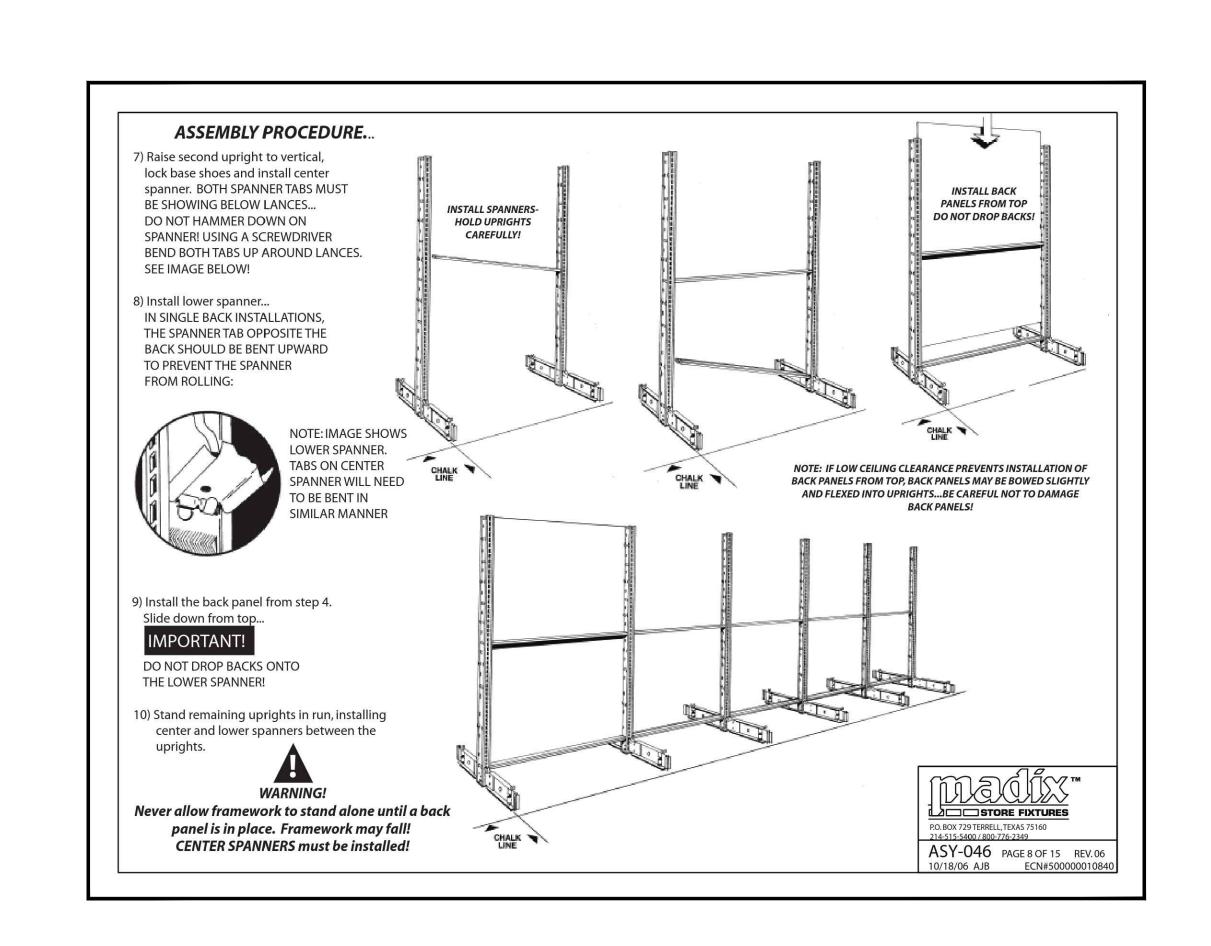


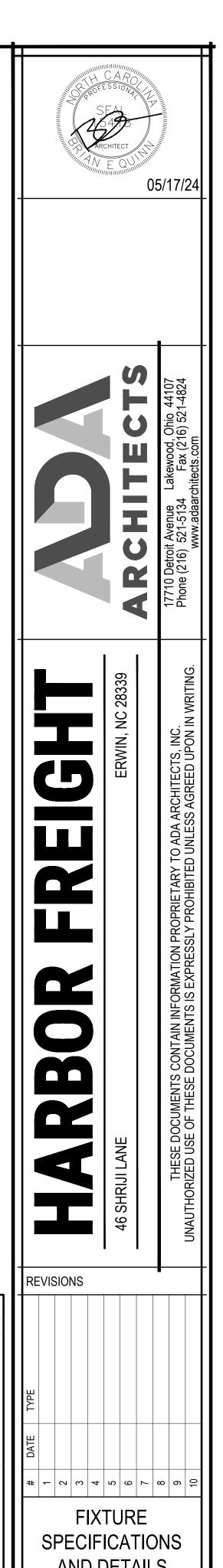




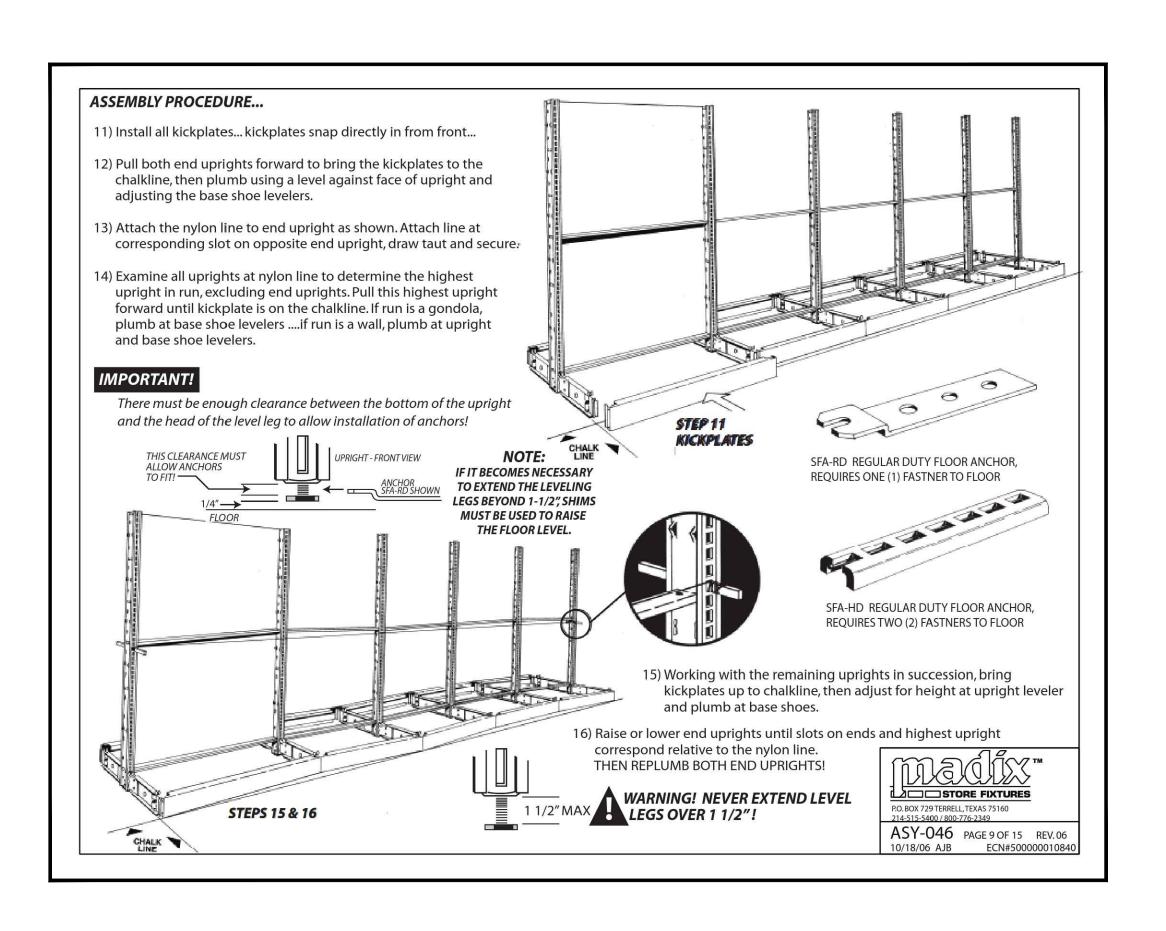


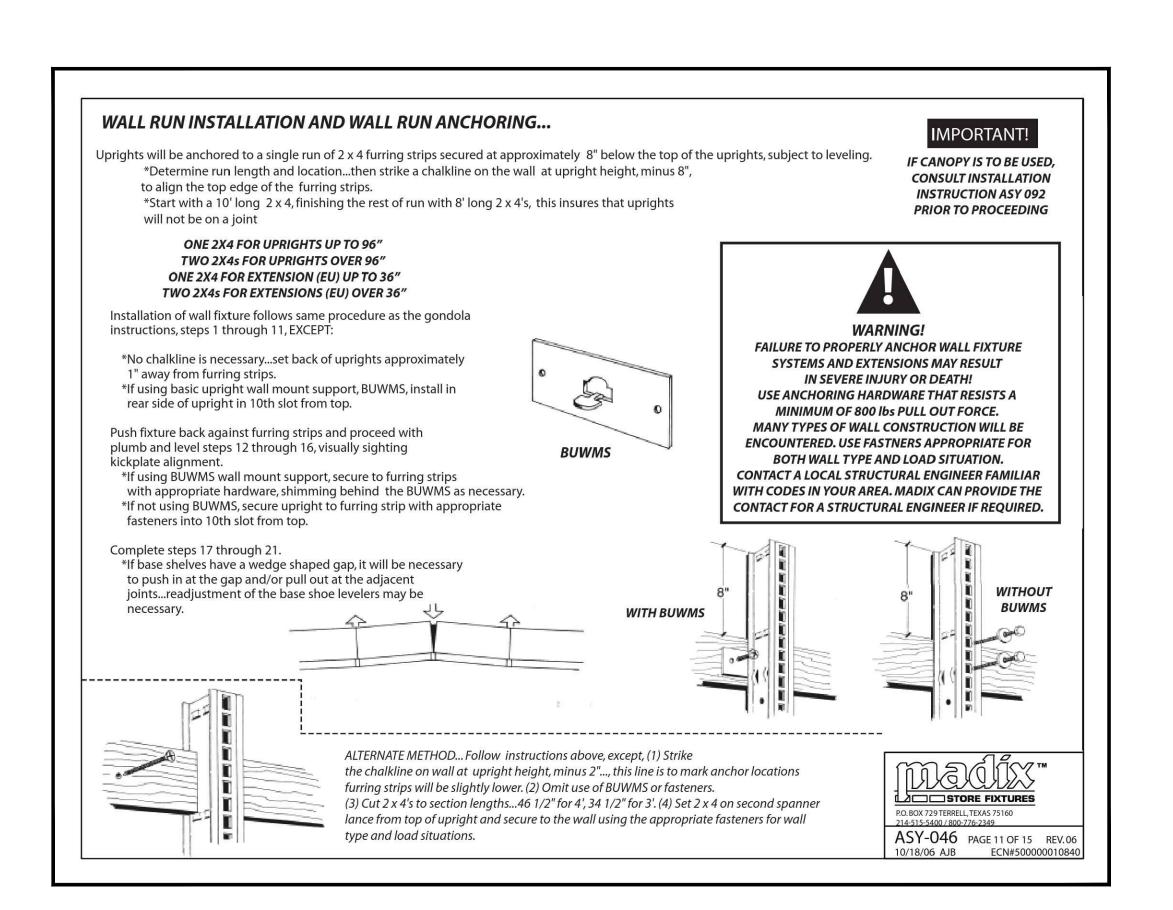


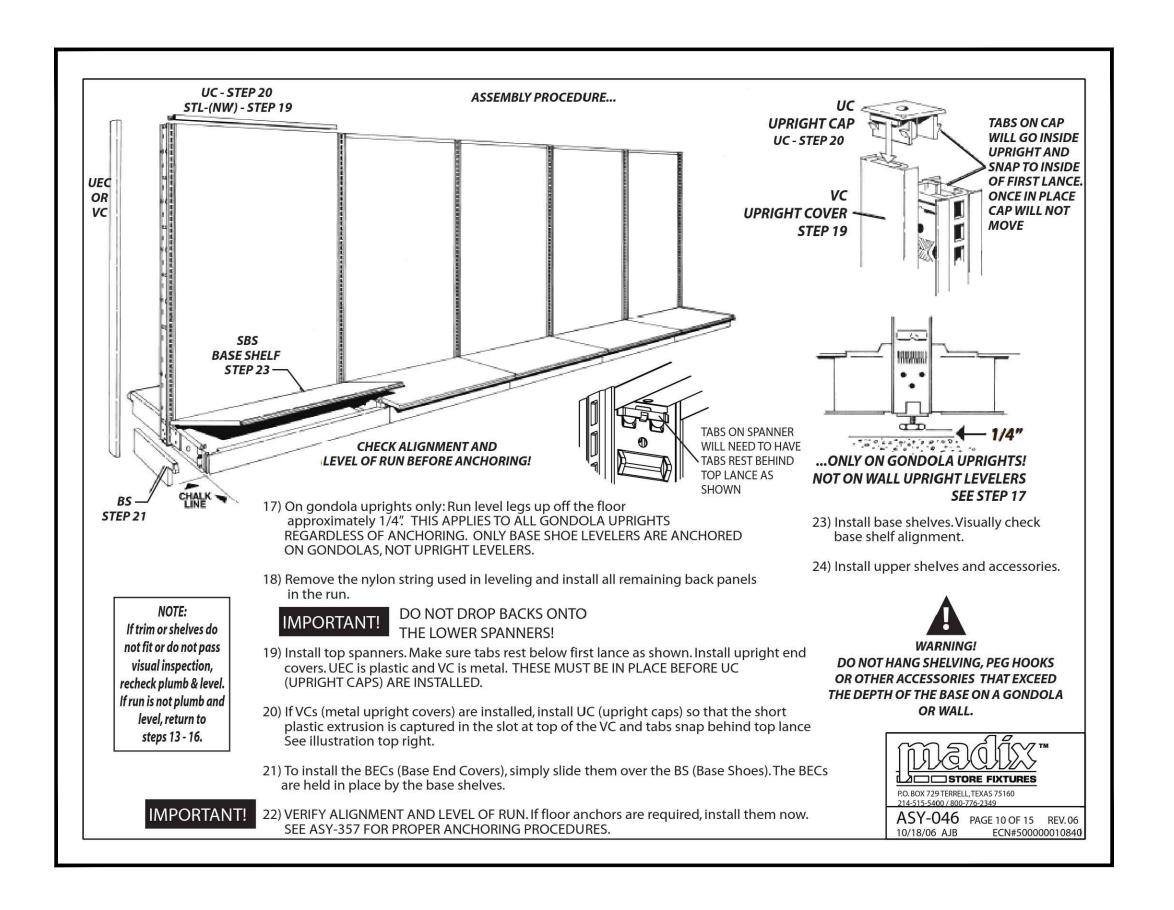


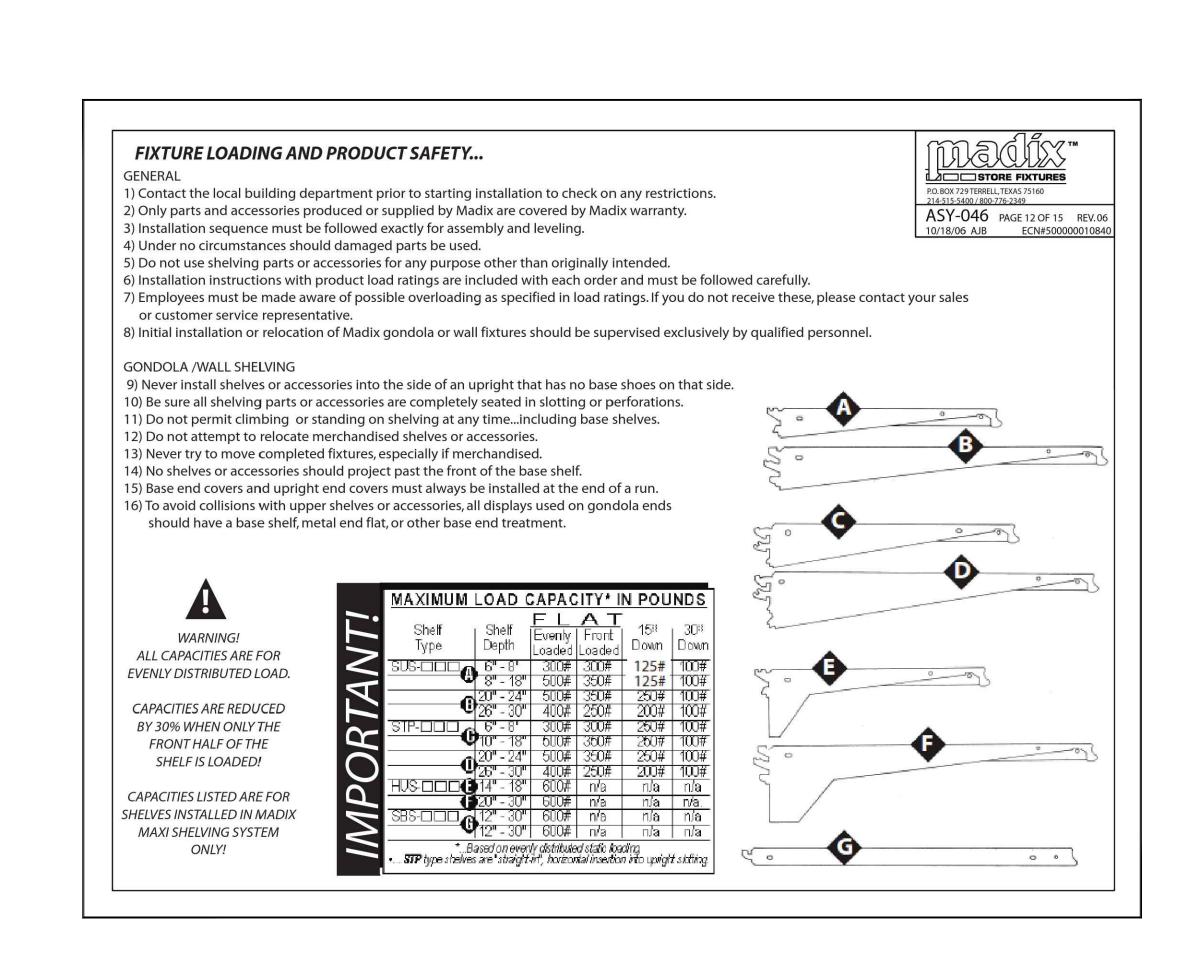


AND DETAILS 05/17/24 23475 Job no.







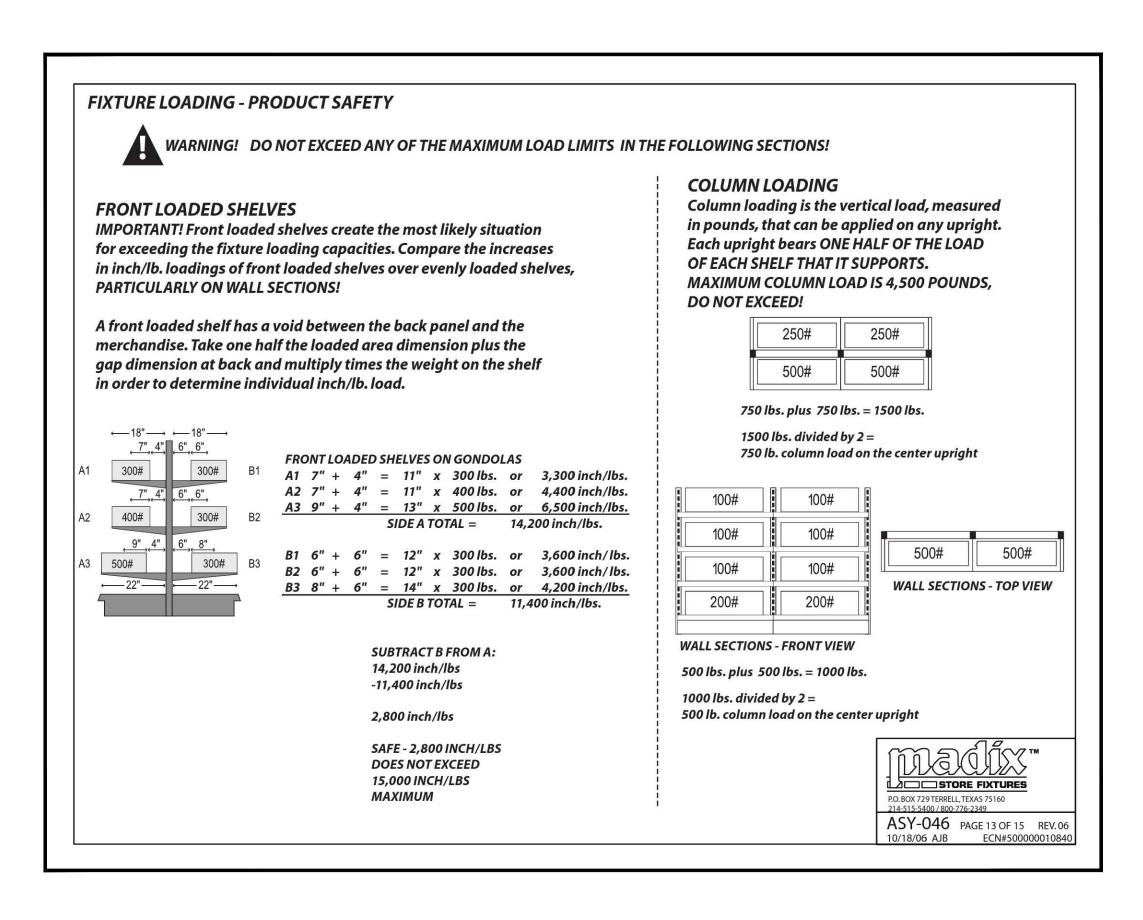


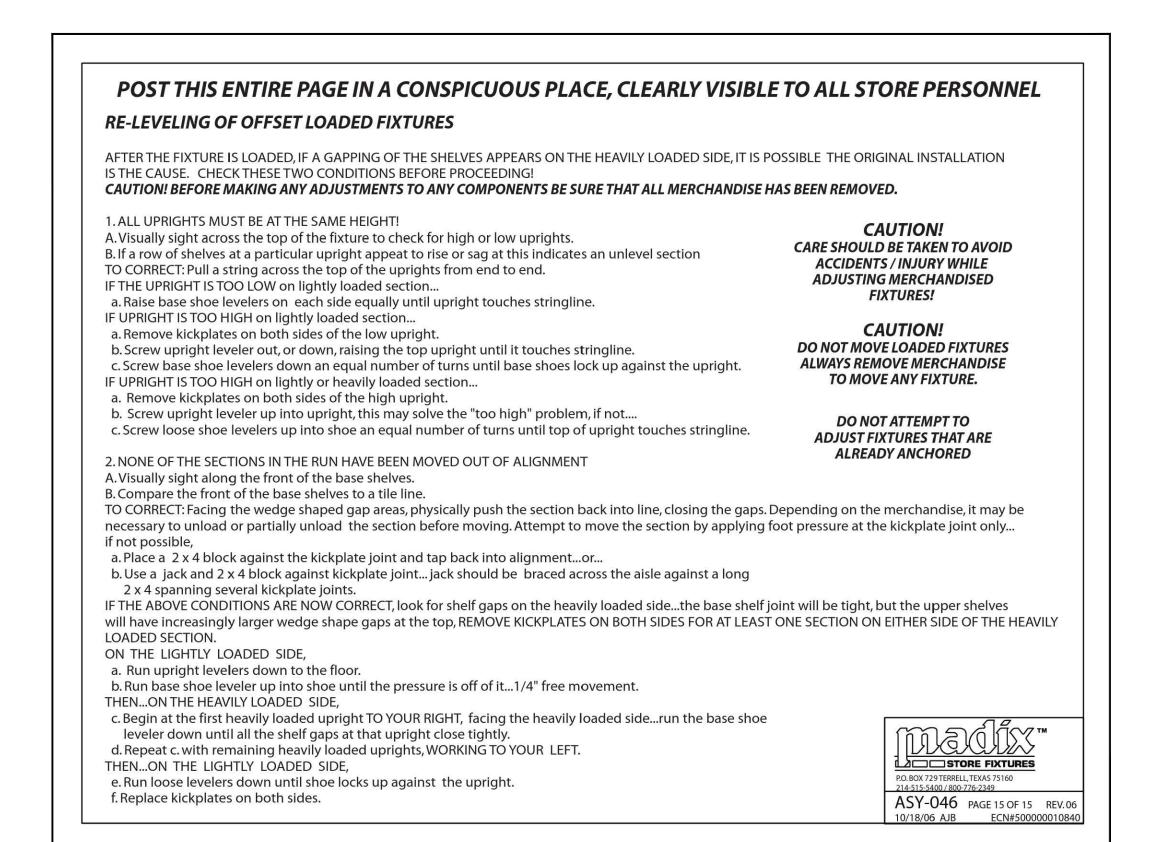


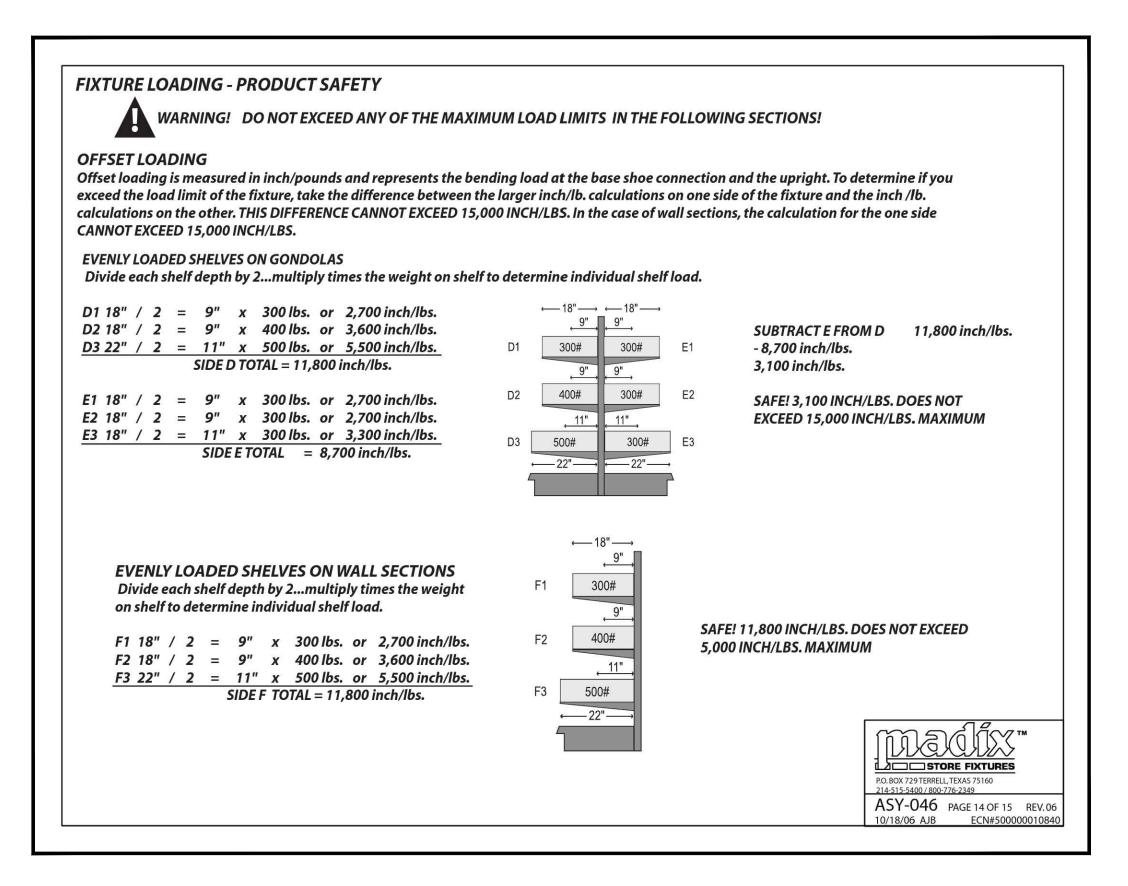
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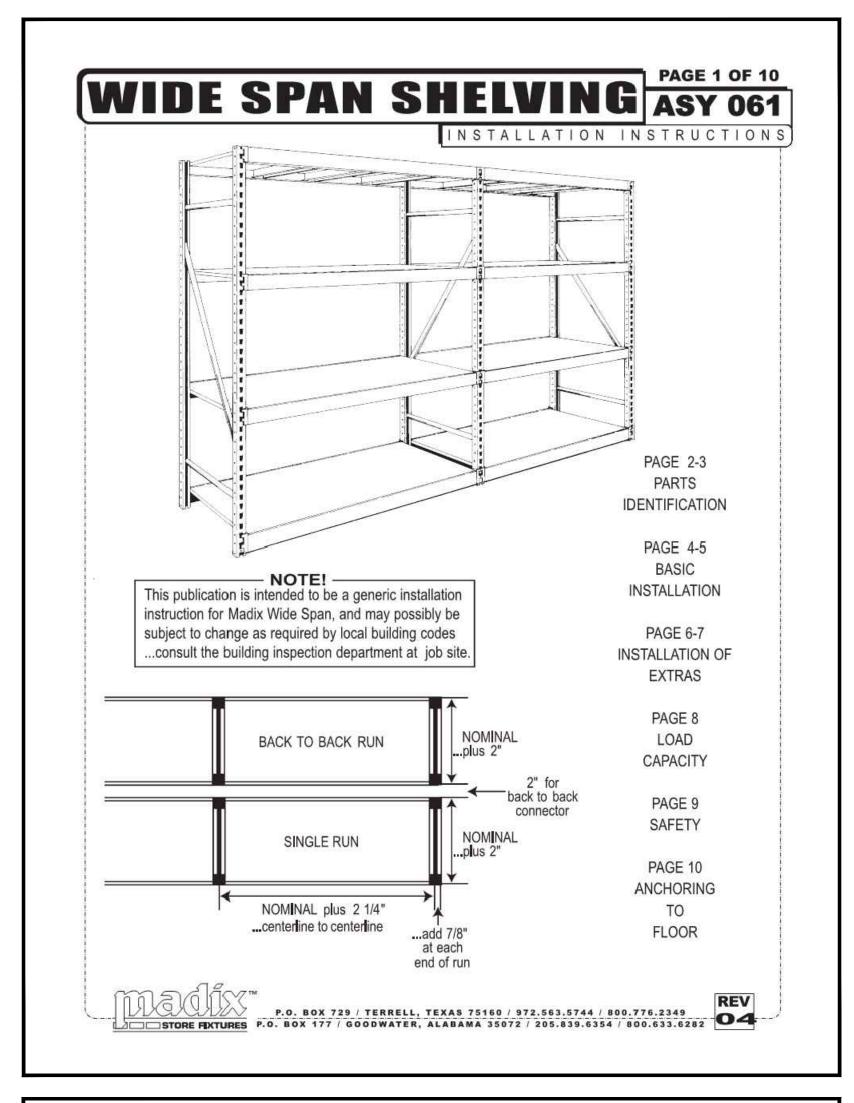


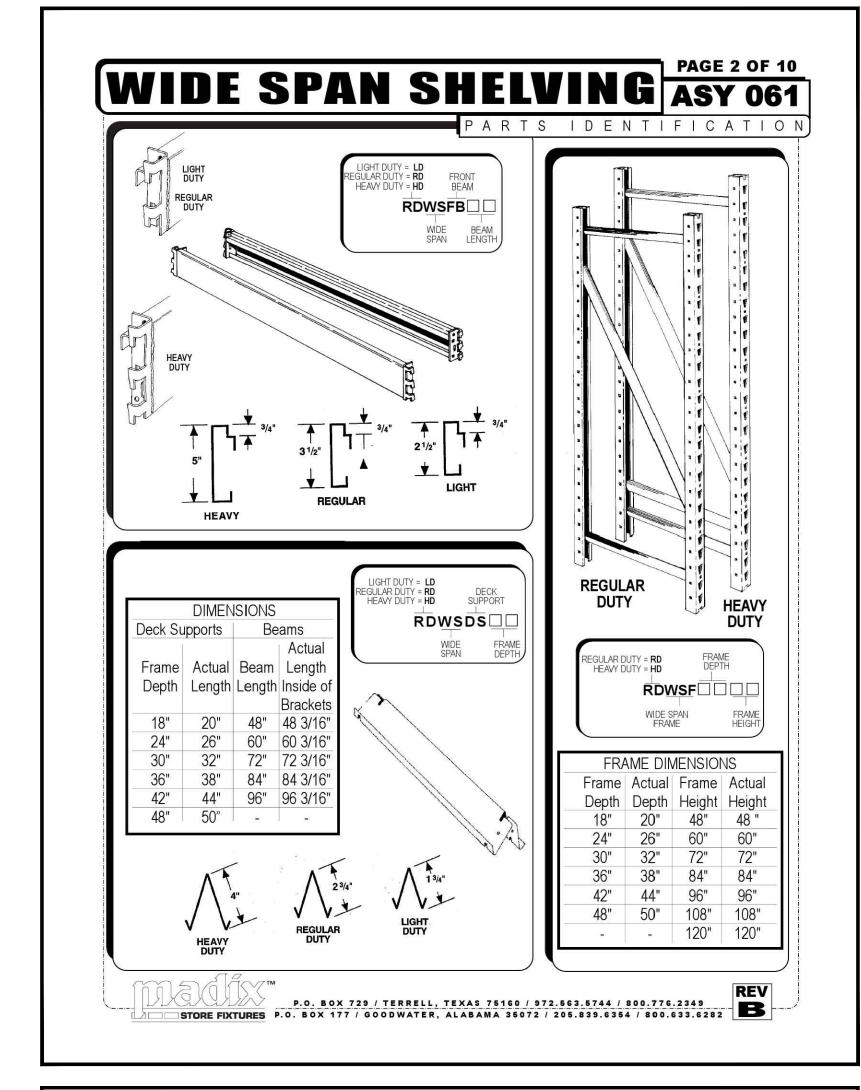


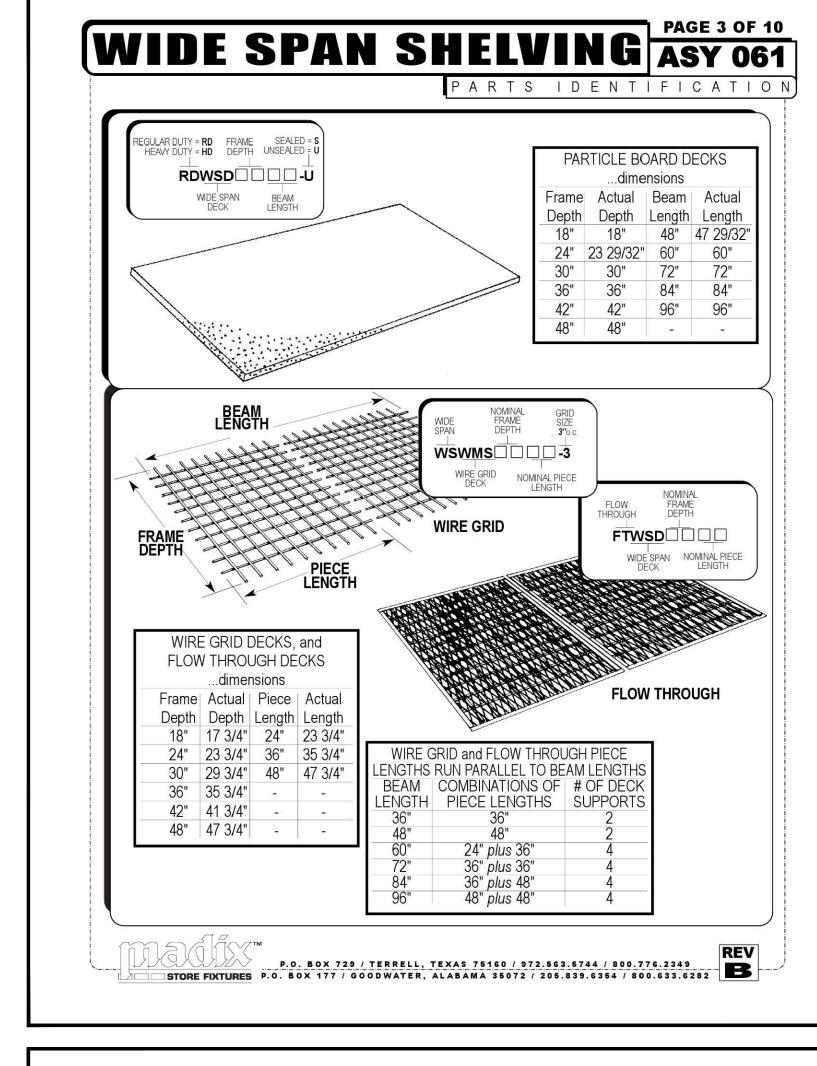
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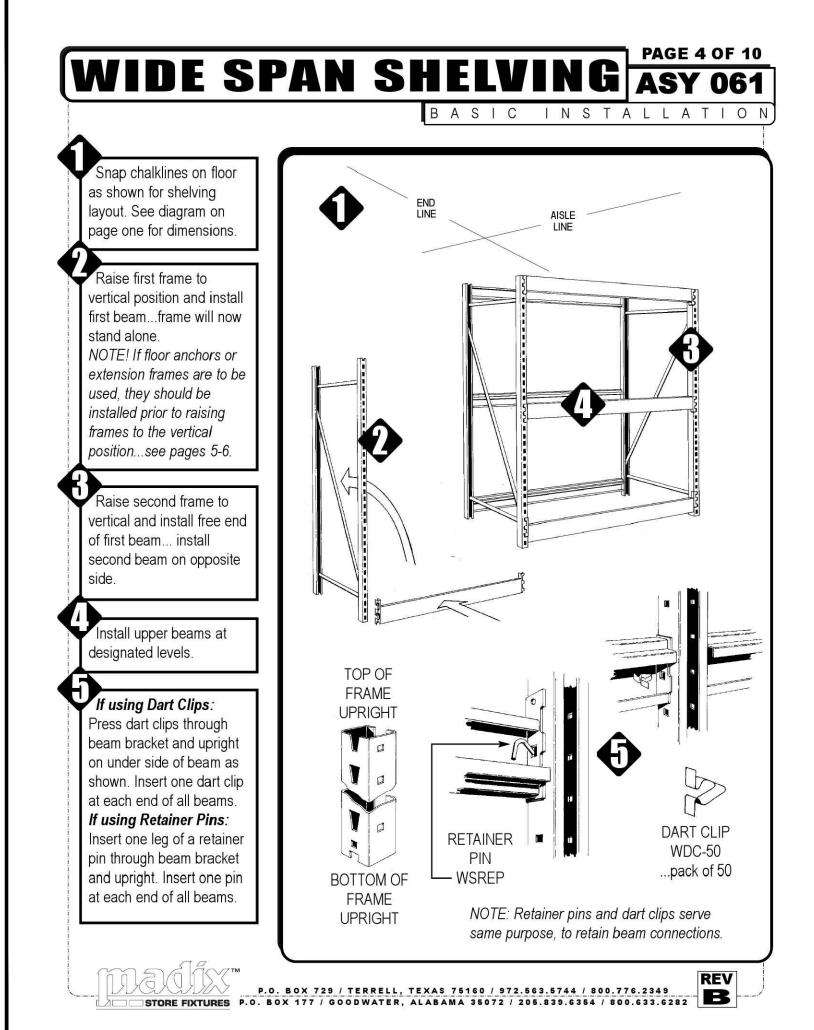
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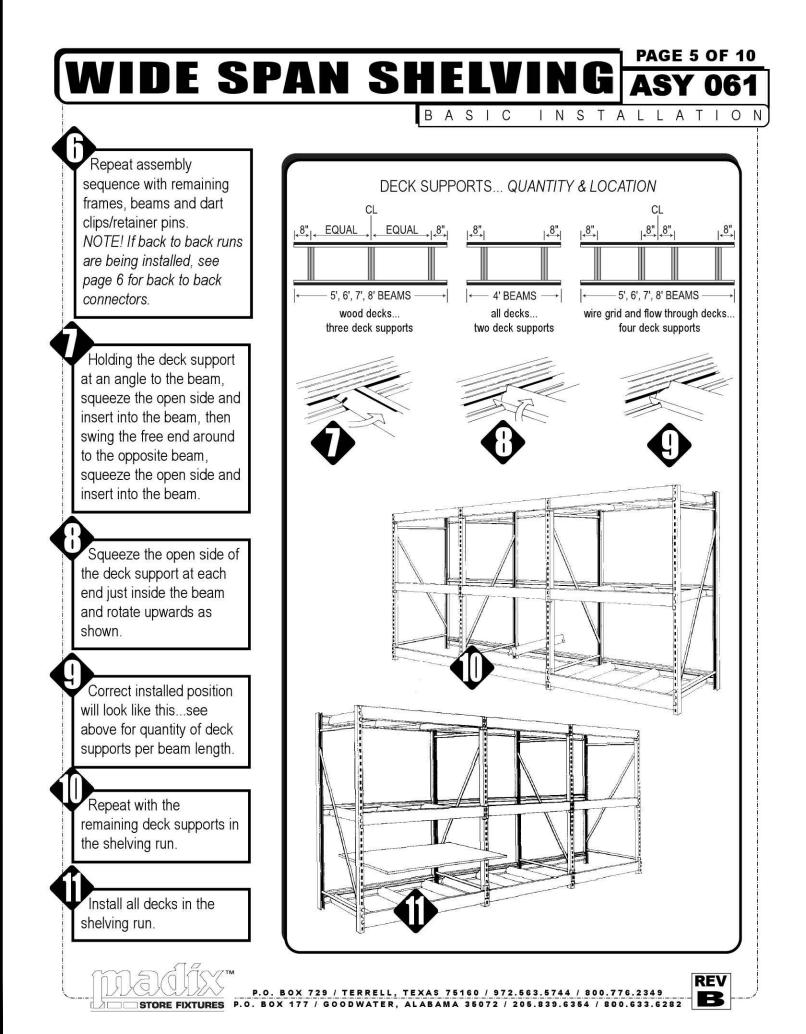
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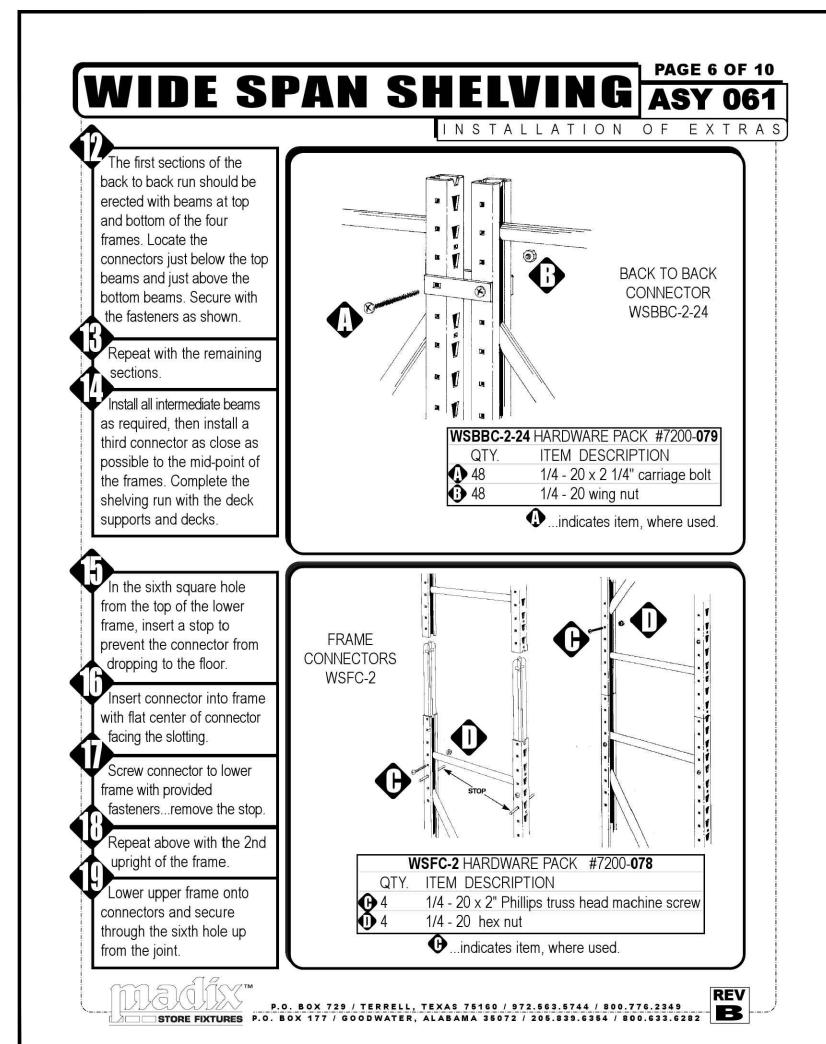




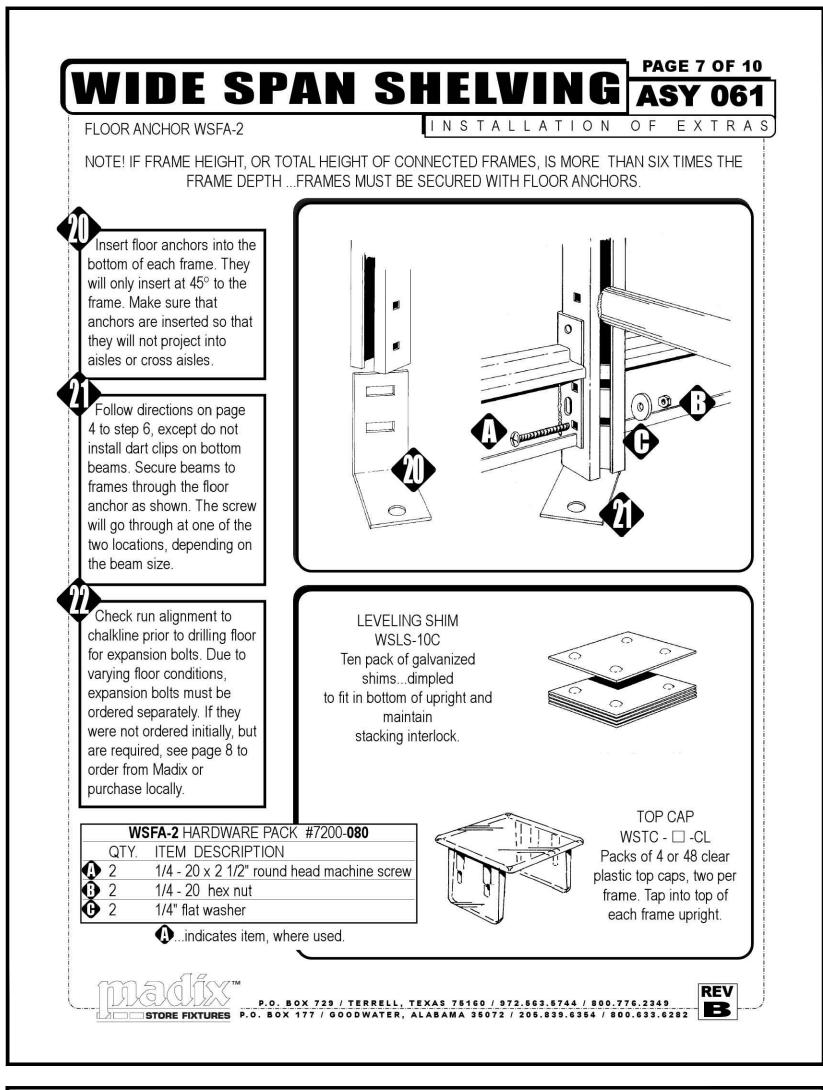


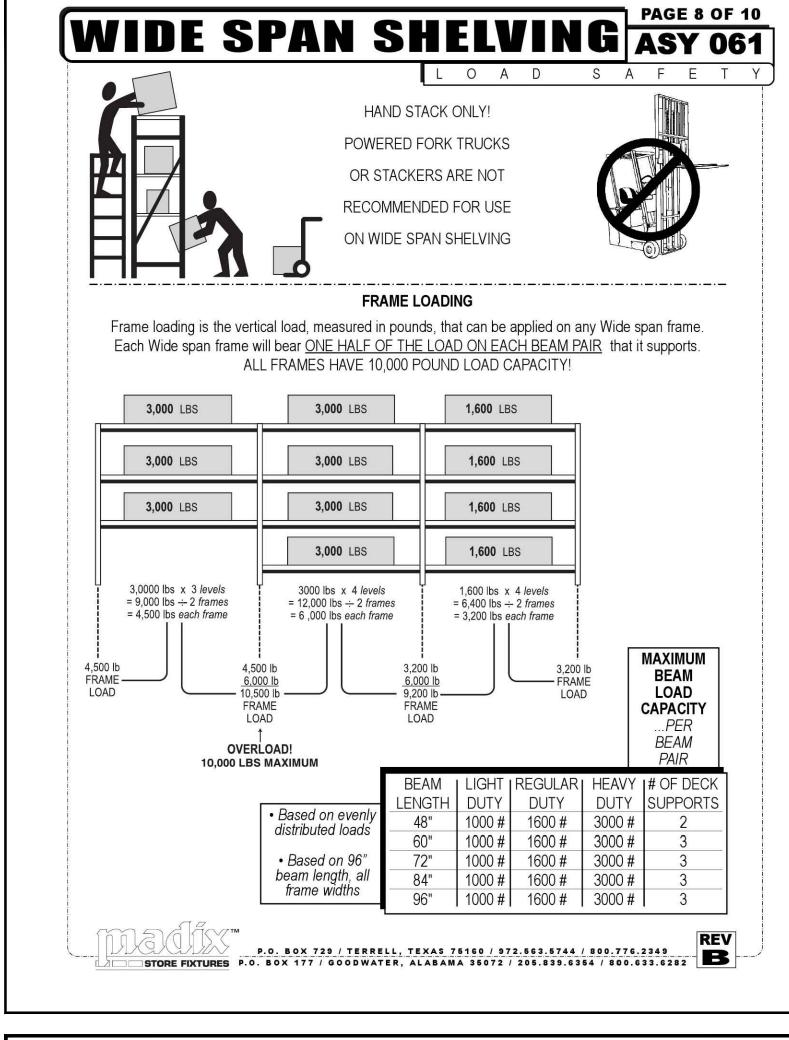


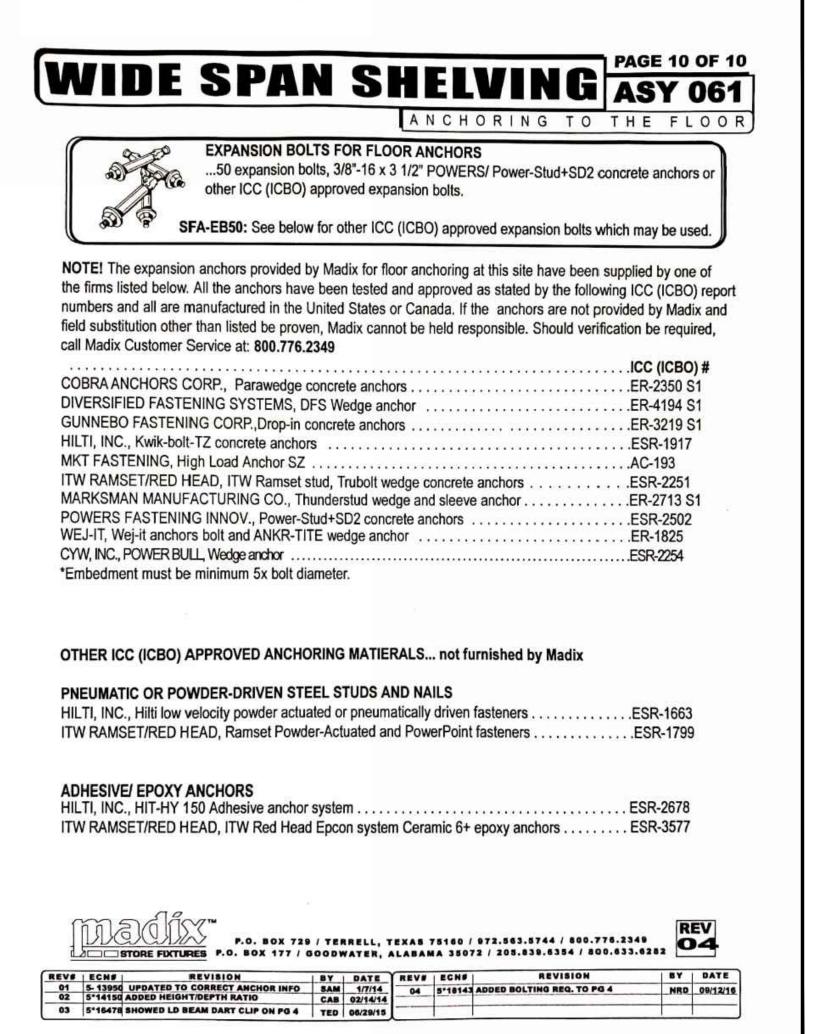




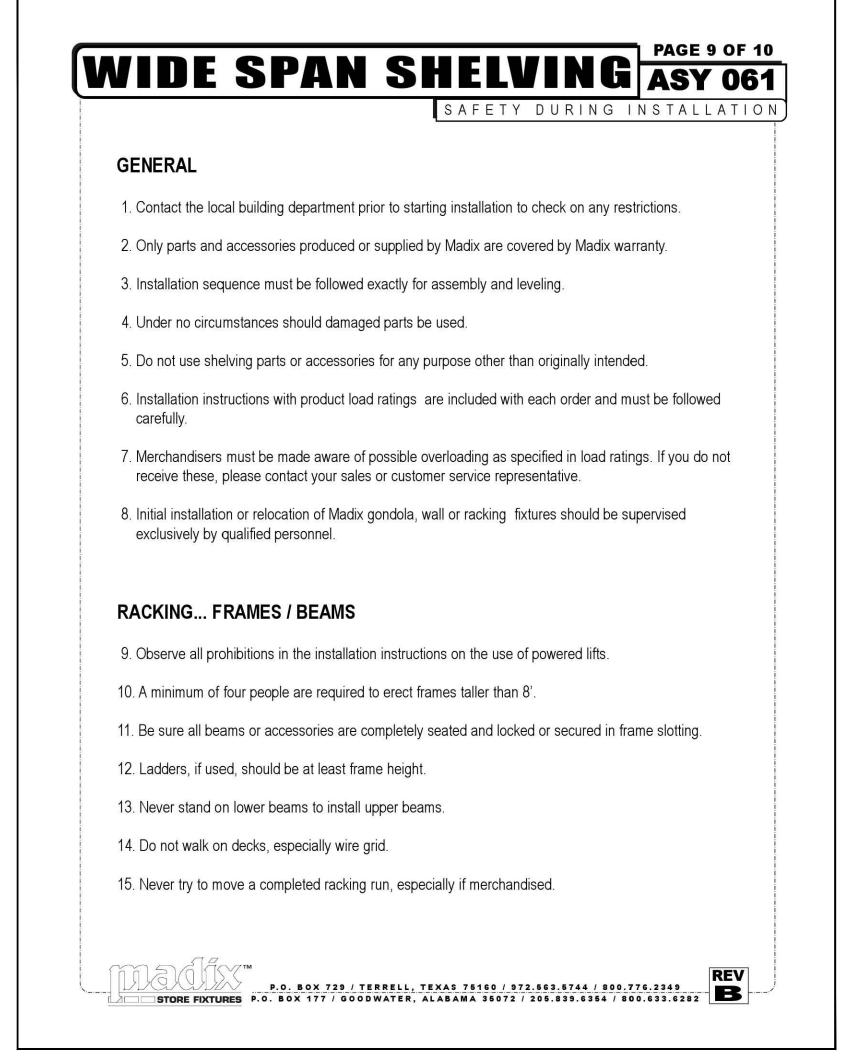


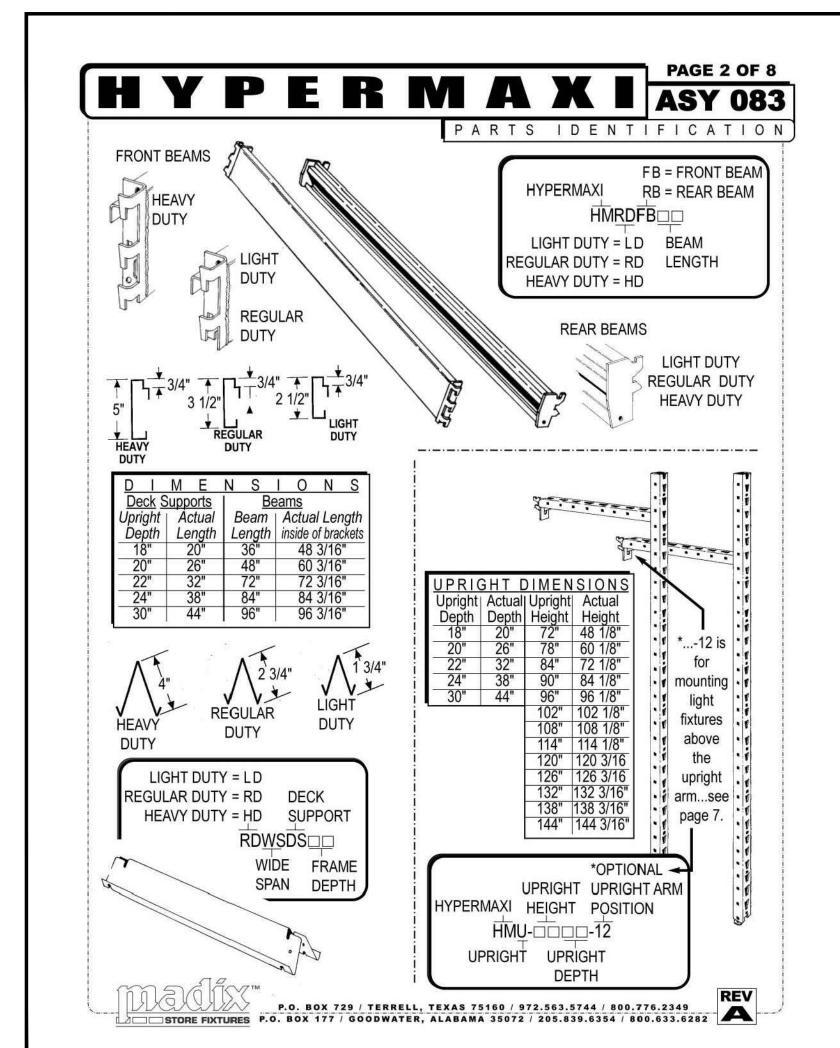










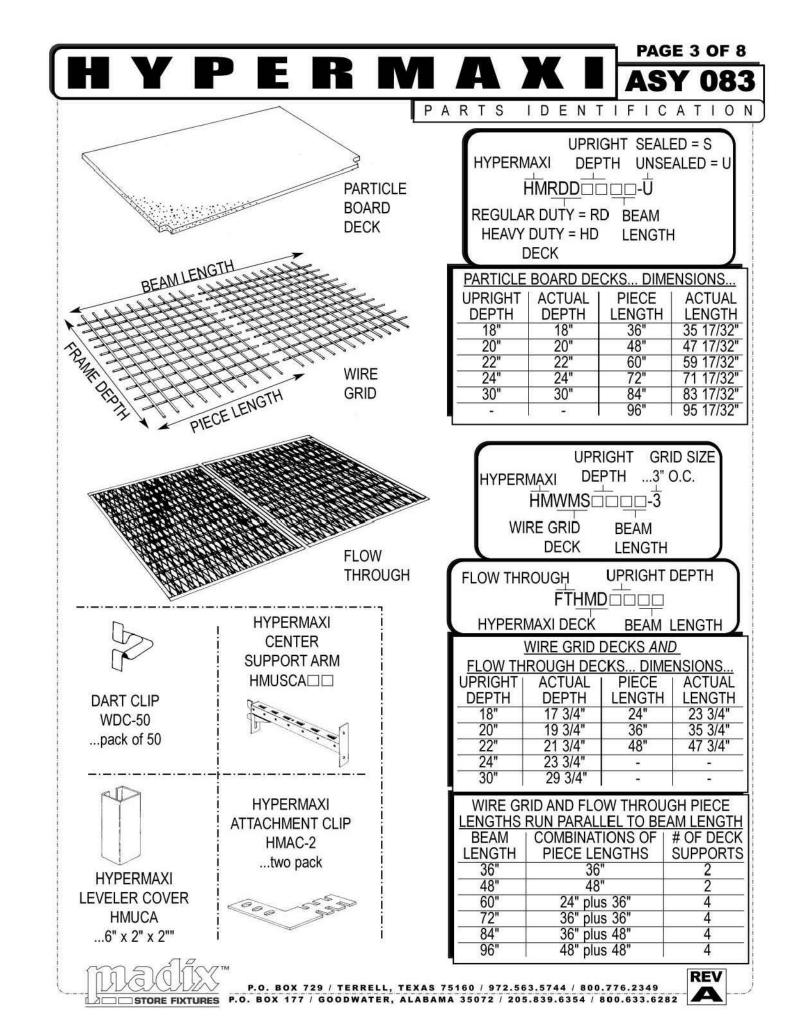


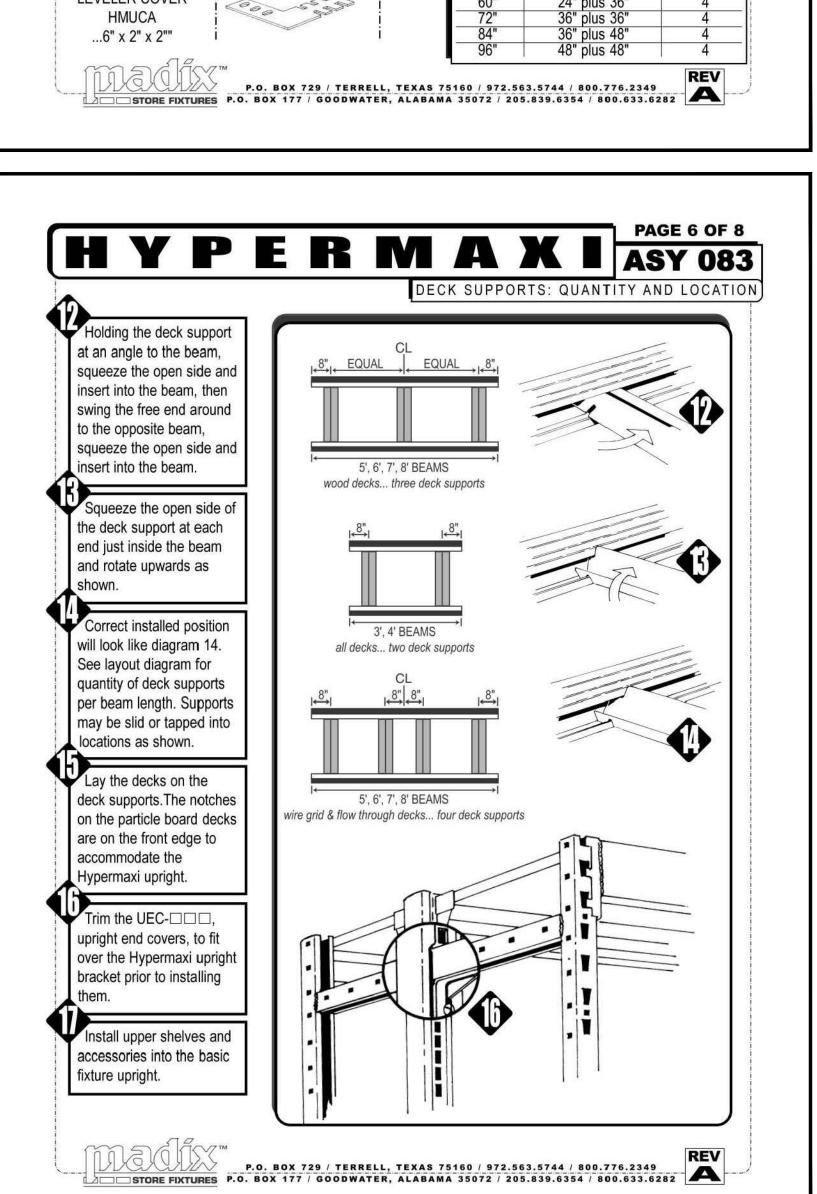


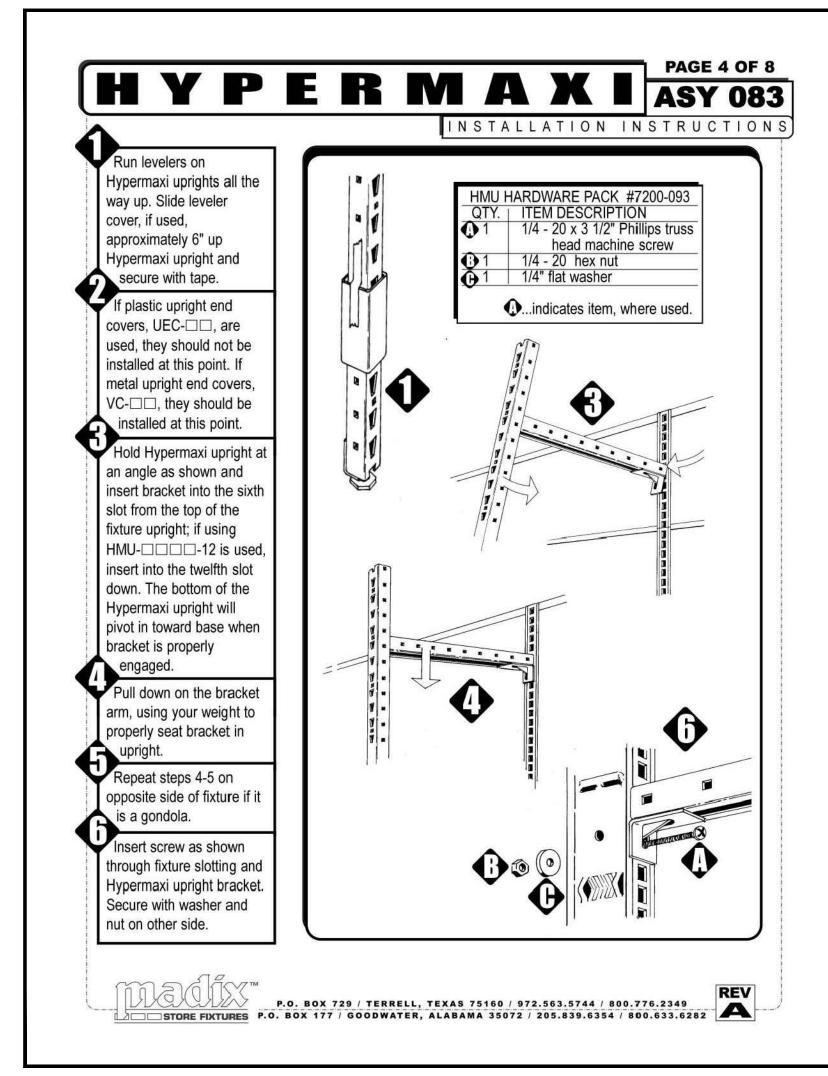
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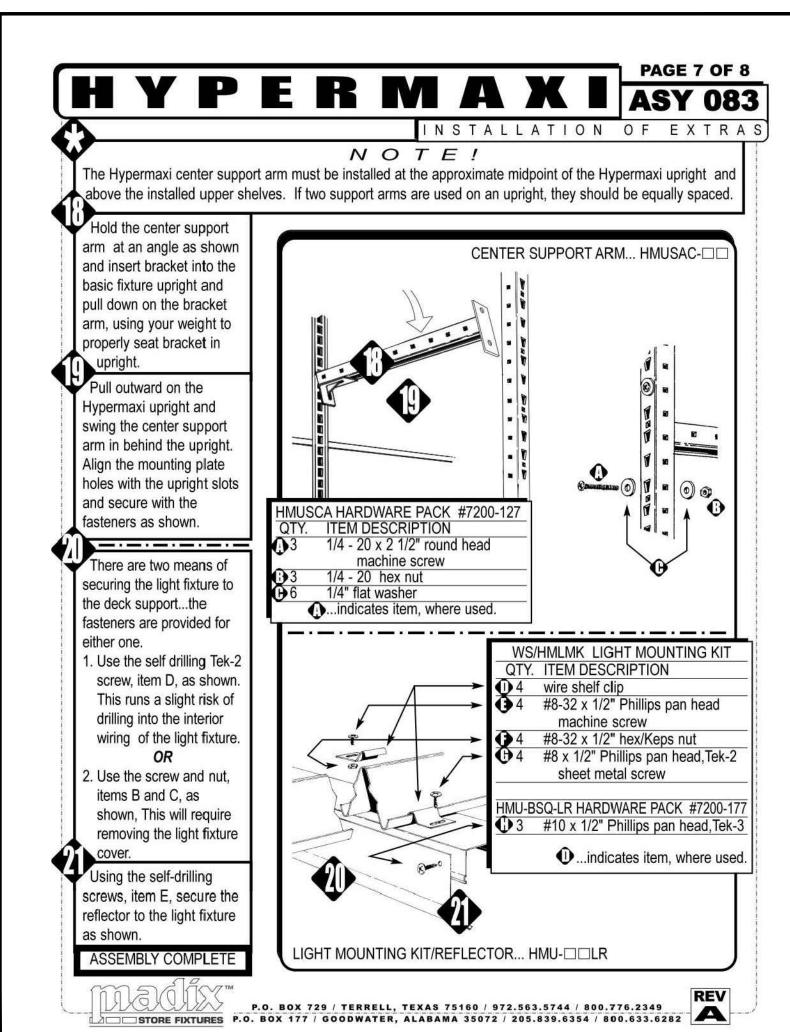
FIXTURE SPECIFICATIONS AND DETAILS

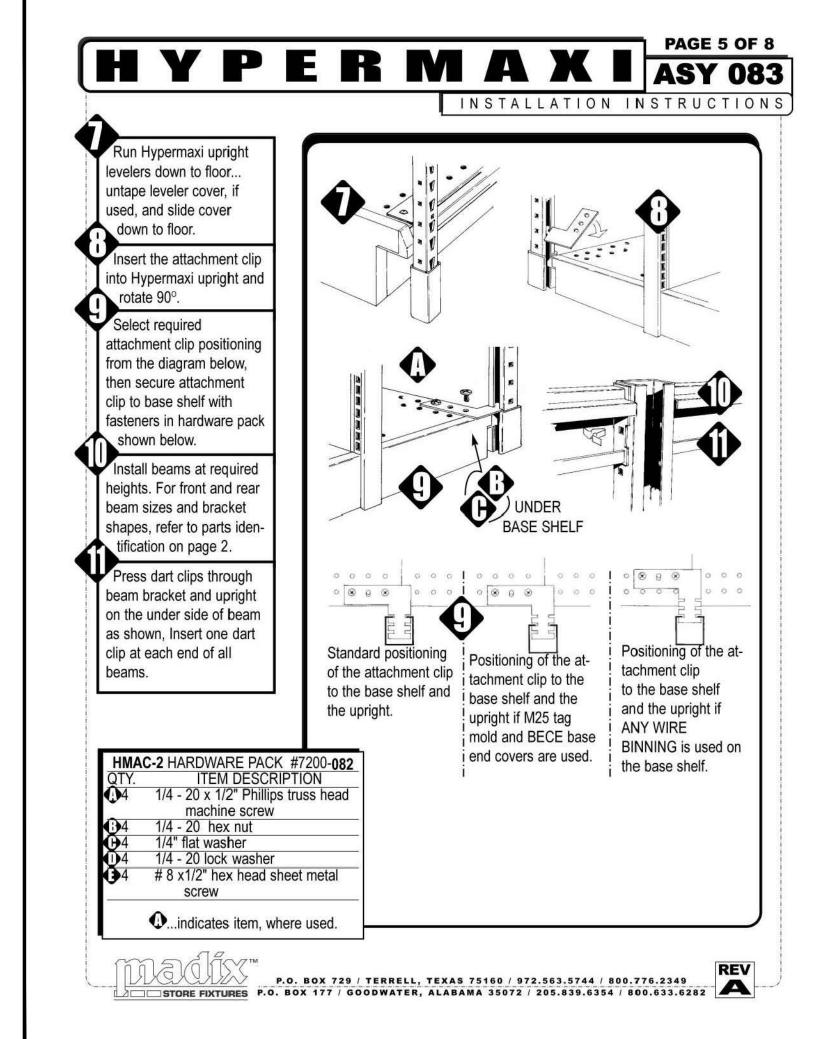
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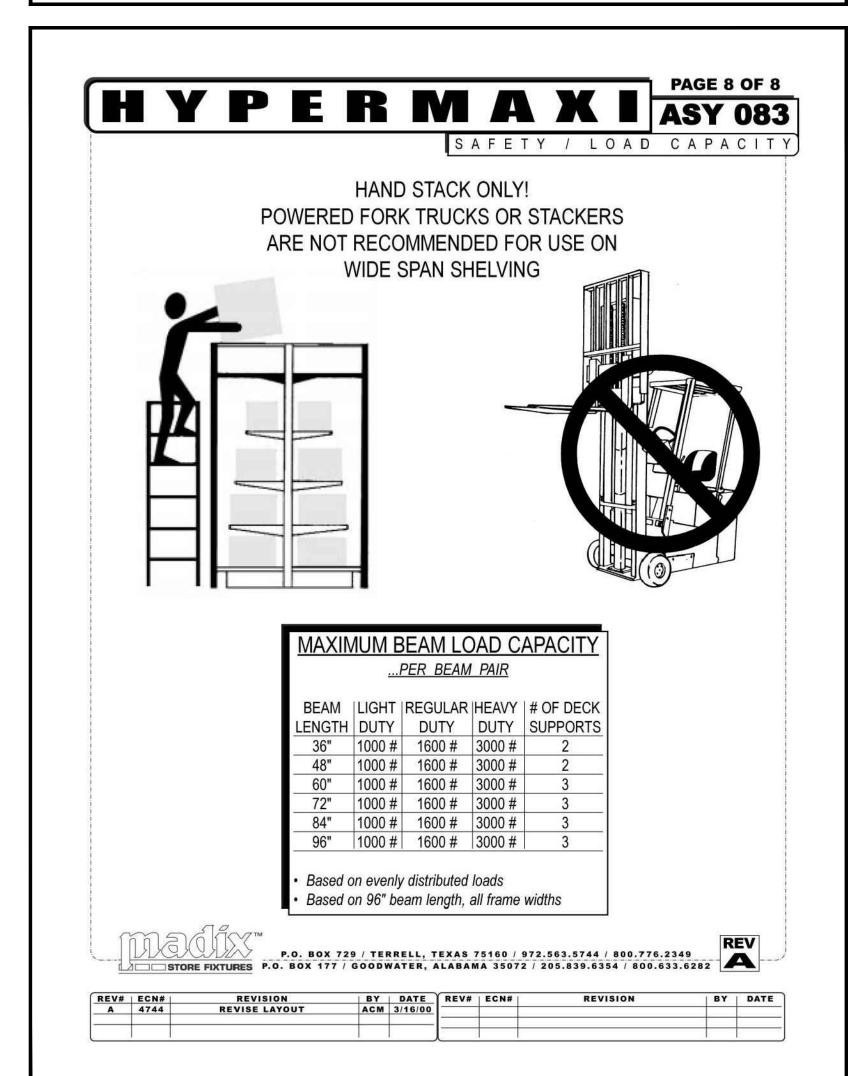


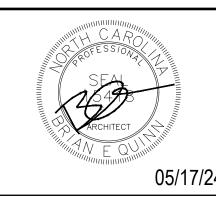








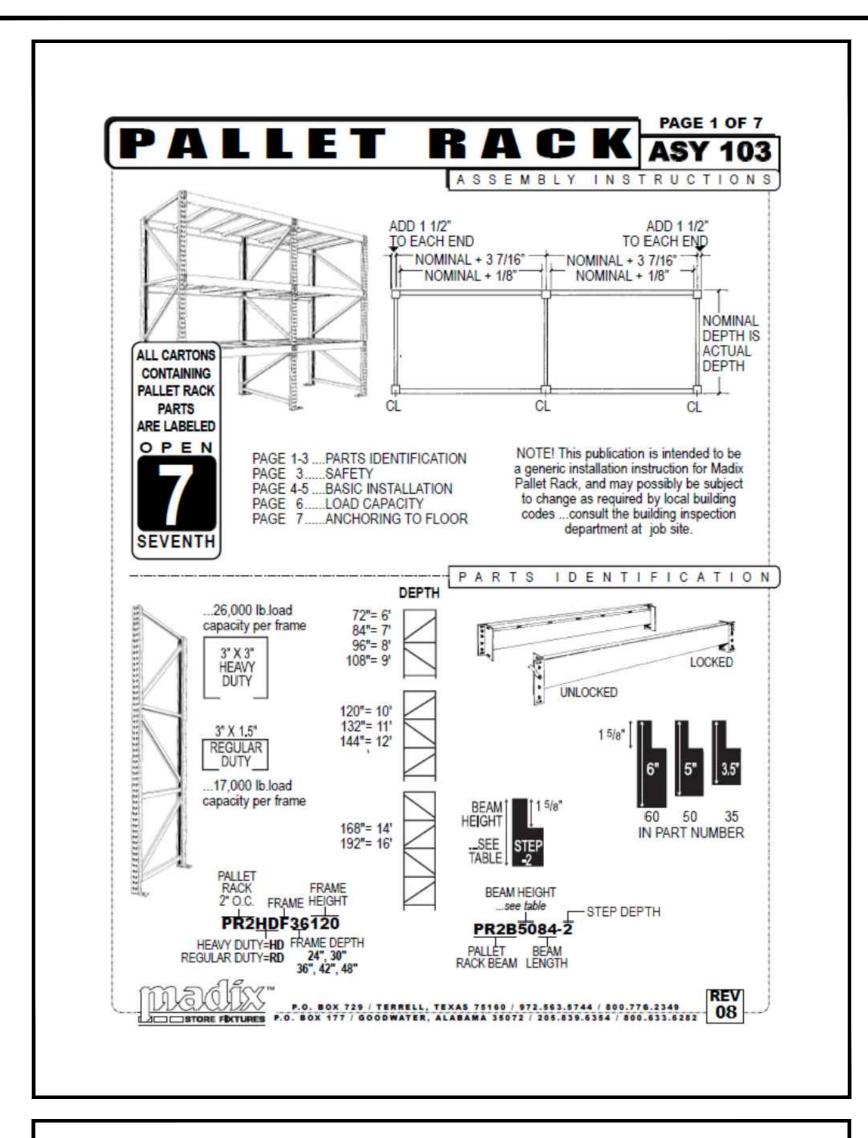


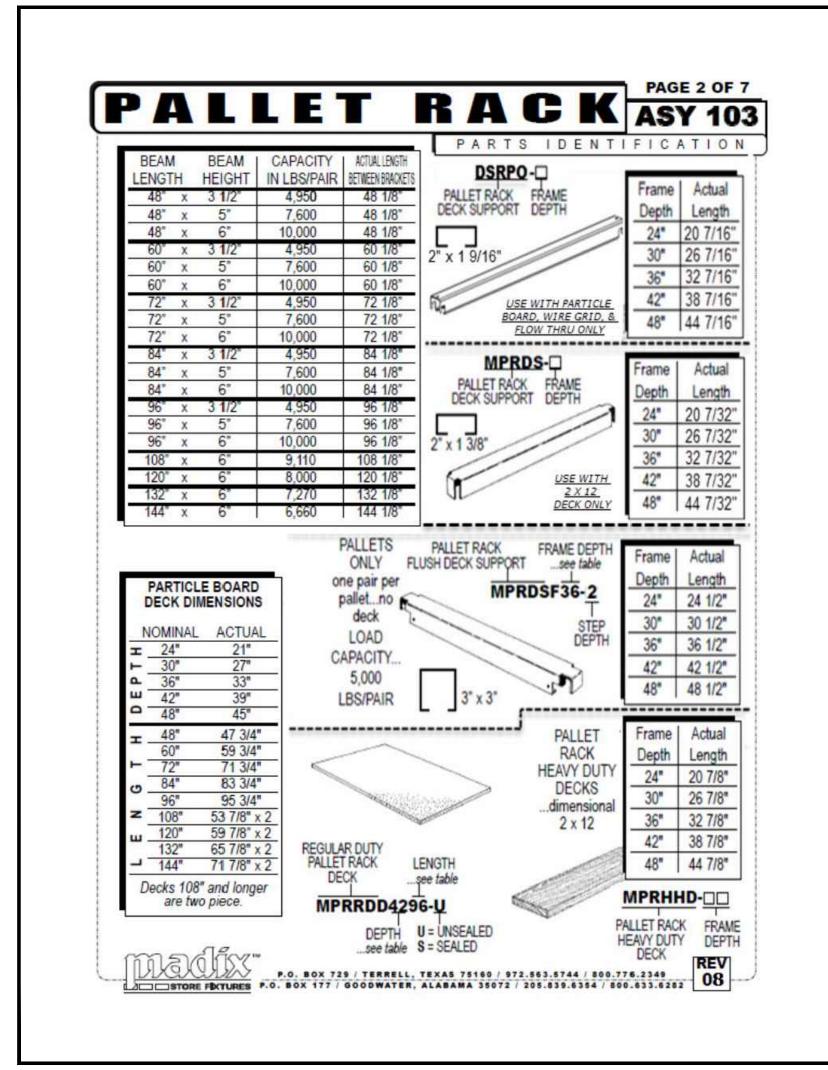


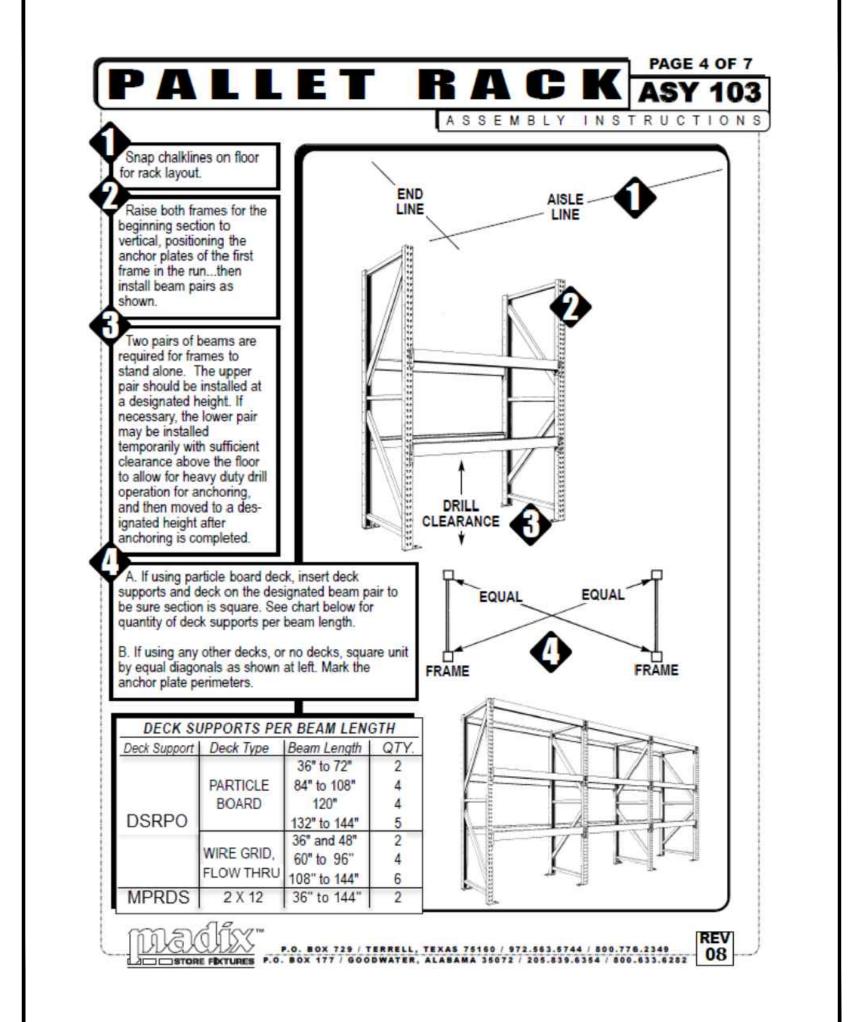
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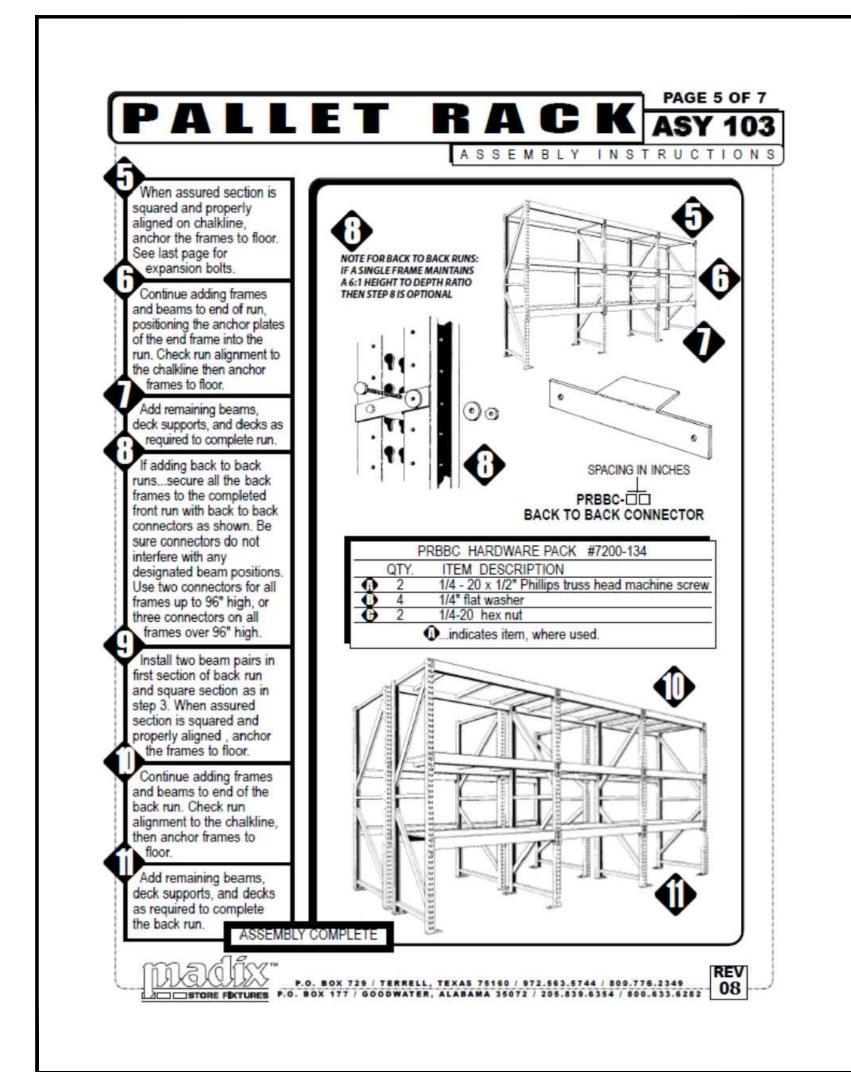
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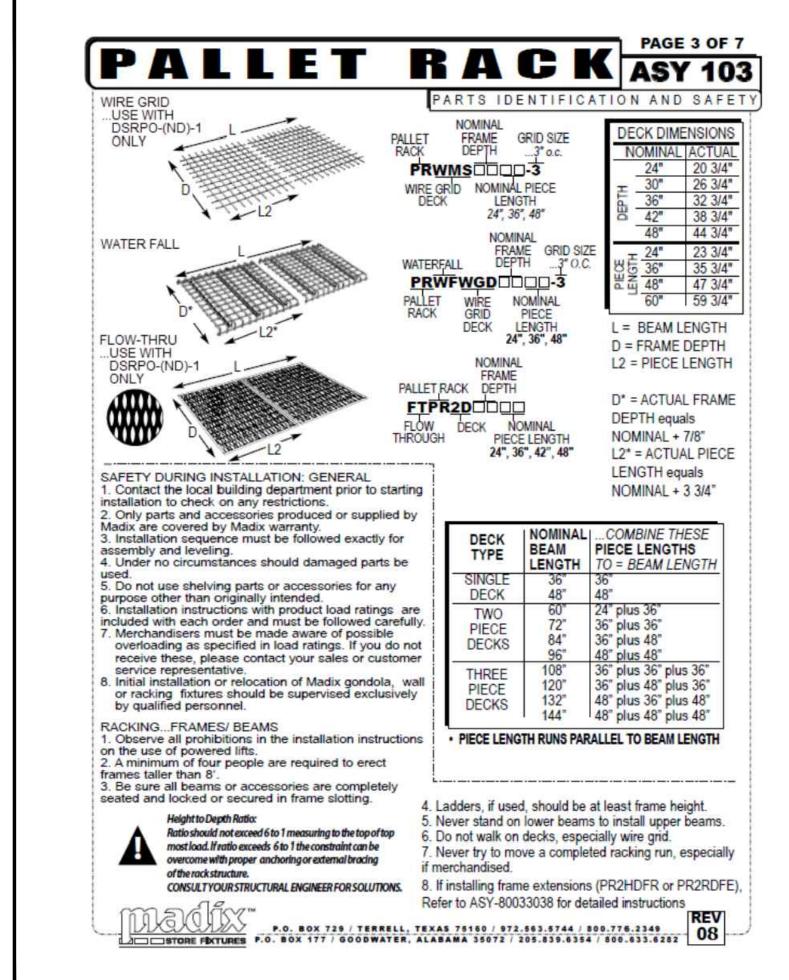
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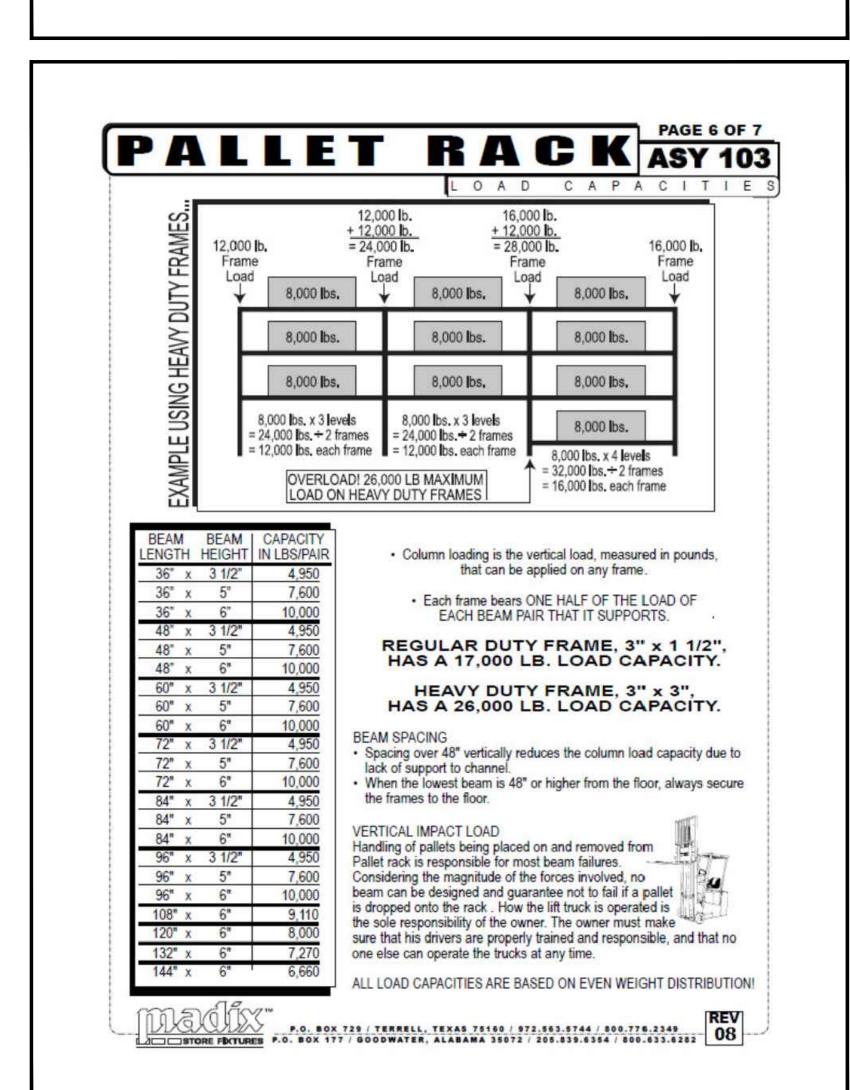


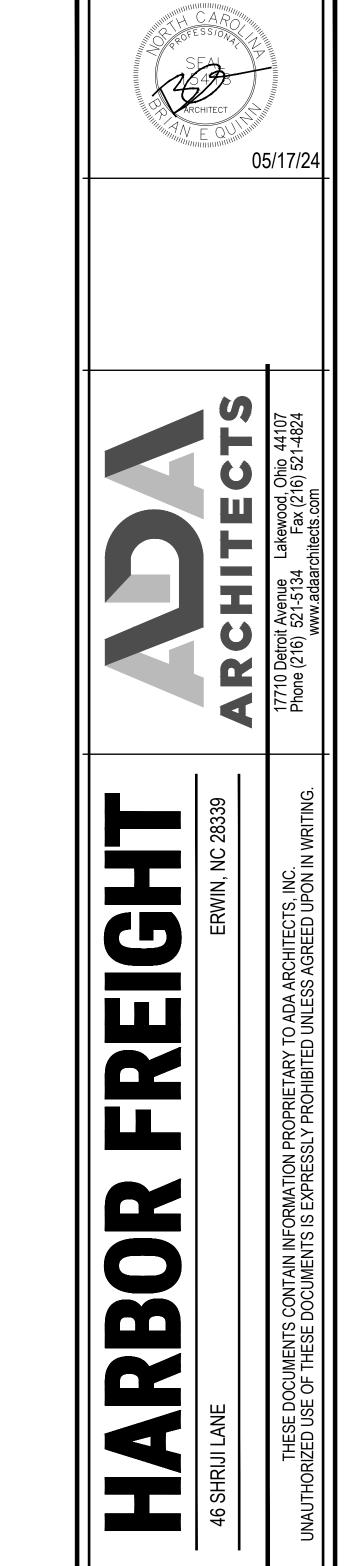


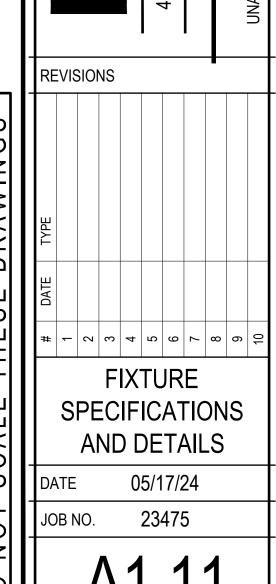


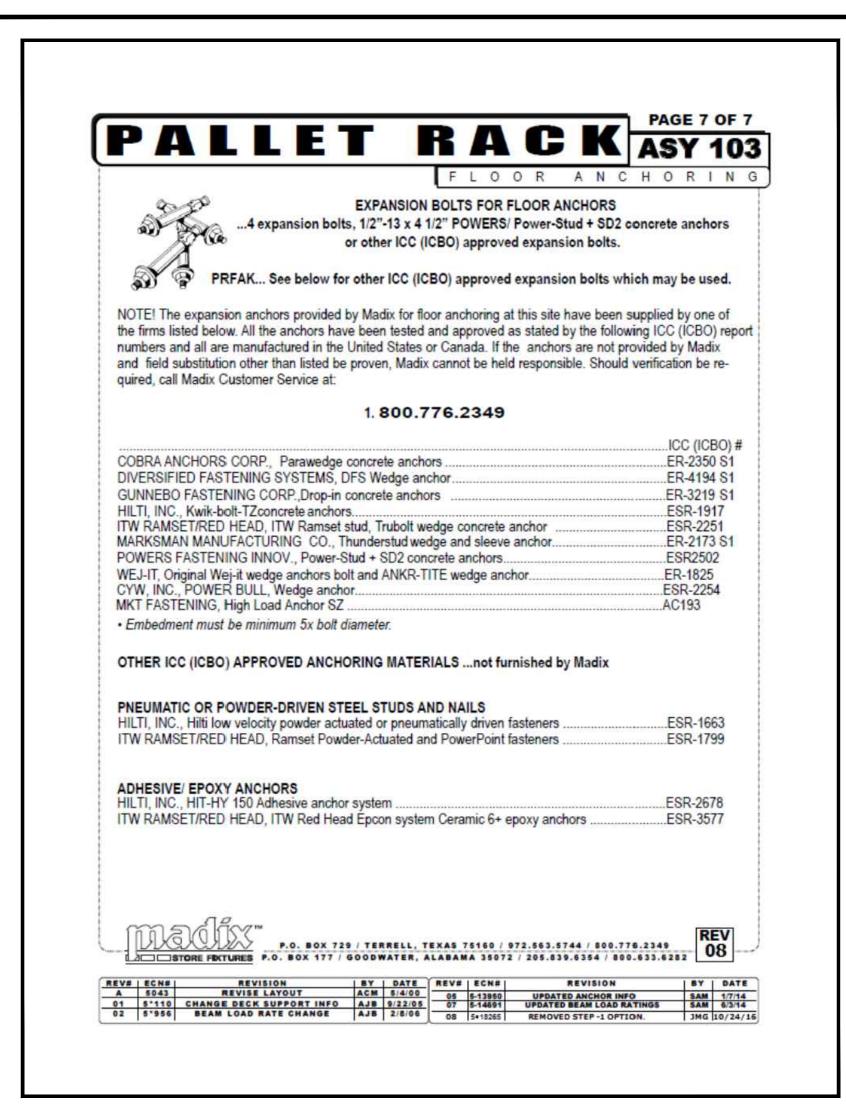


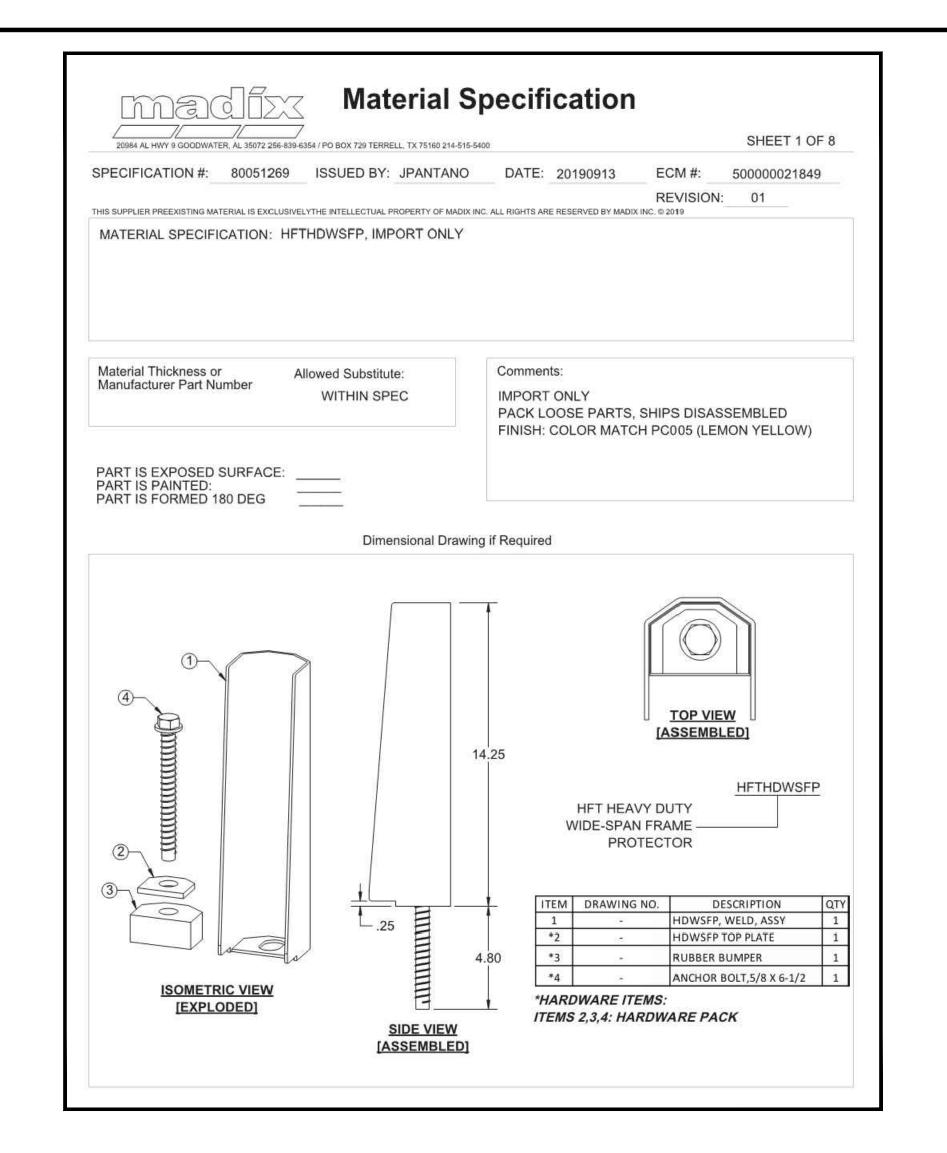


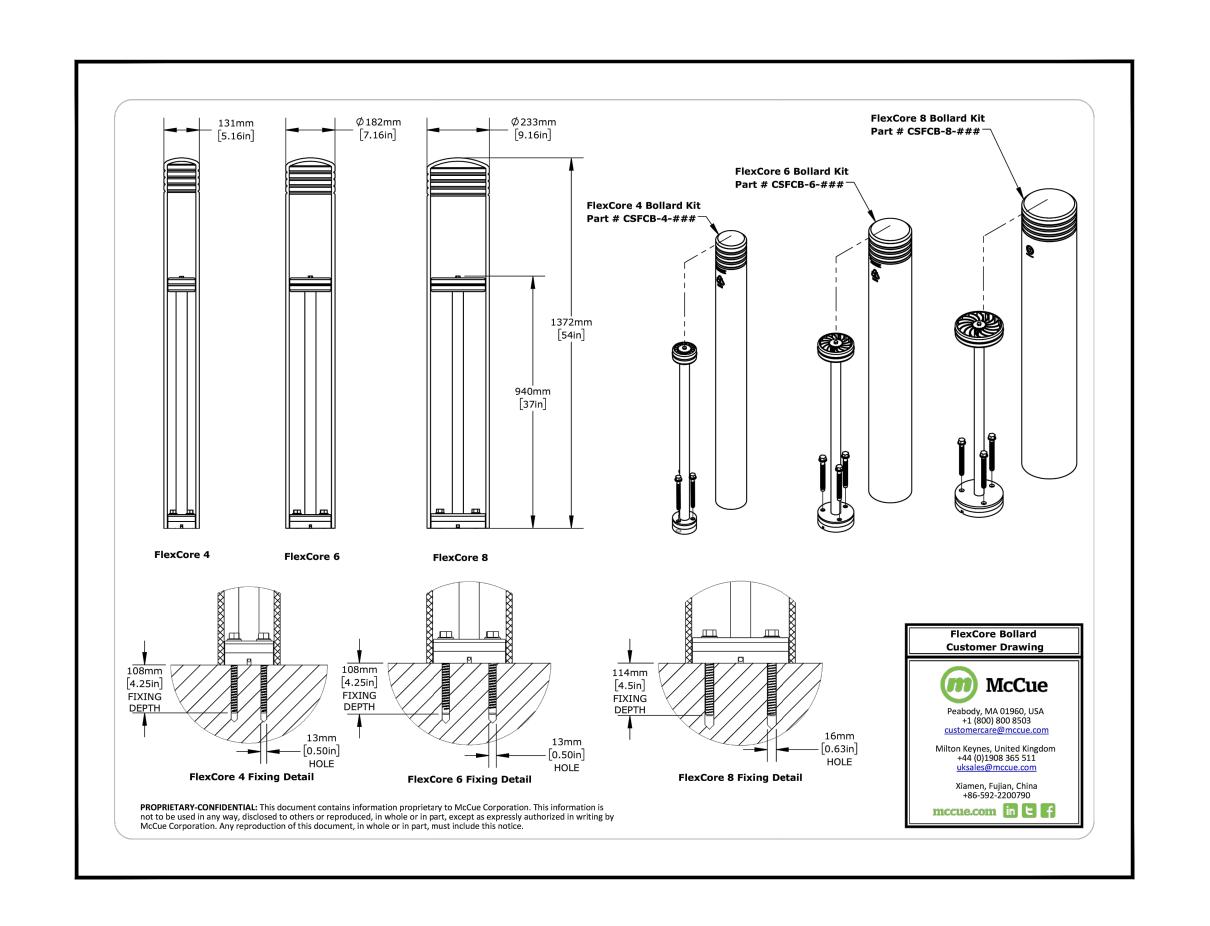


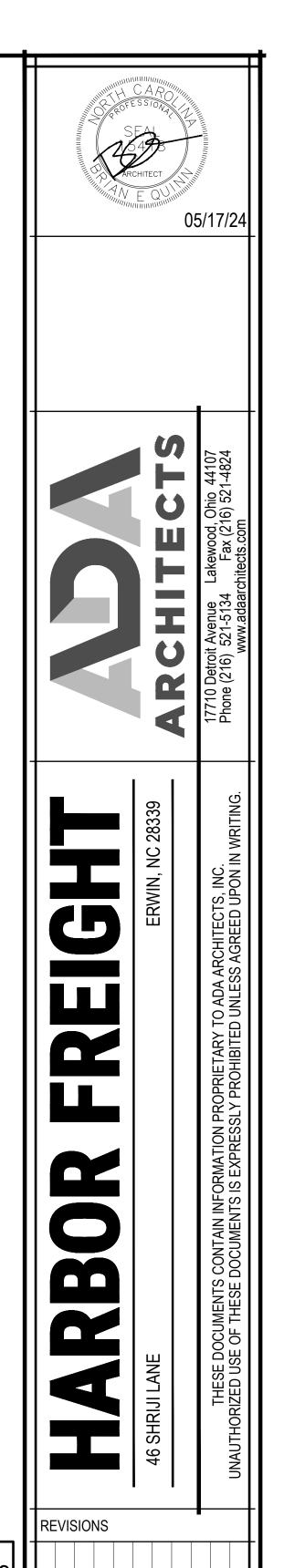




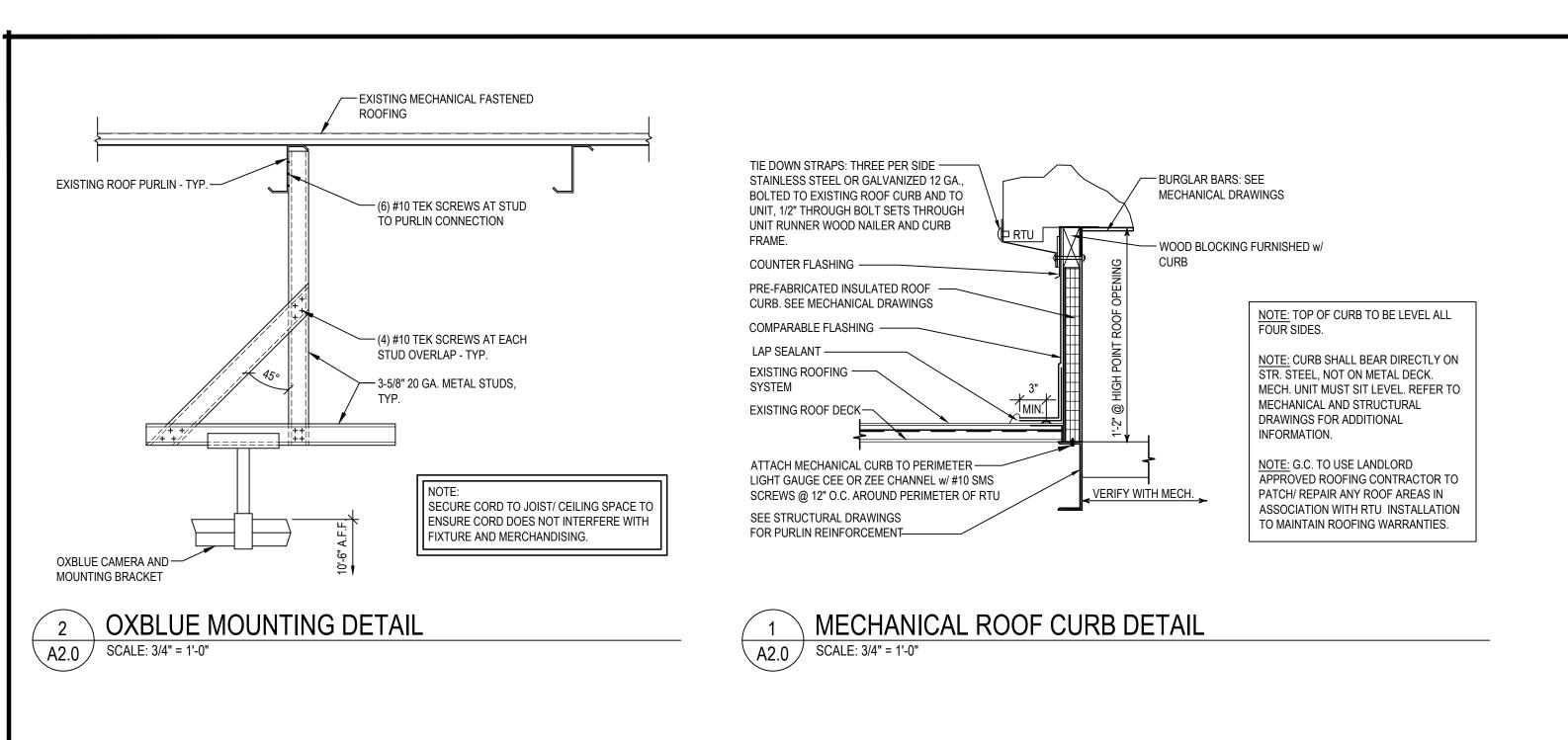








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RESTROOM 1

107 LAY-IN CEILING

@ 8'-0" A.F.F.

SALES AREA

(101)

OPEN TO

STRUCTURE

B.O. DECK @ ±20'-0" A.F.F. B.O. JOIST @ ±18'-0" A.F.F.

B.O. DECK @ ±16'-0" A.F.F. B.O. JOIST @ ±14'-0" A.F.F.

501 503 505 506

MANAGER'S

OFFICE

102 LAY-IN CEILING

@ 8'-0" A.F.F.

L____

8'-6"

EQ. (4'-0" MAX.)

OF (4)

SUPPOR1

OFFICE

LAY-IN CEILING @ 8'-0" A.F.F.

RESTROOM 2

(108)

LAY-IN CEILING

@ 8'-0" A.F.F.

BREAK ROOM

106

/LAY-IN CEILING

/ @ 8'-0" AļF.F.

EQ. (4'-0" MAX.)

(502)

8'-6"

VESTIBULE

LAY-IN CEILING

@ 10'-6" A.F.F.

RECEIVING AREA

OPEN TO STRUCTURE

8'-6"

OF (6)

LINE INDICATES LIMIT

OF SALES / SALES

REPLENISHMENT

500) TYP.

OF (3)

ALL PIPING AND OBSTRUCTIONS BELOW 14' A.F.F. IN THE SALES REPLENISHMENT

SALES REPLENISHMENT

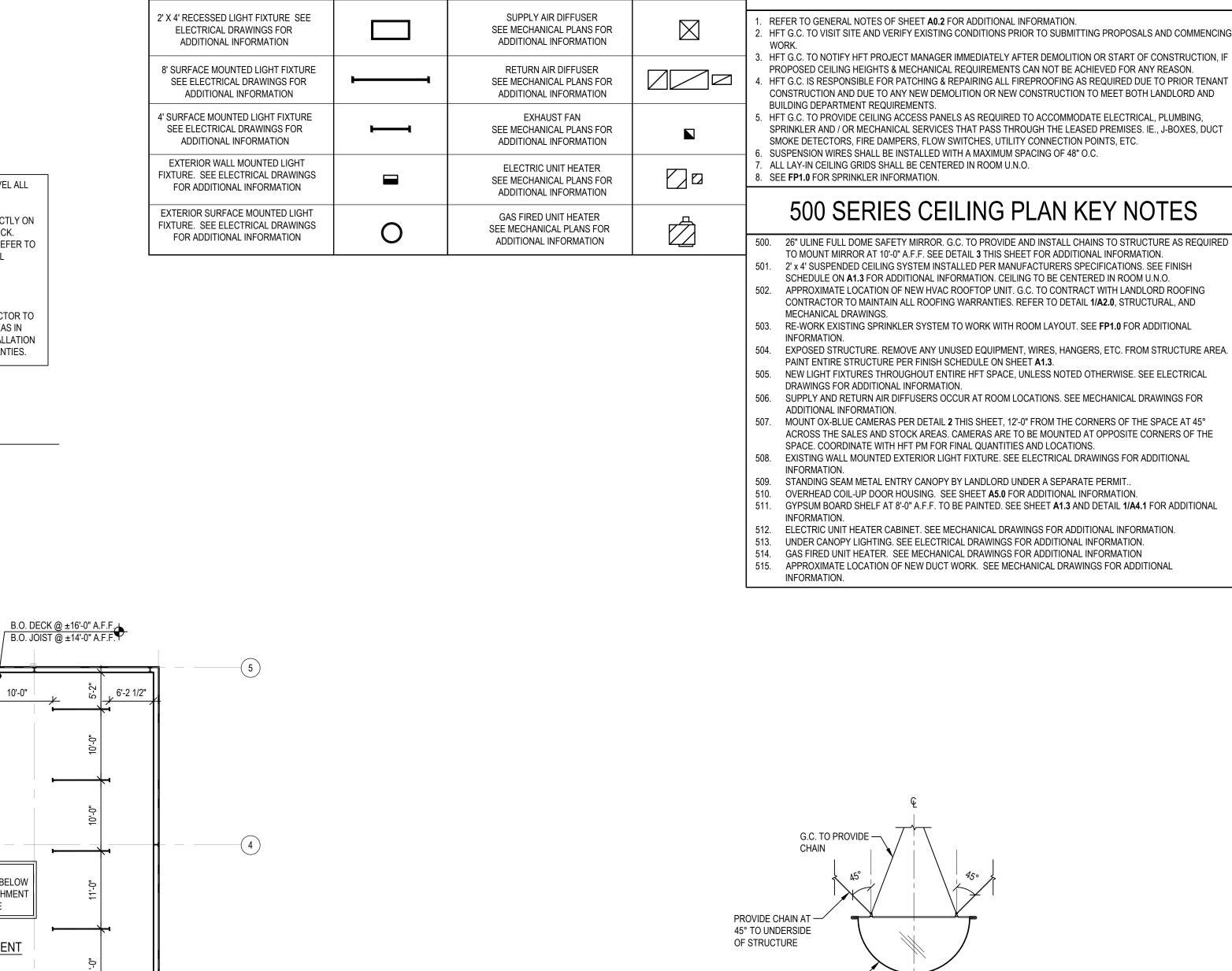
OPEN TO

STRUCTURE

B.O. DECK @ ±20'-0" A.F.F. B.O. JOIST @ ±18'-0" A.F.F.

В

AREA TO RECEIVE CAUTION TAPE



CEILING PLAN LEGEND

MIRROR

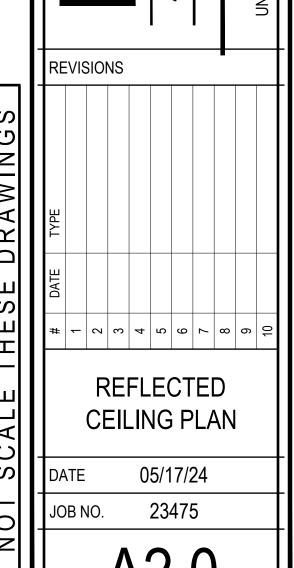
CEILING PLAN GENERAL NOTES

1. BRACING CHAIN SECURED TO MAIN DOME WITHIN 2" OF THE CROSS BRACING INTERSECTION AND SPLAYED 90° FROM EACH OTHER AT AN ANGLE NOT EXCEEDING 45° FROM THE PLAN OF THE CEILING.

2. THE SUSPENDED CEILING DOMES SHALL COMPLY WITH CBC 808 AND SEISMIC DESIGN PER ASCE 7-10.

3. SEE MANUFACTURERS INSTRUCTIONS FOR ADDITIONAL INFORMATION.

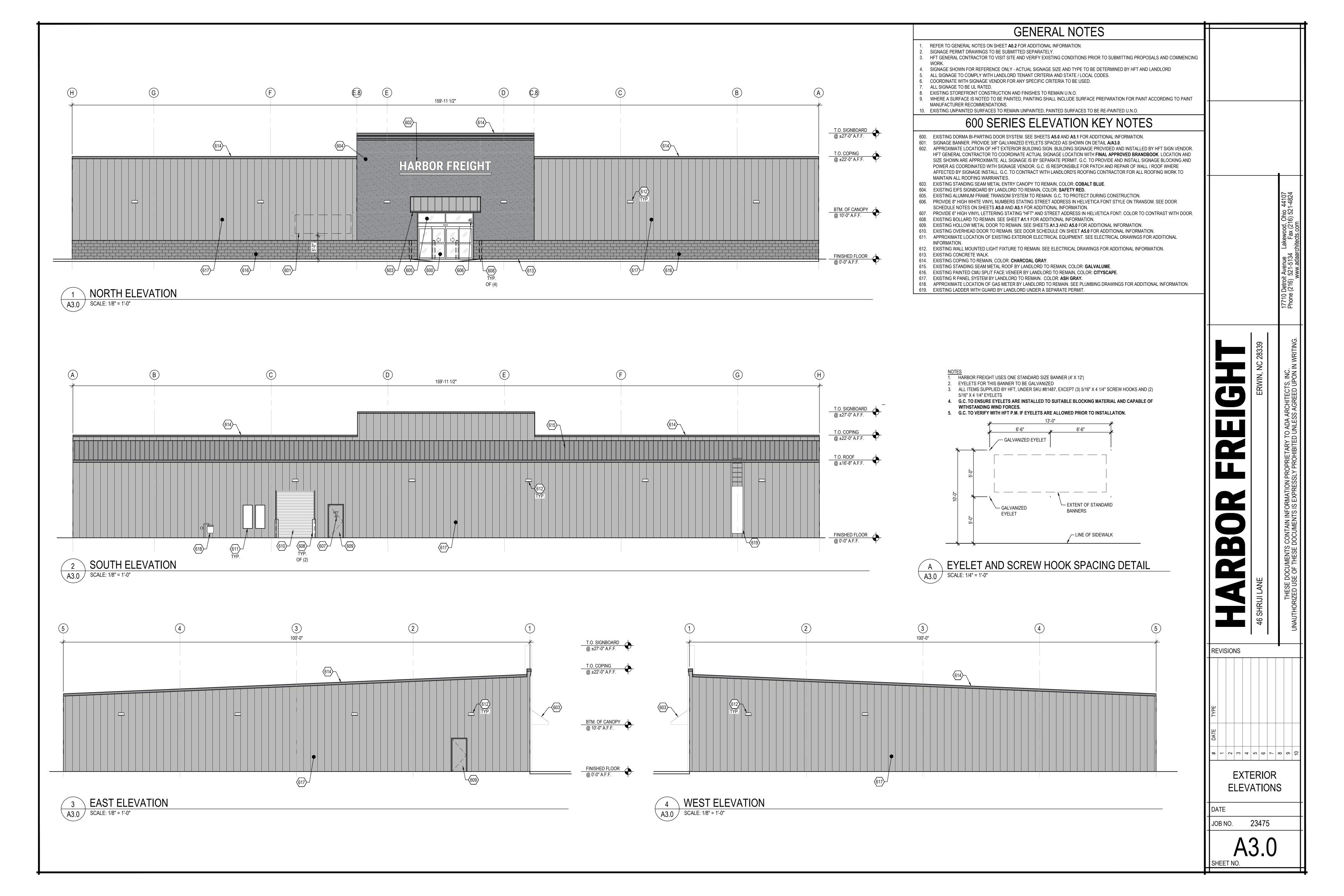
SUSPENDED FULL DOME MIRROR DETAIL A2.0 SCALE: 3/4" = 1'-0"

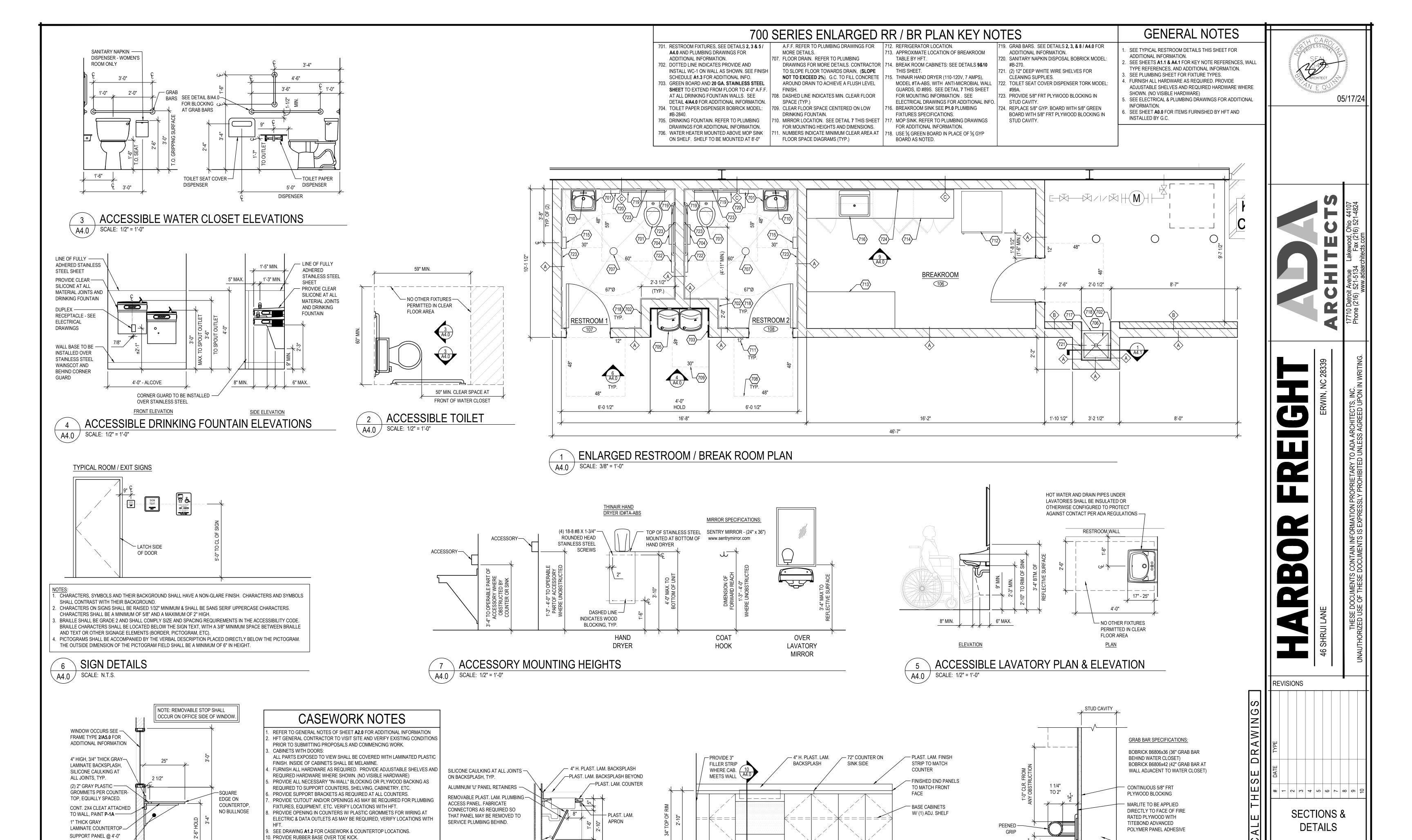


REFLECTED CEILING PLAN SCALE 3/32" = 1'-0"

5'-0" 5'-0"

©OF ENTRY DOOR





OFFICE COUNTERTOP SECTION

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

O.C. MAX. FINISH TO

MATCH COUNTERTOP

10 COUNTERTOP SECTION @ SINK
SCALE: 1/2" = 1'-0"

ALUMINUM CLIP ANGLE -

GYP. BOARD WALL

FINISHED FLOOR

6" HIGH VINYL BASE ON ——

1'-5"

2'-1"

CABINET DOOR

BEYOND

. OPEN SHELVING: ALL SHELVING UNITS, EDGES OF SHELVES AND VERTICAL

SUPPORTS SHALL HAVE PLASTIC LAMINATE FINISH ON ALL SURFACES

12. G.C. TO SILICON AROUND SINK AND AT ALL BACKSPLASH EDGES AND SEAMS

EXPOSED TO VIEW.

WITH CLEAR SILICONE.

9 BREAK ROOM CASEWORK ELEVATION
SCALE: 1/2" = 1'-0"

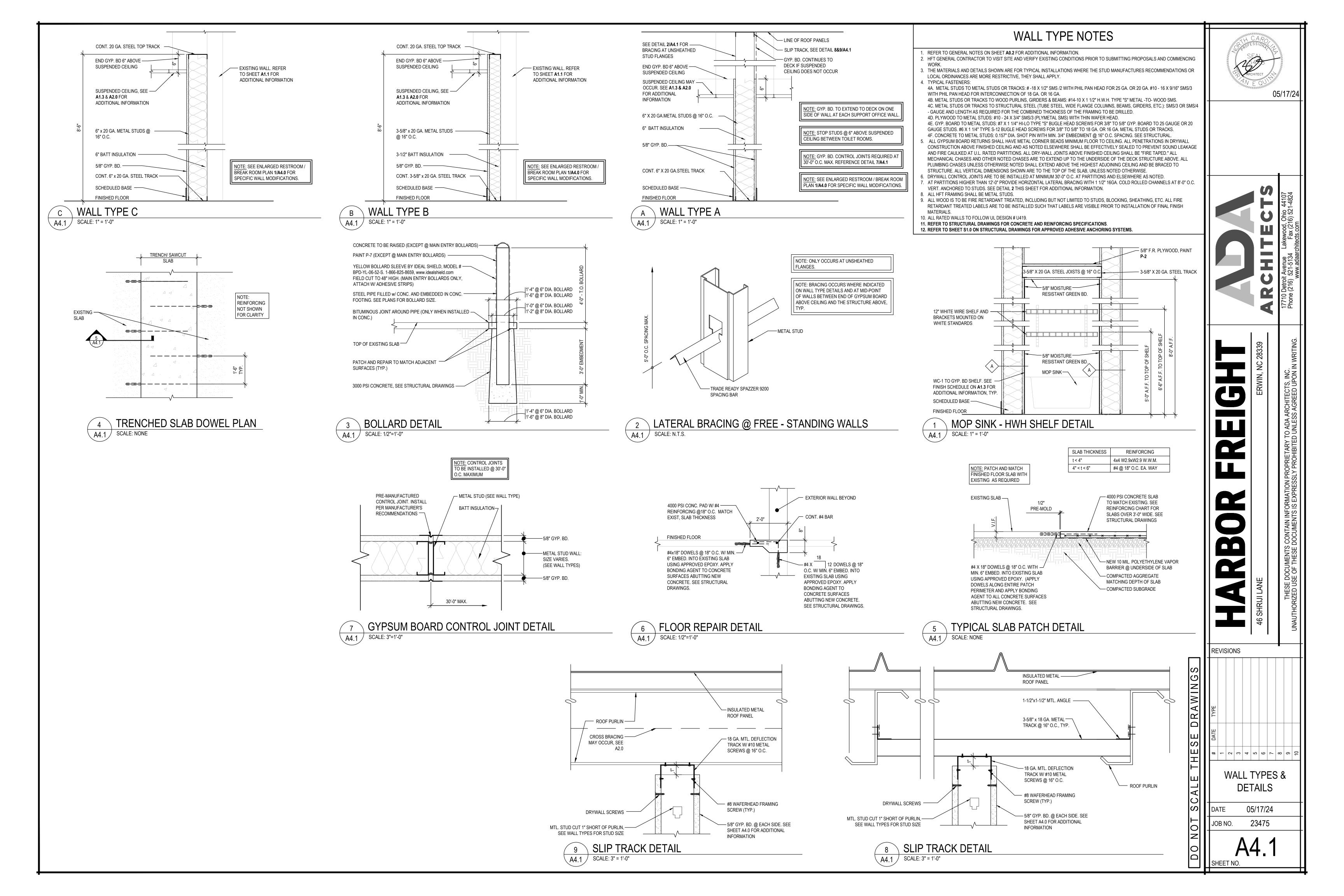
10'-0"

2'-9"

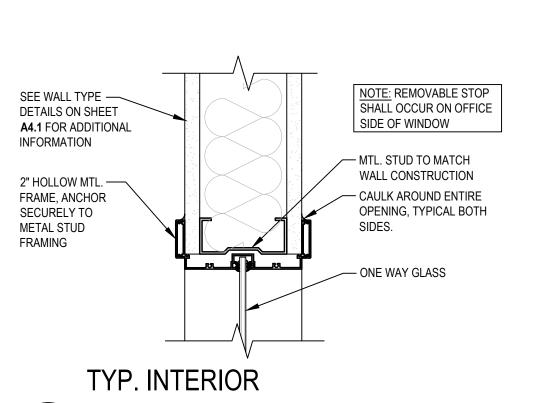
8 GRAB BAR SECTION
SCALE: N.T.S.

05/17/24

23475



DOOR	0175		DOOR			FRAME		FIRE	HARDWARE	HEAD/JAMB	DEMARKO	GROUP #1		GROUP #2		[
NO.	SIZE	TYPE	MAT'L	FINISH	TYPE	MAT'L	FINISH	LABEL	GROUP	DETAIL	REMARKS	(MANAGER, UTI		(SUPPORT OFFIC	,	(E
€01A)	EXISTING 12'-0" x 7'-8" HFT PACKAGED UNIT										EXISTING DOOR TO REMAIN. G.C. TO PROTECT DURING CONSTRUCTION. G.C. TO CHANGE OUT CORES.	BUTTS:	1 - 1/2 PAIR MCKINNEY MP 79, 4 1/2" x 4 1/2", 26D.	BUTTS:	1 - 1/2 PAIR MCKINNEY MP 79, 4 1/2" x 4 1/2", 26D.	
(01B)	12'-0" x 7'-8" HFT PACKAGED UNIT	А	GLASS/ALUM.	CLEAR ANODIZED	PER MANF.	ALUM.	CLEAR ANODIZED	-	SUPPLIED BY DORMA		G.C. TO COORDINATE FINAL DOOR AND FRAME DIMENSIONS WITH DORMA. SEE VENDOR INFORMATION ON SHEET A0.0 FOR CONTACT INFORMATION. GLAZING TO BE 1/4" TEMPERED	LATCH GUARD:	FALCON 'ENTRANCE' LEVER W511HD-D-231F-7 PIN-626 DON-JO ILP-212-SL	LATCH SET:	FALCON 'STOREROOM' LEVER W581HD-D-626 DOOR #3: DON-JO ILP-212-SL	
(01C)	8'-0" x 7'-8" HFT PACKAGED UNIT	D	GLASS/ALUM.	CLEAR ANODIZED	PER MANF.	ALUM.	CLEAR ANODIZED	-	SUPPLIED BY DORMA		G.C. TO COORDINATE FINAL DOOR AND FRAME DIMENSIONS WITH DORMA. SEE VENDOR INFORMATION ON SHEET A0.0 FOR CONTACT INFORMATION. GLAZING TO BE 1/4" TEMPERED		E: FALCON C649 (C/KWY-7 PIN)-626	DEAD BOLT:	DOOR #4 DON-JO OSLP-110-SL FALCON D241H-50-231F-7 PIN-626	K
02	3'-0" x 7'-0" x 1 3/4"	В	S.C. WOOD	PAINTED	1	H.M.	PAINTED	-	1	A&B/A5.0	SEE DOOR SCHEDULE NOTES.	CLOSER:	FALCON SC71 RW / PA-689 (MTD. ON INSIDE)		:: (2) FALCON C649 (C/KWY-7 PIN)-626	5
03	3'-0" x 7'-0" x 1 3/4"	В	S.C. WOOD	PAINTED	1	H.M.	PAINTED	-	2	A&B/A5.0	SEE DOOR SCHEDULE NOTES.	KICKPLATE:	ROCKWOOD K1050 - 10x34 US32D	CLOSER:	FALCON SC71 RW / PA-689 (MTD. ON INSIDE)	F
<u>04</u>	3'-0" x 7'-0" x 1 3/4"	В	S.C. WOOD	PAINTED	1	H.M.	PAINTED	-	2	A&B/A5.0	SEE DOOR SCHEDULE NOTES.	SILENCER:	(3) ROCKWOOD 608-26D	KICKPLATE:	ROCKWOOD K1050 - 10x34 US32D	_
05	3'-0" x 7'-0" x 1 3/4"	В	S.C. WOOD	PAINTED	1	H.M.	PAINTED	-	4	A&B/A5.0	UNDERCUT DOOR TO PROVIDE 1" CLEARANCE. LATCH SET SHALL BE "PRIVACY" TYPE.	FLOOR STOP:	ROCKWOOD 441-US26D DOME STOP		(3) ROCKWOOD 608-26D	
06	3'-0" x 7'-0" x 1 3/4"	В	S.C. WOOD	PAINTED	1	H.M.	PAINTED	-	4	A&B/A5.0	UNDERCUT DOOR TO PROVIDE 1" CLEARANCE. LATCH SET SHALL BE "PRIVACY" TYPE.	(DOOR VIEWERS	ROCKWOOD 622-26D FOR MANAGER OFFICE SIDE OF DOORS VIEWERS INSTALLED ON UTILITY DOORS)	FLOOR STOP:	ROCKWOOD 441-US26D DOME STOP	٥
07	3'-0" x 7'-0" x 1 3/4"	В	S.C. WOOD	PAINTED	1	H.M.	PAINTED	=	3	A&B/A5.0	SEE DOOR SCHEDULE NOTES.	ONLY - NO DOOR	VIEWERS INSTALLED ON UTILITY DOORS)	DOOR VIEWER:	ROCKWOOD 622-26D	上
E08)	EXISTING 8'-0" x 10'-0" x 1/2"							_	5		EXISTING OVERHEAD DOOR TO REMAIN. G.C. TO PROTECT DURING CONSTRUCTION.					
E09	EXISTING 3'-0" x 7'-0" x 1 3/4"								6		EXISTING DOOR TO REMAIN. G.C. TO PROTECT DURING CONSTRUCTION. INSTALL ADDRESS ON THIS DOOR					
E10	EXISTING 3'-0" x 7'-0" x 1 3/4"								6A		EXISTING DOOR TO REMAIN. G.C. TO PROTECT DURING CONSTRUCTION. DO NOT INSTALL ADDRESS ON THIS DOOR.					
									INSTALLED. CO	TO VERIFY ALL I	EXISTING HARDWARE TO ENSURE HFT SPECIFIED HARDWARE HAS BEEN ALL REMOVE AND REPLACE ANY EXISTING HARDWARE THAT DOES NOT NOTED IN HARDWARE GROUPS.					



DOOR SCHEDULE NOTES

1 - 1/2 PAIR HAGER ECBB1100,

(SINGLE-USE RESTROOMS)

FALCON SC71 RW / PA-689

(MTD. ON INSIDE)

SILENCER: (3) ROCKWOOD 608-26D

KICKPLATE: ROCKWOOD K1050 - 10x34 US32D

FLOOR STOP: ROCKWOOD 441H-US26D DOME STOP

T101S-D-626 (MULTI-USE RESTROOMS)

4 1/2" x 4 1/2" x US26D.

LATCH SET: FALCON 'PASSAGE' LEVER

GROUP #5

DOOR PANELS:

FALCON 'PRIVACY' LEVER T301S-D-626 CYLINDER CORE: FALCON C649 (IHCK, IHK)-626

LOCKING:

BOTTOM BAR:

(OVERHEAD DOORS)

2-3/4" INSULATED STEE

ENDS BY VENDOR

SCHLAGE KS41F1200

SCHLAGE 80-035-GRN 24 GA. MIN. GALVANIZED STEEL

HAND CHAIN BY VENDOR

CHAIN KEEPER (BY VENDOR)

EXTRUDED ALUM. BAR BY

WITH PADLOCK (SUPPLIED BY

BY VENDOR

VENDOR

WEATHER SEALS: BY VENDOR

INTERLOCKING FLAT SLAT

CURTAIN W/ ENDLOCKS @ BOTH

- RATED DOORS SHALL BE A TIGHT-FITTING SMOKE AND DRAFT CONTROL ASSEMBLY. ALL EXISTING / NEW DOORS AND HARDWARE SHALL COMPLY WITH CURRENT ADA REGULATIONS. ALL OPERABLE PARTS ON DOORS AND GATES SHALL BE EASY TO GRASP WITH ONE HAND AND NOT REQUIRE GRASPING. PINCHING OR TWISTING OF THE WRIST TO OPERATE. GROUP #6A (ALARMED) NOTE: (NO HARDWARE OF
- ALL INTERIOR / EXTERIOR METAL DOORS SHALL BE 20 GA. MINIMUM. ALL DOOR HARDWARE SHALL BE LEVER TYPE OR PANIC HARDWARE.

HARDWARE GROUP

GROUP #4

(RESTROOMS)

CLOSER:

GROUP #3

(BREAK ROOM)

CLOSER:

1 - 1/2 PAIR MCKINNEY MP 79,

FALCON SC71 RW / PA-689

4 1/2" x 4 1/2", 26D.

(MTD. ON INSIDE)

KICKPLATE: ROCKWOOD K1050 - 10x34 US32D

FLOOR STOP: ROCKWOOD 441-US26D DOME STOP

LATCH SET: FALCON 'PASSAGE' LEVER

SILENCER: (3) ROCKWOOD 608-26D

W101S-D-626

- 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 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. SUBMIT HARDWARE CUT SHEETS FOR ANY ALTERNATES TO HFT REPRESENTATIVE PRIOR TO ORDERING HARDWARE FOR APPROVAL. REPLACE ALL EXISTING HARDWARE, TO COMPLY WITH HARDWARE SCHEDULE
- PROVIDE A SIGN ABOVE ALL ENTRANCE DOOR STATING THAT "THIS DOOR IS TO REMAIN UNLOCKED DURING BUSINESS HOURS".
- LETTERS SHALL BE AT LEAST 1" IN HEIGHT AND SHALL BE WHITE ON A CONTRASTING BACKGROUND. 2. CONTRACTOR SHALL COORDINATE KEYING OF LOCKS WITH OWNER PRIOR TO INSTALLATION.
- 13. ALL HARDWARE LISTED TO BE SUPPLIED BY LISTED MANUFACTURER OR EQUAL
- 4. ALL DOOR HARDWARE TO BE BRUSHED CHROME FINISH. 5. EXTERIOR DOORS & FRAMES, EXCLUDING OVERHEAD DOOR, TO BE PAINTED TO MATCH THE ADJ. FINISH ON THE EXTERIOR AND
- PAINTED P-8 ON THE INTERIOR. SEE FINISH SCHEDULE ON SHEET A1.3.
- . INTERIOR DOORS AND FRAMES TO BE PAINTED P-8. SEE FINISH SCHEDULE ON SHEET A1.3.
- . BI-PARTING DOOR THRESHOLDS TO BE PROVIDED AND INSTALLED BY DOOR VENDOR. 3. PROVIDE 8" HIGH WHITE VINYL NUMBERS STATING STREET ADDRESS IN HELVETICA FONT STYLE ON TRANSOM AT MAIN ENTRY DOOR.
- INTERIOR DOOR FRAMES SHALL BE MIN. 20GA, U.N.O. EXTERIOR DOOR FRAMES SHALL BE MIN. 16GA. WELDED FRAMES, U.N.O. 20. ALL EXTERIOR DOORS TO BE ALARMED, U.N.O.



W/ KEEPER DOOR BOTTOM: PEMKO 315-CN MILL 36" GASKETING: PEMKO 303 AV (1) 36", (2) 84" PEMKO 171-A MILL 36" ROCKWOOD 131-26D (MTD. INSIDE) LATCH GUARD: DON-JO NLP-110 (EXTERIOR) DRIP EDGE: PEMKO 346C RAIN DRIP 40" (EXTERIO)

GROUP #6 (ALARMED) NOTE: (NO HARDWARE ON

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

DOOR VIEWER: DOORSCOPE DS2000 AL.S

GASKETING: PEMKO 303 AV (1) 36", (2) 84"

DOOR BOTTOM: PEMKO 315-CN MILL 36"

1/2 PAIR MCKINNEY MP 79

FALCON C953 (C/KWY 7-PIN) 626

ROCKWOOD K1050 - 10x34 US32D

DOOR STOP: ROCKWOOD 472-26D STOP W/ KEEPER

PEMKO 171-A MILL 36"

DRIP EDGE: PEMKO 346C RAIN DRIP 40" (EXTERIOR)

4 1/2" x 4 1/2", 26D.

EXIT DEVICE: VON DUPRIN GUARD-X 2670-US28

(MTD. INSIDE)

CYLINDER CORE: FALCON C207-SC-C26D

CONST. CORE: FALCON C607 CCA 7-PIN

1 - 1/2 PAIR MCKINNEY MP 79,

FALCON C953 (C/KWY 7-PIN) 626

ROCKWOOD K1050 - 10x34 US38D

FALCON SC71 RW / PA-689

ROCKWOOD 472-26D STOP

EXTERIOR SIDE, U.N.O.)

DOOR PULL: ROCKWOOD 131-26D (MTD. INSIDE)

LATCH GUARD: DON-JO NLP-110 (EXTERIOR)

FALCON SC71 RW / PA-689 (MTD. INSIDE

EXTERIOR SIDE, U.N.O.)

(SINGLE EXIT DOORS)

HOUSING:

CLOSER:

KICKPLATE:

THRESHOLD:

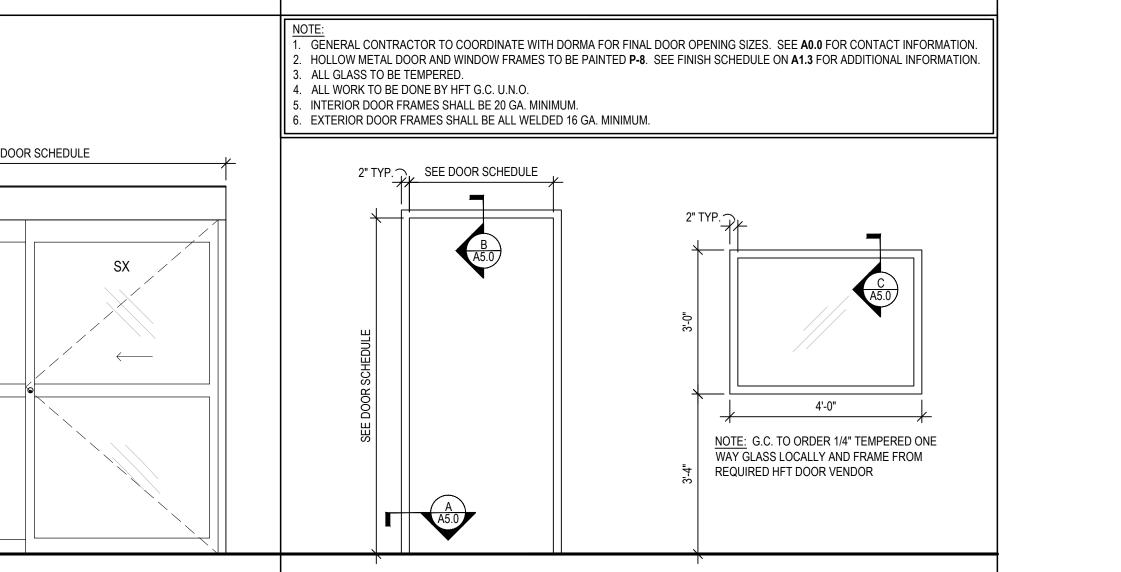
(SINGLE EXIT DOORS)

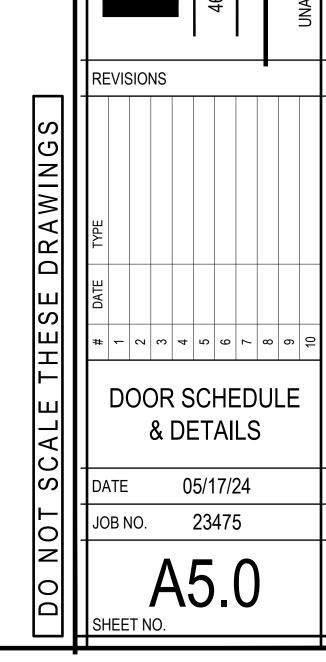
HOUSING:

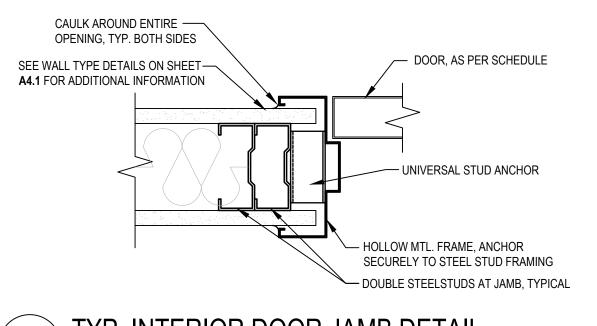
KICKPLATE:

DOOR STOP:

CLOSER:

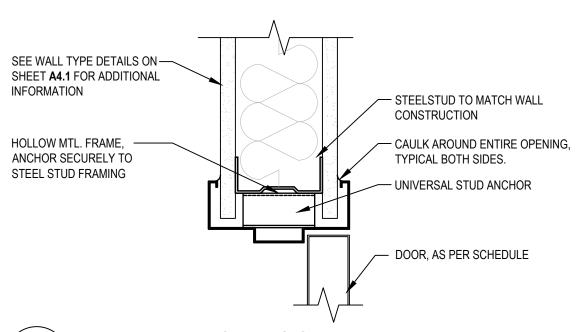




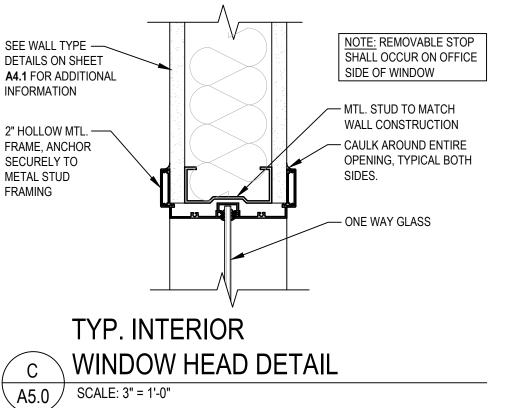




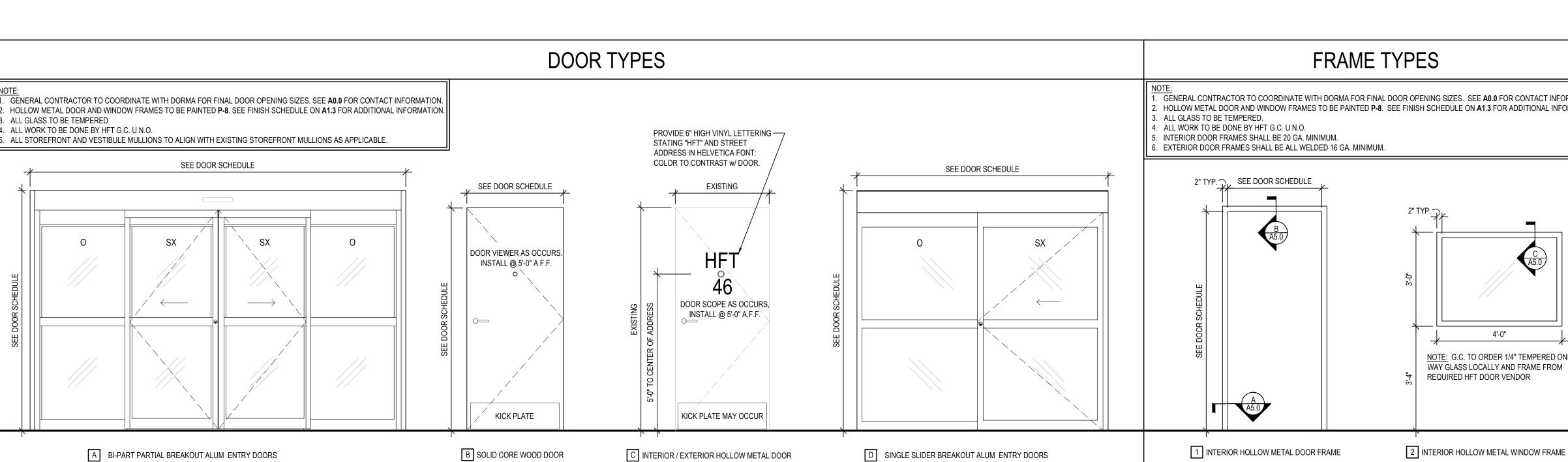
(ESA200 SERIES BY DORMA)

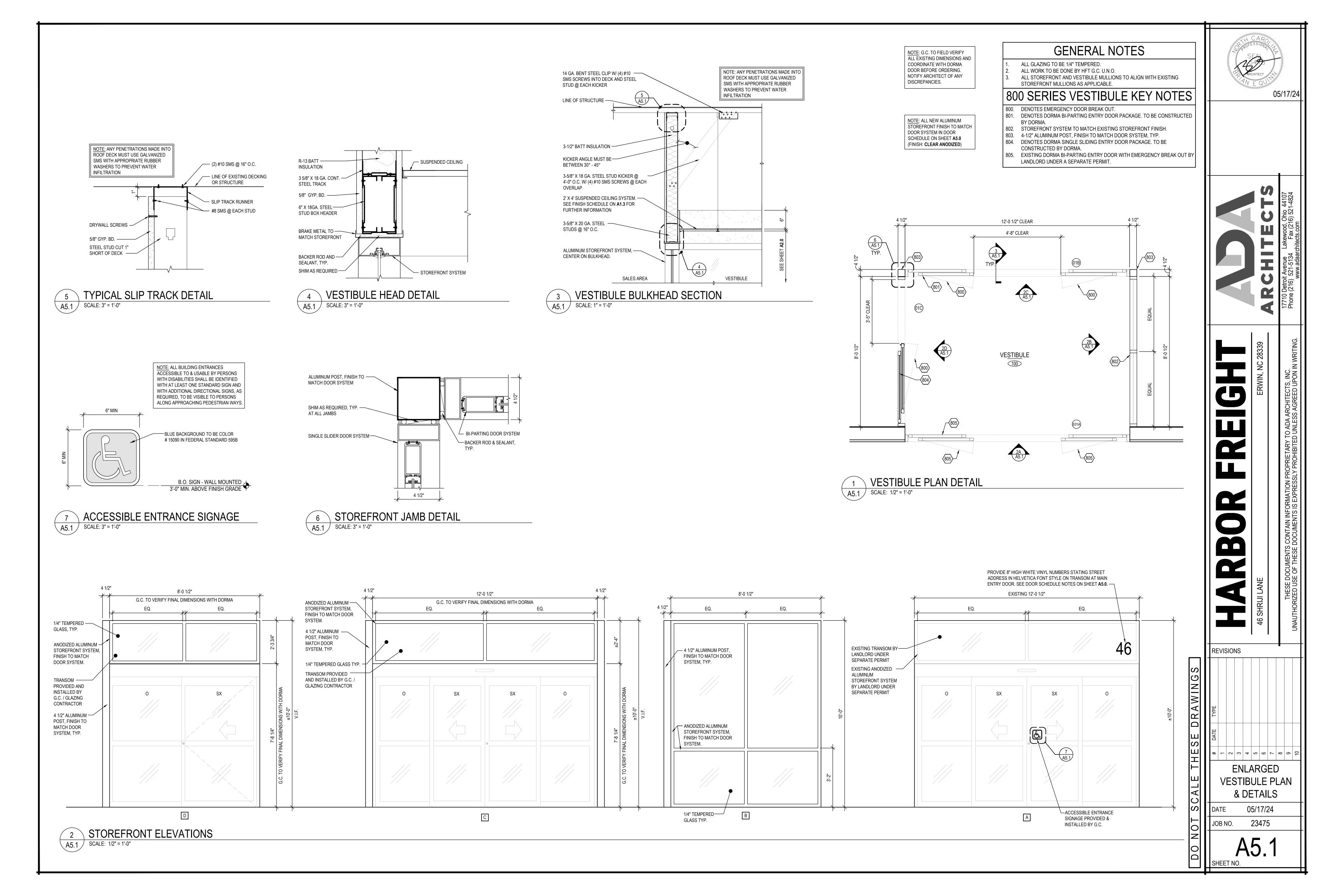


TYP. INTERIOR DOOR HEAD DETAIL SCALE: 3" = 1'-0"



(ESA200 SERIES BY DORMA)

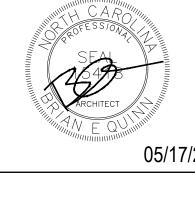




GENERAL NOTES

- ALL TURNSTILE COMPONENTS TO BE SUPPLIED BY HFT, U.N.O. ALL WORK TO BE DONE BY G.C., U.N.O.
- SEE SHEET A0.0 FOR ADDITIONAL INFORMATION.



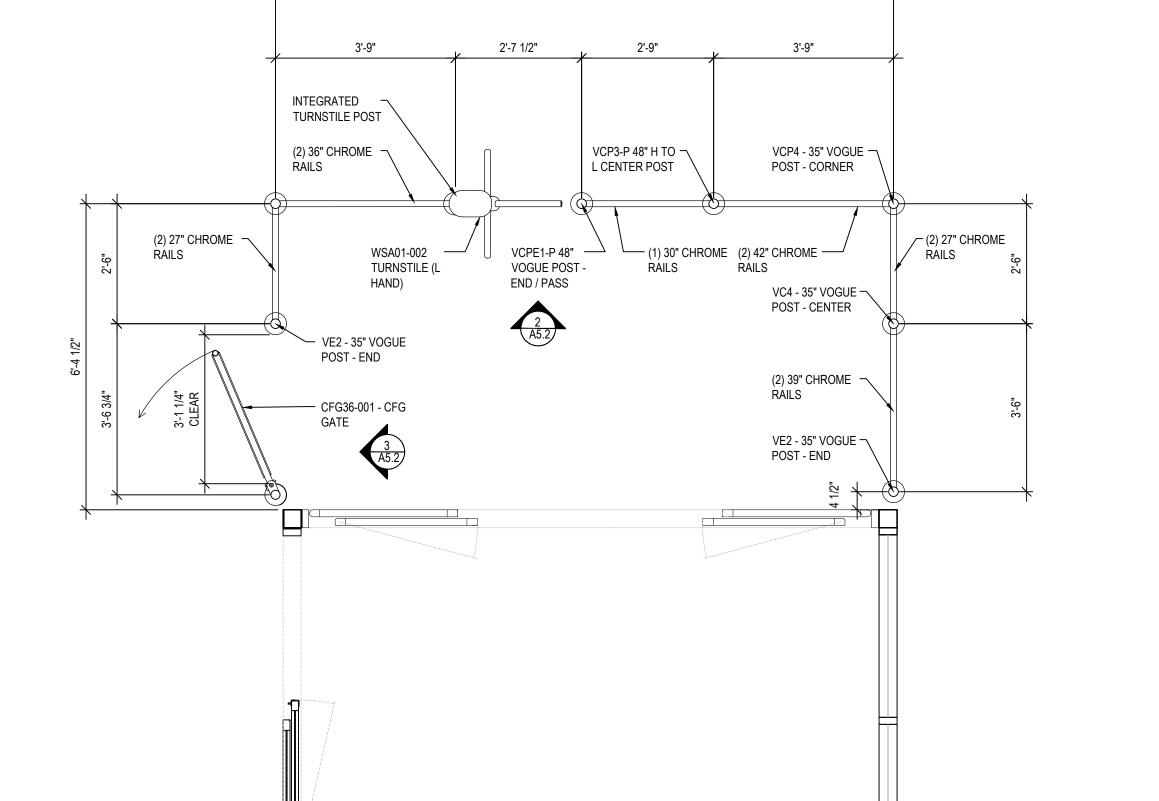




REVISIONS

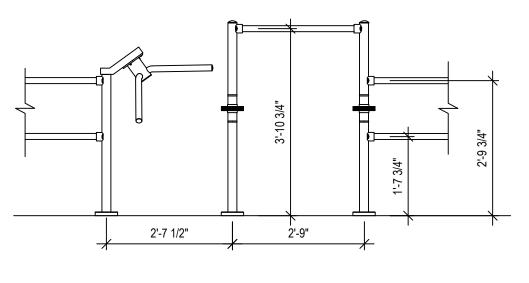
ENLARGED TURNSTILE PLAN & DETAILS

05/17/24 JOB NO. 23475

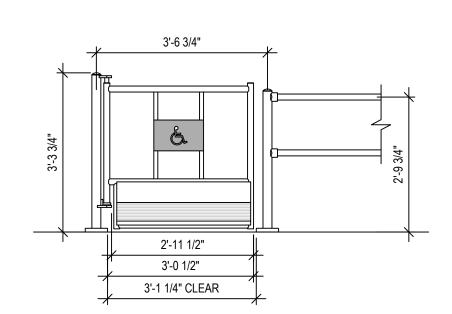


12'-10 1/2"

1 TURNSTILE PLAN DETAIL
A5.2 SCALE: 1/2" = 1'-0"









MECHANICAL EQUIPMENT TAG NOTES:

- MECHANICAL CONTRACTOR SHALL INSTALL NEW LENNOX ROOFTOP UNIT AND ROOF CURB. MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL ROOF CURB FOR NEW ROOFTOP UNIT. PROVIDE NEW ROOF OPENINGS AS NECESSARY TO ACCOMMODATE NEW ROOFTOP UNIT. REFER TO ROOFTOP UNIT SCHEDULE ON DWG. M1.1 FOR ADDITIONAL INFORMATION. THE WEIGHT OF THE NEW ROOFTOP UNIT IS 1600 LBS.
- MECHANICAL CONTRACTOR SHALL INSTALL NEW LENNOX ROOFTOP UNIT AND ROOF CURB. MECHANICAL CONTRACTOR SHALL FLIDNISH AND INSTALL BOOS CURB. TO THE WORLD AND INSTALL BOOS CURB. CONTRACTOR SHALL FURNISH AND INSTALL ROOF CURB FOR NEW ROOFTOP UNIT. PROVIDE NEW ROOF OPENINGS AS NECESSARY TO ACCOMMODATE NEW ROOFTOP UNIT. REFER TO ROOFTOP UNIT SCHEDULE ON DWG. M1.1 FOR ADDITIONAL INFORMATION. THE WEIGHT OF THE NEW ROOFTOP UNIT IS 1400 LBS.

MECHANICAL CONTRACTOR SHALL ENSURE ALL NEW EXPOSED DUCTWORK IS SEALED CLEANLY IN THE EVENT IT DOES NOT RECEIVE A FINAL PAINTED FINISH. COORDINATE WORK WITH GENERAL CONTRACTOR AND HARBOR FREIGHT TOOLS' PROJECT MANAGER.

MECHANICAL CONTRACTOR SHALL PERFORM AN HVAC SYSTEM CHECK PRIOR TO AND AFTER COMPLETION OF SIEMENS' SCOPE OF WORK INCLUDING THE SMOKE DETECTOR "TEST/RESET" BUTTON.

MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL BURGLAR BARS IN THE DUCT DROPS OF THE NEW ROOFTOP UNITS.

MECHANICAL CONTRACTOR SHALL REFER TO DRAWING M1.1 FOR LABELING OF EQUIPMENT PROCEDURE.

MECHANICAL CONTRACTOR SHALL REMOVE ALL EXISTING UNUSED MECHANICAL EQUIPMENT, UNIT HEATERS, EXHAUST FAN(S), DUCTWORK, DIFFUSER(S), ETC... COMPLETELY UNLESS OTHERWISE NOTED TO REMAIN. GENERAL CONTRACTOR SHALL ENGAGE LANDLORD'S ROOFING CONTRACTOR FOR ALL ROOFING WORK. MECHANICAL CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR TO DISCONNECT ELECTRICAL SERVICE FROM EQUIPMENT BEING REMOVED AND COORDINATE WITH PLUMBING CONTRACTOR FOR DISCONNECTING GAS FROM EQUIPMENT BEING REMOVED.

GENERAL CONTRACTOR SHALL ENGAGE LANDLORD'S ROOFING CONTRACTOR FOR ANY ROOFING WORK.

MECHANICAL CONTRACTOR SHALL REFER TO THE SIEMENS EMS DRAWING SET (EMS-1 THRU EMS-4) FOR COMPLETE INTERFACE REQUIREMENTS.

MECHANICAL CONTRACTOR SHALL LEAVE ROOFTOP UNIT'S IN WIRED THERMOSTAT MODE UNTIL COMMISSIONING.

MECHANICAL GENERAL NOTES:

- 1. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE, THE MECHANICAL CONTRACTOR SHALL INCLUDE ALL NEEDED OFFSETS, CHANGES IN DIRECTION, TRANSITIONS, ETC. NEEDED FOR COMPLETE AND OPERATIONAL SYSTEMS.
- 2. PERFORM ALL WORK IN ACCORDANCE WITH THE, RULES & REGULATIONS OF THE APPROPRIATE STATE AND LOCAL BUILDING CODES AND SUBTITLES.
- 3. QUESTIONS REGARDING THESE DRAWINGS SHALL BE ADDRESSED TO THE ENGINEER PRIOR TO THE AWARDING OF THE CONTRACT. OTHERWISE THE ENGINEER'S INTERPRETATION OF THE MEANING AND INTENT OF THE DRAWINGS SHALL BE FINAL.
- 4. IF CONFLICTS EXIST, PRIORITY OF LOCATION IN REFLECTED CEILING GRID SHALL BE AS FOLLOWS FROM HIGH TO LOW: SPRINKLER, MECHANICAL, LIGHTS, AND FIRE ALARM DEVICES (AS APPLICABLE).
- 5. SENSORS AS MANUFACTURED BY SIEMENS. MECHANICAL CONTRACTOR SHALL LABEL EACH SENSOR APPROPRIATELY TO THE CORRESPONDING ROOFTOP UNIT IT SERVES. TOUCHPAD SHALL BE LOCATED IN THE MANAGER'S OFFICE. MECHANICAL CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR.

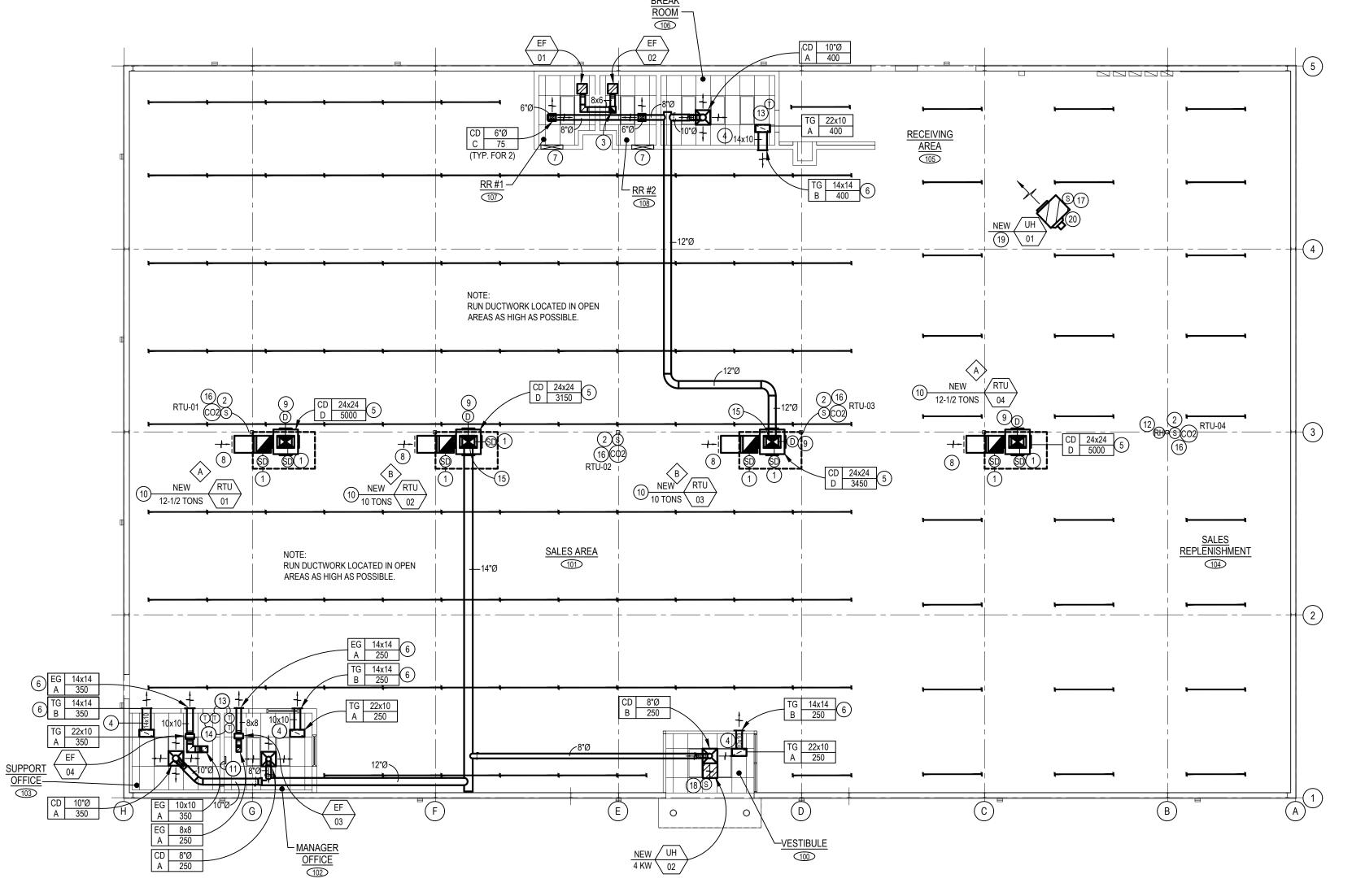
MECHANICAL GENERAL NOTES (CONTINUED):

- 6. MECHANICAL CONTRACTOR SHALL PROVIDE AN AIR BALANCE REPORT TO VERIFY THAT THE HVAC EQUIPMENT IS FULLY OPERATIONAL. AIR BALANCE REPORT SHALL BE PREPARED BY A THIRD PARTY HIRED BY THE GENERAL CONTRACTOR. PAYMENT OF ALL COSTS FOR TESTING SHALL BE MADE BY THE MECHANICAL CONTRACTOR. TURN OVER AIR BALANCE REPORT TO HARBOR FREIGHT TOOLS' GENERAL CONTRACTOR FOR DISTRIBUTION. REFER TO MECHANICAL SPECIFICATIONS ON DWG. M1.3 FOR ADDITIONAL INFORMATION REGARDING TESTING AND BALANCING.
- 7. MECHANICAL CONTRACTOR ENSURE THERE ARE FILTERS IN ALL ROOFTOP UNITS DURING CONSTRUCTION AND SHALL INSTALL NEW FILTERS DURING CONSTRUCTION AND REPLACE ALL FILTERS PRIOR TO TURNOVER AND DATE ALL FILTERS WITH INSTALL DATE.
- 8. MECHANICAL CONTRACTOR SHALL RUN ALL DUCTWORK AS HIGH AS POSSIBLE; MINIMUM OF 12'-6" A.F.F.
- 9. MECHANICAL CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF SPACE TEMPERATURE SENSORS, RELATIVE HUMIDITY SENSOR AND CARBON DIOXIDE SENSORS WITH SALES FLOOR FIXTURES AND GENERAL CONTRACTOR PRIOR TO INSTALLING SENSORS.
- 10. THE MECHANICAL CONTRACTOR SHALL BE ON SITE AS THE EMS COMMISSIONING IS BEING PERFORMED TO ENSURE ALL THE REQUIREMENTS ARE RESPONDED TO IF NOT PERFORMING CORRECTLY.
- 11. MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL ROOF CURBS COMPLETE WITH BURGLAR BARS FOR ROOFTOP UNITS. MECHANICAL CONTRACTOR SHALL CONFIRM ROOF CURB HEIGHT, ROOF SLOPE, ETC. TO ORDER PROPER ROOF CURB.

	WEST WITHOUT ELECTIVE					
SYMBOL	DESCRIPTION					
SA	SUPPLY AIR					
EA	EXHAUST AIR					
EF	EXHAUST FAN					
EG	EXHAUST GRILLE					
CD	CEILING DIFFUSER					
OA	OUTSIDE AIR					
RA	RETURN AIR					
TG	TRANSFER GRILLE					
RTU	ROOFTOP UNIT					
AFF	ABOVE FINISH FLOOR					
MC	MECHANICAL CONTRACTOR					
PC	PLUMBING CONTRACTOR					
EC	ELECTRICAL CONTRACTOR					
GC	GENERAL CONTRACTOR					
LL	LANDLORD					
0	DUCT TEMPERATURE SENSOR					
①	THERMOSTAT (MTD. 4'-0" AFF)					
S	SPACE TEMPERATURE SENSOR (AS NOTED)					
S D	SMOKE DETECTOR					
(H)	RELATIVE HUMIDITY					
	FLEXIBLE DUCT (8'-0" MAX. LENGTH)					
	FLEXIBLE DUCT CONNECTOR					
	MANUAL VOLUME DAMPER					
上	ELBOW W/ DBL THICKNESS TURNING VANES					
	FRESH/RETURN/EXHAUST AIR DUCT					
\boxtimes	SUPPLY AIR DUCT					
E.S.P.	EXTERNAL STATIC PRESSURE					

MECHANICAL LEGEND





MECHANICAL CONTRACTOR SHALL MOUNT EXHAUST FANS (EF-03 AND EF-04) 8 TO 10 FEET ABOVE FINISHED FLOOR WITH ALL THREADED RODS AND VIBRATION ISOLATORS LOCATED ABOVE OFFICE CEILINGS. PROVIDE FLEXIBLE CONNECTIONS AT THE INLET AND OUTLET OF THE EXHAUST FAN. TRANSITION INLET AND OUTLET OF EXHAUST FAN CONNECTIONS TO RECTANGULAR DUCT AS INDICATED ON THE MECHANICAL PLAN. PROVIDE A MINIMUM OF 18" OF EXHAUST DUCTWORK AT THE INLET AND OUTLET OF THE EXHAUST FAN. EXHAUST AIR DUCT TO TERMINATE AT FACE OF OFFICE WALL WITH NEW EXHAUST GRILLE 'A' FLUSH TO WALL. GRILLE TO BE LOCATED 2 FEET BELOW STRUCTURE. THERMOSTATS CONTROLLING THE EXHAUST FANS SHALL BE LOCATED BEHIND THE DOORS AND THE POWER AND SPEED CONTROL SWITCH ASSOCIATED WITH THE FAN SHALL BE LOCATED ABOVE THE CEILING APPROXIMATELY 10" AWAY FROM THE INSIDE WALL. THE EXHAUST FANS SHALL BE LOCATED 1 FOOT ABOVE THE CEILING OVER THE ENTRY DOOR INTO THE ROOM FOR EASE OF MAINTENANCE, NOTE: GRILLES TO BE CENTERED OVER THE DOORS WHEN POSSIBLE. ALL GRILLES TO BE AT THE SAME ELEVATION.

EMS TOUCHPAD LOCATED IN MANAGER'S OFFICE. REFER TO MECHANICAL GENERAL NOTE #5 ON THIS DWG. FOR ADDITIONAL INFORMATION



- LENNOX SHALL FURNISH AND INSTALL SMOKE DETECTORS IN THE SUPPLY AND RETURN AIR DUCTS. MECHANICAL CONTRACTOR SHALL FURNISH, INSTALL AND WIRE REMOTE TEST STATION WITH AUDIO VISUAL ALARM "SYSTEM SENSOR" MODEL RTS2-A0S NEXT TO THE PHONE BOARD OR AT A LOCATION APPROVED BY THE AUTHORITY HAVING JURISDICTION. MECHANICAL CONTRACTOR SHALL PROVIDE CONTROL WIRING TO RTU AND INTERLOCKING WIRING TO OTHER DUCT DETECTORS (AS REQUIRED) FOR GLOBAL SHUT-DOWN. MECHANICAL CONTRACTOR SHALL WIRE DETECTORS TO FIRE ALARM SYSTEM (IF REQUIRED). SEE DUCT DETECTOR DETAIL ON DRAWING M1.2 FOR WIRING.
- 2) SPACE TEMPERATURE SENSOR MOUNTED ON COLUMN AT 7'-0" A.F.F.
- 8x8 EXHAUST AIR DUCT RISER THRU ROOF IN PRE-FAB INSULATED ROOF CURB TO GOOSENECK WITH BIRDSCREEN. COORDINATE ROOF OPENING AND ROOFING REPAIR WITH LANDLORD AND LANDLORD'S ROOFING CONTRACTOR.
- MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL TRANSFER AIR DUCT WITH 1" THICK ACOUSTIC LINING.
- MECHANICAL CONTRACTOR SHALL TRANSITION SUFFLY AIR DOOR IN D.C. A. A. DOOR DIFFUSER SYSTEM. MOUNT DROP DIFFUSER SYSTEM AS HIGH AS POSSIBLE. REFER TO MECHANICAL CONTRACTOR SHALL TRANSITION SUPPLY AIR DUCT IN DROP AND CONNECT TO RTU DROP BOX DIFFUSER DETAIL ON DWG. M1.2 FOR ADDITIONAL INFORMATION. OFFSET DROP DIFFUSER SYSTEM AS NECESSARY TO AVOID LIGHTS.
- MOUNT TRANSFER AIR AND/OR EXHAUST AIR GRILLE ON WALL AS HIGH AS POSSIBLE, APPROXIMATELY 2 FEET BELOW STRUCTURE. MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL 14"x14"x12" PLENUM BOX BEHIND GRILLE. MECHANICAL CONTRACTOR SHALL EXTEND AND CONNECT TRANSFER OR EXHAUST AIR DUCT INTO BACK OF PLENUM BOX.
- 7 1" TOTAL FREE AREA BETWEEN FLOORING AND BOTTOM OF DOOR. UNDERCUT DOOR BY GENERAL CONTRACTOR.
- 8 EXTEND RETURN AIR DUCT, FULL SIZE, WITH ELBOW AS HIGH AS POSSIBLE. REFER TO RTU DROP BOX DIFFUSER DETAIL ON DWG. M1.2. COVER RETURN AIR DUCT OPENING WITH 1"x1" WIRE MESH SCREEN. FURNISH AND INSTALL RETURN AIR DUCT WITH 1" THICK ACOUSTIC LINING.
- DUCT TEMPERATURE SENSOR, MOUNTED IN BOTTOM OF MAIN SUPPLY AIR DUCT. REFER TO THE
- SIEMENS EMS DRAWING SET (EMS-1 THRU EMS-4) FOR MORE INFORMATION. ROOFTOP UNIT DIGITAL ZONE CONTROLLER. REFER TO THE SIEMENS EMS DRAWING SET (EMS-1
- EMS TOUCHPAD. COORDINATE WITH ELECTRICAL CONTRACTOR AND EMS DRAWINGS FOR MORE
- RELATIVE HUMIDITY SENSOR MOUNTED ON COLUMN AT 7'-0" A.F.F. NOTE: REFER TO SIEMENS
 FMS DRAWINGS SET FOR ADDITIONAL INFORMATION EMS DRAWINGS SET FOR ADDITIONAL INFORMATION.
- (13) THERMOSTAT MOUNTED ON WALL AT 4'-0" A.F.F. TO CONTROL DIFFUSER.
- (14) THERMOSTAT MOUNTED ON WALL AT 4'-0" A.F.F. TO EXHAUST FAN.

COORDINATE IN FIELD. MOUNT A MINIMUM OF 12'-0" A.F.F.

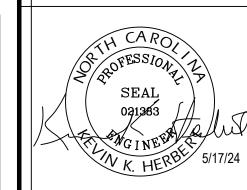
THRU EMS-4) FOR MORE INFORMATION.

- (15) EXTEND AND CONNECT NEW SUPPLY AIR BRANCH DUCT, SIZE AS INDICATED ON PLAN, INTO SUPPLY AIR DUCT MAIN PRIOR TO CONCENTRIC DIFFUSER. INSTALL OPPOSED BLADE DAMPER BETWEEN BRANCH SUPPLY AIR DUCT TAKE-OFF AND DROP BOX DIFFUSER.
- (16) CARBON DIOXIDE SENSOR MOUNTED ON COLUMN AT 7'-0" A.F.F. REFER TO THE SIEMENS EMS DRAWING SET (EMS-1 THRU EMS-4) FOR MORE INFORMATION.
- UH-01 SENSOR. REFER TO THE SIEMENS EMS DRAWING SET (EMS-1 THRU EMS-4) FOR MORE
- INFORMATION.
- UH-02 SENSOR. REFER TO THE SIEMENS EMS DRAWING SET (EMS-1 THRU EMS-4) FOR MORE INFORMATION. (19) NEW GAS-FIRED UNIT HEATER. SUSPEND GAS UNIT HEATER WITH ALL THREADED RODS AND

NEOPRENE VIBRATION ISOLATORS FROM STRUCTURE FRAMING AS HIGH AS POSSIBLE.

(20) MECHANICAL CONTRACTOR SHALL EXTEND CONCENTRIC INTAKE/EXHAUST FLUE THRU ROOF IN PRE-FAB INSULATED ROOF CURB. REFER TO GAS-FIRED UNIT HEATER DETAIL ON DWG. M1.2. MECHANICAL CONTRACTOR SHALL COORDINATE ALL ROOFING WORK WITH LANDLORD AND LANDLORD'S APPROVED ROOFING CONTRACTOR

45
16,000
356



REVISIONS

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MECHANICAL PLAN

05/17/24

JOB NO. 23475

	ROOFTOP UNIT SCHEDULE (NO SUBSTITUTIONS ALLOWED)																		
TAG	TAG LABEL MANUFACTURER NOMINAL CFM E.S.P. OUTDOOR				HEATING CAPACITY				COOLING CAPA				ELECTRICAL DATA			REMARKS			
	TAG	MODEL NUMBER	TONNAGE	-	(IN.)	AIR	1st STAGE (MBH)	2nd STAGE (MBH)	AFUE (%)	EAT DB/WB	TOTAL (MBH)	SENSIBLE (MBH)	EER/SEER IEER	AMBIENT TEMP.	S/A FAN HP VOLTAGE	MCA	MOCP	WEIGHT (LBS)	
RTU 01	XXXX-RTU-01	LENNOX LGT150H4EH1Y	12-1/2	5000	0.6"	1250	156/126.4	240/194	81	80/67	146.1	108.1	10.8 EER 14.6 IEER	95°F	3.75 HP 208/230V 3 PH	61	80	1600	SEE NOTES BELOW.
RTU 02	XXXX-RTU-02	LENNOX LGT120H4EH1Y	10	4000	0.8"	1000	156/126.4	240/194	81	80/67	121.9	89.0	12.1 EER 15.5 IEER	95°F	3.75 HP 208/230V 3 PH	52	60	1400	SEE NOTES BELOW.
RTU 03	XXXX-RTU-03	LENNOX LGT120H4EH1Y	10	4000	0.8"	1000	156/126.4	240/194	81	80/67	121.9	89.0	12.1 EER 15.5 IEER	95°F	3.75 HP 208/230V 3 PH	52	60	1400	SEE NOTES BELOW.
RTU 04	XXXX-RTU-04	LENNOX LGT150H4EH1Y	12-1/2	5000	0.6"	750	156/126.4	240/194	81	80/67	146.1	108.1	10.8 EER 14.6 IEER	95°F	3.75 HP 208/230V 3 PH	61	80	1600	SEE NOTES BELOW.

FURNISH WITH THE FOLLOWING:

14" HIGH PRE-FABRICATED INSULATED ROOF CURB BY MECHANICAL CONTRACTOR

BAROMETRIC RELIEF DAMPERS HIGH PERFORMANCE ECONOMIZER 0-100% COMPLETE WITH FAULT DETECTOR AND DIAGNOSTICS SYSTEM (FDD)

PATTERN

AS SHOWN

AS SHOWN

AS SHOWN

4-WAY

EXHAUST

TRANSFER

TRANSFER

AREA

SERVED

RESTROOM

RESTROOM

MANAGER'S

OFFICE

OFFICE

SERVED

RECEIVING

SIZE

NOTED

24x24

NOTED

SERVICE

EXHAUST

EXHAUST

EXHAUST

EXHAUST

7. HANGING KIT WITH NEOPRENE VIBRATION ISOLATORS

120 99.6 2049 83%

4. 30° DOWNTURN NOZZLE.

6. 14" HIGH PRE-FAB ROOF CURB

INPUT OUTPUT

BLADE

BLADE

BLADE

DIRTY FILTER SWITCH, 2" MERV 8 FILTERS

MANUFACTURER

& MODEL NUMBER

PRODIGY PPD2

AES INDUSTRIES

ADB-1 10-12.5

XXXX-EF-01

XXXX-EF-02

XXXX-EF-03

XXXX-EF-04

GRAVITY BACKDRAFT DAMPER

LABEL TAG

XXXX-UH-01

3. SUMMER FAN SWITCH

NOTES: PROVIDE WITH THE FOLLOWING ITEMS:

. FACTORY INSTALLED DISCONNECT SWITCH

DISCONNECT SWITCH

METAL CEILING GRILLE

PLAN TAG

NOTES: PROVIDE WITH THE FOLLOWING ITEMS:

INTEGRAL SPEED CONTROL SWITCH FOR BALANCING

BURGLAR BARS BY MECHANICAL CONTRACTOR

. MSAV (MULTI-STAGE AIR VOLUME) SUPPLY AIR BLOWER

. FACTORY INSTALLED UNIT NON-FUSED DISCONNECT - WEATHERPPROOF LENNOX CONTACT: Garry Baker: LennoxNationalAccounts@LennoxInd.com (972) 497-6665

NOTED

NOTED

NOTED

NOTED

NOTED

NOTED

MANUFACTURER

& MODEL NUMBER

SP-A190

GREENHECK

MANUFACTURER

& MODEL NUMBER

REZNOR

UBZ125

. VERTICAL CONCENTRIC COMBUSTION AIR/VENT KIT(CC2)

SP-A190

10. HIGH AND LOW PRESSURE SWITCHES 11. FREEZE STAT SERVICE VALVES

LENNOX NATIONAL ACCOUNT TECH SUPPORT: (800) 367 6285 option 2

STYLE

CEILING

CEILING

MOUNTED

EXPOSED

MOUNTED

MOUNTED

ESP

CFM

100

250

350

GAS UNIT HEATER SCHEDULE

& VOLTAGE

3/4 HP

120V/1 PH.

5. UNIT HEATER TO BE CONTROLLED FROM "UNIT MOUNTED" ZONE CONTROLLER SENSOR

(REFER TO THE SIEMENS EMS DRAWING SET EMS-1 THRU EMS-4 FOR MORE INFORMATION.)

CFM AFUE

FAN SCHEDULE

& VOLTAGE

113 WATTS 120V/1Ø

119 WATTS

120V/1Ø

138 WATTS

120V/1Ø

13.2

5. CONTROLLED BY LIGHT SWITCH (WHEN LIGHT SWITCH IS ACTIVATED THE FAN WILL ENGAGE)

8. LINE VOLTAGE (120V) COOLING ONLY THERMOSTAT

MOCP

COMBINATION HAIL/COIL GUARD

GRILLE, REGISTER AND DIFFUSER SCHEDULE

SIZE

12x12

MAXIMUM

NC LEVEL

POWDER

COAT

POWDER

WHITE POWDER

MILL FINISH

POWDER

COAT

POWDER

POWDER

FAN

TYPE

1400 | CEILING MTD.

1400 CEILING MTD.

IN-LINE

VENT CONN.

OUTLET

4" DIA.

INLET

4" DIA.

2550 IN-LINE

RPM

3000

COAT

SOUND

LEVEL

3.4 SONES

9. HINGED ACCESS PANELS

8. R-410a REFRIGERANT

14. CYCLE PROTECTION 15. 5-YEAR COMPRESSOR WARRANTY

MATERIAL

STEEL

STEEL

STEEL

STEEL

ALUMINUM

STEEL

WEIGHT

(LBS)

12

12

REMARKS

SEE NOTES BELOW

REMARKS

SEE NOTES 1 - 7 BELOW

SEE NOTES 1 - 7 BELOW

SEE NOTES 3 & 8 BELOW

SEE NOTES 3 & 8 BELOW

16. GFCI - FACTORY INSTALLED/FIELD WIRED BY ELECTRICIAN 17. AES INDUSTRIES DROP DIFFUSER SYSTEM

REMARKS

(4) ADB-1 10-12.5 18. ROOFTOP UNITS REMOTE SPACE TEMPERATURE SENSORS AND CARBON DIOXIDE SENSORS REFER TO THE SIEMENS EMS DRAWING SET (EMS-1 THRU EMS-4) FOR MORE INFORMATION.

PROVIDE WITH WALL MOUNTED ROOM T'STAT W/LCD DISPLAY. MC

TO PROVIDE 120/24V CONTROL TRANSFORMER. MC SHALL WIRE

LOW VOLTAGE T'STATS. PROVIDE WITH INSULATED BACKPANS.

FURNISHED BY LENNOX AND INSTALLED BY THE

MECHANICAL CONTRACTOR.

NOTE: MECHANICAL CONTRACTOR SHALL PROVIDE REMOTE TEST STATIONS FOR DUCT DETECTORS. REFER TO MECHANICAL PLAN TAG NOTE #1 ON DWG. M1.0 FOR ADDITIONAL INFORMATION.

19. SMOKE DETECTORS IN THE SUPPLY AND RETURN

20. DRAIN PAN OVERFLOW SWITCH

FIELD INSTALLED OPTIONS NOTE: MECHANICAL CONTRACTOR SHALL BE
RESPONSIBLE FOR ALL ITEMS LISTED ABOVE AS A FIELD INSTALLED OPTION
IF ROOFTOP UNIT COMES AS BARE BONES STYLE (NO CHANGE ORDERS WILL
BE APPROVED). MECHANICAL CONTRACTOR SHALL COORDINATE WITH
GENERAL CONTRACTOR AND THE ELECTRICAL CONTRACTOR FOR ALL THE
FIELD INSTALLED ITEMS.

	VENTILATION AIR REQUIREMENT							
HVAC UNIT	AREA SERVED	OCCUPANT LOAD	REQUIRED VENTILATION	O.A. REQUIRED (CFM)	O.A. (MIN.) SUPPLIED (CFM)	REMARKS		
RTU 01-03	SALES AREA 101	141 (9,381 SF)	7.5 CFM/PERSON .12 CFM/SF (1.25)	2729	2900	PER NORTH CAROLINA MECHANICAL CODE		
RTU 04	RECEIVING / SALES REPLENISHMENT AREA 104 & 105	6 (5,959 SF)	5 CFM/PERSON .06 CFM/SF (1.25)	484	750	PER NORTH CAROLINA MECHANICAL CODE		
RTU 02	SUPPORT OFFICE 103	1 (126 SF)	5 CFM/PERSON .06 CFM/SF (1.25)	16	88	PER NORTH CAROLINA MECHANICAL CODE		
	MANAGER OFFICE 102	1 (128 SF)	5 CFM/PERSON .06 CFM/SF (1.25)	16	62	PER NORTH CAROLINA MECHANICAI CODE		
	VESTIBULE 100	(97 SF)	.06 CFM/SF (1.25)	7	62	PER NORTH CAROLINA MECHANICAI CODE		
RTU 03	BREAK ROOM 106	6 (154 SF)	5 CFM/PERSON .06 CFM/SF (1.25)	49	100	PER NORTH CAROLINA MECHANICAL CODE		
EF 01	RESTROOM #1 107	1 WC	70 CFM EXH./WC	70 EXH	100 EXH	QUANTITIES ARE EXHAUSTED (19 CFM OF O.A RTU-03)		
EF 02	RESTROOM #2 108	1 WC	70 CFM EXH./WC	70 EXH	100 EXH	QUANTITIES ARE EXHAUSTED (19 CFM OF O.A RTU-03)		

NORTH CAROLINA M

Az = ZONE FLOOR AREA

Pz = POPULATION Rp = TABLE 6.1 OUTDOOR AIR PER PERSON Ra = TABLE 6.1 OUTDOOR AIR PER AREA

	DUCTW	ORK SCHE	<u>DULE</u>	
DUCT SYSTEM	SMACNA PRESSURE CLASS	SMACNA SEAL CLASS	DUCT MATERIAL	
EXPOSED SUPPLY AIR			GAI VANIZED	

DUCTWORK	2" W.C.	В	STEEL STEEL	SPECIFICATIONS
CONCEALED SUPPLY AIR DUCTWORK	2" W.C.	В	GALVANIZED STEEL	2" DUCT WRAP
RETURN AIR DUCTWORK	1" W.C.	С	GALVANIZED STEEL	1" DUCT LINING
EXHAUST AIR DUCTWORK	1" W.C.	С	GALVANIZED STEEL	NONE

NOTE: ALL DUCTWORK SIZES ARE AIRWAY DIMENSIONS

	LIGHTING AND HEATING SCHEDULE											
	PARKING LOT / NON-SECURITY BUILDING FIXTURES	EXTERIOR SIGNS / SECURITY BUILDING FIXTURES	INDOOR LIGHTS (MONSAT.)	INDOOR LIGHTS (SUNDAY)	INTERIOR SIGN (MONSAT.)	INTERIOR SIGN (SUNDAY)	HEATING	COOLING	SUNDAY			
ON	DUSK (BY PHOTOCELL)	DUSK TO DAWN PHOTOCELL (ALWAYS ON DURING DARK)	7:00 AM	8:00 AM	STORE OPEN	STORE OPEN	68 DEGREES AT 7:00 AM	72 DEGREES AT 7:00 AM	SAME TEMPS AT 8:00 AM			
OFF	10:15 PM	DURING THE DAY	10:00 PM	8:00 PM	9:00 PM	6:00 PM	62 DEGREES AT 10:00 PM	78 DEGREES AT 10:00 PM	SAME TEMPS AT 8:00 PM			
LIGHTING CONTROL ZONE	GROUP 4	GROUP 3	GROUP 1	GROUP 1	GROUP 2	GROUP 2						
NOTES:	THE SYSTEM CAN BE OV	ERRIDDEN BY THE SECURITY	KEYPAD. COORDIN	NATE ON/OFF TIME	S WITH HARBOR FF	REIGHT PRIOR TO P	ROGRAMMING.		•			

MECHANICAL CONTRACTOR SHALL REFER TO ARCHITECTURAL DRAWING A0.0 FOR MECHANICAL EQUIPMENT AND ACCESSORIES PROVIDED BY HARBOR FREIGHT TOOLS.

MECHANICAL CONTRACTOR TO REVIEW AND COMPLY WITH THE REQUIREMENTS OF GENERAL NOTES ON SHEET A0.2.

	<u>VE</u>	NTILATION AIR REQ	UIREMEN	<u>T</u>	
AREA SERVED	OCCUPANT LOAD	REQUIRED VENTILATION	O.A. REQUIRED (CFM)	O.A. (MIN.) SUPPLIED (CFM)	REMARKS
SALES AREA 101	141 (9,381 SF)	7.5 CFM/PERSON .12 CFM/SF (1.25)	2729	2900	PER NORTH CAROLINA MECHANICAL CODE
CEIVING / SALES LENISHMENT AREA 104 & 105	6 (5,959 SF)	5 CFM/PERSON .06 CFM/SF (1.25)	484	750	PER NORTH CAROLINA MECHANICAL CODE
SUPPORT OFFICE 103	1 (126 SF)	5 CFM/PERSON .06 CFM/SF (1.25)	16	88	PER NORTH CAROLINA MECHANICAL CODE
IANAGER OFFICE 102	1 (128 SF)	5 CFM/PERSON .06 CFM/SF (1.25)	16	62	PER NORTH CAROLINA MECHANICAL CODE
VESTIBULE 100	(97 SF)	.06 CFM/SF (1.25)	7	62	PER NORTH CAROLINA MECHANICAL CODE
BREAK ROOM 106	6 (154 SF)	5 CFM/PERSON .06 CFM/SF (1.25)	49	100	PER NORTH CAROLINA MECHANICAL CODE
RESTROOM #1 107	1 WC	70 CFM EXH./WC	70 EXH	100 EXH	QUANTITIES ARE EXHAUSTED (19 CFM OF O.A RTU-03)
RESTROOM #2 108	1 WC	70 CFM EXH./WC	70 EXH	100 EXH	QUANTITIES ARE EXHAUSTED (19 CFM OF O.A RTU-03)
MECHANICAL CODE	BREATHING ZON	E OUTDOOR AIR FLOW (CFM) VBz = RpPz+f	RaAz x 1.25	

COND STORE NUMBER ——— EQUIPMENT TYPE----EQUIPMENT NUMBER ----

INSULATION

EXHAUST FAN WALL UNIT

ASSET LABELING SCHEDULE

XXXX-RTU-01

XXXX-RTU-02

XXXX-RTU-03

XXXX-RTU-04

XXXX-UH-01

XXXX-UH-02

XXXX-EF-01

XXXX-EF-02

XXXX-EF-03

PLAN TAG

RTU-01

RTU-02

RTU-03

RTU-04

UH-02

EF-01

EF-02

DESCRIPTION

ROOFTOP UNIT

SALES/OFFICE/VESTIBULE AREA

SALES/BREAK ROOM AREA ROOFTOP UNIT SALES REPLENISHMENT/

RECEIVING AREA

RECEIVING AREA

VESTIBULE AREA

EXHAUST FAN

RESTROOM #1

EXHAUST FAN

RESTROOM #2

EXHAUST FAN

MANAGER'S OFFICE

EXHAUST FAN

SALES AREA

FAN COIL UNIT CONDENSING UNIT DUCT HEATER ROOFTOP UNIT WALL HEATER

XXXX-EF-04 SUPPORT OFFICE AIR HANDLING UNIT, FURNACE,

UNIT HEATER, CABINET UNIT HEATER, MISC MISCELLANEOUS

NOTE: MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE CONSTRUCTION PM TO ACQUIRE THE STORE NUMBER PRIOR TO LABELING THE EQUIPMENT. THE MECHANICAL CONTRACTOR SHALL UPDATE THE ASBUILT DRAWINGS WITH THE STORE NUMBER.

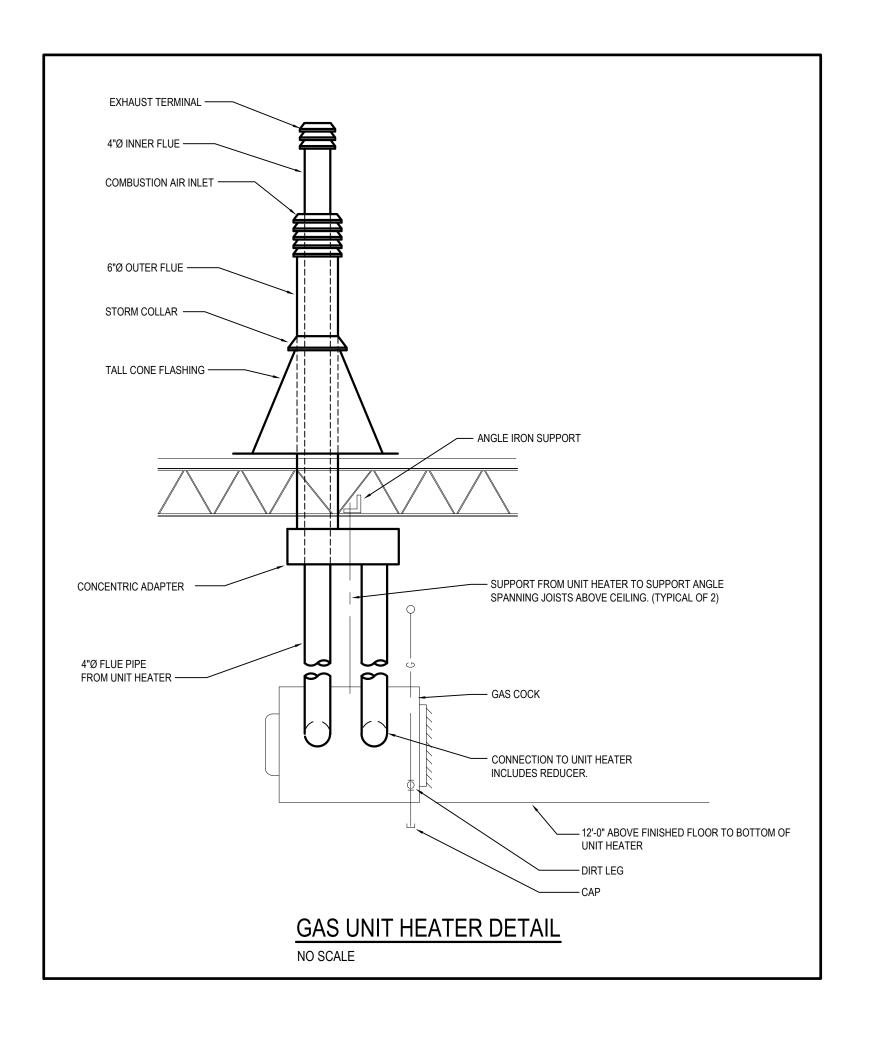
MECHANICAL CONTRACTOR SHALL LABEL ALL EQUIPMENT SO THEY ARE VISIBLE FROM BELOW. EQUIPMENT SHALL BE IDENTIFIED WITH THE LABEL TAG AS INDICATED ABOVE. SPACE TEMPERATURE SENSORS AND THERMOSTATS SHALL BE IDENTIFIED WITH THE EQUIPMENT PLAN TAG THAT SERVES THEM. THERMOSTAT AND SENSOR LABELS ARE TO BE 1/4" TALL BLACK STICKERS AND ARIAL FONT. EXHAUST FAN AND UNIT HEATER (ALL TYPES) LABELS ARE TO BE 1/2" TALL BLACK STICKERS AND ARIAL FONT. ROOFTOP EQUIPMENT LABELS ARE TO BE 2" TALL BLACK STICKERS AND ARIAL FONT. CONCENTRIC DIFFUSER LABELS ARE TO BE 2" TALL BLACK STICKERS AND ARIAL FONT. OTHER DIFFUSERS IN ENCLOSED SPACES ARE TO BE LABELED WITH THE RTU THAT SERVES THEM WITH 1/2" TALL BLACK STICKERS AND ARIAL FONT. NOTE: EXTERIOR LABELS MUST BE SUITABLE FOR WEATHER APPLICATIONS AND FADE RESISTANT. EQUIPMENT LABELS SHALL BE MOUNTED NEXT TO THE UNIT MOUNTED DISCONNECT. IF THE UNIT DOES NOT HAVE A UNIT MOUNTED DISCONNECT, THEN PLACE ON THE MOST VISIBLE PLACE.

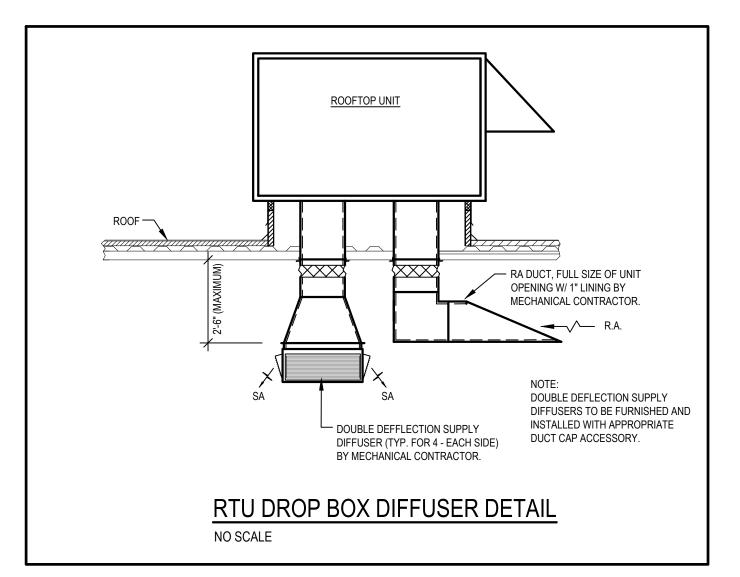
> **MECHANICAL** SCHEDULES

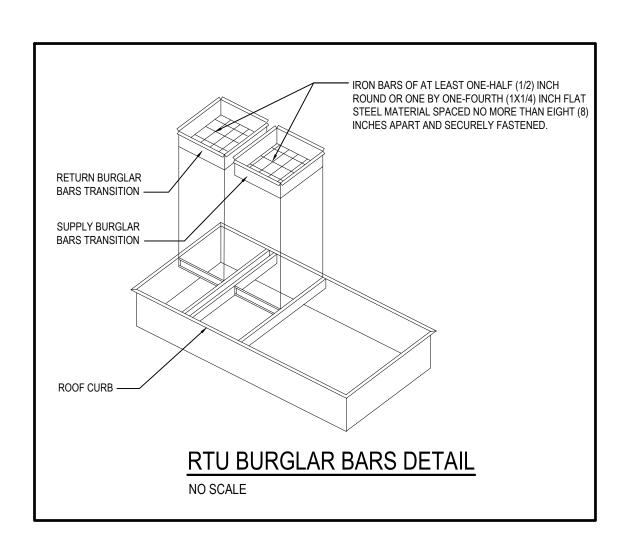
05/17/24 DATE JOB NO. 23475

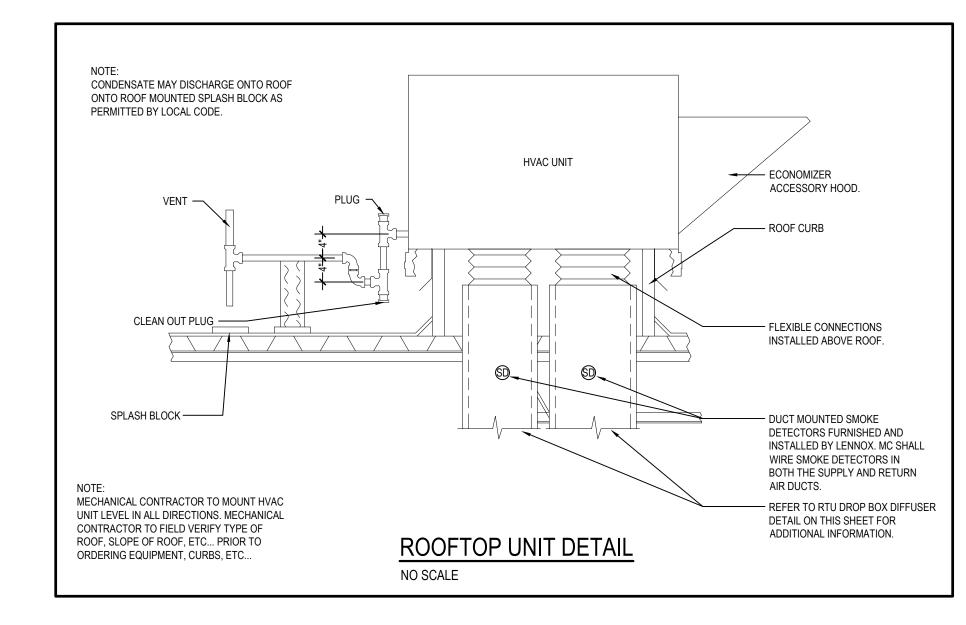
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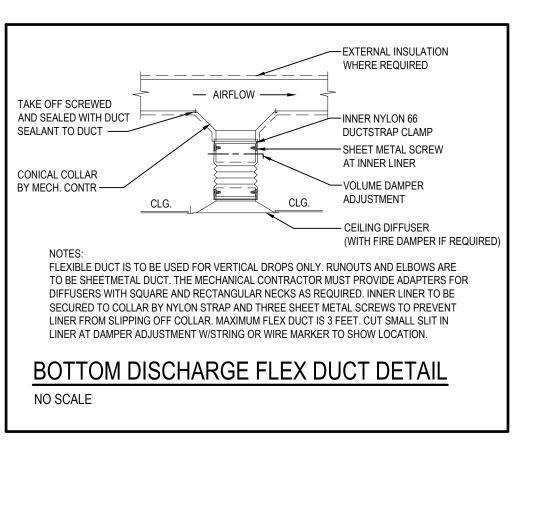
			ELECTR	RIC CABINE	T UNIT HEA	ATER S	CHEDU	<u>LE</u>
PLAN TAG	LABEL TAG	MANUFACTURER & MODEL NUMBER	HEATING KW	CAPACITY BTU/HR	VOLTAGE	CFM	AMPS	REMARKS
UH 02	XXXX-UH-02	MARKEL F3484	4	13,600	208V 1 PHASE	425	19.2	SEE NOTES BELOW
2. HEATER	R TO BE RECESSE	ONNECT, LOUVER OUT D CEILING (LAY-IN) MOU TROLLED FROM "UNIT I	JNTED			ER TO THE	SIEMENS	EMS DRAWING SET EMS-1 THRU EMS-4 FOR MORE INFORMATION

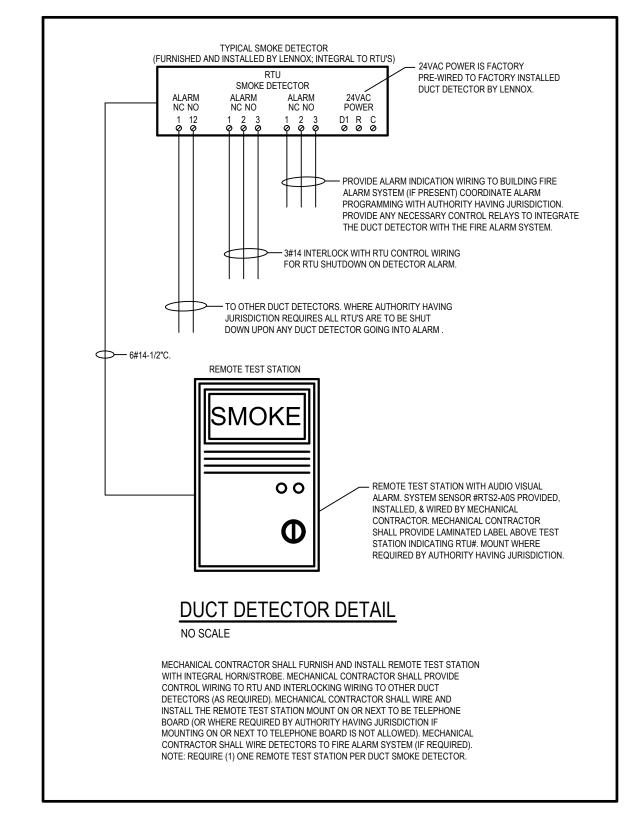


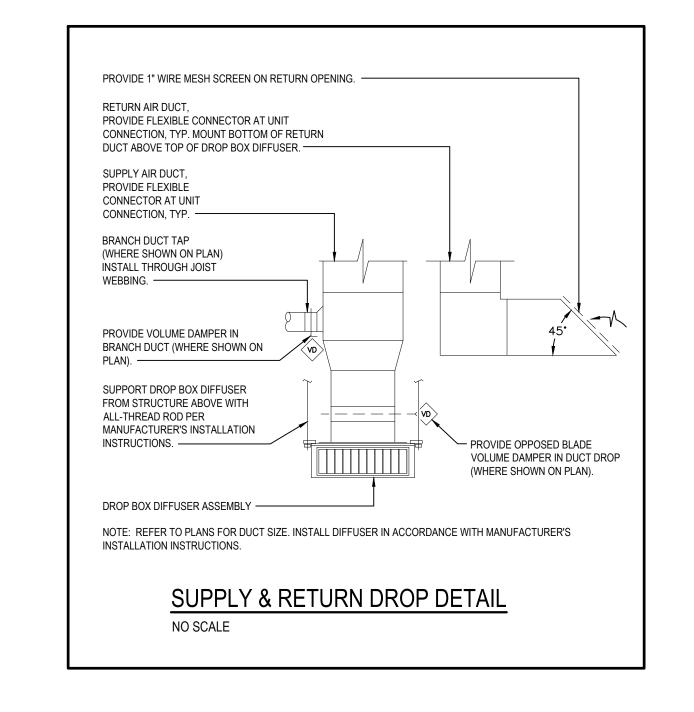


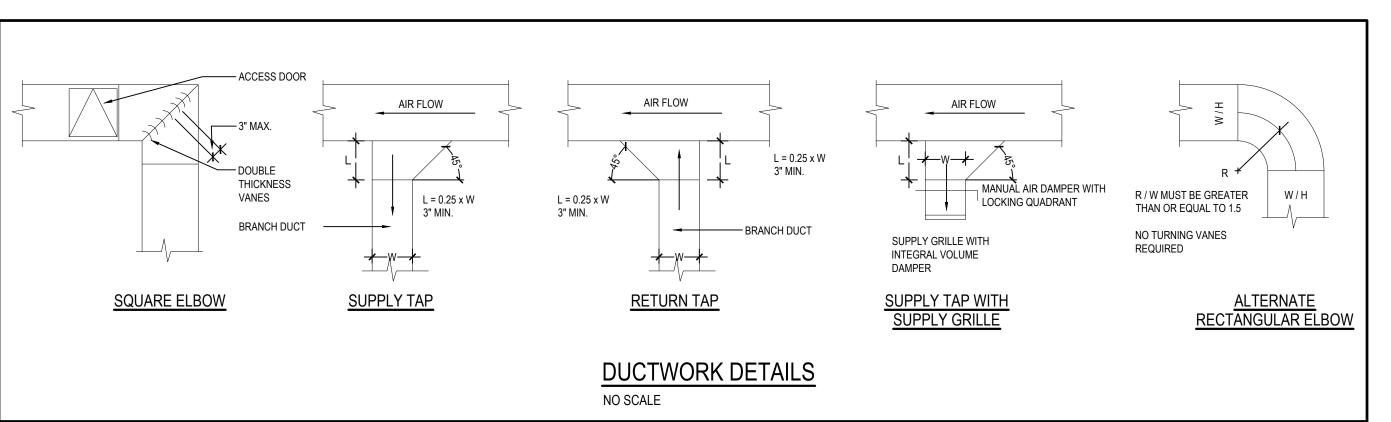


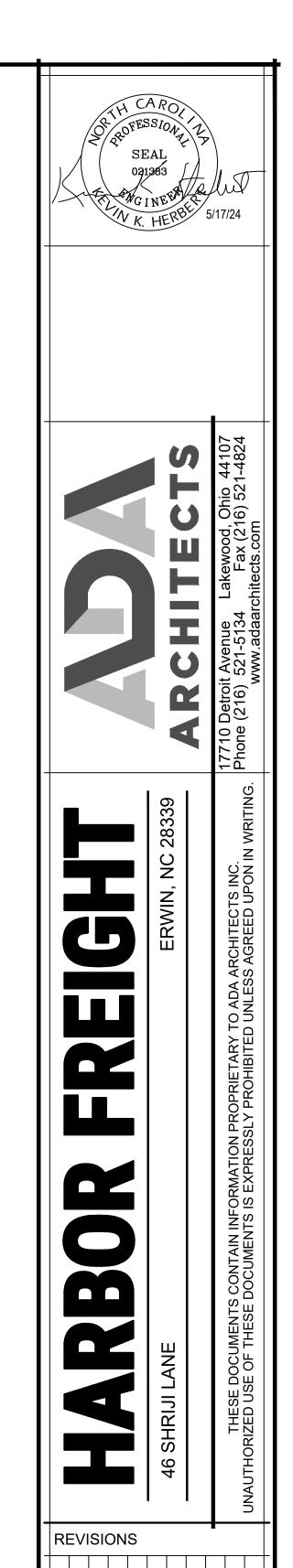












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MECHANICAL

DETAILS

JOB NO. 23475

SHEET NO.

05/17/24

1. DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND ALL OTHER SPECIFICATION SECTIONS (IF PROVIDED AS PART OF THE CONTRACT) ARE A PART OF THIS CONTRACT. 2. THE TERM "CONTRACTOR" SHALL MEAN THE "MECHANICAL CONTRACTOR HIRED TO COMPLETE THE WORK OUTLINED IN THESE PLANS AND SPECIFICATIONS" UNLESS OTHERWISE SPECIFIED.

3. THE CONTRACTOR FOR THIS WORK IS REQUIRED TO REVIEW ALL DRAWINGS FOR ALL OTHER TRADES. 4. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING ITS SUBCONTRACTORS WITH A FULL SET OF BID DOCUMENTS INCLUDING SPECIFICATIONS AND MUST COORDINATE ITS WORK AND INSPECTIONS AND THE WORK AND INSPECTION OF THEIR SUBCONTRACTORS WITH ALL OTHER TRADES ON SITE TO CONFORM WITH THE GENERAL

5. BY SUBMITTING A QUOTATION OR PROPOSAL THE MECHANICAL CONTRACTOR EXPRESSLY STATES AND WARRANTS THAT: ALL DRAWINGS AND SPECIFICATIONS HAVE BEEN THOROUGHLY REVIEWED, CONTRACTOR HAS BECOME FAMILIARIZED WITH JOB SITE CONDITIONS AND IS TOTALLY QUALIFIED TO PERFORM ALL OF THE WORK REQUIRED. 6. BEFORE SUBMITTING A FINAL PROPOSAL THE CONTRACTOR SHALL EXAMINE THE SITE OF THE PROPOSED WORK TO DETERMINE THE EXISTING CONDITIONS THAT MAY AFFECT THE PROPOSAL. IF DISCREPANCIES ARE NOTED BETWEEN THE DOCUMENTS AND THE EXISTING CONDITIONS THE ARCHITECT SHALL BE NOTIFIED AND THE CONTRACTOR SHALL RECEIVE CLARIFICATION BEFORE SUBMITTING A BID. THE SUBMISSION OF A PROPOSAL SHALL INDICATE THAT ALL CHARGES AND COSTS MADE NECESSARY BY EXISTING CONDITIONS ARE INCLUDED AND THAT THE COMPLETE SYSTEM AS DESCRIBED HEREIN WILL BE FURNISHED AT THE PROPOSED COST.

7. WHEN USED, THE TERM "PROVIDED BY CONTRACTOR" SHALL BE INTERPRETED AS MEANING "FURNISHED AND INSTALLED BY CONTRACTOR" WITH THE EXCEPTION WHERE ITEMS ARE "PROVIDED BY TENANT" SHALL BE INTERPRETED AS MEANING "FURNISHED BY TENANT (INSTALLED BY CONTRACTOR)", EXCEPT WHERE NOTED OTHERWISE.

1. THE MECHANICAL SUBCONTRACTORS QUOTING ON THEIR SPECIFIC SCOPE OF WORK/SERVICES TO CONTACT THE LOCAL BUILDING DEPARTMENT/AGENCY TO DISCUSS CODE ISSUES/IDIOSYNCRASIES REGARDING THEIR SERVICES AND THE QUOTE ASSOCIATED WITH THE SERVICES TO THE GENERAL CONTRACTOR FOR THIS PROJECT. THIS CONTRACTOR TO BE FAMILIAR WITH THE SITE WHERE SUCH SERVICES/WORK WILL BE PERFORMED, THIS SPECIFIC USE AND THE IDIOSYNCRASIES ASSOCIATED WITH THE LIFE, SAFETY AND HEALTH ASSOCIATED WITH THIS WORK AND TO INDICATE ON THE QUOTE ANY ITEMS REQUIRED THAT ARE NOT NECESSARILY SHOWN ON THE DRAWINGS/SPECIFICATIONS. 2. THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, SERVICES, TOOLS, TRANSPORTATION, INCIDENTALS AND DETAILS NECESSARY TO PROVIDE COMPLETE AND FULLY FUNCTIONAL MECHANICAL SYSTEMS AS SHOWN ON THE DRAWINGS, CALLED FOR IN THE SPECIFICATIONS (IF SUPPLIED) AND AS REQUIRED BY JOB CONDITIONS. ALL WORK NOT SPECIFICALLY NOTED AS BEING BY THE LANDLORD SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR. CLOSELY COORDINATE THE ENTIRE INSTALLATION WITH LANDLORD AS REQUIRED. FIELD VERIFY THE EXACT TYPE, SIZE, LOCATION, REQUIREMENTS, ETC. OF EXISTING EQUIPMENT, PIPE AND DUCTS SERVING THE TENANT SPACE PRIOR TO SUBMISSION OF PID.

3. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT EACH OTHER AND ANY MATERIAL OR LABOR CALLED FOR IN ONE SHALL BE PROVIDED EVEN THOUGH NOT SPECIFICALLY MENTIONED IN BOTH. ANY MATERIAL OR LABOR WHICH IS NEITHER SHOWN ON THE DRAWINGS NOR CALLED FOR IN THE SPECIFICATIONS, BUT WHICH IS NECESSARY TO COMPLETE THE WORK OR WHICH IS USUALLY INCLUDED IN WORK OF SIMILAR CHARACTER, SHALL BE PROVIDED AS PART OF THE CONTRACT.

4. WHERE THE DRAWINGS AND / OR SPECIFICATIONS CALL FOR ITEMS WHICH EXCEED CODES OR THE LANDLORD'S TENANT CRITERIA, THE CONTRACTOR IS STILL RESPONSIBLE FOR PROVIDING THE SYSTEM AS DESIGNED AND DESCRIBED ON THE DRAWINGS, UNLESS SPECIFICALLY NOTED OTHERWISE. 5. THE CONTRACTOR SHALL OBTAIN AND COMPLY WITH DETAILED REQUIREMENTS OF LEASE EXTRACTS FROM THE LANDLORD AND TENANT.

6. COORDINATE LOCATIONS OF ALL AIR OUTLETS WITH ALL WALLS, LIGHTS, SPRINKLER HEADS, CEILING TILES AND DECORATIVE CEILING FIXTURES PRIOR TO INSTALLATION. 7. ALL MECHANICAL WORK SHALL BE INSTALLED SO AS TO BE READILY ACCESSIBLE FOR OPERATION, SERVICE, MAINTENANCE AND REPAIR. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING SUFFICIENT ACCESS TO ALL EQUIPMENT FOR SERVICE.

8. THE CONTRACTOR SHALL DO ALL CUTTING, CORE DRILLING, CHASING, OR CHANNELING AND PATCHING REQUIRED FOR ANY WORK UNDER THIS CONTRACT. CUTTING SHALL HAVE PRIOR APPROVAL BY THE TENANT'S CONSTRUCTION MANAGER AND THE LANDLORD OR LANDLORD'S REPRESENTATIVE. PATCHING SHALL MATCH FINISH OF SURROUNDING AREA.

. ALL WORK SHALL BE PERFORMED IN A NEAT AND PROFESSIONAL MANNER USING GOOD CONSTRUCTION PRACTICES. ALL WORK SHALL CONFORM TO THE LATEST ADOPTED EDITION OF THE LANDLORD'S CRITERIA; STATE, COUNTY AND LOCAL CODES AND ORDINANCES; THE LATEST EDITIONS OF ASHRAE STANDARDS, THE LIFE SAFETY CODE, THE APPLICABLE BUILDING CODE, UNDERWRITERS LABORATORIES, THE NATIONAL ELECTRICAL CODE, NFPA 70, 90A AND 96 AND ALL OTHER APPLICABLE CODES ENFORCED BY AUTHORITIES HAVING JURISDICTION. THE CHANGES REQUIRED BY ANY APPLICABLE CODES SHALL BE INCLUDED IN THE BID. AFTER THE CONTRACT IS ISSUED, NO ADDITIONAL COST DUE TO CODE ISSUES SHALL BE REIMBURSED BY THE TENANT TO THE CONTRACTOR. D. LICENSES, PERMITS, INSPECTIONS AND FEES

1. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL LICENSES, PERMITS, INSPECTIONS AND FEES REQUIRED OR RELATED TO THIS WORK. 2. FURNISH TO THE TENANT'S CONSTRUCTION MANAGER ALL CERTIFICATES OF INSPECTION AND FINAL INSPECTION APPROVAL AT COMPLETION OF PROJECT.

DRAWINGS (PLANS AND SPECIFICATIONS) ARE DIAGRAMMATIC AND INDICATE THE GENERAL LOCATION AND INTENT OF HE MECHANICAL SYSTEMS. BECAUSE OF THE SCALE OF THE DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL DUCT ND PIPE OFFSETS, FITTINGS AND ACCESSORIES THAT MAY BE REQUIRED. THE MECHANICAL CONTRACTOR MUST OBTAIN APPROVED CONSTRUCTION DRAWINGS FROM THE GENERAL CONTRACTOR BEFORE BEGINNING ANY WORK. 2. THE LAYOUT SHOWN ON THE DRAWINGS IS BASED ON A PARTICULAR MAKE OF EQUIPMENT. IF ANOTHER MAKE OF EQUIPMENT IS USED WHICH REQUIRES MODIFICATION OR CHANGE OF ANY DESCRIPTION FROM THE DRAWINGS OR SPECIFICATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE AS PART OF THIS WORK, FOR MAKING ALL SUCH MODIFICATIONS AND CHANGES, INCLUDING THOSE INVOLVING OTHER TRADES WITH THE COST THEREOF INCLUDED IN THE BID. IN SUCH CASE, CONTRACTOR SHALL SUBMIT DRAWINGS AND SPECIFICATIONS PRIOR TO STARTING WORK SHOWING ALL SUCH MODIFICATIONS AND CHANGES. THE PROPOSAL SHALL BE SUBJECT TO THE APPROVAL OF THE TENANT'S CONSTRUCTION MANAGER TENANT'S CONSTRUCTION MANAGER.

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF THE DEMOLITION OF EXISTING MECHANICAL WORK IN THE SPACE NOT SHOWN TO BE REUSED IN THE NEW TENANT SPACE. 2. THE CONTRACTOR SHALL INCLUDE AND WILL BE HELD RESPONSIBLE FOR, THE REMOVAL OF ALL EXISTING FIRE PROTECTION, PLUMBING FIXTURES, PIPING, HVAC UNITS, REFRIGERANT RECAPTURE, EXHAUST FANS, DUCTWORK, ETC AND ASSOCIATED ROOF CURBS NOT TO BE REUSED ON THIS PROJECT, UNLESS SPECIFICALLY NOTED OTHERWISE. CONTRACTOR MUST VERIFY WITH THE LANDLORD ALL PRESUMED ABANDONED EQUIPMENT, PIPES, DUCTWORK AND EQUIPMENT PRIOR TO REMOVAL. ROOF CURBS SHALL BE REMOVED AND THE ROOF PATCHED UNLESS NOTED FOR

REUSE OR RECONFIGURATION ON PLANS. ROOF PATCHING SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE BY A ROOFING CONTRACTOR APPROVED BY THE LANDLORD. ALL EXTRANEOUS ITEMS IN THE SPACE OR ON THE ROOF THIS SPACE) NOT APPLICABLE TO THE NEW WORK OR PART OF THE LANDLORD'S OR ANOTHER TENAN' ACTIVE SYSTEM MUST BE REMOVED AND ROOF/WALL/FLOOR PATCHED/REPAIRED TO MATCH THE EXISTING STRUCTURE. EXISTING ABANDONED PIPES, DUCTS OR EQUIPMENT IN THE FLOOR, EMBEDDED IN CONCRETE OR OTHERWISE INACCESSIBLE ARE TO BE CUT OFF AND SEALED BELOW OR WITHIN FLOOR OR WALL LEVEL WHEN THEY ARE NOT

IF REQUIRED BY THE LANDLORD OR CODES, ABANDONED PIPING AND/OR DUCTWORK MUST BE REMOVED TO POINT OF ORIGIN. CONFIRM THE EXTENT OF DEMOLITION PRIOR TO BID AND INCLUDE IN BID PROPOSAL. 3. ACTIVE LANDLORD OR OTHER TENANT SERVICES ENCOUNTERED IN WORK SHALL BE PROTECTED AND SUPPORTED. IF EXISTING SERVICES NOT ANTICIPATED REQUIRE RELOCATION, CONTACT THE TENANT'S CONSTRUCTION MANAGER IMMEDIATELY. ALL COSTS FOR REPAIR OF DAMAGES TO ACTIVE LANDLORD OR OTHER TENANT SERVICES DURING CONSTRUCTION SHALL BE PAID FOR BY THE CONTRACTOR CAUSING THE DAMAGE. 4. TIE-INS AND MODIFICATIONS TO EXISTING LANDLORD SERVICES MUST BE DONE WITH MINIMUM INTERRUPTION OF

4. IE-INS AND MODIFICATIONS TO EXISTING DANDLORD STRVICES MUST BE DONE WITH MINIMOM INTERREPTION LANDLORD OPERATION AND DURING HOURS SPECIFIED BY THE LANDLORD. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING EXACT WORKING HOURS OF THIS WORK WITH THE LANDLORD PRIOR TO SUBMITTING THEIR BID. THE CONTRACTOR SHALL INCLUDE IN THEIR BID, ALL PREMIUM TIME REQUIRED TO PERFORM MODIFICATIONS DURING OTHER THAN NORMAL WORKING HOURS. ALL SUCH WORK MUST BE COORDINATED WITH THE LANDLORD. 5. ALL WORK SHALL BE DONE WITH A MINIMUM OF NOISE AND DISTURBANCE TO BUSINESS ROUTINE. ALL WORK SCHEDULES SHALL BE COORDINATED WITH AND APPROVED BY, THE TENANTS CONSTRUCTION MANAGER. 6. CONTRACTOR SHALL PROTECT THEIR WORK AND EQUIPMENT FROM DAMAGE, VANDALS, ETC. ANY ITEM THAT I DAMAGED, VANDALIZED OR STOLEN PRIOR TO ACCEPTANCE OF BUILDING BY OWNER AND ARCHITECT SHALL BE REPLACED BY RESPECTIVE CONTRACTOR AT NO CHARGE TO TENANT.

7. IT IS SPECIFICALLY THE INTENTION OF THIS SPECIFICATION TO HOLD THE CONTRACTOR RESPONSIBLE FOR ALL DAMAGE DONE TO ANY EXISTING FACILITIES, EQUIPMENT, PAINTING, OR ARCHITECTURAL AND STRUCTURAL FEATURES OF THE BUILDING, BY EITHER THEIR OWN WORKMEN OR BY ANY OF THEIR SUBCONTRACTORS. THE CONTRACTOR SHALL REPAIR ANY DAMAGE DONE BY THEIR OWN WORKMEN OR SUBCONTRACTORS AND THE OWNER AT THEIR DISCRETION, MAY WITHHOLD PAYMENTS EQUAL TO THE REASONABLE COST OF THE REPAIRS. 8. THIS CONTRACTOR OR THEIR WORKMEN SHALL NOT BE PERMITTED TO USE ANY PART OF THE EXISTING BUILDING AS A SHOP WITHOUT THE APPROVAL OF THE OWNER AND ARCHITECT.

9. WHERE THE WORK MAKES TEMPORARY SHUTDOWN OF SERVICES UNAVOIDABLE, THEY SHALL BE MADE AT NIGHT OR AT SUCH TIMES AS WILL CAUSE THE LEAST INTERFERENCE WITH THE ESTABLISHED OPERATING ROUTINE. 10. THIS CONTRACTOR SHALL ARRANGE THE WORK SO AS TO ASSURE THAT SERVICES WILL BE SHUT DOWN ONLY DURING THE TIME ACTUALLY REQUIRED TO MAKE THE NECESSARY CONNECTION TO THE EXISTING WORK. THIS CONTRACTOR SHALL GIVE AMPLE WRITTEN NOTICE IN ADVANCE TO THE OWNER OF ANY REQUIRED SHUT DOWN.

11. ALL MOTORS, FANS, CONTROLS, FIXTURES, HVAC UNIT, DUCTWORK AND OTHER EQUIPMENT FOR USE IN THIS CONTRACT SHALL BE PROTECTED BY TARPAULIN OR BY BOXING AS SOON AS DELIVERED TO THE SITE AND SHALL BE KEPT CLEAN AND DRY. THE MOTORS, UNITS, FIXTURES, FANS, DUCTWORK AND MOVING PARTS SHALL BE KEPT COVERED SO AS TO ELIMINATE DIRT, DUST AND OTHER MATERIALS ENTERING THE PARTS DURING ERECTION AND CONSTRUCTION WORK ON THE BUILDING. SHOULD IT BE FOUND THAT ANY PARTS ARE DAMAGED DUE TO CARELESSNESS ON THE PART OF THE CONTRACTOR IN NOT PROVIDING PROPER PROTECTION, SUCH PART OR PARTS SHALL BE REPLACED BY THE CONTRACTOR AT THEIR OWN COST AND EXPENSE. ALL OPENINGS IN DUCTS, PIPING, CONDUITS, ETC., SHALL BE PROPERLY PROTECTED WITH TEMPORARY CAPS OR PLUGS AT ALL TIMES. G. DISCREPANCIES IN DOCUMENTS

1. DRAWINGS (PLANS, SPECIFICATIONS AND DETAILS) ARE DIAGRAMMATIC AND INDICATE THE GENERAL LOCATION AND INTENT OF THE MECHANICAL SYSTEMS. WHERE DRAWING, EXISTING SITE CONDITIONS, SPECIFICATIONS OR OTHER TRADES CONFLICT OR ARE UNCLEAR, ADVISE THE GENERAL CONTRACTOR IN WRITING, PRIOR TO SUBMITTAL OF BID. THE GENERAL CONTRACTOR IS RESPONSIBLE TO ADVISE THE TENANT'S CONSTRUCTION MANAGER, IN WRITING, OF VARIATIONS TO THE CONTRACT DOCUMENTS PRIOR TO SUBMISSION OF BID. OTHERWISE, TENANT'S CONSTRUCTION MANAGER'S INTERPRETATION OF CONTRACT DOCUMENTS OR CONDITIONS SHALL BE FINAL WITH NO ADDITIONAL COMPENSATION PERMITTED.

H. TRADE NAMES AND MANUFACTURERS

1. WHERE TRADE NAMES AND MANUFACTURERS ARE USED ON THE DRAWINGS OR IN THE SPECIFICATIONS, THE EXACT EQUIPMENT SHALL BE USED AS A MINIMUM STANDARD FOR THE BASE BID. MANUFACTURERS CONSIDERED AS AN EQUIVALENT OR BETTER IN ALL ASPECTS TO THAT SPECIFIED WILL BE SUBJECT TO REVIEW IN WRITING BY THE TENANT'S CONSTRUCTION MANAGER PRIOR TO ACCEPTANCE. THE USE OF ANY UNAUTHORIZED EQUIPMENT SHALL BE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE. I. SHOP DRAWINGS

1. SUBMIT THREE COPIES OF MATERIAL LISTS AND SHOP DRAWINGS FOR ALL EQUIPMENT AND DUCT FABRICATION DRAWINGS TO THE TENANT'S CONSTRUCTION MANAGER FOR REVIEW PRIOR TO ORDERING EQUIPMENT. SUBMISSIONS MUST BE EARLY ENOUGH TO ALLOW THE TENANT'S CONSTRUCTION MANAGER EIGHT WORKING DAYS FOR REVIEW WITHOUT CAUSING DELAYS OR CONFLICTS TO THE JOB'S PROGRESS. SUBMITTALS SHALL BE IN ACCORDANCE WITH THE GENERAL CONDITIONS USING THE MANUFACTURER'S LISTED ON THE DRAWINGS. SHOP DRAWINGS SHALL INCLUDE ALL DATA THAT PERTAINS TO THE REQUIREMENTS SET FORTH ON THE DRAWINGS AND IN THE SPECIFICATIONS. THE SUBMITTAL SHALL INCLUDE BUT NOT BE LIMITED TO CUTS OR CATALOGS INCLUDING DESCRIPTIVE LITERATURE AND CHARACTERISTICS OF EQUIPMENT SHALL SHOW MAJOR DIMENSIONS, ROUGHING—IN DATA, CAPACITY, CURVES, PRESSURE DROPS, CODE COMPLIANCE, MOTOR AND DRIVE DATA AND ELECTRICAL DATA. OBSERVE SPECIAL INSTRUCTIONS WHEN REQUIRED. SUBMITTALS SHALL BEAR THE STAMP OF THE GENERAL AND SUBCONTRACTOR SHOWING THAT HE HAS REVIEWED AND CONFIRMED THAT THEY ARE IN CONFORMANCE WITH THE CONTRACT DOCLIMENTS OR INDICATE WHERE EXCEPTIONS TAKE PLACE, LACK OF SUCH CONTRACTOR'S REVIEW WILL BE CAUSE FOR REJECTION WITHOUT REVIEW BY TENANT'S CONSTRUCTION MANAGER. ALL SHOP DRAWINGS MUST APPEAR IN THE OPERATION AND MAINTENANCE MANUALS LEFT ON SITE AT JOB COMPLETION. 2. TENANT'S CONSTRUCTION MANAGER'S OR ARCHITECT'S REVIEW OF SHOP DRAWINGS OR SCHEDULES SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS, OMISSIONS OR OTHER DEFICIENCIES OR DEVIATIONS IN THE SHOP DRAWINGS FROM THE CONSTRUCTION DOCUMENTS.

3. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND / OR THEIR SUBCONTRACTORS TO FURNISH SHOP DRAWINGS AND SUBMITTALS ON ANY AND ALL EQUIPMENT, DUCT, DAMPERS, CONTROLS ETC. TO THE ARCHITECT FOR THEIR REVIEW PRIOR TO CONSTRUCTION.

MECHANICAL SPECIFICATIONS (CONTINUED)

J. RECORD DRAWINGS 1. THE CONTRACTOR SHALL MAINTAIN ONE COPY OF DRAWINGS AND SPECIFICATIONS ON THE JOB SITE TO RECORD DEVIATIONS FROM CONTRACT DRAWINGS, SUCH AS LOCATIONS OF CONCEALED PIPING VALVES AND DUCTS, REVISIONS,

ADDENDUM'S AND CHANGE ORDERS, SIGNIFICANT DEVIATIONS MADE NECESSARY BY FIELD CONDITIONS, APPROVED

2. AT COMPLETION OF THE PROJECT AND BEFORE FINAL APPROVAL, THE CONTRACTOR SHALL MAKE ANY FINAL CORRECTIONS TO DRAWINGS AND CERTIFY THE ACCURACY OF EACH PRINT BY SIGNATURE THEREON. THE DRAWINGS ARE TO BE TURNED OVER TO THE TENANT.

EQUIPMENT SUBSTITUTIONS AND CONTRACTOR'S COORDINATION WITH OTHER TRADES AND EXACT ROUTING OF ALL SANITARY

1. THE MECHANICAL CONTRACTOR SHALL INCLUDE IN THE PROPOSAL A ONE YEAR GUARANTEE, WARRANTY ON ALL EQUIPMENT AND MATERIAL INSTALLED OR REFURBISHED, ALL MATERIALS AND WORK UNDER THE CONTRACT AND SHALL MAKE GOOD, REPAIR, OR REPLACE AT THEIR OWN EXPENSE, ANY DEFECTIVE WORK, MATERIAL OR EQUIPMENT WHICH MAY BE DISCOVERED WITHIN A PERIOD OF 12 MONTHS FROM THE DATE OF WRITTEN ACCEPTANCE OF THE INSTALLATION BY IE TENANT'S CONSTRUCTION MANAGER. IN CASE OF REPLACEMENT OR REPAIR OF EQUIPMENT DUE TO FAILURE WITHIN THE GUARANTEE PERIOD, THE GUARANTEE ON THAT PORTION OF WORK SHALL BE EXTENDED FOR A PERIOD OF 12 MONTHS FROM THE DATE OF SUCH REPLACEMENT OR REPAIR. THIS GUARANTEE, WARRANTY IS TO INCLUDE ALL LABOR, MATERIAL, PARTS, ETC. NECESSARY TO MAINTAIN THE SYSTEM IN SATISFACTORY OPERATION FOR A PERIOD OF ONE YEAR STARTING FROM THE DATE OF ACCEPTANCE OF THE SYSTEM BY THE TENANT. IT SHALL ALSO INCLUDE ONE SUMMER TO WINTER CHANGEOVER AND ONE WINTER TO SUMMER CHANGEOVER, A NEW SET OF FILTERS AT THE TIME OF STARTUP AND BE PERFORMED AT THE TIME OF THE FILTER CHANGES. USE ONLY #40 PLEATED TYPE AIR FILTERS. L. OPERATIONS MANUALS

1. ONE COPY OF EACH OPERATION AND MAINTENANCE MANUAL FOR ALL EQUIPMENT FURNISHED ON THE JOB SHALL BE PROVIDED TO THE TENANT BOUND TOGETHER IN A 3 INCH, THREE RING BINDER. THE BINDER SHALL INCLUDE BUT NOT BE LIMITED TO INSTALLATION, MAINTENANCE AND OPERATING INSTRUCTIONS, PAMPHLETS OR BROCHURES, REVIEWED SHOP DRAWINGS AND WARRANTIES OBTAINED FROM EACH MANUFACTURER OF PRINCIPAL ITEMS OF EQUIPMENT

1. THE CONTRACTOR SHALL PROVIDE SLEEVES TO PROTECT EQUIPMENT OR FACILITIES IN THE INSTALLATION. EACH SLEEVE SHALL EXTEND THROUGH ITS RESPECTIVE FLOOR, WALL, OR PARTITION AND SHALL BE CUT FLUSH WITH EACH SURFACE EXCEPT SLEEVES THAT PENETRATE THE FLOOR, WHICH SHALL EXTEND 2 INCHES ABOVE THE FLOOR. 2. ALL SLEEVES AND OPENINGS THROUGH FIRE RATED WALLS AND/OR FLOORS SHALL BE FIRE SEALED WITH APPROVED SEALANDS RATED FOR THE APPLICATION SO AS TO MAINTAIN THE FIRE RATING OF THE ASSEMBLY. CONFORM TO THE U.L.

3. SLEEVES IN BEARING AND MASONRY WALLS, FLOORS AND PARTITIONS SHALL BE STANDARD WEIGHT STEEL PIPE FINISHED WITH SMOOTH EDGES. FOR OTHER THAN MASONRY PARTITIONS, THROUGH SUSPENDED CEILINGS OR FOR CONCEALED VERTICAL PIPING, SLEEVES SHALL BE 22 GAUGE GALVANIZED STEEL MINIMUM. 4. DUCT SLEEVES SHALL BE MINIMUM 14 GAUGE STEEL.

1. HANGERS SHALL INCLUDE ALL MISCELLANEOUS STEEL SUCH AS ANGLE IRON, BANDS, C-CLAMPS WITH RETAINING CLIPS, CHANNELS, HANGER RODS, ETC. NECESSARY FOR THE INSTALLATION OF WORK. . HANGERS SHALL BE FASTENED TO BUILDING STEEL, CONCRETE, OR MASONRY, BUT NOT TO PIPING OR DUCTWORK, DUCTWORK SHALL NOT BE SUPPORTED FROM ROOF DECKING AND/OR BRIDGING, BUT SHALL BE SUSPENDED FROM THE TOP CHORD OF BAR JOISTS, STEEL OR OTHER STRUCTURE. DUCTWORK SHALL CLEAR ALL SPRINKLERS AND OTHER

OBSTACLES AND SHALL BE HUNG AS HIGH AS POSSIBLE IN WORK AND STORAGE AREAS. WHERE INTERFERENCE'S OCCUR, IN ORDER TO SUPPORT DUCTWORK OR PIPING, THE CONTRACTOR MUST INSTALL TRAPEZE TYPE HANGERS OR SUPPORTS WHICH SHALL BE LOCATED WHERE THEY DO NOT INTERFERE WITH ACCESS TO FIRE DAMPERS, VALVES, ACCESS DOORS AND OTHER EQUIPMENT SERVICE REQUIREMENTS AND/OR OTHER TRADES. HANGER TYPES AND INSTALLATION METHODS ARE SUBJECT TO LANDLORD

3. HANGERS FOR ALL INSULATED PIPING SHALL BE SIZED AND INSTALLED FOR THE OUTER DIAMETER OF INSULATION. INSTALL 6 INCH LONG SPLIT CIRCLE GALVANIZED SADDLE BETWEEN THE HANGER AND THE PIPE INSULATION. 4. HANGERS AND PIPING OF DISSIMILAR METALS SHALL BE DI-ELECTRICALLY SEPARATED FROM ONE ANOTHER.

P. ACCESS DOORS 1. FURNISH STEEL ACCESS DOORS AND FRAMES, MINIMUM 16 INCHES BY 20 INCHES OR AS REQUIRED FOR ADEQUATE ACCESS TO THE GENERAL CONTRACTOR FOR ALL LOCATIONS WHERE NECESSARY TO PROVIDE ACCESS TO CONCEALED VALVES AND OTHER EQUIPMENT REQUIRING SERVICE OR INSPECTION. LOCATION, TYPE, SIZE AND NUMBER WILL BE DETERMINED BY THE CONTRACTOR AND APPROVED BY THE TENANT CONSTRUCTION MANAGER TO SUIT EQUIPMENT REQUIREMENTS. GENERAL CONTRACTOR WILL INSTALL ACCESS DOORS AND FRAMES.

2. ACCESS DOORS LOCATED IN FIRE-RATED WALLS, FLOORS, CEILING-FLOOR, OR CEILING-ROOF ASSEMBLIES SHALL BE

3. ACCESS DOORS SHALL BE FLUSH TYPE, MANUFACTURED FROM 14 GAUGE STEEL, COMPLETE WITH FLUSH FLANGE TYPE FRAMES MANUFACTURED FROM 16 GAUGE STEEL, PROVIDED WITH ANCHORS. ACCESS DOORS SHALL BE SUITABLE FOR INSTALLATION IN WALL OR CEILING MATERIALS SHOWN IN ROOM FINISH SCHEDULES. PROVIDE ACCESS DOORS FOR ALL CONCEALED VALVES, VENTS, DAMPERS, FIRE DAMPERS, EXPANSION JOINTS, PULL BOXES, SHOCK ABSORBERS, DRAINS, MOTORS, FANS, PUMPS AND ANY OTHER ITEM REQUIRING SERVICE. DOORS IN PLASTER OR CONCRETE SURFACES SHALL HAVE A RECESSED DOOR WITH CONCRETE OR PLASTER FACING. DOORS IN CARPETED OR TILED AREAS SHALL BE RECESSED WITH TILE FACING. NO ACCESS DOORS ARE REQUIRED IN 2' X 2' AND 2' X 4' LAY-IN ACOUSTIC TILE CEILING PROVIDE COLORED PINS TO DENOTE ACCESS TILES. FURNISH FACTORY MADE METAL ACCESS DOORS, COMPLETELY FLUSH, ALLAN HEAD" SCREWDRIVER OPERATED, WITH FRAMES AND CAM-TYPE CATCH WITH STAINLESS STEEL STUD. DOORS SHALL BE NOT LESS THAN 12" X 12" FOR HAND ACCESS. DOORS IN WALLS AND CEILING SHALL BE PRIME COATED CARBO STEEL FURNISH FIRE RATED DOORS FOR FIRE RATED CONSTRUCTION. RATING OF DOOR MUST BE SAME RATING AS CONSTRUCTION. Q. ELECTRIC MOTORS

1. FURNISH, INSTALL AND ALIGN ALL MOTORS REQUIRED FOR THIS EQUIPMENT, UNLESS THEY ARE FACTORY INSTALLED ON THE UNIT. ALL STARTERS AND ASSOCIATED WIRING AND SAFETY SWITCHES FOR SUCH MOTORS SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. STARTERS SHALL MEET ALL REQUIREMENTS AS DEFINED IN THE ELECTRICAL

. DESIGN, CONSTRUCTION AND PERFORMANCE CHARACTERISTICS OF MOTORS SHALL CONFORM TO ALL APPLICABLE PROVISIONS OF LATEST NEMA, ANSI, ISEE STANDARDS FOR ELECTRICAL EQUIPMENT. ALL MOTORS SHALL BE SUITABLE FOR OPERATION ON VOLTAGE VARIATION OF PLUS OR MINUS 10 PERCENT, 40 DEGREES C AMBIENT TEMPERATURE AND HAVE A R. LOW VOLTAGE (24 VOLT) WIRING

THE CONTRACTOR IS TO INSTALL ALL LOW VOLTAGE WIRING REQUIRED FOR THEIR EQUIPMENT. THIS WORK INCLUDES ALL TRANSFORMERS AND DEVICES TO MAKE THIS A COMPLETE FUNCTIONAL SYSTEM. 2. ALL WORK IS TO CONFORM TO THE ELECTRICAL SPECIFICATIONS AND THE REQUIREMENTS OF THE AUTHORITIES HAVING

3. ANY CONDUIT REQUIRED BY CODE OR THE LANDLORD WILL BE INSTALLED BY THE ELECTRICAL SUBCONTRACTOR. 4. SMOKE DETECTORS AND REMOTE TEST STATION

i. REFER TO ELECTRICAL DRAWING FOR WIRING. A. HEATING, VENTILATION AND AIR CONDITIONING

1. 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 HVAC SYSTEM, MATERIALS AND EQUIPMENT WITH OTHER CONTRACTORS TO AVOID INTERFERENCE'S AND CONFLICTS. B. HVAC EQUIPMENT (REFER TO PLANS FOR SCHEDULE OF EQUIPMENT)

1. PRIMARY HVAC UNITS ARE TO BE AS SCHEDULED. EQUIVALENTS MAY BE SUBSTITUTED WITH WRITTEN APPROVAL ONLY. ALL COMPRESSORS ARE TO INCLUDE A 5 YEAR EXTENDED WARRANTY. 2. ALL EQUIPMENT SHALL BE COMPLETE IN EVERY RESPECT WITH ALL DEVICES, APPURTENANCES AND ACCESSORIES PROVIDED TO MEET THE DESIGN INTENT AND OPERATION OF THE SYSTEMS SHOWN ON THE DRAWINGS AND SPECIFIED 3. EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. ALL AIF CONDITIONING EQUIPMENT MUST HAVE A CONDENSATE DRAIN AND BE TRAPPED IN ACCORDANCE WITH MANUFACTURER'S

DATA. SEE DRAWINGS FOR ADDITIONAL DETAILS. C. TOILET EXHAUST FANS 1. WHERE SHOWN ON DRAWINGS PROVIDE A TOILET EXHAUST FAN COMPLETE WITH GRAVITY BACKDRAFT DAMPER. ALL DUCTWORK, ROOF OPENINGS AND CAPS NECESSARY TO PROVIDE A COMPLETE EXHAUST SYSTEM SHALL BE PROVIDED BY

THE CONTRACTOR. REFER TO PLANS FOR APPLICABILITY. D. VIBRATION ISOLATION DEVICES . VIBRATION ISOLATION DEVICES SHALL BE PROVIDED IN ALL SUPPORTS BETWEEN VIBRATING EQUIPMENT (FANS, ROOFTOP

UNITS, ETC.) AND STRUCTURE. 2. VIBRATING EQUIPMENT HUNG FROM STRUCTURE SHALL BE ISOLATED WITH RUBBER AND SPRING DEVICES. VIBRATING EQUIPMENT SUPPORTED FROM FLOOR OR DECK SHALL BE ISOLATED WITH HOUSED SPRING MOUNT DEVICES. 3. EXAMINE DEAD LOAD AND OPERATING LOAD CONDITIONS WHEN SELECTING DEVICES. ADJUST FOR PROPER ALIGNMENT AND LOADING. AVOID "GROUNDING" THE ISOLATOR. 4. CHECK HANGER ROD SIZE FOR ALLOWABLE LOADS AT THE ISOLATING DEVICE AND THE UPPER AND LOWER ATTACHMENTS TO STRUCTURES, DUCTS, EQUIPMENT, ETC.

5. CONSULT MANUFACTURER FOR APPLICATION DATA.

E. CURBS AND STEEL FRAMING FOR SUPPORT 1. THIS CONTRACTOR WILL PROVIDE ALL NECESSARY CURBS AND STEEL FRAMING REQUIRED TO INSTALL ALL HVAC EQUIPMENT. CURBS SHALL BE A MINIMUM OF 14 INCHES HIGH AND OF THE SAME MANUFACTURER AS THE EQUIPMENT SUPPORTED. INSULATE UNDER THE COMPRESSOR SECTION TO PREVENT CONDENSATION, ALL CURBS MUST BE INSTALLED O THAT THE TOP OF CURBS ARE "DEAD" LEVEL. ALL PENETRATIONS OF EXISTING STRUCTURE SHALL BE DONE IN ACCORDANCE WITH THE LANDLORD'S GUIDELINES AT THIS CONTRACTOR'S EXPENSE. ALL CONNECTIONS TO ROOFTOP EQUIPMENT SHALL BE INSIDE THE CURB (CONDENSATE DRAIN, POWER WIRING, CONTROL WIRING, ETC.). F. METAL DUCTWORK - NO FIBERGLASS DUCT ALLOWED

1. NO DUCTWORK SHALL BE FABRICATED PRIOR TO APPROVAL BY THE TENANT'S CONSTRUCTION MANAGER, DEVIATIONS FROM DESIGN MUST BE APPROVED BY TENANT'S CONSTRUCTION MANAGER PRIOR TO FABRICATION OR INSTALLATION. ALL DUCT SHOWN AS ROUND ABOVE A CEILING SHALL BE LONGITUDINAL SEAM DUCT AND SPIRAL WHERE EXPOSED, OR AS

2. ALL DUCTWORK SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH SMACNA LOW VELOCITY AND "HVAC DUCT CONSTRUCTION STANDARDS MANUAL", LATEST EDITION AND ASHRAE USING PRIME SHEETS OF GALVANIZED STEEL. CONFORM O THE REQUIREMENTS IN THE REFERENCED STANDARD FOR METAL THICKNESS, REINFORCING TYPES AND INTERVALS, TIE ROD APPLICATIONS AND JOINT TYPES AND INTERVALS. ALL SQUARE ELBOWS SHALL BE PROVIDED WITH DOUBLE WALLED VANES ON MAXIMUM 3" CENTERS. PROVIDE SEAL CLASS "C" ON ALL TRAVERSE JOINTS UNLESS SUPERSEDED BY MORE STRINGENT LOCAL CODES. ALL DUCT CONNECTIONS ARE TO BE RIGID AND LEAK FREE ASSEMBLIES 3. DURING THE CONSTRUCTION PHASE OF THE PROJECT, ANY DUCTWORK INSTALLED IS TO BE COMPLETELY SEALED UP

OF ANY OPENINGS, EITHER AT THE BEGINNING OR END OF A DUCT RUN OR AT A BRANCH, COLLAR DIFFUSER OR REGISTER TO AVOID DIRT OR OTHER CONTAMINANTS FROM ENTERING THE SYSTEM. 4. EXCEPT WHERE OTHERWISE INDICATED, CONSTRUCT DUCT SYSTEMS TO 2 INCH WATER GAUGE PRESSURE CLASSIFICATION (VERIFY WHETHER RETURN OR EXHAUST DUCT IS POSITIVE OR NEGATIVE PRESSURE). PRESSURE TEST DUCTS FOR LEAKAGE. REMAKE LEAKING JOINTS AND APPLY SEALANTS AS REQUIRED TO FABRICATE A SYSTEM THAT DOES NOT EXCEED 5 PERCENT LEAKAGE OR LESS AS STATED BY PRESSURE CLASS RATINGS IN SMACNA STANDARDS. 5. AS A MINIMUM, CROSSBREAK ALL FLAT SURFACES OR REINFORCE WITH A BEAD APPROXIMATELY 3/8 INCH WIDE BY 3/16 INCH DEEP ON 12 INCH CENTERS TO PREVENT VIBRATIONS. 6. INSTALL RIGID ROUND AND RECTANGULAR METAL DUCT WITH SUPPORT SYSTEMS INDICATED IN SMACNA STANDARDS. NO

WOOD SHALL BE USED TO SUPPORT OR BRACE DUCTS. PROVIDE SWAY AND SEISMIC BRACING AS REQUIRED BY STATE AND LOCAL CODES OR BY LANDLORD.

MECHANICAL SPECIFICATIONS (CONTINUED):

7. WHERE DUCTS PASS THROUGH ROOFS, FLOORS AND FIRE RATED PARTITIONS, PROVIDE AS MINIMUM 1-1/2 INCH BY 1-1/2 INCH BY 1/8 INCH STEEL ANGLE FRAMES AT EACH SIDE OF OPENING. THE ANNULAR SPACE BETWEEN DUCT AND ANGLE FRAMES SHALL BE CAULKED WITH SILICONE SEALANT OR FIREPROOFED AS REQUIRED BY THE ASSEMBLY FIRE RATING. CONTRACTOR TO PROVIDE FIRE OR COMBINATION FIRE / SMOKE DAMPERS AT EACH PENETRATION WHERE REQUIRED

8. ALL TRAVERSE JOINTS AND SEAMS IN SUPPLY AIR DUCT SHALL BE SEALED AIR TIGHT WITH DAP CMC DUCT SEALER. JOINTS ALSO SHALL BE RIVETED OR CONNECTED WITH SHEET METAL SCREWS.

9. SOFT ELASTOMER BUTYL GASKETS WITH ADHESIVE BACKING SHALL BE USED TO SEAL FLANGED JOINTS.

10. DUCT TRANSITIONS SHALL NOT EXCEED 30 DEGREES SLOPE EXCEPT AS SPECIFICALLY NOTED OTHERWISE 11. PROVIDE ACCESS TO ALL MOTORIZED DAMPERS, FIRE DAMPERS, FIRE / SMOKE DAMPERS, CONTROLS AND OTHER ITEMS IN DUCTWORK THAT REQUIRE SERVICE OR INSPECTION. IF THE ACCESS PANEL LOCATION IS EXPOSED TO THE SALES

AREA, IT MUST BE APPROVED BY THE TENANT'S CONSTRUCTION MANAGER PRIOR TO INSTALLATION. LAY-IN SUPPLY AND RETURN AIR DIFFUSERS, GRILLES AND REGISTERS WITH PLASTER FRAMES MAY BE USED AS ACCESS LOCATIONS. 12. ALL BRANCHES AND TAKEOFFS SHALL BE EQUIPPED WITH MANUAL VOLUME CONTROLLING DEVICES HAVING AN INDICATING AND LOCKING DEVICE.

1. FLEXIBLE COLLARS SHALL BE PROVIDED IN ALL CONNECTIONS BETWEEN VIBRATING FOUIPMENT (FANS. ROOFTOP UNITS ETC.) AND DUCTS OR CASINGS. ALSO PROVIDE FLEXIBLE CONNECTIONS WHERE DUCTS CROSS BUILDING EXPANSION JOINTS. 2. FLEXIBLE CONNECTIONS SHALL BE CONSTRUCTED OF NEOPRENE—COATED FLAMEPROOF FABRIC. PROVIDE ADEQUATE JOINT FLEXIBILITY TO ALLOW FOR MOVEMENT AND PREVENT THE TRANSMISSION OF VIBRATION. 3. FLEXIBLE CONNECTIONS ARE TO BE RATED FOR THE OPERATING PRESSURE OF THE SYSTEM

4. FINAL CONNECTIONS TO EXHAUST FAN(S) SHALL BE WITH A HEAVY AIRTIGHT ACID RESISTANT FIRE RETARDANT FIBERGLASSED NEOPRENE CONNECTOR, A MINIMUM OF SIX (6) INCHES IN LENGTH. THE CONNECTOR SHALL BE FASTENED TO EQUIPMENT AND DUCT WITH TWO FLEXIBLE REMOVABLE BRASS STRAPS OR ALTERNATE APPROVED METHOD.

1. MOUNT THERMOSTATS 4'-0" (ADA COMPLYING), THERMOSTAT SENSORS 7'-0" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED AND SET DATE, TIME, TEMPERATURE, ETC. TURN OVER OPERATING INSTRUCTIONS TO TENANT REPRESENTATIVE.

2. THERMOSTATS SHALL BE PROVIDED WITH DESCRIPTIVE NAMEPLATES.

1. FLEXIBLE DUCT FOR CONNECTIONS SHALL BE A FACTORY FABRICATED ASSEMBLY CONSISTING OF AN INNER SLEEVE INSULATION AND AN OUTER MOISTURE BARRIER. THE INNER SLEEVE SHALL BE CONSTRUCTED OF A CONTINUOUS VINYL COATED SPRING STEEL WIRE HELIX FUSED TO A CONTINUOUS LAYER OF FIBERGLASS IMPREGNATED AND COATED VINYL. A 1 1/4" THICK LAYER OF INSULATING BLANKET OF FIBERGLASS WOOL SHALL ENCASE THE INNER SLEEVE AND BE SHEATHED WITH AN OUTER MOISTURE BARRIER OF A BIDIRECTIONAL REINFORCED METALIZED VAPOR BARRIER. THE FLEXIBLE DUCT SHALL BE RATED FOR A MAXIMUM WORKING VELOCITY OF 6000 FPM AND SHALL BE LISTED BY THE UNDERWRITERS LABORATORIES UNDER THEIR UL-181 STANDARDS AS A CLASS 1 DUCT AND SHALL COMPLY WITH NFPA STANDARD - 90A. THE FLEXIBLE DUCT SHALL BE THERMAFLEX M-KC OR APPROVED EQUIVALENT. FLEXIBLE DUCT SHALL ROUTE FROM SHEET METAL DUCTWORK TO CEILING DIFFUSERS ONLY. THERE SHALL BE NO EXPOSED FLEXIBLE DUCT.

2. FLEXIBLE AIR DUCT MAY ONLY BE USED IN VERTICAL APPLICATIONS WITH PRIOR APPROVAL FROM THE TENANT'S

3. FLEXIBLE DUCT SHALL NOT EXTEND OVER 5 FEET IN LENGTH AT ANY ONE LOCATION. J. SUPPLY AND RETURN AIR TAKEOFF FITTINGS

1. RECTANGULAR DUCT

A. PROVIDE 45 DEGREE RECTANGULAR TAKEOFFS FROM MAIN DUCTWORK TO RECTANGULAR BRANCHES.

. PROVIDE SADDLE OR DIRECT CONNECTION OF A BRANCH DUCT INTO A LARGER DUCT. THE DIAMETER OF THE BRANCH SHALL NOT EXCEED TWO THIRDS OF THE DIAMETER OF THE MAIN. PROTRUSIONS INTO THE MAIN ARE NOT ALLOWED.

1. PROVIDE MANUAL LOCKING QUADRANT VOLUME CONTROL DAMPERS WITH HANDLE OPERATORS IN EACH BRANCH DUCT AND AS SHOWN ON PLANS TO FACILITATE AIR BALANCING. 2. WHERE ACCESS TO BALANCING DAMPER IS RESTRICTED OR IN AREAS WITH SHEET ROCK CEILINGS, YOUNG REGULATORS SHALL BE USED.

3. ALL RECTANGULAR DAMPERS IN OUTSIDE AIR AND RELIEF AIR DUCTS ARE TO BE OPPOSED BLADE TYPE. ALL RECTANGULAR DAMPERS IN RETURN AIR DUCTS TO BE PARALLEL BLADE TYPE. ALL OUTSIDE AIR DUCT DAMPERS MUST ALSO BE OF THE LOW LEAKAGE TYPE.

4. ALL MOTORIZED DAMPERS NOT FURNISHED WITH EQUIPMENT ARE TO BE HONEYWELL DAMPERS. L. DIFFUSERS, GRILLES AND REGISTERS

1. PROVIDE DIFFUSERS, GRILLES AND REGISTERS AS SCHEDULED. DEVICES TO BE COMPLETE WITH FRAMES AND ALL ACCESSORIES. ALL DIFFUSERS, GRILLES AND REGISTERS IN SHEET ROCK CEILINGS TO BE PROVIDED WITH PLASTER FRAMES. FINISH TO BE COORDINATED WITH INTERIOR FINISHES. 2. INSTALL ALL AIR DEVICES AS LOCATED ON THE ARCHITECTURAL REFLECTED CEILING PLAN OR THE MECHANICAL PLAN.

1. ALL NEW EXPOSED SUPPLY AIR DUCTWORK SHALL BE ACOUSTICALLY LINED. DUCT SIZES SHOWN ON THE DRAWING ARE INTERNAL FREE AREA SIZES. INTERNAL LINER SHALL BE 2" THICK DUCT LINER EQUIVALENT TO JOHNS MANVILLE "PERMACOTE LINACOUSTIC" ("R VALUE" = 6.0 INSTALLED) AND SHALL BE APPLIED TO THE DUCTWORK WITH FIRE RESISTIVE ADHESIVES AND CADMIUM OR COPPER PLATED MECHANICAL FASTENERS.

2. LEADING EDGES OF DUCT INSULATION SHALL BE OVERLAPPED BY ADJOINING INSULATION FOR 6" MINIMUM AND THEN SEALED WITH FOIL VAPOR BARRIER ADHESIVE AND DUCT MASTIC SO THAT NO FIBERGLASS INSULATION IS VISIBLE. . ALL INSULATION ON EXISTING PIPING OR DUCTS THAT IS WETTED, DAMAGED, DISTURBED OR REMOVED SHALL BE

4. INSTALL INSULATION PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES. INSULATION MUST COMPLY WITH NFPA 90A. 5 ALL INSULATION SHALL HAVE A FLAME SPREAD RATING OF NOT MORE THAN 25 AND A SMOKE DEVELOPED RATING OF NO HIGHER THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM C 411 OR AS REQUIRED BY LOCAL CODES. 6. RETURN DUCT INSULATION

A. SERVICE: RECTANGULAR, RETURN-AIR DUCTS. . MATERIAL: INSULATION BOARD, 6 PSF MINIMUM AND PLAIN FACING. THICKNESS: 1 INCH

B. APPLY INSULATION AS FOLLOWS:

3. NUMBER OF LAYERS: ONE. A. INORGANIC GLASS FIBERS PREFORMED AND BONDED BY THERMOSETTING RESIN. MUST COMPLY WITH ASTM C 612, 1. KNAUF INSULATION OR APPROVED EQUIVALENT.

A. APPLY ONE-LAYER INSULATION WITH JOINTS TIGHTLY BUTTED. SECURE LAYERS WITH ADHESIVE, MECHANICAL FASTENERS OR BANDING. FASTENERS SHALL BE LOCATED A MAXIMUM OF 3" FROM EACH EDGE AND NO GREATER THAN 12"

N. SYSTEM CLEANOUT 1. UPON COMPLETION OF INSTALLATION, CLEAN ENTIRE SYSTEM BEFORE INSTALLING AIR OUTLETS. CONTRACTOR TO PROVIDE A CERTIFICATION THAT CLEANING WAS ACCOMPLISHED PRIOR TO PROJECT CLOSEOUT.

2. NEW FILTERS MUST BE IN UNITS AT ANY TIME FANS ARE OPERATED. O. SYSTEM TESTING, ADJUSTING AND BALANCING

1. TESTING, ADJUSTING AND BALANCING OF ALL WORK SHALL BE COMPLETED BY AN INDEPENDENT CONTRACTOR WHO IS CURRENTLY LICENSED BY THE ASSOCIATED AIR BALANCING COUNCIL (AABC) OR NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB). NO OTHER BALANCE REPORTS WILL BE REVIEWED OR ACCEPTED. ALL BALANCING WORK MUST BE COMPLETE AND DONE IN ACCORDANCE WITH THE MOST RECENT STANDARDS OF THEIR SOCIETY. PAYMENT OF ALL COSTS FOR TESTING SHALL BE MADE BY THE HVAC CONTRACTOR.

2. THE CONTRACTOR SHALL INSTALL NEW FILTERS IN ALL UNITS PRIOR TO THE AIR BALANCING. THE COMPLETE AIR BALANCE SHALL TAKE PLACE WITH OUTSIDE AIR DAMPERS IN MINIMUM POSITION. 3. BALANCE AIR AND WATER QUANTITIES TO WITHIN PLUS OR MINUS 5 PERCENT OF THAT INDICATED ON THE DRAWING:

ANY REQUIRED CHANGES IN SHEAVES, BELTS, PULLEYS OR THE ADDITION OF DAMPERS REQUIRED TO ACHIEVE SPECIFIED FLOW RATES SHALL BE PROVIDED BY THE HVAC CONTRACTOR WITH NO ADDITIONAL COST TO THE TENANT. 4. THE BALANCE REPORT SHALL INCLUDE AS A MINIMUM THE FOLLOWING INFORMATION

B) INSTRUMENTATION LIST WITH LAST CALIBRATION DATES. MAKE AND MODEL NUMBERS OF ALL HVAC EQUIPMENT TESTED. AIR CFM AND STATIC PRESSURE READINGS (DISCHARGE AND SUCTION) AS MEASURED BY PITOT TUBE DUCT TRAVERSE) MOTOR NAMEPLATE DATA WITH ACTUAL FIELD VOLTAGE AND AMPERAGE READINGS FOR EACH LEG.) MOTOR AND FAN RPM. SHEAVE SIZES AND BELT SIZES AND LENGTHS.

OUTSIDE, RETURN, MIXED AND SUPPLY AIR TEMPERATURES AT FULL COOLING AND HEATING MODES USING AN INFRARED H) MAKE AND MODEL NUMBERS OF ALL AIR DISTRIBUTION EQUIPMENT. FINAL BALANCED AIR VOLUMES AT ALL OUTLETS (INCLUDING RETURNS WHERE DUCTED). J) INDEXED PLAN WITH DIFFUSER AND RETURN LOCATIONS.

A) AABC OR NEBB CERTIFICATION NUMBER AND SIGNATURE OF BALANCING CONTRACTOR

5. ALL CONTROL SEQUENCES SHALL BE TESTED AND OPERATING STATUS RECORDED IN THE REPORT. 6. THREE COPIES OF THE BALANCE REPORT SHALL BE SUBMITTED THROUGH THE GENERAL CONTRACTOR TO THE TENANT'S CONSTRUCTION MANAGER FOR REVIEW AND COMMENT.

7. THE BALANCING CONTRACTOR SHALL PERFORM ALL APPLICABLE TESTING AND BALANCING FUNCTIONS REQUIRED FOR THE SYSTEM DESIGNED IN THESE DRAWINGS. THE BALANCING CONTRACTOR SHALL RECHECK ANY ITEMS THAT THE TENANT DEEMS NECESSARY AT NO ADDITIONAL COST TO THE TENANT. 8. FINAL BALANCE REPORT SHALL BE INCLUDED IN THE OPERATION AND MAINTENANCE MANUAL.

9. MECHANICAL CONTRACTOR SHALL COORDINATE WITH EMS VENDOR ON BEING ON SITE FOR THEIR COMMISSIONING P. FINAL HVAC INSPECTIONS

1. ASIDE FROM NORMAL INTERIM INSPECTIONS OF WORK IN PLACE. THE TENANT SHALL HAVE THE RIGHT TO HAVE AN THE PLANS, SPECIFICATIONS AND CODES. THE INSTALLING CONTRACTOR WILL BE RESPONSIBLE TO BRING ALL ITEMS REPORTED BY THE INDEPENDENT HVAC CONTRACTOR UP TO PLANS AND SPECIFICATIONS REQUIREMENTS AT NO ADDITIONAL Q. INDOOR AIR QUALITY

1. NO ANALYSIS HAS BEEN MADE WITH REGARD TO SOURCES OR POTENTIAL SOURCES OF INDOOR OR OUTDOOR AIR CONTAMINANTS OR LEVELS OF CONTAMINATION. 2. IT IS THE RESPONSIBILITY OF THE GENERAL AND MECHANICAL CONTRACTOR TO INFORM THE TENANT'S REPRESENTATIVE LANDLORD AND TENANT'S ARCHITECT IF ANY SOURCE OR POTENTIAL SOURCE OF INDOOR AIR CONTAMINATION IS IDENTIFIED. 3. PRIOR TO ENCLOSING SPACES SUCH AS PLUMBING CHASES, AIR SHAFTS AND RETURN AIR PLENUMS CLEAN ALL AREAS THOROUGHLY. THE CONTRACTOR SHALL GUARANTEE THAT THE PLENUM CHAMBER USED FOR RECIRCULATING OF AIR WILL BE OF TIGHT CONSTRUCTION AND THAT ALL SOURCES OF CONTAMINATION FROM TRAPS, SOIL STACKS, DOWNSPOUTS, VENTS, STATE OF THE PROPERTY EXHAUST DISCHARGES AND OTHER SOURCES WILL BE ENCLOSED SO THAT NO CONTAMINATED AIR WILL BE RECIRCULATED

4. PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES SHUT OFF THE HVAC SYSTEM, BLOCK OFF ALL AIR GRILLS, DIFFUSERS

AND OTHER OPENINGS OUTSIDE THE IMMEDIATE CONSTRUCTION AREA. OPENINGS TO ADJACENT TENANT SPACES SHALL BE COVERED WITH FILTER MEDIA TO PREVENT DUST AND OTHER AIRBORNE CONTAMINANTS FROM PASSING TO ADJOINING

5. CONTRACTOR TO INSTALL TEMPORARY EXHAUST SYSTEM TO VENTILATE CONSTRUCTION SITE AND KEEP SITE UNDER SLIGHT NEGATIVE PRESSURE DURING ALL HOURS OF CONSTRUCTION, EVEN IF AFTER NORMAL BUSINESS HOURS. 6. CONTRACTOR TO INSTALL TEMPORARY BARRIERS TO PROTECT ADJACENT SPACES FROM DUST, PARTICULATES, VAPORS AND NOISE. WHERE TEMPORARY BARRIERS ARE INSTALLED ALWAYS MAINTAIN FIRE EXITS AND EXITWAYS.

01. IT IS THE INTENT OF THESE SPECIFICATIONS TO PROVIDE A COMPLETE INSTALLATION FOR FINISHED WORK, TESTED AND READY FOR OPERATION. THE WORK THROUGHOUT SHALL BE EXECUTED IN THE BEST AND MOST THOROUGH MANNER UNDER THE DIRECTION OF AND TO THE SATISFACTION OF THE

02. ALL MATERIALS REQUIRED FOR THIS WORK SHALL BE NEW, UNUSED, BEST OF ITS RESPECTIVE KINDS, AND FREE FROM DEFECTS AND OF FIRST CLASS QUALITY. BASIS OF QUALITY SHALL BE LATEST STANDARDS OF ASTM, ANSI FEDERAL SPECIFICATIONS OR OTHER ACCEPTABLE STANDARDS.

03. THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR WORK UNTIL ITS COMPLETION AND FINAL ACCEPTANCE AND SHALL REPLACE ANY OF THE SAME WHICH MAY BE DAMAGED, LOST OR STOLEN WITHOUT ADDITIONAL COST TO THE OWNER.

04. THE PLUMBING CONTRACTOR SHALL GUARANTEE ALL WORK PERFORMED AND MATERIALS INSTALLED TO BE FREE FROM INHERENT DEFECTS AND SHALL KEEP IN REPAIR AND REPLACE ANY DEFECTIVE MATERIALS OF WORKMANSHIP FREE OF COST TO THE TENANT (OWNER) FOR A PERIOD OF ONE (1)

05. ALL WORK SHALL BE DONE ACCORDING TO THE REQUIREMENTS OF ALL APPLICABLE CODES AND LEASE CRITERIA (IF APPLICABLE) AND SHALL RECEIVE THE APPROVAL OF ALL AUTHORITIES HAVING JURISDICTION. PREPARE ALL REQUIRED DOCUMENTS, DRAWINGS AND PERFORM ALL REQUIRED TESTS AND PAY ALL REQUIRED CHARGES TO OBTAIN THESE APPROVALS.

06. CONTRACTOR SHALL BE HELD TO HAVE EXAMINED THE SITE FOR THE WORK BEFORE HAVING SUBMITTED A PROPOSAL. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR CONDITIONS FOUND DURING THE COURSE OF THE CONTRACT.

07. THIS CONTRACTOR MUST PROVIDE LANDLORD'S CONSTRUCTION REPRESENTATIVE WITH COPIES OF REQUIRED INSURANCE AND COPIES TO BE FURNISHED TO THE OWNER BEFORE COMMENCING WORK. 08. THE PLUMBING SUBCONTRACTOR IS A SUBCONTRACTOR OF THE TENANT'S GENERAL CONTRACTOR. 09. NOTCHING AND BORING OF STRUCTURAL STEEL MEMBERS IS NOT PERMITTED. WHEN HANGING FROM STRUCTURAL STEEL ONLY HANG FROM TOP FLANGE OF BEAMS AND TOP CHORDS ONLY AT PANEL

10. THE PLUMBING SUBCONTRACTORS QUOTING ON THEIR SPECIFIC SCOPE OF WORK/SERVICES TO CONTACT THE LOCAL BUILDING DEPARTMENT/AGENCY TO DISCUSS CODE ISSUES/IDIOSYNCRASIES REGARDING THEIR SERVICES AND THE QUOTE ASSOCIATED WITH THE SERVICES TO THE GENERAL CONTRACTOR FOR THIS PROJECT. THIS CONTRACTOR TO BE FAMILIAR WITH THE SITE WHERE SUCH SERVICES/WORK WILL BE PERFORMED, THIS SPECIFIC USE AND THE IDIOSYNCRASIES ASSOCIATED WITH THE LIFE, SAFETY AND HEALTH ASSOCIATED WITH THIS WORK AND TO INDICATE ON THE QUOTE ANY ITEMS REQUIRED THAT ARE NOT NECESSARILY SHOWN ON THE DRAWINGS/SPECIFICATIONS.

. FURNISH ALL LABOR, MATERIALS, EQUIPMENT AND CONTRACTORS FOR A COMPLETE, SAFE INSTALLATION OF PLUMBING WORK IN FULL CONFORMITY WITH REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION AS INDICATED ON DRAWINGS AND/OR HEREIN SPECIFIED, INCLUDING IN GENERAL THE

2. SANITARY DRAINAGE CONNECTIONS TO PLUMBING FIXTURES AND EQUIPMENT REQUIRING SAME WITH FINAL CONNECTIONS TO EXISTING PREINSTALLED OUTLETS PROVIDED BY PRIOR TENANT(S) OR LANDLORD. PLUMBER SHALL VERIFY EXACT LOCATION OF WASTE PIPE OUTLET BEFORE SUBMITTING BID AND NOTIFY THE ARCHITECT OF ANY LOCATION DISCREPANCIES. PLUMBING CONTRACTOR SHALL B RESPONSIBLE FOR ANY CONCRETE SAWCUTTING REQUIRED TO MAKE THE FINAL CONNECTION TO THE EXISTING WASTE PIPING OR CAPPED OUTLET(S). SAWCUTTING, EXCAVATING, BACKFILLING AND NEW

A. SNAKE SANITARY FOR A DISTANCE OF 250 FEET AND REPORT ANY BLOCKAGE. B. TEST WATER PRESSURE TO INSURE MINIMUM OF 50 PSI.

3. COMPLETE VENT SYSTEM, ALL FIXTURES INDIVIDUALLY VENTED WITH FINAL CONNECTION THROUGH ROOF OR TO EXISTING LANDLORD SUPPLIED COMMON VENT. ROOF PENETRATION AND FLASHING TO BE PERFORMED BY LANDLORD'S ROOFER (IF APPLICABLE). COST OF ROOF PENETRATION AND FLASHING TO BE PART OF THIS CONTRACT, UNLESS NOTED OTHERWISE IN BID PROPOSAL (IF APPLICABLE). 4. DOMESTIC WATER SUPPLY SYSTEM INCLUDING CONNECTION TO EXISTING CAPPED OUTLET AND FINAL NNECTIONS TO PLUMBING FIXTURES AND EQUIPMENT REQUIRING SAME, VERIFY EXACT LOCATION AND

5. INSULATION OF ALL HOT AND COLD WATER PIPING, INCLUDING UNDER LAVATORY A.D.A. PIPE

6. REUSE EXISTING EXTERIOR WATER METER ACCESSIBLE TO UTILITY COMPANY FOR MONITORING WATER. 7. INSTALLATION OF BACKFLOW PREVENTER (IF REQ. BY CODE) AS PER LANDLORD REQUIREMENT AND CLEANOUT PER LOCAL CODE. COORDINATE ALL LOCATIONS WITH OPERATIONS

1. SLEEVES: PROVIDE #22 GAGE GALVANIZED IRON PIPE SLEEVES FOR PIPING THROUGH WALLS AND

FLOOR, PACK WITH NON-ASBESTOS ROPE AND FILL WITH EXPANDO NON-SHRINKING CEMENT. 2. ESCUTCHEONS: PROVIDE EXPOSED PIPING, BOTH BARE AND COVERED, WITH CP CAST BRASS ESCUTCHEONS WHERE PASSING THROUGH FLOORS, CEILINGS, WALLS OR PARTITIONS. 3. HANGERS AND SUPPORTS: SUPPORT HORIZONTAL DRAINAGE PIPING AT LEAST EVERY 5 FEET OR AT

EVERY HUB, COPPER TUBING EVERY 7 FEET AND STEEL PIPE EVERY 10 FEET WITH "CLEVIS" HANGERS AND INSULATION PROTECTION SHIELDS. PIPING SHALL NOT BE SUPPORTED FROM BRIDGING OR OTHER PIPING. ONLY SUPPORT FROM TOP FLANGES OF BEAMS AND TOP CHORDS AT PANELS OF JOIST AND TRUSSES. PROVIDE SWAY AND SEISMIC BRACING WHERE REQUIRED BY CODES. 4. TEST: TEST PIPING AND PROVE TIGHT FOR AT LEAST TWO HOURS IN ACCORDANCE WITH REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION AND/OR AS SPECIFIED. TEST SHALL BE PERFORMED IN THE PRESENCE OF OWNER'S REPRESENTATIVE AND LOCAL INSPECTOR. TEST SHALL BE REPEATED IF

A. TEST DRAINAGE AND VENT PIPING BY FILLING WITH WATER TO OVERFLOWING AT ROOF, WATER LEVEL TO REMAIN.

B. TEST WATER PIPING WITH WATER 1-1/2 TIMES THE WORKING PRESSURE 5. STERILIZATION OF DOMESTIC WATER SYSTEM: BEFORE BEING PLACED IN SERVICE, ALL WATER LINES

BE CHLORINATED TO THE SATISFACTION OF THE ARCHITECT OR LANDLORD'S REPRESENTATIVE, IN ACCORDANCE WITH A.W.W.A. SPECIFICATION C601-53T. 6. SLOPE WASTE LINES 2 INCHES AND SMALLER NOT LESS THAN 1/4 INCH PER FOOT. SLOPE LARGER

MAINS NOT LESS THAN 1/8 INCH PER FOOT. 7. 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.

I. DRAINAGE AND VENT PIPING: EXTRA HEAVY HUB AND SPIGOT CAST IRON SOIL WITH RUBBER GASKETS CONFORMING TO ASTM C564. NO-HUB CAST IRON TO HAVE HEAVY DUTY, TYPE 304 STAINLESS STEEL COUPLINGS CONFORMING TO ASTM A 666, TYPE 304 STAINLESS STEEL SHIELD, TYPE 304 STAINLESS STEEL BANDS AND SLEEVE. NPS 1-1/2" TO NPS 4": 3" WIDE SHIELD WITH 4 BANDS; NPS 5" TO NPS 10": 4" WIDE BAND WITH 6 BANDS, NOTE: PVC SCHEDULE 40 PLASTIC PIPE (TYPE DWV) CONFORMING TO ASTM D2665 WITH JOINTS TO BE SOLVENT CEMENT CONFORMING TO AST D2564 MAY

BE USED AS PER PERMITTED BY LOCAL CODE 2. WATER PIPING BELOW SLAB: TYPE K HARD COPPER TUBING, WITH CAST BRONZE OR WROUGHT COPPER SOLDER JOINT FITTINGS USING 95-5 SOLDER. WATER PIPING ABOVE SLAB: TYPE L COPPER TUBING USING SILVER SOLDER.

3. WATER HAMMER ARRESTERS: PROVIDE ON HOT AND COLD WATER BRANCHES TO FIXTURES, J. R. SMITH HYDROTROL MODEL 5020 FOR UP TO 60 FIXTURE UNITS. 4. VALVES: GATE VALVE WATTS SERIES GV: 1/4" TO 4" BRONZE BODY, CHECK VALVE WATTS SERIES CVY: 3/8" TO 2" BRONZE BODY, BALL VALVE WATTS SERIES B6080 OR B6081 FULL PORT: 1/2" TO 2"

5. VACUUM RELIEF VALVE: WATTS MODEL N36-M1 BRASS BODY, 1/2" NPT LINE SIZE. IV. INSULATION

1. ALL HOT AND COLD WATER PIPING AND FITTINGS SHALL BE INSULATED WITH 1" THICK RIGID FIBERGLASS WITH VAPOR BARRIER UNIVERSAL JACKET PASTED WITH VAPOR BARRIER CEMENT. VAPOR BARRIER NOT REQUIRED ON HOT WATER PIPING.

V. SPECIFIC PLUMBING SPECIFICATIONS 1. INSTALL NEW ONLY IF EXISTING DOES NOT MEET CURRENT ADA/CABO—ANSI (AS APPLICABLE)

STANDARDS, OR IS DAMAGED, NOT IN WORKING ORDER OR NOT EXISTING AS APPLICABLE. 2. IT IS THIS CONTRACTOR'S RESPONSIBILITY TO SUPPLY HANDICAPPED TOILET FIXTURES, IF REQUIRED BY CODE OR NOTED ON THE DRAWINGS, UTILIZING THE SPECIFICATION ABOVE AS A STANDARD AND MEETING CODE REQUIREMENTS. SPACING OF FIXTURES TO BE COORDINATED WITH THE GENERAL CONTRACTOR AS WELL AS THE PLUMBING INSPECTOR'S REQUIREMENTS.

VI. LANDLORD'S CRITERIA

1. THE PLUMBING CONTRACTOR IS TO BECOME FAMILIARIZED WITH LANDLORD'S CRITERIA FOR THIS LOCATION AND INCLUDE ANY WORK REQUIRED OF THIS CRITERIA, WHICH IS NOT SPECIFICALLY NOTED IN THESE DRAWINGS AND SPECIFICATIONS.

I. <u>DESIGN/BUILD REQUIREMENTS</u>

1. THE SPRINKLER SUBCONTRACTOR, A LICENSED SUBCONTRACTOR OF THE TENANT'S GENERAL CONTRACTOR (USE ONLY DESIGNATED SPRINKLER SUBCONTRACTOR IF REQUIRED BY LANDLORD OR BUILDING) IS REQUIRED TO MODIFY AN EXISTING SYSTEM AS PER THE LATEST N.F.P.A. PAMPHLET (PAMPHLET 13) AND THE BUILDING LANDLORD'S INSURANCE UNDERWRITER'S REQUIREMENTS AND OTHER RELEVANT AUTHORITIES' REQUIREMENTS. SPRINKLER CONTRACTOR TO VERIFY WITH BUILDING LANDLORD AS TO THE BASIS FOR DESIGN — OCCUPANCY TYPE AND DENSITY, NORMAL OR HYDRAULIC AS WELL AS INSURANCE REQUIREMENTS.

2. THE SYSTEM SHALL BE DESIGNED TO EITHER INSTALL NEW IF SPACE IS NEW OR IF AN EXISTING SPACE MODIFY THE SPRINKLER HEADS WITHIN THE DEMISED PREMISES.

3. THE SPRINKLER HEAD TO BE USED IN THE ENTIRE SPACE WHERE A CEILING OCCURS ARE TO BE WHITE PLATED RECESSED TYPE, UNLESS THERE IS A SPECIAL TYPE HEAD REQUIRED BY HE LANDLORD. IF THIS IS THE CASE, THE SPRINKLER HEAD TO BE USED IS PER LANDLORD'S

THE SPRINKLER CONTRACTOR SHALL INCLUDE IN HIS SUBMISSIONS FOR APPROVAL BY THE BUILDING LANDLORD AND REVIEW BY THE TENANT'S REPRESENTATIVE, A 1/4" SCALE

SPRINKLER LAYOUT. (UTILIZE TENANT'S REFLECTED CEILING PLAN.) 5. THE SPRINKLER SUBCONTRACTOR SHALL OBTAIN ALL APPROVALS FROM APPLICABLE AUTHORITIES FOR THE SPRINKLER SYSTEM.

6. OWNER, TENANT, CLIENT AND LESSEE ARE ALL THE SAME INDIVIDUAL OR COMPANY. THE LANDLORD AND LESSOR IS THE BUILDING LANDLORD AND/OR THE OWNER OR REPRESENTATIVE OF THE OWNER OF THE SHOPPING CENTER. LANDLORD'S ARCHITECT AND CONSTRUCTION REPRESENTATIVE MAY OR MAY NOT BE ONE AND THE SAME; TENANT'S ARCHITECT AND CONSTRUCTION REPRESENTATIVE MAY OR MAY NOT BE ONE AND THE SAME.

7. SINCE SPACE TO BE OCCUPIED IS NEW OR WHOLLY OR PARTIALLY ANOTHER SHOPPING CENTER OR BUILDING TENANT (AS APPLICABLE), THE SPRINKLER SUBCONTRACTOR MUST CHECK SITE CONDITIONS TO ANALYZE IF MAINS, BRANCH LINES, ETC., MAY BE EXISTING LOWER THAN OR IN THE WAY OF THE NEW CEILING HEIGHT OR OVERHEAD GRILLE ASSEMBLY (IF APPLICABLE); IF THIS IS THE CASE, THEN COSTS FOR REMOVING, RELOCATING AND NEW,

8A. THIS IS A NEW SYSTEM TO BE INSTALLED AS TO LAYOUT AND CAPACITY BASED ON TENANT'S FLOOR PLANS, CEILING PLANS, HEIGHTS AND SECTIONS AND THE LATEST N.F.P.A. PAMPHLET/STANDARDS GOVERNING THIS USE. SPRINKLER SUBCONTRACTOR TO CHECK WITH LOCAL FIRE AUTHORITIES REGARDING ANY SPECIAL SPRINKLER REQUIREMENTS FOR SIDE WALL CASES (AS APPLICABLE). TENANT'S ARCHITECT'S PLACEMENT OF SPRINKLER HEADS IS FOR AFSTHETIC PURPOSES ONLY: THE ACTUAL PLACEMENT MUST MEET CODE TENANT'S PLANS ANDLORD AND INSURANCE REQUIREMENTS AND IF IN A GRID SYSTEM PLACED IN THE CENTER OF THE GRID PATTERN, WHETHER EXISTING OR NOT EXISTING.

8B. THIS IS AN EXISTING SYSTEM TO BE MODIFIED AS TO LAYOUT AND CAPACITY BASED ON TENANT'S FLOOR PLANS, CEILING PLANS, HEIGHTS AND SECTIONS AND THE LATEST N.F.P.A. PAMPHLET/STANDARDS GOVERNING THIS USE. SPRINKLER SUBCONTRACTOR TO CHECK WITH LOCAL FIRE AUTHORITIES REGARDING ANY SPECIAL SPRINKLER REQUIREMENTS FOR SIDE WALL CASES (AS APPLICABLE).

9. ALL SPRINKLER HEADS IN ACOUSTICAL CEILINGS TO BE IN CENTER OF TILES. II. GENERAL REQUIREMENTS

1. IT IS THE INTENT OF THESE SPECIFICATIONS TO PROVIDE A COMPLETE INSTALLATION FOR FINISHED WORK, TESTED AND READY FOR OPERATION. THE WORK THROUGHOUT SHALL BE EXECUTED IN THE BEST AND MOST THOROUGH MANNER UNDER THE DIRECTION OF AND TO THE SATISFACTION OF THE BUILDING OWNER AND TENANT'S REPRESENTATIVE.

2. ALL MATERIALS REQUIRED FOR THIS WORK SHALL BE NEW, UNUSED, BEST OF ITS RESPECTIVE KINDS, FREE FROM DEFECTS AND OF FIRST CLASS QUALITY. BASIS OF QUALITY SHALL BE BASED ON THE LATEST STANDARDS OF THE N.F.P.A. PAMPHLET AND OTHER ACCEPTABLE

3. THE SPRINKLER SUBCONTRACTOR SHALL BE RESPONSIBLE FOR HIS WORK UNTIL ITS COMPLETION AND FINAL ACCEPTANCE AND SHALL REPLACE ANY OF THE SAME WHICH MAY BE DAMAGED, LOST OR STOLEN WITHOUT ADDITIONAL COST TO THE BUILDING OWNER OR TENAN

4. THE SPRINKLER SUBCONTRACTOR SHALL GUARANTEE ALL WORK PERFORMED AND MATERIALS INSTALLED BY HIM TO BE FREE FROM INHERENT DEFECTS AND SHALL KEEP IN REPAIR AND REPLACE ANY DEFECTIVE MATERIALS OF WORKMANSHIP, FREE OF COST TO THE TENANT OR LESSEE (OWNER) FOR A PERIOD OF ONE (1) YEAR AFTER THE FINAL COMPETITION OF 5. ALL WORK SHALL BE DONE ACCORDING TO THE REQUIREMENTS OF ALL APPLICABLE CODES AND BUILDING LANDLORD / TENANT LEASE CRITERIA (IF APPLICABLE) AND SHALL RECEIVE THE APPROVAL OF ALL AUTHORITIES HAVING JURISDICTION. PREPARE ALL REQUIRED DOCUMENTS,

DRAWINGS AND PERFORM ALL REQUIRED TESTS AND PAY ALL REQUIRED CHARGES TO OBTAIN 6. THIS CONTRACTOR SHALL BE HELD TO HAVE EXAMINED THE SITE FOR THE WORK AND REVIEWED THE DRAWINGS WITH THE TENANT'S GENERAL CONTRACTOR BEFORE HAVING SUBMITTED HIS PROPOSAL. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR CONDITIONS FOUND DURING THE COURSE OF THE

7. THIS CONTRACTOR MUST PROVIDE TENANT, LANDLORD AND TENANT'S CONSTRUCTION REPRESENTATIVES WITH COPIES OF REQUIRED INSURANCE AND COPIES TO BE FURNISHED TO THE OWNER BEFORE

SUBMIT THREE (3) SETS OF SHOP DRAWINGS IDENTIFIED WITH PROJECT NAME TO THE BUILDING OWNER, OWNER AND OWNER'S CONSTRUCTION REPRESENTATIVE FOR THEIR FILE. THE FIRE PROTECTION SUBCONTRACTORS QUOTING ON THEIR SPECIFIC SCOPE OF WORK/SERVICES TO CONTACT THE LOCAL BUILDING DEPARTMENT/AGENCY TO DISCUSS CODE ISSUES/IDIOSYNCRASIES REGARDING THEIR SERVICES AND THE QUOTE ASSOCIATED WITH THE SERVICES TO THE GENERAL CONTRACTOR FOR THIS PROJECT. THIS CONTRACTOR TO BE FAMILIAR WITH THE SITE WHERE SUCH SERVICES/WORK WILL BE PERFORMED, THIS SPECIFIC USE AND THE IDIOSYNCRASIES ASSOCIATED WITH THE LIFE, SAFETY AND HEALTH ASSOCIATED WITH THIS WORK AND TO INDICATE ON THE QUOTE ANY ITEMS REQUIRED THAT ARE NOT NECESSARILY SHOWN ON THE DRAWINGS/SPECIFICATIONS.

FURNISH ALL REQUIRED LABOR, MATERIALS, EQUIPMENT AND CONTRACTORS FOR A COMPLETE, SAFI INSTALLATION OF SPRINKLER WORK IN FULL CONFORMITY WITH REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION AS INDICATED ON DRAWINGS AND/OR HEREIN SPECIFIED.

IV. <u>GENERAL ITEMS</u> 1. IF VALVES ARE NOW UTILIZED IN SYSTEM BUT NOT ALLOWED BY LAW, THEY ARE TO BE REMOVED AS

2. SPRINKLER SUBCONTRACTOR SHOULD VERIFY WITH LANDLORD ANY SPECIAL REQUIREMENTS, HOOKUPS, ALARM SYSTEMS IN PIPING, ETC., AND INCLUDE COST IN BID - ITEMIZE AND SPECIFY INCLUSIONS IN BID.

3. DRAIN DOWNS AS PER GENERAL CONTRACTOR'S REQUIREMENTS. PIPING SHALL NOT BE SUPPORTED FROM DUCTWORK, ELECTRICAL, MECHANICAL, PLUMBING, OR OTHER SPRINKLER PIPING. ONLY HANG FROM TOP FLANGES OF BEAMS AND TOP CHORDS AT PANEL POINTS OF JOISTS AND TRUSSES. 4. TEST: TEST PIPING AND PROVE TIGHT FOR AT LEAST TWO HOURS BASED ON CODE OR BUILDING OWNER'S EQUIREMENTS AND IN ACCORDANCE WITH REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION AND/O AS SPECIFIED. TEST SHALL BE PERFORMED IN THE PRESENCE OF BUILDING OWNER (IF REQUIRED) AND OWNER'S REPRESENTATIVE AND LOCAL INSPECTOR. TEST SHALL BE REPEATED IF NECESSARY UNTIL FINAL APPROVAL OF SYSTEM IS OBTAINED. AS PER CODE REQUIREMENTS, TEST PIPING BY FILLING WITH AIR

UNDER PRESSURE FIRST STERILIZATION OF SPRINKLER SYSTEM: IF REQUIRED BY CODE OR LANDLORD'S CRITERIA, BEFOR SPRINKLER SYSTEM IS PLACED INTO SERVICE, ALL LINES SHALL BE CHLORINATED TO THE SATISFACTION OF REPRESENTATION (AS APPLICABLE) IN ACCORDANCE WITH N.F.P.A. STANDARDS.

NOTCHING AND BORING OF STRUCTURAL STEEL MEMBERS IS NOT PERMITTED, WHEN HANGING FROM STRUCTURAL STEEL ONLY HANG FROM TOP FLANGE OF BEAMS AND TOP CHORDS ONLY AT PANEL POINTS OF JOISTS / TRUSSES. SPRINKLER CONTRACTOR TO FILE FOR PERMITS AND SUBMIT PLANS TO BUILDING DEPARTMENT FOR APPROVAL AND SIGN-OFF. ALL BUILDING DEPARTMENT WORK FOR THIS CONTRACTORS SCOPE, TO BE

V. <u>BUILDING LANDLORD'S CRITERIA</u> 1. THE SPRINKLER CONTRACTOR IS TO BECOME FAMILIARIZED WITH BUILDING LANDLORD'S CRITERIA FOR THIS LOCATION (IF APPLICABLE) AND INCLUDE ANY WORK REQUIRED OF THIS CRITERIA, WHICH IS NOT SPECIFICALLY NOTED IN THESE DRAWINGS AND SPECIFICATIONS.

2. THE SPRINKLERS MUST BE A FULL-COVERAGE SYSTEM WHICH COMPLIES WITH ALL THE REQUIREMENTS OF

5. A COMPLETED, CERTIFIED COPY OF THE "CONTRACTORS MATERIAL AND TEST CERTIFICATE" IS REQUIRED TO BE TURNED INTO THE BUREAU OF FIRE PREVENTION.

3. SPECIAL ATTENTION MUST BE PAID TO SPRINKLER OBSTRUCTIONS INCLUDING STOCK FIXTURES AND 4. THE 200 PSI, TWO-HOUR HYDROSTATIC TEST OF THE SYSTEM IS REQUIRED TO BE WITNESSED BY A

REPRESENTATIVE OF THE BUREAU OF FIRE PREVENTION.

TH CARO - OFESSION Z SEAL 021363 GINERAL K. HERBY 5/17/24

REVISIONS | - | 2 | E | 4 | C | O | - | E | O MECHANICAL/

DATE 05/17/24

23475 JOB NO. SHEET NO.

PLUMBING SPECIFICATIONS

GAS PIPING NOTES:

- 1. PLUMBING CONTRACTOR TO NOTIFY THE AUTHORITY HAVING JURISDICTION WHEN THE INSTALLATION IS READY FOR INSPECTION (AT ROUGH-IN PRIOR TO COVERING AND FINAL).
- 2. PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL GAS PRESSURE REGULATOR, MANUAL SHUT-OFF VALVE, DRIPS AND/OR SEDIMENT TRAPS AT EACH PIECE OF EQUIPMENT AND AT THE OUTLET OF THE METER. VALVES AND DRIPS SHALL BE READILY ACCESSIBLE TO PERMIT CLEANING, EMPTYING OR SERVICING.
- 3. GAS PIPING IS SIZED WITH LONGEST LENGTH METHOD AND BASED ON THE INTERNATIONAL FUEL GAS CODE; SCHEDULE 40 METALLIC PIPE TABLE 402.4(2).
- 4. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR PRESSURE TESTING AND INSPECTION PRIOR TO ACCEPTANCE, PER NFPA 54. TEST PRESSURE SHALL BE NO LESS THAN 1-1/2 TIMES THE MAXIMUM WORKING PRESSURE, BUT NOT LESS THAN 3 PSI. TEST SHALL BE NOT LESS THAN 1/2 HOUR PER 500 CF OF PIPE VOLUME.
- 5. GAS PIPING ABOVE GROUND SHALL BE SCHEDULE 40 BLACK STEEL WITH 125 POUND BLACK MALLEABLE IRON SCREWED FITTINGS FOR 2" AND SMALLER AND WELDED FOR 2-1/2" AND ABOVE. GAS PIPING COMPOUND AT JOINTS SHALL BE PER NFPA BULLETIN #54 AND LOCAL CODES. GAS VALVES SHALL BE UL LISTED FOR GAS SERVICE SUCH AS DEZURICK MODEL S-425 FOR 2" AND LESS AND MODEL F-425 FOR 2-1/2" AND LARGER. NOTE: WELDED PIPE TO BE WITH APPROVED WELD-O-LET FITTINGS.
- 6. GAS PIPING SERVING HARBOR FREIGHT TOOLS' LEASE SPACE IS TO BE PRIMED AND PAINTED WITH TWO (2) COATS OF RUST RESISTANT PAINT. PAINT EXTERIOR GAS PIPING TO MATCH BUILDING COLOR AND NEW GAS PIPING ON ROOF SHALL BE PAINTED SAFETY YELLOW AS REQUIRED BY SECTION 404 OF THE INTERNATIONAL FUEL GAS CODE.

GAS PIPING HANGER SPACING SCHEDULE STEEL PIPE, NOMINAL SIZE SPACING OF SUPPORT NOMINAL SIZE OF TUBING; SPACING OF SUPPORT								
SPACING OF SUPPORT (FEET)	NOMINAL SIZE OF TUBING; SMOOTH-WALL (INCHES O.D.)	SPACING OF SUPPORT (FEET)						
6	1/2	4						
8	5/5 OR 3/4	6						
10	7/8 OR 1 (HORIZONTAL)	8						
EVERY FLOOR LEVEL	1 OR LARGER (VERTICAL)	EVERY FLOOR LEVEL						
	SPACING OF SUPPORT (FEET) 6 8 10	SPACING OF SUPPORT (FEET) NOMINAL SIZE OF TUBING; SMOOTH-WALL (INCHES O.D.) 6 1/2 8 5/5 OR 3/4 10 7/8 OR 1 (HORIZONTAL)						

HARBOR FREIGHT TOOLS' GAS DEMAND

ROOFTOP UNIT (RTU-01, NEW) • • • • • • •	 240.0 CFH (240,000 BTU/HR)
ROOFTOP UNIT (RTU-02, NEW) • • • • • • •	 240.0 CFH (240,000 BTU/HR)
ROOFTOP UNIT (RTU-03, NEW) • • • • • • •	 240.0 CFH (240,000 BTU/HR)
ROOFTOP UNIT (RTU-04, NEW) • • • • • • •	 240.0 CFH (240,000 BTU/HR)
GAS-FIRED UNIT HEATER (UH-01, NEW) • • •	 120.0 CFH (120,000 BTU/HR)
TOTAL GAS DEMAND	1,080.0 CFH (1,080,000 BTU/HR)

- 1. INLET PRESSURE ASSUMED TO BE 7" W.C. CONFIRM GAS DELIVERY PRESSURE PRIOR TO STARTING WORK.
- 2. GAS PIPE SIZES ARE BASED ON THE 2018 INTERNATIONAL FUEL GAS CODE TABLE 402.4(2) SCHEDULE 40 METALLIC PIPE; INLET PRESSURE OF LESS THAN 2 PSI; PRESSURE DROP OF 0.5 IN W.C. AND 300 FEET (TOTAL LENGTH OF PIPE).

NOTE:

PLUMBING CONTRACTOR SHALL RELOCATE ALL REQUIRED PIPING; WATER, VENTS, GAS, SANITARY WASTE, ETC., AS NECESSARY TO MAINTAIN A MINIMUM CLEARANCE OF 13'-6" ABOVE FINISHED FLOOR.

PLUMBING DEMOLITION GENERAL NOTES:

- 1. THE PLUMBING CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF ALL EXISTING PIPING, EQUIPMENT AND FIXTURES REQUIRING DEMOLITION. THE CONTRACTOR SHALL COORDINATE ALL DEMOLITION WORK WITH THE ARCHITECT, GENERAL CONTRACTOR, AND WITH THE OWNER.
- 2. THE PLUMBING CONTRACTOR SHALL CUT EXISTING SANITARY AND WASTE PIPING 3" BELOW FLOOR AND PLUG
- 3. THE PLUMBING CONTRACTOR SHALL REMOVE ANY FLOOR DRAINS THAT ARE NOT USED FOR NEW SPACE LAYOUT. CUT WASTE LINE TO 3" BELOW FLOOR AND PLUG WITH PERMANANT STOPPER.
- 4. THE PLUMBING DEMOLITION WORK SHALL BE PERFORMED EXCLUSIVELY BY THE PLUMBING CONTRACTOR UNLESS OTHERWISE INDICATED.
- 5. ALL PATCHING AND SEALING OF WALLS, FLOORS, CEILINGS, ETC... TO BE DONE BY GENERAL CONTRACTOR.
- 6. THE PLUMBING CONTRACTOR TO MAKE ALL FINAL PLUMBING CONNECTIONS TO FIXTURES & EQUIPMENT.
- 7. THE PLUMBING CONTRACTOR SHALL CUT AND CAP UNUSED EXISTING WATER AND VENT LINES BELOW FLOOR.
- 8. THE PLUMBING CONTRACTOR SHALL REMOVE ALL UNUSED EXPOSED EXISTING WASTE, VENT, GAS AND WATER PIPING COMPLETE.
- 9. PLUMBING CONTRACTOR SHALL CAP ALL UNUSED SANITARY BRANCH LINES NEAR MAIN WITHIN 2'-0" WHERE POSSIBLE. NO DEAD END RUNS ARE ALLOWED PER CODE.

PLUMBING DEMISE CRITERIA:

WATER SERVICE:

THE LANDLORD SHALL PROVIDE A NEW 1-1/2" DOMESTIC WATER SERVICE, WATER METER AND BACKFLOW PREVENTER FOR HARBOR FREIGHT TOOLS' LEASE SPACE. PLUMBING CONTRACTOR SHALL CONFIRM THE EXISTENCE OF A BACKFLOW PREVENTER SERVING HARBOR FREIGHT TOOLS' LEASE SPACE. IF NONE EXISTS, THEN PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL A BACKFLOW PREVENTER, AS APPLICABLE, PER LOCAL WATER DEPARTMENT REQUIREMENTS. FIELD VERIFY THE EXACT SIZE AND LOCATION OF THE EXISTING DOMESTIC WATER SERVICE PROVIDED BY LANDLORD PRIOR TO STARTING ANY WORK.

SEWER SERVICE:

THE LANDLORD SHALL PROVIDE A 4" SANITARY SEWER STUB AT THE PROPOSED RESTROOMS. PLUMBING CONTRACTOR SHALL TIE INTO STUB AND PERFORM THE REMAINDER OF THE UNDERGROUND PIPING. PLUMBING CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION, SIZE, DIRECTION OF FLOW AND INVERT ELEVATION OF EXISTING SANITARY SEWER PRIOR TO STARTING ANY WORK, ALL NEW CONCRETE PATCHING FROM TRENCHING OF EXISTING CONCRETE SLAB FLOOR SHALL BE PATCHED TO MATCH EXISTING MATERIALS BY GENERAL CONTRACTOR. HARBOR FREIGHT TOOLS' PLUMBING CONTRACTOR SHALL FLUSH EXISTING SANITARY SYSTEM TO ENSURE IT IS IN PROPER WORKING CONDITION.

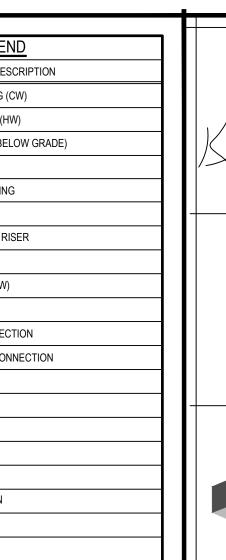
GAS SERVICE:

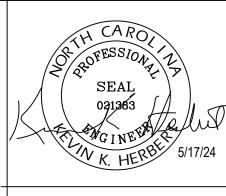
THE LANDLORD SHALL PROVIDE A NEW GAS METER AT THE SOUTHEAST CORNER OF THE BUILDING. PLUMBING CONTRACTOR SHALL EXTEND NEW 3" GAS LINE, FROM LANDLORD PROVIDED GAS METER, UP ALONG EXTERIOR BUILDING WALL TO ROOF. REPLACE EXISTING GAS METER AS NECESSARY TO ACCOMMODATE NEW GAS DEMAND. NEW GAS DEMAND = 1,080.0 CFH. COORDINATE WORK WITH LOCAL GAS COMPANY. FIELD VERIFY EXISTING CONDITIONS PRIOR TO STARTING WORK.

STORM SERVICE:

STORM WATER WILL EVACUATE THE ROOF VIA GUTTER AND DOWNSPOUTS THAT WILL BE ROUTED TO A SUB-GRADE SYSTEM.

0.4.50	PLUMBING LEGEND
SYMBOL	DESCRIPTION
	COLD WATER PIPING (CW)
	HOT WATER PIPING (HW)
	SANITARY SEWER (BELOW GRADE)
─ co	CLEANOUT
v	SANITARY VENT PIPING
G	GAS PIPING
	SHUT-OFF VALVE IN RISER
<u> </u>	SHUT-OFF VALVE
	RISER DOWN (ELBOW)
 0	RISER UP (ELBOW)
J	BRANCH-TOP CONNECTION
- G	BRANCH-BOTTOM CONNECTION
,Ĭ,	_ TEE
	ELBOW
WC	WATER CLOSET
LAV	LAVATORY
SK	SINK
DF	DRINKING FOUNTAIN
MS	MOP SINK
LL	LANDLORD
PC	PLUMBING CONTRACTOR
GC	GENERAL CONTRACTOR
EC	ELECTRICAL CONTRACTOR
MC	MECHANICAL CONTRACTOR





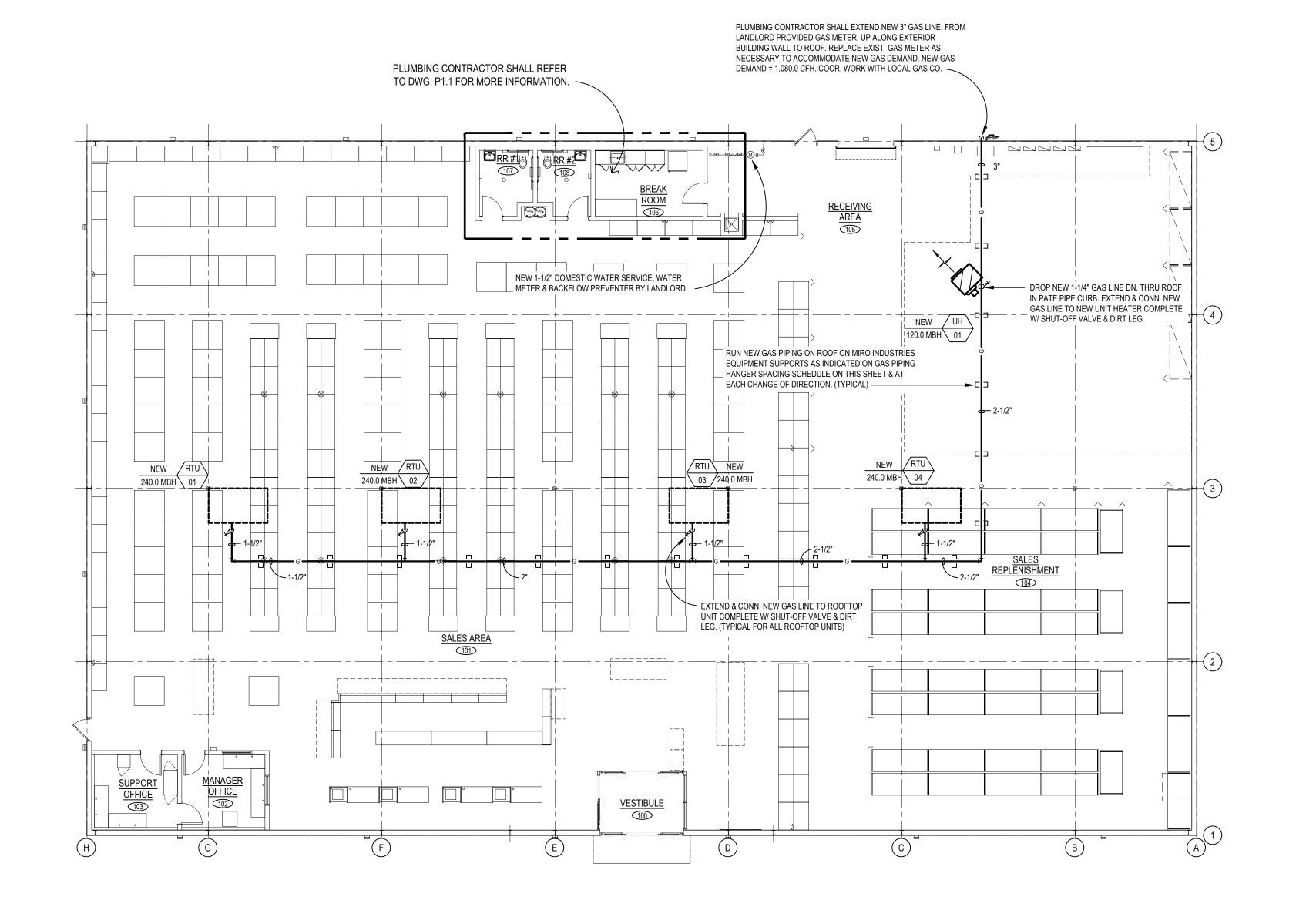
PLUMBING PLAN

05/17/24 DATE JOB NO. 23475

NOTE: PLUMBING CONTRACTOR SHALL REFER TO

DWG. M1.3 FOR PLUMBING SPECIFICATIONS

SHEET NO.





PLUMBING GENERAL NOTES:

- 1. EACH LENGTH OF PIPE, FITTINGS, TRAP, FIXTURE, MATERIAL, ETC., UTILIZED IN THE PLUMBING SYSTEM SHALL BEAR THE IDENTIFICATION OF THE MANUFACTURER, AND APPLICABLE STANDARD TO WHICH IT WAS MANUFACTURED.
- 2. ALL MATERIALS USED SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE STANDARDS UNDER WHICH THE MATERIALS ARE ACCEPTED. ALSO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS SHALL BE FOLLOWED.
- 3. PIPES PASSING THROUGH CONCRETE SHALL BE PROTECTED AGAINST EXTERNAL CORROSION BY A PROTECTIVE SHEATHING OR WRAPPING.
- 4. PLUMBING SYSTEM SHALL BE INSTALLED SO AS TO PREVENT STRAINS AND STRESSES THAT EXCEED THE STRUCTURAL STRENGTH OF THE PIPE.
- 5. JOINTS AT THE FLOOR, ROOF AND AROUND VENT PIPES SHALL BE MADE WATER TIGHT.
- 6. HANGERS, ANCHORS AND SUPPORTS SHALL SUPPORT THE PIPING AND THE CONTENT OF THE PIPING. HANGERS AND STRAPPING MATERIALS SHALL BE OF APPROVED MATERIALS THAT WILL NOT PROMOTE GALVANIC ACTION. PIPE SHALL BE SUPPORTED AS FOLLOWS:

MAXIMUM HORIZONTAL 5'-0" COPPER PIPE MAXIMUM HORIZONTAL 12'-0" COPPER TUBING 1-1/4" AND LESS MAXIMUM HORIZONTAL 6'-0" COPPER TUBING 1-1/2" AND LARGER MAXIMUM HORIZONTAL 10'-0"

- 7. RIGID SUPPORT SWAY BRACING SHALL BE PROVIDED AT CHANGES IN DIRECTION OVER 45° FOR PIPE SIZE 4" AND ABOVE.
- 8. PLUMBING CONTRACTOR SHALL MAKE THE APPLICABLE TESTS. PLUMBING CONTRACTOR TO GIVE REASONABLE ADVANCE NOTICE TO THE CITY WHEN THE PLUMBING WORK IS READY FOR TESTS. THE FOLLOWING TESTS ARE REQUIRED:

DRAINAGE & VENT WATER TEST: MINIMUM 10 FEET OF HEAD AND KEPT IN FOR AT LEAST

15 MINUTES BEFORE INSPECTION STARTS

DRAINAGE & VENT AIR TEST: MINIMUM 5 PSI FOR AT LEAST 15 MINUTES

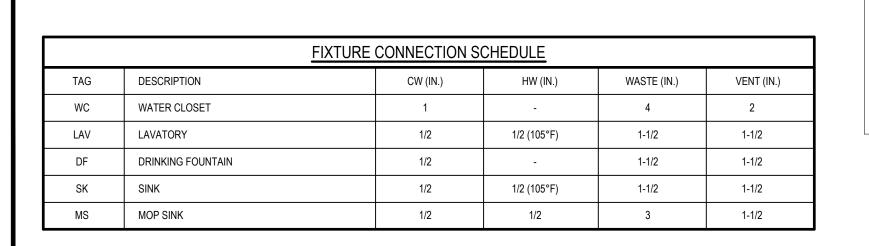
DRAINAGE & VENT FINAL TEST: SHALL BE VISUAL AND IN SUFFICIENT DETAIL TO DETERMINE COMPLIANCE

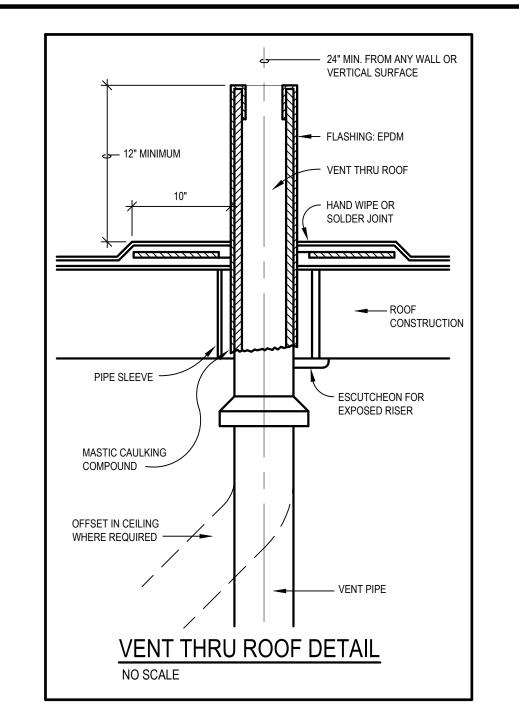
WATER DISTRIBUTION SYSTEM: MINIMUM 100 PSI WATER PRESSURE

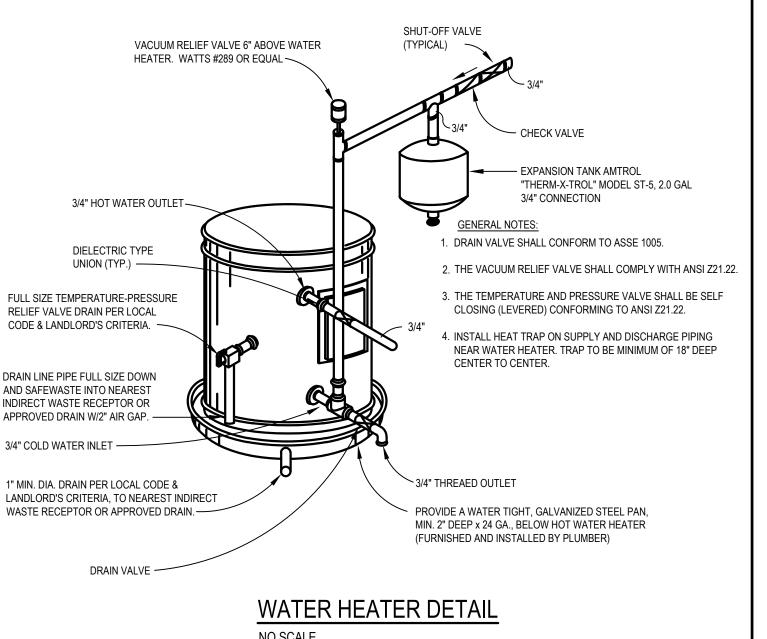
- 9. THE SUPPLY LINES AND FITTINGS FOR EVERY FIXTURE SHALL BE INSTALLED TO PREVENT BACKFLOW.
- 10. THE FIXTURES SHALL BE SET LEVEL AND IN PROPER ALIGNMENT.
- 11. CONNECTIONS BETWEEN THE DRAIN AND FLOOR OUTLET PLUMBING FIXTURE SHALL BE MADE WITH A FLOOR FLANGE.
- 12. FLOOR DRAIN SHALL CONFORM TO ASME A112.6.3 OR ASME A112.3.1.
- 13. WATER HEATER RELIEF VALVE SHALL CONFORM TO ANSI Z21.22.
- 14. WATER HEATER DRAIN VALVE SHALL CONFORM TO ASSE 1005.
- 15. AFTER CONSTRUCTION THE INDIVIDUAL WATER SUPPLY SYSTEM SHALL BE PURGED OF DELETERIOUS MATTER AND DISINFECTED.
- 16. WATER-HAMMER ARRESTOR SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION AND ASSE 1010.
- 17. COPPER OR COPPER-ALLOY TUBING (TYPE K, L & M) SHALL MEET ASTM B75, ASTM B88, ASTM B251, ASTM B447. WATER PIPING TO CONFORM TO NSF61 AND SHALL HAVE A MINIMUM PRESSURE RATING OF 100 PSI. THE JOINING OF SUPPLY PIPING TO BE MADE WITH LEAD-FREE (LESS THAN .2 PERCENT) SOLDER
- 18. SANITARY DRAINAGE SYSTEM SHALL HAVE MINIMUM 1/8" PER FOOT SLOPE. FOR PIPING 3" TO 4" & 1/4" PER FOOT SLOPE FOR 2-1/2" PIPE & LESS.
- 19. MECHANICAL JOINTS COUPLINGS FOR HUBLESS PIPE AND FITTINGS SHALL COMPLY WITH CISPI 310 OR ASTM C1277. THE ELASTOMERIC SEALING SLEEVE SHALL CONFORM TO ASTM C564.
- 20. CLEANOUTS PLUGS TO BE BRASS. HORIZONTAL DRAINS SHALL HAVE CLEANOUTS AT 50 FEET ON CENTERS, AT EACH CHANGE (45 DEGREE) IN DIRECTION AND AT EACH BASE OF STACK. CLEANOUTS TO HAVE A MINIMUM CLEARANCE OF 18" FOR RODDING.
- 21. VENT PIPES SHALL EXTEND THROUGH THE ROOF AND TERMINATE AT LEAST 12 INCHES ABOVE THE ROOF. VENT PIPE THROUGH ROOF TO BE MADE WATER
- 22. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE, THE PLUMBING CONTRACTOR SHALL INCLUDE ALL NEEDED OFFSETS, CHANGES IN DIRECTION, ETC. NEEDED FOR COMPLETE AND OPERATIONAL SYSTEMS.
- 23. THE CONTRACTOR WILL VISIT THE SITE AND BE FAMILIAR WITH SITE CONDITIONS. NO EQUIPMENT OR MATERIAL IS TO BE ORDERED OR FABRICATED PRIOR TO FIELD VERIFICATION OF ALL MEASUREMENTS, CLEARANCES,

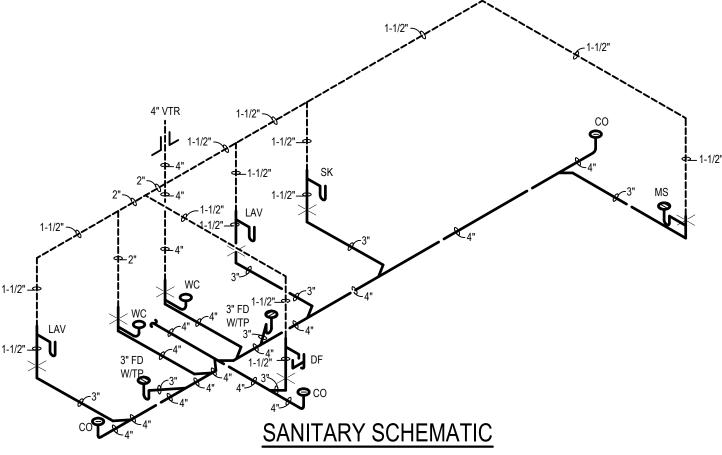
POTENTIAL CONFLICTS WITH EXISTING CONDITIONS OR THAT OF OTHER TRADES ON THE JOB.

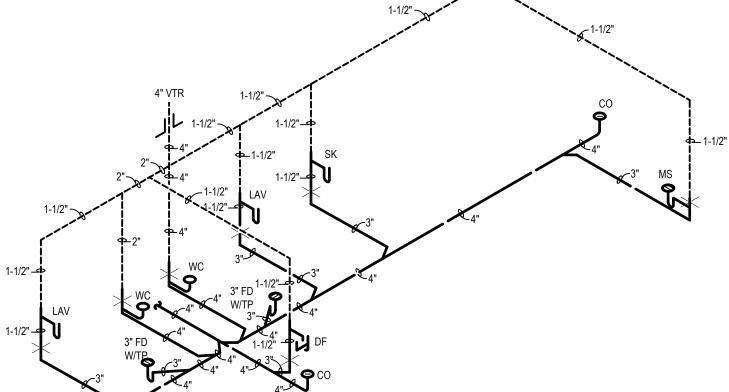
- 24. PERFORM ALL WORK IN ACCORDANCE WITH THE, RULES & REGULATIONS OF THE APPROPRIATE STATE AND LOCAL BUILDING CODES AND SUBTITLES.
- 25. QUESTIONS REGARDING THESE DRAWINGS SHALL BE ADDRESSED TO THE ENGINEER PRIOR TO THE AWARDING OF THE CONTRACT. OTHERWISE THE ENGINEER'S INTERPRETATION OF THE MEANING AND INTENT OF THE DRAWINGS SHALL BE FINAL.
- 26. TENANT'S CONTRACTOR IS TO VERIFY POINTS OF CONNECTION OF ALL VENT, SEWER AND WATER LINES WITH LANDLORD BEFORE PROCEEDING WITH
- 27. INSTALL SHUT OFF VALVES AT ALL PLUMBING FIXTURES.
- 28. INSTALL HAMMER ARRESTORS AT ALL PLUMBING FIXTURES.
- 29. ALL EXPOSED PIPING ABOVE TENANT'S CEILING SHALL BE INSULATED WITH A MINIMUM OF 1" GLASS FIBER WITH NON-COMBUSTIBLE UL RATED VAPOR
- 30. TENANT'S CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH ALL WITHIN THE LANDLORD'S TENANT CRITERIA MANUAL INCLUDING MALL MANAGEMENT'S RULES AND REGULATIONS.
- 31. THE MOUNTING HEIGHTS OF ALL ACCESSORY ITEMS AND HARDWARE SHALL COMPLY WITH NBHA "RECOMMENDED LOCATIONS FOR BUILDERS HARDWARE" AND/OR THE LATEST REQUIREMENTS OF THE A.D.A. REGULATIONS. OR CABO/ANSI STANDARDS WHICHEVER APPLICATION IS MORE STRINGENT FOR ITS
- 32. TENANT CONTRACTOR IS TO HAVE ALL WEATHERPROOFING OF ROOF PENETRATIONS DONE BY LANDLORD'S APPROVED ROOFING CONTRACTOR.
- 33. PLUMBING CONTRACTOR TO INSULATE ANY EXISTING EXPOSED OR RE-INSULATE ANY DAMAGED, MISSING PIPE INSULATION WITH NEW PIPE INSULATION.
- 34. PLUMBING CONTRACTOR SHALL SNAKE ALL EXISTING SANITARY SEWERS A MINIMUM OF 250 FEET. ANY EXTERIOR TRUCK DOCK DRAINS SHALL BE SNAKED A MINIMUM OF 100 FEET.
- 35. PLUMBING CONTRACTOR SHALL VIDEO ALL STORM AND SANITARY LINES DURING THE FIRST WEEK OF CONSTRUCTION AND AFTER CONSTRUCTION IS COMPLETE. VIDEO OF SANITARY LINES SHALL INCLUDE ALL FLOOR DRAINS AND CLEANOUTS. PLUMBING CONTRACTOR SHALL ISSUE WRITTEN EVALUATIONS TO HARBOR FREIGHT TOOLS' PROJECT MANAGER UPON COMPLETION OF EACH VIDEO AND UPLOAD BOTH VIDEOS TO PROTRACK AND
- 36. THE SPOUTS OF DRINKING FOUNTAINS AND WATER COOLERS SHALL BE AT THE FRONT OF THE UNIT AND SHALL DIRECT THE WATER FLOW IN A TRAJECTORY THAT IS PARALLEL OR NEARLY PARALLEL TO THE FRONT OF THE UNIT. THE SPOUT SHALL PROVIDE A FLOW OF WATER AT LEAST 4 IN. HIGH SO AS TO ALLOW THE INSERTION OF A CUP OR GLASS UNDER THE FLOW OF WATER. ON AN ACCESSIBLE DRINKING FOUNTAIN WITH A ROUND OR OVAL BOWL, THE SPOUT MUST BE POSITIONED SO THE FLOW OF WATER IS WITHIN 3 IN. OF THE FRONT EDGE OF THE FOUNTAIN.

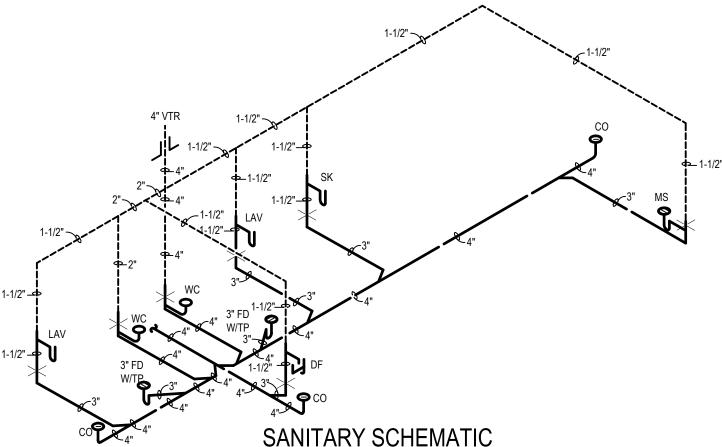


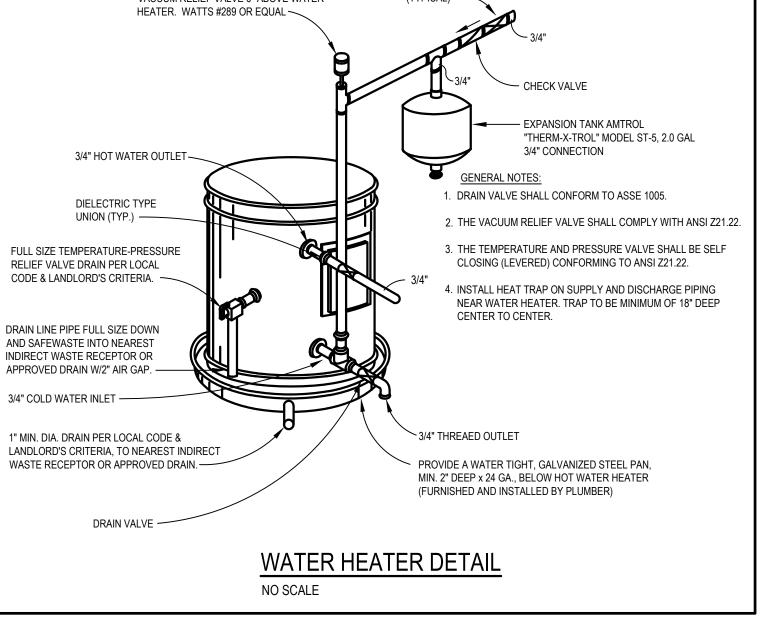












PLUMBING FIXTURE SPECIFICATIONS

FLOOR DRAIN (FD) - J.R. SMITH NO. 2005-P050 WITH ADJUSTABLE ROUND STRAINER HEAD AND TRAP PRIMER CONNECTION.

FLOOR CLEANOUT (CO) - J.R. SMITH NO. 4021S ADJUSTABLE CAST NIKALOY FLOOR CLEANOUT WITH INTERNAL BRONZE COUNTERSUNK PLUG AND SOLID SCORIATED SECURED ROUND COVER.

WALL CLEANOUT (WCO): J.R. SMITH MODEL NO. 4422 DUCO CAST IRON CAULK FERRULE WITH CAST BRONZE TAPER THREAD PLUG WITH STAINLESS STEEL COVER.

WATER HEATER (WH) - RHEEM POINT-OF-USE MODEL EGSP20, 20 GALLON STORAGE CAPACITY WITH 1,500 WATT HEATING ELEMENT, 120V, 1 PHASE WITH GALVANIZED DRIP PAN. RUN DRAIN LINE TO MOP SINK.

WATER CLOSET (WC): AMERICAN STANDARD "MADERA FLoWISE" MODEL 2857.111 FLOOR MOUNTED, ELONGATED FLUSHOMETER TOILET SYSTEM WITH MANUAL FLUSH VALVE, ULTRA LOW-CONSUMPTION (1.1 GPF), AND 16-1/2" RIM HEIGHT. SEAT: BEMIS MODEL NO. 1055SSC OPEN FRONT SEAT LESS COVER WITH SELF-SUSTAINING CHECK HINGES WITH NON-CORROSIVE STAINLESS STEEL POSTS, PINTLES, AND HARDWARE. NOTE: MOUNT FLUSH LEVER OPPOSITE SIDE OF WALL.

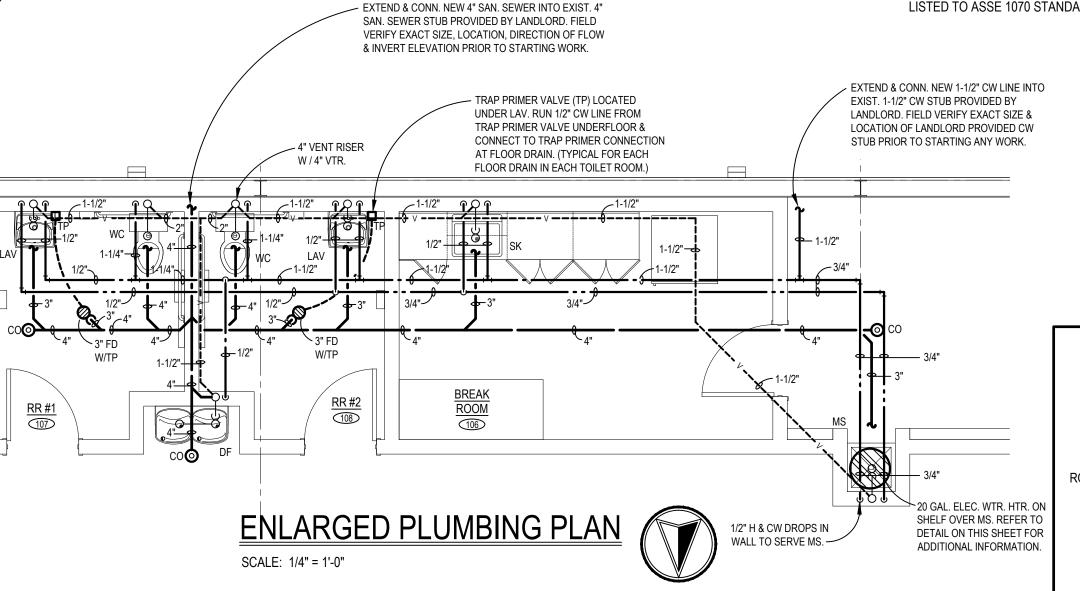
LAVATORY (LAV): AMERICAN STANDARD "LUCERNE" MODEL 0355.012 WALL HUNG, BARRIER-FREE LAVATORY, FAUCET: MOEN MODEL NO. 8886 4" CENTERSET METERING FAUCET WITH 0.5 GPM VANDAL RESISTANT MULTI-STREAM LAMINAR FLOW, AND CHROME PLATED SOLID BRASS CONSTRUCTION. PROVIDE COMPLETE WITH GRID STRAINER, FOOTED WALL CHAIR CARRIER SUPPORT ZURN MODEL Z1231 CHROME TRAP WITH CLEANOUT AND CHROME SUPPLIES WITH LOOSE KEY STOPS. INSULATE WASTE AND WATER LINES WITH TRUEBRO "LAV GUARD 2" INSULATION KIT WITH WHITE FINISH TO CONFORM TO ADA REQUIREMENTS. MOUNT AT ELEVATION AS INDICATED ON THE ARCHITECTURAL DRAWINGS.

MOP SINK (MS): "FIAT" MODEL TSB100 TERRAZZO MOP SERVICE BASIN (24"x24"x12"). PROVIDE COMPLETE WITH STAINLESS STEEL CAPS ON ALL CURBS; HOSE AND HOSE BRACKET MODEL 832AA; (3) WALL GUARDS AND (2) ANGLE BRACKETS MODEL MSG2424; STAINLESS STEEL STRAINER MODEL 1453BB; SILICONE SEALANT MODEL 833AA. FAUCET: CHICAGO FAUCETS MODEL NO. 897-CP WALL MOUNTED SERVICE FAUCET WITH VACUUM BREAKER, WALL BRACE, VANDAL PROOF LEVER HANDLES, AND 3/4" MALE HOSE THREAD OUTLET.

BREAKROOM SINK (SK) - JUST NO. SL-ADA-2019-A-GR, 18 GAUGE TYPE 304 ADA COMPLIANT SINGLE BOWL SELF-RIMMING STAINLESS STEEL SINK, 20"x19"x5-1/2" DEEP SINK WITH CENTER REAR DRAIN. FIXTURE WITH FAUCET LEDGE. SET IN BED OF PUTTY. FAUCET: JUST NO. J-902 SINGLE LEVER DECK MOUNTED FAUCET WITH SPRAYER, AND 2.2 GPM AERATOR. DRAIN: JUST NO. J-ADA35-FS STAINLESS STEEL DRAIN WITH REMOVABLE STRAINER WITH 1-1/2" 17 GAUGE OFFSET TAILPIECE, MCGUIRE NO. 8912-C-F-1-1/2" 17 GAUGE TUBULAR CHROME PLATED BRASS ADJUSTABLE P-TRAP WITH BRASS CLEANOUT WITH ESCUTCHEON AND CHROME SUPPLIES WITH LOOSE KEY STOPS.

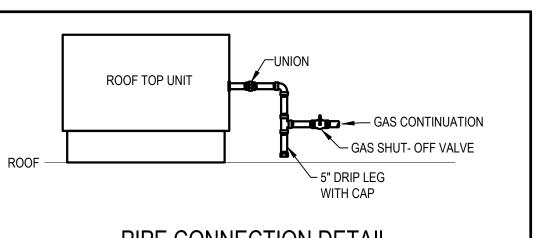
DRINKING FOUNTAIN (DF): ELKAY MODEL EZSTLDDLC TWO-LEVEL BARRIER-FREE WALL MOUNTED DRINKING FOUNTAIN WITH FLEXI-GUARD SAFETY BUBBLER AND FRONT AND SIDE PUSH BUTTONS AND LIGHT GRAY GRANITE FINISH. REFER TO PLUMBING GENERAL NOTE #36 FOR ADDITIONAL INFORMATION.

TEMPERING VALVE SERVING LAVATORY AND BREAK ROOM SINK SHALL BE WATTS SERIES LFMMV WITH A MINIMUM FLOW OF .5 GPM @ 0.8 PSI PRESSURE DIFFERENTIAL. NOTE: TEMPERING VALVE SHALL BE LISTED TO ASSE 1070 STANDARD. SET OUTLET TEMPERATURE TO 105°F.

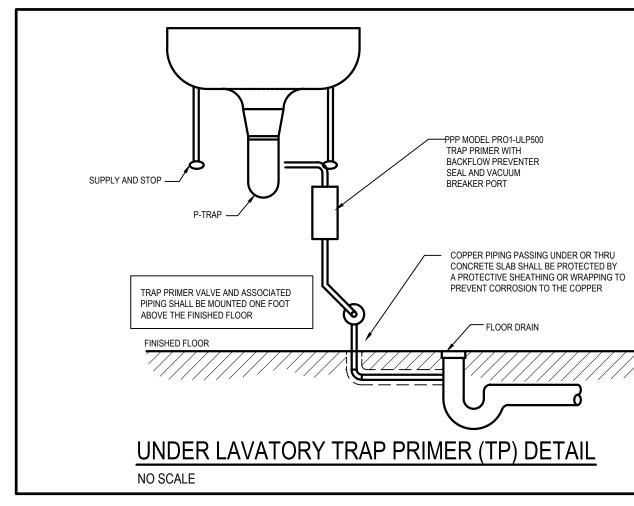


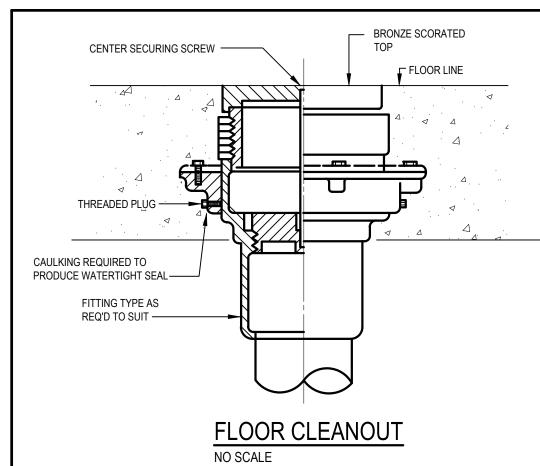
PLUMBING CONTRACTOR SHALL REFER TO ARCHITECTURAL DRAWING A0.0 FOR PLUMBING FIXTURES AND ACCESSORIES PROVIDED BY HARBOR FREIGHT TOOLS.

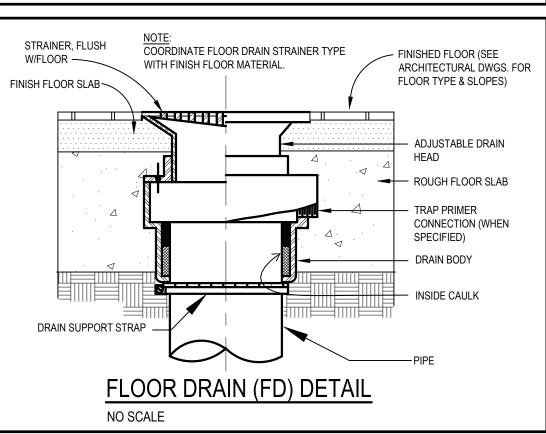
PLUMBING CONTRACTOR TO REVIEW AND COMPLY WITH THE REQUIREMENTS OF GENERAL NOTES ON SHEET A0.2.

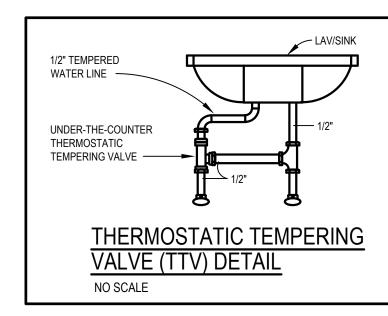


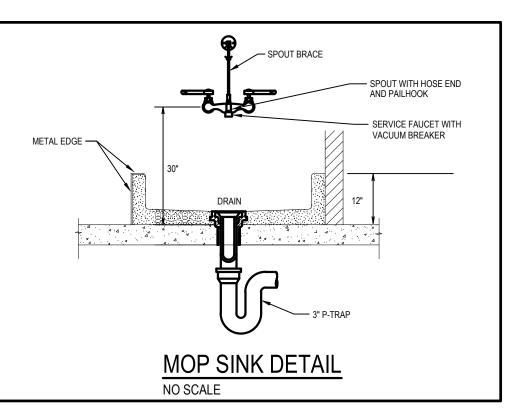
PIPE CONNECTION DETAIL NO SCALE











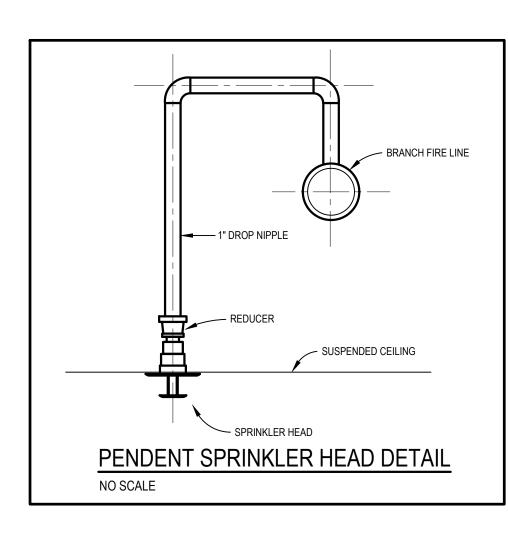


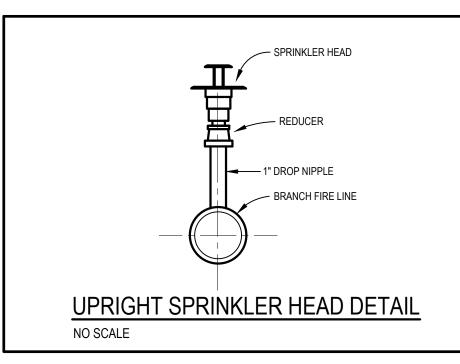
REVISIONS

DETAILS

05/17/24 23475 JOB NO.

SHEET NO.





NOTE: THE SPACE IS FULLY SUPPRESSED BY A 6"Ø FIRE RISER LOCATED TO THE WEST OF THE RECEIVING OVERHEAD DOOR.

NOTE: GENERAL CONTRACTOR SHALL COORDINATE WITH BV AND LANDLORD

FOR MONITORING REQUIREMENTS.

SPRINKLER CONTRACTOR SHALL RELOCATE ALL REQUIRED PIPING, ETC TO ALLOW HEIGHTS AS NOTED ON CEILING PLAN.

NOTE:

SPRINKLER CONTRACTOR SHALL ENSURE THAT EXISTING FIRE PROTECTION SYSTEM IS IN PROPER WORKING ORDER INCLUDING BUT NOT LIMITED TO BACKFLOW PREVENTION, FLOW AND TAMPER SWITCHES, ALARMS, ETC... AND MEETS NFPA-13 AND LOCAL FIRE DEPARTMENT REQUIREMENTS. PROVIDE 5 YEAR SYSTEM CERTIFICATION AT ROUGH INSPECTION.

NOTE:

GENERAL CONTRACTOR SHALL VERIFY SPRINKLER SYSTEM MONITORING, CERTIFICATION STATUS AND PREFERRED VENDOR REQUIREMENTS WITH HARBOR FREIGHT TOOLS' PROJECT MANAGER AND LANDLORD PRIOR TO SUBMITTING BID.

FIRE PROTECTION KEY NOTES:

- MODIFY SPRINKLERS AND PIPING OF EXISTING FIRE PROTECTION SYSTEM AS NECESSARY TO ACCOMMODATE THE INSTALLATION OF NEW FULL HEIGHT WALLS, CEILING GRIDS AND LIGHTS PER NFPA 13 REQUIREMENTS. SPRINKLER HEADS SHALL BE PENDENT TYPE.
- MODIFY SPRINKLERS AND PIPING OF EXISTING FIRE PROTECTION SYSTEM AS NECESSARY TO ACCOMMODATE THE INSTALLATION OF NEW LIGHTS AND WALLS PER NFPA 13 REQUIREMENTS. SPRINKLER HEADS SHALL BE UPRIGHT TYPE IN OPEN AREAS TO MATCH EXISTING.

DESIGN CRITERIA

FIRE PROTECTION AREA TYPES:

A) ORDINARY HAZARD II - 0.20 GPM/SQ.FT OVER 1500 SQ.FT. WITH 250 GPM HOSE ALLOWANCE. SPRINKLERS SHALL E SPACED AT A 130 SQ.FT. MAXIMUM WITH SPRINKLER HEADS AT A MAXIMUM OF 13'-0" APART AND SPACED AT A MAXIMUM OF 6'-6" FROM ALL WALLS.

NOTE: ORDINARY HAZARD IS BASED ON COMMODITY PLACEMENT.

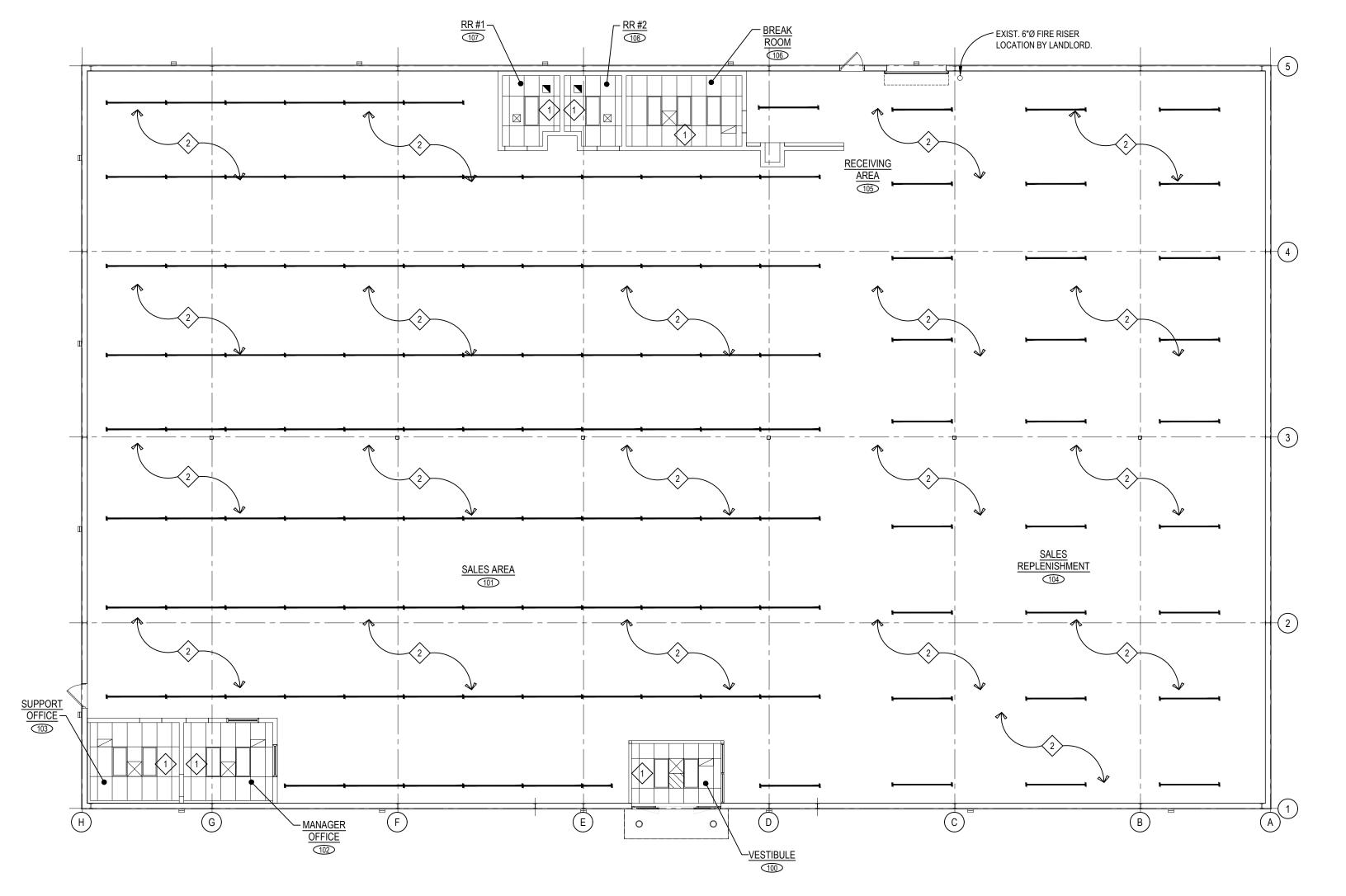
B) LIGHT HAZARD - 0.10 GPM/SQ.FT. OVER 1500 SQ.FT. WITH 100 GPM HOSE ALLOWANCE. SPRINKLERS SHALL BE SPACED AT A 225 SQ.FT. MAXIMUM WITH SPRINKLER HEADS AT A MAXIMUM OF 15'-0" APART AND SPACED AT A MAXIMUM OF 7'-6" FROM ALL WALLS.

SALES: ORDINARY HAZARD II SALES REPLENISHMENT: ORDINARY HAZARD II BREAK ROOM: LIGHT HAZARD

TOILET ROOMS: LIGHT HAZARD

FIRE PROTECTION NOTES:

- 1. THIS DRAWING IS FOR REFERENCES PURPOSE ONLY. THE FIRE SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE FOR THE FULL DESIGN OF THE SPRINKLER SYSTEM AND ITS CONFORMANCE TO NFPA 13 AND ANY LOCAL CODE REQUIREMENTS. THE FIRE PROTECTION CONTRACTOR SHALL INCLUDE ALL NEEDED OFFSETS, CHANGES IN DIRECTION, TRANSITIONS, ETC. NEEDED FOR COMPLETE AND OPERATIONAL SYSTEMS.
- 2. THE CONTRACTOR WILL VISIT THE SITE AND BE FAMILIAR WITH SITE CONDITIONS. NO EQUIPMENT OR MATERIAL IS TO BE ORDERED OR FABRICATED PRIOR TO FIELD VERIFICATION OF ALL MEASUREMENTS, CLEARANCES, POTENTIAL CONFLICTS WITH EXISTING CONDITIONS OR THAT OF OTHER TRADES ON THE JOB.
- PERFORM ALL WORK IN ACCORDANCE WITH THE, RULES & REGULATIONS OF THE APPROPRIATE STATE AND LOCAL BUILDING CODES AND SUBTITLES.
- 4. QUESTIONS REGARDING THESE DRAWINGS SHALL BE ADDRESSED TO THE ENGINEER PRIOR TO THE AWARDING OF THE CONTRACT. OTHERWISE THE ENGINEER'S INTERPRETATION OF THE MEANING AND INTENT OF THE DRAWINGS SHALL BE FINAL.
- 5. SPRINKLER CONTRACTOR RESPONSIBLE TO OBTAIN A COPY OF THE SPECIFICATION ON DWG. M1.3 AND COMPLYING WITH THE REQUIREMENTS THEREIN.
- 6. SPRINKLER CONTRACTOR SHALL REVIEW ARCHITECTURAL DRAWINGS FOR CEILING TYPES, HEIGHTS, COLOR, ELEVATIONS, SOFFITS, DISPLAY WINDOWS, ETC.
- 7. FIRE PROTECTION SHOP DRAWINGS MUST BE SUBMITTED FOR LOCAL AUTHORITY DEPARTMENT REVIEW AND APPROVAL AT LEAST TWO WEEKS BEFORE THE PROJECTED INSTALLATION DATE.
- 8. FAILURE TO OBTAIN APPROVAL OF THESE DRAWINGS BEFORE INSTALLATION COULD RESULT NOT ONLY IN DELAY OF THE FINAL INSPECTION AND ISSUANCE OF AN OCCUPANCY PERMIT, BUT ALSO IN REMOVAL AND RECONSTRUCTION OF INSTALLATIONS WHICH FAIL TO MEET LOCAL AND NFPA REQUIREMENTS.
- 9. SPRINKLER CONTRACTOR SHALL SUBMIT WORKING FIRE PROTECTION PLANS, HYDRAULIC CALCULATIONS, ETC... TO THE FIRE DEPARTMENT FOR SEPARATE PLAN CHECK.







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REVISIONS

1 DATE TABLE

PROTECTION

PLAN

DATE 05/17/24

JOB NO. 23475

FP1.0

ELECTRICAL SPECIFICATIONS

A: DESCRIPTION OF WORK

- 1. The electrical contractor shall provide all labor, material, equipment, and tools necessary for demolition and removal of existing and the complete installation of the new electrical work, ready to use, as shown on the drawings or specified herein. Work shall include, but not be limited to the following:
 - Furnish and install new conduit and wire. ii. Furnish and install new fuses, circuit breakers, panelboards etc.
 - iii. Install new lighting fixtures as indicated.
 - iv. Furnish & install new light fixtures as indicated. v. Furnish & install new communications devices.
- 2. The exact location of all items shown on the electrical drawings is dependent upon field conditions. Review the plans and specifications for all parts and consult with other trades of this project for pertinent data on sizes, locations, wiring, etc., as required for a complete electrical installation.
- 3. The electrical contractor shall not attach to, cover up, or finish against any defective work, or install in a manner which will prevent proper installation of the work of other trades.
- 4. The electrical contractor shall warrant all work & material indicated on these electrical drawings for a period of 1 year from the date of final acceptance. Warranty shall include any additional labor or material required to repair or replace defective item.

B: CODES, PERMITS AND FEES

- 1. All work included by the drawings and specifications, together with all material (or equipment) furnished, shall comply with the latest published codes and standards listed insofar as such shall apply. All electrical items shall be new and UL labeled & listed.
- 2. The contractor shall secure all permits and pay all fees that are required by the applicable local and state codes.
- 3. Perform all work in accordance with the latest edition of applicable codes including, but not necessarily limited to those listed below:
 - i. The National Electrical Code sometimes referred to herein as
 - the "NEC" (NFPA-70). ii. National Electrical Safety Code (ANSI-C2). iii. All applicable state and local codes.
 - iv. Applicable provisions of the Occupational Safety and Health Act.

C: GENERAL REQUIREMENTS FOR SUBMITTING & BID

- 1. The drawings represent the design for the listed manufacturers' requirements. If any substitutions are accepted by the engineer, this contractor shall be responsible for all necessary modifications, including cost, to the electrical system required because of the substituted equipment or material.
- 2. The electrical, mechanical, architectural, structural, and all other drawings as well as the specifications and addendums are part of the contract documents. any electrical requirements called for on other trades contract documents shall be included in the electrical bid.
- 3. Co-ordination & knowledge of local standards of utility companies is required to submit a bid. Any required deviation from the design by local utility shall be brought to the attention of the Architect or Engineer prior to submitting bid. No extra compensation will be awarded for adjustments to the design that are required by the local utility company.
- 4. The contractor shall visit the job site and become familiar with all existing conditions. Submission of a bid assumes the contractor has reviewed or accepts all field Conditions and existing conditions. No additional compensations shall be allowed for labor or material because of ignorance of these conditions before or after bid submission.
- 5. Discrepancies between the drawings or between the drawings and actual field conditions shall be brought to the attention of the architect and the engineer prior to submitting the bid. The more comprehensive and most expensive scope of work shall be considered for the electrical bid unless written clarification is provided by the architect and the engineer prior to submitting the bid.

D: RACEWAYS

- 1.EMT conduit shall be used in all interior locations which call for conduit unless noted therwise. Conduits routed thru areas of significant temperature differences shall be provided with seal-off fittings to minimize condensation. Conduits penetrating fire walls shall be firestopped per NEC & Underwriters Laboratories.
- 2. Rigid PVC Schedule 40 shall be used for all underground or below slab conduit runs.
- 3. Heavy wall rigid steel conduit shall be used in exterior exposed applications. Provide 2 coats of rust inhibiting paint for exterior runs. Paint shall match surface conduit is attached to.
- 4. 'MC' cable may be used for all branch circuits located above ceilings or in wall cavities or exposed & attached to supports of suspended light fixtures as allowed by the National Electrical Code & the authority having jurisdiction. Cable shall be installed in a neat professional manner adhering to industry standards.
- 5. When power or control conductors are installed in a raceway, a green equipment grounding conductor shall be included in each raceway system and shall be sized as shown on the drawings or if not noted on the drawings, then in accordance with Table 250-122 of the NEC, or as indicated on the drawings If green insulation is not available, the grounding conductor shall be bare and clearly and permanently marked at all tap and terminating points by
- 6. All conduit shall be securely fastened in full accordance and as directed by the latest edition of the National Electrical Code. In addition to the NEC requirements, conduit hangers, supports, or fastenings shall be provided at each elbow and at the end (within 6") of each straight run terminating at a box or cabinet.
- 7. Conduits or boxes may not be supported by ceiling support wires or other ceiling supporting hardware.
- 8. Horizontal and vertical conduit runs may be supported by one-hole malleable straps, clamp backs, or other approved devices with suitable bolts, expansion shields (where needed) or beam type clamps for mounting to building structure or special brackets.
- 9. The use of perforated iron for supporting conduits will not be permitted.
- 10. Conduit runs between outlets shall contain not more than the equivalent of three (3) quarter bends. Provide iunction and/or pull boxes where shown on the drawings or as required, whether shown on the drawings or not. Pull boxes shall be approved for use in the area where they are to be installed. Pull boxes or junction boxes shall
- be provided in accordance with the following schedule: i. Straight runs - not over one hundred (100) feet apart.
- ii. One (1) 90 degree bend not over seventy five (75) feet apart. iii. Two (2) or more 90 degree bends - not over fifty (50) feet apart.
- 11.In Class I and Class II hazard areas, as designated on the drawings, explosion-proof flexible metal conduit shall be used for all final conduit terminations at motors and to all other devices subject to vibration or movement. This shall include all pendant mounted lighting fixtures and conduit runs at building expansion joints in Class I and Class II hazard areas. Electrical ground continuity shall be provided as noted above
- 12. Telephone and data (including other special communication systems such as cable TV) conduits shall be a minimum of 3/4" in size unless noted otherwise, and shall run continuous from outlet to outlet and back to the main terminal board, or shall be stubbed into the ceiling space (6" above the ceiling) and provided with a plastic bushing. Bond conduit stub with a #10 bare copper conductor to the nearest electrical outlet box or continuous metal conduit body. Refer to plans for specific details about the routing of the conduits. All empty conduits shall be provided with
- 13. Cables installed in plenums without conduit shall be UL classified for low flame resistance and low smoke properties with "FEP" Teflon or Halar insulation suitable for plenum applications per Article 760 of the N.E.C.

14. Conduits below grade shall be installed in conformance with:

- i. Provide all necessary trenching, backfill & removal of trenched material from site.
- ii. The bottom of the trench shall be undisturbed earth or thoroughly compacted fill. The contractor shall be responsible for such compaction. the bottom shall be free of projecting rocks or other foreign matter. Where muck or unstable ground is encountered in the bottom of the trench, it shall be excavated to a depth of at least 12in. below the bottom line of the ducts and replaced with pea gravel in the proper grade. Duct shall not be installed on or in frozen ground. sheeting or bracing shall be provided where necessary to protect the work or adjacent property. Sheeting, bracing, and pea gravel shall be installed by the electrical contractor at no additional expense to the owner. Backfill shall consist of 3 inches of compacted sand below conduits and 12" above conduits. Clean screened fill shall be installed and compacted to 6" below final grade or as
- detailed in architectural specifications. Final grade patch shall be by E.C. iii. Duct joints shall be sealed with waterproof joint compound. Ducts shall be supported at least 3in. above the trench bottom on plastic supports with spacing not exceed 5'. Before duct is placed, supports shall be aligned, set to grade, and placed in concrete to prevent movement when encasement is placed. Ducts shall be secured to supports and spacers placed for tiered ducts.
- iv. All secondary power service underground ducts shall be encased with 3000 psi concrete. All underground ducts shall be 4" in diameter schedule 40 rigid non-metallic (P.V.C.) ducts with ground wires, unless specifically indicated otherwise on the drawings. concrete encasement shall be in accordance with the applicable provisions of the general trades portion of the specifications
- v. Encasement shall be continuous monolithic pour providing a minimum of 3" completely around the ducts. Concrete shall not be poured directly on top of the ducts, but shall be poured from the sides and allowed to
- vi. Bell ends shall be installed at all duct terminations or as required by the power company. Fittings, couplings and other accessories, as recommended by the manufacturer, shall be provided and installed.
- vii. Ducts shall be cleaned by rodding and brushing. It shall be the contractors responsibility to assure a full bore

opening throughout the duct system. E: FITTINGS FOR CONDUIT

- 1. Couplings and connectors for EMT: Die cast zinc, steel, or aluminum compression type. Set screw type will also be permitted. Approved manufacturers, Thomas & Betts, Steel City, O-Z Gedney.
- 2. Fittings for rigid plastic conduit: Polyvinyl chloride, joints solvent welded in field, providing continuity of mechanical strength and water tightness. Fittings and cement shall be produced by the same manufacturer
- 3. Fittings for rigid conduit: Cast or malleable iron bodies, zinc or cadmium plated, with full threaded hubs, screw covers and gaskets when located in areas requiring gaskets. Approved manufacturers: Crouse-Hinds, Pyle National, Appleton.

- 4. Couplings and connectors for flexible steel conduit: Malleable iron or steel, zinc or cadmium plated and shall fasten to the conduit by a clamping action around the periphery. Connectors for "liquid-tight" flexible conduit shall be approved for the purpose and maintain the liquid-tight feature of the installation. Approved manufacturers: Thomas & Betts, Steel City, O-Z Gedney.
- 5. Bushings: Grounding type, with insulating plastic insert; malleable iron, zinc or cadmium plated, for steel conduit and aluminum alloy for aluminum conduit. Install grounding type bushings as required in the grounding section of this specification.
- 6. Fittings for conduits: All conduit runs at building expansion joints shall be provided with O-Z type expansion fittings. Sizes shall be as dictated by the conduit size. A bonding jumper shall be securely connected to each conduit. Exterior exposed runs of PVC conduit shall be provided with expansion fittings at intervals not exceeding manufaturers recommendations.
- 7. Outlet, Pull, Terminal and Junction Boxes in Classified (Hazardous) Areas: Cast boxes shall be copper-free aluminum with integral hubs or box wall thickness sufficient for a minimum of five full tapered threads. Covers shall be screw-on bolt-on through 12" x 12" boxes and hinged removable bolt-on covers for larger boxes. Boxes other than outlet boxes shall be equipped with a breather drain and equipment grounding lug and all boxes shall be, as applicable, for installation in the particular classified (hazardous) areas which are designated on the drawings. Approved Manufactures: Crouse-Hinds, Pyle-National, Appleton, Adalet,
- 8. Conduit Fittings in Classified (Hazardous) Areas: Conduit seals and/or drain seals shall be installed in strict accordance with the NEC in classified (Hazardous) areas designated on the drawings, with special attention
- i. Entering or cross-connecting enclosures containing arcing or high temperature devices.
- ii. Two-inch conduit and larger entering any enclosure iii. Passing from Division 1 to Division 2, from Division 2 to non-classified areas, with or without a barrier. iv. Multi-conductor and shielded cables.

F: ELECTRICAL SUPPORTING DEVICES

- 1. Supports shall be suitable for the device or equipment to be mounted. All supports shall present a neat appearance, and shall be installed in such a way that they do not detract from the appearance of the space. Supports shall have adequate strength and shall be installed so as to properly support the device or equipment mounted on them.
- 2. Electrical supports shall be attached to the structure by one of the following methods:
- i. Wood wood screws
- ii. Concrete expansion bolts or cast in place anchors. iii. Structural steel - approved brackets or machine bolts

G: CONDUCTORS

- 1. Conductors shall be new, 600 volt, 90c, type XHHW, THHN or THWN insulation, stranded copper for feeders rated above 60 amps. Compact aluminum may be used for feeders of 150amps or higher. Minimum size shall be #12 AWG for runs of less than 100 feet total circuit length (out and back for single phase circuits and out only for three phase circuits with no neutral). Use #10 AWG for circuits longer than 100 feet. Other sizes shall be as noted. Control wiring may be #14 AWG. All 120 volt and 277 volt circuits shall have a dedicated neutral conductor. The neutral conductor shall be the same size as the phase conductor. All conductors shall be copper. The conductor sizes for feeders and branch circuits are designed to maintain a voltage drop of less than 5 percent. (2 percent for feeders and 3 percent for branch circuits)
- 2. Compression type lugs and connectors shall be used for all terminations and splices. All terminations shall be permanently identified and numbered, using "Brady" labels or other approved equal. Wire numbering shall be panelboard and circuit numbers. Also, all wiring which passes through junction or pull boxes shall be identified with appropriate numbers. When panelboard/circuit numbers are not appropriate for identification, the contractor shall assign a unique number and record this number on the construction set.

- 1. Provide wiring devices which are UL listed and which comply with NEMA WD 1 and other applicable UL and NEMA standards. Device Color shall be white unless otherwise noted. Coverplate color shall match device color. Confirm color selection with architect before purchasing and installing.
- 2. Receptacles: Devices shall be specification grade, NEMA 5-20R configuration. Duplex type, Hubbell Cat No. CR5362, single outlet type, Hubbell Cat No. CR5361, GFCI duplex, Hubbell Cat No. CR GF5362. Catalog numbers for Hubbell are shown for reference purposes and equivalent receptacles by other manufacturers as noted above are also approved. Receptacles shall comply with UL 498 and NEMA WD 1. Special receptacles not shown below shall be specification grade with Nema configuration as noted on the drawings.
- 3. Ground-fault interrupter (GFI or GFCI) receptacles as indicated above shall be designed for and installed in a 2-3/4 inch deep outlet box without adapter, grounding type, Class A, Group 1, per UL Standard 94.3.
- 4. Snap switches: Devices shall be specification grade quiet type, 20 A 120/277V, single pole Hubbell Cat No. CS1221, two pole Hubbell Cat No. CS1222, three pole, Hubbell Cat No. CS1223, and four pole, Hubbell Cat No. CS1224. Catalog numbers for Hubbell are shown for reference purposes and equivalent receptacles by other manufacturers as noted above are also approved. Devices shall be specification grade, quiet type ac switches, and shall comply with UL 20 and NEMA WD1

5. Approved manufacturers for wiring devices:

P&S

6. Dimmer switches: solid state dimmer switches conforming to NEMA WD 1, mounted in outlet boxes For incandescent fixtures; switch poles and wattage as indicated, 120 V, 60-Hz, continuously adjustable toggle. single-pole, with on-off switch. Equip with electromagnetic filter to eliminate noise. RF and TV interference. Dimmers to be Lutron "Nova T-Star" series for dimmers rated up to 1500 watts and "Nova" series for 2000 watt dimmers. Lighting switches shown adjacent to dimmers shall be Lutron "Nova T-Star" or standard "Nova" style to match dimmers and shall be provided with a single, one piece coverplate. Color shall be specified by architect.

Wiring device accessories

- i. Wall plates: Single and combination, of types, sizes, and with ganging and cutouts as indicated. Provide plates and attachment screws which mate and match with wiring devices to which attached. Provide wall plates with engraved legend where indicated. Provide smooth nylon coverplates for finished areas, and galvanized steel plate for unfinished areas.
- ii. Floor service outlets: Modular, above-floor service outlets and fittings of types and ratings indicated. Construct of die cast aluminum, satin finish. Use design compatible with floor outlet wiring methods indicated. Provide 20 Amperes, 125 Volts, gray duplex receptacles. NEMA configuration 5-20R where indicated. Provide with 3/4 inch or 1 inch NPT, 1 inch long, locking nipple for installation where compatible with wiring method.

Wiring device installation

- i. Install switches and receptacles in outlet boxes as specified elsewhere in this specification. Install single pole toggle switches so that the switch is on in the "up" position. Install receptacles with the
- U-shaped ground slot at the top or to the left. ii. Duplex receptacles shall be wired with the neutral wire to the silver binding screw.
- iii. Three phase receptacles shall be wired such that all have the same phase sequence.
- iv. The receptacle circuit and panel number shall be indicated on the inside of all outlet boxes, or directly on the conductors by means of a wire labeling system.
- v. Combination switch/receptacle shall be installed in a two gang box with a combination switch/receptacle coverplate. Connect the receptacle to the lighting circuit ahead of the switch and locate the switch on the side of the box closest to the door. Note, this method is to be used only for 120 Volt lighting system. 277 Volt lighting switches and 120 Volt receptacles shall be located in
- vi. Confirm final location of all wiring devices and outlet boxes with owner/architect prior to rough-in. 9. Wiring devices listed or noted on the drawings as weatherproof shall be provided with a cover which maintains the weatherproof integrity when the cover is closed. Receptacles noted as suitable for operation in a wet locations shall be provided with a cover which will allow the receptacle to remain operational during wet conditions with a plug inserted into the receptacle.

I: LIGHTING

1. Lighting Fixtures: see drawings for manufacturers catolog numbers.

- i. The Contractor shall refer to the Architectural drawings for ceiling type, construction and details of mounting. Adjust fixture trim ring as required for correct mounting in ceiling fixture is to be installed. All fixtures shall be supported per NEC Article 410.
- ii. Suspended ceiling systems shall be supported for fixture installation as noted above, and as a minimum condition, as noted in ANSI/ASTM C636-76, par. 2-7, CEILING FIXTURES.
- iii. Install fixtures in accordance with the Architectural Reflected Ceiling Plans. Where substantial differences may occur between the Reflected Ceiling Plans and the Electrical Plans, inform the Architect/Engineer for resolution of the discrepancy.
- iv. The Contractor shall coordinate fixture construction details with ceiling system in which they are installed, i.e.: support system dimensions, flanges where required, acoustical tile or pan pattern, etc. v. Rows of fixtures shall be installed accurately as to line and level. Fixtures shall be securely mounted so that they will not be distorted by handling incidental to normal maintenance.

vi. Surface type fluorescent lighting fixtures mounted on acoustical ceiling must be coordinated with the

- Architectural drawings in order that a main "T" runner will be placed in the center of each fixture and/or each row of fixtures. Main "T" runner shall be of at least the same length as the lighting fixture and shall be supported to carry at least twice the weight of the lighting fixture.
- vii. All fixtures shall be securely supported with approved hangers. Where fixtures will be installed in suspended ceilings, any Code-required additional ceiling supports as approved by the Architect, shall be provided by this Contractor.
- viii. Provide supports for all lighting fixtures as detailed on the Drawings, as specified, or as required by the fixture specified. Fixtures installed in unfinished areas (areas including but not necessarily limited to warehouses, factory areas, manufacturing areas, office spaces without lay-in ceilings, and spaces above lay-in ceilings) shall not be fastened directly to the structure. In these cases, unistrut type channel along with the appropriate fasteners and clips shall be used to support the fixtures.
- ix. Fixtures shall not hang directly from conduit boxes unless the boxes have been specifically designed for such purposes. These boxes shall be supported independent of the conduit system and shall not rely upon the conduit for support.

- x. Lay-in troffers in suspended ceilings and surface type fixtures mounted to suspended ceilings shall be secured mechanically by screws, rivets, clips, etc. as per Article 410, NEC. Additionally, layin fixtures shall also be supported by two independent support wires running from diagonally opposite corners of the fixture to the overhead structure. Surface mount fixtures shall be additionally supported by means of at least two clips for each fixture which surround the T-bar and are tied to the overhead structure with a separate wire. The surface fixtures shall be secured to these clips.
- xi. Plaster frames shall be furnished for each recessed fixture installed in plaster ceilings and walls. xii. Pendant mounted fixtures shall utilize pipe stems to mount fixtures at elevations as noted on the drawings. Chains or cords will not be accepted. Wherever the mounting surface slopes, fixtures shall
- be provided with universal type fixture hangers to allow the fixture to hang plumb. xiii. Fixtures shall be installed with due regard for beams, piping, ductwork, and other mechanical or
- xiv. Branch circuit conductors shall be run in fluorescent fixture wiring channels only as permitted by the N.E.C. The Contractor shall be responsible for providing all necessary boxes and conduit for an
- xv. Where a modular wiring system is installed, all ceiling mounted recessed fluorescent lighting fixtures shall be furnished with suitable receptacles to match the modular wiring system furnished and installed by this Contractor. Each fixture shall be equipped to permit either single or multiple fixture circuit wiring as is appropriate for the fixture type.
- xvi. When fixtures are installed in a fire proof ceiling, the fixture shall be U. L. listed to maintain the fire proof rating or the fixture shall be fire proofed by the electrical contractor using a U. L. accepted standard. see architectual drawings for ceiling ratings.
- xvii. At the time of final inspection all fixtures and equipment shall be complete with all required glassware and/or reflectors, clean and free of defects. Any glass-ware, or reflectors, etc., which have defects shall be replaced at the Contractor's expense before final acceptance.
- xiii. All lamps shall be in working order at the time of final acceptance of the work by the Owner and Architect/Engineer. This Contractor shall replace all defective lamps with new lamps until the work is finally accepted.
- xix. Low voltage lighting transformers should be protected by fuses. Fuse sizes shall be as recommended by the transformer manufacturer. Busman type HRS or Littelfuse 155020, fuse holders are recommended
- xx. Solid state transformers for low voltage lighting shall not be used for dimming applications unless the transformer and dimmer are a U. L. listed assembly specifically intended for the application.

3. Outdoor and Site Lighting Installation:

plumbing equipment

- i. Site lighting luminaires shall be as called for on the drawings. ii. Bases for site and roadway luminaires where required, shall be augered into the earth and concrete shall be poured into the augered hole without a sona tube below grade to allow the concrete to fill the natural crevices in the earth. Portion of base above grade shall be formed using a sonatube. Exposed portion of finished base shall be smoothed, and voids filled with grout
- iii. Bases shall have reinforcing steel as indicated on the contract drawings and shall be Class 'A' concrete. iv. Anchor bolts for poles shall be performed for the pole bolt circle at the factory.

- 1. Panelboards for 480/277, 208/120, or 240/120 panels shall be dead front type, conforming to NEMA standard PB-1-1-71 and UL 67, and consisting of three phase, three or four wire solid neutral, main lugs or main overcurrent device as indicated, branch overcurrent devices as noted and equipment ground bar, all in a surface or flush mounted code gauge galvanized sheet steel cabinet as indicated. Enclosure to be NEMA 1 unless noted otherwise with primer and finish paint of the manufacturers standard. All busing shall be copper.
- i. Standard enclosure shall be NEMA 1, unless noted otherwise, with primer and finish paint of the manufacturers standard. Cabinets shall be oversized where necessary to accommodate the entrance of several large conduits and/or when necessary to avoid overcrowding except cabinets for panels mounted flush shall be not more than 22 inches wide and 5-3/4 inches deep unless otherwise approved by the architect/engineer. All panels (branch & distribution style) within HFT space shall have trims that contain hinged doors and shall be equipped with flush chrome plated combination key locks and catches. Locks shall be all keyed alike and two keys furnished to the owner.
- ii. Column-type enclosures shall be similar to the standard enclosure except panel shall be approximately 8-1/2 inches wide for mounting between building column webs as indicated, and provided with extension trough and pullbox with neutral bar when shown on the drawings.
- iii. Where spaces are noted on the drawing, equip the panelboard with bus and all necessary hardware for future circuit breaker installation
- iv. Metal frame and plastic covered typewritten card shall be mounted inside each panel door. Information entered onto the cards shall correspond to the circuit numbers as installed in the field
- 2. Overcurrent Protective Devices i. General use circuit breakers for panelboards shall be bolt-on molded plastic case type, 1, 2, or 3 pole, quick-make, quick-break, with trip-free operating handle, position indicating and thermal-magnetic trip device. Furnish 2 and 3 pole breakers with common operating handle and common trip mechanism. All circuit breakers used for switching applications shall be U.L. listed type "SWD" for that application. all circuit breakers used for protection of motors, refrigeration equipment, or HVAC equipment shall be U.L. listed type "HACR" for that application.
- ii. Circuit breakers furnished with panelboards shall conform to the following interrupting ratings

iniculcal) in	amperes unic	Jos Othici Wio	c noteu.			
Voltage Rating	Trip Rating	No. of Poles	I.c. Am (Symr		ime ze	
120	15-100 ar	mpere	1	22,000	100 amp	
240	15-100 ar	npere	2&3	22,000	100 amp	
240	125-225 a	ampere	2&3	22,000	225 amp	
240	250-400 a	ampere	2&3	42,000	400 amp	
277	15-100 ar	mpere	1	25,000	100 amp	
480	15-100 ar	mpere	2&3	25,000	100 amp	
480	125-225 a	ampere	2&3	30,000	225 amp	
480	250-400 a	ampere	2&3	42,000	400 amp	

iii. Ground fault circuit interrupters shall be similar to general use circuit breakers specified; 15-20

400-800 ampere 2&3

minimum interrupting rating of 200,000 ampere rms symmetrical

- ampere, 1 or 2 pole with 5ma sensitivity. Furnish when indicated on drawing. iv. Fuses over 600 ampere shall be Bussman Hi-cap time delay type KRP-C, or Gould Shawmut A4BQ (601-2000 ampere) or Gould Shawmut A4BY (2001-6000 ampere) 600 volt, UL Class I with
- v. Fuses 600 ampere or below shall be Bussman low-peak dual element type LPN-RK (250 volt) or LPS-RK (600 volt) or Gould Shawmut Amp-trap type A2K (250 volt) or A6K (600 volt) UL Class RK1 with minimum interrupting rating of 200,000 ampere rms symmetrical.
- vi. Provide spare circuit breakers installed in panelboards as indicated on the panel schedule as shown on the drawings. Provide 10% spare (minimum of 3) of each type and rating of fuses installed.
- i. Provide fusible or non-fusible safety switches as indicated on the drawings. Switches shall be quickmake, quick-break, heavy duty visible blade type, horsepower and I squared T rated. Use NEMA 12 enclosures in factory areas, NEMA 1 enclosures in other indoor areas and NEMA 4X stainless steel type enclosures outside unless otherwise indicated on the drawings. Furnish three pole, single-throw switches unless otherwise indicated, with current and voltage ratings as indicated.
- ii. Provide safety switches with an external operating handle interlocked with the cover door to prevent the door from being opened while the switch is in the "on" position except by operating an inconspicuous interlock defeating mechanism. Provide means for padlocking the operating handle in the "off" position. Equip switches with auxiliary contacts when indicated.
- iii. Fuse clips shall be rejection type for fuses specified (up to 600 ampere). Fuses clips for 601 ampere to 6000 ampere shall be suitable for UL Class I fuses.

4. Transformers

KVA

Panelboard and Transformer Installation

designation as shown on the drawings.

3. Safety Switches

i. Transformers shall be indoor dry, two winding, quiet type, with ventilated enclosure, conforming to NEMA standards, 220 degrees celcius insulation for continuous operation in a 40 degree celsius ambient temperature with a temperature rise not to exceed 80 degrees celsius. Provide a minimum of two 2-1/2% FCAN and four 2-1/2% FCBN taps in the primary winding for transformers over 25 KVA and a minimum of two 2-1/2%

dB level

- FCBN taps for transformers 25 KVA and below. Transformers 25 KVA through 75 KVA shall be designed for floor or wall mounting. ii. Sound levels shall not exceed those established in ANSI standard C89 shown in the following table:
- 0-150 iii. Furnish transformers having voltage, KVA ratings and connections as indicated on the drawings.
- i. Mount panelboards at uniform height throughout the building, and such that the top switch is not more
- than 79 inches above floor when measured to the center of the switch handle. ii. Install handle guards on all breakers for night lighting, emergency, and similar circuits when indicated. iii. Each panelboard shall be identified with a legend plate of lamicoid plastic inside the door for panelboards in finished areas and on the outside of panelboards in unfinished areas with the panel
- iv. Install not less than two spare 1-1/4 inch conduits from each flush mounted panel to an accessible area above the ceiling.
- v. When branch circuits are not scheduled on the drawing, they shall be arranged to balance the phase loads on each panelboard and the loads shall be equally distributed on each of the phases of the panelboard.

- vi. Mount panelboard, safety switches, and similar equipment securely to walls or steel supports. Equipment mounted on the building perimeter foundation walls shall be shimmed at least 1/4 inch
- vii. Provide supports for truss mounted and wall mounted transformers. All transformers which are mounted above panelboards shall be mounted away from the wall by an amount equal to the depth of the panelboard. The width of the panelboard shall also be maintained clear behind the transformer.
- viii. Approved Manufacturers for Power Distribution Equipment: General Electric Company Siemens

Cutler Hammer/Westinghouse Cleveland Switchboard Co. Square D

K: RACEWAY AND GENERAL GROUNDING

from the wall to permit back ventilation

- 1. The entire power, lighting system as well as building structure, mechanical & plumbing systems, fences & simalar metal objects shall be permanently and effectively grounded in accordance with the minimum requirements of the National Electrical Code, or as specified herein, whichever is the more
- 2. Ground conductors shall be stranded, annealed copper with green insulation (insulation material as specified for general building use)
- 3. The entire power and lighting system shall be permanently and effectively grounded including panels, starter enclosures, motor frames, and other exposed, non-current carrying parts of the electrical equipment. The equipment ground conductor shall be separate from the neutral conductor and shall not be used as a load current carrying conductor.
- 4. Any item covered by the preceding paragraph which is within six feet of grounded metal and not directly interconnected with the grounded metal shall have a flexible bare copper cable connection not smaller than #6 AWG to the grounding system.
- 5. Where building type conductors are installed in a raceway, a green equipment grounding conductor shall be included in each raceway system.
- 6. Lighting fixtures permanently connected to the conduit system shall be grounded by means of a grounding conductor run inside the conduit. Fixtures mounted on trollies or portable lighting units shall be grounded by means of a grounding conductor in the portable cord.
- 7. Convenience outlets shall be self-grounding type or shall have a green grounding conductor installed from the ground lug on the outlet to the outlet box.
- 8. Motors shall be connected to the equipment ground conductor with a conduit grounding bushing and with a bolted solderless lug connection on the metal frame.
- 9. The armor of interlocked armor cable, wiring channels, cable trays, and all metallic conduit including rigid, EMT, and flexible conduit shall be connected at each end to the equipment ground conductor utilizing a conduit grounding bushing. Junction boxes and other enclosures (sizes above 5" x 5") shall utilize an equipment ground lug to securely bond the equipment grounding conductor to the enclosure.
- 10. Where any grounding conductor requires physical protection to maintain grounding integrity, it shall be run through a non-ferrous conduit or bonded to a continuous steel conduit at both ends
- 11. The grounding electrode system shall consist of $\frac{3}{4}$ " diameter x 10' copper clad ground rods. Exterior ground rods shall be driven to 12" below finished grade & be provided with a 12" diameter x 30" long rigid pvc pipe w/ screw cover for inspection purposed. center ground rod in pipe & install pipe flush with grade. pvc pipe and cover shall be traffic rated. interior ground rods shall be driven to 6" above grade & installed as close to a wall as possible. all connections to ground rods shall be cadweld type.

L: EXECUTION

- 1. The contractor shall exercise due caution when working so as not to damage that portion of the electrical
- system that is to remain. 2. Positively no conduit or wire removed shall be reused in the new installation.
- 3. All circuits shall be identified on the panel directories by this contractor. At the completion of the job, the contractor shall provide each panelboard with a new typed directory with the existing loads as noted from the old directory and the new loads as installed
- 4. The contractor shall keep on the job, one complete set of working drawings on which he shall record any deviations or changes from such contract drawings made during construction. Record drawings shall show
- changes in the following: i. Size, type, capacity, etc. of any material, device or piece of equipment.
- ii. Location of any device or piece of equipment.
- iii. Location of any outlet or source in the building service system iv. Routing of any conduit, or other building electrical service.

exposed surfaces of finished areas will be permitted.

equipment involved may be energized for operational tests.

These drawings shall be kept clean and undamaged, and shall not be used for any other purpose than recording deviations from working drawings and exact locations of concealed work. After the job is completed, this set of drawings shall be delivered to the owner in good condition, as a permanent record of the installation as actually constructed.

M: CUTTING AND REPAIRING

- 1. All necessary cutting in walls, floors and other such work shall be neatly and carefully done and the work shall be repaired in an approved and workmanlike manner. No cutting into the structural parts of the building, which may impair its strength, shall be permitted without the prior written approval of the owner If such cutting is permitted, the area shall be suitably reinforced to restore the structural integrity of the work to its designed value.
- 2. The electrical contractor shall be responsible for all damage to work of his, or other trades, caused by his work or through the neglect of his workmen. All patching and repairing of damaged work shall be done by the trade which originally installed it, at the direction of the owner's representative, and the cost of such repair shall be paid by the electrical contractor.
- N: TESTING 1. The testing work shall include all labor, materials, tools, and equipment to perform and record all necessary

tests and adjustments of equipment, including Load Center Unit Substations, Motor Control Centers, High

3. Absolutely no cutting of wall, floor or other finished material or fastening of electrical components to the

- Voltage Cable, 600 Volt Wire and Cable, and Grounding, as indicated on the drawings, specified herein, or where necessary to verify performance requirements. 2. Inspection tests shall provide a visual inspection of electrical equipment for manufacturing, shipping or installation defects
- 3. Acceptance tests shall show that the methods and materials used in the installation of equipment conform to applicable codes and standards, and the manufacturers installation instructions, and to determine that the
- 4. Operational tests shall show the electrical equipment will perform the functions for which it was designed. 5. The services of a recognized independent testing laboratory shall be engaged to conduct all tests described herein with the exception of routine insulation resistance, continuity and rotation tests. 6. Perform all acceptance and operational tests in the presence of the Architect/Engineer. Notify the
- Architect/Engineer of time of test at least two (2) days prior to testing. Notify manufacturers of electrical equipment to permit their representatives to witness the test should they so request. 7. Submit test reports, including complete data and actual readings taken, for all equipment tested to the Architect/Engineer for approval after each test performed. Do not energize any equipment for operating tests until data has been approved. Include copies of the final approved test reports upon completion of the
- work as part of the required operating and maintenance data to be furnished as specified in Division 1. 8. Give each power feeder and subfeeder cable (600 Volt Wire and Cable) a continuity and megger test. Isolate power cables to be megger tested by opening switches at each end of cable prior to testing. Apply megger tests, using a 1000 volt megger, between each conductor and ground with the other two conductors in the conduit grounded to the same ground. Minimum acceptable readings for disconnected cables shall be

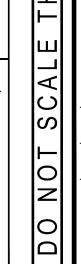
1 (one) megohm. Cable must pass megger test to be reported as acceptable.

9. The following test and inspections shall be made on the grounding system.

- i. Inspect ground conductors and connections for compliance with plans and specifications and for
- satisfactory workmanship. After installation of the grounding electrodes, provide ground resistance testing prior to the interconnection of other grounding systems. Do not perform tests under unusually wet weather; tests should be performed during normal weather
- ii. Reports shall include all resistance readings obtained, temperature, humidity and condition of the soil 10. Operational tests shall be performed on all electrical systems, and shall include, but not be limited to, building lighting system, panelboards, motor starters and control devices, alarm circuits and site lighting

equipment O: GUARANTEE

1. Material, equipment and installation shall be guaranteed for a period of one year from the date of acceptance. Defects which appear during that time period shall be corrected by this contractor at his REVISIONS



Brian M

Schuler, P.E.

BRIAN M. SCHULER

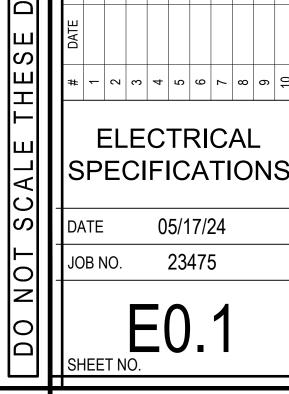
SEAL

N.C. PROFESSIONAL ENGINEER No. 033582

155 Willamsburg Drive

Avon Lake, Ohio 44012

Phone: 216-244-4120



05-17-24

	MECHANI	CAL E	QUIPMEN	IT SCHI	EDULE			
MARK	DESCRIPTION	LOAD	VOLTAGE & PHASE	PANEL	CIRCUIT	C.B.	WIRE	NOTES
RTU-1	ROOF TOP UNIT	61 MCA	208V-3PH	М	1,3,5	80/3	4-3	1,3
RTU-2	ROOF TOP UNIT	52 MCA	208V-3PH	М	2,4,6	60/3	6-3	1,3
RTU-3	ROOF TOP UNIT	52 MCA	208V-3PH	М	7,9,11	60/3	6-3	1,3
RTU-4	ROOF TOP UNIT	61 MCA	208V-3PH	М	8,10,12	80/3	4-3	1,3
UH-01	UNIT HEATER	1.8 KW	120V-1PH	Р	22	30/1	10-2	1,3
UH-02	UNIT HEATER	4 KW	208V-1PH	L	39,41	25/2	8-2	1,2
EF-1	EXHAUST FAN #1	0.1 KW	120V-1PH	Р	41	20/1	12-2	1,2,4
EF-2	EXHAUST FAN #2	0.1 KW	120V-1PH	Р	41	20/1	12-2	1,2,4
EF-3	EXHAUST FAN #3	0.1 KW	120V-1PH	Р	35	20/1	12-2	1,2,5
EF-4	EXHAUST FAN #4	0.1 KW	120V-1PH	Р	35	20/1	12-2	1,2,5

MECHANICAL EQUIPMENT SCHEDULE NOTES:

1. VERIFY LOAD, LOCATION AND CONNECTION REQUIREMENTS WITH MECHANICAL & PLUMBING DESIGN DRAWINGS, SHOP DRAWINGS, AND MECHANICAL & PLUMBING CONTRACTOR IN THE FIELD. ADJUST CONNECTION DEVICE, MOUNTING HEIGHT, WIRE, CONDUIT AND CIRCUIT BREAKER AS REQUIRED IN ORDER TO POWER THE EQUIPMENT. COORDINATE WITH THE EQUIPMENT INSTALLING CONTRACTOR PRIOR TO ROUGH-IN.

2. PROVIDE A LOCAL NEMA 3R HEAVY DUTY NON FUSED DISCONNECT SWITCH SIZED PER EQUIPMENT NAMEPLATE DATA.

3. PROVIDE A LOCAL NEMA 3R HEAVY DUTY FUSED DISCONNECT SWITCH SIZED AND FUSED PER EQUIPMENT NAMEPLATE DATA. WIRE AHEAD OF THE INTEGRAL UNIT

4. CONTROL CIRCUIT WITH TIME CLOCK.

5. WIRE TO 120 VOLT TSTAT AND LOUVER

GENERAL ELECTRICAL DEMOLITION NOTES

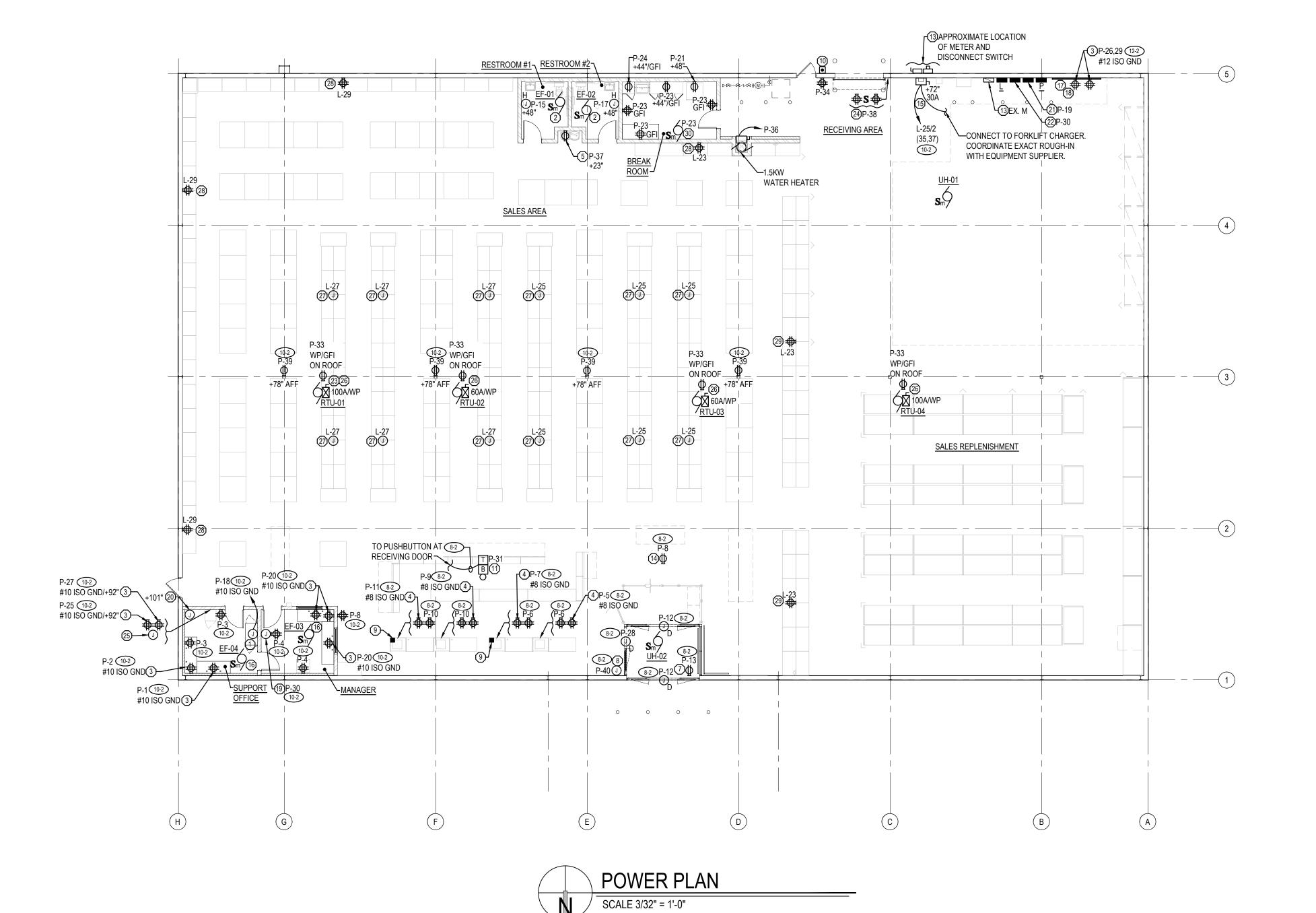
- A) NO ATTEMPT HAS BEEN MADE TO INDICATE ALL EXISTING ELECTRICAL DEVICES, LIGHT FIXTURES, COMMUNICATION DEVICES, WIRING, CONDUIT, ETC. TO BE REMOVED AND/OR RELOCATED. HOWEVER, THE ELECTRICAL CONTRACTOR SHALL FIELD VERIFY THE EXTENT OF DEMOLITION PRIOR TO SUBMITTING BID. ALL ITEMS SHOWN ON THESE DRAWINGS ARE NEW UNLESS OTHER WISE
-) REMOVE AND/OR RELOCATE EXISTING ELECTRICAL DEVICES NOT NOTED AS EXISTING TO REMAIN. COORDINATE SUCH CONDITIONS WITH ARCHITECTURAL DRAWINGS.
- C) EXISTING CONDUITS, CIRCUITS OR SYSTEMS IN WALLS OR CEILING BEING REMOVED WHICH SERVE SURROUNDING UN REMODELED AREAS SHALL BE REWORKED AND MAINTAINED.
-)) EXISTING CONDUITS, CIRCUITS OR SYSTEMS PASSING THROUGH THE REMODELED AREAS WHICH SERVE UNREMODELED AREAS SHALL REMAIN AND BE PROTECTED DURING DEMOLITION AND REMODELING, AND SHALL BE RELOCATED AND REROUTED.
- E) CONTINUITY OF CIRCUITS INTERRUPTED BY REMOVAL OF ELECTRICAL DEVICES SHALL BE MAINTAINED.
- F) ALL UNUSED WIRE (POWER & COMMUNICATION) SHALL BE REMOVED.
- 6) ALL EXISTING WIRING (POWER & COMMUNICATION) THAT IS TO REMAIN SHALL BE REWORKED OR REPLACED WITH CODE COMPLIANT MATERIAL & SUPPORTS. ANY EXISTING SURFACE MOUNTED CONDUITS SHALL BE REMOVED OR RELOCATED SO THAT THEY ARE IN THE JOIST SPACE OR WITHIN WALL CAVITIES.
-) EXISTING LIGHT FIXTURES THAT REMAIN OR ARE BEING RELOCATED SHALL BE CLEANED AND RE-LAMPED WITH 4' T8 LAMPS. BROKEN LENSES SHALL BE REPLACED. PROVIDE NEW T8 BALLASTS IF REQUIRED.
- EXISTING LIGHT FIXTURES, ELECTRICAL / TELECOMMUNICATION DEVICES, PANELBOARDS ETC. THAT ARE NOT TO BE REMOVED SHALL BE NOTED AS EXISTING TO REMAIN ON THE DRAWINGS. SEE ARCHITECTURAL & MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION ON SCOPE OF DEMOLITION.

BE DIRECTLY MOUNTED TO THE ROOF DECK

WALL COLOR UNLESS NOTED OTHERWISE.

CONDUITS OR MOUNTING HARDWARE SHALL NOT

OUTLET COVER PLATES SHALL MATCH ADJACENT



NEW HORIZONTAL CONDUITS TO BE INSTALLED

ABOVE 12'-0" A.F.F. OR AS HIGH AS POSSIBLE IN

FREIGHT TOOLS

NOTES ON SHEET A0.2

ELECTRICAL CONTRACTOR SHALL REFER TO

ELECTRICAL CONTRACTOR TO REVIEW AND

COMPLY WITH THE REQUIREMENTS OF GENERAL

ARCHITECTURAL DRAWING A0.0 FOR ELECTRICAL

DEVICES AND ACCESSORIES PROVIDED BY HARBOR

JOIST SPACE AT SALES FLOOR WALLS.

POWER PLAN NOTES

- PROVIDE A JUNCTION BOX ON WALL ABOVE CEILING FOR RACK POWER. RUN MC CABLE IN WALL CAVITY TO BEHIND RACK, PENETRATE RACK & INSTALL A SEPARATE ORANGE ISOLATED GROUND QUAD RECEPTACLE MOUNTED IN RACK. COORDINATE EXACT LOCATION WITH HFT PRIOR TO INSTALLATION.
- 02 PROVIDE A DEDICATED CIRCUIT & WIRE THRU TIME CLOCK. UTILIZE SAME CIRCUIT IF THERE ARE TWO EXHAUST FANS.
- 03 DEDICATED ISOLATED GROUND QUAD OUTLET ON DEDICATED CIRCUIT. COLOR TO BE ORANGE.
- 04 DEDICATED ISO GROUND QUAD OUTLET MOUNTED WITHIN THE CASHWRAP SO THAT BOTTOM OF QUAD IS 2" ABOVE LOWEST SHELF. SEE DETAIL ON E1.1A. COLOR TO BE ORANGE.
- 05 COORDINATE ROUGH-IN LOCATION WITH MANUFACTURERS SHOP DRAWINGS PRIOR TO INSTALLATION. PROVIDE STANDARD 20A-120V RECEPTACLE & WIRE TO A GFCI TYPE CIRCUIT BREAKER.
- 06 DUPLEX OUTLET MOUNTED ON WALL AT 12" ABOVE WINDOW. MOUNT FLUSH IN CEILING IF CEILING IS WITHIN 12" OF TOP OF
- 07 DUPLEX OUTLET MOUNTED FLUSH IN WALL ABOVE GLASS FOR NEON SIGNS BY T.G.C.
- J-BOXES WITH SERVICE DISC SWITCH FOR SIGN CIRCUITS. COORDINATE ROUGH-IN REQUIREMENTS WITH SYSTEM CONTRACTOR. COORDINATE EXACT LOCATION WITH ARCHITECTURAL ELEVATIONS PRIOR TO ROUGH-IN.
- 15'-0" HIGH 2 COMPARTMENT POWER POLE TO BE FURNISHED BY HFT AND INSTALLED BY EC. EC SHALL EXTEND UNISTRUT FROM THE POWER POLE UP TO THE ROOF STRUCTURE AND CONNECT TO UNISTRUT SECURED TO ROOF STRUCTURE (UNISTRUT TO BE PAINTED TO MATCH THE CEILING). SEE ARCHITECTURAL DRAWINGS FOR ROOF STRUCTURE HEIGHTS.
- 0 24 VAC WEATHERPROOF PUSH BUTTON MOUNTED +48" CONNECT TO LOAD SIDE OF TRANSFORMER. DORTRONICS #WR5276-HD29
- SERVICE BELL MOUNTED TO BOTTOM OF ROOF STRUCTURE. EDWARDS #340-6G5/598-348.

MONITOR ARM. COORDINATE EXACT LOCATION WITH COMMUNICATIONS CONTRACTOR.

EQUIPMENT MANUFACTURER PRIOR TO INSTALLATION.

MECHANICAL EQUIPMENT.

- 12 REMOVE EXISTING ELECTRICAL PANELS IF NOT SHOWN ON THIS PLAN OR E2.0 AS EXISTING TO REMAIN.
- 13 EXISTING 600A SECONDARY CONDUCTORS, CT BOX, METER, 600A DISCONNECT SWITCH, AND MAIN DISTRIBUTION PANEL
- TO REMAIN. (LANDLORD TO PROVIDE AND INSTALL UNDER SEPARATE CONTRACT) 14 DUPLEX RECEPTACLE FOR SUSPENDED MONITOR. E.C. SHALL PROVIDE MC CABLE & CAST BOX & MOUNT RECEPTACLE ON
- 5 208/240V CHARGER WIRED & INSTALLED BY ELECTRICAL CONTRACTOR. COORDINATE ROUGH-IN REQUIREMENTS WITH
- 16 UTILIZE EXHAUST FAN CIRCUIT & CONNECT POWERED LOUVER AND CONTROL TRANSFORMER LOCATED IN DUCT WORK WITH (2)#12,#12GND. INSTALL CONTROL TRANSFORMER (PROVIDED BY MECHANICAL CONTRACTOR). COORDINATE ROUGH-IN REQUIREMENTS WITH MECHANICAL CONTRACTOR. WIRE TO LINE VOLTAGE TSTAT.
- LOCATION OF FIRE ALARM CONTROL PANEL IF REQUIRED. ELECTRICAL CONTRACTOR TO LABEL PANEL & CONNECT TO CIRCUIT P-32 WITH (2)#12,#12GND-3/4"C.
- 18 LANDLORD TO PROVIDE 1-1/2" EMPTY CONDUIT WITH PULL STRING FROM EXISTING TELEPHONE DEMARK TO HFT PHONE
- 19 3 GANG RECESSED METALLIC JUNCTION BOX WITH METAL OVERALL COVER PLATE MOUNTED FLUSH WITH DRYWALL MOUNTED AT 43 INCHES TO THE BOTTOM OF THE BOX FOR THE EMS SYSTEM TOUCHSCREEN CONTROLLER. STUB (1) 3/4" EMT CONDUIT ABOVE CEILING WITH GROMMET FOR COMMUNICATION CABLES. STUB A SECOND EMT 3/4" CONDUIT TO A TWO GANG DEEP BOX MOUNTED 6" ABOVE CEILING FOR POWER SUPPLY WIRING. FROM TWO GANG BOX MOUNTED ABOVE CEILING HOMERUN BRANCH CIRCUIT TO PANEL. 2 GANG BOX ABOVE CEILING AND 3 GANG BOX MOUNTED AT 43 INCHES SHALL BE WITHIN 6 FEET OF EACH OTHER. E.C. SHALL PROVIDE A 2 INCH DIAMETER HOLE GROUND SMOOTH IN METALLIC COVER PLATE. SEE DRAWING EMS-1 FOR INSTALLATION DETAILS.
- SURFACE MOUNTED TERMINAL BOX MOUNTED NEXT TO SECURITY PANEL FOR EMS TO SECURITY SYSTEM INTERFACE.
- ELECTRICAL CONTRACTOR SHALL INSTALL THE LIGHTING CONTROL PANEL (LCP). E.C. SHALL PROVIDE 120 VOLT POWER FOR THE POWER SUPPLY AND WIRE ALL LIGHTING CIRCUITS THROUGH THE CONTACTORS AS SHOWN ON DRAWING E2.0
- THE ELECTRICAL CONTRACTOR SHALL INSTALL THE ENERGY MANAGEMENT CONTROL PANEL (SLP). E.C. SHALL PROVIDE THE 120 VOLT CIRCUIT, (2) 1" CONDUITS STUBBED TO JOIST SPACE FOR CONTROL WIRING AND (1) 1" CONDUIT BETWEEN THE SLP AND SLP FOR CONTROL WIRING. SEE DRAWING E2.0 AND THE EMS DRAWINGS FOR FURTHER DETAILS.
- 23 E.C SHALL PROVIDE HEAVY RIGID STEEL CONDUIT THRU RTU CURB AND INSTALL ON RTU ON SIDE OPPOSITE OF THE
- CONDENSING FAN. SEE EMS DRAWINGS FOR DETAILS. EMS VENDOR SHALL WIRE AND INSTALL OSD.
- 24 ELECTRICAL CONTRACTOR SHALL INSTALL A RECEPTACLE MOUNTED AT 9'6" AFF. CONTROLLED BY A SWITCH MOUNTED AT 48" AFF AND AN UNSWITCHED RECEPTACLE AT 24" AFF ALL CONNECTED TO THE CIRCUIT INDICATED ON THE FLOOR PLAN. 25 STUB 3/4" CONDUIT FROM THE BOTTOM OF THE SECURITY PANEL TO 95" AFF (BELOW CEILING). STUB TO BE WITHIN 6"
- HORIZONTAL OF QUAD RECEPTACLE. TYPICAL FOR 2. SECURITY CONTRACTOR SHALL ROUTE SECURITY PANEL POWER CABLE THRU CONDUITS PROVIDED. FLECTRICAL CONTRACTOR SHALL INSTALL A HEAVY DUTY NEMA 3R DISCONNECT SWITCH PROVIDE REJECTION TYPE FUSES SIZED PER THE MOCP OF THE UNIT. CONNECT SWITCH AHEAD OF THE INTEGRAL UNIT MOUNTED CIRCUIT BREAKER.

THE FUSED DISCONNECT SWITCH IS REQUIRED TO MINIMIZE THE AVAILABLE SHORT CIRCUIT CURRENT AT THE

- 7 ELECTRICAL CONTRACTOR SHALL PROVIDE A JUNCTION BOX AND BRANCH CIRCUIT WIRING MOUNTED IN JOIST SPACE FOR FUTURE POWER DROP TO FURNITURE.
- THE ELECTRICAL CONTRACTOR SHALL INSTALL A QUAD RECEPTACLE AT 8'-6" TO THE BOTTOM OF THE OUTLET. PROVIDE A RECESSED SYSTEM WHERE WALLS ARE FURRED. FOR SURFACE MOUNTED APPLICATIONS, RUN A 3/4" EMT CONDUIT VERTICALLY DOWN WALL FROM JOIST SPACE TO OUTLET. MOUNT RECEPTACLE IN A GRAY OR TO MATCH WALL FINISH CAST BOX AND PAINT EMT CONDUIT TO MATCH WALL SURFACE.
- ELECTRICAL CONTRACTOR SHALL PROVIDE A JUNCTION BOX WITH SWIVEL BALL HANGER FITTING IN JOIST SPACE ABOVE RECEPTACLE. INSTALL A VERTICALLY RUN 3/4" IMC CONDUIT FROM THE BALL HANGER TO A QUAD RECEPTACLE MOUNTED IN A WHITE CASTE BELL BOX MOUNTED AT 8'-6" TO THE BOTTOM OF THE BOX. PAINT THE WHOLE INSTALLATION GRAY OR
- 30 UTILIZE LOCAL RECEPTACLE CIRCUIT AND CONNECT POWERED LOUVER AND CONTROL TRANSFORMER LOCATED IN DUCT WORK WITH (2) #12, #12 GND. INSTALL CONTROL TRANSFORMER (PROVIDED BY MECHANICAL CONTRACTOR). COORDINATE ROUGH-IN REQUIREMENTS WITH MECHANICAL CONTRACTOR. WIRE TO LINE VOLTAGE THERMOSTAT.

REVISIONS

POWER PLAN

05/17/24 23475

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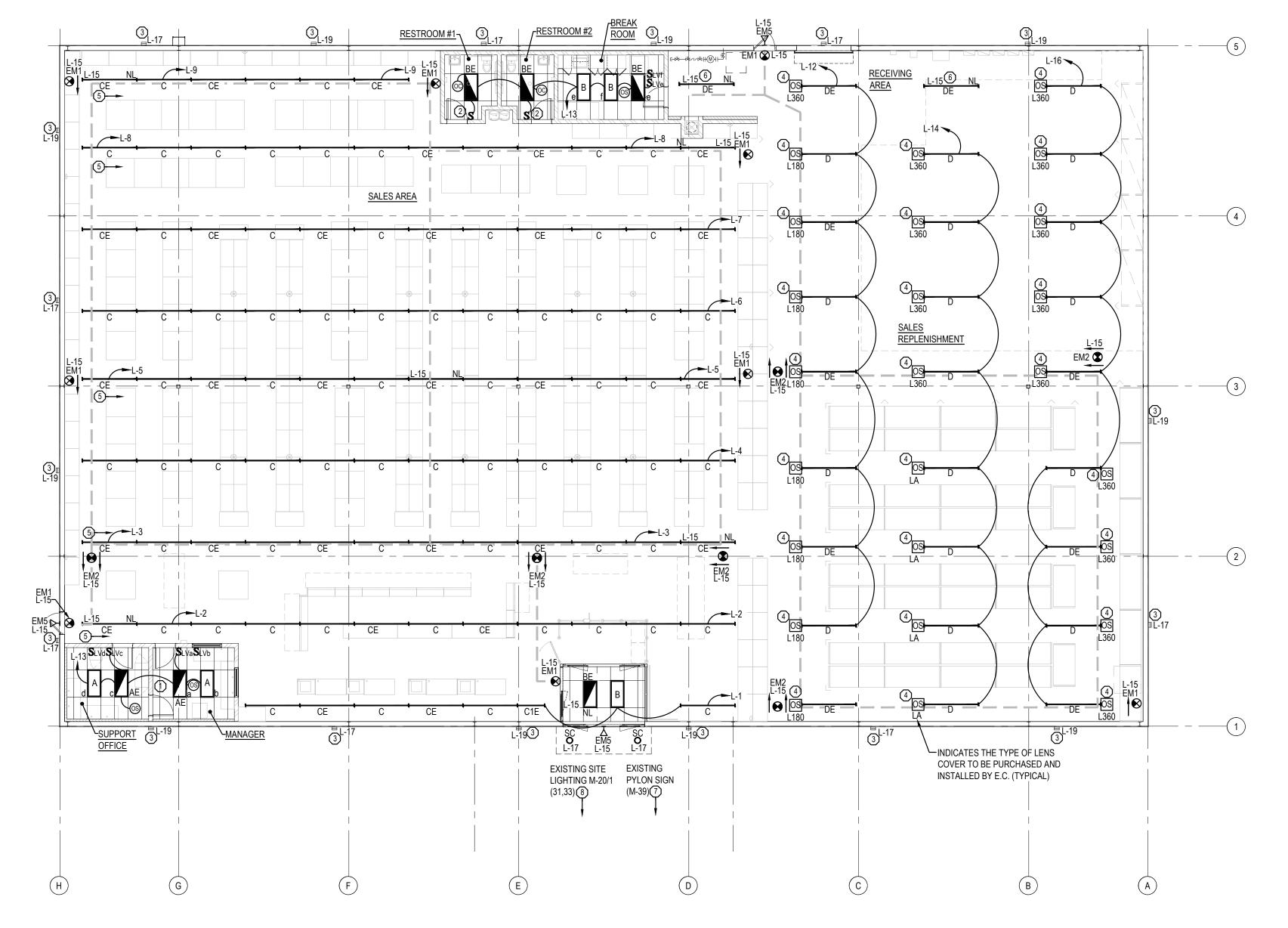
BRIAN M. SCHULER

SWITCH COVER PLATES SHALL MATCH ADJACENT WALL COLOR UNLESS NOTED OTHERWISE.

FIXTURES LOCATED IN THE SALES AREA (C, C1, CE, C1E) HAVE A 7 WIRE HARNESS AND THRU PIN CONNECTORS TO UTILIZE FOR BRANCH CIRCUIT WIRING THROUGH THE FIXTURES MOUNTED IN CONTINUOUS ROWS.

SALES FLOOR LIGHTING SHALL BE CHAIN MOUNTED AT 12'-0" TO THE BOTTOM OF THE FIXTURE.

SURFACE OR PENDANT MOUNTED LIGHT FIXTURES & ASSOCIATED MOUNTING HARDWARE AS WELL AS ANY CONDUITS SHALL NOT BE DIRECTLY MOUNTED TO THE ROOF DECK.



LIGHTING PLAN SCALE 3/32" = 1'-0"

GENERAL NOTES

- A ALL SALES & SALES REPLENISHMENT AREA LIGHTING CIRCUITS SHALL BE 10-2 10-3
- B ALL NIGHT / EMERGENCY / EXIT LIGHTING CIRCUITS SHALL BE 8-2
- ALL EXTERIOR LIGHTING CIRCUITS SHALL BE 8-2
- EMERGENCY LIGHT FIXTURES AND EXIT SIGNS HAVE BATTERY BACK UP INSTALLED, DESIGNED, AND MANUFACTURED TO CONFORM WITH THE NATIONAL ELECTRICAL CODE ARTICLE 700. THE EMERGENCY LIGHTING SYSTEM ILLUMINATION IS DESIGNED TO CONFORM WITH STATE BUILDING CODE SECTION 1008. EXIT SIGNS ARE INTERNALLY ILLUMINATED AND CONSTRUCTED TO CONFORM WITH STATE BUILDING CODE SECTION 1013.
- FIXTURES LOCATED IN THE SALES REPLENISHMENT & RECEIVING AREA SHALL BE MOUNTED AS HIGH AS POSSIBLE MAXIMUM 15' AFF TO THE BOTTOM OF THE JOISTS OR ON UNISTRUT MOUNTED TO THE BOTTOM OF THE JOIST WHERE FIXTURE LOCATIONS DO NOT LINE UP WITH THE JOIST. IF JOISTS ARE HIGHER THAN 15'-6" AFF TO BOTTOM CHANGE TYPE 'D' FIXTURES TO TYPE 'C' FIXTURES & MOUNT FIXTURES AT 15'-0" AFF.
- ELECTRICAL CONTRACTOR SHALL INSTALL ALL EMERGENCY BALLASTS IF SHIPPED SEPARATELY. COORDINATE WITH
- FOR EMERGENCY FIXTURES AE, A1E, BE, CE, C1E, DE & D1E NOT SHOWN AS NIGHT LIGHTS, RUN AN EXTRA HOT CONDUCTOR (BYPASSING ALL CONTROL) AND CONNECT TO EMERGENCY BALLAST. FIXTURES SHALL BE SHUT OFF WITH

LIGHTING PLAN NOTES

- 01 APPROXIMATE LOCATION OF TOUCH SCREEN CONTROL. TOUCH CONTROLLER CONTROLLER SHALL PROVIDE MANUAL ON / OFF CONTROL OF SALES AREA AND SALES REPLENISHMENT LIGHT FIXTURES. THE TOUCH SCREEN PROVIDES 2 POINTS OF CONTROL FOR THE SALES AREA REDUCING THE LIGHTING DENSITY BY 1/3 OR 2/3'S. EACH TOUCH POINT INDICATES WHETHER THE CONTROLLED LOAD IS ON OR OFF.
- 02 MOUNT SWITCH @ +44" A.F.F.
- 03 EXISTING EXTERIOR WALL LIGHTING TO REMAIN. EXISTING LIGHTING TO RUN THRU LIGHTING CONTACTOR PANEL AND CONNECT TO PANEL 'L' AS SHOWN.
- 04 PASSIVE INFRARED OCCUPANCY SENSOR. PROVIDED BY LIGHTING VENDOR WIRED AND INSTALLED TO FIXTURE BY E.C. MASK SENSOR SO THAT FIXTURE AREA OF DETECTION DOES NOT EXCEED AISLE OR AISLEWAY BOUNDARIES THAT FIXTURE IS LOCATED IN.
- FIXTURES MOUNTED IN CONTINUOUS ROWS WITH A NIGHT LIGHT LOCATED IN THE RUN SHALL BE CONNECTED TO BRANCH CIRCUIT WIRING VIA A VERTICAL DROP FROM THE CEILING AT A MINIMUM OF ONCE FOR EACH NIGHT LIGHT CIRCUIT AND ONCE ON EITHER SIDE OF THE NIGHT LIGHT.
- 06 FIXTURE TYPE 'D' OR 'DE' LABELED AS 'NL' DO NOT RECEIVE OCCUPANCY SENSORS.
- 07 EXISTING PYLON SIGN TO REMAIN. EXISTING CIRCUITING TO REMAIN AND RE-ROUTE THRU LIGHTING CONTACTOR AS SHOWN ON DRAWING E2.1.
- 08 EXISTING SITE LIGHTING TO REMAIN. EXITING CIRCUITING TO REMAIN AND RE-ROUTE THRU LIGHTING CONTACTOR AS

REVISIONS

LIGHTING PLAN

05/17/24

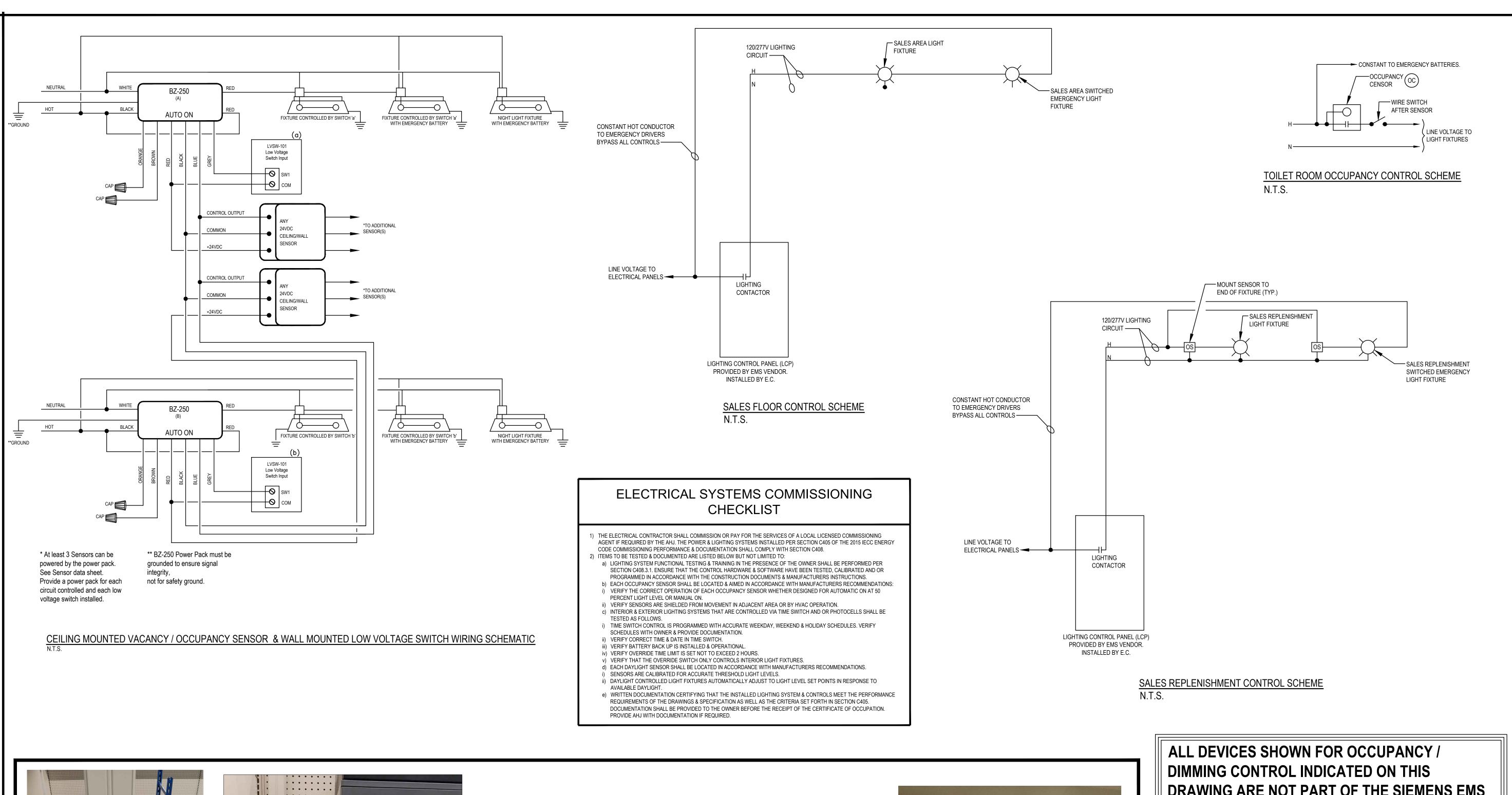
Brian M.

155 Willamsburg Drive Avon Lake, Ohio 44012 Phone: 216-244-4120

Schuler, P.E.

BRIAN M. SCHULER

23475





CASH WRAP POWER / COMMUNICATION DETAIL





DRAWING ARE NOT PART OF THE SIEMENS EMS SYSTEM (U.O.N). THE ELECTRICAL CONTRACTOR SHALL PURCHASE, WIRE, INSTALL LINE AND LOW VOLTAGE DIMMING SWITCHES, OCCUPANCY/VACANCY SENSORS, RELAYS, ETC.

Brian M. Schuler, P.E. 155 Willamsburg Drive Avon Lake, Ohio 44012 **ROOM LIGHTING** Phone: 216-244-4120 BRIAN M. SCHULER SYSTEM DETAILS 05/17/24 23475

COMMUNICATIONS CONTRACTOR SHALL REFER TO ARCHITECTURAL DRAWING A0.0 FOR COMMUNICATIONS DEVICES AND ACCESSORIES PROVIDED BY HARBOR FREIGHT TOOLS

COMMUNICATIONS CONTRACTOR TO REVIEW AND COMPLY WITH THE REQUIREMENTS OF GENERAL NOTES ON SHEET A0.2

CONDUITS, LOW VOLTAGE WIRING OR MOUNTING HARDWARE SHALL NOT BE DIRECTLY MOUNTED TO THE ROOF DECK.

GENERAL ELECTRICAL / COMMUNICATION / SECURITY NOTES

- HFT COMMUNICATIONS CONTRACTOR SHALL PROVIDE & INSTALL ALL CABLE, JACKS, PATCH CORDS, TELEPHONE EQUIPMENT ETC FOR A COMPLETE LOW VOLTAGE COMMUNICATIONS SYSTEM. GC IS RESPONSIBLE FOR COMPLETE SECURITY SYSTEM INSTALLATION, REFER TO VENDOR SCOPE OF WORK SUMMARY ON SHEET A0.0 FOR ANY HFT VENDOR PROVIDED ITEMS.
- THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL CONDUIT, BOXES, PULL STRINGS, 120V POWER SLEEVES FOR COMMUNICATIONS WIRING & EQUIPMENT. COORDINATE WITH COMMUNICATIONS CONTRACTOR & SEE SYMBOL LEGEND FOR ADDITIONAL DETAILS. THE E.C. SHALL PROVIDE WIRE AND COMPLETELY INSTALL ALL COMPONENTS OF THE SECURITY SYSTEM INCLUDING BUT NOT LIMITED TO: COMPONENTS, DEVICES, PANELS, WIRE, CONDUIT, BOXES, AND SYSTEM INTERCONNECTIONS.
- 03 ALL CONDUITS SHALL BE PROVIDED WITH PLASTIC BUSHINGS AT EACH END, PULL STRINGS & BE BONDED TO LOCAL BUILDING STEEL.
- ALL LOW VOLTAGE CABLES SHALL BE PLENUM RATED.
- THE COMMUNICATIONS CONTRACTOR SHALL PROVIDE A COMPLETE DATA COMMUNICATIONS SYSTEM WITH EQUIPMENT, PATCH PANELS, CABLE, JACKS, J HOOKS, BOXES, LABELING, TESTING, ETC. ALL EQUIPMENT SHALL BE SUPPLIED & INSTALLED PER CATEGORY 6 (BICSI AND EIA/TIA) INSTALLATION STANDARDS.
- THE COMMUNICATIONS CONTRACTOR SHALL PROVIDE A COMPLETE COMMUNICATIONS SYSTEM LABELING SYSTEM. INCLUDE BUT NOT LIMITED TO: CABLES, JACKS, PATCH PANEL RACKS, ETC. ALL LABELING SHALL COMPLY WITH STANDARDS OF EIA/TIA 606.
- THE COMMUNICATIONS CONTRACTOR SHALL TEST EACH CABLE AFTER INSTALLATION AND TERMINATION TO CERTIFY THAT EACH CABLE
- SECURITY SYSTEM WIRING SHALL BE 22/4 STRANDED UNSHIELDED CABLE.
- EACH SPECIFIED ALARM CONTACT AND EACH SPECIFIED ALARM SENSOR SHOULD BE WIRED IN A CLOCKWISE MANNER TO ITS OWN DESIGNATED ZONE STARTING AT THE MAIN CUSTOMER ENTRANCE / EXIT DOOR CONTACTS.
- EACH SPECIFIED ALARM CONTACT AND EACH SPECIFIED ALARM SENSOR SHOULD BE SPECIFICALLY LABELED ACCORDING TO ITS DESIGNATED CONTACT OR SENSOR NAME, ITS LOCATION WITHIN THE STORE & PROGRAMMED SEPARATELY TO ITS OWN DESIGNATED ZONE.
- THE CONTRACTOR SHOULD **NEVER** PROGRAM / INSTALL ANY TYPE OF LOCKOUT CODE INTO THE PANEL OR EXPANDER.
- COORDINATE CONDUIT AND/OR JUNCTION BOXES AS REQUIRED FOR SECURITY SYSTEM.
- ALL PRODUCTS SPECIFIED ARE FEATURED IN PRODUCT BROCHURES FROM THE MANUFACTURER.
- SECURITY / LOW VOLTAGE SUBCONTRACTOR TO LABEL, PROGRAM, AND INSTALL WIRING TO SECURITY PANEL.

COMPLIES WITH TIA/EIA CATEGORY 6 STANDARDS. PROVIDE DOCUMENTATION PER HFT REQUIREMENTS.

SECURITY SYSTEM NOTES

- (1)HONEYWELL ADEMPCO VISTA 20P (8) ZONE CONTROL PANEL AND (1) HONEYWELL #4219 ADEMCO VISTA EXPANDER MOUNTED IN THE CASH OFFICE ABOVE CEILING. SECURITY CONTRACTOR TO CLEARLY LABEL SECURITY PANEL.
- S2 (1)HONEYWELL #6160 KEYPAD MOUNTED OUTSIDE OF THE MANAGERS OFFICE WALL. BOTTOM OF KEYPAD SHALL BE 44" AFF.
- S3 (1)HONEYWELL WAVE2 2-TONE SOUNDER (SIREN HORN) ON THE MANAGERS OFFICE WALL FACING THE SALES FLOOR MOUNTED AT 12'
- S4 (1)HONEYWELL #FG1625 GLASS BREAK DETECTOR CEILING MOUNTED IN THE MIDDLE OF THE VESTIBULE 5 FEET FROM THE PERIMETER GLASS PANES ENTRANCE/EXIT DOORS. GLASS BREAK DETECTOR SHOULD FACE GLASS PANES.
- S5 (1)HONEYWELL #FG1625 GLASS BREAK DETECTOR ALONG THE INTERIOR OF GLASS STOREFRONT 5 FEET FROM GLASS PANES FOR EVERY 25 FEET OF STOREFRONT GLASS. GLASS BREAK DETECTORS SHOULD FACE GLASS PANES.
- S6 (1)WALL MOUNTED BOSCH #ISC-PDL1-W18G SERIES TRITECH PIR/MICROWAVE DETECTOR MOUNTED AT 9'-6" AFF FOR 60 LINEAR FOOT OF STOREFRONT GLASS SHOOTING SIDEWAYS ACROSS THE GLASS. NO MOTION DETECTORS IN THE VESTIBULE.
- S7 (1)CEILING MOUNTED 360° BOSCH #DS9370 PANORAMIC TRITECH DETECTOR AT 12' TO 25' AFF FOR STOREFRONT GLASS IN THE EVENT (S6) CANNOT BE WALL MOUNTED.
- S8 (1)WALL MOUNTED BOSCH #ISC-CDL1-W15G SERIES TRITECH PIR/MICROWAVE DETECTOR ABOVE VESTIBULE DOOR FRAME FACING
- S9 (1)CEILING MOUNTED 360° BOSCH #DS9370 PANORMAIC TRITECH DETECTOR IN THE CENTER OF THE CASH OFFICE AWAY FROM ANY
- \$10 (1)WALL MOUNTED BOSCH #ISC-CDL1-W15G SERIES TRITECH PIR/MICROWAVE DETECTOR ABOVE ALL EGRESS DOOR FRAMES (EXCEPT IF EGRESS DOOR IS ADJACENT TO RECEIVING OVERHEAD DOOR) AT 8'-0" AFF.
- S11 MAIN CUSTOMER ENTRANCE / EXIT DOORS: FOR NEW DORMA DOORS, WIRE INTO THE DOOR FRAME HEADER TO POINT OF CONNECTION TERMINAL STRIP.
- \$12 (1) NASCOM N200AU/ST DOOR CONTACT FOR EXTERIOR DOORS AND ROOF HATCH (IF APPLICABLE). (2) DOOR CONTACTS REQUIRED AT
- S13 (1) HONEYWELL #959 DOOR CONTACT FOR OVERHEAD DOOR.
- S14 (1) CEILING MOUNTED 360° BOSCH #DS9370 PANORMAIC TRITECH DETECTOR IN THE CENTER OF THE RECEIVING AREA MOUNTED AT 15' TO 25' AFF. (NO OTHERS NEEDED IN SALES REPLENISHMENT).

GENERAL ELECTRICAL DEMOLITION NOTES

- NO ATTEMPT HAS BEEN MADE TO INDICATE ALL EXISTING ELECTRICAL DEVICES, LIGHT FIXTURES, COMMUNICATION DEVICES, WIRING, CONDUIT, ETC. TO BE REMOVED AND/OR RELOCATED. HOWEVER, THE ELECTRICAL CONTRACTOR SHALL FIELD VERIFY TH EXTENT OF DEMOLITION PRIOR TO SUBMITTING BID.
- REMOVE AND/OR RELOCATE EXISTING DEVICES ON WALLS OR CEILING BEING REMOVED. COORDINATE SUCH CONDITIONS WITH ARCHITECTURAL DRAWINGS.
- ALL UNUSEDWIRE (POWER & COMMUNICATION) SHALL BE REMOVED.
-) ALL EXISTING WIRING (POWER & COMMUNICATION) THAT IS TO REMAIN SHALL BE REWORKED OR REPLACED WITH CODE COMPLIANT MATERIAL & SUPPORTS. ANY EXISTING SURFACE MOUNTED CONDUITS SHALL BE REMOVED OR RELOCATED SO THAT THEY ARE IN THE JOIST SPACE OR WITHIN WALL CAVITIES.

ELECTRICAL KEY NOTES

- 4'x8'x3/4" PAINTED FIRE RATED PLYWOOD FOR TELEPHONE BACKBOARD. REFER TO DETAIL ON SHEET E2.2 FOR MORE
- E2 1-1/2" EMT CONDUIT FROM 9' AFF TO JOIST SPACE HOMERUN CONTINUOUS CONDUIT TO TELEPHONE DEMARK (COORDINATE LOCATION WITH LANDLORD). STUB CONDUIT AT 8' AFF TO TELEPHONE DEMARK.
- 12"x4"x1/2" COPPER BUS BAR MOUNTED AT 84" AFF U.O.N. ON INSULATORS. PROVIDE BAR WITH (6) EQUALLY SPACED 3/8" DIAMETER HOLES. CONNECT BAR TO HFT'S MAIN PANELS GROUND BAR WITH #4AWG COPPER CONDUCTORS.
- E4 4" DIAMETER EMT CONDUIT RISER FROM JOIST SPACE INTO TOP OF RACK.
- E5 2 COMPARTMENT POWER POLE.
- 20A 120 VOLT DUPLEX RECEPTACLE AT JOIST SPACE FOR SECURITY CAMERA MONITOR. COORDINATE EXACT LOCATION WITH COMMUNICATIONS CONTRACTOR. MOUNT FLUSH IN CEILING WHERE CEILINGS OCCUR, RECEPTACLE SHALL BE WHITE WITH WHITE COVER PLATE. COORDINATE EXACT LOCATION WITH SECURITY VENDOR.
- E7 PROVIDE 2 GANG BOX WITH 1 1/2" CONDUIT & PULL STRING TO JOIST SPACE
- E8 (3) 1 1/2" CONDUITS & PULL STRINGS FROM TOP OF SECURITY PANEL TO JOIST SPACE.
- E9 1" CONDUIT WITH PULL STRING FROM AMPLIFIER TO JOIST SPACE.
- E10 FLUSH SINGLE GANG BOX MOUNTED AT 48" AFF WITH 3/4" EMT CONDUIT STUB TO CEILING JOIST
- E11 FLUSH SINGLE GANG BOX MOUNTED AT 114" AFF AT VESTIBULE AND AT 96" AT ALL OTHER LOCATIONS WITH 3/4" EMT CONDUIT TO JOIST SPACE FOR MOTION SENSOR.
- E12 3/4" CONDUIT STUBBED INTO DOOR FRAME FOR DOOR CONTACT.
- E13 PROVIDE 2 GANG BOX AT 4" AFF. WITH 3/4" CONDUIT STUB TO JOIST SPACE FOR OVERHEAD DOOR CONTACT.
- E14 PROVIDE OCTAGONAL BOX ON BOTTOM OF JOIST.

COMMUNICATIONS KEY NOTES

- 25 PAIR CAT3 24AWG TWISTED PAIR CABLE. TERMINATE AT TELEPHONE DEMARK AS DIRECTED BY TELEPHONE COMPANY. TERMINATE AT HFT PHONE BOARD ON 66 PUNCH DOWN BLOCK.
- C2 (3) 4 PAIR CAT 6 24AWG CABLES BETWEEN HFT PHONE BOARD & RACK. TERMINATE ON BOTH ENDS.
- C3 24"Wx43"Dx80"H FLOOR MOUNTED LOCKABLE RACK PER HFT STANDARDS.
- C4 (2) 4 PAIR CAT 6 24AWG DATA CABLE BETWEEN REGISTERS & HFT RACK. TERMINATE ON BOTH ENDS.
- C5 (1) 4 PAIR CAT 6 24AWG CABLE BETWEEN REGISTER & HFT RACK FOR TELEPHONE. TERMINATE ON BOTH ENDS.
- C6 HFT VENDOR SHALL PROVIDE, WIRE & INSTALL SALES AREA SPEAKERS.
- C7 HFT VENDOR SHALL PROVIDE. WIRE & INSTALL SALES REPLENISHMENT AREA SPEAKERS.
- C8 (1) 4 PAIR CAT 6 24AWG CABLE BETWEEN DOCK DOOR & HFT RACK FOR TELEPHONE. TERMINATE ON BOTH ENDS.
- C9 SECURITY CAMERA & (1) CAT 6 24AWG 4 PAIR CABLE FROM CAMERA TO RACK, TERMINATE CABLES AT BOTH ENDS. VERIFY EXACT LOCATION OF CAMERAS WITH CCTV VENDOR PRIOR TO ROUGH IN.
- C10 (1) CAT 6 24AWG CABLE FROM TRAFFIC COUNTER TO HFT RACK. TERMINATE AT BOTH ENDS.
- C11 (1) CAT 6 24AWG CABLE FROM WIRELESS ACCESS POINT TO HFT RACK. TERMINATE AT BOTH ENDS.
- C12 (1) CAT 6 24AWG 4 PAIR CABLE FROM TIME CLOCK (CENTERED BETWEEN WINDOW & DOOR) TO HFT RACK. TERMINATE AT
- C13 (2) CAT 6 24AWG 4 PAIR CABLES FROM PRINTER/FAX TO HFT RACK. TERMINATE AT BOTH ENDS.
- C14 (2) CAT 6 24AWG 4 PAIR CABLES FROM MANAGERS WORK STATION TO HFT RACK. TERMINATE AT BOTH ENDS.
- C15 (1) RG59 COAXIAL CABLE FROM CCTV MONITOR TO RACK. TERMINATE AT BOTH ENDS. C16 (1) CAT 6 24AWG 4 PAIR CABLE FROM CASH ROOM TO HFT RACK. TERMINATE AT BOTH ENDS.
- C17 (1) RJ31X PHONE JACK MOUNTED AT +101" AFF FOR SECURITY PANEL
- C18 (1) RJ31X PHONE JACK & 4 PAIR CAT 6 24AWG CABLE BETWEEN PHONE BOARD & HFT RACK FOR FIRE ALARM PANEL.

COMMUNICATIONS SYMBOL LEGEND SYMBOL DESCRIPTION CAM SECURITY CAMERA DOOR CONTACT GB GLASS BREAK DETECTOR $\langle M \rangle$ **CEILING MOUNTED 360° DETECTOR** WALL MOUNTED MOTION DETECTOR POWER POLE SPEAKERS WIRELESS ACCESS POINT DATA CABLE SPEAKERS & AMPLIFIER

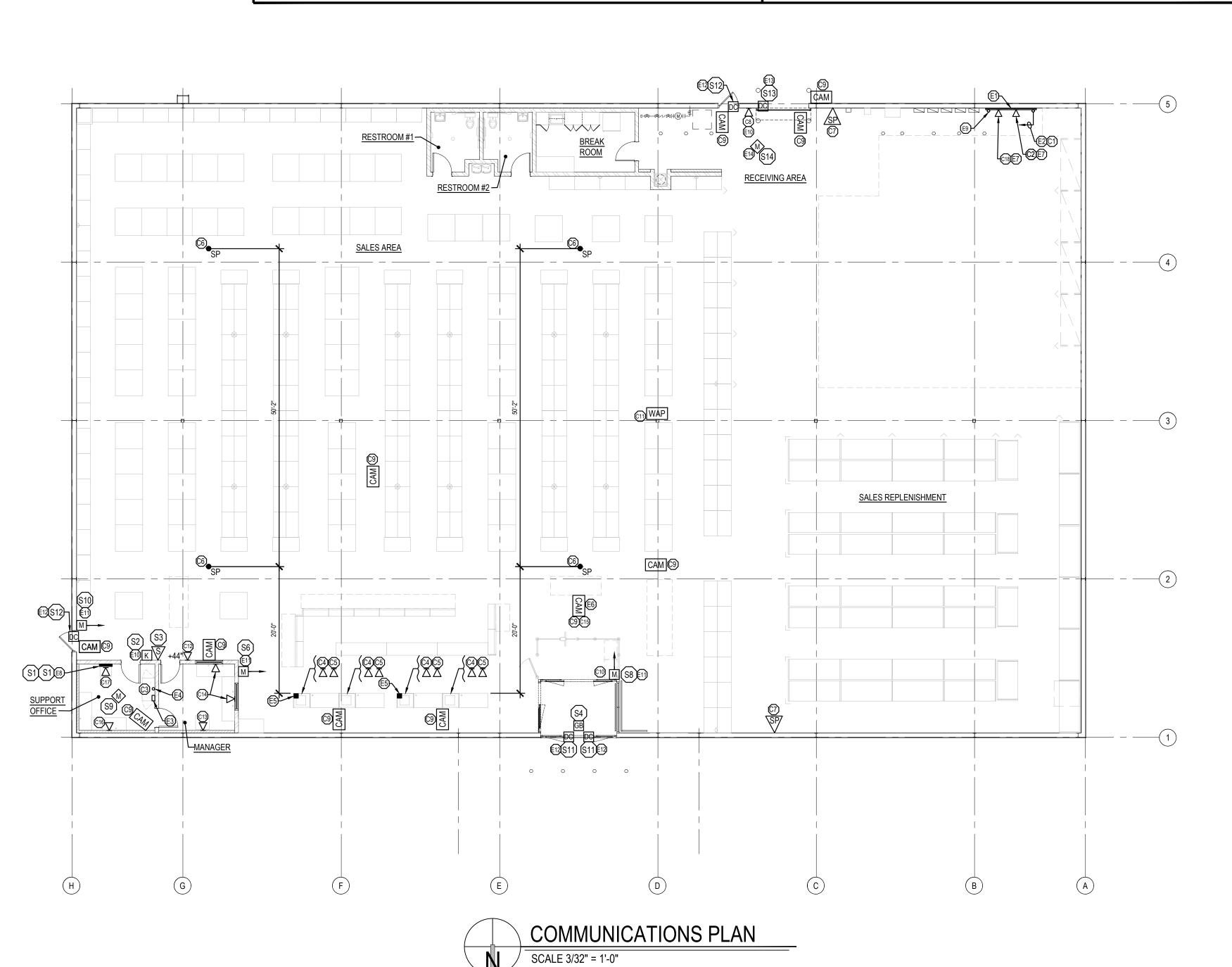
> Brian M Schuler, P.E.

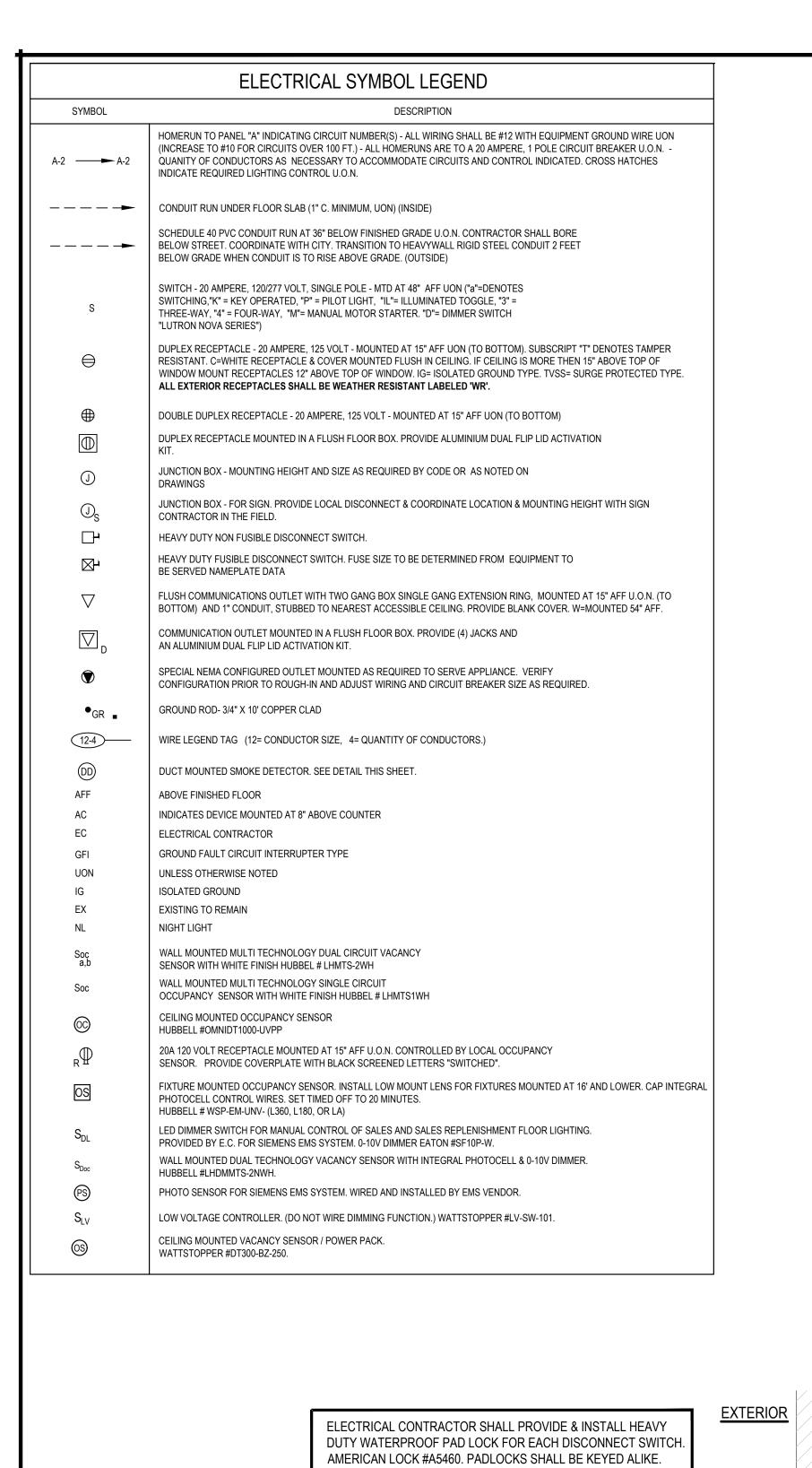
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COMMUNICATIONS 05/17/24 23475

REVISIONS



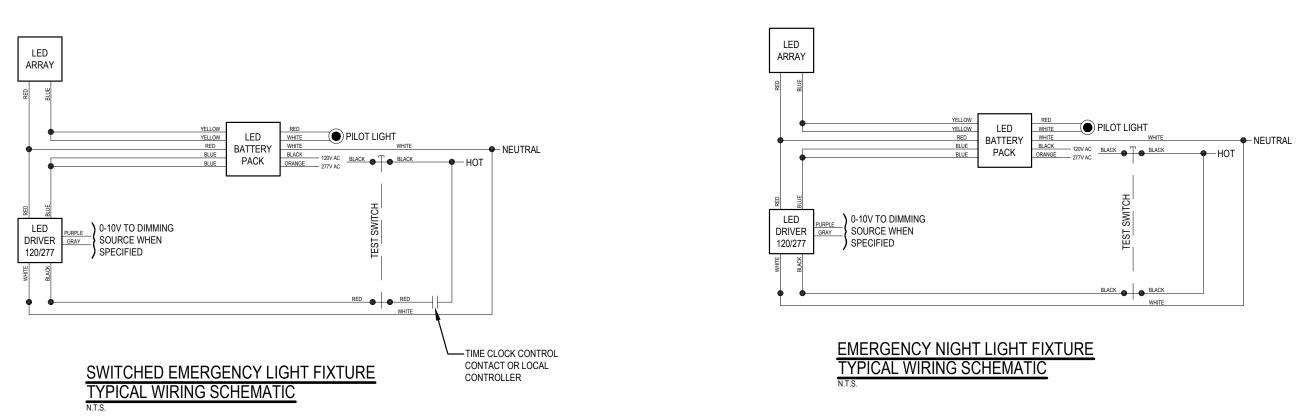


PROVIDE 15 KEYS TO LANDLORD & 15 KEYS TO HFT.

EXISTING 600A 120/208V 3PH NEMA 3R CT BOX, METER SOCKET & 600A 120/208V 3PH HEAVY DUTY DISCONNECT SWITCH TO REMAIN.

LANDLORD TO PROVIDE AND INSTALL UNDER

SEPARATE CONTRACT



Tag	Fill	Tag	Fill	Tag	Fill
No Tag	(2) #12, #12GND-3/4"C	4-4	(4) #4, #4GND-1 1/4 "C	4/0-3	(3) #4/0, #2GND-2" C
12-3	(3) #12, #12GND-3/4"C	2-2	(2) #2, #4GND-1"C	4/0-4	(4) #4/0, #2GND-2 1/2"C
12-4	(4) #12, #12GND-3/4"C	2-3	(3) #2, #4GND-1 1/4 "C	300-2	(2) 300KCMIL, #1/0GND-2"C
10-2	(2) #10, #10GND-3/4"C	2-4	(4) #2, #4GND-1 1/4" C	300-3	(3) 300KCMIL, #1/0GND-21/2" C
10-3	(3) #10, #10GND-3/4"C	1-2	(2) #1, #4GND-1 1/4" C	300-4	(4) 300KCMIL, #1/0GND-2 1/2"C
10-4	(4) #10, #10GND-3/4"C	1-3	(3) #1, #4GND-1 1/4" C	350-2	(2) 350KCMIL, #3/0GND-2"C
8-2	(2) #8, #8GND-3/4"C	1-4	(4) #1, #4GND-1 1/2" C	350-3	(3) 350KCMIL, #3/0GND-2 1/2"C
8-3	(3) #8, #8GND-1"C	1/0-2	(2) #1/0, #2GND-1 1/4" C	350-4	(4) 350KCMIL, #3/0GND-3"C
8-4	(4) #8, #8GND-1"C	1/0-3	(3) #1/0, #2GND-1 1/2" C	500-2	(2) 500KCMIL, #3/0GND-2 1/2"C
6-2	(2)#6, #6GND-1"c	1/0-4	(4) #1/0, #2GND-2 1/2" C	500-3	(3) 500KCMIL, #3/0GND-3"C
6-3	(3) #6, #6GND-1"C	3/0-2	(2) #3/0, #2GND-1 1/2" C	500-4	(4) 500KCMIL, #3/0GND-3 1/2" C
6-4	(4) #6, #6GND-1"C	3/0-3	(3) #3/0, #2GND-2" C	600-2	(2) 600KCMIL, #3/0GND-3"C
4-2	(2) #4, #4GND-1"C	3/0-4	(4) #3/0, #2GND-2" C	600-3	(3) 600KCMIL, #3/0GND-3 1/2" C
4-3	(3) #4, #4GND-1"C	4/0-2	(2) #4/0, #2GND-2" C	(600-4)	(4) 600KCMIL, #3/0GND-3 1/2" C

CONDUIT ONE TRADE SIZE FOR ISOLATED GROUND CONDUCTOR IF REQUIRE TO ACCOMMODATE ALL CONDUCTORS

		<u>LIGH</u>	TING SCHEDULE			INTERIO	OR SIGN		
		PARKING LOT / NON SECURITY BUILDING FIXTURES	EXTERIOR SIGNS / SECURITY BUILDING FIXTURES	INDOOR LIGHTS (MONSAT.)	INDOOR LIGHTS (SUNDAY)	MON-SAT	SUNDAY		
ON DUSK (BY PHOTOCELL) OFF 10:15 PM			DUSK TO DAWN PHOTOCELL (ALWAYS ON DURING DARK)	7:00 AM	8:00 AM	STORE OPEN	STORE OPEN		
		10:15 PM	DURING THE DAY	10:00 PM	8:00 PM	9:00 PM	6:00 PM		
LIGHTIN CONTROL		GROUP 4	GROUP 3	GROUP 1	GROUP 1	GROUP 2	GROUP 2		
NOTES: THE SYSTEM CAN BE OVERRIDDEN BY THE SECURITY KEYPAD. THE TOUCH SCREEN CONTROLLER SHALL BE CAPABLI MANUALLY TURNING OFF GROUP 2 LIGHTING CONTACTORS. COORDINATE ON/OFF TIMES WITH HARBOR FREIGHT PRICTO PROGRAMMING.									

IN ORDER TO REDUCE SHORT CIRCUIT

LOOP AND ROUTE BACK DOWN TO LCP.

- ISO GND BUS

MULTIPLE

LIGHTING

CIRCUITS-

#2 ISO GND

120/208V 3PH 4WSN RISER DIAGRAM

CONTRACTOR SHALL COORDINATE ALL LOCAL REQUIREMENTS WITH

REGARDS TO CONNECTING THE ELECTRICAL SERVICE. METER, CT BOXES,

DISCONNECT SWITCHES ETC. SHALL BE PURCHASED & INSTALLED PER

THE LOCAL POWER COMPANY REQUIREMENTS & AUTHORITY HAVING

COORDINATE ANY REQUIRED SERVICE SHUT DOWNS WITH LANDLORD.

JURISDICTION. COORDINATION SHALL OCCUR WITHIN 1 WEEK OF

RECEIVING CONTRACT. INCLUDE IN BID ANY EXPEDITED SHIPPING CHARGES FOR ANY LONG LEAD ELECTRICAL DISTRIBUTION EQUIPMENT.

HFT LEASE SPACE

EXISTING 600A

REMAIN.

FEEDERS TO

EXISTING 600A 120/208V 3PH 4WSN MAIN DISTRIBUTION PANEL TO REMAIN.

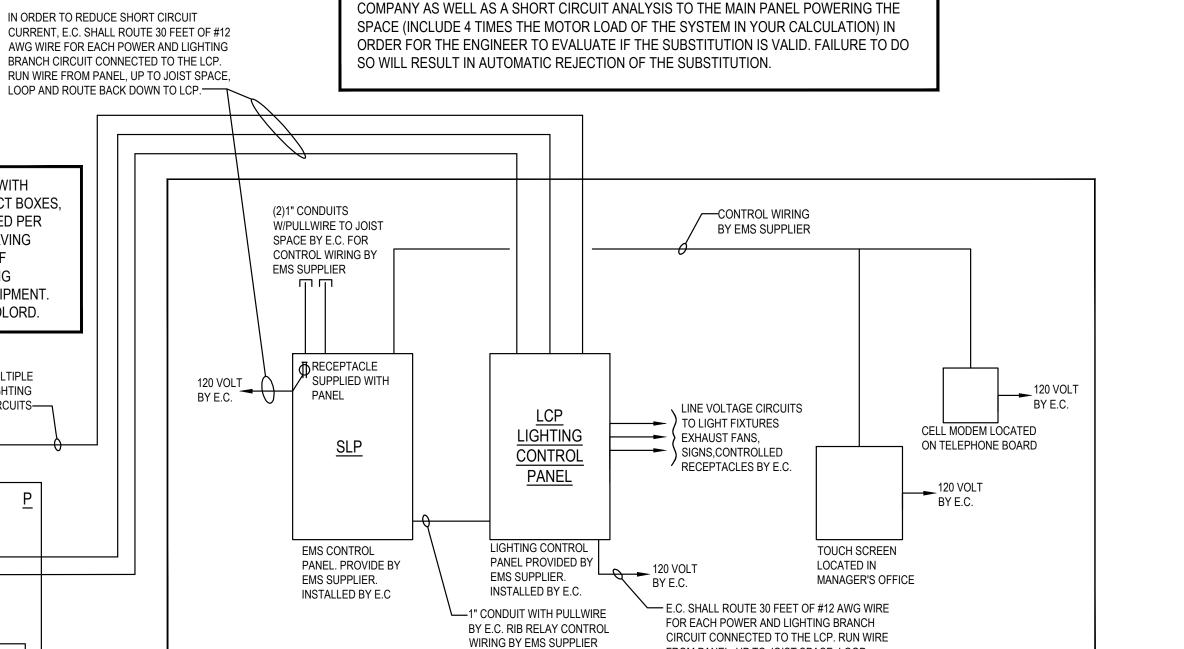
LANDLORD TO PROVIDE AND INSTALL

UNDER SEPARATE CONTRACT.

— EXISTING GROUNDING ELECTRODE SYSTEM TO REMAIN. SUPPLEMENT AS

REQUIRED TO MEET NEC.

-EXISTING 600A SECONDARY CONDUCTORS TO REMAIN.



FROM PANEL, UP TO JOIST SPACE, LOOP AND ROUTE BACK DOWN TO LCP.

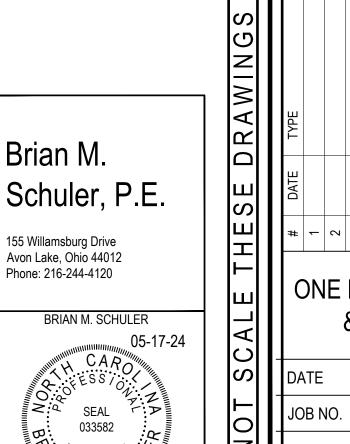
FOR ANY SUBSTITUTIONS OF THE ELECTRICAL DISTRIBUTION EQUIPMENT INVOLVING

EQUIPMENT WITH A LOWER SHORT CIRCUIT RATING THAN WHAT IS SPECIFIED ON THE DRAWINGS. THE ELECTRICAL CONTRACTOR SHALL PROVIDE IN WRITING THE AVAILABLE

SHORT CIRCUIT CURRENT AT THE POWER COMPANY TRANSFORMER FROM THE POWER

EMS SYSTEM. SEE EMS DRAWINGS

FOR ALL REQUIREMENTS. ——



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BRIAN M. SCHULER

ONE LINE DIAGRAM & DETAILS Job no.

05/17/24

23475

REVISIONS

N.C. PROFESSIONAL ENGINEER No. 033582

L	'LCP IGHTING CONTAC		CHEDUL	.E
CIRCUIT	DESCRIPTION	ZONE	CONTACTOR SIZE	CONTACTOR #
L-1	EMPLOYEE LIGHTING	GROUP 1		
L-3	EMPLOYEE LIGHTING	GROUP 1		
L-6	EMPLOYEE LIGHTING	GROUP 1	30A/4P	1
L-9	EMPLOYEE LIGHTING	GROUP 1		
P-41	EXHAUST FAN	GROUP 1		
L-12	SALES REPLENISHMENT LTG.	GROUP 1		_
L-14	SALES REPLENISHMENT LTG.	GROUP 1	30A/4P	2
L-16	SALES REPLENISHMENT LTG.	GROUP 1		
-	SPARE	GROUP 1		
-	SPARE	GROUP 1		
-	SPARE	GROUP 1	30A/4P	3
-	SPARE	GROUP 1		
L-2	CUSTOMER LIGHTING	GROUP 2		
L-4	CUSTOMER LIGHTING	GROUP 2		
L-5	CUSTOMER LIGHTING	GROUP 2	30A/4P	4
L-7	CUSTOMER LIGHTING	GROUP 2		
L-8	CUSTOMER LIGHTING	GROUP 2		
P-13	INTERIOR SIGN	GROUP 2		
-	SPARE	GROUP 2	30A/4P	5
-	SPARE	GROUP 2		
L-23	FURNITURE RECEPTACLES	GROUP 2		
L-25	FURNITURE RECEPTACLES	GROUP 2		
L-27	FURNITURE RECEPTACLES	GROUP 2	30A/4P	6
L-29	FURNITURE RECEPTACLES	GROUP 2		
L-17	EXTERIOR SECURITY LIGHTING	GROUP 3		
P-40	EXTERIOR SIGN	GROUP 3		_
M-39	EXISTING PYLON SIGN	GROUP 3	30A/4P	7
-	SPARE	GROUP 3		
L-19	EXTERIOR LIGHTING	GROUP 4		
-	SPARE	GROUP 4	000,445	
-	SPARE	GROUP 4	30A/4P	8
-	SPARE	GROUP 4		
M-31	EXISTING SITE LIGHTING	GROUP 4		
M-33	EXISTING SITE LIGHTING	GROUP 4	204/45	
-	SPARE	GROUP 4	30A/4P	9
-	SPARE	GROUP 4		
-	SPARE	SPARE		
-	SPARE	SPARE	204/45	40
-	SPARE	SPARE	30A/4P	10
-	SPARE	SPARE]	

			LIGHT FIXTUR	E SCHEDU	JLE			
TYPE	SYMBOL	DESCRIPTION	MANUFACTURER	LAMPS	VOLT	WATTS	REMARKS	
Α		2x4 LED TROFFER FOR INSTALLATION IN LAY-IN ACOUSTIC CEILING TILE GRID	COLUMBIA LIGHTING# LCAT24-40VL-G-U-EDU-PNCS	LED 4000K	120/277	59	OFFICES FACTORY INSTALLED WHIP CONNECTION.	
AE		2x4 LED TROFFER WITH 1400 LUMEN BATTERY FOR INSTALLATION IN LAY-IN ACOUSTIC CEILING TILE GRID	COLUMBIA LIGHTING# LCAT24-40VL-G-U-EDU-PNCS-ELL14	LED 4000K	120/277	59	OFFICES EMERGENCY BATTERY. SEE GENERAL NOTE #1. VE APPROPRIATE VOLTAGE PRIOR TO WIRING FIXTUR	
В		2x4 LED TROFFER FOR INSTALLATION IN LAY-IN ACOUSTIC CEILING TILE GRID	COLUMBIA LIGHTING# LCAT24-40LW-G-U-EDU-PNCS	LED 4000K	120/277	36	TOILET ROOM FACTORY INSTALLED WHIP CONNECTION	
BE		2x4 LED TROFFER WITH 1400 LUMEN BATTERY FOR INSTALLATION IN LAY-IN ACOUSTIC CEILING TILE GRID	COLUMBIA LIGHTING# LCAT24-40LW-G-U-EDU-PNCS-ELL14	LED 4000K	120/277	36	TOILET ROOM EMERGENCY BATTERY. SEE GENERAL NOTE #1. FA	CTORY INSTALLED WHIP CONNECTION.
С	<u> </u>	8' - LED CHAIN MOUNTED STRIP FIXTURE	COLUMBIA LIGHTING# MPS-8-40-HLHE-CW-EDV-INT-LBC	LED 4000K	120/277	100	SALES & STORAGE AREA FOR OPEN CEILINGS PROVIDE CHAIN & INSTALI RUN IN CONTINUOUS ROWS WHERE SHOWN. PI	
CE	ļ	8' - LED CHAIN MOUNTED STRIP WITH 1400 LUMEN BATTERY	COLUMBIA LIGHTING# MPS-8-40-HLHE-CW-EDV-ELL14-INT-LBC	LED 4000K	120/277	100		HEIGHT NOTED ON E1.1 (CSHC). RUN IN CONTINUOUS E GENERAL NOTE #1,2,4. PROVIDED WITH COUPLER.
C1	<u> </u>	4' - LED CHAIN MOUNTED STRIP FIXTURE	COLUMBIA LIGHTING# MPS-4-40-HLHE-CW-EDV-INT-LBC	LED 4000K	120/277	50	SALES & STORAGE AREA FOR OPEN CEILINGS PROVIDE CHAIN & INSTALI RUN IN CONTINUOUS ROWS WHERE SHOWN. PI	
C1E		4' - LED CHAIN MOUNTED STRIP FIXTURE WITH 1400 LUMEN BATTERY	COLUMBIA LIGHTING# MPS-4-40-HLHE-CW-EDV-ELL14-INT-LBC	LED 4000K	120/277	50		HEIGHT NOTED ON E1.1 (CSHC). RUN IN CONTINUOUS E GENERAL NOTE #1,2,4. PROVIDED WITH COUPLER.
D	<u> </u>	8' - LED SURFACE MOUNTED STRIP FIXTURE	COLUMBIA LIGHTING# MPS-8-40-HLHE-CW-EDV	LED 4000K	120/277	100	SALES & STORAGE AREA SURFACE MOUNTED. FOR CEILING / JOIST MOUNT F STRUCTURE AS REQUIRED BY CODE. FOR JOIST MO UNISTRUT AS REQUIRED. RUN IN CONTINUOUS ROV	DUNT, PROVIDE MOUNTING HARDWARE &
DE	<u> </u>	8' - LED SURFACE MOUNTED STRIP FIXTURE WITH 1400 LUMEN BATTERY	COLUMBIA LIGHTING# MPS-8-40-HLHE-CW-EDV-ELL14	LED 4000K	120/277	100	REQUIRED BY CODE. FOR JOIST MOUNT, PROVIDE N	PROVIDE CEILING CLIPS & SUPPORT FROM STRUCTURE AS MOUNTING HARDWARE & UNISTRUT AS REQUIRED. RUN IN BATTERY. SEE GENERAL NOTE #1,2. PROVIDED WITH COUPLER
D1		4' - LED SURFACE MOUNTED STRIP FIXTURE	COLUMBIA LIGHTING# MPS-4-40-HLHE-CW-EDV	LED 4000K	120/277	50	AS REQUIRED. RUN IN CONTINUOUS ROWS WHERE	DUNT, PROVIDE MOUNTING HARDWARE & UNISTRUT
D1E		4' - LED SURFACE MOUNTED STRIP FIXTURE WITH 1400 LUMEN BATTERY	COLUMBIA LIGHTING# MPS-4-40-HLHE-CW-EDV-ELL14	LED 4000K	120/277	50	REQUIRED BY CODE. FOR JOIST MOUNT, PROVIDE N	PROVIDE CEILING CLIPS & SUPPORT FROM STRUCTURE AS MOUNTING HARDWARE & UNISTRUT AS REQUIRED. RUN IN BATTERY. SEE GENERAL NOTE #1,2. PROVIDED WITH COUPLER
EM1	⊗	SELF-POWERED EXIT SIGN WITH LED LAMPS - UNIVERSAL MOUNTED - SINGLE FACE NOTE #3	COMPASS# CER	LED	120/277	5	SALES & STORAGE AREA	
EM2	101	SELF-POWERED EXIT SIGN WITH LED LAMPS - UNIVERSAL MOUNTED - DOUBLE FACE NOTE #3	COMPASS# CER	LED	120/277	5	SALES & STORAGE AREA	EMERGENCY/EXIT LIGHTS EQUIPPED WITH 90 MINUTE BATTERY BACK-UP. WIRE AHEAD OF LOCAL CONTROL
EM3		SURFACE MOUNTED 2 HEAD EMERGENCY UNIT WITH REMOTE CAPACITY	DUAL LITE# LZ15-03L	LED	120/277	5	SALES & STORAGE AREA REMOTE CAPACITY	
EM4	Υ	EXTERIOR WP 2 LAMP REMOTE HEADS	DUAL LITE# OCR-D-W-0603L	LED	6	-	EXTERIOR PROVIDE WITH 2 HEAD M WIRE TO EM3.	OUNTING PLATE.
EM5	Υ	EXTERIOR WP LED EMERGENCY FIXTURE WITH 4 LAMPS	HUBBELL LIGHTING# PG-Z	LED	120/277	5	EXTERIOR WIRE SO THAT FIXTURE I BUILDING POWER IS AVA	
SA	В	EXTERIOR WALL MOUNTED FIXTURE	HUBBELL LIGHTING# SG1-20-4K7-DB	LED 4000K	120/277	20	EXTERIOR WALL MOUNTED FIXTURE. SEE ARCH	HITECTURAL ELEVATIONS FOR MOUNTING HEIGHT.
SB		EXTERIOR WALL MOUNTED FIXTURE	HUBBELL LIGHTING# SG2-80-4K7-FT-UNV-DB	LED 4000K	120/277	80	EXTERIOR WALL MOUNTED FIXTURE AT 15'-0" A	BOVE FINISHED GRADE.
SC	0	EXTERIOR CEILING MOUNTED FIXTURE	BEACON# SRT1-35-4K7-5QW	LED 4000K	120/277	35	SURFACE MOUNT ON CANOPY.	
	L	IGHTING FIXTURE	SCHEDULE NOT	ES (SEE R	EMAF	RKS)		

FOR EMERGENCY FIXTURES AE, A1E, BE, CE, C1E, DE & D1E NOT SHOWN AS NIGHT LIGHTS, RUN AN EXTRA HOT CONDUCTOR (BYPASSING ALL CONTROL) AND CONNECT

MOUNT EXIT SIGNS A MAXIMUM OF 1'-0" ABOVE TOP OF EGRESS DOOR. PROVIDE PENDANT IF REQUIRED. FOR SIGNS NOT MOUNTED DIRECTLY ABOVE AN EGRESS DOOR, IN SALES AREA MOUNT EXIT SIGNS 6" BELOW TYPE 'C' FIXTURES. IN SALES REPLENISHMENT AREA MOUNT EXIT SIGNS 12" BELOW TYPE D FIXTURES.

4. THE LIGHT FIXTURE SHALL BE PROVIDED WITH A 7 WIRE HARNESS WITH PIN CONNECTORS FOR BRANCH CIRCUIT THROUGH WIRING FOR CONTINUOUS ROW MOUNTING.

FOR ALL CHAIN MOUNTED FIXTURES E.C. SHALL PROVIDE EXTENSIONS AS REQUIRED TO INSTALL LIGHT FIXTURES AT HEIGHTS AS NOTED.

TO EMERGENCY BATTERY. FIXTURES SHALL BE SHUT OFF WITH LOCAL LIGHT FIXTURE CONTROL.

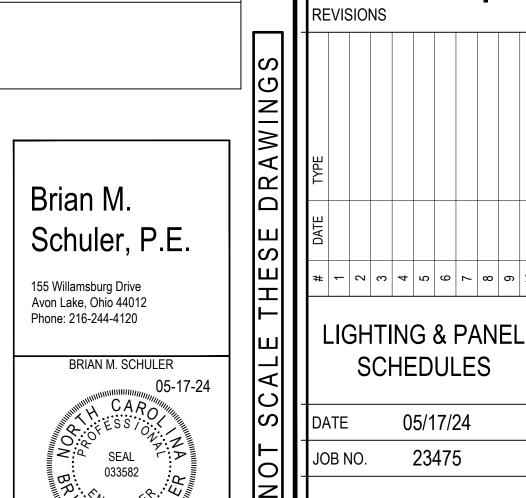
M															
MOUN	ITING: SURFACE			LOCA	TION:										
BUS F	ATING: 600A			A.I.C.:	65,000			А	MPS CON	IN.:	346.7			BREAKER REMARKS C-CONTACTOR CONTROLLED, S-SHUNT T	
600A I	MAIN LUG ONLY							A	MPS DEM	IAND.:	368.9			L-LOCK ON, G-GFCI, A-ARC FAULT,	
VOLT/	AGE: 120/208V-3PH-4W													SW-SWITCHING DUTY, HA-HACR, HI-F	<u>ID</u>
COMN	MENTS: EXISTING PANEL TO REMAIN. PF	ROVIDE MATCH	ING STY	LE CIRCU	IIT BREA	KERS TO	ACCON	MODA	TE LOAD	S AS SHO	OWN.			_	
			KVA CON	NNECTED)		I		1		KVA CON	INFCTED	<u> </u>		T
CKT.	DESCRIPTION	LTG.	REC.	HVAC	MISC.	C/B	REM	ARKS	C/B	MISC.	HVAC	REC.	LTG.	DESCRIPTION	CKT
1		1 2 3 3		5.9			_	Ι.			5.0				2
3	- RTU-01			5.9		80/3	_	-	60/3		5.0			 RTU-02	4
5	1			5.9		1	_	-	1		5.0				6
7				5.0			-	-			5.9				8
9	RTU-03			5.0		60/3	_	-	80/3		5.9				10
11	1			5.0		1	-	-	1		5.9				12
13							-	-							14
15	PANEL 'L'	20.2	-	4.0	4.0	150/3	-	-	150/3	10.4	2.6	13.8	2.4	PANEL 'P'	16
17	1						-	-	1						18
19		-					-	-					-		20
21	SPARE	-				80/3	-	-	60/3				-	SPARE	22
23	1	-					-	-	1				-		24
25	SPARE	-				20/1	-	-	20/1				-	SPARE	26
27	SPARE	-				20/1	-	-	20/1				-	SPARE	28
29	SPARE	-				20/1	-	-	20/1				-	SPARE	30
31	EXISTING SITE LIGHTING	0.4				20/1	С	-	20/1				-	SPARE	32
33	EXISTING SITE LIGHTING	0.4				20/1	С	-	20/1				-	SPARE	34
35	SPARE	-				20/1	-	-	20/1				-	SPARE	36
37	SPARE	-				20/1	-	-	20/1				-	SPARE	38
39	EXISTING PYLON SIGN	1.2				20/1	С	-	20/1				-	SPARE	40
41	SPARE	-				20/1	-	-	20/1				-	SPARE	42
TOTA	ALS	22.2	0.00	36.7	4.0					10.4	35.3	13.8	2.4	TOTALS	
	LOAD	CONNEC	TED			DEMAND									
	LIGHTING	24.6			3	30.4									
	RECEPTACLE	13.8			1	11.9									
	HVAC	72.0			7	76.4									
ı	MISC	14.4			1	14.4									

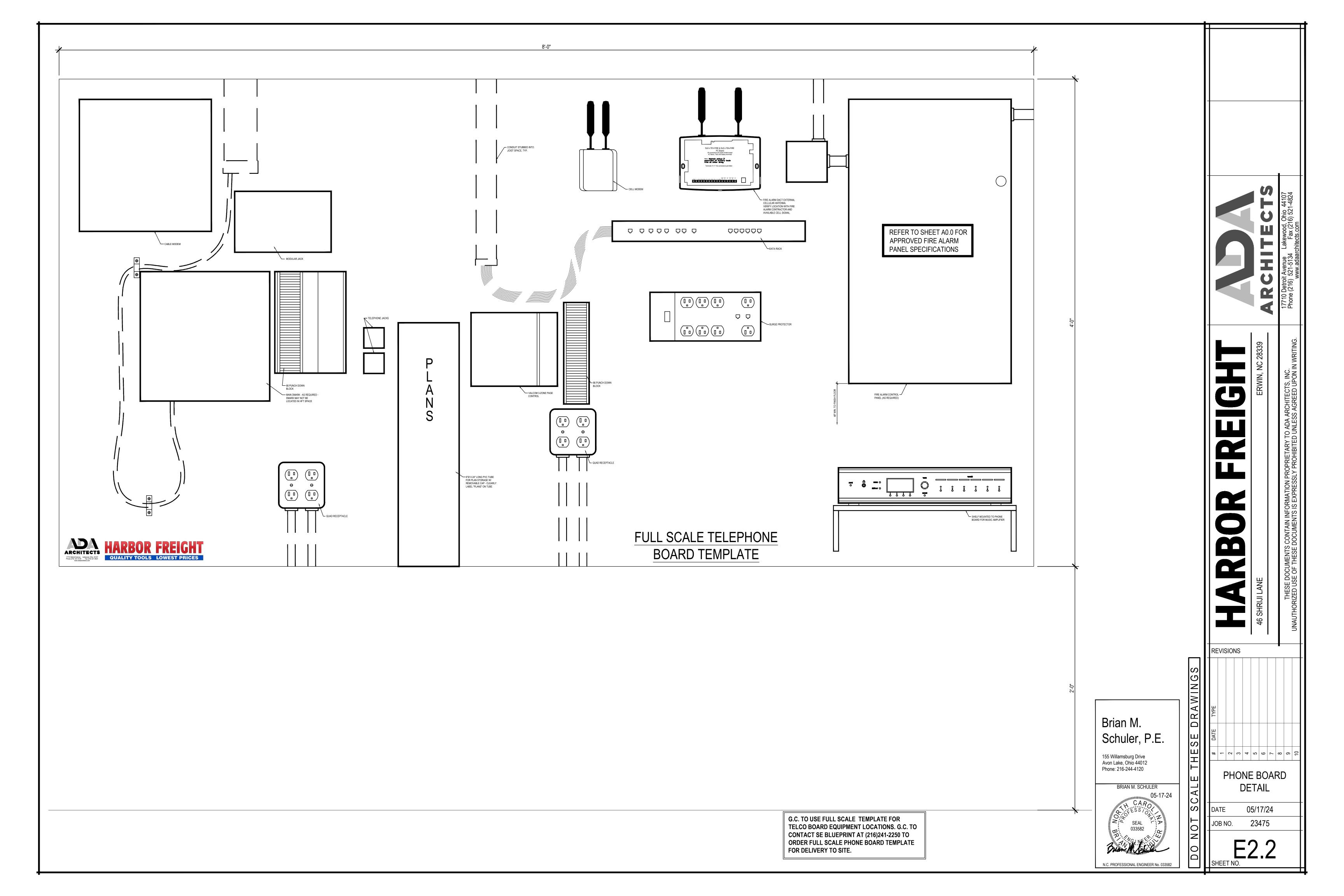
REFER TO SHEET A0.0

FOR LIGHTING VENDOR CONTACT INFORMATION.

MOUN	TING: SURFACE			LOCA	TION:										
BUS R	ATING: 200A			A.I.C.:	65,000			А	MPS CON	IN.:	78.3			BREAKER REMARKS C-CONTACTOR CONTROLLED, S-SHUNT	TRIF
200A N	MAIN LUG ONLY							Α	MPS DEM	IAND.:	95.3			L-LOCK ON, G-GFCI, A-ARC FAULT	
/OLTA	GE: 120/208V-3PH-4W													SW-SWITCHING DUTY, HA-HACR, HI-F	<u>IID</u>
OR A N	ENTS: CAN BE SERIES RATED WITH MANUF MAIN CIRCUIT BREAKER IN THIS PANEL. UPS ECESSARY DOCUMENTATION FROM THE MA	STREAM B	REAKER	SHALL BE	FULLY F	RATED TO	THE A	AIC RAT	ING SHO						
CKT.	DESCRIPTION	KVA CONNE		NECTED		C/B	DEM	ARKS	C/B		KVA CON	INECTED		DESCRIPTION	
CICT.	DESCRIPTION	LTG.	REC.	HVAC	MISC.	C/B	INCIVI.	AININO	C/D	MISC.	HVAC	REC.	LTG.	DESCRIPTION	`
1	SALES LIGHTING	0.7				20/1	С	С	20/1				1.1	SALES LIGHTING	
3	SALES LIGHTING	1.1				20/1	С	С	20/1				1.2	SALES LIGHTING	T
5	SALES LIGHTING	1.1				20/1	С	С	20/1				1.2	SALES LIGHTING	
7	SALES LIGHTING	1.2				20/1	С	С	20/1				1.1	SALES LIGHTING	T
9	SALES LIGHTING	0.5				20/1	С	-	20/1				-	SPARE	T
11	SPARE					20/1	-	С	20/1				0.8	SALES REPLENISHMENT LIGHTING	
13	OFFICE, BREAKROOM, TOILET LIGHTING	0.4				20/1	-	С	20/1				0.9	SALES REPLENISHMENT LIGHTING	T
15	NIGHT / EMERGENCY LIGHTING	1.2				20/1	L	С	20/1				0.8	SALES REPLENISHMENT LIGHTING	T
17	EXTERIOR LIGHTING	1.0				20/1	С	-	20/1				-	SPARE	T
19	EXTERIOR LIGHTING	1.0				20/1	С	-	20/1				-	SPARE	T
21	SPARE	-				20/1	-	-	20/1				-	SPARE	T
23	FURNITURE RECEPTACLE	1.2				20/1	С	-	20/1				-	SPARE	T
25	FURNITURE RECEPTACLE	1.2				20/1	С	-	20/1				-	SPARE	T
27	FURNITURE RECEPTACLE	1.2				20/1	С	-	20/1				-	SPARE	T
29	FURNITURE RECEPTACLE	1.2				20/1	С	-	20/1				-	SPARE	
31	SPARE	-				20/1	-	-	20/1				-	SPARE	T
33	SPARE	-				20/1	-	-	20/1				-	SPARE	T
35	CHARCER				2.0	25/2	-	-	20/1				-	SPARE	T
37	CHARGER				2.0	25/2	-	-	20/1				-	SPARE	Ţ
39	1111 02			2.0		25/2	_	-	20/1				-	SPARE	I
41	UH-02			2.0		25/2	-	-	20/1				-	SPARE	T
TOTA	LS	13.0	0.00	4.0	4.0					0.00	0.00	0.00	7.2	TOTALS	_
	LOAD	CONNEC	TED			EMAND									
	LIGHTING	20.2			2	5.3									
	RECEPTACLE	-			-										
	HVAC	4.0			5	5.0									

Р																	
MOUN	TING: SURFACE			LOCA	TION:									BREAKER REMARKS			
BUS F	ATING: 200A			A.I.C.:	65,000			Α	MPS CON	IN.:	81.1			C-CONTACTOR CONTROLLED, S-SHUN	IT TRIP,		
200A I	MAIN LUG ONLY							A	MPS DEN	MAND.:	78.9			L-LOCK ON, G-GFCI, A-ARC FAUL			
VOLT/	AGE: 120/208V-3PH-4W							_						SW-SWITCHING DUTY, HA-HACR, HI LO-PERMANENTLY INSTALLED LOCK			
OR A	IENTS: CAN BE SERIES RATED WITH MANUF MAIN CIRCUIT BREAKER IN THIS PANEL. UPS ECESSARY DOCUMENTATION FROM THE MA	TREAM B	REAKER	SHALL BE	FULLY I	RATED TO	O THE A	IC RAT	ING SHO								
CVT	DESCRIPTION	KVA CON		NNECTED)	- C/B	DEM	V DIV C	C/B		KVA CON	NECTED		DESCRIPTION	СКТ		
CKT.	DESCRIPTION	LTG.	REC.	HVAC	MISC.	- C/B	REMA	AKKS	C/B	MISC.	HVAC	REC.	LTG.	- DESCRIPTION	CKI		
1	ISO GND RECEPTACLE		0.4			20/1	-	-	20/1			0.4		ISO GND RECEPTACLE	2		
3	GENERAL RECEPTACLE		0.8			20/1	-	-	20/1			0.8		GENERAL RECEPTACLE	4		
5	CASHWRAP RECEPTACLE (D) (ISO GND.)		0.8			20/1	-	-	20/1			0.8		CASHWRAP RECEPTACLE	6		
7	CASHWRAP RECEPTACLE (D) (ISO GND.)		0.8			20/1	-	-	20/1			0.4		SALES OUTLET	8		
9	CASHWRAP RECEPTACLE (D) (ISO GND.)		0.8			20/1	-	-	20/1			0.8		CASHWRAP RECEPTACLE	10		
11	CASHWRAP RECEPTACLE (D) (ISO GND.)		0.8			20/1	-	-	20/1	1.0				POWER DOORS	12		
13	INTERIOR SIGN	1.2				20/1	С	-	20/1	1.0				POWER DOORS	14		
15	HAND DRYER				1.2	20/1	LO		20/1					SPARE	16		
17	HAND DRYER				1.2	20/1	LO	-	20/1			0.4		ISO GND RECEPTACLE	18		
19	LCP				0.2	20/1	-	-	20/1			0.4		ISO GND RECEPTACLE	20		
21	REFRIGERATOR				0.8	20/1	G	-	30/1		1.8			UH-01	22		
23	BREAKROOM RECEPTACLE		0.4			20/1	-	-	20/1			0.8		BREAKROOM RECEPTACLE	24		
25	SECURITY ISO GND RECEPTACLE		0.4			20/1	-	-	20/1			0.4		TELEPHONE ISO GND RECEPTACLE	26		
27	SECURITY ISO GND RECEPTACLE		0.4			20/1	-	-	20/1	1.0				POWER DOORS	28		
29	MUSIC RECEPTACLE		0.8			20/1	-	-	20/1	0.2				TIME CLOCK	30		
31	DOOR BELL				0.2	20/1	-	L	20/1	0.5				FACP	32		
33	ROOF RECEPTACLE		1.0			20/1	-	-	20/1			0.4		STOCK RECEPTACLE	34		
35	EF-03,04			0.4		20/1	-	-	20/1	1.5				WATER HEATER	36		
37	EWC				0.6	20/1	G	-	20/1	1.0				PORTABLE A/C	38		
39	SALES RECEPTACLE		0.8			20/1	-	С	20/1				1.2	EXTERIOR SIGN	40		
41	EF-01,02			0.4		20/1	С	-	20/1				-	SPARE	42		
TOTA	NLS	1.2	8.2	0.8	4.2			l		6.2	1.8	5.6	1.2	TOTALS	I		
	LOAD	CONNEC	CTED			DEMAND					l						
	LIGHTING	2.4			3	3.0											
	RECEPTACLE	13.8			1	1.9											
	HVAC	2.6			3	3.1											
						0.4											





		INSTALLATION RESPONSIBILITIES MATRIX ALIDATE THE EMS INSTALLATION AND COMMISSIONING THROUGH COMPLE	ETION AND FINAL OPERATION.						
YMBOL	_ DEVICE	QUANTITY SUPPLIED BY SIEMENS	DEVICE CABLE TYPE	DEVICE LOCATION	PROVIDED BY	MOUNTING BOX/RACEWAYS		INSTALL CABLE/WIRE, TERMINATE BOTH ENDS	INSTALLA TION NOTES
©	CARBON DIOXIDE SENSOR	1 PER HVAC UNIT WITH CO2 (AS REQUIRED PER MECHANICAL DRAWINGS)	18/4 & 18/2	NEXT TO ZONE TEMP SENSOR	SIEMENS	SIEMENS	E.C.	SIEMENS	
D	DUCT TEMPERATURE SENSOR	1 PER CONTROLLED HVAC EXCEPT UNIT HEATERS	18/2	BOTTOM OF MAIN SUPPLY AIR DUCT DROP	SIEMENS	SIEMENS	E.C.	SIEMENS	
ОСР	DIMMING CONTROL PANEL	1 (AS REQUIRED PER ELECTRICAL DRAWINGS)	VARIES PER CONNECTED DEVICES.	NEAR LCP	SIEMENS	E.C.	E.C.	E.C. / SIEMENS WILL TERMINATE LOW VOLTAGE WIRING AT DCP	4
(DZC)	DIGITAL ZONE CONTROLLER (WALL MOUNT VERSION)	1 PER UNIT HEATER	18/4 TO UNIT HEATER / 24-1P DAISY CHAIN	RETURN SIDE OF UNIT HEATER	SIEMENS	SIEMENS	E.C.	SIEMENS	
(DZC) RT	DIGITAL ZONE CONTROLLER (ROOFTOP VERSION)	1 PER CONTROLLED HVAC (EXCEPT UNIT HEATER)	18/10 TO RTU'S CTRL TERMINAL / 24/1P DAISY CHAIN / SENSORS AS REQUIRED	HVAC CONTROLS SECTION	SIEMENS	SIEMENS	E.C.	SIEMENS	
(L)	INDOOR LIGHT SENSOR	AS REQUIRED PER ELECTRICAL DRAWINGS	18/4	IN DAYLIGHT HARVESTING ZONE	SIEMENS	SIEMENS	E.C.	SIEMENS	
(CP)	LIGHTING CONTROL PANEL	1 (TYPICAL)	AS REQUIRED	NEAR BREAKER PANELS FEEDING LIGHTING CIRCUITS	SIEMENS	E.C.	E.C.	E.C. / SIEMENS WILL TERMINATE LOW VOLTAGE WIRING AT LCP	1
MIO	MICRO I/O	1 (STOCK ROOM RTU)	AS REQUIRED	MOUNTED ON DZC-RT	SIEMENS	SIEMENS	N/A	SIEMENS	
(OSD)	OUTSIDE SENSING DEVICE	1	18/4	ROOF	SIEMENS	SIEMENS	M.C.	SIEMENS	
RH	RELATIVE HUMIDITY SENSOR	1	18/4	STOCK ROOM	SIEMENS	SIEMENS	E.C.	SIEMENS	
S	ZONE TEMPERATURE SENSOR	1 PER CONTROLLED HVAC	18/2	1 IN EACH ZONE (SEE CONSTRUCTION DRAWING FOR LOCATIONS)	SIEMENS	SIEMENS	E.C.	SIEMENS	
SLP	SCREAM LOGIC PANEL	1	VARIES PER CONNECTED DEVICES.	ELECTRICAL ROOM OR STOCKROOM	SIEMENS	E.C.	E.C.	E.C. / SIEMENS WILL TERMINATE LOW VOLTAGE WIRING AT SLP	
(SL SW)	SLIDER SWITCH	1 PER EACH DIMMING GROUP ON SALES FLOOR PROVIDED BY ELECTRICAL CONTRACTOR	18/2	WALL BETWEEN STOCK AND SALES FLOOR	E.C.	E.C.	E.C.	E.C. / SIEMENS	4
	SECURITY INTERFACE	1	18 /4	WITHIN 10 FEET OF SECURITY RELAY PANEL	SIEMENS	SIEMENS	E.C.	SIEMENS	
	SPLICE BOX	1 PER EACH DIMMING GROUP ON SALES FLOOR (AS REQUIRED)	AS REQUIRED	NEXT TO DCP	SIEMENS	SIEMENS	E.C.	SIEMENS	
TSP	TOUCH SCREEN PANEL	1	CAT-5	MANAGERS OFFICE	SIEMENS	E.C.	E.C.	E.C.	5, 2, 3

INSTALLATION SUMMARY

1. LOW VOLTAGE CABLE:

I. SIEMENS SHALL FURNISH THE LOW VOLTAGE CABLE FOR THE EMS SYSTEM. THE CABLE SHALL BE AS SPECIFIED IN THE CABLE SCHEDULE.

II. REFER TO "EMS DEVICES SCHEDULE AND CONSTRUCTION INSTALLATION RESPONSIBILITY MATRIX" FOR ADDITIONAL INFORMATION ON

RESPONSIBILITIES FOR INSTALLATION OF LOW VOLTAGE CABLE.

2. EQUIPMENT DELIVERY:

I. SITE CONTROLS SHALL PROVIDE THE EMS EQUIPMENT IN 1 SHIPMENT.

II. IT SHALL BE UP TO THE G.C. TO CALL FOR EMS EQUIPMENT DELIVERY THE EQUIPMENT WILL BE SHIPPED WITHIN 2 DAYS OF RECEIVING A VALID

REQUEST. A VALID REQUEST SHALL CONSIST OF THE FOLLOWING:

1 - NAME AND PHONE NUMBER OF PERSON RESPONSIBLE FOR RECEIVING THE EMS EQUIPMENT AND STORE

2 - A VALID SHIPPING ADDRESS (CONFIRMABLE BY THE DELIVERY AGENT).

3. CONTACT INFORMATION:

I. PLEASE DIRECT ALL SHIPPING AND PROJECT MANAGEMENT REQUESTS TO SIEMENS RCS AT (512) 751-5942 OR PROJECT MANAGER:

EMELY CORDON AT EMELY.CORDON@SIEMENS.COM

4. EMS COMMISSIONING:

I. IT SHALL BE UP TO THE G.C. TO CALL FOR EMS COMMISSIONING AT LEAST 2 WEEKS PRIOR TO TURN OVER AND BEFORE THE INSTALLING

CONTRACTOR HAS LEFT THE PROJECT. SIEMENS WILL BE ON SITE PER HFT REQUEST 1 WEEK AFTER THE HFT 'FIXTURE DATE".

THE FOLLOWING CONDITIONS MUST BE MET PRIOR TO SIEMENS ARRIVAL:

1-ALL EMS DEVICES AND PANELS HAVE BEEN INSTALLED AND WIRED 2-ALL LINE VOLTAGE WIRING HAS BEEN COMPLETED

3-ALL CONTROLLED EQUIPMENT HAS BEEN INSTALLED AND STARTED

II. FAILURE TO MEET THESE CONDITIONS COULD RESULT IN DELAY OF STORE OPENING AND ADDITIONAL CHARGES.

III. E.C. & M.C. MUST BE PRESENT FOR COMMISSIONING OF EMS.

NOTE: TITLE 23 REPRESENTATIVE SHALL ALSO BE PRESENT AT CALIFORNIA LOCATIONS.

GENERAL EMS CONSTRUCTION NOTES

1. SIEMENS SHALL PROVIDE THE INSTALLATION LABOR AND MATERIALS TO INSTALL THE LOW VOLTAGE PORTION OF THE EMS SYSTEM ACCORDING THE EMS SCHEDULES AND THE FOLLOWING:

I. INSTALL EMS DEVICES AT LOCATIONS SHOWN ON THE MECHANICAL DRAWINGS AND MOUNT ACCORDING TO THE EMS DETAILS.

II. PROVIDE AND INSTALL THE LOW VOLTAGE CABLING FROM THE EMS DEVICES TO THE RTU'S AND LCP

III. TERMINATE THE LOW VOLTAGE CABLING AT BOTH ENDS.

IV. CLEARLY IDENTIFY (LABEL) THE CABLES AT BOTH ENDS.

2. THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE LABOR AND MATERIALS TO INSTALL THE LINE VOLTAGE PORTION OF THE EMS SYSTEM ACCORDING TO THE EMS SCHEDULES AND THE FOLLOWING:

I. PROVIDE AND INSTALL ELECTRICAL BOXES WITH 3/4" EMT STUB-UPS TO ABOVE CEILING GRID FOR WALL MOUNTED EMS AND CONTROL

II. PROVIDE AND INSTALL A 5' SECTION OF 1/2" RIGID FOR ROOF MOUNTED OSD.

3. SIEMENS SHALL PROVIDE THE LABOR AND MATERIALS TO INSTALL THE LINE VOLTAGE PORTION OF THE EMS SYSTEM ACCORDING TO THE EMS

SCHEDULES AND THE FOLLOWING:

I. MOUNT EMS PANELS AND PIPE TOGETHER ACCORDING TO THE EMS DRAWINGS.

II. SIEMENS SHALL INSTALL AND TERMINATE OSD AND CABLE.

4. NOTES ABOVE DO NOT ALLEVIATE CONTRACTORS OF OVERALL RESPONSIBILITIES OF PROVIDING A COMPLETE AND OPERATIONAL SYSTEM.

5. TITLE 24: THE F.C. SHALL WIRE AND INSTALL A LOW VOLTAGE DIMMER LOCATED OUTSIDE OF THE BREAK ROOM FOR SALES REPLENISHMENT

I. LOW VOLTAGES CABLES SHALL BE PULLED FROM DEVICE TO CONTROL PANEL WITHOUT SPLICING.

2. COMMUNICATIONS CABLING:

I. IN THE CASE OF MULTIPLE DEVICES SUCH AS COMMUNICATIONS CABLING, THE CABLE SEGMENTS SHALL BE PULLED FROM DEVICE TO DEVICE WITHOUT SPLICING.

3. CABLE SHIELD GROUNDING:

I. EACH CABLE RUN SHALL BE GROUNDED AT ONE END ONLY. GROUND SHIELD DRAIN WIRE AT

CONTROL PANEL END. FASTEN DRAIN WIRE TO EARTH GROUND SCREWS PROVIDED. THE THE SHIELD AND DRAIN WIRE SHALL BE

REMOVED FROM THE OPPOSITE (DEVICE) END AND ISOLATED FROM GROUND.

II. IN THE CASE OF MULTIPLE DEVICES SUCH AS COMMUNICATIONS WIRING, THE SHIELD DRAIN WIRES AT THE INTERMEDIATE DEVICES SHALL BE MECHANICALLY SPLICED TOGETHER

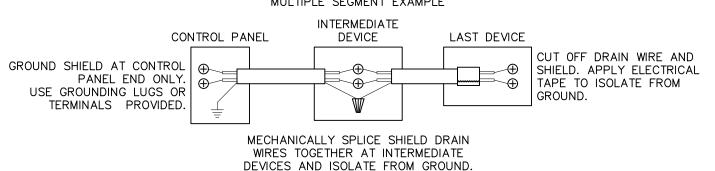
AND ISOLATED FROM GROUND.

4. TESTING SHIELD GROUNDS:

I. DURING COMMISSIONING THE FIELD SERVICE REPRESENTATIVE (FSR) WILL TEST THE SHIELD GROUNDING AT THE CONTROL PANEL.

SHIELDS FOUND TO HAVE CONTINUITY LESS THEN 100K OHM TO GROUND SHALL BE REJECTED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEARING SHIELD GROUND FAULTS.

MULTIPLE SEGMENT EXAMPLE



INSTALLATION NOTES

1. SIEMENS SHALL INSTALL LOW VOLTAGE CABLE IN RACEWAYS PROVIDED BY E.C. AND TERMINATE BOTH ENDS. LINE VOLTAGE CONDUIT, WIRING AND TERMINATIONS BY E.C.

2. SIEMENS SHALL TERMINATE ALL LOW VOLTAGE CABLES AT THE TOUCHSCREEN.

3. E.C. TO PROVIDE DEDICATED POWER CIRCUIT TO TOUCHSCREEN.

4. E.C. SHALL BE RESPONSIBLE FOR INSTALLATION OF POWER WIRING AND LOW VOLTAGE DIMMING CONTROL SIGNALS TO LIGHTING FIXTURES. SIEMENS SHALL BE RESPONSIBLE FOR

INSTALLATION OF ADDITIONAL CONTROL WIRING IN RACEWAYS INSTALLED BY E.C.

5. THE MAXIMUM DISTANCE BETWEEN THE TSP AND THE OUTLET IS 4 FEET. THE MAXIMUM LENGTH OF THE CAT-5 BETWEEN THE SLP AND TSP
WEST-BOT EXCEPTIONS

I. COMBUSTION AIR VENTILATION AND OTHER EQUIPMENT:

I. CONTROLS FOR COMBUSTION AIR VENTILATION AND ANY OTHER EQUIPMENT NOT SPECIFICALLY MENTIONED IN THE EMS SCHEDULES SHALL BE FURNISHED AND INSTALLED ACCORDING

TO THE MECHANICAL AND ELECTRICAL BID DOCUMENTS.

2. EXHAUST FAN, TRANSFER FAN AND OTHER "HARD-WIRED" INTERLOCKS (SEE INTERLOCK EXAMPLE BELOW):

I. WHEN HARD-WIRED INTERLOCKING IS SPECIFIED IN THE MECHANICAL AND/OR ELECTRICAL SCHEDULES, THE INTERLOCKS SHALL BE FURNISHED AND INSTALLED BY THE TRADES SPECIFIED.

INTERLOCKING IS NOT PART OF EMS SYSTEM.

II. WHERE EXHAUST FAN AND RTU INTERLOCKS ARE CALLED OUT, THE CONTRACTOR SHALL CONNECT DIRECTLY TO THE SUPPLY FAN CONTACTOR COIL AND WIRE IN PARALLEL TO THE

CONTACTOR COIL AND WIRE IN PARALLEL TO THE

COIL OF A PROPERLY SIZED CONTACTOR OR STARTER SERVING THE INTERLOCKED EQUIPMENT. DO NOT USE THE EMS SYSTEM TO INTERLOCK EQUIPMENT.

3. LIFE SAFETY AND FIRE ALARM SYSTEMS:

I. LIFE SAFETY AND FIRE ALARM SYSTEMS ARE NOT PART OF THE EMS SYSTEM AND SHALL BE FURNISHED AND INSTALLED AS SPECIFIED IN THE MECHANICAL AND ELECTRICAL

BID DOCUMENTS.

II. MECHANICAL EQUIPMENT SHUTDOWN SHALL BE WIRED AS TO NOT AFFECT THE EMS SYSTEM.

4. MANUFACTURER SUPPLIED HUMIDITY CONTROLLERS:

I. DEHUMIDIFYING ROOFTOP UNITS:

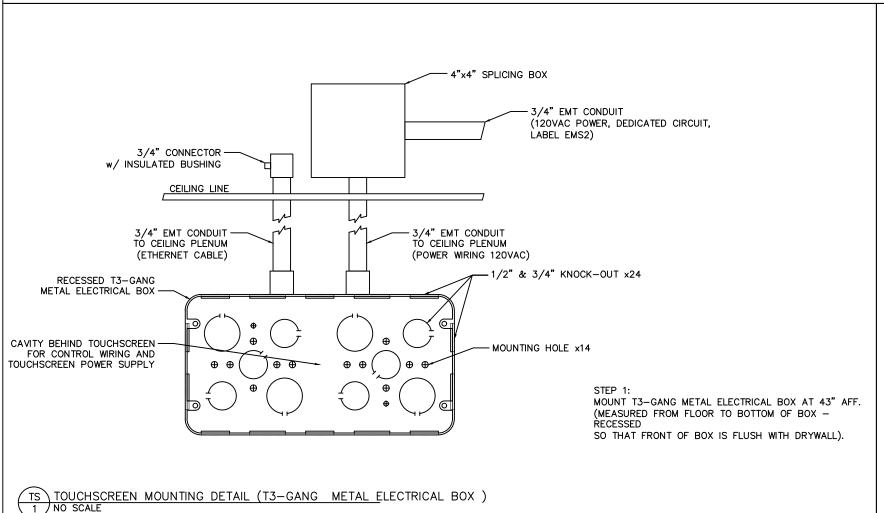
CASIME ROOFTOP, UNITS MAY COME EQUIPPED WITH A DEHUMIDIFICATION CYCLE AND SPACE HUMIDITY SENSOR. THIS SENSOR SHALL BE INSTALLED IN ADDITION TO THE EMS SYSTEM AND SIEMENS PART # CABEBROING TO THEPMANUFACTURER'S INSTRUCTION MANUFACTURER 18AWG, 2 CONDUCTOR, SHIELDED, STRANDED, PLENUM, WHITE ANIXTER RCS-2C18-CMP-WH 18/4 18AWG, 4 CONDUCTOR, SHIELDED, PLENUM, WHITE ANIXTER RCS-4C18-CMP-WH 18/10 18AWG, 10 CONDUCTOR, UNSHIELDED, STRANDED, PLENUM, WHITE ANIXTER RCS-10C18-CMP-WH 24AWG, TWISTED PAIR, SHIELDED, STRANDED, PLENUM, WHITE ANIXTER RCS-TP24-CMP-WH CATEGORY 5, UNSHIELDED, SOLID, TWISTED PAIR WHITE ANIXTER RCS-E-4UTP-CAT5E-CMR-WH

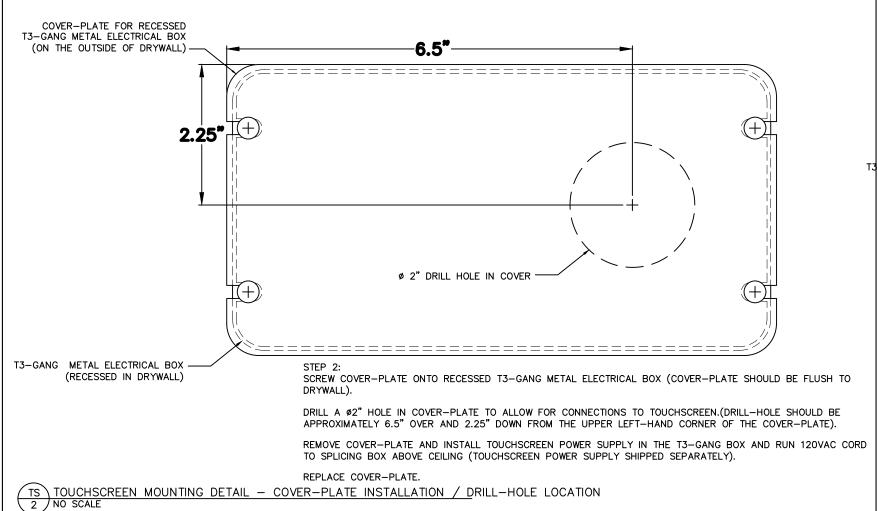
CABLE PURCHASING INSTRUCTIONS

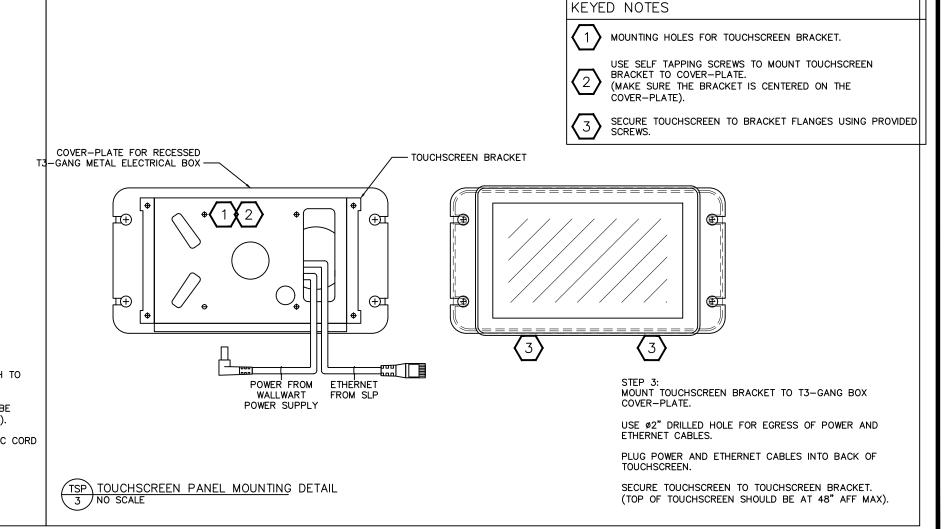
ANIXTER INC. IS THE AUTHORIZED DISTRIBUTOR OF SPECIFIED CABLE FOR SIEMENS INDUSTRY, INC., BUILDING TECHNOLOGIES DIVISION. (PLEASE, CONSULT ANIXTER OR SIEMENS COMMODITY MANAGER FOR THE MOST CURRENT PRICING STRUCTURE.) CONTACT INFORMATION:

PHONE: (888) 479-3830 FAX: (888) 479-3834 EMAIL: SBT@anixter.com

| EMAIL: SBT@anixter.com | WEBSITE FOR SIEMENS BT: www.anixter.com/SBT (BUILDING AUTOMATION TAB) | WO REFERENCE NUMBER: 30209634

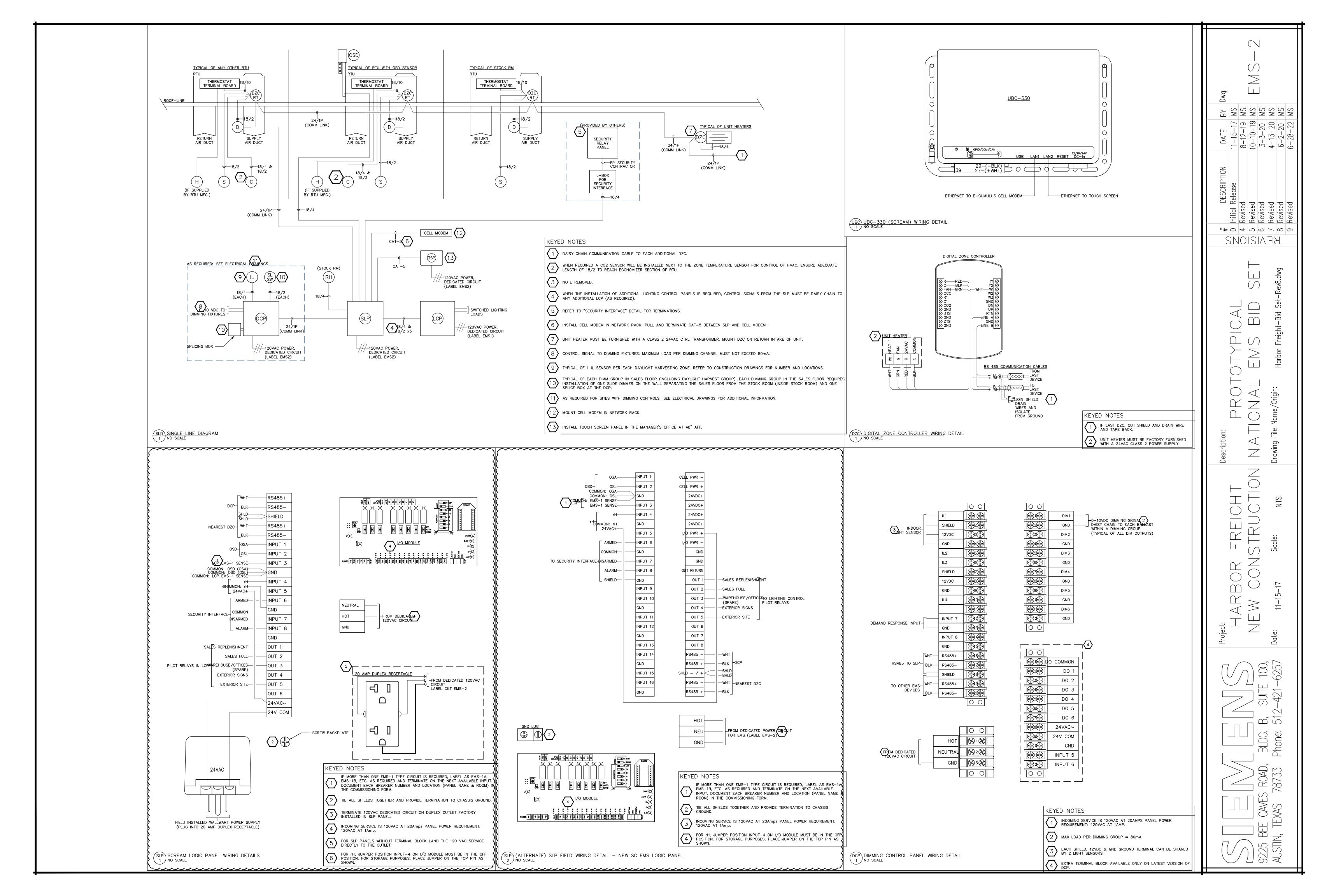


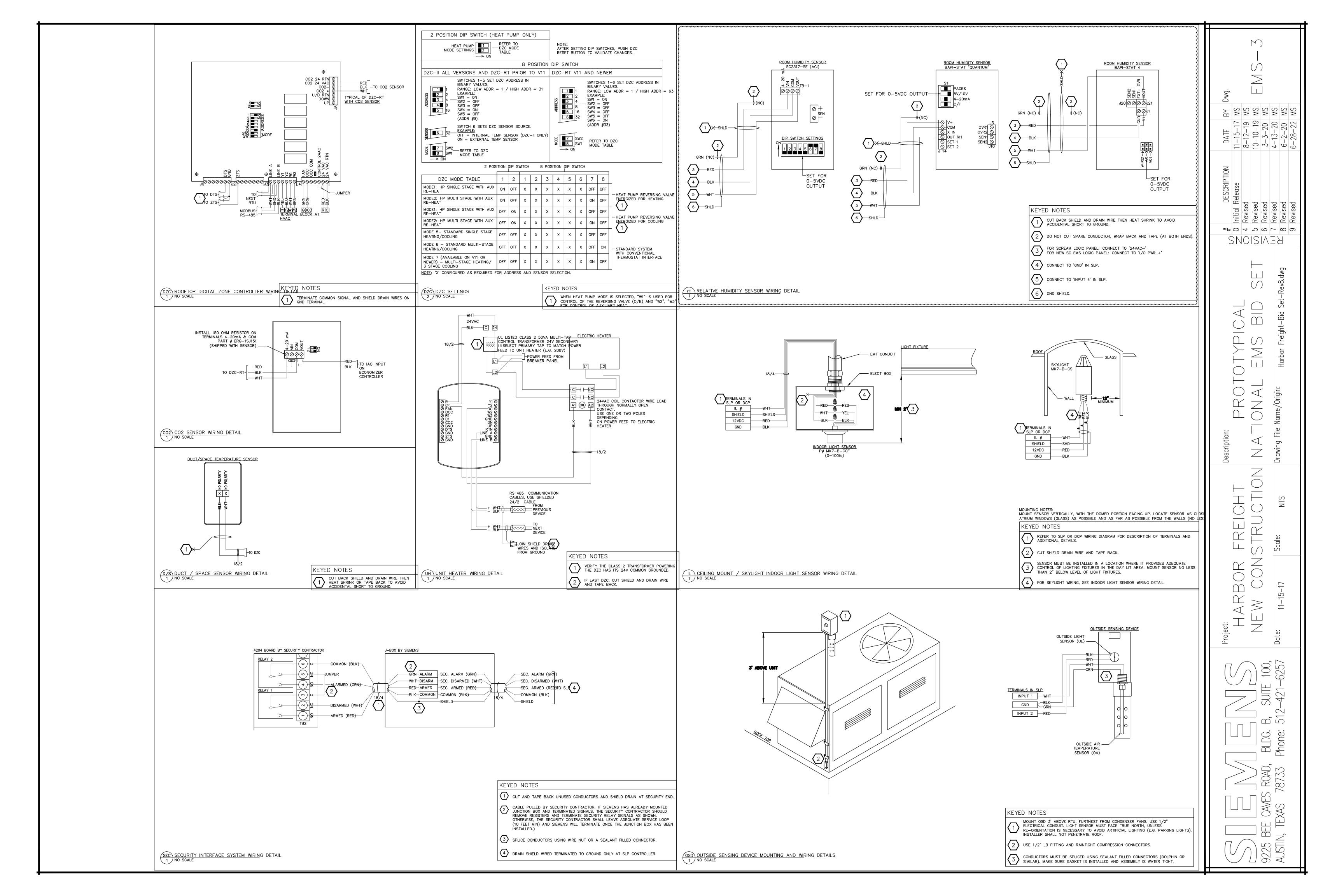


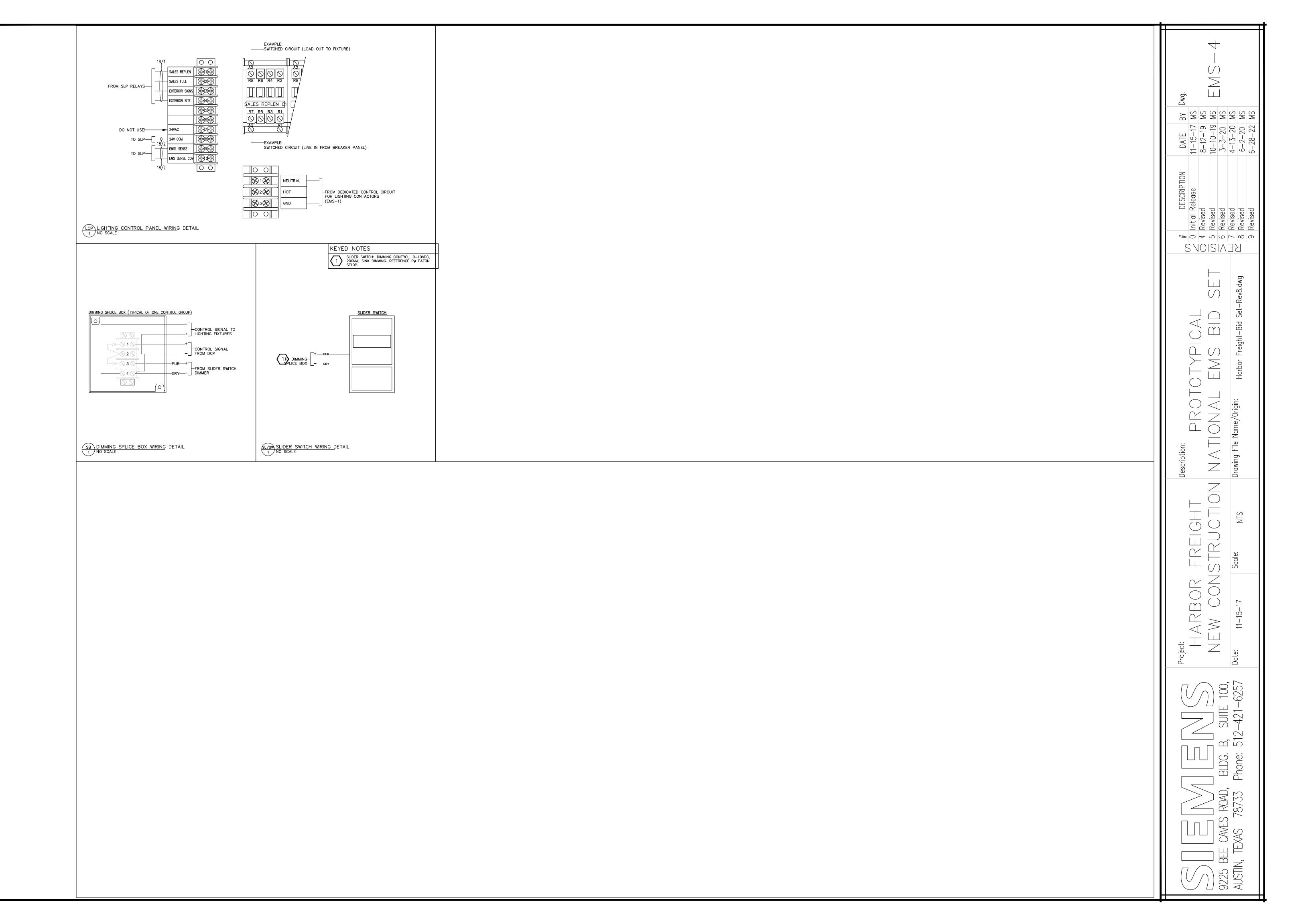


Project:
HARBOR FREIGHT
NEW CONSTRUCTION NATIONAL EMS BID

SENISIONS









GENERAL NOTES:

- 1. MATERIALS AND INSTALLATION SHALL COMPLY WITH APPLICABLE NFPA CODES (NFPA 13 2013 EDITION), STATE BUILDING CODE, LOCAL AUTHORITY HAVING JURISDICTION, AND INSURANCE UNDERWRITER'S REQUIREMENTS.
- 2. ALL MATERIALS AND EQUIPMENT SHALL BE NEW, UL LISTED FOR THE INTENDED USE AND SHALL BE INSTALLED IN FULL COMPLIANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- 3. ALL NEW SPRINKLER PIPE 1" AND SMALLER IS SCHEDULE-40 BLACK STEEL WITH THREADED ENDS AND FITTINGS. ALL NEW SPRINKLER PIPE 11/4" AND LARGER IS SCHEDULE-10 BLACK STEEL WITH GROOVED ENDS AND FITTINGS.
- 4. SPRINKLER HEAD SPACING IS BASED ON THE NFPA STANDARDS FOR ORDINARY HAZARD OCCUPANCIES ALLOWING A MAXIMUM HEAD SPACING OF 130 S.F. PER HEAD.
- 5. LOCATIONS OF PIPING AS SHOWN ON THE DRAWINGS ARE APPROXIMATE AND SUBJECT TO MINOR ADJUSTMENTS IN THE FIELD.
- 6. SCOPE OF WORK IS TO INSTALL A NEW ONE RISER SPRINKLER SYSTEM FOR NEW SHELL BUILDING.
- 7. THE WATER TEST INFORMATION HAS BEEN PROVIDED BY J&D SPRINKLER DATED 2/6/2024 INDICATES THE FOLLOWING...

STATIC: 52 PSI RESIDUAL: 36 PSI FLOW: 840 GPM

SYMBOLS:



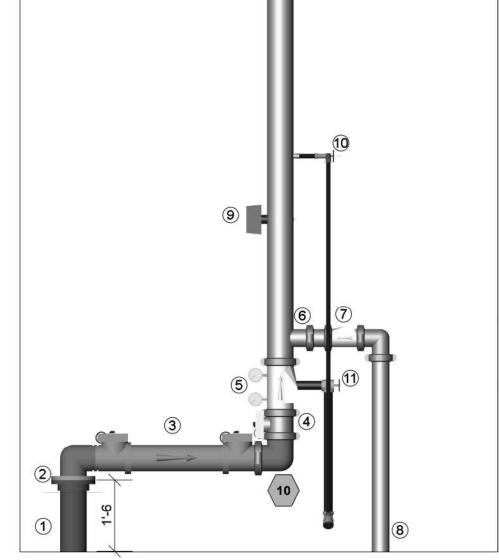
DENOTES A HYDRAULIC CALCULATION POINT OF REFERENCE
DENOTES A HYDRAULIC REMOTE AREA

DENOTES NEW SPRINKLER PIPE

— DENOTES UNDERGROUND PIPE

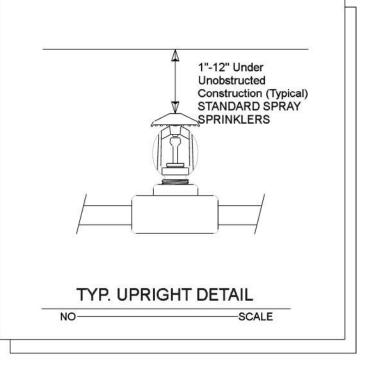
DENOTES PIPE CENTERLINE ELEVATION AFF

_-0'-0 TS ℚ DENOTES PIPE CENTERLINE BELOW TOP OF STEEL



RISER DETAIL

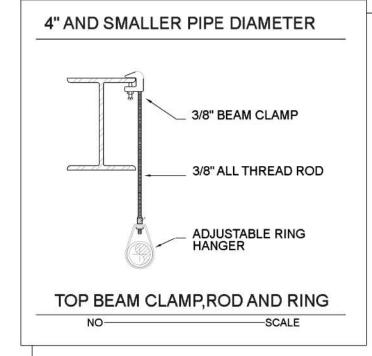
0½" = 1 Foot

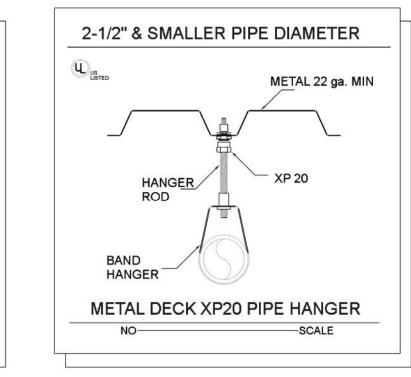


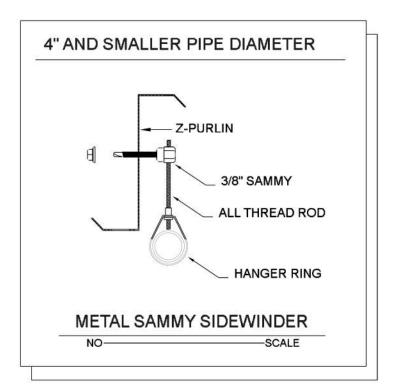


10 TEST & DRAIN ASSMBLY

11) 2" MAIN DRAIN







DANA GRAHAM

NC # 16269FS CERT # 12184

REVISION: NO. DATE

4/24/2024

1/8"=1'-0"

F24084

MWL

FP-1

Job Number:

Drawn By:

Sheet Number

Sprinkler Design Data

Project Name: HARBOR FREIGHT TOO	System:WET		
Project Street Address: 46 SHRIJI LN, E	RWIN NC	Sys. Sq. Ft.: 15,632	
Suite: -	Floor#:-	Ceiling Height: VARIES	
Designed By: J&D SPRINKLER CO	Phone: 919-553-2356	Total Bldg. Hgt.:22'-0	
Occupancy: MERCHANTILE	Hazard: ORDINARY GRP II		

Design Summary

	-		1	<u> 1858</u>	-
Design Method	CALCULATED	-		N=	(-)
Design Area #	1	-	1-	s-	(= f
Location	=	-	-) -	-
Type of System	WET	-	-	0 .	:=1
Hazard Class	ORDINARY GRP II	-	<u>.</u>	% -	
Criteria From	NFPA13 2013 ED	-	1 ,-	% -	s = €
Design Area	1500 S.F.	-	-	-	•
Sprinkler Spacing	130 S.F. MAX	-	-	-	
Density	.20	-	-	s -	
K-factor	5.6	-	-		-
Hose Allowance	250 GPM	_	-	-	B
# Design Sprinklers	13	-	-		
Special Application Spk.	-	v a v	-	-	141
Requirement @ BASE					
G.P.M. Req'd	329.08	-	-		•
P.S.I. Req'd	30.630	-		-	
Requirement @ TEST					
GPM Required	579.08	_	_	_	-
PSI Required	41.467	-	-	19	
Safety factor @ Test	2.493	-	-	2 -	•
Dry Sys. Volume (gal)	-				_

Water Supply Information

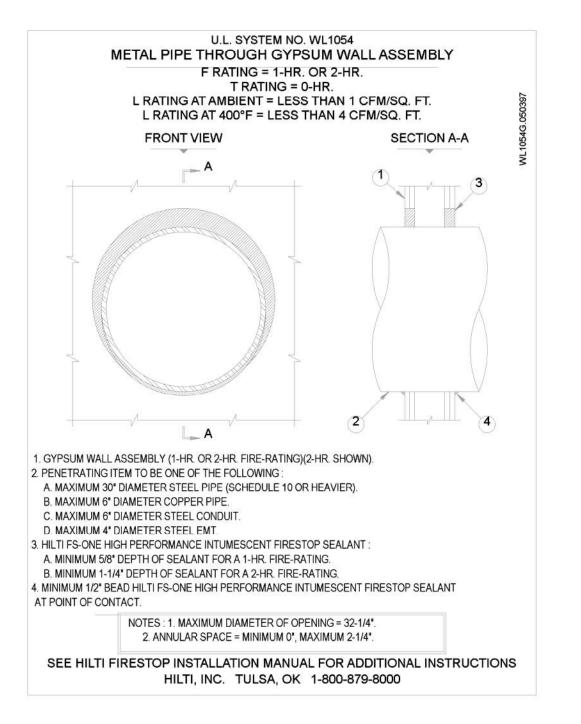
Tested by	J&D SPRINKLER CO	Date/Time	2/6/2024 @ 1:45PM	Pressure Hydrant	-	
Hydrant Elevation	1=0	Flow Hydrant # 1	· -	Flow Hydrant #2		
Static (PSI)	52	Residiual (PSI)	36	Flow (gpm)	840	
	Сору	of Water Test Data Inc	luded with Calculation is r	required		

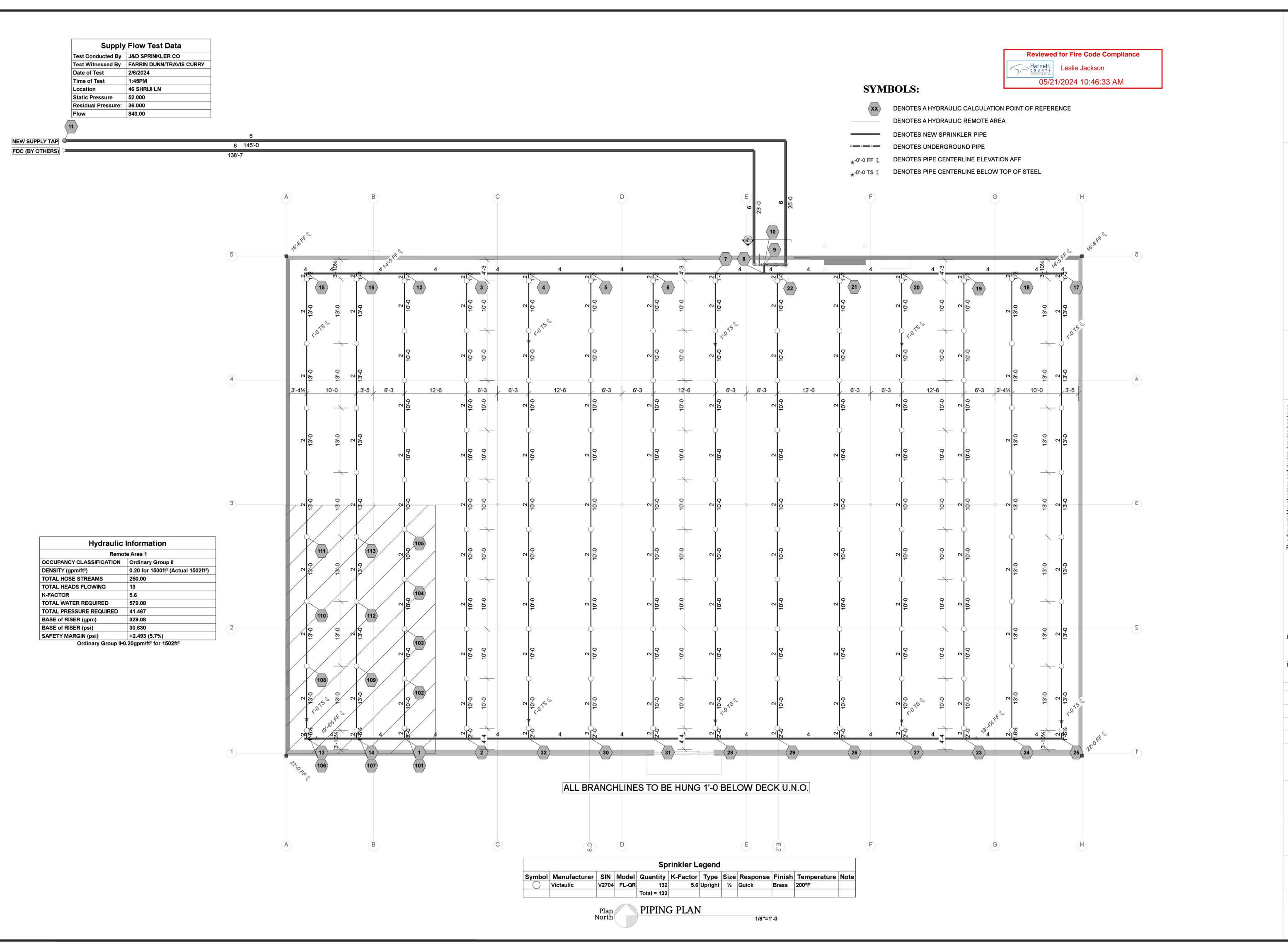
ŀ	HANG	ER INS	TALLAT	TION R	EQUIR	EMENT	S		
	MAX	KIMUM D	ISTANCI	BETWE	EN HAN	IGERS			
NOMINAL PIPE SIZE	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
LAZEMASTER CPVC	5' 6"	6' 0"	6' 6"	7' 0"	8' 0"	9' 0"	10' 0"	N/A	N/A
READABLE LIGHTWALL	N/A	12' 0"	12' 0"	12' 0"	12' 0"	12' 0"	12' 0"	N/A	N/A
STEEL PIPE (10/40)	N/A	12' 0"	12' 0"	15' 0"	15' 0"	15' 0"	15' 0"	15' 0"	15' 0"

100 PSI STATIC PRESSURE ON SYSTEM REQUIRES UP-LIFT RESTRAINT WITHIN 12 INCHES HORIZONTALLY OF HEAD FOR ARM-OVERS AND END OF BRANCH LINE

THE UNSUPPORTED LENGTH BETWEEN THE END SPRINKLER AND THE LAST HANGER
ON THE LINE SHALL NOT EXCEED 36" FOR 1" PIPE, 48" FOR 1 1/4" PIPE AND 60" FOR 1 1/2" PIPE OR LARGER
THE CUMULATIVE HORIZONTAL LENGTH OF AN UNSUPPORTED ARMOVER TO A SPRINKLER,
SPRINKLER DROP, OR SPRIG-UP SHALL NOT EXCEED 24"

TR	APEZE I	NSTAL	LATION	N REQU	JIREME	ENTS				
SPAN OF TRAPEZE		NOMINAL PIPE SIZE SUPPORTED								
(Schedule 10)	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"		
1 FT. 6 IN.	1"	1"	1"	1"	1"	1"	1-1/4"	1-1/4"		
2 FT. 0 IN.	1"	1"	1"	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/2"		
2 FT. 6 IN.	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/2"	2"		
3 FT. 0 IN.	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/2"	1-1/2"	1-1/2"	2"		
4 FT. 0 IN.	1-1/2"	1-1/2"	1-1/2"	1-1/2"	2"	2"	2"	2-1/2"		
5 FT. 0 IN.	2"	2"	2"	2"	2"	2"	2-1/2"	2-1/2"		
6 FT. 0 IN.	2"	2"	2"	2"	2"	2-1/2"	2-1/2"	3"		
7 FT. 0 IN.	2"	2"	2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	3"		
8 FT. 0 IN.	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	3"		
9 FT. O IN.	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	3"	4"		
10 FT. 0 IN.	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	3"	3"	4"		





DANA GRAHAM

NC # 16269FS CERT # 71075 NICET LEVEL III JASON CRAHAM NC # 15269FS CERT # 121842 NICET LEVEL III

REVISION: NO. DATE

4/24/2024

1/8"=1'-0" ____

Job Number: F24084

Drawn By: MWL

Sheet Number

FP-2