

HARBOR FREIGHT TOOLS

314 NY ROUTE 59

NYACK, NY 10960

SIGN VENDOR LIST

Harbor Freight Tools Sign Vendor Territories

Vendors

Southern US
Atlas Sign Industries

Northern US
Urban Neon

SIGN VENDOR (SOUTHERN)

ATLAS SIGN INDUSTRIES
1077 W. BLUE HERON BLVD.
WEST PALM BEACH, FL 33404
CONTACT: JODY KLUTTZ
T: (888) 781-3097
EMAIL: jody.k@atlasbw.com

SIGN VENDOR (NORTHERN)

URBAN NEON ELECTRIC SIGN CO.
500 PINE STREET SUITE 3B
HOLMES, PA 19043
CONTACT: STU LEVY
T: (610) 583-6366
EMAIL: slevy@urbanneon.com

NOTE:
ALL SIGNAGE AND PERMITS FOR SIGNAGE ARE BY OTHERS AND NOT PART OF THE BUILDING PERMIT PACKAGE. NO BUILDING SIGNAGE WORK TO BE PERFORMED AS PART OF THIS PROJECT PERMIT.

CODE AND BUILDING DATA

- PROJECT SCOPE:**
EXTERIOR AND INTERIOR ALTERATIONS OF AN EXISTING MERCANTILE TENANT SPACE. INTERIOR ALTERATIONS INCLUDE NEW OFFICES, RESTROOMS, BREAK ROOM, VESTIBULE, AND 1HR FIRE RATED DEMISING WALL. EXTERIOR ALTERATIONS INCLUDE NEW AUTOMATIC BI-PARTING ENTRY/EXIT DOOR IN NEW OPENING, NEW OVERHEAD DOOR IN MODIFIED OPENING, NEW CONCRETE RECEIVING PAD AND WEATHER ENCLOSURE AND NEW RETAINING WALL. ORIGINAL CONSTRUCTION IS 1960'S PREVIOUS TENANT WAS MET FRESH GROCERY. PARKING ANALYSIS: SHARED PARKING PROVIDED BY STRIP CENTER PARKING LOT.
DEFERRED SUBMITTALS:
- EXTERIOR SIGNAGE (INCLUDING TEMPORARY SIGN BANNER)
- AUTOMATIC SPRINKLER SYSTEM MODIFICATIONS
- FIRE ALARM SYSTEM MODIFICATIONS
- MERCHANDISE RACKING

APPLICABLE CODES:
BUILDING CODE: 2020 NEW YORK STATE BUILDING CODE
ENERGY CODE: 2020 NEW YORK STATE ENERGY CODE
MECHANICAL CODE: 2020 NEW YORK STATE MECHANICAL CODE
ELECTRICAL CODE: 2020 NATIONAL ELECTRICAL CODE
PLUMBING CODE: 2020 NEW YORK STATE PLUMBING CODE
FIRE CODE: 2020 NEW YORK STATE FIRE CODE
ACCESSIBILITY: NEW YORK STATE BUILDING CODE APPENDIX E, FOLLOWING A117.1

USE and OCCUPANCY CLASSIFICATION:
M - MERCANTILE

CONSTRUCTION CLASSIFICATION (TYPE):
IIB - FULLY SPRINKLERED
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS):
STRUCTURAL FRAME: 0 HOURS INTERIOR NONBEARING WALLS: 0 HOURS
EXTERIOR BEARING WALLS: 0 HOURS FLOOR CONSTRUCTION: 0 HOURS
INTERIOR BEARING WALLS / COLUMNS: 0 HOURS ROOF CONSTRUCTION: 0 HOURS

ALLOWABLE HEIGHT and BUILDING AREAS:
ALLOWABLE AREA: 50,000 SQ. FT.
SALES AREA: 9,412 SQ. FT.
NON-SALES AREA: 5,760 SQ. FT.
GROSS LEASED AREA: 15,172 SQ. FT.
ALLOWABLE HEIGHT: 75'-0"
ACTUAL HEIGHT: 22'-0"

OCCUPANT LOAD:
ACTUAL INTERIOR AREA BUILDING: 15,172 SQ. FT.
FUNCTION OF SPACE FLR AREA / OCC. CALCULATION ALLOWABLE
M - SALES 60 GROSS 9,412 SQ. FT. 157 OCCUPANTS
B - CORE AREA 150 GROSS 708 SQ. FT. 5 OCCUPANTS
S-2 - STOCK 300 GROSS 5,052 SQ. FT. 17 OCCUPANTS
ANTICIPATED OCCUPANT LOAD FOR HARBOR FREIGHT TOOLS: 150 MAX FROM HISTORICAL DATA 179 OCCUPANTS

EGRESS REQUIREMENTS:
REQUIRED EGRESS WIDTH: 179 OCC. x 0.2 = 35.8" (44" MIN)
PROVIDED EGRESS WIDTH: (1) BI-PARTING DOOR @ 66", (1) SALES EGRESS DOOR @ 34", (1) STOCK EGRESS DOOR @ 34" = 136"
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

PLUMBING FIXTURE REQUIREMENTS:
PLUMBING FIXTURE CALCULATION REQUIRED PROVIDED
WATER CLOSETS, MEN: 1 PER 500 OCC. 1 1
WATER CLOSETS, WOMEN: 1 PER 500 OCC. 1 1
LAVATORIES, MEN: 1 PER 750 OCC. 1 1
LAVATORIES, WOMEN: 1 PER 750 OCC. 1 1
DRINKING FOUNTAINS: 1 PER 1,000 OCC. 1 1
MOP SINK: 1 SERVICE SINK/USE GROUP 1 1

LIST OF DRAWINGS

SHEET NO.	DRAWING NAME	ISSUE DATE	REVISION DATE
A0.0	COVER SHEET	09/22/21	
AS1.0	ARCHITECTURAL SITE PLAN	09/22/21	
D1.0	DEMOLITION PLAN	09/22/21	
A0.2	GENERAL NOTES	09/22/21	
A0.3	CONCRETE SPECIFICATIONS	09/22/21	
A0.4	CONCRETE SPECIFICATIONS	09/22/21	
A1.1	FLOOR PLAN	09/22/21	
A1.2	FIXTURE PLAN	09/22/21	
A1.3	FINISH PLAN	09/22/21	
A1.4	FIXTURE SPECIFICATION AND DETAILS	09/22/21	
A1.5	FIXTURE SPECIFICATION AND DETAILS	09/22/21	
A1.6	FIXTURE SPECIFICATION AND DETAILS	09/22/21	
A1.7	FIXTURE SPECIFICATION AND DETAILS	09/22/21	
A1.8	RACKING SPECIFICATION AND DETAILS	09/22/21	
A1.9	RACKING / FIXTURE SPECIFICATION AND DETAILS	09/22/21	
A1.10	FIXTURE SPECIFICATION AND DETAILS	09/22/21	
A1.11	FIXTURE SPECIFICATION AND DETAILS	09/22/21	
A1.12	FIXTURE SPECIFICATION AND DETAILS	09/22/21	
A2.0	CEILING PLAN	09/22/21	
A3.0	EXTERIOR ELEVATIONS	09/22/21	
A4.0	SECTIONS AND DETAILS	09/22/21	
A4.1	WALL TYPES AND DETAILS	09/22/21	
A4.2	MISC. DETAILS	09/22/21	
A4.3	MISC. DETAILS	09/22/21	
A5.0	DOOR SCHEDULE AND DETAILS	09/22/21	
A5.1	ENLARGED VESTIBULE PLAN & DETAILS	09/22/21	
S0.0	GENERAL STRUCTURAL NOTES	09/22/21	
S0.1	GENERAL STRUCTURAL NOTES	09/22/21	
S0.2	CONCRETE SLAB SPECS w/ FIBER	09/22/21	
S1.0	PARTIAL FLOOR AND ROOF FRAMING PLAN	09/22/21	
S1.1	ENLARGED PLANS	09/22/21	
S2.0	STRUCTURAL DETAILS	09/22/21	
S2.1	STRUCTURAL DETAILS	09/22/21	
S2.2	STRUCTURAL DETAILS	09/22/21	
S2.3	STRUCTURAL DETAILS	09/22/21	
M1.0	MECHANICAL / PLUMBING	09/22/21	
M1.1	MECHANICAL SCHEDULES	09/22/21	
M1.2	MECHANICAL / PLUMBING DETAILS	09/22/21	
M1.3	MECHANICAL / PLUMBING SPECIFICATIONS	09/22/21	
P1.0	PLUMBING PLAN	09/22/21	
P1.1	PLUMBING DETAILS	09/22/21	
FP1.0	FIRE PROTECTION PLAN	8/4/20	
E0.1	ELECTRICAL SPECIFICATIONS	09/22/21	
E1.0	POWER PLAN	09/22/21	
E1.0A	POWER PLAN	09/22/21	
E1.1	LIGHTING PLAN	09/22/21	
E1.1A	ROOM LIGHTING CONTROL / DIMMING SYSTEM DETAILS	09/22/21	
E1.2	COMMUNICATIONS PLAN	09/22/21	
E2.0	ONE LINE DIAGRAM & DETAILS	09/22/21	
E2.1	ELECTRICAL DETAILS	09/22/21	
E2.2	PHONE BOARD DETAIL	09/22/21	
E2.3	LIGHTING AND PANEL SCHEDULES	09/22/21	
EMS-1	ENERGY MANAGEMENT SYSTEM	06/02/20	
EMS-2	ENERGY MANAGEMENT SYSTEM	06/02/20	
EMS-3	ENERGY MANAGEMENT SYSTEM	06/02/20	
C0	COVER	09/22/21	
C1	DEMOLITION & EROSION CONTROL PLAN	09/22/21	
C1.1	EROSION CONTROL NOTES	09/22/21	
C2	SITE PLAN	09/22/21	
C3	PAVING PLAN	09/22/21	
C4	UTILITY PLAN	09/22/21	
C5	GRADING PLAN	09/22/21	
C6	DETAIL SHEET 1	09/22/21	

HFT VENDOR SCOPE OF WORK SUMMARY

- FIXTURES / FURNISHINGS:**
- FURNISH AND INSTALL SALES AREA CASH WRAPS
 - FURNISH AND INSTALL FRONT OF HOUSE AND BACK OF HOUSE
 - FIXTURES
 - FURNISH AND INSTALL EXTERIOR CART CORRAL (IF APPLICABLE)
 - FURNISH AND INSTALL POWER STRIP AND CHARGERS AT BANNER AND CHARGING STATION
- DOORS AND STOREFRONT:**
- FURNISH DOORS, FRAMES, AND HARDWARE. SEE SHEET A5.0 FOR FURTHER INFORMATION.
 - FURNISH AND INSTALL OVERHEAD DOOR AT RECEIVING AREA. SEE SHEET A5.0 FOR FURTHER INFORMATION.
 - FURNISH AND INSTALL HFT BI-PARTING DOOR PACKAGES. SEE SHEET A5.0 FOR FURTHER INFORMATION.
 - FURNISH AND INSTALL SECURITY GATES.
 - FURNISH AND INSTALL COOLVU WINDOW TINT.
- SIGNAGE:**
- FURNISH AND INSTALL EXTERIOR SIGNAGE. POWER AND BLOCKING BY G.C.
 - FURNISH ALL INTERIOR SIGNAGE.
- FLOOR FINISHES:**
- FURNISH AND INSTALL LVT FLOORS
 - FURNISH AND INSTALL WALL BASE
 - FURNISH AND INSTALL GRINDING AND POLISHING OF CONCRETE FLOORS
- ELECTRICAL:**
- FURNISH AND INSTALL TELEPHONE / DATA WIRING. VERIFY IF WIRING IS TO BE PLENUM RATED
 - FURNISH AND INSTALL SOUND SYSTEM
 - FURNISH AND INSTALL CAMERAS
 - FURNISH LIGHT FIXTURES AND LAMPS
 - FURNISH LIGHTING DIMMING SYSTEM COMPONENTS (IF APPLICABLE, SEE E1.1A)
 - FURNISH AND INSTALL EMS COMPONENTS
- MECHANICAL:**
- FURNISH HVAC ROOFTOP UNITS. G.C. TO COORDINATE SCHEDULE AND DELIVERY
- RESTROOM ACCESSORIES:**
- FURNISH GRAB BARS, BLOCKING BY G.C.
 - FURNISH SANITARY WAPIN DISPOSAL
 - FURNISH TOILET PARTITIONS (IF APPLICABLE)
- NOTE:** G.C. SHALL MANAGE ALL WARRANTY ITEMS AND REMEDIES INCLUDING MANAGING SUB-CONTRACTORS, VENDORS AND HFT VENDORS FOR A PERIOD OF (1) YEAR FROM TURNOVER.

HFT FURNISHED ITEMS G.C. TO INSTALL

- FIXTURES / FURNISHINGS:**
- MILLWORK KIT FOR OFFICES
 - FIRE EXTINGUISHERS
 - PLASTIC BOLLARD COVERS
 - EYE WASH STATION AND CARTRIDGE
 - CORNER GUARDS
 - POWER POLES
 - FORKLIFT BATTERY CHARGER STATION AND WATER TANK
 - MOP SINK SHELVES
 - UPRIGHT FRAME PROTECTORS
 - BOX RAILS
 - BOLT DOWN BOLLARDS
 - INPRO WALL GUARD
 - DOCK FAN AND MOUNTING KIT (IF APPLICABLE)
- ELECTRICAL:**
- BURGLAR ALARM PANEL
 - WIRED ZONE EXPANDER
 - KEY PAD
 - SIREN
 - CEILING MOUNTED MOTION DETECTOR
 - GLASSBREAK DETECTOR
 - MOTION DETECTOR
 - MICROWAVE DETECTOR
 - EXTERIOR DOOR CONTACTS
 - OVERHEAD DOOR CONTACT
 - EMPLOYEE TIME CLOCK
- MECHANICAL:**
- DIGITAL DIFFUSERS
 - 12" X 12" SQUARE PLAQUE DIFFUSERS
- PLUMBING FIXTURES:**
- DRINKING FOUNTAIN AND STAINLESS STEEL WALL GUARDS
 - MOP SINK, FAUCET AND ACCESSORIES
 - BREAK ROOM SINK AND FAUCET
 - RESTROOM LAVATORIES AND FAUCET
 - WATER HEATER AND PAN
 - EXPANSION TANK
- RESTROOM ACCESSORIES:**
- HAND DRYERS AND WALL GUARDS
 - TOILET PAPER HOLDERS
 - MIRRORS
 - TOILET SEAT COVER DISPENSER
- FLOOR FINISHES:**
- VESTIBULE CARPET TILE

NOTE: G.C. TO PROVIDE (2) 40'-0" CONEX CONTAINERS FOR TEMPORARY STORAGE OF HFT SUPPLIED ITEMS. COORDINATE DELIVERY / PLACEMENT WITH HFT PM.

VENDOR LIST

IT VENDOR	IT CHECKLIST	FLOORING VENDORS				LVT VENDOR
RETAIL TECH INC. MAIN CONTACT: CRISTIN BELSITO T: (952) 356-1775 X 2007 C: (440) 263-2270 EMAIL: cbelstlo@retaltechinc.com	MUST HAVE CHECK LIST: <input type="checkbox"/> PROJECT MANAGERS CONTACT INFORMATION INCLUDING EMAIL ADDRESS <input type="checkbox"/> CONTRACTOR INFORMATION 1 WEEK BEFORE CONSTRUCTION STARTS (PROTRACK TRIGGER VIA EMAIL) <input type="checkbox"/> GENERAL CONTRACT INFO INCLUDING EMAIL ADDRESSES <input type="checkbox"/> SITE FOREMAN INFO INCLUDING EMAIL ADDRESS <input type="checkbox"/> CONFIRMED ADDRESS WITH MPOE LOCATION (CLOSET, DMARK, ETC) <input type="checkbox"/> STANDARD STORE SET UP IS 2 LINES IN A HUNT GROUP, 1 LINE FOR BACK UP COMMUNICATION, AND 1 ALARM LINE. IF WE NEED MORE DEDICATED ALARM LINES TO PASS CITY CODE, NEED TO KNOW THAT UPFRONT	DIAMA-SHIELD, LLC 32401 INDUSTRIAL DRIVE WADISON HEIGHTS, MI 48071 CONTACT: TRAVIS SIBLEY T: (313) 510-6149 EMAIL: tsibley@diamashield.com	ROCKERZ INC. 100 COMMONWEALTH DR. WARRENDALE, PA 15066 CONTACT: ROBERT SMITH T: (724) 553-3854 EMAIL: rsmith@rockerzinc.com	PREFERRED GLOBAL CONTACT: MATTHEW NEWCOMER T: (371) 501-7284 EMAIL: mnewcomer@preferredglobal.net CONTACT: DEREK BROWN T: (371) 869-3712 EMAIL: dbrown@preferredglobal.net	FLOORMAX USA CONTACT: ALX RAHMAN 7701 DERRY STREET HARRISBURG, PA 17111 T: (717) 571-3548 EMAIL: alv@floormaxusa.com	
CABLING VENDOR RETAIL TECH INC. MAIN CONTACT: CRISTIN BELSITO T: (952) 356-1775 X 2007 C: (440) 263-2270 EMAIL: cbelstlo@retaltechinc.com		RACKING VENDOR MADIX, INC. 500 AIRPORT ROAD TERRELL, TX 75160 CONTACT: SCOTT NELSON T: (805) 529-6457 C: (805) 795-9386 EMAIL: snelson@madixinc.com	RACKING ENGINEER GARY K. MUNKELT AND ASSOCIATES 1180 WELSH ROAD, SUITE 190 NORTH WALES, PA 19454 CONTACT: BRUCE MATTHEWS, P.E. T: (215) 855-8713 EMAIL: bruce.matthews@gkmassoc.com denise.bailey@gkmassoc.com EMAIL: denise.bailey@gkmassoc.com brenda.rojahn@gkmassoc.com EMAIL: snelson@madixinc.com	BI-PARTING DOOR VENDOR DORMA 924 SHERWOOD DRIVE LAKE BLUFF, IL 60044 CONTACT: TESS FREEMAN T: (717) 335-4731 EMAIL: TESS.freeman@dormakaba.com	OVERHEAD DOOR VENDOR CORNELL IRON 140 MAFFET STREET WILKES-BARRE, PA 18705 CONTACT: KRISTA BONAVINA T: (800) 882-6773 X 620 EMAIL: kbonavina@cornellstorefronts.com	
DOOR HARDWARE VENDORS / RESTROOM ACCESSORIES COOK AND BOARDMAN, LLC 345 MASON ROAD LIVERGNE, TN 37086 CONTACT: MIKE DONNELLY T: (615) 964-6000 X4523 EMAIL: harborfreightteam@cookandboardman.com	FIRE ALARM MONITORING VENDOR PROTECTION 1 4221 W JOHN CARPENTER FWY IRVING, TX 75063 CONTACT: STEPHANIE NYSTROM T: (214) 277-7125 EMAIL: snystrom@adt.com	ADDRESS VERIFICATION / METER SERVICES COST CONTROL ASSOCIATES 310 BAY ROAD QUEENSBURY, NY 12804 CONTACT: DAVID SADOCHA T: (518) 824-0311	SECURITY GATE VENDOR CORNELL IRON 140 MAFFET STREET WILKES-BARRE, PA 18705 CONTACT: KRISTA BONAVINA T: (800) 882-6773 X 620 EMAIL: kbonavina@cornellstorefronts.com	PAINT VENDOR SHERWIN WILLIAMS 2100 WEST ORANGEWOOD, SUITE 100 ORANGE, CA 92668 CONTACT: SUNNY PATEL T: (619) 990-1920 EMAIL: sundepkumar.patel@shewin.com		
HVAC VENDOR LENNOX INDUSTRIES NATIONAL ACCOUNTS CONTACT: DEREK GAREN T: (872) 497-6082 EMAIL: LennoxNationalAccounts@Lennoxind.com	EMS VENDOR SIEMENS CONTACT: EMELY CORDON T: (512) 751-5942 EMAIL: emely.cordon@siemens.com PROJECT MANAGER: EMELY CORDON T: (512) 751-5942 EMAIL: emely.cordon@siemens.com ENGINEERING MANAGER: JUAN CABRERA T: (512) 967-7455 EMAIL: juancabrera@siemens.com	EMS SHIELDED CABLE VENDOR WINDY CITY WIRE CONTACT: KIMBERLY DEPAOLA T: (800) 379-1191 X 2811 C: (630) 633-4811 EMAIL: kdepola@smarwire.com	LIGHTING VENDOR CAPITOL LIGHT 270 LOCUST ST HARTFORD, CT 06114 CONTACT: BETH RIBE T: (860) 449-4502 EMAIL: beth.ribe@capitollight.com	NOTE: SUBSTITUTE PRODUCTS -OR- ALTERNATES TO THOSE SPECIFIED ON PLANS WILL NOT BE ACCEPTED WITHOUT HFT'S EXPRESS CONSENT. ANY PROPOSED SUBSTITUTIONS MUST BE SUBMITTED TO ARCHITECT FOR REVIEW AND APPROVAL.		

PROJECT DIRECTORY

BLDG. DEPT. CONTACT	HARBOR FREIGHT TOOLS	HARBOR FREIGHT TOOLS	HARBOR FREIGHT TOOLS	HARBOR FREIGHT TOOLS	ARCHITECT CONTACT
CITY BUILDING & ZONING DIVISION 10 MAPLE AVE. NEW CITY, NY 10956 CONTACT: ERIK ASHEIM T: (845) 639-2100 EMAIL: e.asheim@darkstown.org	HARBOR FREIGHT TOOLS 26541 AGOURA ROAD CALABASAS, CA 91302 CONTACT: DOUG HORROCKS Senior Construction Manager T: (805) 407-1961 EMAIL: dhorrocks@harborfreight.com	HARBOR FREIGHT TOOLS 26541 AGOURA ROAD CALABASAS, CA 91302 CONTACT: BRADY ROTHGEB Construction Manager T: (818) 309-9137 EMAIL: brothgeb@harborfreight.com	HARBOR FREIGHT TOOLS 26541 AGOURA ROAD CALABASAS, CA 91302 CONTACT: JAKE MATTERN Construction Manager T: (818) 309-9137 EMAIL: jmattern@harborfreight.com	HARBOR FREIGHT TOOLS 26541 AGOURA ROAD CALABASAS, CA 91302 CONTACT: ADAM STEECE Senior Director of Construction T: (818) 309-9137 F: (216) 521-4824 EMAIL: asteece@harborfreight.com	ADA ARCHITECTS, INC. 17710 DETROIT AVE. CLEVELAND, OH 44107 CLIENT MANAGER: BRYAN MATTHEWS PROJECT MANAGER: DAN COLLINS T: (216) 521-5134 F: (216) 521-4824 EMAIL: bmatthews@adaarchitects.cc EMAIL: dcollins@adaarchitects.cc

FIRE ALARM NOTES

(IF REQUIRED)
NOTE: FIRE ALARM VENDOR SHALL CLEARLY LABEL THE FIRE ALARM CONTROL PANEL IN THE FIELD.

APPROVED PANELS:
FIRE-LITE
MODEL #S MS-9600, ES-50, AND ES-200X

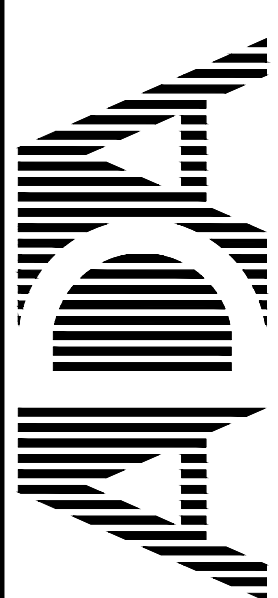
SILENT KNIGHT
MODEL #S SK6700, SK6808, SK6820, SK5208, AND SK-4.

NOTE: FIRE ALARM MONITORING IS VIA CELLULAR ANNUNCIATOR-NAPCO # SLE-LT-EV-FIRE OR SLE-LT-EA-FIRE. REFER TO SHEET E2.2 FOR ADDITIONAL INFORMATION.

LIFE SAFETY SUMMARY

THE SPACE IS FULLY SUPPRESSED AND IS SERVED BY A 4" MAIN LOCATED AT THE REAR OF THE HFT LEASE SPACE. THE EXISTING SPRINKLER RISER HAS A CURRENT STATE FIRE MARSHAL CERTIFICATION TAG DATED 2/27/21. HFT TO ADJUST SPRINKLER HEADS IN AREAS OF NEW CONSTRUCTION AS REQUIRED.

NOTE:
THERE IS A MANUAL PULL STATION SYSTEM SERVING THE SPACE. HFT TO MAINTAIN THE SYSTEM AND TO MAKE MODIFICATIONS AS NECESSARY. G.C. TO COORDINATE WITH AHJ FOR ANY LOCAL REQUIREMENTS. COORDINATE WITH HFT/ BV PM AND LANDLORD FOR ANY MONITORING REQUIREMENTS.



ADA ARCHITECTS SERVICES, P.C.

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HARBOR FREIGHT TOOLS

NYACK, NY 10960

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REVISIONS

#	DATE	TYPE	1	2	3	4	5	6	7	8	9

COVER SHEET

DATE 9/22/21

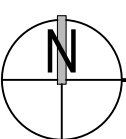
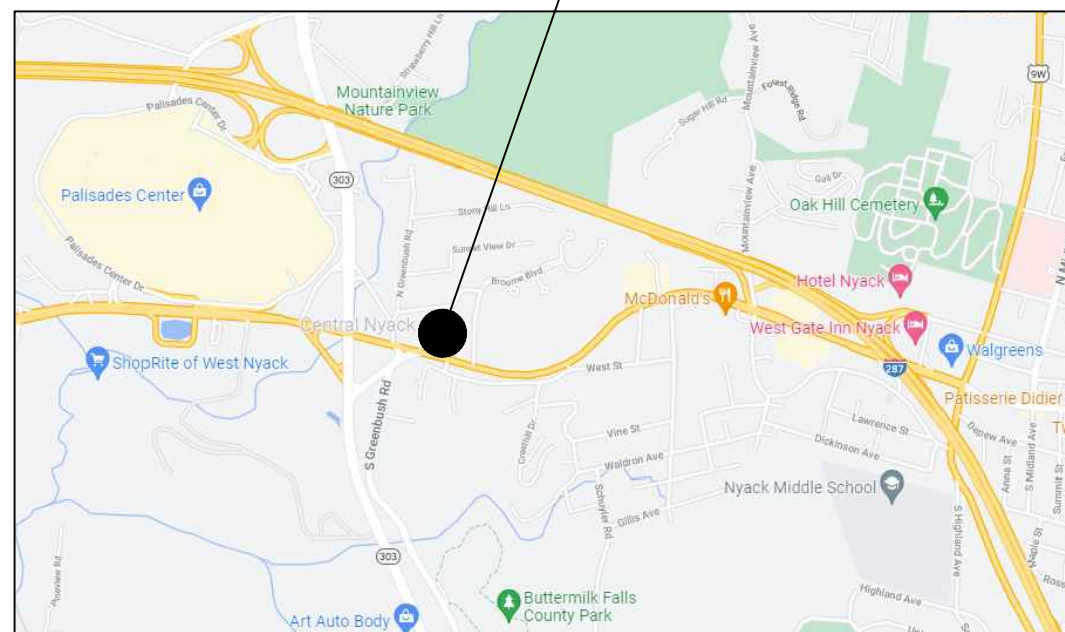
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SHEET NO.

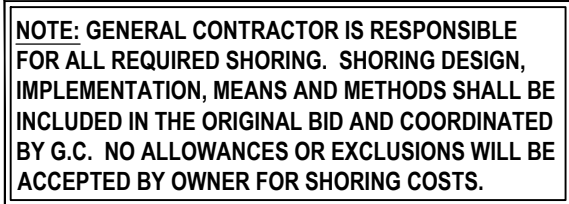
SITE VICINITY MAP

PROJECT LOCATION



SITE VICINITY MAP

SCALE = NTS



GENERAL DEMOLITION NOTES

1. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL EXISTING FIELD CONDITIONS SO AS TO BECOME FAMILIARIZED WITH THE DEMOLITION AND / OR REMOVAL WORK WHICH MAY BE REQUIRED TO PRODUCE RESULTS INTENDED IN THE CONTRACT DOCUMENTS. THE SCOPE OF WORK DESCRIBED IN THE CONTRACT DOCUMENTS ANTICIPATES THE DEMOLITION OF EXISTING CONSTRUCTION IN PART OR ITS ENTIRETY, AND THE REMOVAL, RELOCATION AND REPOWERING OF CERTAIN CONSTRUCTION MATERIAL AND EQUIPMENT, INCLUDING ITEMS BELONGING TO OTHER TENANTS WHICH MAY PASS THROUGH OR OCCUPY THIS TENANT'S SPACE. IT IS THE INTENT THAT EACH PORTION OF THE DEMOLITION AND REMODELING WORK BE DONE BY THE SPECIFIC TRADE INVOLVED IN THE INSTALLATION, (i.e. CARPENTRY WORK BY THE CARPENTRY TRADE, MECHANICAL AND ELECTRICAL WORK BY THE MECHANICAL AND ELECTRICAL TRADES ETC.). THEREFORE, EACH CONTRACTOR AND SUBCONTRACTOR SHALL THOROUGHLY EXAMINE THE PROPOSED WORK AND MAKE ALLOWANCES IN HIS PROPOSAL FOR THE COST OF ALL DEMOLITION AND/OR REMOVAL WHICH MAY BE REQUIRED TO PRODUCE THE END RESULTS INTENDED BY THE CONTRACT DOCUMENTS.
2. GENERAL CONTRACTOR TO COMPLETE ALL DEMOLITION AS NOTED IN CONTRACT DOCUMENTS AND REMOVE ALL DEBRIS AND RUBBISH FROM THE PROJECT AND BUILDING SITE.
3. ALL AREAS WHERE DEMOLITION IS TO OCCUR IS TO BE SECTIONED OFF FROM THE PUBLIC AND ALL REQUIRED SHORING, BARRICADING, AND SCAFFOLDING TO BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
4. ALL WORK TO BE IN ACCORDANCE WITH O.S.H.A. REQUIREMENTS.
5. ALL RUBBISH AND DEBRIS TO BE REMOVED FROM THE PROJECT SITE WITHIN A 24 HOUR PERIOD OR PLACED IN PRE-APPROVED DUMPSTER LOCATIONS FOR REMOVAL OR DUMPSTER CHANGE OUT DAILY. THIS CONTRACTOR TO RECEIVE APPROVAL OF DUMPSTER LOCATION FROM BUILDING LANDLORD REPRESENTATIVE.
6. DEBRIS REMOVED FROM THE PROJECT SITE TO BE DUMPED IN ONLY APPROVED DUMPING SITE. ANY ASBESTOS REMOVAL OR DEBRIS DUMPING TO BE COMPLETED BY THIS CONTRACTOR, PER PROPER APPROVALS.
7. GENERAL CONTRACTOR TO CONTACT BUILDING LANDLORD REPRESENTATIVE AND ALL UTILITY COMPANY REPRESENTATIVES HAVING JURISDICTION OVER THIS PROJECT TO ASCERTAIN BUILDING AND UTILITY COMPANY LINES ABOVE, WITHIN, OR BELOW PREMISES TO AVOID ANY POSSIBILITIES OF CUTTING SHUT LINES, CAUSING ESCAPMENTS, ETC.
8. GENERAL CONTRACTOR IS RESPONSIBLE FOR THE CORE DRILL OF CONCRETE SLAB AT ALL AREAS WHERE UNDER SLAB MECHANICAL, PLUMBING AND ELECTRICAL WORK OCCURS. REVIEW AND COORDINATE EXACT LOCATIONS AND SIZES WITH THE MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS. NOTE: DO NOT CUT SLAB WITHOUT WRITTEN APPROVAL FROM LANDLORD.
9. ALL WORK TO BE COMPLETED FOLLOWING LANDLORD'S CONSTRUCTION "RULES AND REGULATIONS".
10. DEMOLITION OR DEMOLITION REMOVAL TO BE COMPLETED IN A MANNER THAT DOES NOT DISTURB ADJACENT TENANTS OR DISRUPT THE OPERATION OF ADJACENT TENANTS.
11. PROTECTION OF ADJACENT TENANTS OR SPACES IS REQUIRED PRIOR TO DEMOLITION.
12. ALL CUTTING OF SERVICES OR UTILITIES AFFECTING THE BUILDING COMPLEX OR ADJACENT TENANTS INCLUDING SPRINKLER OPERATION TO BE COMPLETED ON "OFF HOURS", COORDINATE ALL SHUT DOWNS WITH LANDLORD, A 48 HOUR NOTICE REQUIRED.
13. REFER TO ELECTRICAL DRAWINGS FOR ELECTRICAL DEMOLITION.
14. REFER TO MECHANICAL / PLUMBING DRAWINGS FOR MECHANICAL / PLUMBING DEMOLITION.
15. DEMOLITION WORK TO BE PHASED TO ALLOW PROPER EGRESS FOR ANY PERSON IN CASE OF FIRE OR HAZARD AND NO DEMOLITION WORK CAN OCCUR IF THE WORK JEOPARDIZES A MEANS OF EGRESS FOR THE PUBLIC OR PROJECT EMPLOYEES.
16. ALL FLOORING MATERIALS TO BE REMOVED, UNLESS NOTED OTHERWISE.
17. ALL LABOR TO BE COMPATIBLE WITH OTHER LABOR COMPLETING WORK IN THE BUILDING
18. ANY LANDLORD COMPONENT THAT IS EXISTING IN THE SPACE MUST REMAIN VISIBLE AND ACCESSIBLE TO THE LANDLORD. (DUCTWORK, CLEANOUTS, ETC.) LABEL CLEARLY IN TENANT SPACE. PROVIDE ACCESS PANELS.
19. HFT CONSTRUCTION MAY ATTACH TO BUILDING STRUCTURE ONLY. (NO ATTACHMENT TO ROOF DECK, LATERAL BRIDGING, CONDUITS, DUCTWORK, ETC., IS ALLOWED FOR STABILITY.)
20. IF ANY PENETRATIONS ARE OBSERVED OR SAW-CUT, CONTRACTOR MUST X-RAY OR OTHERWISE SATISFACTORILY VERIFY THERE ARE NO EXISTING HIDDEN CONDITIONS PRIOR TO COMMENCING CORING/DRILLING OR SAW CUTTING.
21. ALL EXISTING CONSTRUCTION NOT SCHEDULED FOR RE-USE OR NOTED TO BE ABANDONED IN PLACE MUST BE COMPLETELY DEMOLISHED AND PROPERLY DISPOSED OF OFF SITE. ALL UTILITIES MUST BE REMOVED TO THEIR POINT OF ORIGIN.

200 SERIES DEMOLITION KEY NOTES

200. LOCATION OF LEASE LINE (LOCATED @ CENTERLINE OF DEMISING WALL).
201. REMOVE ALL EXISTING FLOOR FINISHES, PATCH AND REPAIR ANY DAMAGED SECTION OF CONCRETE SLAB. PREPARE SLAB TO RECEIVE SCHEDULED FINISHES (TYPICAL THROUGHOUT SPACE UNLESS NOT OTHERWISE).
202. REMOVE FIXTURES (FIXED OR FREE-STANDING) THROUGHOUT THE SPACE.
203. REMOVE ALL ABANDONED EQUIPMENT IN HFT SPACE.
204. ALL DIMENSIONS TO BE FIELD VERIFIED AFTER DEMOLITION HAS BEEN COMPLETED. NOTIFY HFT PROJECT MANAGER IMMEDIATELY OF ANY DISCREPANCIES. HFT G.C. IS REQUIRED TO VISIT PROJECT SITE AND VERIFY ALL EXISTING CONDITIONS PRIOR TO BID.
205. REMOVE AND DISPOSE OF ALL ELECTRICAL EQUIPMENT NOT TO BE RE-USED, INCLUDING BUT NOT LIMITED TO, JUNCTION BOXES, CONDUIT, WIRING, ETC. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL DEMOLITION NOTE (TYPICAL THROUGHOUT SPACE).
206. ALL REMAINING OUTLETS, DRAINS, HOLES, ETC. IN THE FLOOR SHALL BE COMPLETELY CUT OUT AND CONCRETE REPLACED. CONCRETE SLAB INFILL AREAS OVER 12"X12" TO BE DOWELED INTO EXISTING ADJACENT SLAB. SEE DETAILS **485A4.1** FOR ADDITIONAL INFORMATION. REFER TO SHEETS **A0.3 & A0.4** FOR CONCRETE SPECIFICATIONS.
207. EXISTING STRUCTURAL COLUMN, G.C. TO REMOVE EXISTING COLUMN ENCLOSURE. PREP. COLUMN FOR PAINT.
208. SAW-CUT AND REMOVE PORTION OF EXISTING CONCRETE SLAB FOR PLUMBING TRENCH (APPROX. **375 S.F.**) TRENCH LAYOUT FOR REFERENCE ONLY. G.C. SHALL VERIFY DEPTH OF SANITARY TIE-IN POINT AND CONFIRM ADEQUATE FALL FOR THE SEWER LINE. PRIOR TO TRENCHING CONCRETE NOTIFY ARCHITECT IF ADEQUATE FALL IS NOT ACHIEVABLE. INFILL-TRENCH WITH CONCRETE TO MATCH AND ALIGN WITH ADJACENT FLOOR SLAB (INCLUDING COLOR MATCH). TROWEL CONCRETE SMOOTH. SEE DETAILS **485A4.1** FOR ADDITIONAL INFORMATION. REFER TO SHEET **A0.3 & A0.4** FOR CONCRETE SPECIFICATIONS.
209. DASHED LINES INDICATE TO REMOVE WALL COMPLETELY. TYP. THROUGHOUT HFT SPACE.
210. DASHED LINES INDICATE TO REMOVE DOOR AND FRAME COMPLETELY.
211. G.C. TO REMOVE EXISTING DOOR, FRAME AND ALL ASSOCIATED MECHANISMS COMPLETELY AND PORTION OF EXISTING MASONRY AS REQUIRED FOR NEW 8'-0" X 10'-0" HD. DOOR. SHORE AS REQUIRED DURING CONSTRUCTION. SEE SHEET **A1.1** FOR ADDITIONAL INFORMATION.
212. REMOVE LAY-IN CEILING COMPLETELY, INCLUDING BUT NOT LIMITED TO: ALL MECHANICAL DEVICES (DIFFUSERS, RETURN AIR GRILLES, ETC.) AND LIGHTING FIXTURES. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
213. REMOVE LIGHT FIXTURES COMPLETELY, INCLUDING BUT NOT LIMITED TO: ALL HFT SPACE.
214. EXISTING DEMISING WALL, G.C. TO TAKE ALL NECESSARY PRECAUTIONS TO PROTECT WALL DURING CONSTRUCTION. PATCH AND REPAIR AS REQUIRED TO MAINTAIN INTEGRITY OF EXISTING FIRE RATING (TYPICAL).
215. REMOVE PORTION OF ASPHALT AND CONCRETE TRASH COMPACTOR PAD AS REQUIRED TO ACCOMMODATE FOR NEW CONCRETE PAD AND RECEIVING ENCLOSURE. G.C. TO LOCATE AND PROTECT ALL UNDERGROUND UTILITIES PRIOR TO START OF DEMOLITION WORK. SEE SHEET **A1.1** FOR ADDITIONAL INFORMATION.
216. SAW-CUT AND REMOVE PORTION OF EXISTING CONCRETE SIDEWALK AND CURB RAMPS AND EXCAVATE AS NECESSARY FOR NEW CONCRETE SIDEWALK AND CURB RAMP. G.C. TO LOCATE AND PROTECT ALL UNDERGROUND UTILITIES PRIOR TO START OF DEMOLITION WORK. SEE SHEET **A1.1** FOR ADDITIONAL INFORMATION.
217. REMOVE PORTION OF MASONRY WALL FOR INSTALLATION OF NEW BI-PARTING DOOR. SEE SHEETS **A1.1** AND **A5.0** FOR ADDITIONAL INFORMATION.
218. HARBOR FREIGHT G.C. TO REMOVE ANY EXISTING SIGNAGE. TYP. G.C. TO COORDINATE WITH LANDLORD AS REQUIRED.
219. REMOVE EXISTING UPPER LAYER OF COR. BID, STARTING AT APPROX. 5'-0" A.F.F. G.C. TO PATCH AND REPAIR LAYER OF EXISTING WOOD FLOORING AND GYP. BD. BENEATH AND START GYP. BD. TO RECEIVE NEW FIXTURES AND FINISHES. SEE SHEET **A1.1** FOR ADDITIONAL INFORMATION.
220. EXISTING ELECTRICAL EQUIPMENT PANEL LOCATION. REFER TO ELECTRICAL DRAWINGS FOR SCOPE OF WORK.
221. REMOVE EXISTING PLUMBING FIXTURE / ACCESSORY COMPLETELY. CAP AND SEAL ALL WATER AND WASTE LINES. SEE PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
222. REMOVE GYP. BD. CEILING COMPLETELY, INCLUDING, BUT NOT LIMITED TO: ALL ELECTRICAL AND MECHANICAL EQUIPMENT.
223. G.C. TO REMOVE DOOR AND FRAME COMPLETELY. G.C. TO PATCH AND REPAIR MASONRY AS REQUIRED TO PROVIDE A CLEAN AND FINISHED CONDITION.
224. EXISTING ROOF TOP DUNNAGE TO BE ABANDONED IN PLACE. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
225. G.C. TO REMOVE EXISTING TRASH COMPACTOR HATCH AND PORTION OF CMU AS REQUIRED FOR NEW 3'-0" X 7'-0" H.M. EGRESS DOOR. SHORE AS REQUIRED DURING CONSTRUCTION. SEE SHEET **A1.1** FOR ADDITIONAL INFORMATION.
226. SAW-CUT AND REMOVE PORTION OF EXISTING CONCRETE SLAB AND EXCAVATE AS NECESSARY FOR NEW CONCRETE FROST SLAB CENTERED ON DOOR OPENING. G.C. TO LOCATE AND PROTECT ALL UNDERGROUND PRIOR TO START OF DEMOLITION WORK. SEE SHEET **A1.1** FOR ADDITIONAL INFORMATION.
227. EXISTING ELECTRICAL TRENCH, AND ACCESS PANEL. INFILL TRENCH WITH CONCRETE TO MATCH AND ALIGN WITH ADJACENT FLOOR SLAB (INCLUDING COLOR MATCH). TROWEL CONCRETE SMOOTH. SEE DETAILS **485A4.1** FOR ADDITIONAL INFORMATION. REFER TO SHEET **A0.3 & A0.4** FOR CONCRETE SPECIFICATIONS.
228. SAW-CUT AND REMOVE PORTION OF EXISTING CERAMIC TILE AND SETTING BED (APPROX. 148 S.F.) TO BE REMOVED. G.C. TO REMOVE AREAS OF ELECTRICAL FLOOR BOXES, TRENCHING AND ADJACENT SLAB IN CERAMIC AREAS AS REQUIRED. G.C. TO INFILL EXCAVATED SLAB AREAS WITH CONCRETE TO MATCH AND ALIGN WITH ADJACENT FLOOR SLAB (INCLUDING COLOR MATCH). TROWEL CONCRETE SMOOTH. SEE DETAILS **45A4.1** FOR ADDITIONAL INFORMATION. SEE SHEET **A0.3** FOR CONCRETE SPECIFICATIONS.
229. SAW-CUT AND REMOVE EXISTING CONCRETE SIDEWALK AND RAMP AS REQUIRED FOR NEW CONCRETE SIDEWALK. MATCH AND ALIGN ADJACENT FLOOR SLAB (INCLUDING COLOR MATCH). G.C. TO LOCATE AND PROTECT ALL UNDERGROUND UTILITIES PRIOR TO START OF DEMOLITION WORK. SEE DETAIL **44A2.2** AND SHEET **A3.0** FOR ADDITIONAL INFORMATION.
230. REMOVE EXISTING DOOR AND FRAME, PREP OPENING FOR INFILL. SEE SHEET **A1.1** FOR ADDITIONAL INFORMATION.
231. EXISTING GAS METER TO REMAIN. PROTECT DURING DEMOLITION. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
232. G.C. TO REMOVE EXISTING MEZZANINE, CATWALK, SOFFIT AND ALL ASSOCIATED ATTACHMENTS.
233. EXISTING WATER LINE, G.C. TO PROTECT DURING CONSTRUCTION. SEE PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
234. EXISTING FIRE RISER TO REMAIN. PROTECT DURING DEMOLITION.
235. EXISTING FIRE DEPARTMENT CONNECTION TO REMAIN. PROTECT DURING DEMOLITION.
236. EXISTING DOCK LEVELER PLATFORM, CANOPY AND CONCRETE COLUMNS TO BE REMOVED COMPLETELY.
237. EXISTING TRASH COMPACTOR TO BE REMOVED.
238. EXISTING ROOF HATCH AND LADDER ON MEZZANINE. G.C. TO PROTECT EXISTING LADDER AND ASSOCIATED WALL DURING MEZZANINE DEMOLITION AND CONSTRUCTION. SEE SHEET **A1.1** FOR ADDITIONAL INFORMATION.
239. SAW-CUT AND REMOVE PORTION OF EXISTING CERAMIC TILE AND SETTING BED (APPROX. 148 S.F.) TO BE REMOVED. G.C. TO CONFIRM EXTENTS OF FREEZER SLAB TO BE REPLACED WITH HFT PM. G.C. TO LOCATE AND PROTECT ALL UNDERGROUND UTILITIES PRIOR TO START OF DEMOLITION WORK. INFILL SLAB WITH CONCRETE TO MATCH AND ALIGN WITH ADJACENT FLOOR SLAB (INCLUDING COLOR MATCH). TROWEL CONCRETE SMOOTH. SEE DETAILS **45A4.1** FOR ADDITIONAL INFORMATION. REFER TO SHEETS **A0.3** AND **A0.4** FOR CONCRETE SPECS.
240. G.C. TO REMOVE EXISTING DOOR AND FRAME COMPLETELY. G.C. TO PREP OPENING FOR NEW HOLLOW METAL DOOR AND PARTIAL CMU INFILL. SEE SHEET **A1.1** FOR ADDITIONAL INFORMATION.
241. AREA OF ROUGH CONCRETE SLAB (APPROX 21 S.F.) G.C. TO REMOVE AND REPLACE WITH NEW.

DO NOT SCALE THESE DRAWINGS	REVISIONS		<div><div><div>HARBOR FREIGHT TOOLS</div><div>314 NY ROUTE 59</div><div>NYACK, NY 10960</div></div><div>ADA ARCHITECTS SERVICES, P.C.</div><div>17710 Detroit Avenue Phone (216) 521-5134 Lakewood, Ohio 44107 Fax (216) 521-4824 www.adaarchitects.cc</div></div>	
	DEMOLITION PLAN			
	DATE 9/22/21			
	JOB NO. 20420			
	D1.0			
	SHEET NO.			

21. 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 FOR PROPER MAINTENANCE AND REMOVAL OF SAME, AND (C) PAY ALL UTILITY CHARGES INCURRED AT THE PREVAILING RATES OF THE 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 ABOVE TO, ABOVE OR NEAR SUCH UTILITIES TO AVOID ANY PROBLEMS WITH EXPLOSIONS, DISCONNECTION, REPAIRS, 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 METER ADDRESS AND PHONE NUMBERS OF THE TENANT FOR REMOVAL OF SERVICE. TENANTS G.C. UNLESS OTHERWISE NOTED, SHALL BRING IN ALL ADDITIONAL SERVICES, ADEQUATE FOR THE PROJECT, 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 ITS 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 PUMP OR TO THE POINT WHERE 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 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 CABLE SERVICE WIRE EXTENDING SUFFICIENT TO LANDLORD'S ELECTRICAL, (METER ROOM SERVICE POINT), AND INCLUDE SUCH COSTS IN THE BID TO THE TENANT.

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 IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. GENERAL CONTRACTOR TO IMMEDIATELY ADVISE TENANT OR TENANT'S REPRESENTATIVE OF ALL DAMAGED OR DEFICIENT SHIPMENTS OF MATERIALS AND EQUIPMENT, WHETHER SUPPLIED BY TENANT OR DIRECTLY BY CONTRACTOR OR ITS 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 OF THE PROJECT DUE TO DELAYS OR SHORTAGES BROUGHT TO THE ATTENTION OF THE SUPPLIER AND THE ARCHITECT. SUBMIT DEFINITION OF ALL ORDERS, DELIVERY DATES, AND A FULL WRITTEN SCHEDULE TO TENANT'S ARCHITECT.

LVT INSTALLATION NOTES:

BEFORE STARTING THE JOB:

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

STORAGE AND HANDLING:

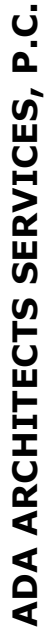
1. THE BUILDING MUST BE ENCLOSED AND THE HVAC IN CONTINUOUS OPERATION. THE LVT AND ADHESIVE MUST BE CONDITIONED TO ROOM TEMPERATURE FOR 7 DAYS PRIOR TO INSTALLATION. DURING THE INSTALLATION AND CONTINUOUS FOLLOWING COMPLETION OF THE INSTALLATION, THE AMBIENT AIR RELATIVE HUMIDITY MUST BE BETWEEN 10% - 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.
2. STONE CARTONS OF TILE OR PLANK PRODUCTS FLAT AND SQUARELY ON TOP OF ONE ANOTHER. PREFERABLY, LOCATE MATERIAL IN THE "CENTER" OF INSTALLATION AREA (I.E. AWAY FROM VENTS, DIRECT SUNLIGHT, ETC.) STORING CARTONS IN DIRECT SUNLIGHT MAY AFFECT PROPER ACCLIMATION BY INDUCING THERMAL EXPANSION / CONTRACTION.

JOB SITE CONDITIONS:

1. AREAS TO RECEIVE LVT FLOORING SHOULD BE ADEQUATELY ILLUMINATED DURING ALL PHASES OF THE INSTALLATION PROCESS.
2. CONTROLLED ENVIRONMENTS ARE CRITICAL. **DO NOT** INSTALL LVT FLOORING PRODUCTS UNTIL THE WORK AREA CAN BE TEMPERATURE CONTROLLED.
3. PORTABLE HEATERS ARE NOT ACCEPTABLE.
4. KEROSENE HEATERS SHOULD NEVER BE USED WHERE FLOOR COVERING PRODUCTS WILL BE INSTALLED. THEY HEAT THE AIR, NOT THE SUBSTRATE. 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.

ABOVE 85 DEGREES FAHRENHEIT REGARDLESS OF THE AGE OF THE INSTALLATION.

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THESE DOCUMENTS CONTAIN INFORMATION PROPRIETARY TO ADA ARCHITECTS SERVICES, P.C.
UNAUTHORIZED USE OF THESE DOCUMENTS IS EXPRESSLY PROHIBITED UNLESS AGREED UPON IN WRITING.

SHEET NO. _____

Harbor Freight Tools Retrofit Concrete Repair Specification

PART 1 GENERAL

- 1.01

SCOPE

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:

1.

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

QUALITY 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-77" 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

3.

Joint / Crack Materials:

a.

Single Component Polyurethane (Gun and Pourable Grade): Provide the following:
"Eucoelastic 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.

3.01

ESTIMATING

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:
"Euocrete" by Euclid Chemical

5.

Underlayment for Soft Floor Coverings: Product shall be a one component, free-flowing, self-leveling, 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, self-leveling 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

3.02

PREPARATION

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 "Euocrete" 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 doveled 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

DO NOT SCALE THESE DRAWINGS

HARBOR FREIGHT TOOLS

NYACK, NY 10960

314 NY ROUTE 59

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CONCRETE SPECIFICATIONS

DATE 9/22/21

JOB NO. 20420

A0.3

SHEET NO.

(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 floors

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

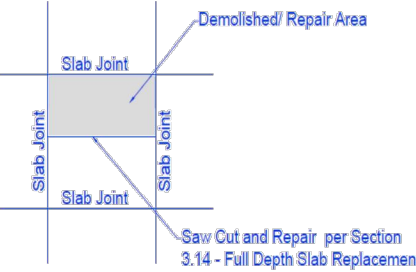
3.06 FULL DEPTH, PARTIAL SLAB REPAIR (INTERIOR OR EXTERIOR)

A. Slab defects that exhibit severe pitting or spalling, which exceeds a third of the slab panel area or ¼" 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.

- D. Repair:
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 grassed on the other half for new slab installation. All dowels



grassed 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, use a finishing aid.

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 or dislodge from sawing.

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)	3oz.-10oz./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

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

3.10 CLEAN-UP

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

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, use a finishing aid.

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 or dislodge from sawing.

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)

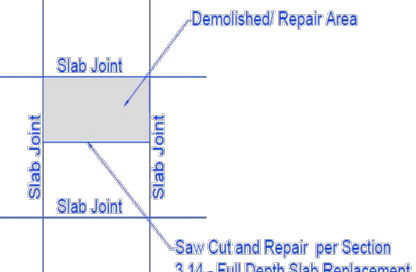
3.07 FULL DEPTH, COMPLETE SLAB REPLACEMENT (INTERIOR)

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.

- D. Repair:
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'S 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, APPLICATIONS, AND CONDITIONS.

- A. SURFACE CLEANING OF JOINTS: CLEAN JOINTS IMMEDIATELY BEFORE INSTALLING JOINT FILLER. REMOVE FOREIGN MATERIAL THAT COULD INTERFERE WITH ADHESION 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.
- B. MIXING: JOINT FILLER IS A TWO-PART PRODUCT REQUIRING MACHINE MIXING AND PLACING. PREPARE PART 'B' SEPARATELY BEFORE USING. FOLLOW PUMP MANUFACTURER'S EQUIPMENT INSTRUCTIONS.
- C. 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.
- D. 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 'EUCCO CLEAN & STRIP'
1. KUREZ RC (SLAB LAST); EUCLID '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.

- A. 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 EQUIPMENT, 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.
1. 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. 'EUCCO CLEAN & STRIP' BY EUCLID CHEMICAL.
 - b. IF WATER SOAKS INTO THE SURFACE INDICATING CURING AND SEALING COMPOUNDS ARE NOT PRESENT, MOVE TO STEP 3.
 2. 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".
- B. INITIAL GRIND AND HONE PROCESS:
1. START INITIAL GRIND WITH APPROPRIATE RESIN BOND DIAMOND TOOLING AS DETERMINED FROM MOCK-UP TEST SLAB.
 2. 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).
 3. ONCE COMPLETED, CLEAN OPENED FLOOR THOROUGHLY, AND THEN APPLY EUCCO 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:
1. 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 EUCCO DIAMOND HARD LIGHTLY AT 700 SQUARE FEET PER GALLON JUST PRIOR TO BURNISHING.
 4. CLEAN FLOOR AND BURNISH WITH 1500 GRIT DIAMOND PAD AT 500 SQUARE FEET PER HOUR WITH A 27" BURNISHER AT 2500 RPM.
- D. POLISH RESULTS: PERFORM POLISHING PROCESS TO REACH A SPECIFIED OVERALL GLOSS VALUE (SOGV) OF 335 AS MEASURED WITH A HORIBA IG-320. AND A SPECIFIED MINIMUM GLOSS READING (GMGR) OF 320. 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 UNIT.

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
1. 1ST COAT 1 PART SURFHARD TO 2 PARTS WATER
 2. 2ND COAT 1 PART SURFHARD TO 1 PART WATER
 3. 3RD COAT 2 PARTS SURFHARD TO 1 PART WATER

- b. COVERAGE RATE
- | | UNDILUTED SURFHARD | DILUTED SURFHARD |
|--------------|-------------------------------------|------------------------------------|
| 1. 1ST COAT: | 900 FT ² /GAL (22.1 MPL) | 300 FT ² /GAL (7.4 MPL) |
| 2. 2ND COAT: | 400 FT ² /GAL (9.8 MPL) | 200 FT ² /GAL (4.9 MPL) |
| 3. 3RD COAT: | 225 FT ² /GAL (5.5 MPL) | 150 FT ² /GAL (3.7 MPL) |

c. 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 17 DAYS OLD PRIOR TO APPLICATION. EXTREMELY SOFT AND POROUS SURFACES SHOULD BE SATURATED WITH WATER PRIOR TO APPLICATION. WHEN THE SURFACE IS DRY, APPLY 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.

d. MIXING: SURFHARD IS EASILY DILUTED IN WATER WITH MILD AGITATION.

e. 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 TREATMENT.

2. 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) |

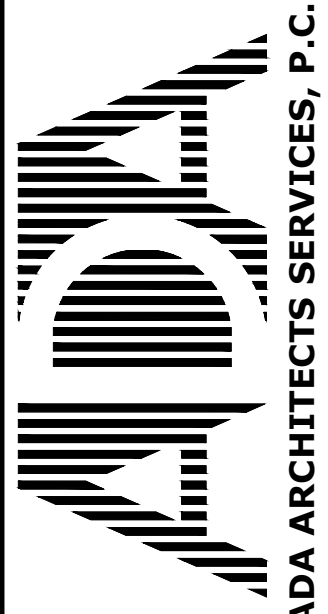
b. MATERIAL REQUIREMENTS: A TWO COAT APPLICATION USING A COVERAGE RATE OF 200 FT²/GAL (4.9 M2/L) WILL REQUIRE APPROXIMATELY 5 GAL (18.9 L) OF MATERIAL PER 1000 FT² (92.9 M2) OF AREA. TWO COATS ARE RECOMMENDED FOR BEST RESULTS. THE CONCRETE SURFACE TEXTURE GREATLY AFFECTS COVERAGE RATES AND FINAL APPEARANCE. 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 EUCCO #512 VOX EPOXY SEALER. HOWEVER, BEST RESULTS ARE OBTAINED WHEN THE CONCRETE IS DAMP WITH ALL PUDDLES REMOVED.

d. MIXING: ALL MATERIALS SHOULD BE IN THE PROPER TEMPERATURE RANGE OF 60° 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.



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CONCRETE SPECIFICATIONS

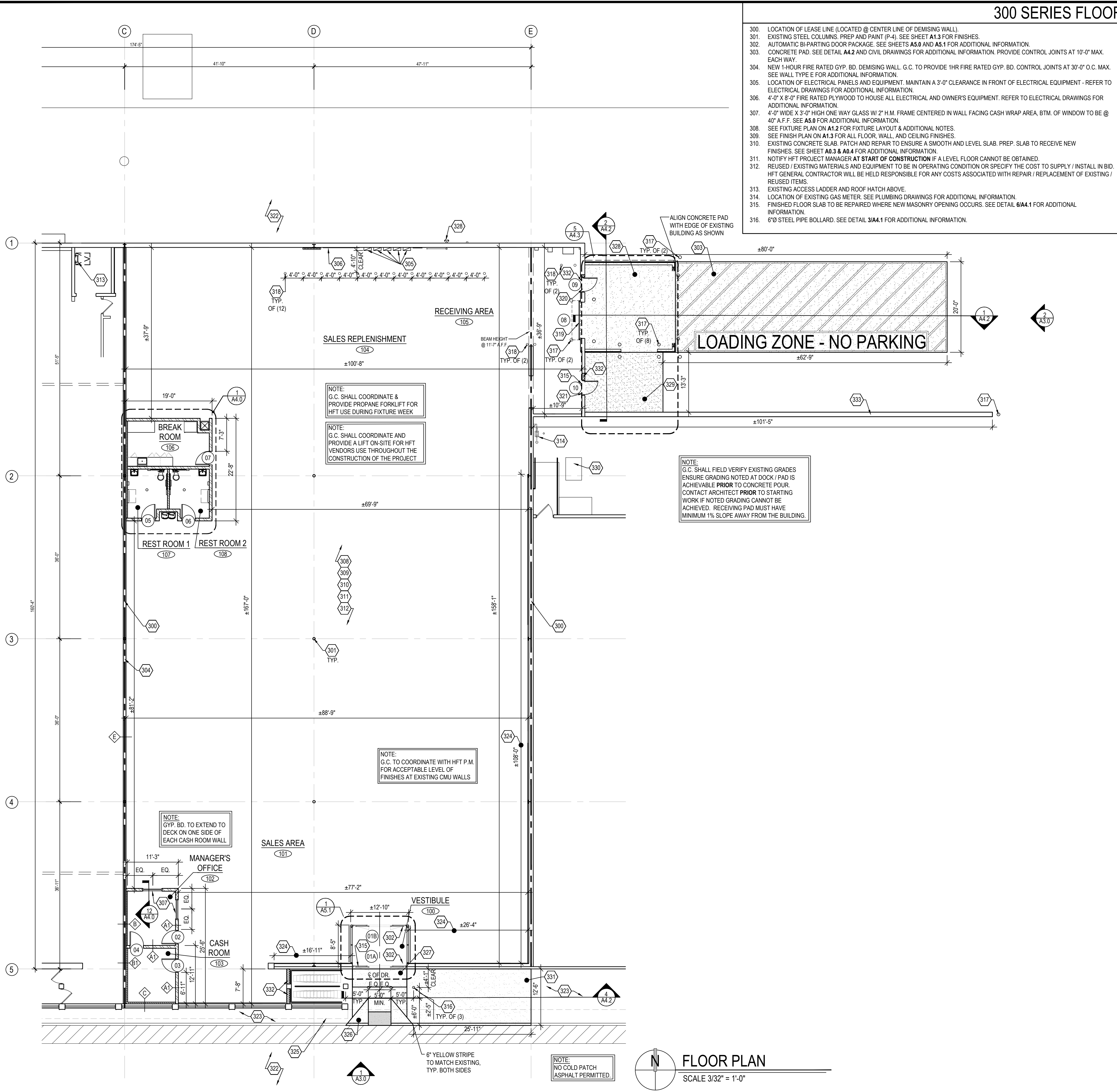
DATE 9/22/21

JOB NO. 20420

A0.4

SHEET NO.

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- 300 SERIES FLOOR PLAN KEY NOTES**
- 300. LOCATION OF LEASE LINE (LOCATED @ CENTER LINE OF DEMISING WALL).
 - 301. EXISTING STEEL COLUMNS. PREP AND PAINT (P-4). SEE SHEET A1.3 FOR FINISHES.
 - 302. AUTOMATIC BI-PARTING DOOR PACKAGE. SEE SHEETS A5.0 AND A5.1 FOR ADDITIONAL INFORMATION.
 - 303. CONCRETE PAD. SEE DETAIL A4.2 AND CIVIL DRAWINGS FOR ADDITIONAL INFORMATION. PROVIDE CONTROL JOINTS AT 10'-0" MAX. EACH WAY.
 - 304. NEW 1-HOUR FIRE RATED GYP. BD. DEMISING WALL. G.C. TO PROVIDE 1HR FIRE RATED GYP. BD. CONTROL JOINTS AT 30'-0" O.C. MAX. SEE WALL TYPE E FOR ADDITIONAL INFORMATION.
 - 305. LOCATION OF ELECTRICAL PANELS AND EQUIPMENT. MAINTAIN A 3'-0" CLEARANCE IN FRONT OF ELECTRICAL EQUIPMENT - REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
 - 306. 4'-0" X 8'-0" FIRE RATED PLYWOOD TO HOUSE ALL ELECTRICAL AND OWNER'S EQUIPMENT. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
 - 307. 4'-0" WIDE X 3'-0" HIGH ONE WAY GLASS W/ 2" H.M. FRAME CENTERED IN WALL FACING CASH WRAP AREA, BTM. OF WINDOW TO BE @ 40" A.F.F. SEE A5.0 FOR ADDITIONAL INFORMATION.
 - 308. SEE FIXTURE PLAN ON A1.2 FOR FIXTURE LAYOUT & ADDITIONAL NOTES.
 - 309. SEE FINISH PLAN ON A1.3 FOR ALL FLOOR, WALL, AND CEILING FINISHES.
 - 310. EXISTING CONCRETE SLAB. PATCH AND REPAIR TO ENSURE A SMOOTH AND LEVEL SLAB. PREP. SLAB TO RECEIVE NEW FINISHES. SEE SHEET A0.3 & A0.4 FOR ADDITIONAL INFORMATION.
 - 311. NOTIFY HFT PROJECT MANAGER **AT START OF CONSTRUCTION** IF A LEVEL FLOOR CANNOT BE OBTAINED.
 - 312. REUSED / EXISTING MATERIALS AND EQUIPMENT TO BE IN OPERATING CONDITION OR SPECIFY THE COST TO SUPPLY / INSTALL IN BID. HFT GENERAL CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY COSTS ASSOCIATED WITH REPAIR / REPLACEMENT OF EXISTING / REUSED ITEMS.
 - 313. EXISTING ACCESS LADDER AND ROOF HATCH ABOVE.
 - 314. LOCATION OF EXISTING GAS METER. SEE PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
 - 315. FINISHED FLOOR SLAB TO BE REPAIRED WHERE NEW MASONRY OPENING OCCURS. SEE DETAIL 6/A4.1 FOR ADDITIONAL INFORMATION.
 - 316. 6"Ø STEEL PIPE BOLLARD. SEE DETAIL 3/A4.1 FOR ADDITIONAL INFORMATION.
 - 317. 8"Ø STEEL PIPE BOLLARD. ALIGN CENTERLINE OF BOLLARD WITH EDGE OF DOOR OPENING AT OVERHEAD DOOR. SEE DETAIL 3/A4.1 FOR ADDITIONAL INFORMATION.
 - 318. 6"Ø BOLT DOWN BOLLARD PROVIDED BY HFT. SEE SHEET A1.12 FOR ADDITIONAL INFORMATION.
 - 319. OVERHEAD DOOR TO BE INSTALLED IN MODIFIED OPENING. SHORE AS REQUIRED. SEE DETAIL 8/A4.1 AND SHEETS D1.0, A5.0 AND STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
 - 320. HOLLOW METAL EGRESS DOOR AND FRAME TO BE INSTALLED IN EXISTING OPENING. SEE SHEET A5.0 FOR ADDITIONAL INFORMATION.
 - 321. HOLLOW METAL EGRESS DOOR AND FRAME TO BE INSTALLED AT NEW OPENING. SHORE AS REQUIRED. SEE SHEETS D1.0, A5.0 AND STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
 - 322. EXISTING ASPHALT.
 - 323. EXISTING CONCRETE SIDEWALK.
 - 324. AFTER REMOVAL OF EXISTING CEILINGS AND UPPER PORTION OF GYP. BD. G.C. SHALL INSTALL NEW GYP. BD. (TO MATCH EXISTING) ABOVE EXISTING GYP. BD. AS REQUIRED TO ENSURE THE WALL EXTENDS TO UNDERSIDE OF EXISTING ROOF DECK ABOVE. G.C. SHALL PATCH AND REPAIR EXISTING GYP. BD. TO A SMOOTH AND UNIFORM SURFACE AND FINISH ALL GYP. BD. PER ROOM FINISH SCHEDULE ON A1.3. SEE SHEET A1.3 FOR ADDITIONAL INFORMATION.
 - 325. LINE OF CANOPY ABOVE. SEE SHEET A3.0 FOR ADDITIONAL INFORMATION.
 - 326. CONCRETE ACCESSIBLE ENTRY RAMP. SEE SHEET A5.1.0 FOR ADDITIONAL INFORMATION.
 - 327. FROST SLAB @ CENTER LINE OF DOOR. SEE DETAIL 9/A4.1 FOR ADDITIONAL INFORMATION.
 - 328. EXISTING FIRE DEPARTMENT CONNECTION AND 4" DIA. RISER. SEE FIRE PROTECTION DRAWINGS FOR ADDITIONAL INFORMATION.
 - 329. CONCRETE FORKLIFT AND EGRESS LANDING. SEE SHEET A4.2 FOR ADDITIONAL INFORMATION.
 - 330. EXISTING PAD MOUNTED TRANSFORMER.
 - 331. NEW CONCRETE SIDEWALK TO MATCH AND ALIGN WITH EXISTING ADJACENT (INCLUDING COLOR FINISH). SEE SHEET A4.2 FOR ADDITIONAL INFORMATION.
 - 332. CMU WALL INFILL. NEW MATERIALS TO MATCH AND ALIGN WITH EXISTING, ADJACENT. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
 - 333. NEW CONCRETE RETAINING WALL. SEE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.

- FLOOR PLAN NOTES**
- 1. REFER TO GENERAL NOTES ON SHEET A0.2 FOR ADDITIONAL INFORMATION.
 - 2. HFT GENERAL CONTRACTOR TO VISIT SITE AND VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING PROPOSALS AND COMMENCING WORK.
 - 3. HFT GENERAL CONTRACTOR IS TO PROVIDE FULL TIME SUPERVISION OF PROJECT. NOTIFY HFT PROJECT MANAGER OF TYPICAL WORK HOURS.
 - 4. HFT GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATION AND TIMING OF ALL HFT VENDOR INSTALLATIONS. COORDINATE WITH HFT PROJECT MANAGER FOR LIST AND MILESTONE TIMING.
 - 5. HFT GENERAL CONTRACTOR IS RESPONSIBLE FOR UNLOADING AND HANDLING ALL OWNER SUPPLIED MATERIAL AND DISPOSAL OF ALL PACKING MATERIALS AT THE JOB SITE.
 - 6. HFT GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR QUALITY AND FIT OF ALL MATERIALS, INCLUDING, BUT NOT LIMITED TO, ALL REFINISHED MATERIALS. ALL REFINISHED MATERIALS TO APPEAR NEW.
 - 7. HFT GENERAL CONTRACTOR TO COORDINATE WITH HFT'S FIXTURE MANUFACTURE TO ENSURE FINISHES TO MATCH.
 - 8. IF THE CONTRACTOR CONSIDERS ANY SURFACE UNSUITABLE FOR A PROPER FINISH, HE SHALL NOTIFY HFT AND ARCHITECT OF THE CONDITION AND NOT COMMENCE WORK UNTIL DIRECTED BY HFT OR ARCHITECT.
 - 9. HFT GENERAL CONTRACTOR TO NOTIFY OWNER OF ANY DAMAGES / SHORTAGES WITHIN 48 HOURS OF RECEIPT OR BEAR RESPONSIBILITY FOR REPLACEMENT OF SUCH.
 - 10. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE PUBLISHED INSTALLATION SPECIFICATIONS AND PROCEDURES OF THE MANUFACTURER OF THE MATERIAL USED.
 - 11. PROTECT OTHER WORK AND MERCHANDISE AS REQUIRED TO PREVENT ANY DAMAGE.
 - 12. PROVIDE A CLEAN SMOOTH CONCRETE SURFACE FOR PROPER INSTALLATION OF ALL FLOOR FINISHES.
 - 13. APPLICATIONS OF PAINT SHALL BE ONE COAT PRIMER AND TWO COATS PAINT (U.N.O.). PRIMER SHALL BE SPECIFIED OR RECOMMENDED BY PAINT MANUFACTURER.
 - 14. ALL ADHESIVES TO BE SUPPLIED BY HFT GENERAL CONTRACTOR. THE TYPE TO BE USED AS RECOMMENDED BY WALL COVERING MANUFACTURER SELECTED FOR THE TYPE OF INSTALLATION.
 - 15. GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO INSPECT ALL WALL COVERING FOR QUALITY AND DEFECTS PRIOR TO INSTALLATION.
 - 16. ALL SURFACES TO RECEIVE FABRIC OR WALL COVERING AS SELECTED SHALL BE PROPERLY PREPARED AND SIZED AS RECOMMENDED BY WALL COVERING MANUFACTURER SELECTED FOR THE TYPE OF INSTALLATION. CONTRACTOR SHALL NOTIFY HFT OF ANY SURFACE NOT SUITABLE FOR PROPER APPLICATION OF WALL COVERING. DO NOT APPLY ANY MATERIAL UNTIL SITUATION IS RESOLVED.
 - 17. HFT GENERAL CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF BLOCKING FOR ALL WALL AND CEILING SUPPORTED ITEMS IN STORE. REVIEW ITEMS THOROUGHLY. COORDINATE WITH VENDOR AS NECESSARY.
 - 18. HFT GENERAL CONTRACTOR TO ENSURE TIGHT, SECURE, AND PROPER FASTENING OF ALL STANDARDS TO METAL STUDS.
 - 19. ALL DIMENSIONS ARE FROM FACE OF GYP. BD. U.N.O.
 - 20. ALL INTERIOR DOORS ARE 5" OFF WALL U.N.O.
 - 21. ALL EXPOSED WALLS TO UNDERSIDE OF STRUCTURE SHALL BE BUILT TIGHTLY AROUND STRUCTURE, PIPING, ETC.

WALL LEGEND	
SYMBOL	DESCRIPTION
	EXISTING WALL
	MASONRY WALL INFILL. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
	NEW WALL. SEE WALL TYPES ON SHEET A4.1 FOR ADDITIONAL INFORMATION.
	WALL TYPE DESIGNATION. SEE SHEET A4.1 FOR ADDITIONAL INFORMATION
NOTE: 1. ALL WALLS BRACED TO STRUCTURE ABOVE @ 4'-0" O.C. MAX. 2. ALL WALLS TO BE PAINTED TO 6" ABOVE CEILING, TO UNDERSIDE OF DECK (IF CEILING IS OPEN TO STRUCTURE), AND BEHIND ALL WALL FIXTURES BY CONTRACTOR.	

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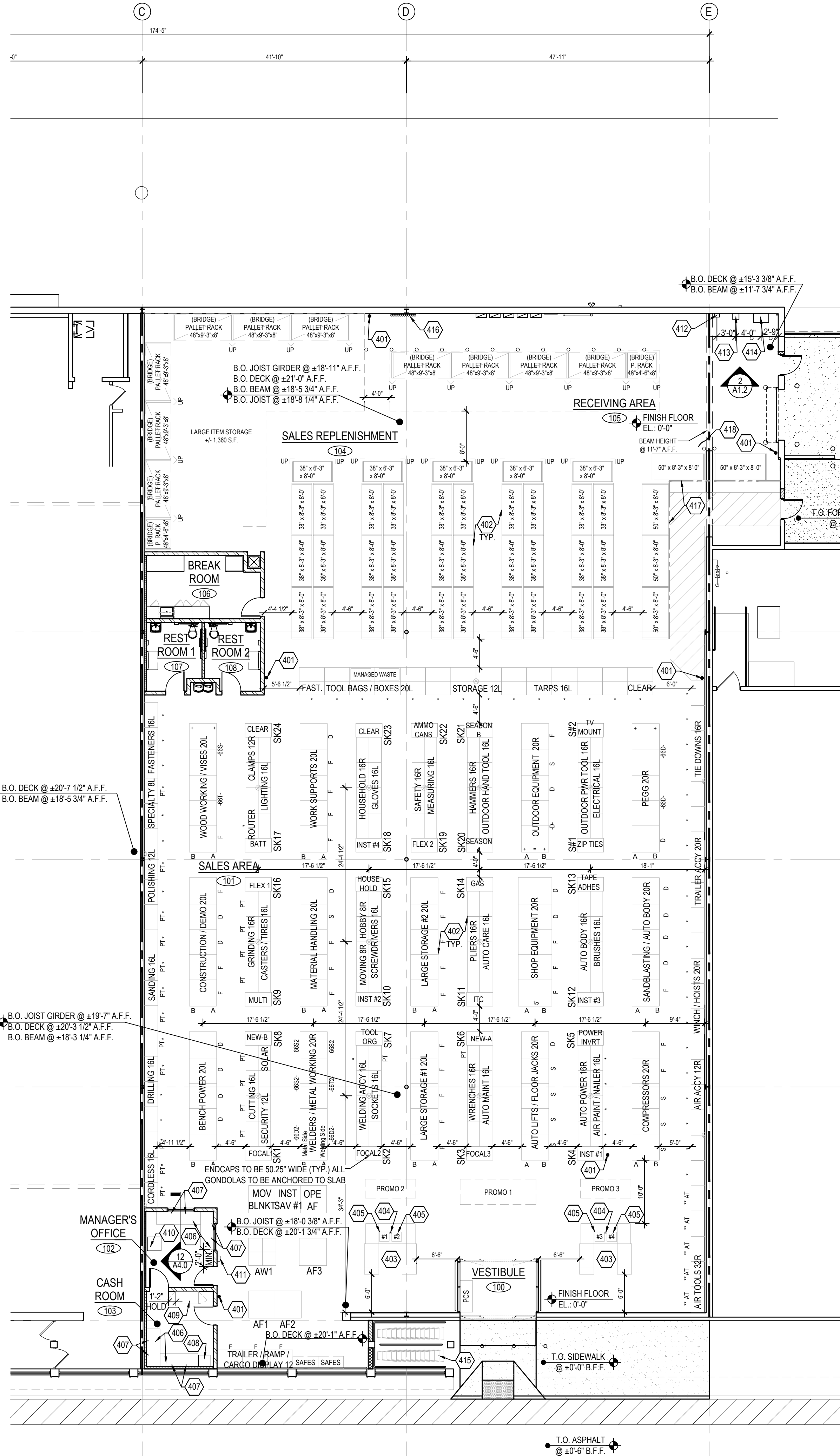
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FLOOR PLAN

DATE 9/22/21
JOB NO. 20420

A1.1
SHEET NO.

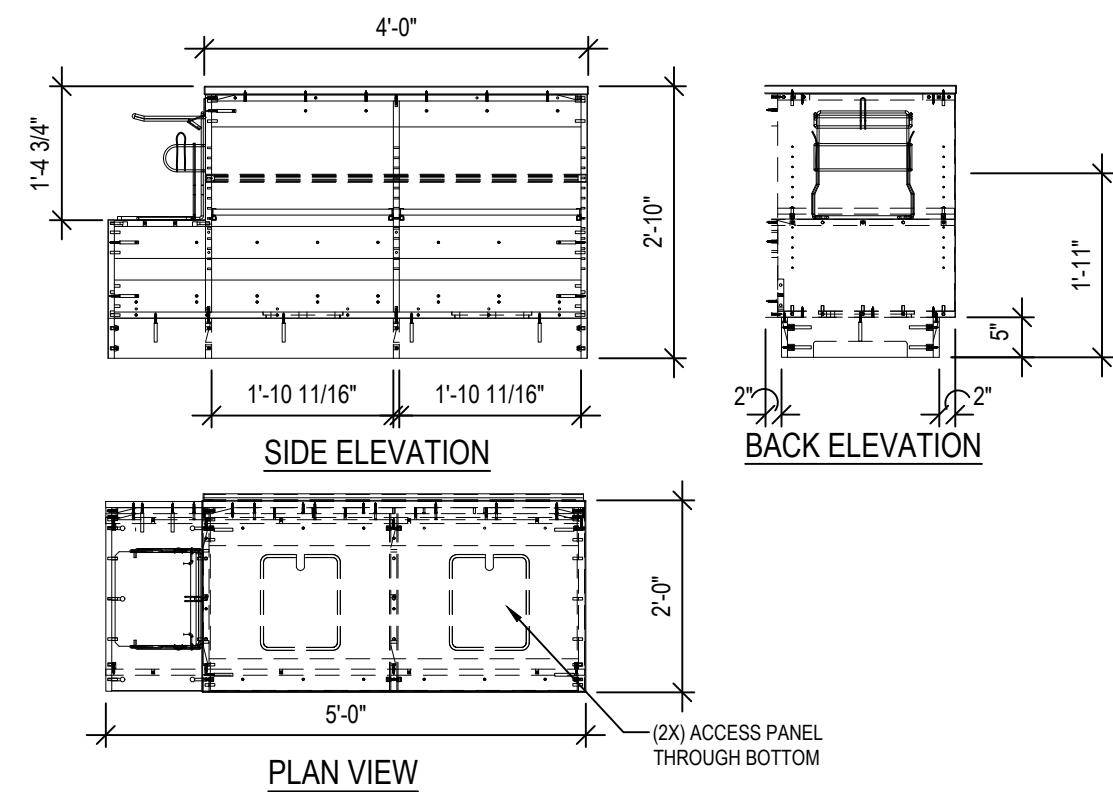


FIXTURE PLAN KEY		
SYMBOL	DESCRIPTION	HEIGHT
AW	ADVERTISING 4 WAY	4'-0" A.F.F.
AF	ADVERTISING FLAT	0'-0" A.F.F.
G	GONDOLA	7'-0" A.F.F. (Consider all unmarked fixtures to be Gondola's)
D	DOUBLE TABLE	1'-9" A.F.F. - 3'-8" A.F.F.
S	SINGLE TABLE	3'-8" A.F.F.
F	FLAT DISPLAY MAT	0'-0" A.F.F.
XP	EXTENDED PEG PANEL	7'-0" A.F.F.
PT	POWER TOOL DISPLAY	7'-0" A.F.F.
AT	AIR TOOL DISPLAY	7'-0" A.F.F.
MPR	MOTOR/ PUMP RACK	7'-0" A.F.F.
B	BOX STOCK ON DISPLAY FLAT	---
UP	UPRIGHT PROTECTOR	---

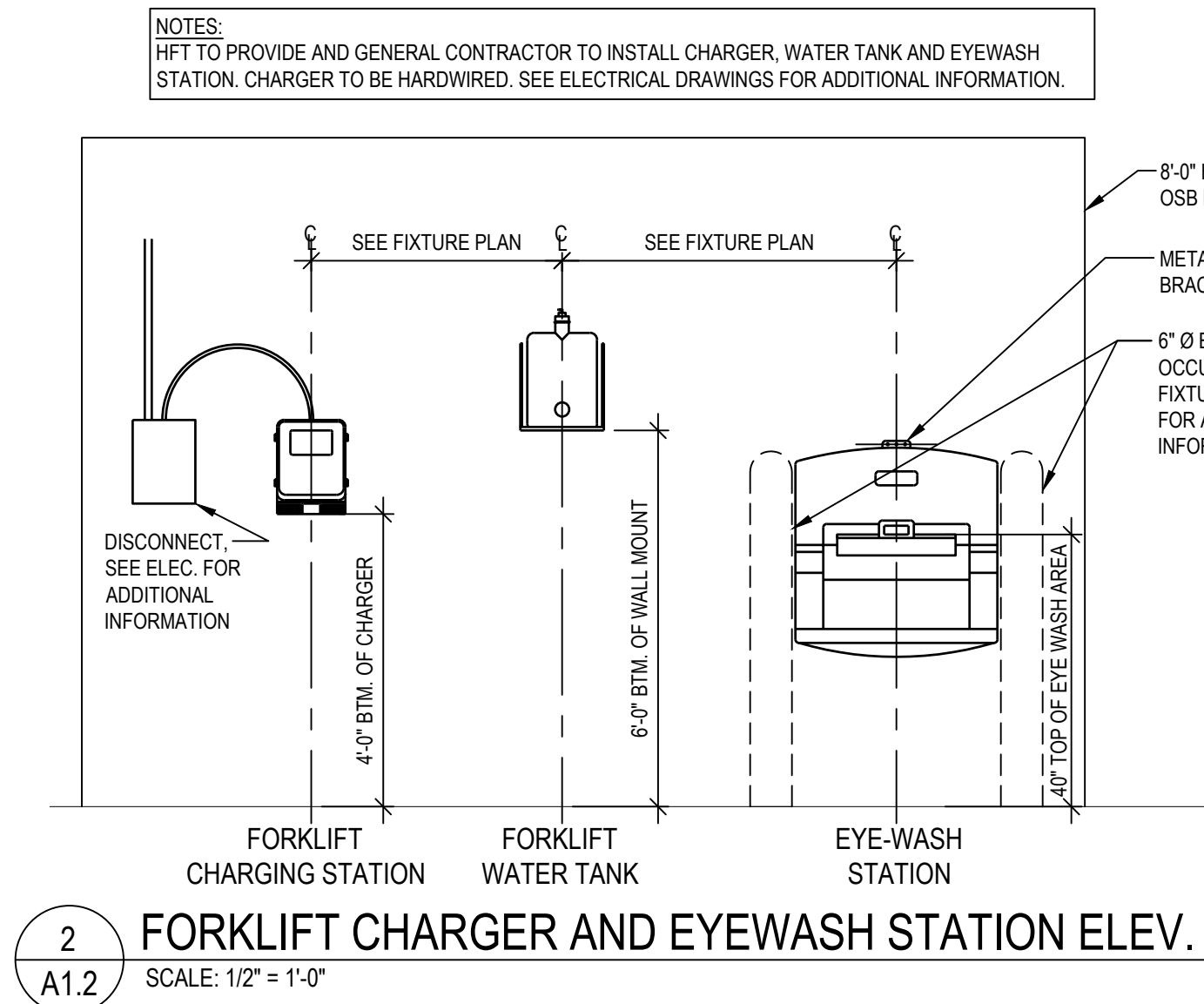
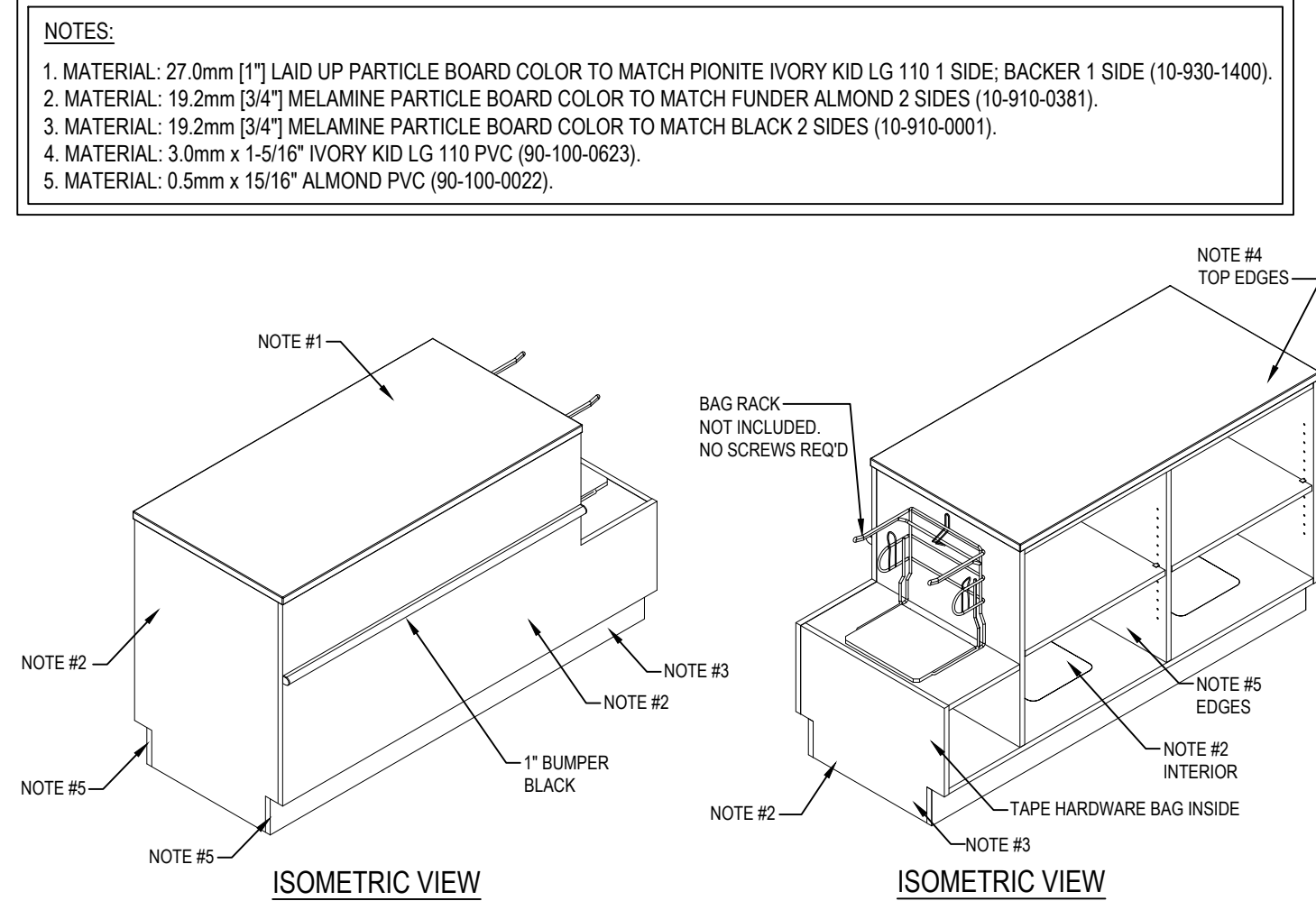
- 400 SERIES FIXTURE PLAN KEY NOTES**
- ABC, CLASS 2A- 20BC (MIN.) WALL MOUNTED FIRE EXTINGUISHER PER CODE. FIRE EXTINGUISHERS LOCATED TO PROVIDE MAXIMUM FLOOR AREA PER UNIT OF 3,000 S.F. AND A MAXIMUM TRAVEL DISTANCE OF 75' AS SHOWN. CONTRACTOR TO VERIFY FINAL LOCATIONS WITH FIRE MARSHAL.
 - FRONT/BACK 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.
 - CASH WRAP. HFT GENERAL CONTRACTOR TO VERIFY EXACT LOCATIONS WITH THE HARBOR FREIGHT TOOLS CONSTRUCTION MANAGER. REFER TO THE ELECTRICAL DRAWINGS FOR ELECTRICAL REQUIREMENTS. INSTALL ALL CASH WRAPS WITH A MAXIMUM COUNTER HEIGHT OF 34" A.F.F. FOR A MINIMUM COUNTER LENGTH OF 36" PER ACCESSIBILITY CODES. SEE DETAIL 1/A1.2 FOR ADDITIONAL INFORMATION.
 - APPROXIMATE POWER POLE LOCATION. APPROXIMATE DECK AT POWER POLE IS 20'-2" IN HEIGHT. HFT GENERAL CONTRACTOR TO CONFIRM CASH WRAP IS IN PROPER LOCATION PRIOR TO POWER POLE INSTALLATION AND FINAL HOOK UP. E.G. TO PROVIDE AND INSTALL UNI-STRUT ATTACHED TO STRUCTURE FOR SECURING POWER POLE IN PLACE. PAINT UNI-STRUT TO MATCH EXPOSED STRUCTURE.
 - CASH REGISTER
 - (1) 6'-0" AND (1) 7'-0" FACTORY GRAY COUNTER TOP FOR THE MANAGERS OFFICE DESK AND (2) 6'-0" FACTORY GRAY COUNTER TOP FOR THE CASH ROOM DESK. SEE DETAIL 12/A4.0 FOR ADDITIONAL INFORMATION.
 - GRAY GROMMET IN COUNTER BY HFT GENERAL CONTRACTOR. VERIFY EXACT LOCATION W/ HFT.
 - APPROXIMATE LOCATION OF SAFE BY HFT.
 - APPROXIMATE LOCATION OF IT CABINET BY HFT.
 - PRINTER.
 - *KRONOS SERIES 4000" TIME CLOCK. MOUNT CENTERED BETWEEN MANAGER OFFICE DOOR & WINDOW @ 44" A.F.F.
 - LOCATION OF HFT FORKLIFT BATTERY CHARGER. SEE ELECTRICAL DRAWINGS & DETAIL 2/A1.2 FOR ADDITIONAL INFORMATION.
 - LOCATION OF HFT FORKLIFT WATER TANK. SEE DETAIL 2/A1.2.
 - LOCATION OF HFT EYE-WASH STATION. SEE DETAIL 2/A1.2.
 - APPROXIMATE LOCATION OF CART RETURN AREA.
 - BANNER STORAGE AND CHARGING STATION. SEE DETAIL 9/A4.0.
 - DASHED LINE INDICATES OSB TO BE ATTACHED TO BACK SIDE OF FIXTURES. SEE TAG SCHEDULE, TAG "OW", ON A1.3 FOR ADDITIONAL INFORMATION. PAINT P-1.
 - 18" ULINE CONVEX SAFETY MIRROR TO BE MOUNTED FOR VISIBILITY AROUND CORNER.

SQUARE FOOTAGE BREAKDOWN	
SALES AREA SQUARE FOOTAGE	9,412 S.F.
SALES REPLENISHMENT SQUARE FOOTAGE	5,052 S.F.
OFFICE AREA SQUARE FOOTAGE	708 S.F.
TOTAL OVERALL LEASE SQUARE FOOTAGE	15,172 S.F.

GENERAL NOTES			
1. REFER TO GENERAL NOTES ON SHEET A0.2 FOR ADDITIONAL INFORMATION			
2. HFT GENERAL CONTRACTOR TO VISIT SITE AND VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING PROPOSALS AND COMMENCING WORK.			
3. HFT GENERAL CONTRACTOR TO PROVIDE NON-COMBUSTIBLE CEILING AND WALL BLOCKING AS NECESSARY.			
4. HFT GENERAL CONTRACTOR TO INSTALL POWER POLES FOR CASH WRAPS. LOCATIONS INDICATED ON PLAN. PRIOR TO INSTALLATION COORDINATE WITH FIXTURE FABRICATOR			
5. HFT GENERAL CONTRACTOR TO FIELD SURVEY AND COORDINATE ACCESS OF ALL MILLWORK WITH HARBOR FREIGHT TOOLS OPERATIONS / STORE DESIGN.			
6. HFT GENERAL CONTRACTOR AND FIXTURE FABRICATOR TO COORDINATE WITH APPROVED FIXTURE DRAWINGS			
7. HFT GENERAL CONTRACTOR TO COORDINATE WITH THE HARBOR FREIGHT TOOLS CONSTRUCTION MANAGER FOR NEW FIXTURE DROP LOCATIONS, TYPES, AND QUANTITIES.			
8. 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.			
9. FIXTURE INSTALLER TO ADJUST FIXTURE LAYOUT AS REQUIRED TO PROVIDE 44" CLEAR PAST ANY COLUMN U.N.O.			
CLEARANCE HEIGHTS CHART			
AREA	CLEARANCE	HIGH POINT	LOW POINT
SALES	BOTTOM OF DECK	±20'-8" A.F.F.	±20'-1" A.F.F.
	BOTTOM OF STRUCTURE	±18'-6 1/2" A.F.F.	±18'-3" A.F.F.
	SPRINKLER LINES	@ L.P. OF STRUCTURE	
SALES REPLENISHMENT	BOTTOM OF DECK	±20'-11" A.F.F.	±20'-8" A.F.F.
	BOTTOM OF STRUCTURE	±19'-6" A.F.F.	±18'-6 1/2" A.F.F.
RECEIVING AREA	SPRINKLER LINES	@ L.P. OF STRUCTURE	
	CLEARANCE @ O.H. DOOR	±11'-7 3/4" A.F.F.	



1 ACCESSIBLE TRANSACTION COUNTER
SCALE: 1/2" = 1'-0"



2 FORKLIFT CHARGER AND EYEWASH STATION ELEV.
SCALE: 1/2" = 1'-0"

DO NOT SCALE THESE DRAWINGS

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HARBOR FREIGHT TOOLS

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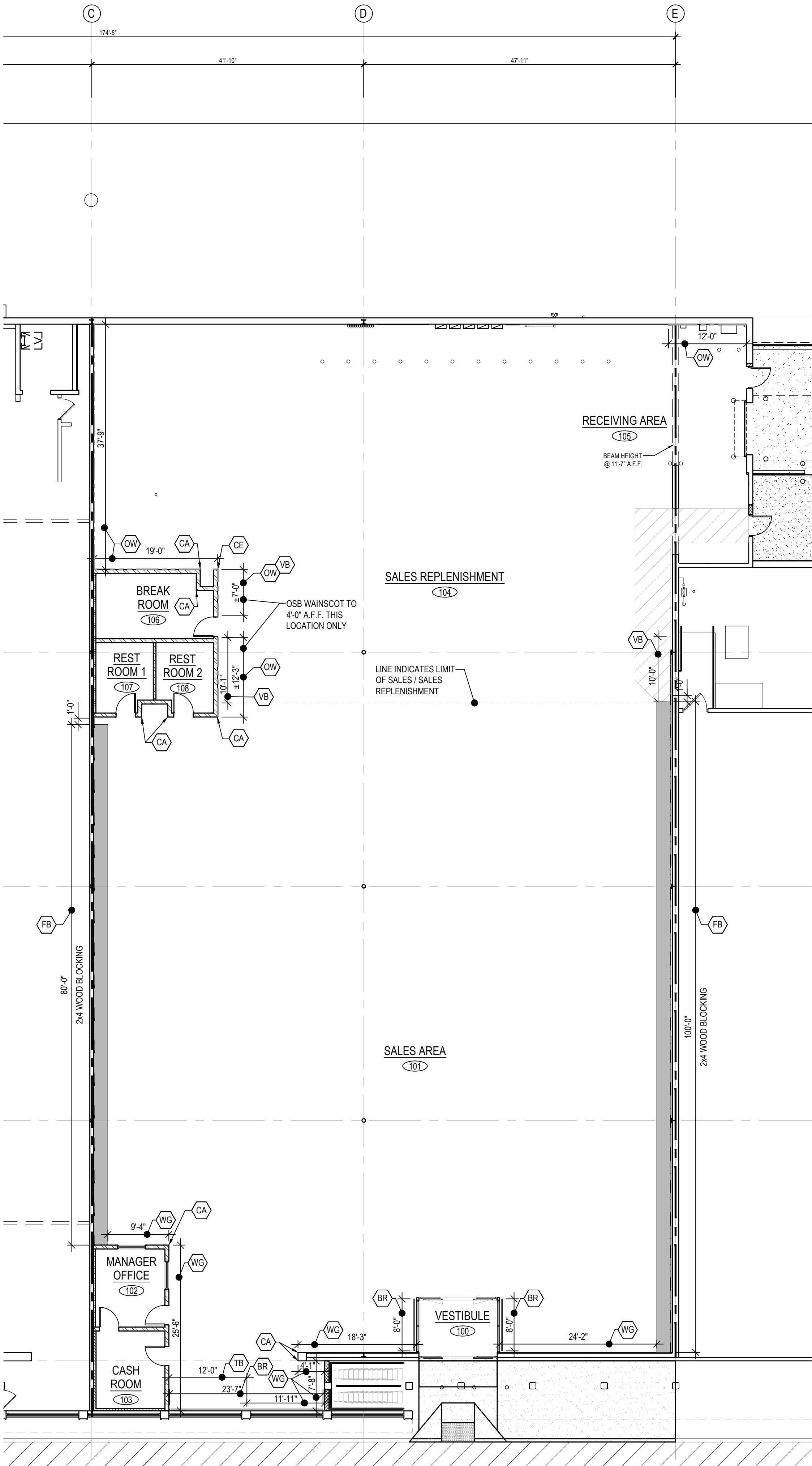
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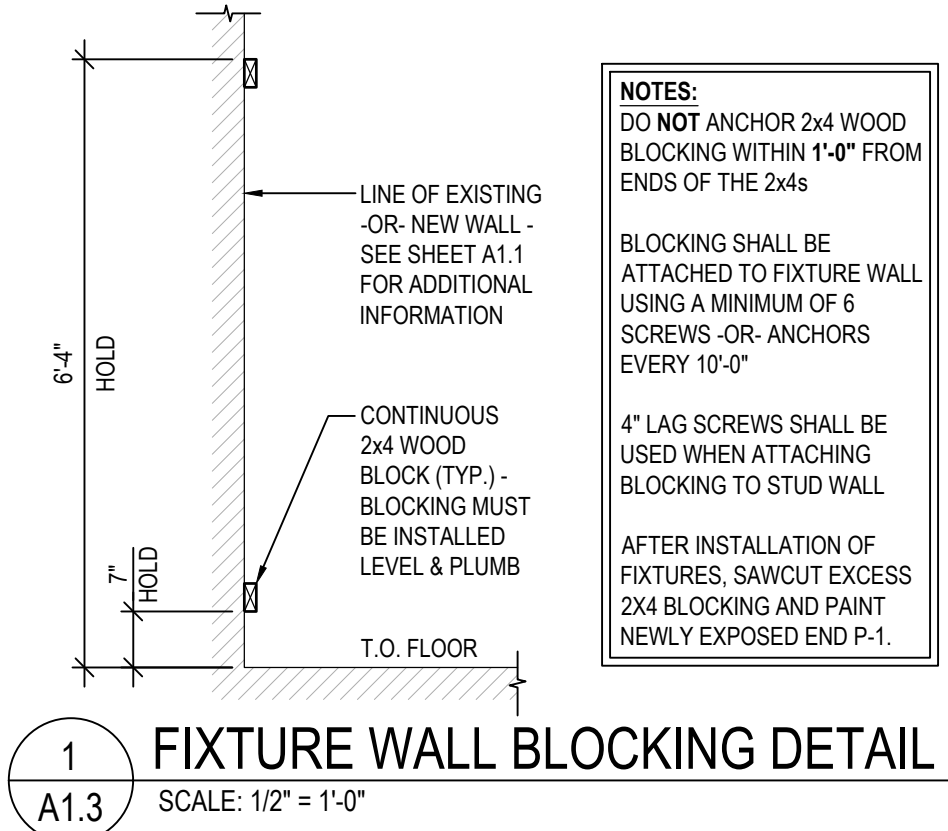


FINISH PLAN
SCALE 3/32" = 1'-0"

FINISH SCHEDULE				
KEY	MATERIAL	MFR.	COLOR	REMARKS
WALL FINISH	P-1 PAINT	SHERWIN - WILLIAMS	SW7006 EXTRA WHITE (EGGSHELL)	UTILIZE PROMAR 200 (0 VOC) - NO SUBSTITUTIONS
	P-2 LATEX PAINT	SHERWIN - WILLIAMS	SW7006 EXTRA WHITE (SEMI-GLOSS)	UTILIZE PROMAR 200 (0 VOC) - NO SUBSTITUTIONS
	P-6 PAINT-PRIMER	SHERWIN - WILLIAMS	WHITE	PREPRITE PROBLOCK PRIMER- NO SUBSTITUTIONS
	P-6A PAINT-PRIMER	SHERWIN - WILLIAMS	WHITE	PROMAR BLOCK FILLER- NO SUBSTITUTIONS
	WC-1 FIBER REINFORCED PLASTIC (FRP) TO CEILING	MARLITE (NO SUBSTITUTIONS)	WHITE FACTORY FINISH	TRIM AND CUT AROUND ALL DISPENSERS & MIRRORS WHICH OVERLAP FRP AND CAULK EDGES. PROVIDE PVC TRIM MOLDING AT WALL BASE, DIVISION SEAMS, INSIDE AND OUTSIDE CORNERS AND EDGES. MITER TRIM AT ALL CORNERS AND CAULK ALL EXPOSED EDGES OF MOLDINGS.
FLOOR FINISH	CON-1 CONCRETE FLOOR SEALANT	HARBOR FREIGHT VENDOR	N/A	GRIND AND POLISH ALL CONCRETE FLOORS AS SPECIFIED ON SHEET A0.3 & A0.4
	LVT-1 BETON - 36" X 36" X 2.5 MM, DRYBACK VINYL TILE	FLOORMAX USA	177 - AGGREGATE	JOINT WHERE VINYL TILE FLOOR MEETS 6" RUBBER BASE TO BE SEALED WITH SILICONE SEALANT. SEE LVT INSTALLATION NOTES ON SHEET A0.2 FOR ADDITIONAL INFORMATION.
	C-1 CARPET TILE	MATWORKS - MONSTER TILE	CHARCOAL	
	C-2 CARPET TILE	MATWORKS - MATSHIELD	CHARCOAL	
BASE	VB-1 6" VINYL BASE	FLOORMAX USA	(BLACK) CB-40	WALL BASE TO BE INSTALLED ON ALL WALLS (EXCEPT AT GLASS / ALUMINUM STOREFRONT) THROUGHOUT SALES AREA AND BEHIND BREAK ROOM CABINETS. SEE PLAN FOR EXTENTS IN STOCK AREA.
	ACT-1 ACOUSTICAL CEILING TILE	ARMSTRONG	WHITE	2' x 4' CORTEGA SQUARE LAY-IN TILE #769 w/ PRELUDE 15/16" EXPOSED TEE GRID.
CEILING	ACT-2 ACOUSTICAL CEILING TILE	NATIONAL GYPSUM	WHITE	2' x 4' GOLD BOND BRAND, GRIDSTONE 1/2" FIRE SHIELD GYPSUM CEILING PANELS w/ PRELUDE 15/16" EXPOSED TEE GRID.
	P-5 PAINT	SHERWIN - WILLIAMS	DRY FALL (FLAT WHITE)	WATERBORNE ACRYLIC DRYFALL: UTILIZE B42W00181 (LOW VOC) - NO SUBSTITUTIONS
MISC.	P-3 MARINE GRADE COATING	SHERWIN - WILLIAMS	SW4081 SAFETY RED	
	P-4 INDUSTRIAL ENAMEL	SHERWIN - WILLIAMS	SW7006 EXTRA WHITE (SEMI-GLOSS)	
	P-7 INDUSTRIAL ENAMEL	SHERWIN - WILLIAMS	SAFETY YELLOW (SEMI-GLOSS)	SEE PLAN FOR EXTENTS OF FLOOR STRIPING
	P-8 INDUSTRIAL ENAMEL	SHERWIN - WILLIAMS	SW6385 DOVER WHITE (SEMI-GLOSS)	INTERIOR DOORS AND DOOR FRAMES
	P-9 INDUSTRIAL ACRYLIC POLYURETHANE	SHERWIN - WILLIAMS	ACROLON 218 HS (GLOSS) - SW9176 DRESS BLUES	FOR STEEL HANDRAILS USE (1) COAT MACROPOXY 646 EPOXY PRIMER
	P-10 INDUSTRIAL ACRYLIC GLOSS	SHERWIN - WILLIAMS	PRO INDUSTRIAL ACRYLIC GLOSS	FOR PAINT APPLICATIONS TO EIFS AND MASONRY
	P-11 INDUSTRIAL ACRYLIC URETHANE	SHERWIN - WILLIAMS	PRO INDUSTRIAL ACROLON 100 WATERBASE URETHANE	FOR PAINT APPLICATIONS TO PRE-FINISHED METAL
NOTE: G.C. SHALL USE HARBOR FREIGHT TOOLS NATIONAL PARENT ACCOUNT #7757 WHEN ORDERING PAINT. SEE SHEET A0.0 FOR VENDOR CONTACT INFORMATION.				

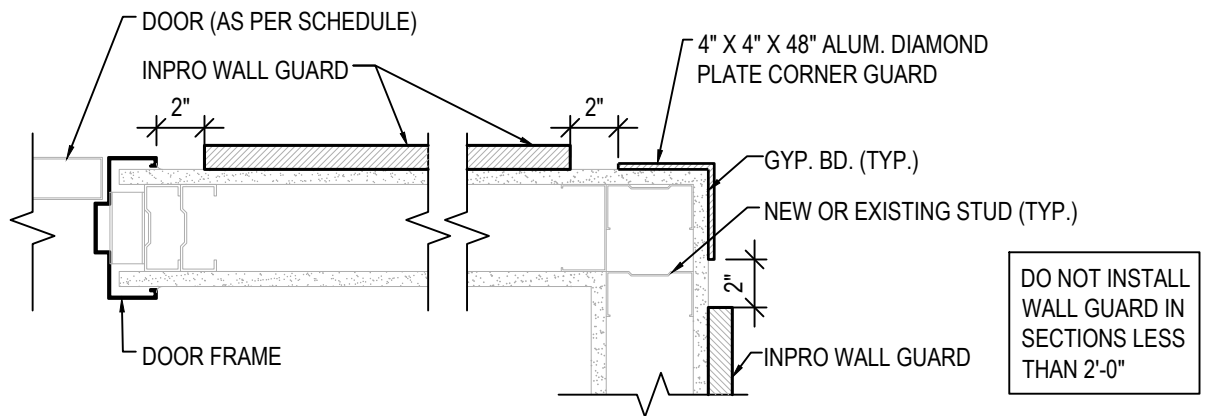
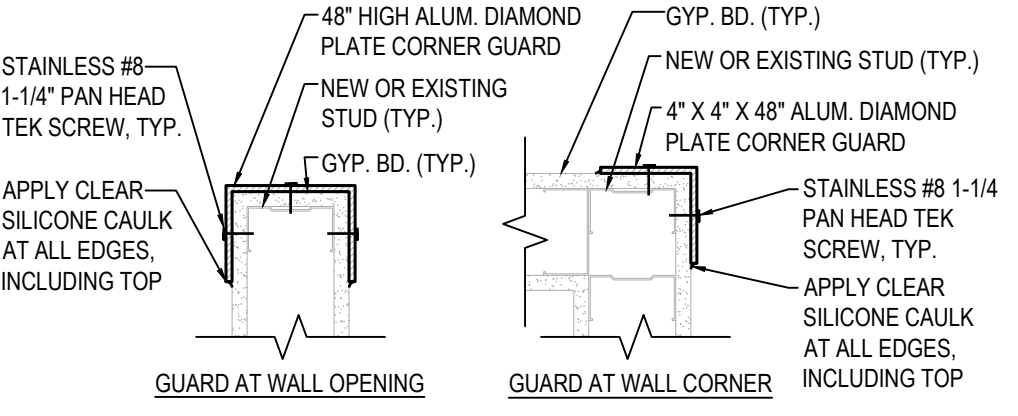
ROOM SCHEDULE					
NO.	ROOM NAME	WALL	BASE	FLOOR	CEILING
100	VESTIBULE	P-1	N/A	C-2	ACT-2
101	SALES AREA	P-1, P-2, P-6	VB-1	CON-1	OPEN TO STRUCTURE (PAINT P-5)
102	MANAGER OFFICE	P-1	VB-1	LVT-1	ACT-1
103	CASH ROOM	P-1	VB-1	LVT-1	ACT-1
104	SALES REPLENISHMENT	P-1, P-2, P-6	AS NOTED	CON-1	OPEN TO STRUCTURE (PAINT P-5)
105	RECEIVING AREA	P-1, P-2, P-6	AS NOTED	CON-1	OPEN TO STRUCTURE (PAINT P-5)
106	BREAK ROOM	P-1	VB-1	LVT-1	ACT-1
107	RESTROOM 1	WC-1	VB-1	LVT-1	ACT-2
108	RESTROOM 2	WC-1	VB-1	LVT-1	ACT-2
NOTES: 1. STRUCTURE ABOVE TO BE CLEANED AND CLEARED OF DEBRIS. ALL EXPOSED STEEL STRUCTURE AND DECK TO BE PAINTED, (P-5). 2. ALL PREVIOUSLY PAINTED ITEMS TO BE PAINTED INCLUDING PIPING, DUCTWORK, CONDUIT, ETC. 3. ALL NEW WORK TO BE PAINTED, EXCLUDING NEW DUCTWORK / NEW HVAC DIFFUSERS. NEW CONDUIT TO BE PAINTED IF ADJACENT SURFACE IS TO BE PAINTED. 4. ALL DOORS AND FRAMES TO BE PAINTED P-8. 5. ALL GYPSUM BOARD SURFACES TO BE PAINTED P-1. 6. ALL PREVIOUSLY PAINTED CMU (or CONCRETE) SURFACES TO BE PRIMED P-6, PAINTED P-2. 7. ALL BARE CMU (or CONCRETE) SURFACES TO BE PRIMED P-6A, PAINTED P-2. 8. PROVIDE A CLEAN, SMOOTH CONCRETE SURFACE FOR PROPER INSTALLATION OF ALL FLOOR FINISHES. 9. APPLICATIONS OF PAINT SHALL BE ONE COAT PRIMER AND TWO COATS PAINT (U.N.O.) PRIMER SHALL BE SPECIFIED OR RECOMMENDED BY PAINT MANUFACTURER.					

TAG SCHEDULE	
TAG	DESCRIPTION
(WG)	DENOTES 700 WALL GUARD, AS MANUFACTURED BY INPRO, "ANTIQUE WHITE, 0104," CENTERLINE OF RAIL MOUNTED @ 32" A.F.F. PER MANF. RECOMMENDATIONS. MIN. RUN 2'-0". HOLD WALL GUARD 2" FROM DOOR FRAMES AND CORNER GUARDS SEE DETAIL 3A1.3 FOR ADDITIONAL INFORMATION. TERMINATE GUARDS WITH 701 END CAPS.
(BR)	MICQUE ZINC PLATED STEEL BOXRAIL HEAVY DUTY FLOOR BUMPER INSTALLED PER MANF. RECOMMENDATIONS.
(FB)	LINE INDICATES WOOD BLOCKING FOR WALL FIXTURES. SHADED AREA INDICATES LOCATION OF WALL FIXTURES. SEE DETAIL 1A1.3 FOR ADDITIONAL INFORMATION.
(OW)	SHADED LINE DESIGNATES AREAS TO RECEIVE 1/2" OSB WAINSCOT TO 8'-0" A.F.F. - SEE PLAN FOR ADDITIONAL INFORMATION.
(C)	CORNER GUARD. SEE DETAIL 2A1.3 FOR ADDITIONAL INFORMATION. TYPES: A, B, C, D, E
CA	GUARD AT CORNER
CB	5'-1" AT OPENING
CC	5'-1/2" AT OPENING
CD	7'-3/8" AT OPENING
CE	7'-7/8" AT OPENING
(VB)	INSTALL BASE "VB-1" WITHIN SALES REPLENISHMENT AREA, DIMENSIONED LOCATION ONLY
(TB)	INSTALL 2x4 WOOD BLOCKING AT 5'-5" A.F.F. TO CENTERLINE, DIMENSIONED LOCATION ONLY. PAINT TO MATCH P-1.
DIMENSIONS SHOWN FOR ESTIMATION OF MATERIALS PURPOSES ONLY (TYP.)	



CORNER GUARD TO BE FULLY ADHERED TO WALL PER MANUFACTURER'S STANDARDS.

FASTEN CORNER GUARD TO WALL IN THE CENTER OF EACH FACE @ 0'-6" A.F.F., 1'-6" A.F.F., 2'-6" A.F.F. & 3'-6" A.F.F.



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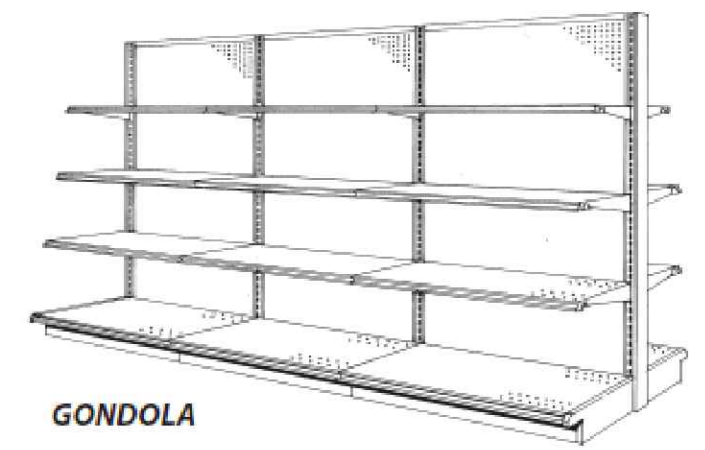
FINISH PLAN

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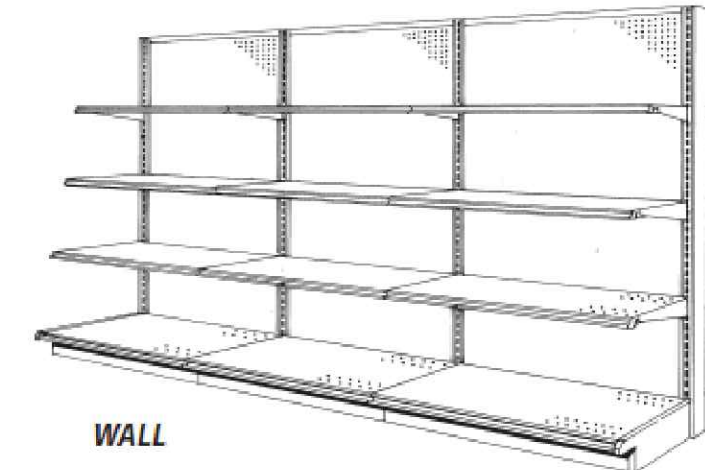
A1.3
SHEET NO.

MAXILINE GONDOLA AND WALL GENERAL ASSEMBLY

NOTE! This publication is intended to be a generic installation instruction for Madix gondola and wall shelving, and may possibly be subject to change as required by the local building codes. Consult the building inspection department at the job site.



GONDOLA



WALL

IMPORTANT! When unloading, stack all boxes...
1. WITH THE LABELS VISIBLE.
2. WITH THE SAME DESCRIPTION TOGETHER.
3. WITH THE SAME PART NUMBER TOGETHER.

READ AND UNDERSTAND THIS DOCUMENT BEFORE PROCEEDING TO INSTALL SHELVING. SPECIAL ITEMS THROUGHOUT ARE DENOTED WITH:

CAUTION!

IMPORTANT!

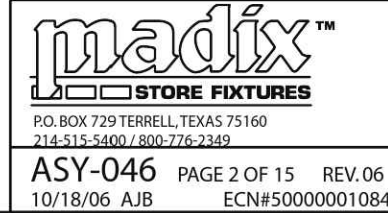
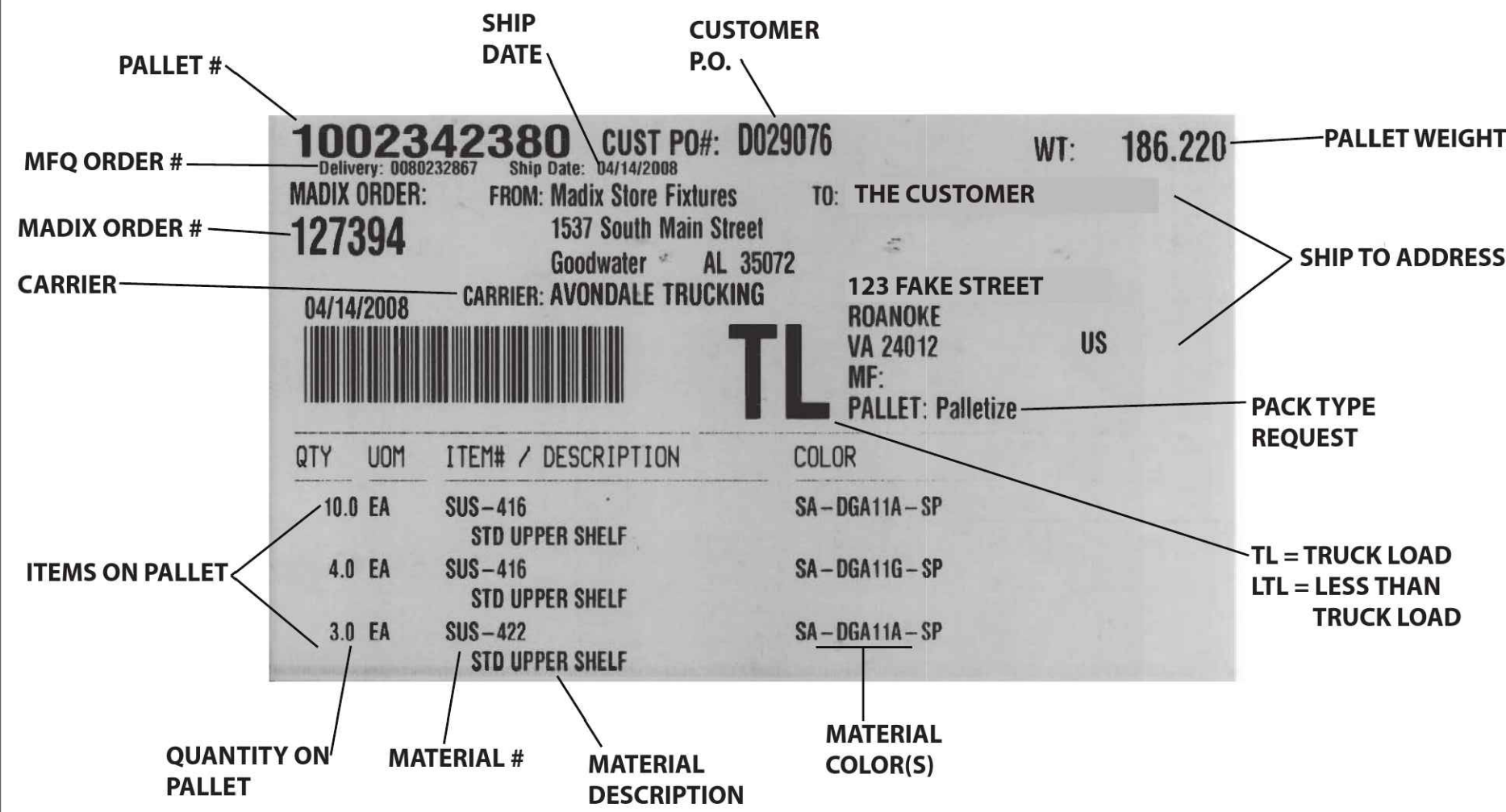
WARNING!

NOTE!
THE STANDARD PRODUCTS LISTED BELOW
WILL ALTER THE INSTALLATION PROCEDURE SHOWN.
Specific instructions covering any products listed below,
if ordered, are included with this document package.
Refer to them prior to beginning installation
since your procedure will be altered.

END MERCHANDISERASY-652
CANOPIES.....ASY-092
TELESCOPING UPRIGHTS.....ASY-027
BOX CORNER.....ASY-098
METAL END FLAT.....ASY-269
INSIDE CORNER.....ASY-062
OPEN BACK STIFFENER.....ASY-042
OUTSIDE CORNER.....ASY-059
FLOOR ANCHORS.....ASY-357
WIRE GRID BACKS.....ASY-328
OUTSIDE MOUNT END
MERCHANDISER.....ASY-064
TRIPLE BACK SYSTEM.....ASY-325



PALLET LABEL LAYOUT



POST THIS ENTIRE PAGE IN A CONSPICUOUS PLACE, CLEARLY VISIBLE TO ALL STORE PERSONNEL

WARNING!

READ BEFORE ASSEMBLY - FOR YOUR SAFETY!

- Install all shelving and/or fixtures as described in installation instruction.
- Shelving and components should ONLY be installed by trained personnel who have read and understand these instructions. Failure to do so may result in product damage or personal injury.
- Do not exceed the maximum load capacities as outlined under all headings related to Load Limits or Capacities in this document.
- Never use damaged parts.
- Install and use components only as directed.
- Do not combine Madix products with non-Madix products.
- Always install kickplates (KP-(nw)) to retain the structural integrity of the shelving. Kickplates must be installed correctly!
- Do not hang shelves, peg hooks or other accessories on the side of a fixture that does not have base shoes (BS) installed.
- Do not hang shelving, peg hooks or other accessories that exceed the depth of the base on a gondola or wall.
- All components that require trim, such as uprights (BU) and base shoes (BS) should have trim installed.
- Never expose any sharp or pointed edges to shoppers or employees.
- Do not climb or stand on shelving.
- Provide safe access to all levels of shelving according to OSHA regulations.
- Do not move assembled unit.
- Do not rearrange shelving while merchandised.
- Do not lean heavy items against shelving.
- All end panels (EP) and other panels for merchandising or aesthetics must have bases in order to direct traffic away from protrusions.



CLEANING SHELVING:

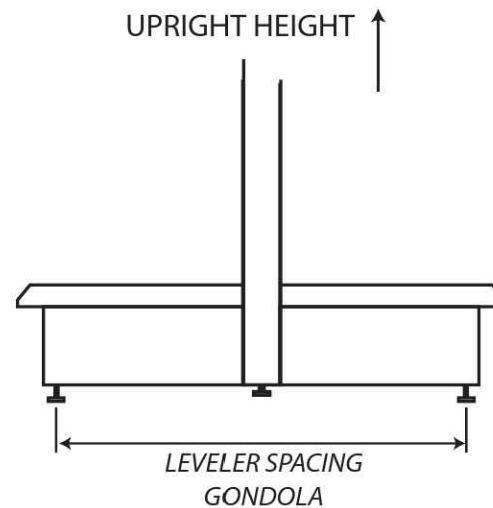
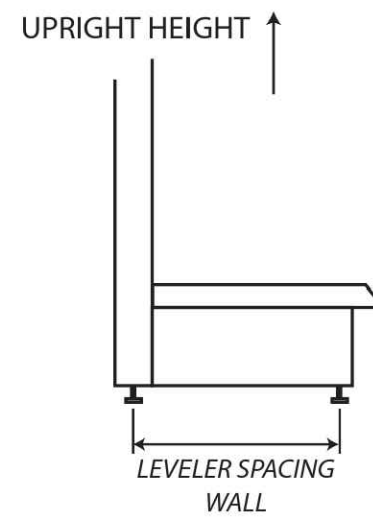
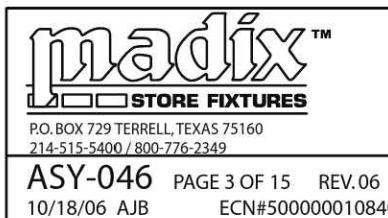
IMPORTANT INSTRUCTIONS FOR CLEANING
MADIX METAL SHELVING:

When necessary to clean Madix shelving, use of a non-abrasive mild detergent and warm water, followed by thorough drying is ideal. The use of a cloth made of a soft, white cotton material is strongly recommended. The use of cleaning agents that contain abrasives, bleach, or strong solvents such as ketones, ethers etc. will result in damage to the finish. The damage is most severe when these harsh cleaning agents are used on colors which contain leafing aluminum pigment such as powder chrome, silver vein and other "vein" type finishes. The aluminum in these coatings resides at the surface of the finish and is therefore more susceptible to damage by the harsh cleaning agents. As an alternative to the mild detergent, cleaners with ingredients similar to those found in products such as 409, Fantastik, and Simple Green can be used. CAUTION! cleaners having ingredients similar to those found in Ajax, Borax, Bleach, Comet, etc. should be avoided as finish damage could result.

WARNING! ALL GONDOLA AND WALL FIXTURES
EXCEEDING 96" IN HEIGHT MUST BE SECURELY ANCHORED!
SEE ASY-357 FOR PROPER ANCHORING PROCEDURES
FOR GONDOLA AND WALL!

WARNING! NEVER STACK EXTENSION UPRIGHTS (EU).
Do not exceed maximum load capacity on EU. Maximum
load capacity for EU 6" to 12" is 250 lb per side, 13" to 18"
is 215 lb per side, 19" to 24" is 160 lb per side, and 24" and
up is 100 lb per side. SEE ASY-018 FOR EU INSTALLATION.

WARNING! LOAD CAPACITY FOR PEGBOARD BACKS:
MAX 150 lbs per side with SL lower spanner in place
MAX 300 lbs per side with HSL Heavy Duty Lower Spanner



VIEW FROM BELOW
UPPER SHELVES

FIXTURE HEIGHT TO BASE WIDTH:

If the height of the upright exceeds six times the space between the upright and shoe leveler, the system must be secured in one of the following configurations:

- Secured at the top as per pg. 11 or...
- For Gondolas, Base Shoe Levelers must be anchored to the floor as shown in ASY-357
- For Walls, Base Shoe Levelers AND Upright Levelers must be anchored to the floor.

WALLS...
USE CHART FOR EXAMPLE ONLY:

BASE SHELF DEPTH OF	EQUALS LEVELER SPACING OF	MAX HEIGHT OF UNANCHORED UPRIGHT
12"	9 1/2"	54"
14"	11 1/2"	66"
16"	13 1/2"	78"
18"	15 1/2"	90"
20"	17 1/2"	102"
22"	19 1/2"	114"
24"	21 1/2"	120"
26"	23 1/2"	138"
28"	25 1/2"	144"
30"	27 1/2"	162"

GONDOLAS...
USE CHART FOR EXAMPLE ONLY:

BASE SHELF DEPTHS OF	EQUALS LEVELER SPACING OF	MAX HEIGHT OF UNANCHORED UPRIGHT
12" & 12"	19"	114"
12" & 14"	21"	126"
14" & 14"	23"	138"
14" & 16"	25"	144"
16" & 16"	27"	162"

ALL UPRIGHTS 96" AND ABOVE
WILL NEED TO BE ANCHORED.

BOLTING UPPER SHELVES AT THE TOP OF
FIXTURES TALLER THAN 96"...

ON ANY UPPER ROW OF SHELVES ON FIXTURES
TALLER THAN 96"; THE SHELVES MUST BE
BOLTED TOGETHER THROUGH THE FRONT MOST
HOLES IN THE SIDES OF THE SHELVES!



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FIXTURE
SPECIFICATIONS
AND DETAILS

DATE 9/22/21

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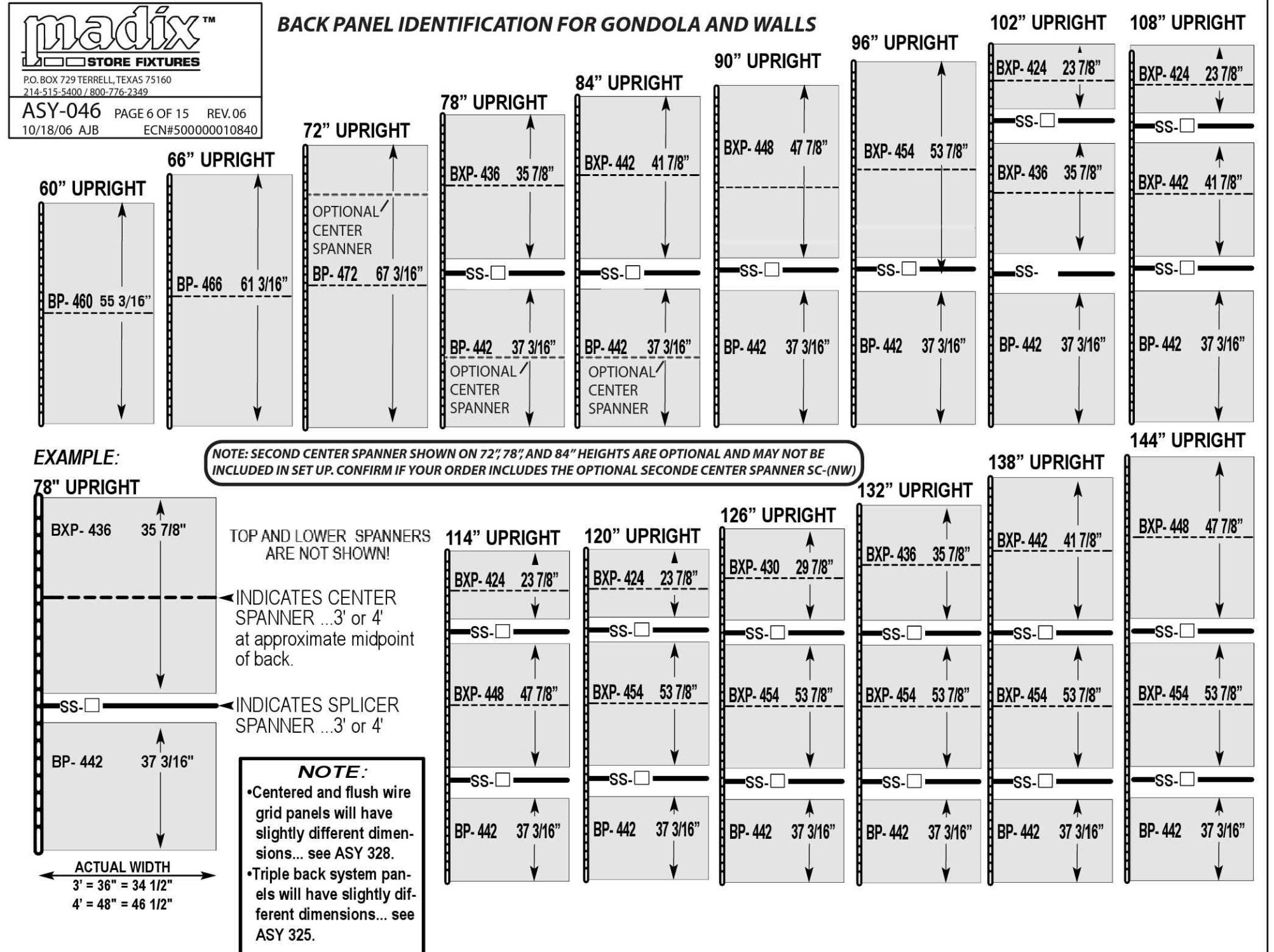
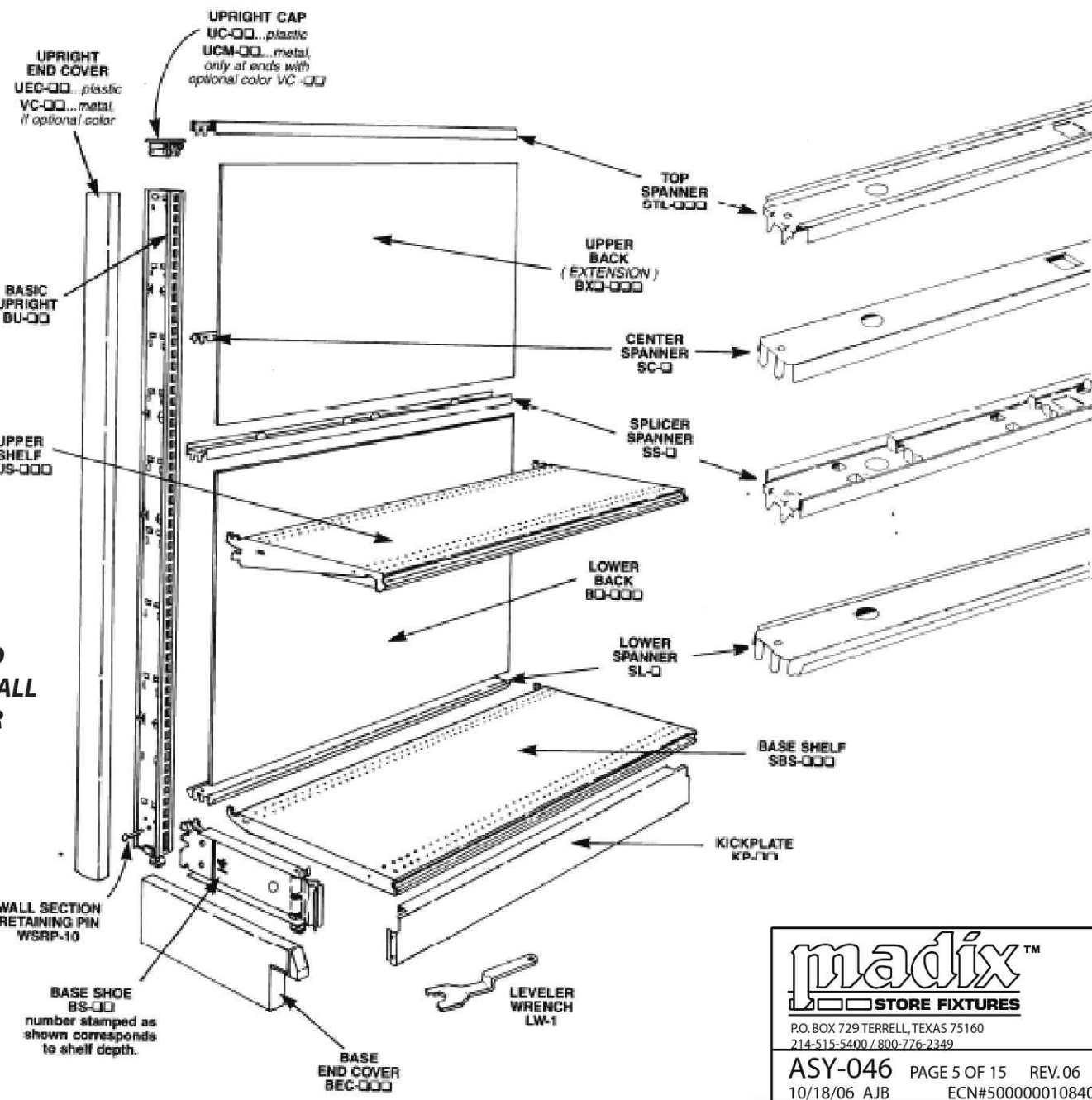
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GONDOLA / WALL PARTS IDENTIFICATION...

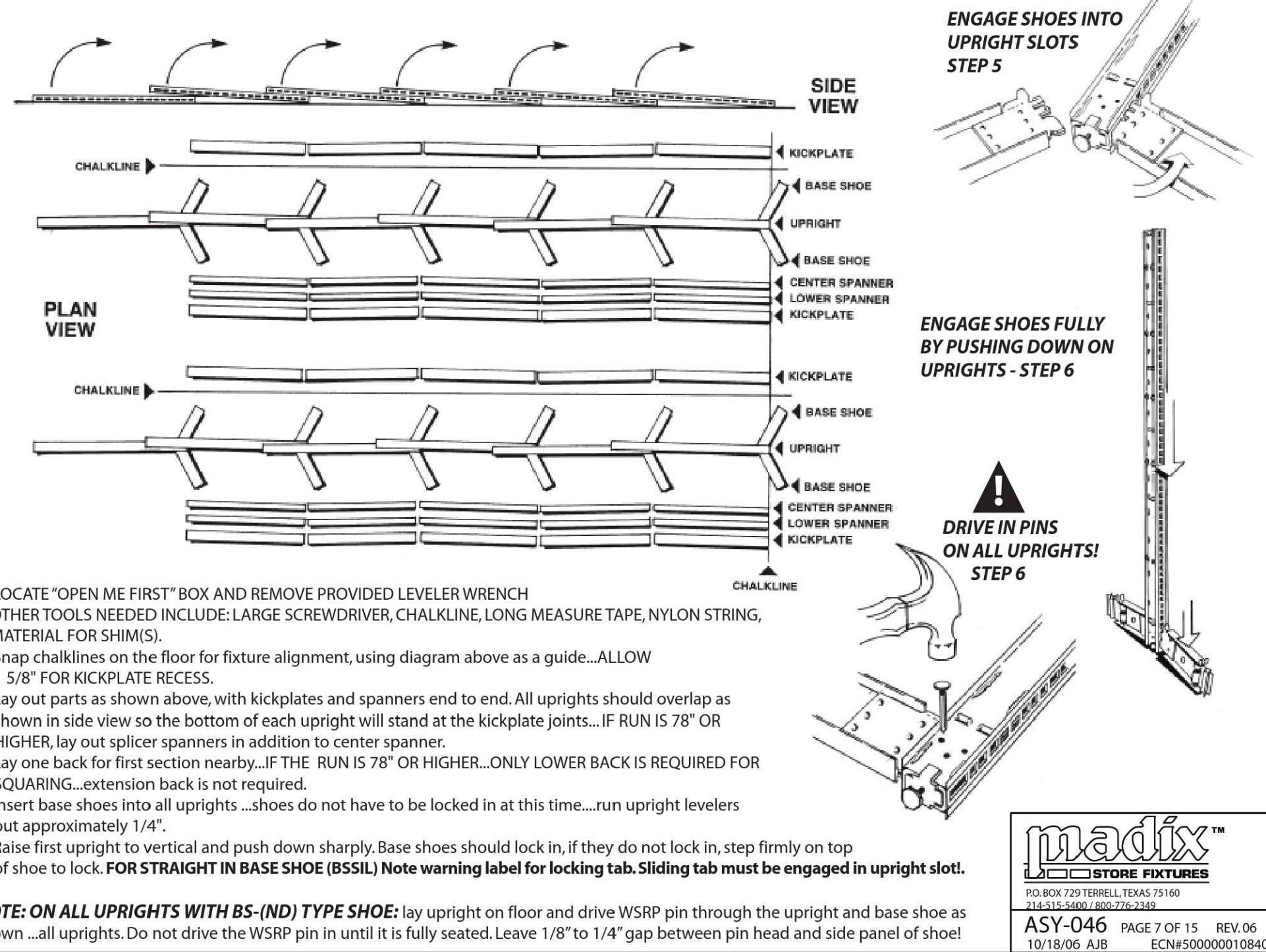
- THE PARTS SHOWN HERE REPRESENT A WALL, SINGLE SIDED, SECTION.
- BOTH GONDOLA AND WALL SECTIONS USE THE SAME PARTS.
- PAGES 7-10 SHOW INSTALLATION OF A GONDOLA, DOUBLE SIDED, FIXTURE.

WSRP MUST BE INSTALLED IN ALL WALL UPRIGHTS AND ALL UPRIGHTS ABOVE 96" FOR GONDOLA AND WALL!

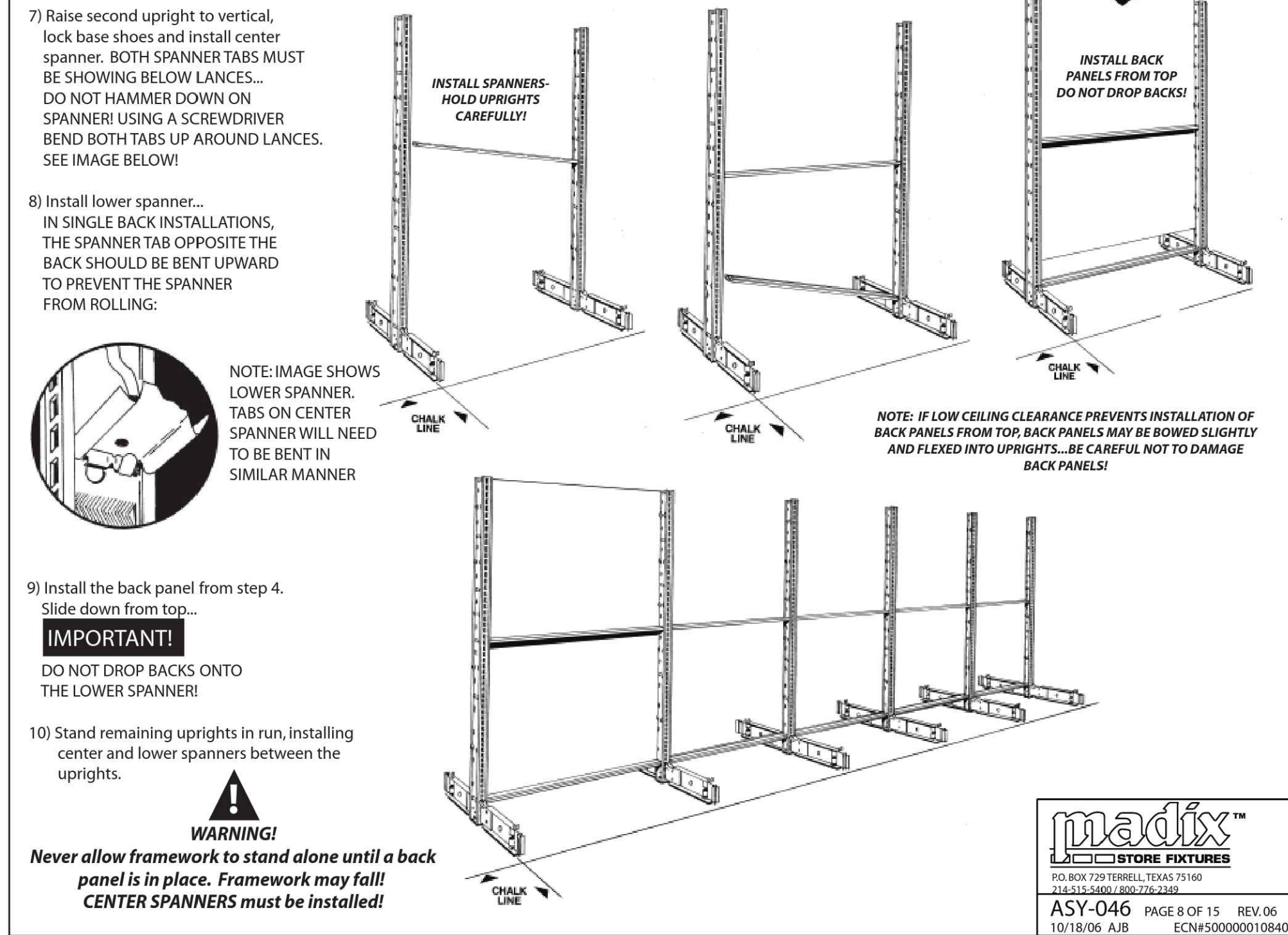
NOTE: ONLY BS-(ND) SHOES WILL REQUIRE THE WSRP, BSSL-(ND) DO NOT REQUIRE THE WSRP.



ASSEMBLY PROCEDURE...



ASSEMBLY PROCEDURE...



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ASSEMBLY PROCEDURE...

11) Install all kickplates...kickplates snap directly in from front...

12) Pull both end uprights forward to bring the kickplates to the chalkline, then plumb using a level against face of upright and adjusting the base shoe levelers.

13) Attach the nylon line to end upright as shown. Attach line at corresponding slot on opposite end upright, draw taut and secure.

14) Examine all uprights at nylon line to determine the highest upright in run, excluding end uprights. Pull this highest upright forward until kickplate is on the chalkline. If run is a gondola, plumb at base shoe levelers ...If run is a wall, plumb at upright and base shoe levelers.

IMPORTANT!

There must be enough clearance between the bottom of the upright and the head of the level leg to allow installation of anchors!

STEP 11 KICKPLATES

SFA-RD REGULAR DUTY FLOOR ANCHOR, REQUIRES ONE (1) FASTNER TO FLOOR

SFA-HD REGULAR DUTY FLOOR ANCHOR, REQUIRES TWO (2) FASTNERS TO FLOOR

NOTE: IF IT BECOMES NECESSARY TO EXTEND THE LEVELING LEGS BEYOND 1-1/2" SHIMS MUST BE USED TO RAISE THE FLOOR LEVEL.

15) Working with the remaining uprights in succession, bring kickplates up to chalkline, then adjust for height at upright leveler and plumb at base shoes.

16) Raise or lower end uprights until slots on ends and highest upright correspond relative to the nylon line. THEN REPLUMB BOTH END UPRIGHTS!

WARNING! NEVER EXTEND LEVEL LEGS OVER 1 1/2"!

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ASSEMBLY PROCEDURE...

UC - STEP 20 STL-(NW) - STEP 19

UC UPRIGHT CAP UC - STEP 20

VC UPRIGHT COVER STEP 19

SBS BASE SHELF STEP 23

BS - STEP 21

CHALK LINE

CHECK ALIGNMENT AND LEVEL OF RUN BEFORE ANCHORING!

NOTE: If trim or shelves do not fit or do not pass visual inspection, recheck plumb & level. If run is not plumb and level, return to steps 13 - 16.

IMPORTANT! DO NOT DROP BACKS ONTO THE LOWER SPANNERS!

17) On gondola uprights only: Run level legs up off the floor approximately 1/4". THIS APPLIES TO ALL GONDOLA UPRIGHTS REGARDLESS OF ANCHORING. ONLY BASE SHOE LEVELERS ARE ANCHORED ON GONDOLAS, NOT UPRIGHT LEVELERS.

18) Remove the nylon string used in leveling and install all remaining back panels in the run.

19) Install top spanners. Make sure tabs rest below first lance as shown. Install upright end covers. UEC is plastic and VC is metal. THESE MUST BE IN PLACE BEFORE UC (UPRIGHT CAPS) ARE INSTALLED.

20) If VCs (metal upright covers) are installed, install UC (upright caps) so that the short plastic extrusion is captured in the slot at top of the VC and tabs snap behind top lance See illustration top right.

21) To install the BECs (Base End Covers), simply slide them over the BS (Base Shoes). The BECs are held in place by the base shelves.

22) **VERIFY ALIGNMENT AND LEVEL OF RUN.** If floor anchors are required, install them now. SEE ASY-357 FOR PROPER ANCHORING PROCEDURES.

23) Install base shelves. Visually check base shelf alignment.

24) Install upper shelves and accessories.

WARNING! DO NOT HANG SHELVING, PEG HOOKS OR OTHER ACCESSORIES THAT EXCEED THE DEPTH OF THE BASE ON A GONDOLA OR WALL.

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WALL RUN INSTALLATION AND WALL RUN ANCHORING...

Uprights will be anchored to a single run of 2 x 4 furring strips secured at approximately 8" below the top of the uprights, subject to leveling.

*Determine run length and location...then strike a chalkline on the wall at upright height, minus 8", to align the top edge of the furring strips.

*Start with a 10' long 2 x 4, finishing the rest of run with 8' long 2 x 4's, this insures that uprights will not be on a joint

IMPORTANT!

IF CANOPY IS TO BE USED, CONSULT INSTALLATION INSTRUCTION ASY 092 PRIOR TO PROCEEDING

ONE 2X4 FOR UPRIGHTS UP TO 96"
TWO 2X4s FOR UPRIGHTS OVER 96"
ONE 2X4 FOR EXTENSION (EU) UP TO 36"
TWO 2X4s FOR EXTENSIONS (EU) OVER 36"

Installation of wall fixture follows same procedure as the gondola instructions, steps 1 through 11, EXCEPT:

*No chalkline is necessary...set back of uprights approximately 1" away from furring strips.

*If using basic upright wall mount support, BUWMS, install in rear side of upright in 10th slot from top.

Push fixture back against furring strips and proceed with plumb and level steps 12 through 16, visually sighting kickplate alignment.

*If using BUWMS wall mount support, secure to furring strips with appropriate hardware, shimming behind the BUWMS as necessary.

*If not using BUWMS, secure upright to furring strip with appropriate fasteners into 10th slot from top.

Complete steps 17 through 21.

*If base shelves have a wedge shaped gap, it will be necessary to push in at the gap and/or pull out at the adjacent joints...readjustment of the base shoe levelers may be necessary.

WARNING!

FAILURE TO PROPERLY ANCHOR WALL FIXTURE SYSTEMS AND EXTENSIONS MAY RESULT IN SEVERE INJURY OR DEATH!

USE ANCHORING HARDWARE THAT RESISTS A MINIMUM OF 800 lbs. PULL OUT FORCE. MANY TYPES OF WALL CONSTRUCTION WILL BE ENCOUNTERED. USE FASTNERS APPROPRIATE FOR BOTH WALL TYPE AND LOAD SITUATION. CONTACT A LOCAL STRUCTURAL ENGINEER FAMILIAR WITH CODES IN YOUR AREA. MADIX CAN PROVIDE THE CONTACT FOR A STRUCTURAL ENGINEER IF REQUIRED.

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FIXTURE LOADING AND PRODUCT SAFETY...

GENERAL

1) Contact the local building department prior to starting installation to check on any restrictions.

2) Only parts and accessories produced or supplied by Madix are covered by Madix warranty.

3) Installation sequence must be followed exactly for assembly and leveling.

4) Under no circumstances should damaged parts be used.

5) Do not use shelving parts or accessories for any purpose other than originally intended.

6) Installation instructions with product load ratings are included with each order and must be followed carefully.

7) Employees must be made aware of possible overloading as specified in load ratings. If you do not receive these, please contact your sales or customer service representative.

8) Initial installation or relocation of Madix gondola or wall fixtures should be supervised exclusively by qualified personnel.

GONDOLA /WALL SHELVING

9) Never install shelves or accessories into the side of an upright that has no base shoes on that side.

10) Be sure all shelving parts or accessories are completely seated in slotting or perforations.

11) Do not permit climbing or standing on shelving at any time...including base shelves.

12) Do not attempt to relocate merchandised shelves or accessories.

13) Never try to move completed fixtures, especially if merchandised.

14) No shelves or accessories should project past the front of the base shelf.

15) Base end covers and upright end covers must always be installed at the end of a run.

16) To avoid collisions with upper shelves or accessories, all displays used on gondolas end should have a base shelf, metal end flat, or other base end treatment.

IMPORTANT!

WARNING! ALL CAPACITIES ARE FOR EVENLY DISTRIBUTED LOAD.

CAPACITIES ARE REDUCED BY 30% WHEN ONLY THE FRONT HALF OF THE SHELF IS LOADED!

CAPACITIES LISTED ARE FOR SHELVES INSTALLED IN MADIX MAXI SHELVING SYSTEM ONLY!

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Shelf Type	Shelf Depth	MAXIMUM LOAD CAPACITY* IN POUNDS			
		Evenly Loaded	Front Loaded	15° Down	30° Down
SUS-000	6" - 8"	300#	300#	125#	100#
	8" - 18"	500#	350#	125#	100#
	20" - 24"	500#	350#	250#	100#
STP-000	6" - 8"	300#	300#	250#	100#
	8" - 18"	600#	350#	250#	100#
	20" - 24"	500#	350#	250#	100#
HUS-000	6" - 8"	400#	250#	200#	100#
	8" - 18"	600#	n/a	n/a	n/a
	20" - 24"	600#	n/a	n/a	n/a
SBS-000	6" - 8"	600#	n/a	n/a	n/a
	8" - 18"	600#	n/a	n/a	n/a
	20" - 24"	600#	n/a	n/a	n/a

* Based on evenly distributed static loading.
* STP type shelves are "straight fit", horizontal insertion into upright slotting.

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FIXTURE SPECIFICATIONS AND DETAILS

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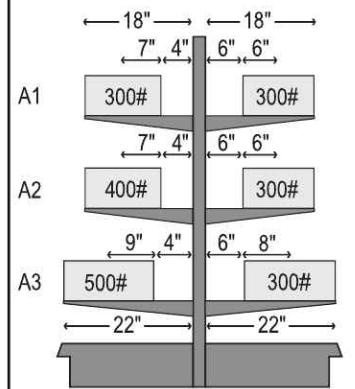
FIXTURE LOADING - PRODUCT SAFETY

! WARNING! DO NOT EXCEED ANY OF THE MAXIMUM LOAD LIMITS IN THE FOLLOWING SECTIONS!

FRONT LOADED SHELVES

IMPORTANT! Front loaded shelves create the most likely situation for exceeding the fixture loading capacities. Compare the increases in inch/lb. loadings of front loaded shelves over evenly loaded shelves, PARTICULARLY ON WALL SECTIONS!

A front loaded shelf has a void between the back panel and the merchandise. Take one half the loaded area dimension plus the gap dimension at back and multiply times the weight on the shelf in order to determine individual inch/lb. load.



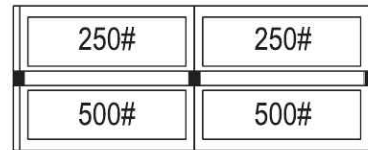
FRONT LOADED SHELVES ON GONDOLAS
A1 7" + 4" = 11" x 300 lbs. or 3,300 inch/lbs.
A2 7" + 4" = 11" x 400 lbs. or 4,400 inch/lbs.
A3 9" + 4" = 13" x 500 lbs. or 6,500 inch/lbs.
SIDE A TOTAL = 14,200 inch/lbs.
B1 6" + 6" = 12" x 300 lbs. or 3,600 inch/lbs.
B2 6" + 6" = 12" x 300 lbs. or 3,600 inch/lbs.
B3 8" + 6" = 14" x 300 lbs. or 4,200 inch/lbs.
SIDE B TOTAL = 11,400 inch/lbs.

SUBTRACT B FROM A:
14,200 inch/lbs
-11,400 inch/lbs
2,800 inch/lbs

SAFE - 2,800 INCH/LBS
DOES NOT EXCEED
15,000 INCH/LBS
MAXIMUM

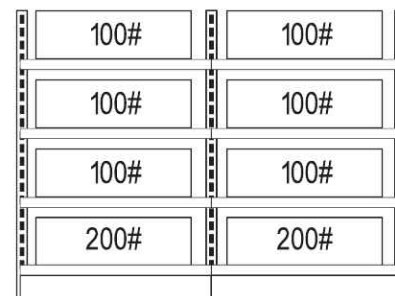
COLUMN LOADING

Column loading is the vertical load, measured in pounds, that can be applied on any upright. Each upright bears ONE HALF OF THE LOAD OF EACH SHELF THAT IT SUPPORTS. MAXIMUM COLUMN LOAD IS 4,500 POUNDS, DO NOT EXCEED!



750 lbs. plus 750 lbs. = 1500 lbs.

1500 lbs. divided by 2 =
750 lb. column load on the center upright



WALL SECTIONS - TOP VIEW

WALL SECTIONS - FRONT VIEW
500 lbs. plus 500 lbs. = 1000 lbs.

1000 lbs. divided by 2 =
500 lb. column load on the center upright



FIXTURE LOADING - PRODUCT SAFETY

! WARNING! DO NOT EXCEED ANY OF THE MAXIMUM LOAD LIMITS IN THE FOLLOWING SECTIONS!

OFFSET LOADING

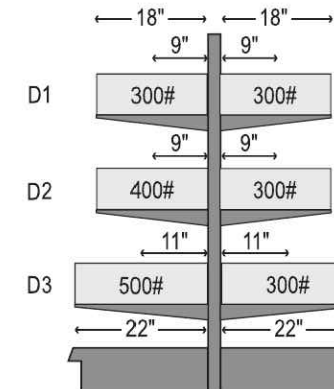
Offset loading is measured in inch/pounds and represents the bending load at the base shoe connection and the upright. To determine if you exceed the load limit of the fixture, take the difference between the larger inch/lb. calculations on one side of the fixture and the inch /lb. calculations on the other. THIS DIFFERENCE CANNOT EXCEED 15,000 INCH/LBS. In the case of wall sections, the calculation for the one side CANNOT EXCEED 15,000 INCH/LBS.

EVENLY LOADED SHELVES ON GONDOLAS

Divide each shelf depth by 2...multiply times the weight on shelf to determine individual shelf load.

D1 18" / 2 = 9" x 300 lbs. or 2,700 inch/lbs.
D2 18" / 2 = 9" x 400 lbs. or 3,600 inch/lbs.
D3 22" / 2 = 11" x 500 lbs. or 5,500 inch/lbs.
SIDE D TOTAL = 11,800 inch/lbs.

E1 18" / 2 = 9" x 300 lbs. or 2,700 inch/lbs.
E2 18" / 2 = 9" x 300 lbs. or 2,700 inch/lbs.
E3 18" / 2 = 11" x 300 lbs. or 3,300 inch/lbs.
SIDE E TOTAL = 8,700 inch/lbs.

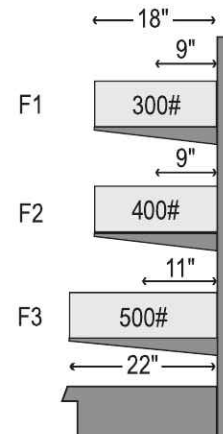


SUBTRACT E FROM D 11,800 inch/lbs.
- 8,700 inch/lbs.
3,100 inch/lbs.

SAFE! 3,100 INCH/LBS. DOES NOT
EXCEED 15,000 INCH/LBS. MAXIMUM

EVENLY LOADED SHELVES ON WALL SECTIONS
Divide each shelf depth by 2...multiply times the weight on shelf to determine individual shelf load.

F1 18" / 2 = 9" x 300 lbs. or 2,700 inch/lbs.
F2 18" / 2 = 9" x 400 lbs. or 3,600 inch/lbs.
F3 22" / 2 = 11" x 500 lbs. or 5,500 inch/lbs.
SIDE F TOTAL = 11,800 inch/lbs.



SAFE! 11,800 INCH/LBS. DOES NOT EXCEED
5,000 INCH/LBS. MAXIMUM



POST THIS ENTIRE PAGE IN A CONSPICUOUS PLACE, CLEARLY VISIBLE TO ALL STORE PERSONNEL

RE-LEVELING OF OFFSET LOADED FIXTURES

AFTER THE FIXTURE IS LOADED, IF A GAPPING OF THE SHELVES APPEARS ON THE HEAVILY LOADED SIDE, IT IS POSSIBLE THE ORIGINAL INSTALLATION IS THE CAUSE. CHECK THESE TWO CONDITIONS BEFORE PROCEEDING!
CAUTION! BEFORE MAKING ANY ADJUSTMENTS TO ANY COMPONENTS BE SURE THAT ALL MERCHANDISE HAS BEEN REMOVED.

1. ALL UPRIGHTS MUST BE AT THE SAME HEIGHT!

A. Visually sight across the top of the fixture to check for high or low uprights.
B. If a row of shelves at a particular upright appear to rise or sag at this indicates an unlevel section
TO CORRECT: Pull a string across the top of the uprights from end to end.

IF THE UPRIGHT IS TOO LOW on lightly loaded section...

a. Raise base shoe levelers on each side equally until upright touches stringline.

IF UPRIGHT IS TOO HIGH on lightly loaded section...

a. Remove kickplates on both sides of the low upright.

b. Screw upright leveler out, or down, raising the top upright until it touches stringline.

c. Screw base shoe levelers down an equal number of turns until base shoes lock up against the upright.

IF UPRIGHT IS TOO HIGH on lightly or heavily loaded section...

a. Remove kickplates on both sides of the high upright.

b. Screw upright leveler up into upright, this may solve the "too high" problem, if not...

c. Screw loose shoe levelers up into shoe an equal number of turns until top of upright touches stringline.

2. NONE OF THE SECTIONS IN THE RUN HAVE BEEN MOVED OUT OF ALIGNMENT

A. Visually sight along the front of the base shelves.

B. Compare the front of the base shelves to a tile line.

TO CORRECT: Facing the wedge shaped gap areas, physically push the section back into line, closing the gaps. Depending on the merchandise, it may be necessary to unload or partially unload the section before moving. Attempt to move the section by applying foot pressure at the kickplate joint only... if not possible,

a. Place a 2 x 4 block against the kickplate joint and tap back into alignment...or...

b. Use a jack and 2 x 4 block against kickplate joint...jack should be braced across the aisle against a long 2 x 4 spanning several kickplate joints.

IF THE ABOVE CONDITIONS ARE NOW CORRECT, look for shelf gaps on the heavily loaded side...the base shelf joint will be tight, but the upper shelves will have increasingly larger wedge shape gaps at the top, REMOVE KICKPLATES ON BOTH SIDES FOR AT LEAST ONE SECTION ON EITHER SIDE OF THE HEAVILY LOADED SECTION.

ON THE LIGHTLY LOADED SIDE,

a. Run upright levelers down to the floor.

b. Run base shoe leveler up into shoe until the pressure is off of it...1/4" free movement.

THEN...ON THE HEAVILY LOADED SIDE,

c. Begin at the first heavily loaded upright TO YOUR RIGHT, facing the heavily loaded side...run the base shoe leveler down until all the shelf gaps at that upright close tightly.

d. Repeat c. with remaining heavily loaded uprights, WORKING TO YOUR LEFT.

THEN...ON THE LIGHTLY LOADED SIDE,

e. Run loose levelers down until shoe locks up against the upright.

f. Replace kickplates on both sides.



CAUTION!
CARE SHOULD BE TAKEN TO AVOID
ACCIDENTS / INJURY WHILE
ADJUSTING MERCHANDISED
FIXTURES!

CAUTION!
DO NOT MOVE LOADED FIXTURES
ALWAYS REMOVE MERCHANDISE
TO MOVE ANY FIXTURE.

DO NOT ATTEMPT TO
ADJUST FIXTURES THAT ARE
ALREADY ANCHORED

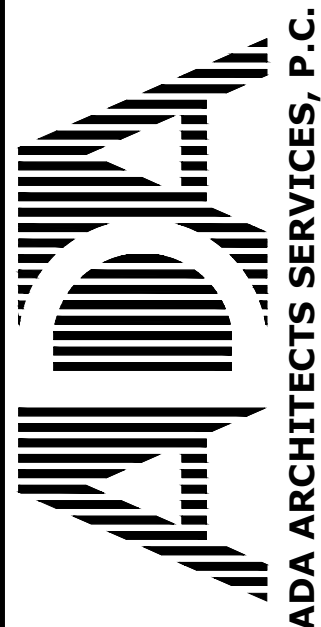
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FIXTURE
SPECIFICATIONS
AND DETAILS

DATE 9/22/21

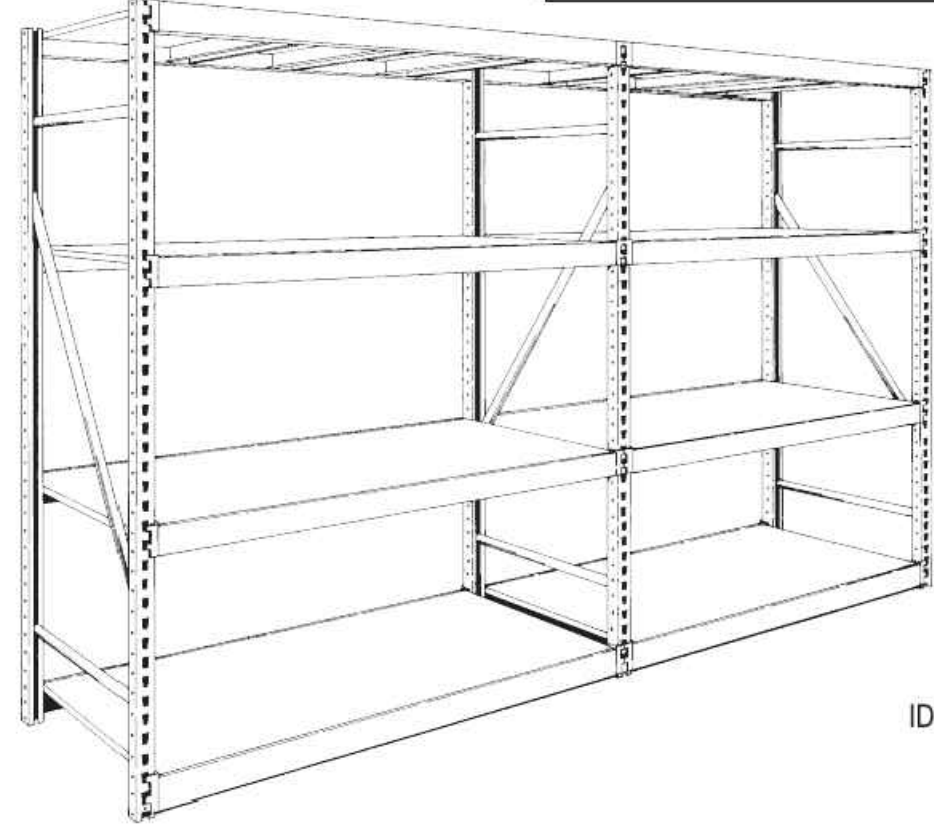
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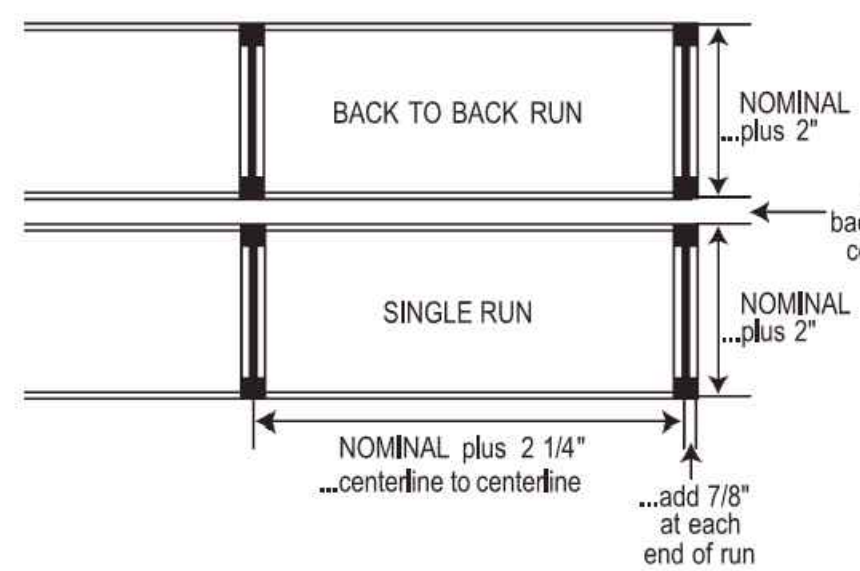
SHEET NO.

WIDE SPAN SHELVING ASY 061

INSTALLATION INSTRUCTIONS



NOTE!
This publication is intended to be a generic installation instruction for Madix Wide Span, and may possibly be subject to change as required by local building codes ...consult the building inspection department at job site.



PAGE 2-3
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IDENTIFICATION

PAGE 4-5
BASIC
INSTALLATION

PAGE 6-7
INSTALLATION OF
EXTRAS

PAGE 8
LOAD
CAPACITY

PAGE 9
SAFETY

PAGE 10
ANCHORING
TO
FLOOR

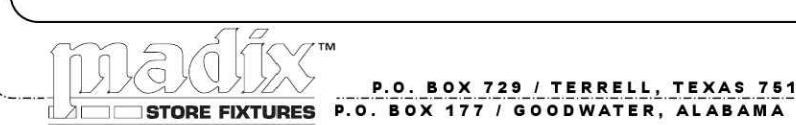
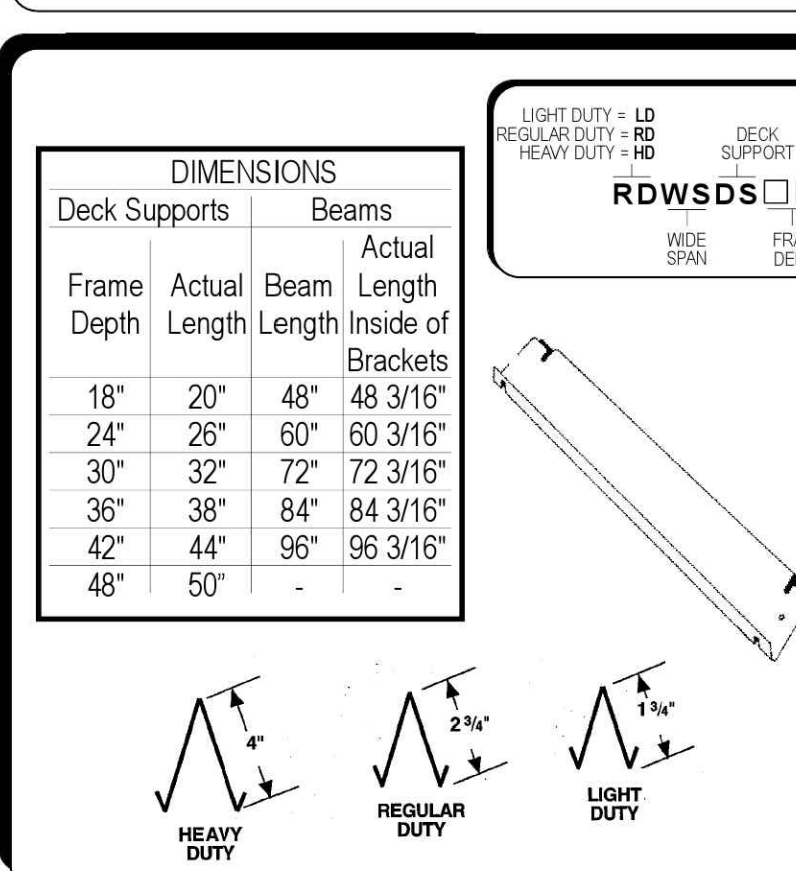
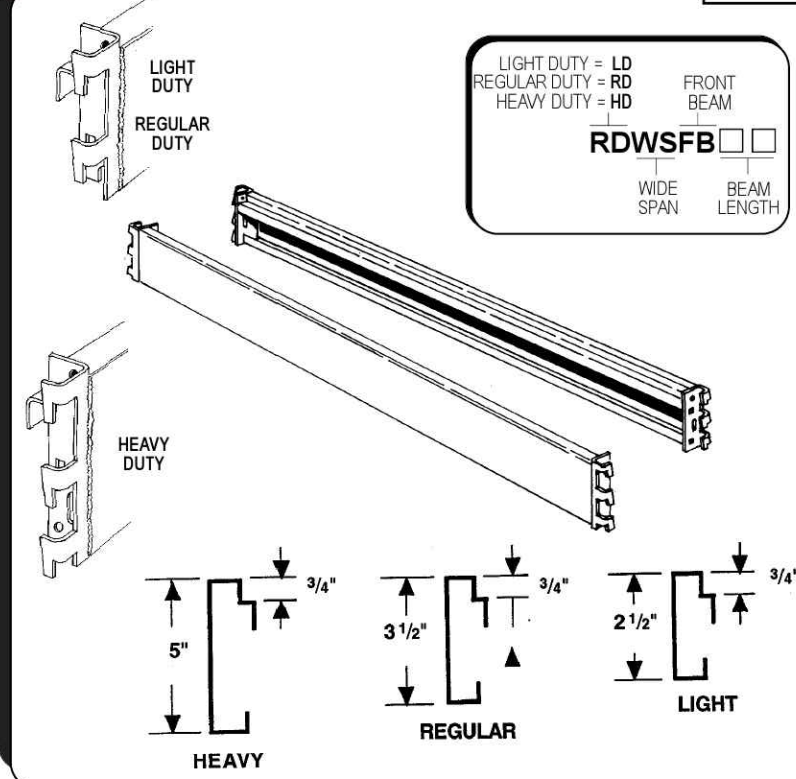


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WIDE SPAN SHELVING ASY 061

PARTS IDENTIFICATION

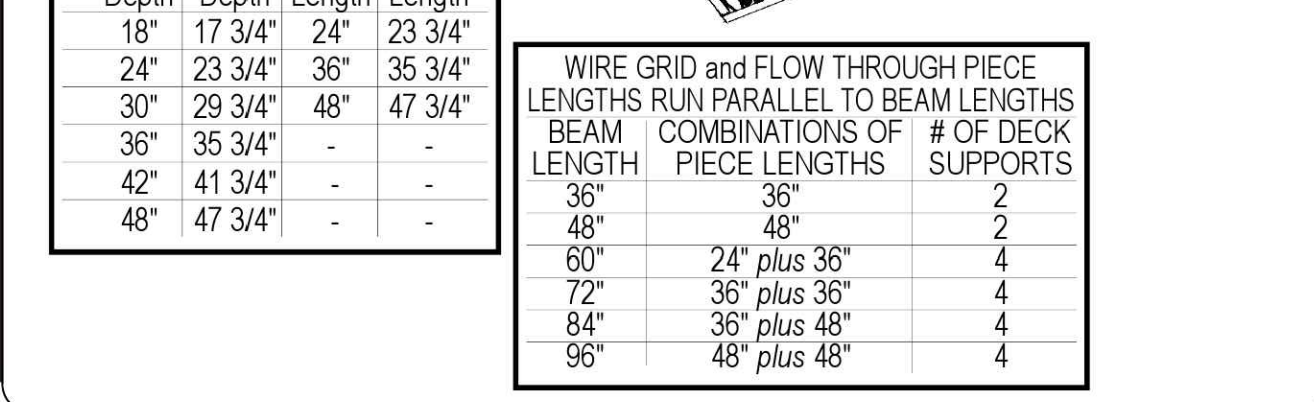
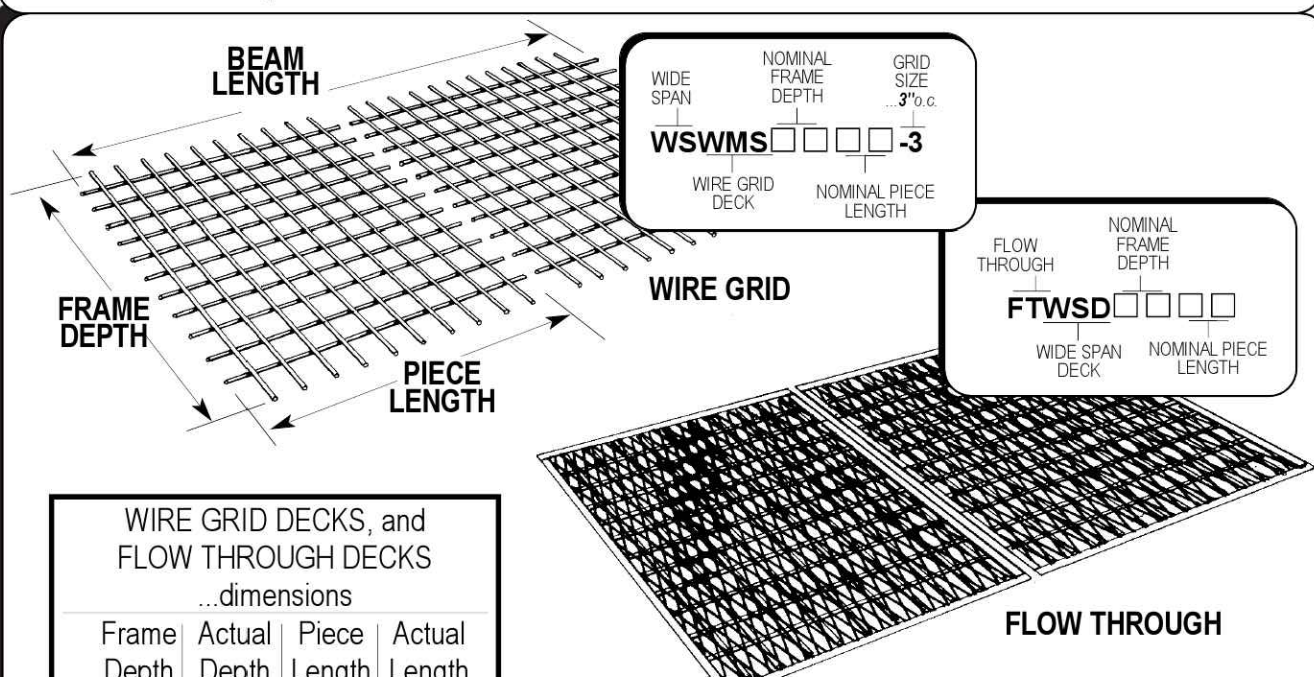
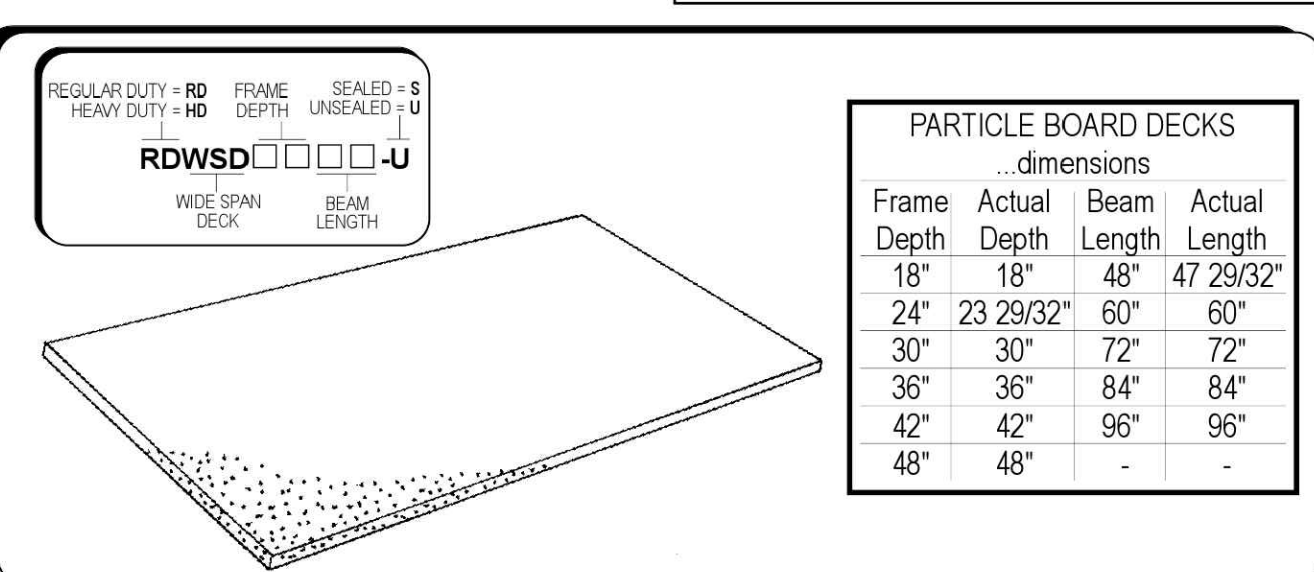


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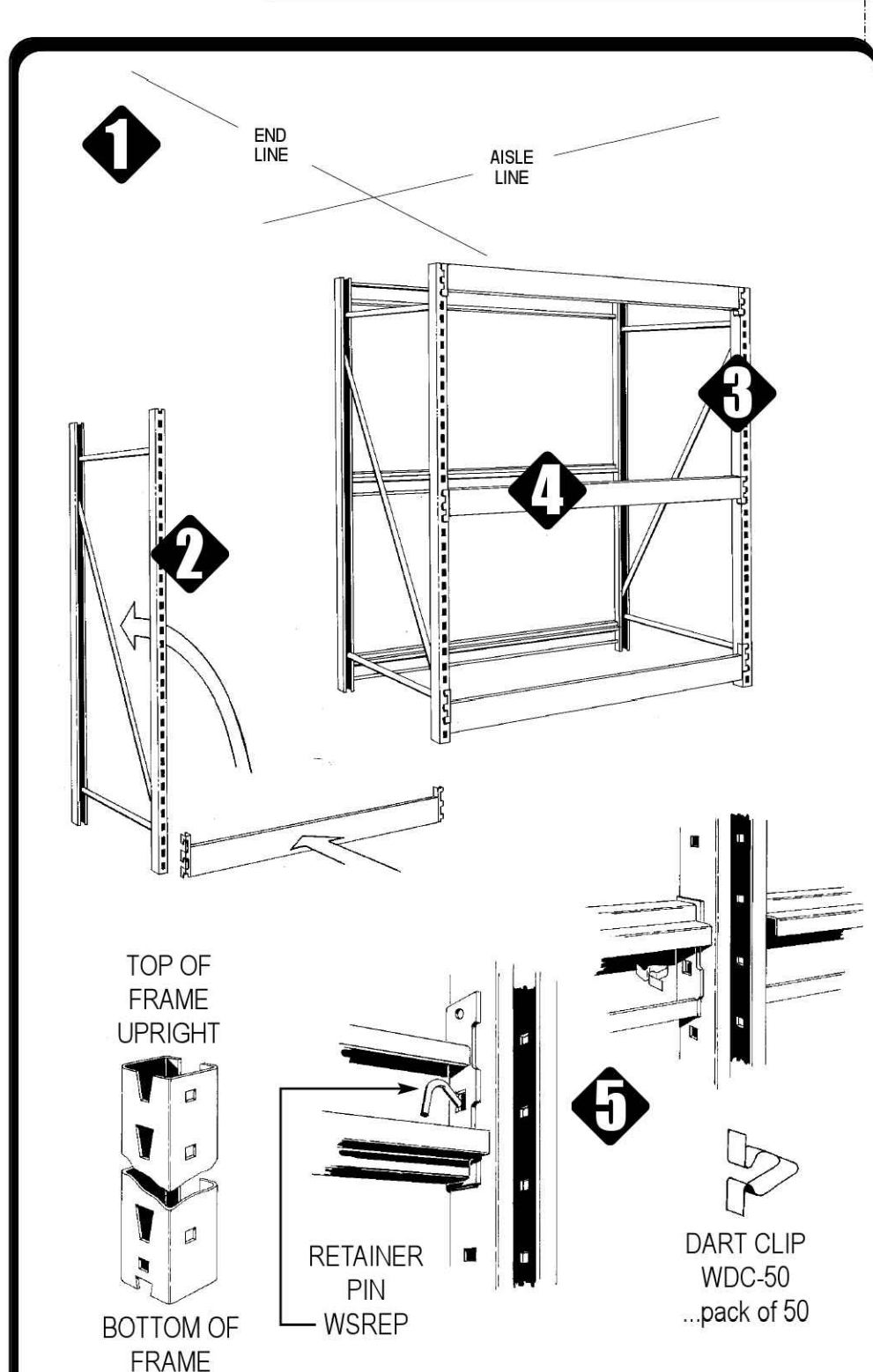
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WIDE SPAN SHELVING ASY 061

BASIC INSTALLATION

- 1 Snap chalklines on floor as shown for shelving layout. See diagram on page one for dimensions.
- 2 Raise first frame to vertical position and install first beam...frame will now stand alone.
NOTE! If floor anchors or extension frames are to be used, they should be installed prior to raising frames to the vertical position...see pages 5-6.
- 3 Raise second frame to vertical and install free end of first beam...install second beam on opposite side.
- 4 Install upper beams at designated levels.
- 5 **If using Dart Clips:** Press dart clips through beam bracket and upright on under side of beam as shown. Insert one dart clip at each end of all beams.
If using Retainer Pins: Insert one leg of a retainer pin through beam bracket and upright. Insert one pin at each end of all beams.



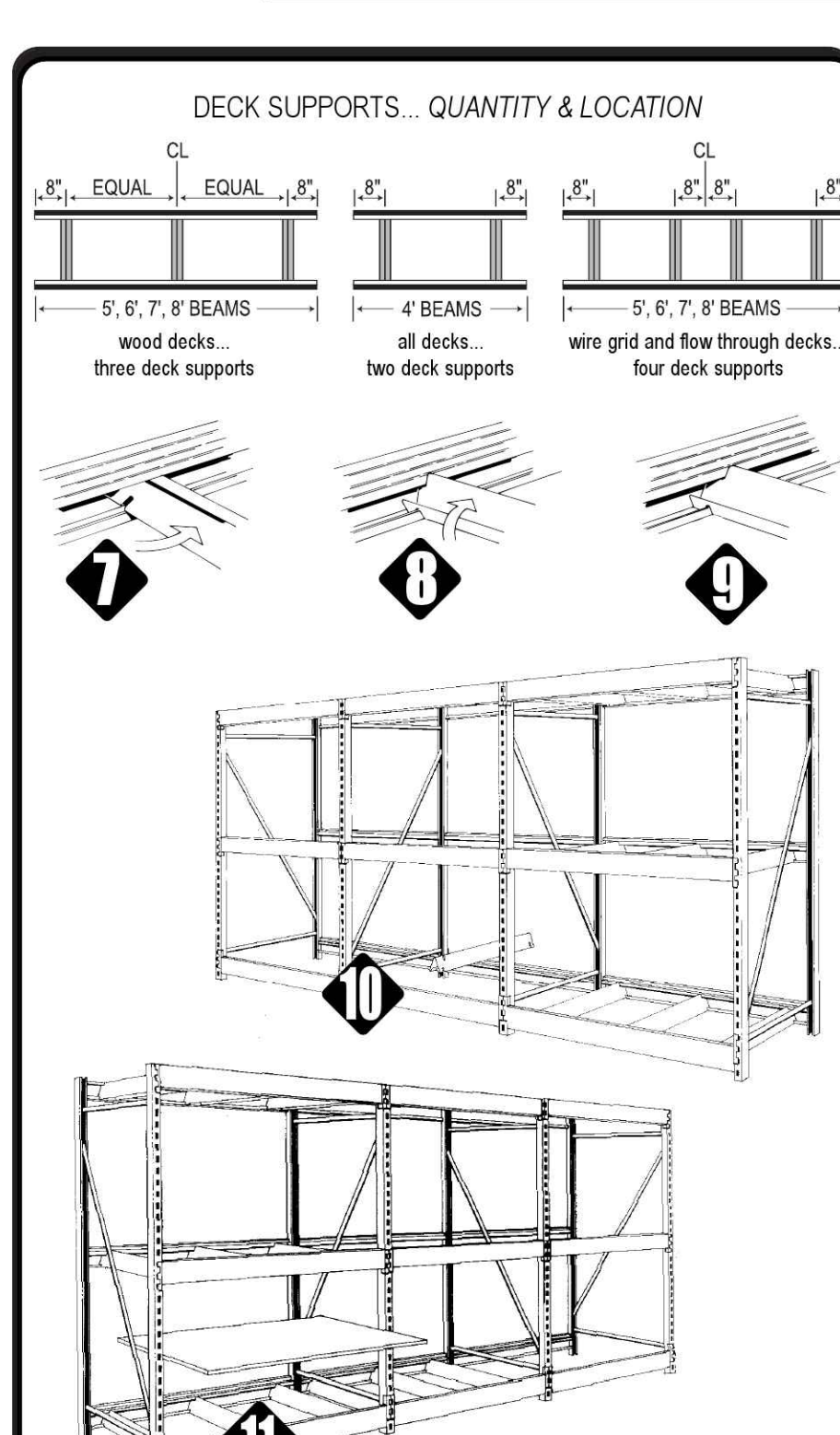
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WIDE SPAN SHELVING ASY 061

BASIC INSTALLATION

- 6 Repeat assembly sequence with remaining frames, beams and dart clips/retainer pins.
NOTE! If back to back runs are being installed, see page 6 for back to back connectors.
- 7 Holding the deck support at an angle to the beam, squeeze the open side and insert into the beam, then swing the free end around to the opposite beam, squeeze the open side and insert into the beam.
- 8 Squeeze the open side of the deck support at each end just inside the beam and rotate upwards as shown.
- 9 Correct installed position will look like this...see above for quantity of deck supports per beam length.
- 10 Repeat with the remaining deck supports in the shelving run.
- 11 Install all decks in the shelving run.



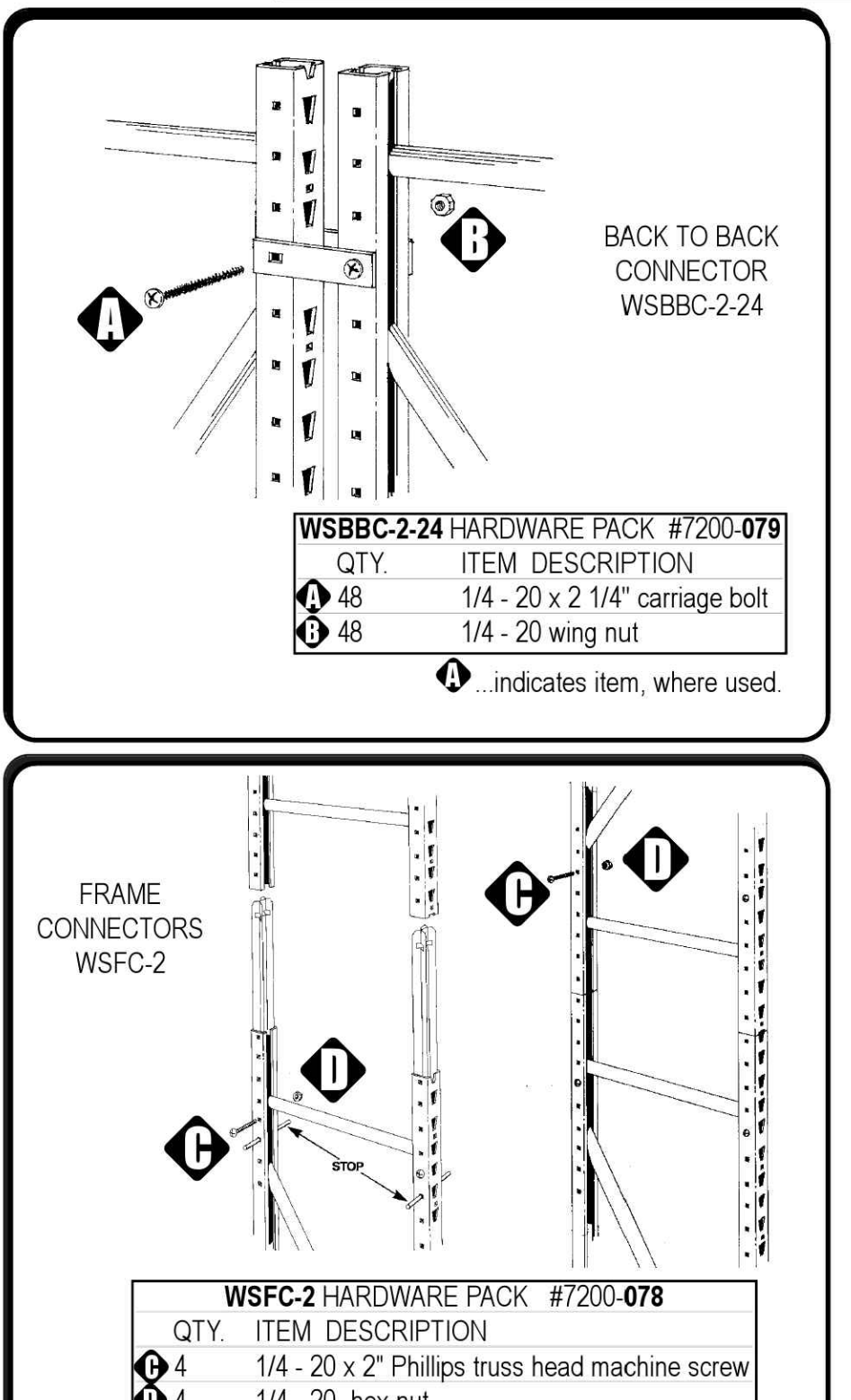
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WIDE SPAN SHELVING ASY 061

INSTALLATION OF EXTRAS

- 12 The first sections of the back to back run should be erected with beams at top and bottom of the four frames. Locate the connectors just below the top beams and just above the bottom beams. Secure with the fasteners as shown.
- 13 Repeat with the remaining sections.
- 14 Install all intermediate beams as required, then install a third connector as close as possible to the mid-point of the frames. Complete the shelving run with the deck supports and decks.
- 15 In the sixth square hole from the top of the lower frame, insert a stop to prevent the connector from dropping to the floor.
- 16 Insert connector into frame with flat center of connector facing the slotting.
- 17 Screw connector to lower frame with provided fasteners...remove the stop.
- 18 Repeat above with the 2nd upright of the frame.
- 19 Lower upper frame onto connectors and secure through the sixth hole up from the joint.



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WIDE SPAN SHELving

ASY 061

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FLOOR ANCHOR WSA-2

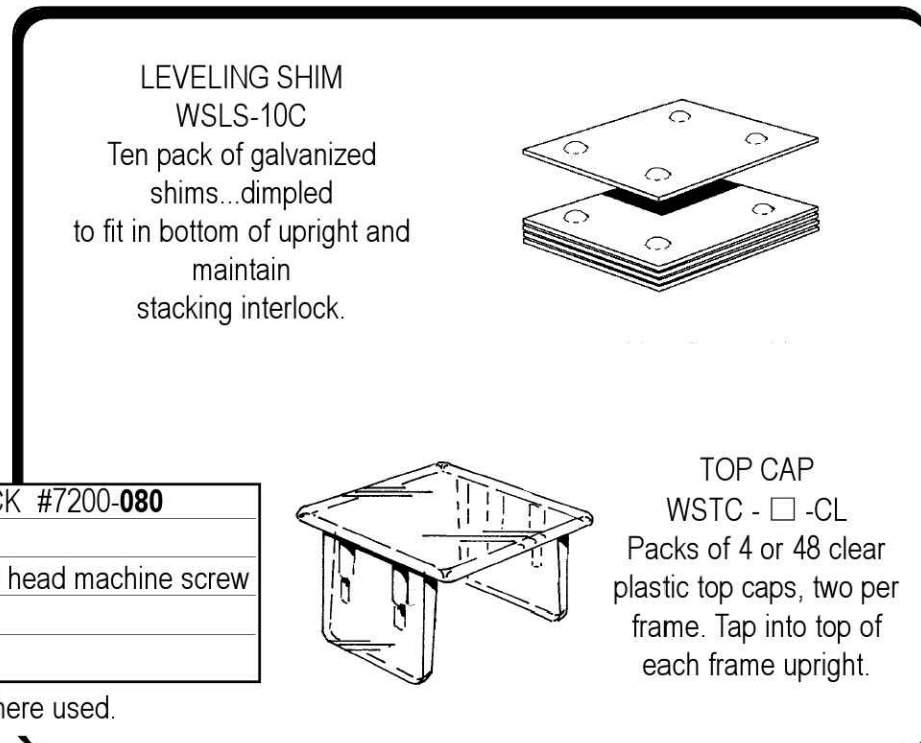
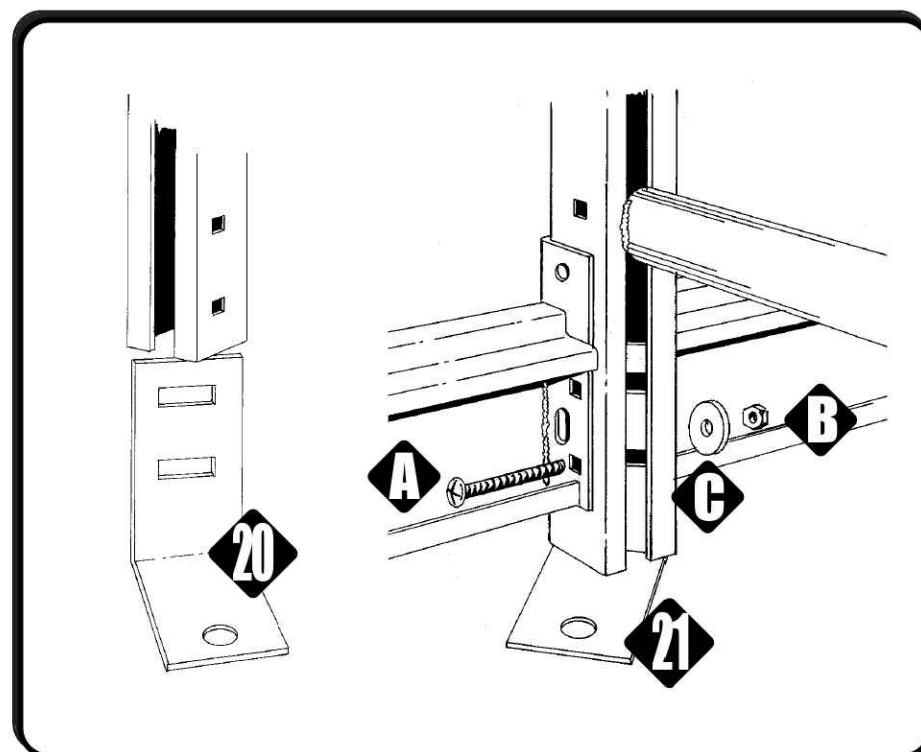
INSTALLATION OF EXTRAS

NOTE! IF FRAME HEIGHT, OR TOTAL HEIGHT OF CONNECTED FRAMES, IS MORE THAN SIX TIMES THE FRAME DEPTH ...FRAMES MUST BE SECURED WITH FLOOR ANCHORS.

20 Insert floor anchors into the bottom of each frame. They will only insert at 45° to the frame. Make sure that anchors are inserted so that they will not project into aisles or cross aisles.

21 Follow directions on page 4 to step 6, except do not install dart clips on bottom beams. Secure beams to frames through the floor anchor as shown. The screw will go through at one of the two locations, depending on the beam size.

22 Check run alignment to chalkline prior to drilling floor for expansion bolts. Due to varying floor conditions, expansion bolts must be ordered separately. If they were not ordered initially, but are required, see page 8 to order from Madix or purchase locally.



WSFA-2 HARDWARE PACK #7200-080	
QTY.	ITEM DESCRIPTION
2	1/4 - 20 x 2 1/2" round head machine screw
2	1/4 - 20 hex nut
2	1/4" flat washer

...indicates item, where used.



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WIDE SPAN SHELving

ASY 061

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LOAD SAFETY

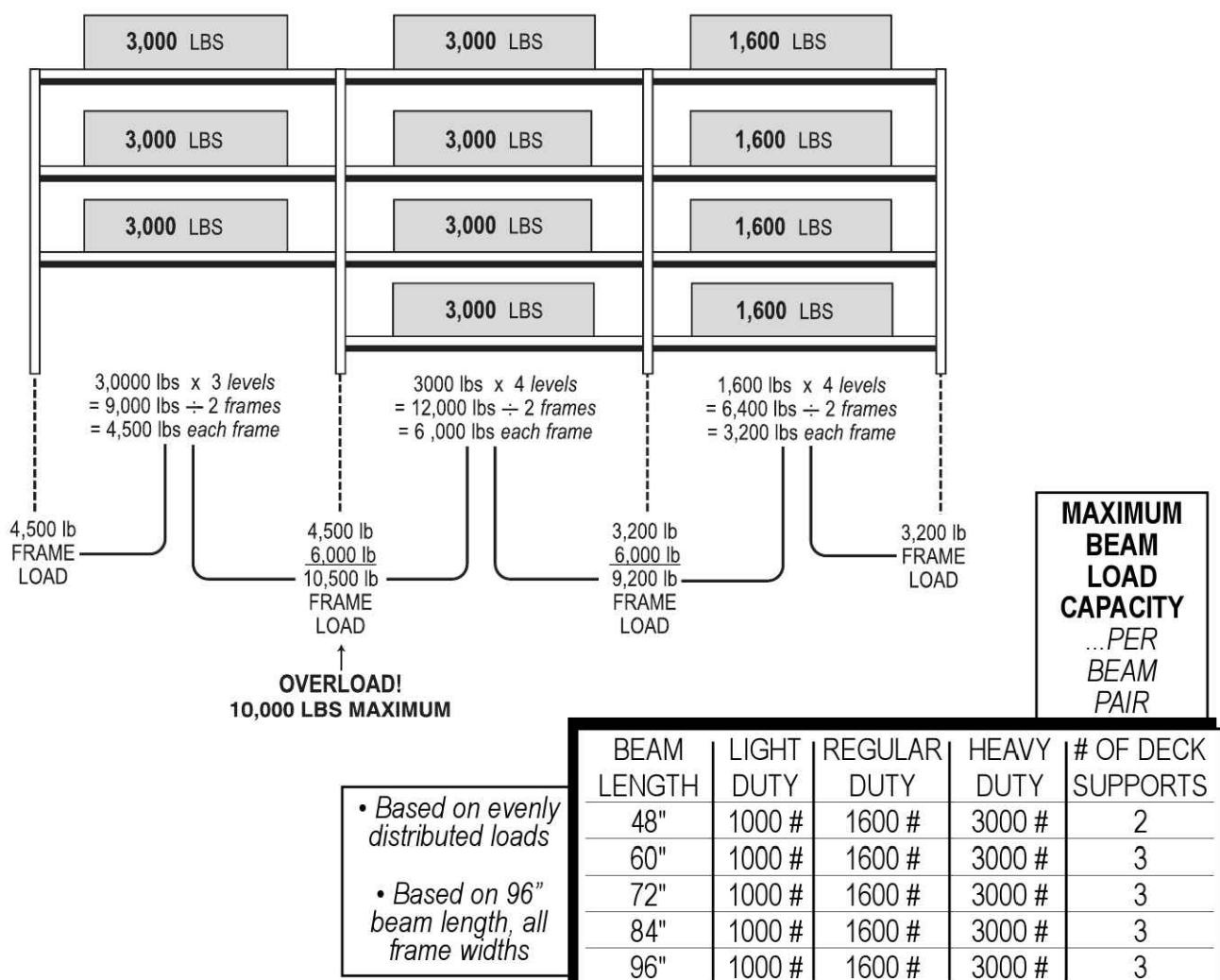


HAND STACK ONLY!
POWERED FORK TRUCKS
OR STACKERS ARE NOT
RECOMMENDED FOR USE
ON WIDE SPAN SHELving



FRAME LOADING

Frame loading is the vertical load, measured in pounds, that can be applied on any Wide span frame. Each Wide span frame will bear **ONE HALF OF THE LOAD ON EACH BEAM PAIR** that it supports. ALL FRAMES HAVE 10,000 POUND LOAD CAPACITY!



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WIDE SPAN SHELving

ASY 061

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SAFETY DURING INSTALLATION

GENERAL

- Contact the local building department prior to starting installation to check on any restrictions.
- Only parts and accessories produced or supplied by Madix are covered by Madix warranty.
- Installation sequence must be followed exactly for assembly and leveling.
- Under no circumstances should damaged parts be used.
- Do not use shelving parts or accessories for any purpose other than originally intended.
- Installation instructions with product load ratings are included with each order and must be followed carefully.
- Merchandisers must be made aware of possible overloading as specified in load ratings. If you do not receive these, please contact your sales or customer service representative.
- Initial installation or relocation of Madix gondola, wall or racking fixtures should be supervised exclusively by qualified personnel.

RACKING... FRAMES / BEAMS

- Observe all prohibitions in the installation instructions on the use of powered lifts.
- A minimum of four people are required to erect frames taller than 8'.
- Be sure all beams or accessories are completely seated and locked or secured in frame slotting.
- Ladders, if used, should be at least frame height.
- Never stand on lower beams to install upper beams.
- Do not walk on decks, especially wire grid.
- Never try to move a completed racking run, especially if merchandised.



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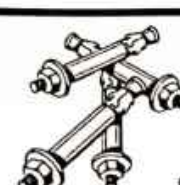


WIDE SPAN SHELving

ASY 061

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ANCHORING TO THE FLOOR



EXPANSION BOLTS FOR FLOOR ANCHORS
...50 expansion bolts, 3/8"-16 x 3 1/2" POWERS/ Power-Stud+SD2 concrete anchors or other ICC (ICBO) approved expansion bolts.

SFA-EB50: See below for other ICC (ICBO) approved expansion bolts which may be used.

NOTE! The expansion anchors provided by Madix for floor anchoring at this site have been supplied by one of the firms listed below. All the anchors have been tested and approved as stated by the following ICC (ICBO) report numbers and all are manufactured in the United States or Canada. If the anchors are not provided by Madix and field substitution other than listed be proven, Madix cannot be held responsible. Should verification be required, call Madix Customer Service at: 800.776.2349

	ICC (ICBO) #
COBRA ANCHORS CORP., Parawedge concrete anchors	ER-2350 S1
DIVERSIFIED FASTENING SYSTEMS, DFS Wedge anchor	ER-4194 S1
GUNNEBO FASTENING CORP., Drop-in concrete anchors	ER-3219 S1
HILTI, INC., Kwik-bolt-TZ concrete anchors	ESR-1917
MKT FASTENING, High Load Anchor SZ	AC-193
ITW RAMSET/RED HEAD, Trubolt wedge concrete anchors	ESR-2251
MARKSMAN MANUFACTURING CO., Thunderstud wedge and sleeve anchor	ER-2713 S1
POWERS FASTENING INNOV., Power-Stud+SD2 concrete anchors	ESR-2502
WEJ-IT, Wej-it anchors bolt and ANKR-TITE wedge anchor	ER-1825
CYW, INC., POWERBULL Wedge anchor	ESR-2254

*Embedment must be minimum 5x bolt diameter.

OTHER ICC (ICBO) APPROVED ANCHORING MATERIALS... not furnished by Madix

PNEUMATIC OR POWDER-DRIVEN STEEL STUDS AND NAILS

HILTI, INC., Hilti low velocity powder actuated or pneumatically driven fasteners	ESR-1663
ITW RAMSET/RED HEAD, Ramset Powder-Actuated and PowerPoint fasteners	ESR-1799

ADHESIVE/ EPOXY ANCHORS

HILTI, INC., HIT-HY 150 Adhesive anchor system	ESR-2678
ITW RAMSET/RED HEAD, ITW Red Head Epon system Ceramic G+ epoxy anchors	ESR-3577



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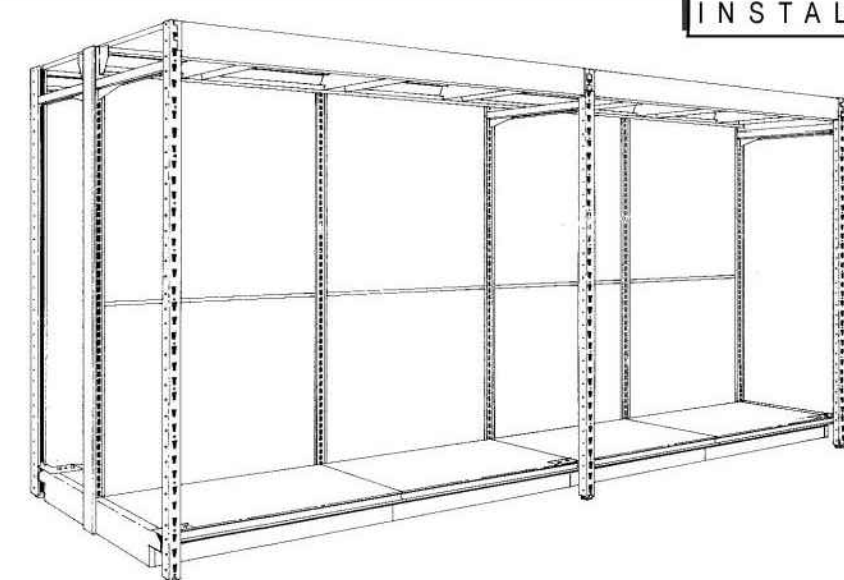
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02	5-14-96	ADDED HEIGHT/DEPTH RATIO	CAR	02/16/14					
03	5-16-96	SHOWED LD BEAM DART CLIP ON PG 4	YED	06/26/15					

HYPERMAXI

ASY 083

PAGE 1 OF 8

INSTALLATION INSTRUCTIONS

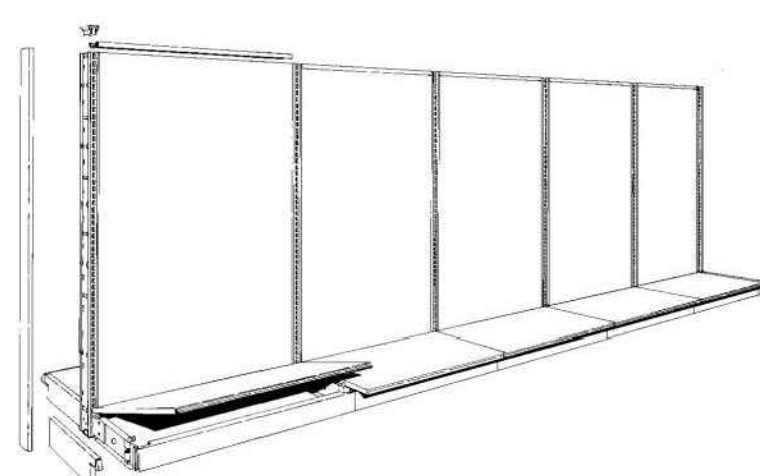


ALL CARTONS CONTAINING HYPERMAXI PARTS ARE LABELED **OPEN 6 SIXTH**

PAGE 2-3 ... PARTS IDENTIFICATION
PAGE 4-6 ... BASIC INSTALLATION
PAGE 7 ... INSTALLATION OF EXTRAS
PAGE 8 ... SAFETY/LOAD CAPACITY

NOTE!

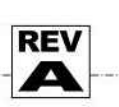
This publication is intended to be a generic installation instruction for Madix Hypermaxi, and may possibly be subject to change as required by local building codes. Consult the building inspection department at job site.



Hypermaxi is an addition to Madix gondola or wall fixtures. See installation instruction ASY 046 to correctly install and level the fixture runs. If floor anchoring of the fixtures is required, see ASY 357 for the correct procedure, and note that **IT IS NOT REQUIRED TO ANCHOR THE HYPERMAXI UPRIGHTS**, only the fixture base shoes or uprights.



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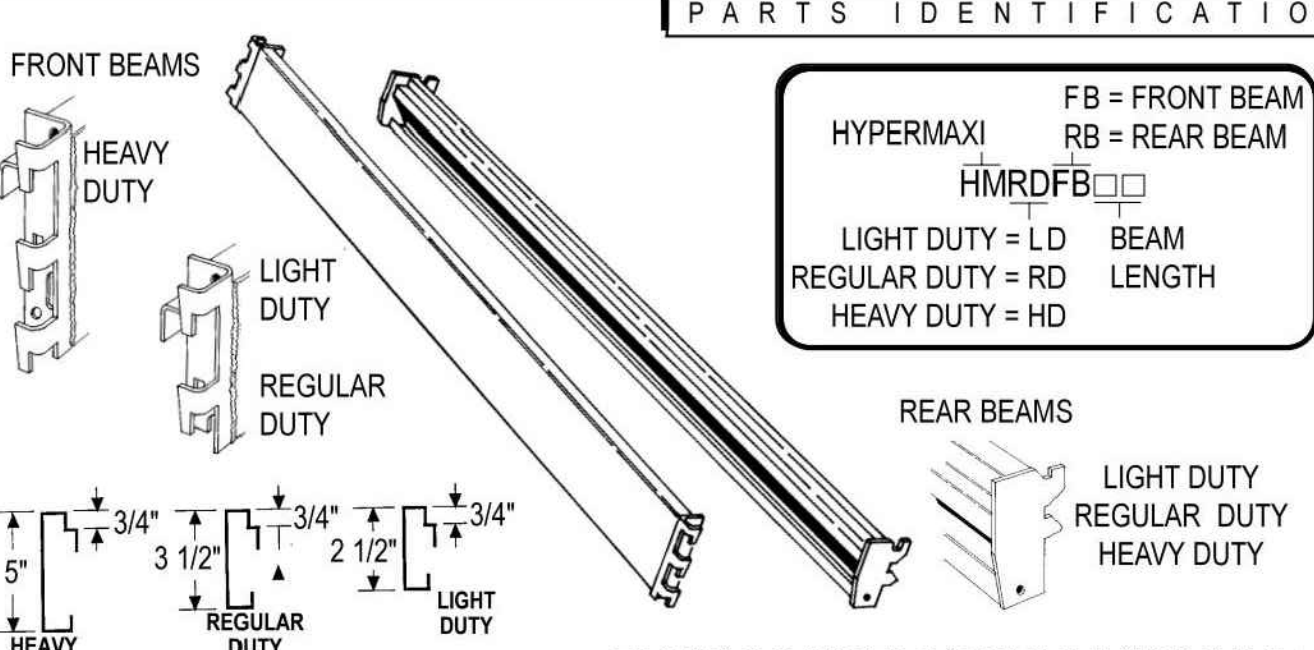


HYPERMAXI

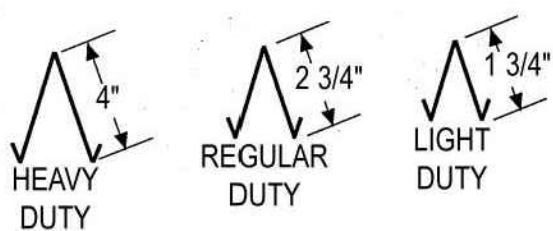
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PAGE 2 OF 8

PARTS IDENTIFICATION



DIMENSIONS			
Deck Supports	Actual Length	Beam Length	Actual Length Inside of brackets
Upright Depth	18"	20"	36"
	20"	26"	48"
	22"	32"	72"
	24"	38"	84"
	30"	44"	96"



LIGHT DUTY = LD
REGULAR DUTY = RD
HEAVY DUTY = HD

RDWSDS
WIDE FRAME
SPAN DEPTH



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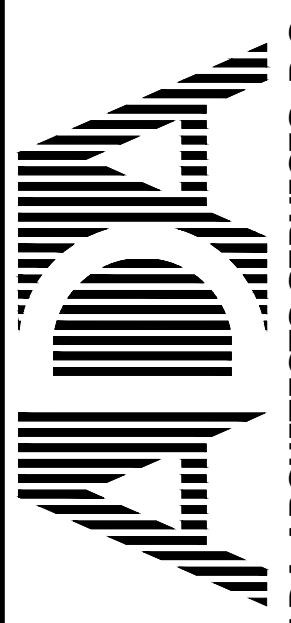


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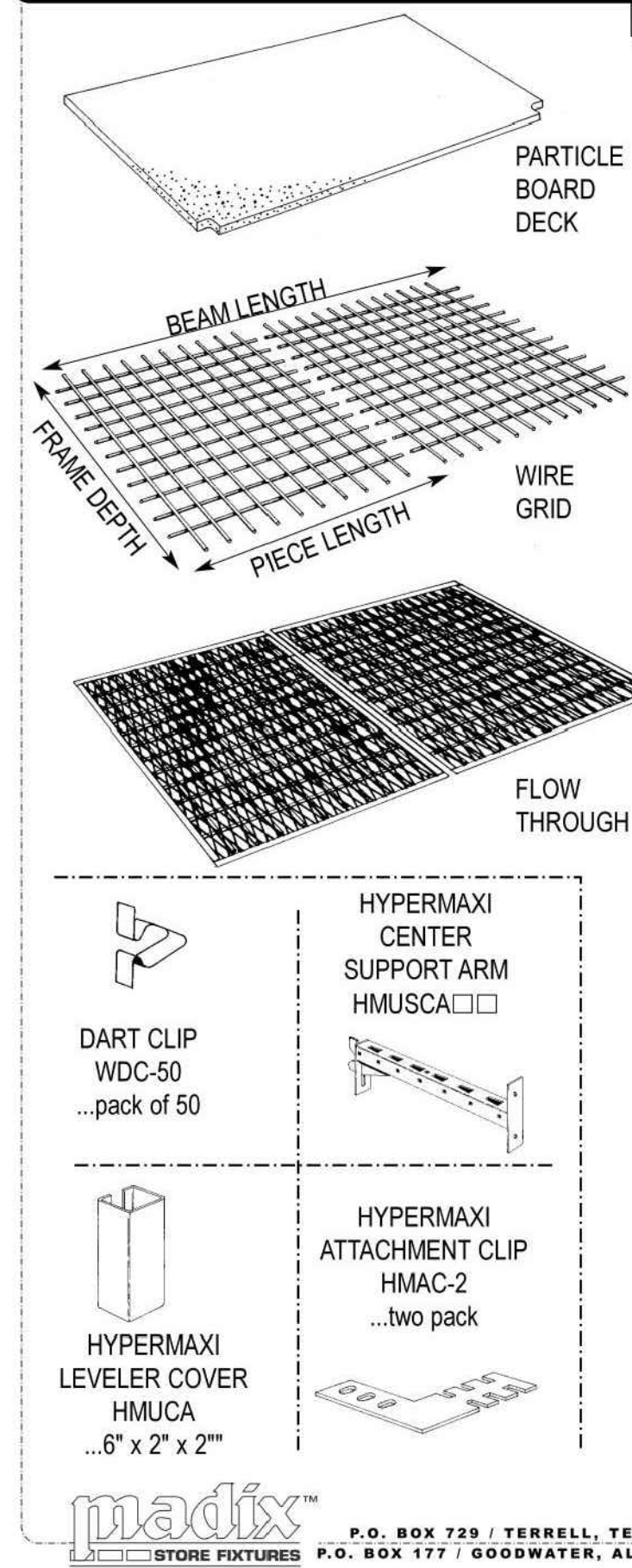
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HYPERMAXIASY 083

PAGE 3 OF 8

PARTS IDENTIFICATION



UPRIGHT SEALED = S HYPERMAXI DEPTH UNSEALED = U HMRDD□□□□-U			
REGULAR DUTY = RD BEAM HEAVY DUTY = HD LENGTH DECK			
PARTICLE BOARD DECKS... DIMENSIONS...			
UPRIGHT DEPTH	ACTUAL DEPTH	PIECE LENGTH	ACTUAL LENGTH
18"	18"	36"	35 17/32"
20"	20"	48"	47 17/32"
22"	22"	60"	59 17/32"
24"	24"	72"	71 17/32"
30"	30"	84"	83 17/32"
-	-	96"	95 17/32"
UPRIGHT GRID SIZE HYPERMAXI DEPTH ...3" O.C. HMMWS□□□□-3			
WIRE GRID DECK BEAM LENGTH			
FLOW THROUGH UPRIGHT DEPTH FTHMD□□□□			
HYPERMAXI DECK BEAM LENGTH			
WIRE GRID DECKS AND FLOW THROUGH DECKS... DIMENSIONS...			
UPRIGHT DEPTH	ACTUAL DEPTH	PIECE LENGTH	ACTUAL LENGTH
18"	17 3/4"	24"	23 3/4"
20"	19 3/4"	36"	35 3/4"
22"	21 3/4"	48"	47 3/4"
24"	23 3/4"	-	-
30"	29 3/4"	-	-
WIRE GRID AND FLOW THROUGH PIECE LENGTHS RUN PARALLEL TO BEAM LENGTH			
BEAM LENGTH	COMBINATIONS OF PIECE LENGTHS	# OF DECK SUPPORTS	
36"	36"	2	
48"	48"	2	
60"	24" plus 36"	4	
72"	36" plus 36"	4	
84"	36" plus 48"	4	
96"	48" plus 48"	4	

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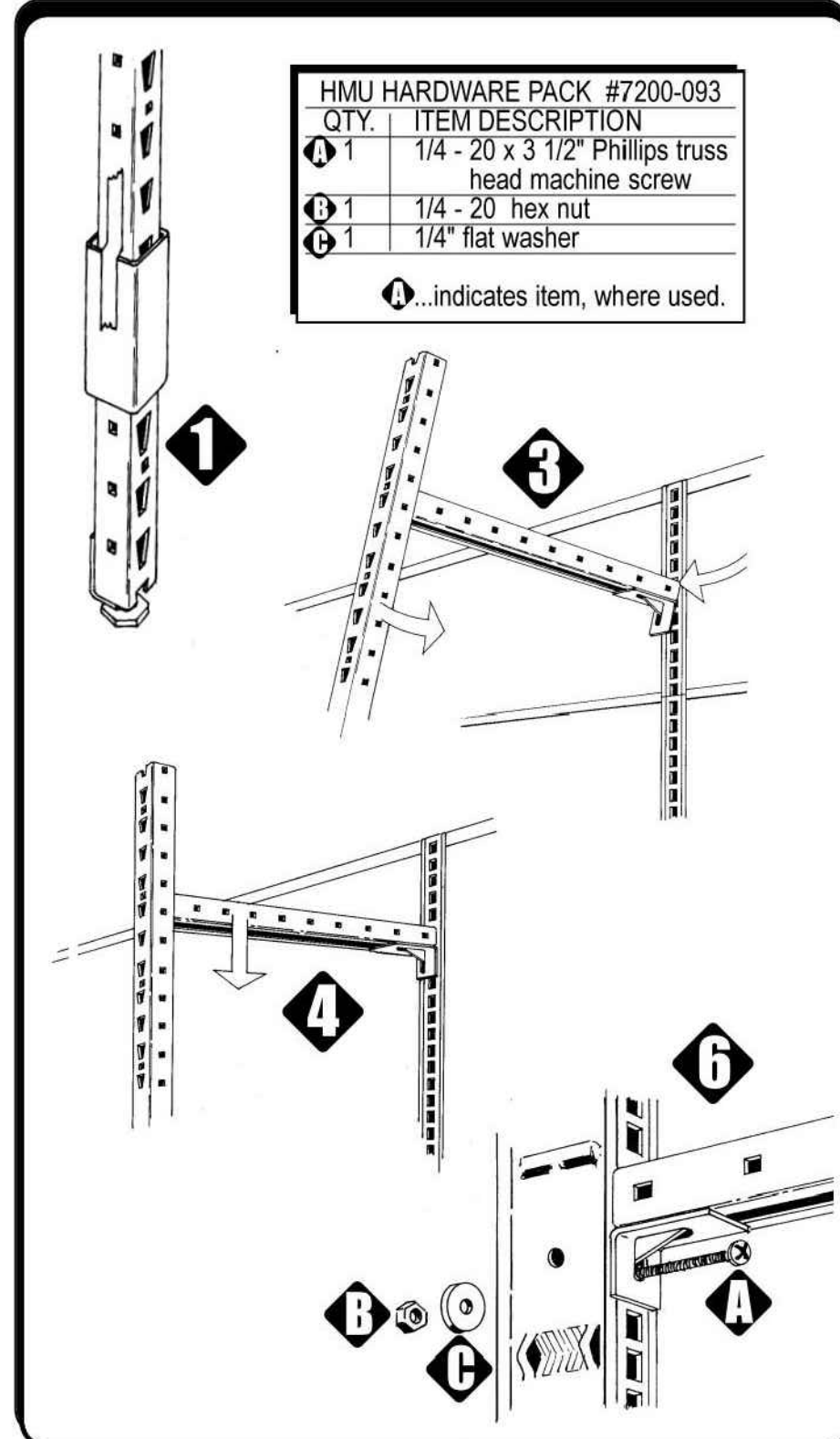


HYPERMAXIASY 083

PAGE 4 OF 8

INSTALLATION INSTRUCTIONS

- Run levelers on Hypermaxi uprights all the way up. Slide leveler cover, if used, approximately 6" up Hypermaxi upright and secure with tape.
- If plastic upright end covers, UEC-□□, are used, they should not be installed at this point. If metal upright end covers, VC-□□, they should be installed at this point.
- Hold Hypermaxi upright at an angle as shown and insert bracket into the sixth slot from the top of the fixture upright; if using HMU-□□□□-12 is used, insert into the twelfth slot down. The bottom of the Hypermaxi upright will pivot in toward base when bracket is properly engaged.
- Pull down on the bracket arm, using your weight to properly seat bracket in upright.
- Repeat steps 4-5 on opposite side of fixture if it is a gondola.
- Insert screw as shown through fixture slotting and Hypermaxi upright bracket. Secure with washer and nut on other side.



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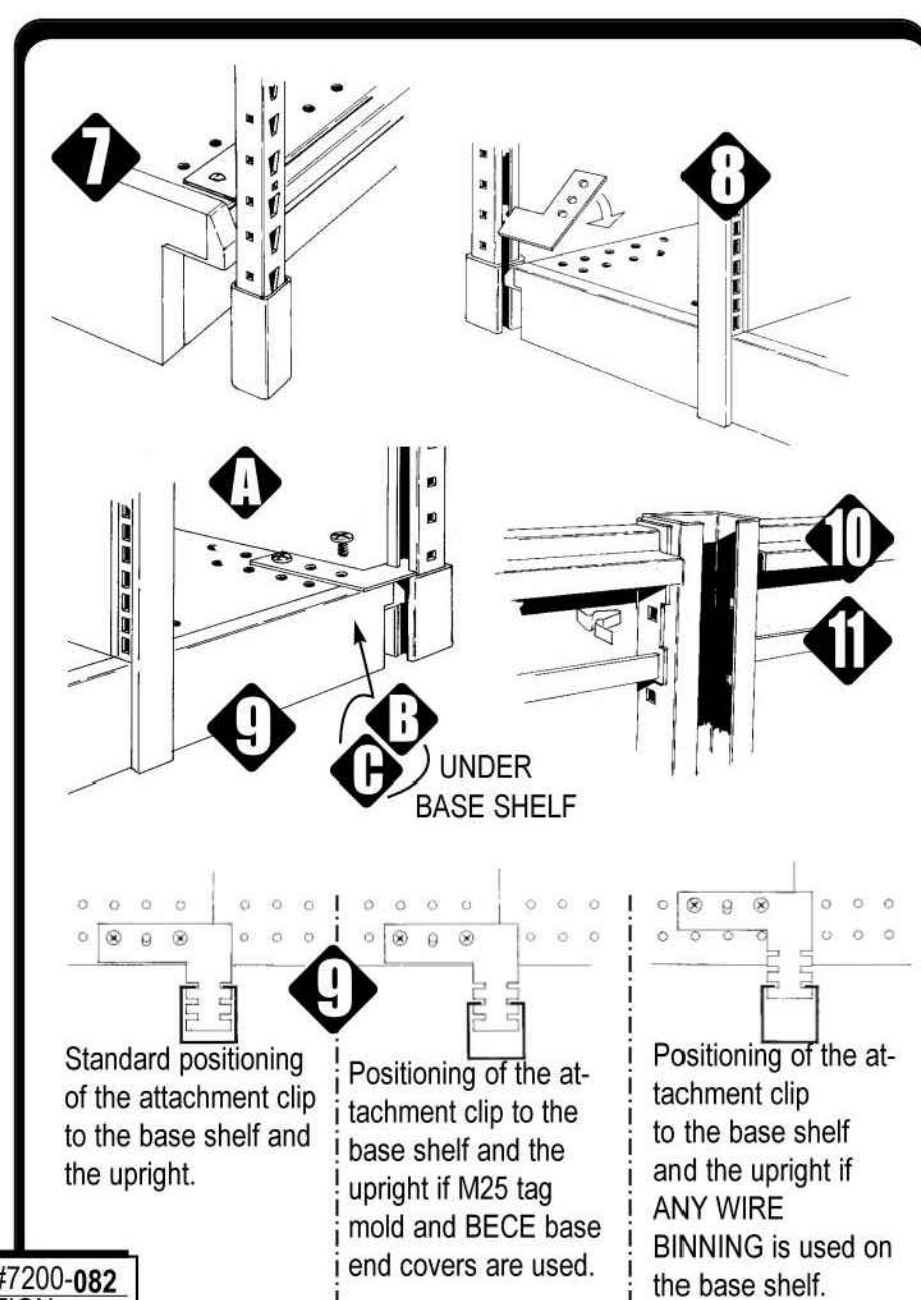


HYPERMAXIASY 083

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INSTALLATION INSTRUCTIONS

- Run Hypermaxi upright levelers down to floor... untape leveler cover, if used, and slide cover down to floor.
- Insert the attachment clip into Hypermaxi upright and rotate 90°.
- Select required attachment clip positioning from the diagram below, then secure attachment clip to base shelf with fasteners in hardware pack shown below.
- Install beams at required heights. For front and rear beam sizes and bracket shapes, refer to parts identification on page 2.
- Press dart clips through beam bracket and upright on the under side of beam as shown. Insert one dart clip at each end of all beams.



HMAAC-2 HARDWARE PACK #7200-082	
QTY.	ITEM DESCRIPTION
4	1/4 - 20 x 1/2" Phillips truss head machine screw
4	1/4 - 20 hex nut
4	1/4" flat washer
4	1/4 - 20 lock washer
4	# 8 x 1/2" hex head sheet metal screw

...indicates item, where used.

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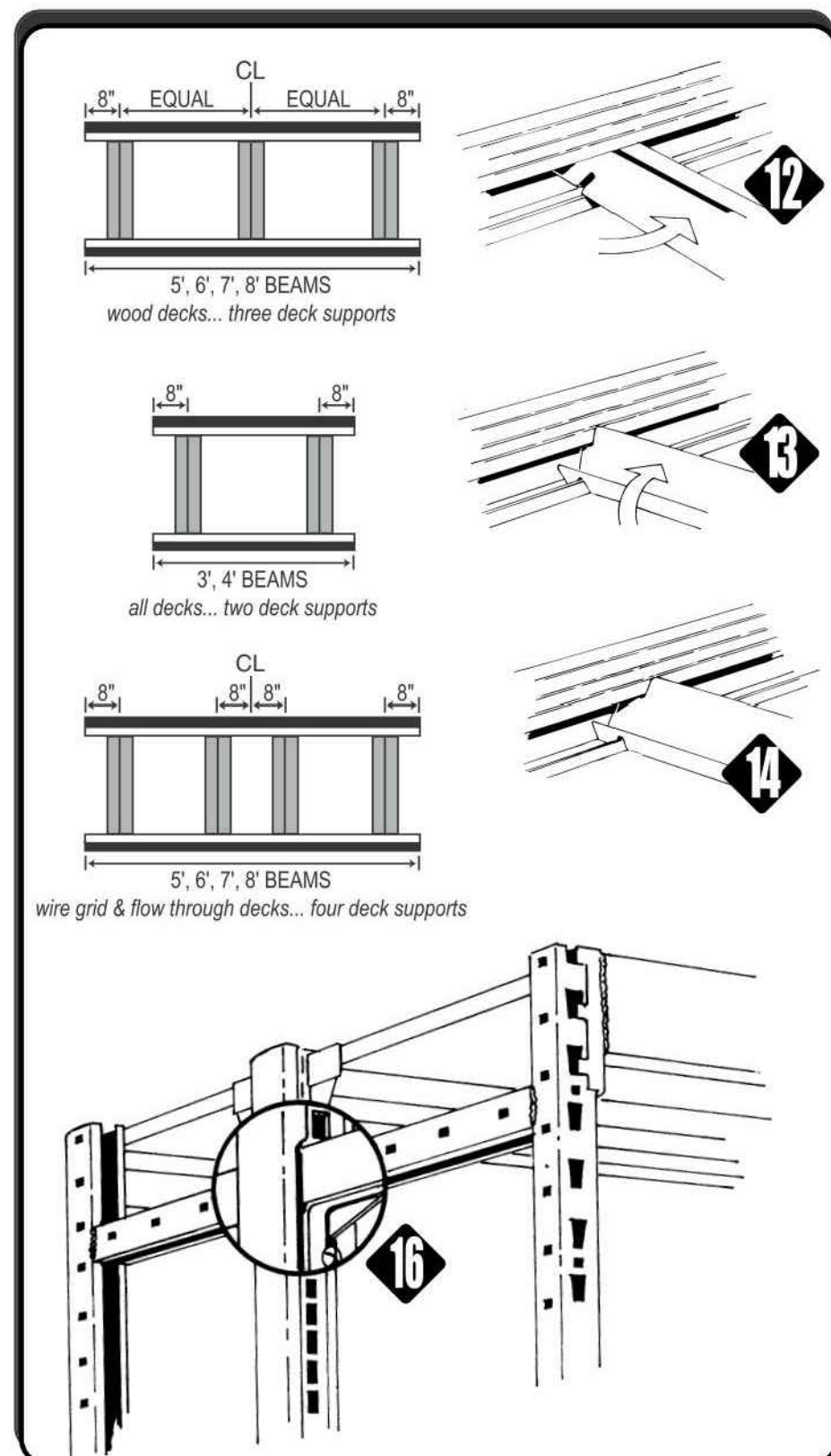


HYPERMAXIASY 083

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DECK SUPPORTS: QUANTITY AND LOCATION

- Holding the deck support at an angle to the beam, squeeze the open side and insert into the beam, then swing the free end around to the opposite beam, squeeze the open side and insert into the beam.
- Squeeze the open side of the deck support at each end just inside the beam and rotate upwards as shown.
- Correct installed position will look like diagram 14. See layout diagram for quantity of deck supports per beam length. Supports may be slid or tapped into locations as shown.
- Lay the decks on the deck supports. The notches on the particle board decks are on the front edge to accommodate the Hypermaxi upright.
- Trim the UEC-□□□, upright end covers, to fit over the Hypermaxi upright bracket prior to installing them.
- Install upper shelves and accessories into the basic fixture upright.



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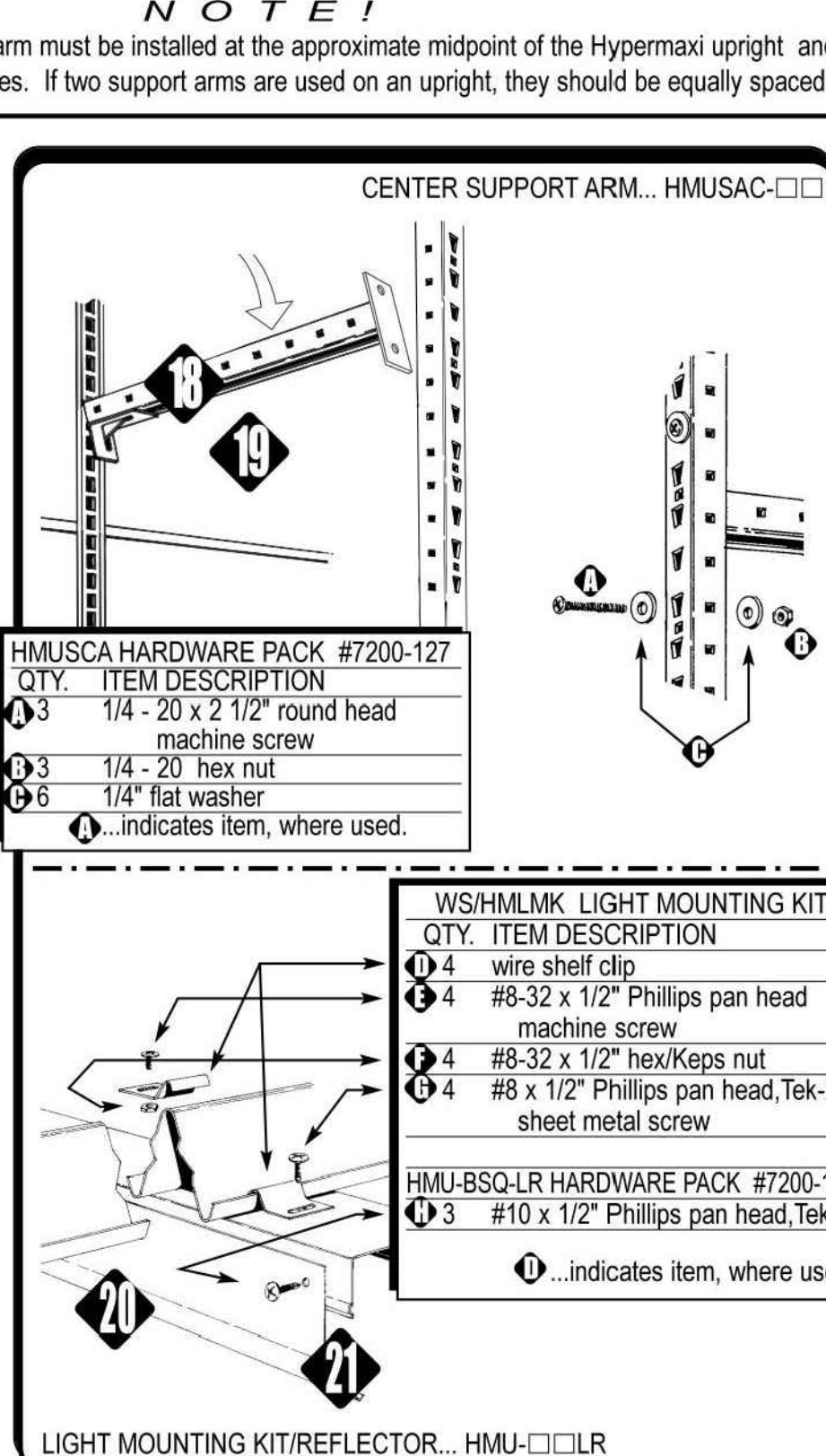


HYPERMAXIASY 083

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INSTALLATION OF EXTRAS

- Hold the center support arm at an angle as shown and insert bracket into the basic fixture upright and pull down on the bracket arm, using your weight to properly seat bracket in upright.
- Pull outward on the Hypermaxi upright and swing the center support arm in behind the upright. Align the mounting plate holes with the upright slots and secure with the fasteners as shown.
- There are two means of securing the light fixture to the deck support...the fasteners are provided for either one.
 - Use the self drilling Tek-2 screw, item D, as shown. This runs a slight risk of drilling into the interior wiring of the light fixture.
 - OR
 - Use the screw and nut, items B and C, as shown. This will require removing the light fixture cover.
- Using the self-drilling screws, item E, secure the reflector to the light fixture as shown.



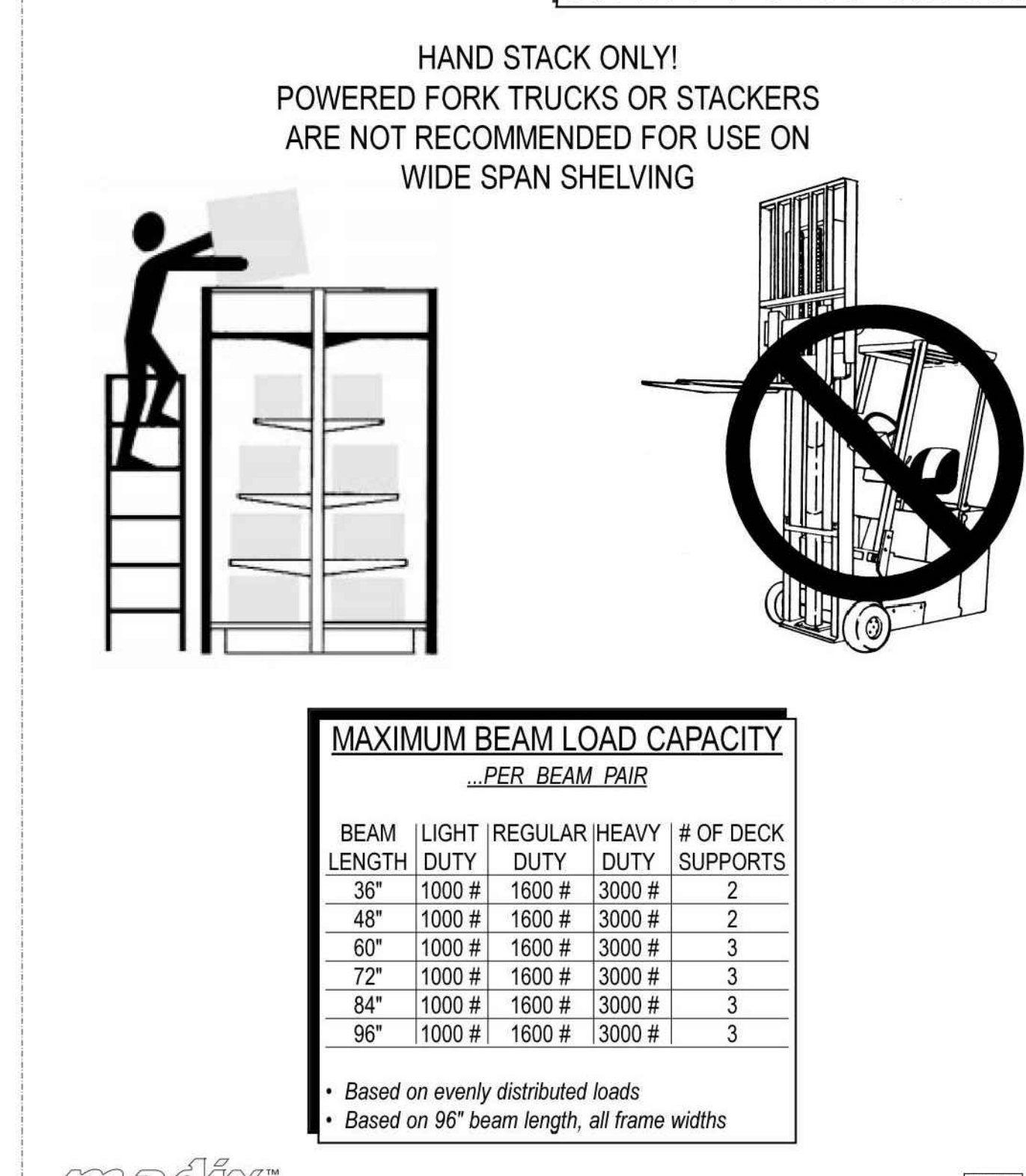
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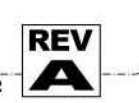
SAFETY / LOAD CAPACITY



MAXIMUM BEAM LOAD CAPACITY ...PER BEAM PAIR					
BEAM LENGTH	LIGHT DUTY	REGULAR DUTY	HEAVY DUTY	# OF DECK SUPPORTS	
36"	1000 #	1600 #	3000 #	2	
48"	1000 #	1600 #	3000 #	2	
60"	1000 #	1600 #	3000 #	3	
72"	1000 #	1600 #	3000 #	3	
84"	1000 #	1600 #	3000 #	3	
96"	1000 #	1600 #	3000 #	3	

• Based on evenly distributed loads
• Based on 96" beam length, all frame widths

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FIXTURE SPECIFICATIONS AND DETAILS

DATE 9/22/21

JOB NO. 20420

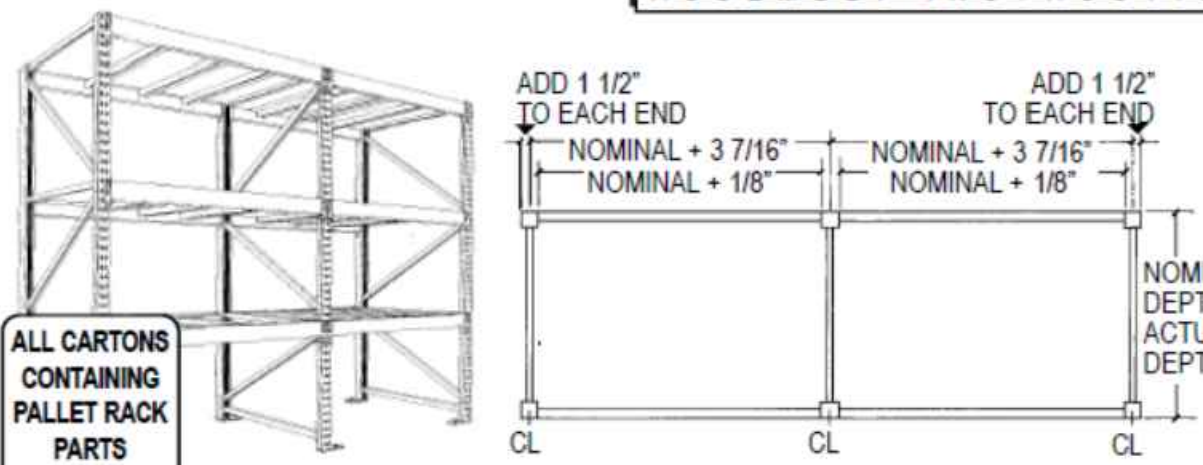
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SHEET NO.

PALLET RACK **ASY 103**

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ASSEMBLY INSTRUCTIONS

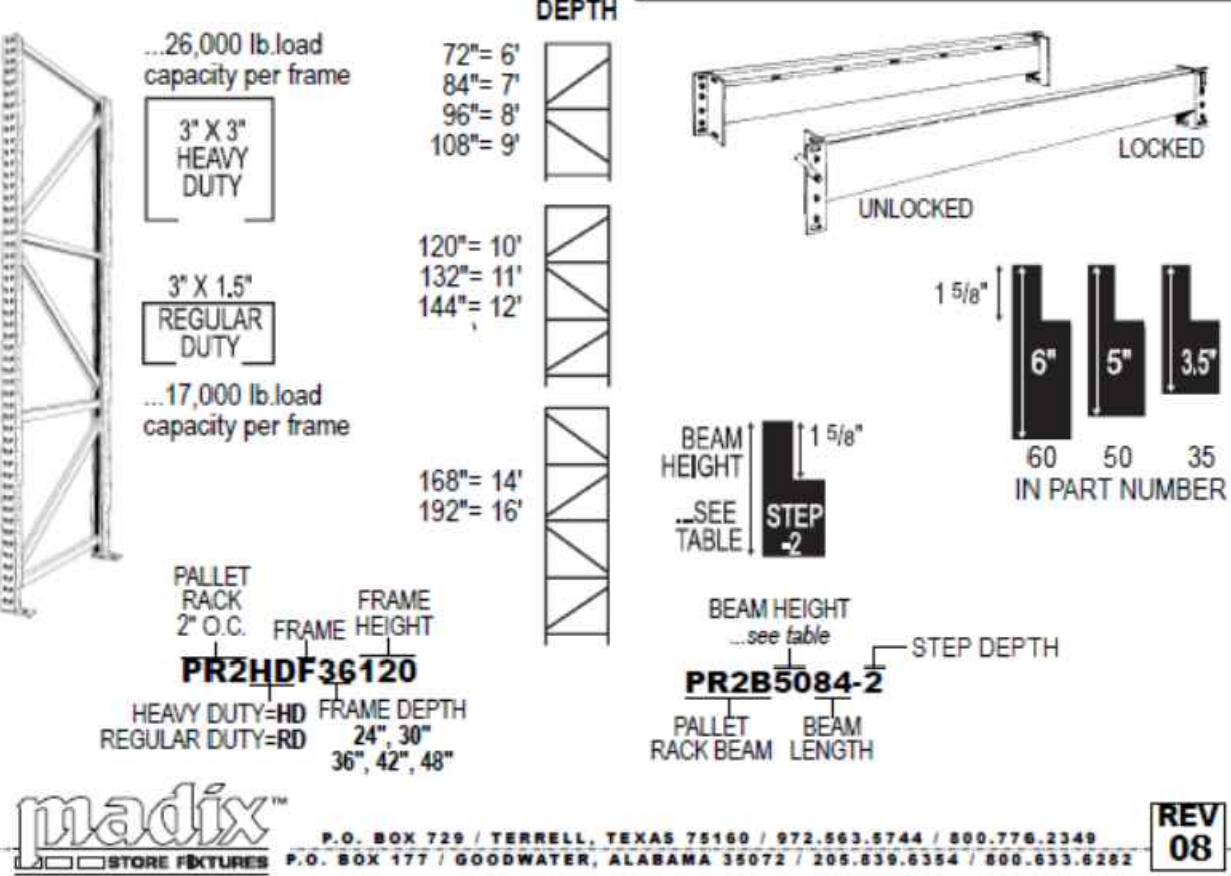


ALL CARTONS CONTAINING PALLET RACK PARTS ARE LABELED **OPEN 7 SEVENTH**

PAGE 1-3 ...PARTS IDENTIFICATION
PAGE 3 ...SAFETY
PAGE 4-5 ...BASIC INSTALLATION
PAGE 6 ...LOAD CAPACITY
PAGE 7 ...ANCHORING TO FLOOR

NOTE! This publication is intended to be a generic installation instruction for Madix Pallet Rack, and may possibly be subject to change as required by local building codes ...consult the building inspection department at job site.

PARTS IDENTIFICATION



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PALLET RACK **ASY 103**

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PARTS IDENTIFICATION

BEAM LENGTH	BEAM HEIGHT	CAPACITY IN LBS/PAIR	ACTUAL LENGTH BETWEEN BRACKETS
48" x 3 1/2"	4,950	48 1/8"	
48" x 5"	7,600	48 1/8"	
48" x 6"	10,000	48 1/8"	
60" x 3 1/2"	4,950	60 1/8"	
60" x 5"	7,600	60 1/8"	
60" x 6"	10,000	60 1/8"	
72" x 3 1/2"	4,950	72 1/8"	
72" x 5"	7,600	72 1/8"	
72" x 6"	10,000	72 1/8"	
84" x 3 1/2"	4,950	84 1/8"	
84" x 5"	7,600	84 1/8"	
84" x 6"	10,000	84 1/8"	
96" x 3 1/2"	4,950	96 1/8"	
96" x 5"	7,600	96 1/8"	
96" x 6"	10,000	96 1/8"	
108" x 3 1/2"	9,110	108 1/8"	
120" x 3 1/2"	8,000	120 1/8"	
132" x 3 1/2"	7,270	132 1/8"	
144" x 3 1/2"	6,660	144 1/8"	

NOMINAL	ACTUAL
24"	21"
30"	27"
36"	33"
42"	39"
48"	45"
48"	47 3/4"
60"	59 3/4"
72"	71 3/4"
84"	83 3/4"
96"	95 3/4"
108"	107 3/4"
120"	119 3/4"
132"	131 3/4"
144"	143 3/4"

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PALLET RACK **ASY 103**

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PARTS IDENTIFICATION AND SAFETY

WIRE GRID	WIRE GRID DEPTH	NOMINAL FRAME DEPTH	GRID SIZE	DECK DIMENSIONS
DSRPO-ND-1 ONLY	24"	36"	36"	NOMINAL
WATER FALL	24"	36"	36"	ACTUAL
FLOW-THRU	24"	36"	36"	
DSRPO-ND-1 ONLY	24"	36"	36"	
WATER FALL	24"	36"	36"	
FLOW-THRU	24"	36"	36"	
DSRPO-ND-1 ONLY	24"	36"	36"	
WATER FALL	24"	36"	36"	
FLOW-THRU	24"	36"	36"	

SAFETY DURING INSTALLATION: GENERAL
1. Contact the local building department prior to starting installation to check on any restrictions.
2. Only parts and accessories produced or supplied by Madix are covered by Madix warranty.
3. Installation sequence must be followed exactly for assembly and leveling.
4. Under no circumstances should damaged parts be used.
5. Do not use shelving parts or accessories for any purpose other than originally intended.
6. Installation instructions with product load ratings are included with each order and must be followed carefully.
7. Merchandisers must be made aware of possible overloading as specified in load ratings. If you do not receive these, please contact your sales or customer service representative.
8. Initial installation or relocation of Madix gondola, wall or racking fixtures should be supervised exclusively by qualified personnel.

RACKING: FRAMES/ BEAMS
1. Observe all prohibitions in the installation instructions on the use of powered lifts.
2. A minimum of four people are required to erect frames taller than 8'.
3. Be sure all beams or accessories are completely seated and locked or secured in frame slotting.

Height to Depth Ratio:
Ratio should not exceed 4 to 1 measuring to the top of top most load. If ratio exceeds 4 to 1 the constraint can be overcome with proper anchoring or external bracing of the rack structure.
CONSULT YOUR STRUCTURAL ENGINEER FOR SOLUTIONS.

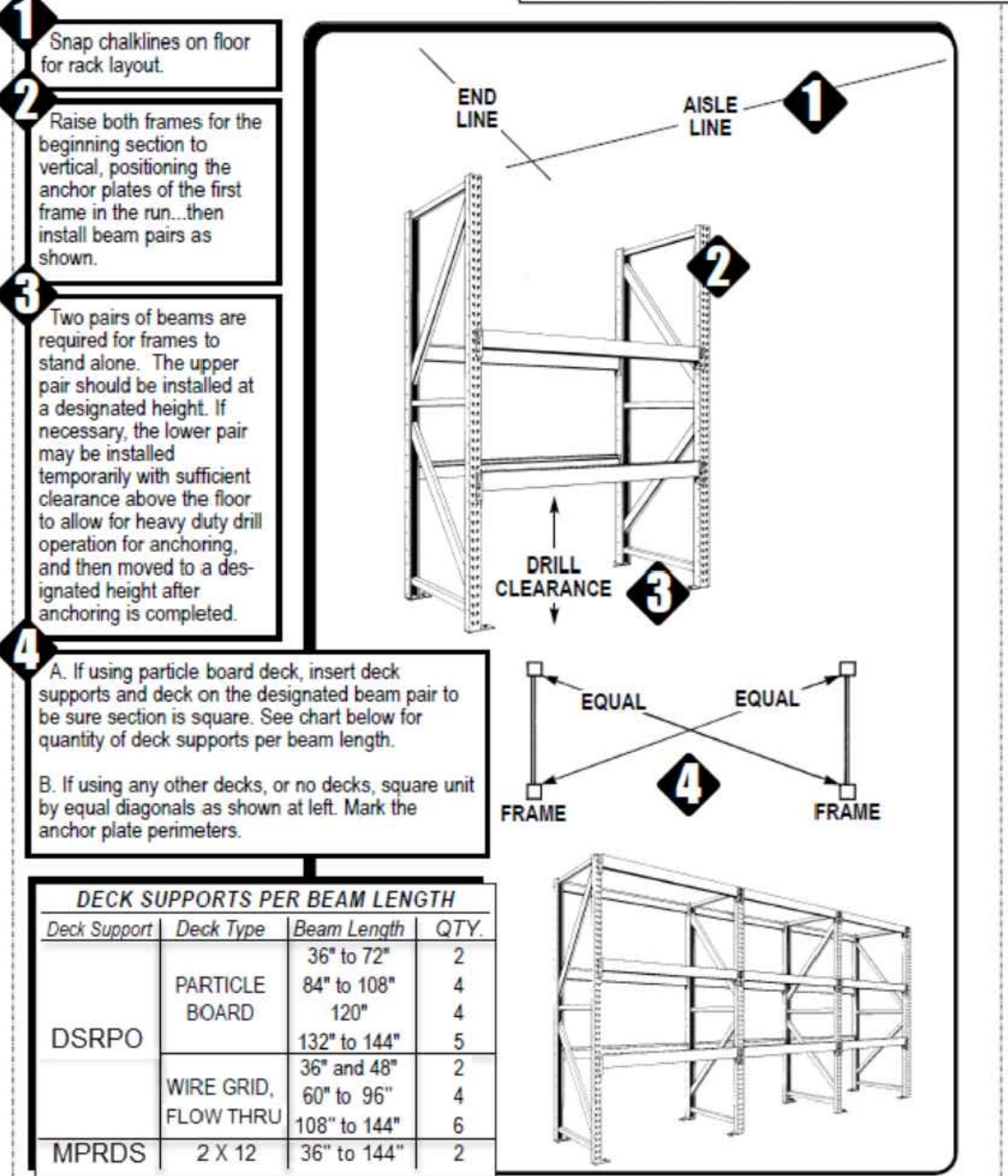
4. Ladders, if used, should be at least frame height.
5. Never stand on lower beams to install upper beams.
6. Do not walk on decks, especially wire grid.
7. Never try to move a completed racking run, especially if merchandised.
8. If installing frame extensions (PR2HDFR or PR2RDFE), Refer to ASY-80033038 for detailed instructions.

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ASSEMBLY INSTRUCTIONS

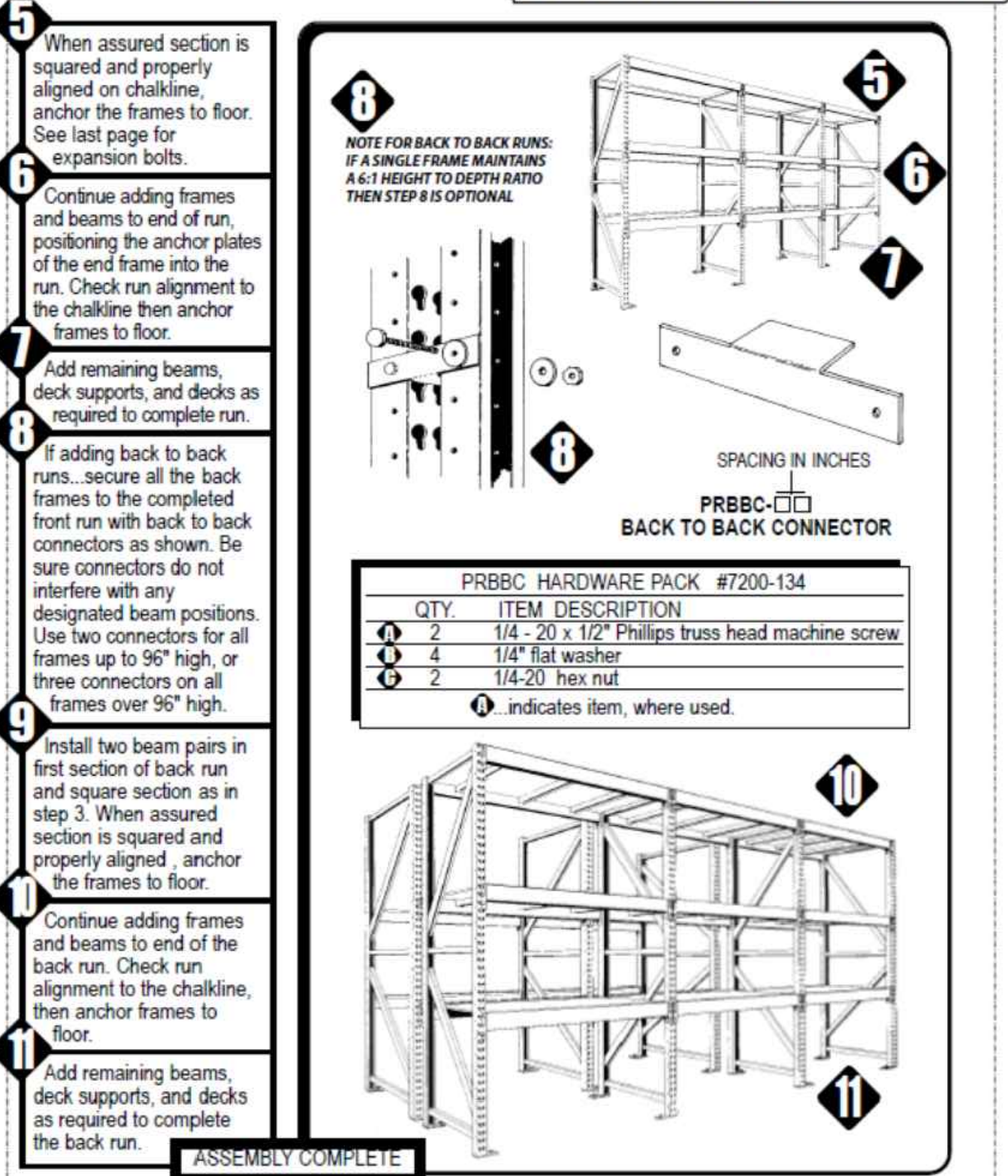


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ASSEMBLY INSTRUCTIONS



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LOAD CAPACITIES

BEAM LENGTH	BEAM HEIGHT	CAPACITY IN LBS/PAIR
36" x 3 1/2"	4,950	
36" x 5"	7,600	
36" x 6"	10,000	
48" x 3 1/2"	4,950	
48" x 5"	7,600	
48" x 6"	10,000	
60" x 3 1/2"	4,950	
60" x 5"	7,600	
60" x 6"	10,000	
72" x 3 1/2"	4,950	
72" x 5"	7,600	
72" x 6"	10,000	
84" x 3 1/2"	4,950	
84" x 5"	7,600	
84" x 6"	10,000	
96" x 3 1/2"	4,950	
96" x 5"	7,600	
96" x 6"	10,000	
108" x 3 1/2"	9,110	
120" x 3 1/2"	8,000	
132" x 3 1/2"	7,270	
144" x 3 1/2"	6,660	

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ANCHORING TO FLOOR



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PALLET RACK FLOOR ANCHORING

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ASY 103



EXPANSION BOLTS FOR FLOOR ANCHORS

...4 expansion bolts, 1/2"-13 x 4 1/2" POWERS/ Power-Stud + SD2 concrete anchors or other ICC (ICBO) approved expansion bolts.

PRFAK... See below for other ICC (ICBO) approved expansion bolts which may be used.

NOTE! The expansion anchors provided by Madix for floor anchoring at this site have been supplied by one of the firms listed below. All the anchors have been tested and approved as stated by the following ICC (ICBO) report numbers and all are manufactured in the United States or Canada. If the anchors are not provided by Madix and field substitution other than listed be proven, Madix cannot be held responsible. Should verification be required, call Madix Customer Service at:

1.800.776.2349

COBRA ANCHORS CORP., Parawedge concrete anchors	ICC (ICBO) # ER-2350 S1
DIVERSIFIED FASTENING SYSTEMS, DFS Wedge anchor	ER-4194 S1
GUNNEBO FASTENING CORP., Drop-in concrete anchors	ER-3219 S1
HILTI, INC., Kwik-bolt-TZ concrete anchors	ESR-1917
ITW RAMSET/RED HEAD, ITW Ramset stud, Trubolt wedge concrete anchor	ESR-2251
MARKSMAN MANUFACTURING CO., Thunderstud wedge and sleeve anchor	ER-2173 S1
POWERS FASTENING INNOV., Power-Stud + SD2 concrete anchors	ESR2502
WEJ-IT, Original Wej-it wedge anchors bolt and ANKR-TITE wedge anchor	ER-1825
CYW, INC., POWER BULL, Wedge anchor	ESR-2254
MKT FASTENING, High Load Anchor SZ	AC193

* Embedment must be minimum 5x bolt diameter.

OTHER ICC (ICBO) APPROVED ANCHORING MATERIALS ...not furnished by Madix

PNEUMATIC OR POWDER-DRIVEN STEEL STUDS AND NAILS

HILTI, INC., Hilti low velocity powder actuated or pneumatically driven fasteners	ESR-1663
ITW RAMSET/RED HEAD, Ramset Powder-Actuated and PowerPoint fasteners	ESR-1799

ADHESIVE/ EPOXY ANCHORS

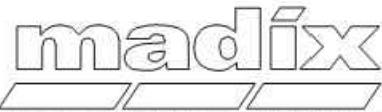
HILTI, INC., HIT-HY 150 Adhesive anchor system	ESR-2678
ITW RAMSET/RED HEAD, ITW Red Head Epcon system Ceramic 6+ epoxy anchors	ESR-3577



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REV	ECN#	REVISION	BY	DATE	REV	ECN#	REVISION	BY	DATE
A	6543	REVISE LAYOUT	ACM	8/4/02	05	0-13950	UPDATED ANCHOR INFO	SAM	1/2/14
01	8-110	CHANGE DECK SUPPORT INFO	AJB	9/22/08	07	514651	UPDATED BEAM LOAD RATINGS	SAM	6/5/14
02	8-195	BEAM LOAD RATE CHANGE	AJB	2/6/09	08	541535	REMOVED STEP 1 OPTION	JMG	10/24/16



Material Specification

SHEET 1 OF 8

SPECIFICATION #: 80051269 ISSUED BY: JPANTANO DATE: 20190913 ECM #: 500000021849
REVISION: 01

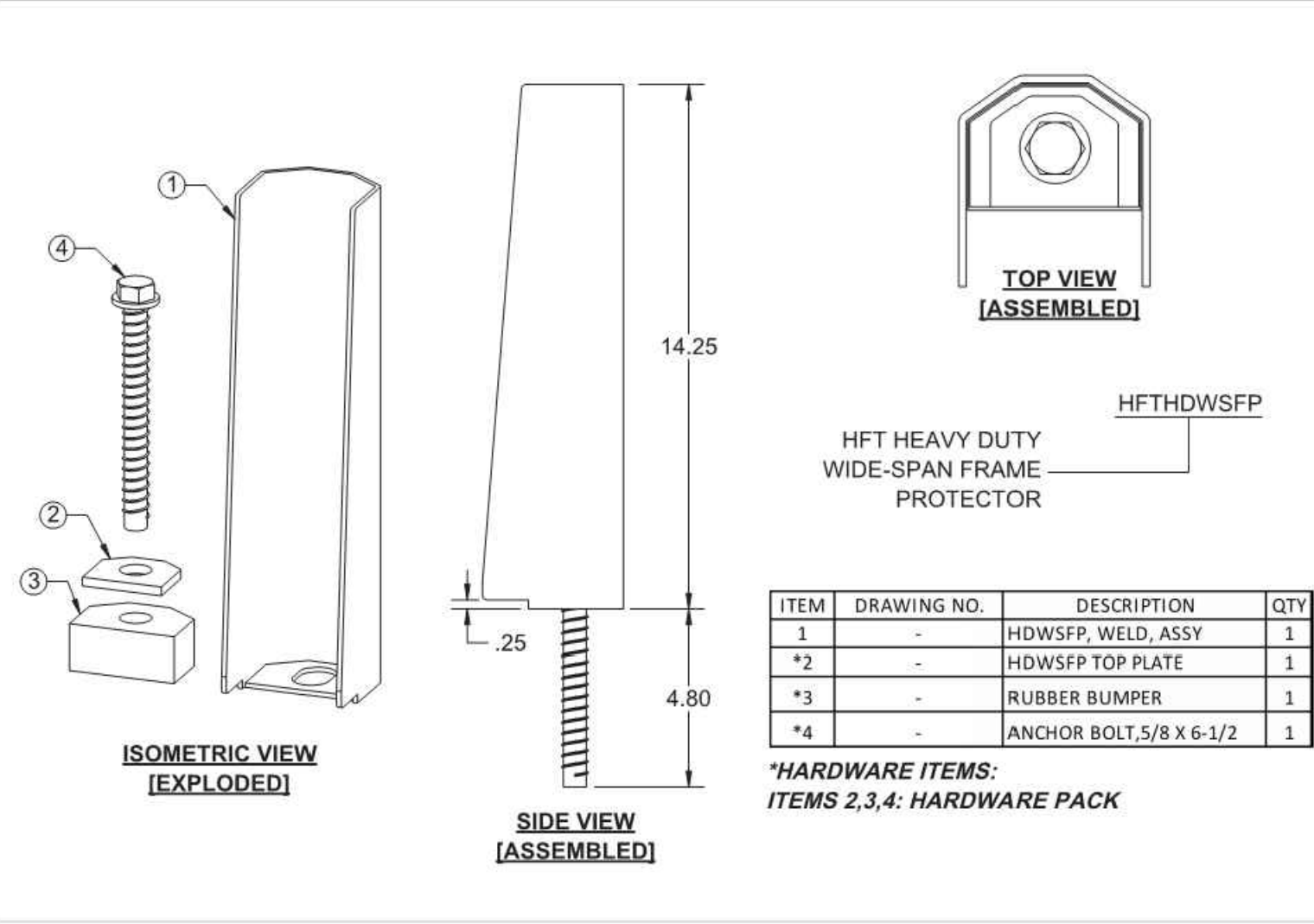
MATERIAL SPECIFICATION: HFTHDWSFP, IMPORT ONLY

Material Thickness or Manufacturer Part Number Allowed Substitute: WITHIN SPEC

Comments:
IMPORT ONLY
PACK LOOSE PARTS, SHIPS DISASSEMBLED
FINISH: COLOR MATCH PC005 (LEMON YELLOW)

PART IS EXPOSED SURFACE: _____
PART IS PAINTED: _____
PART IS FORMED 180 DEG _____

Dimensional Drawing if Required



ITEM	DRAWING NO.	DESCRIPTION	QTY
1	-	HDWSFP, WELD, ASSY	1
*2	-	HDWSFP TOP PLATE	1
*3	-	RUBBER BUMPER	1
*4	-	ANCHOR BOLT, 5/8 X 6-1/2	1

*HARDWARE ITEMS:
ITEMS 2,3,4: HARDWARE PACK



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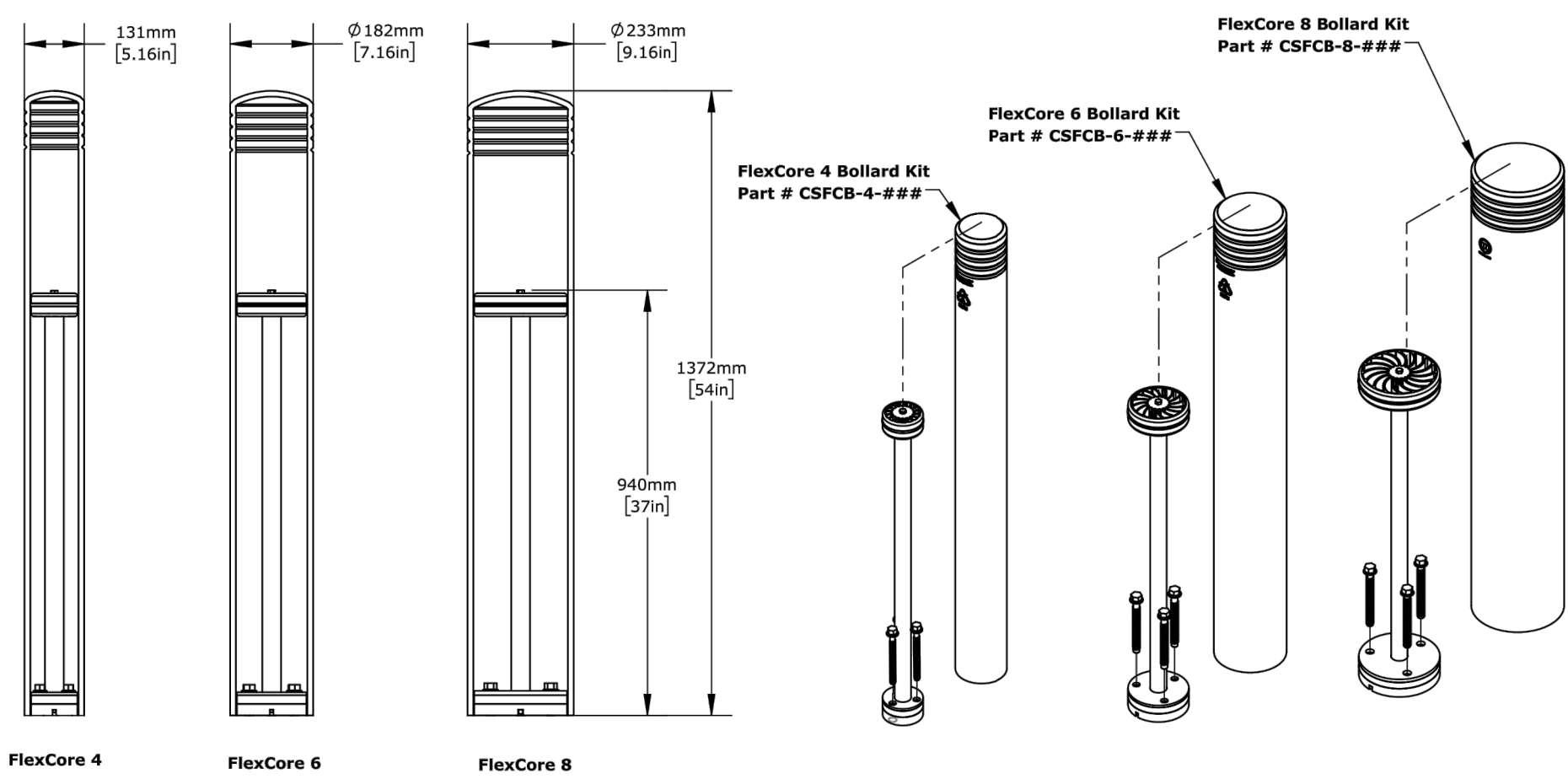
FIXTURE SPECIFICATIONS AND DETAILS

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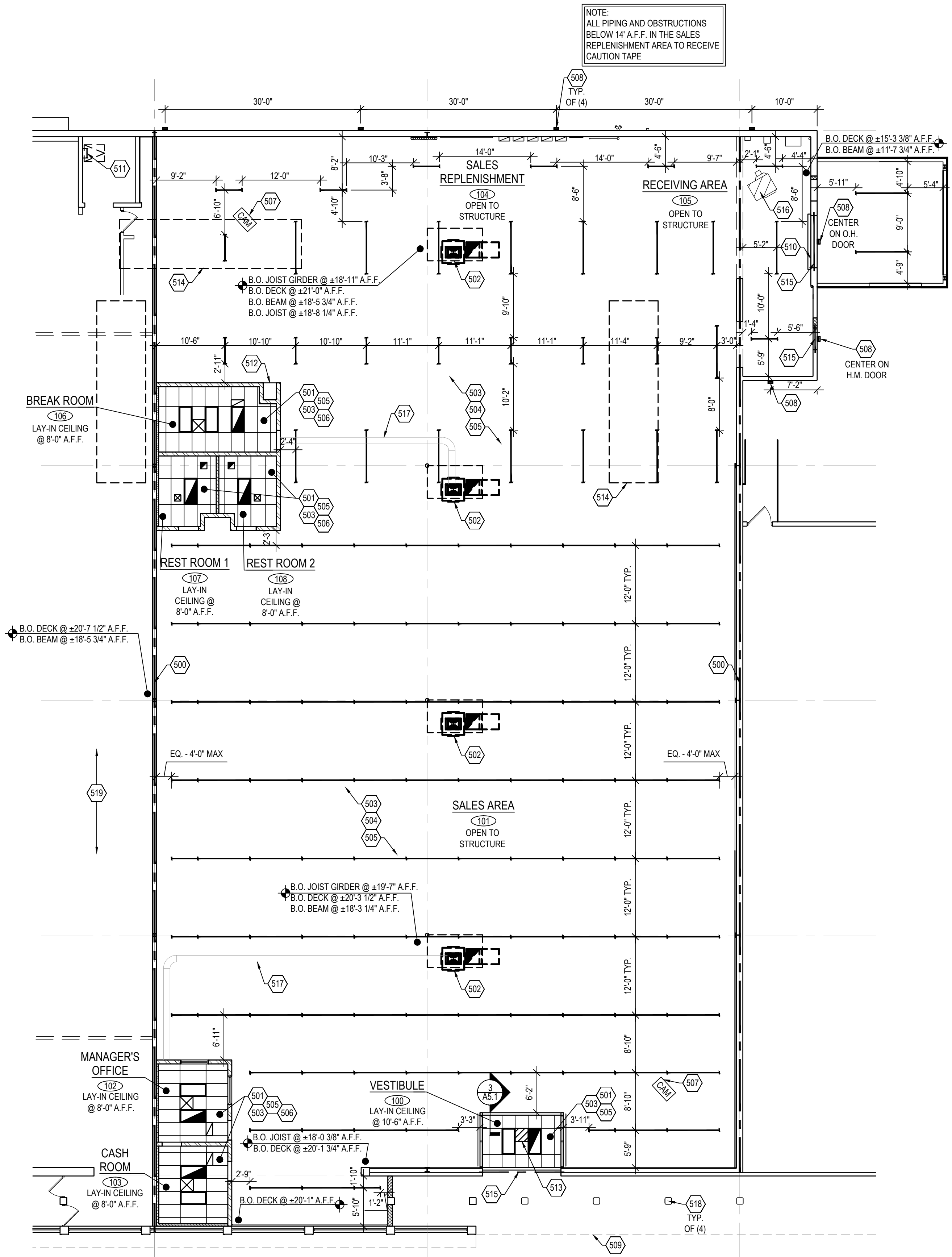


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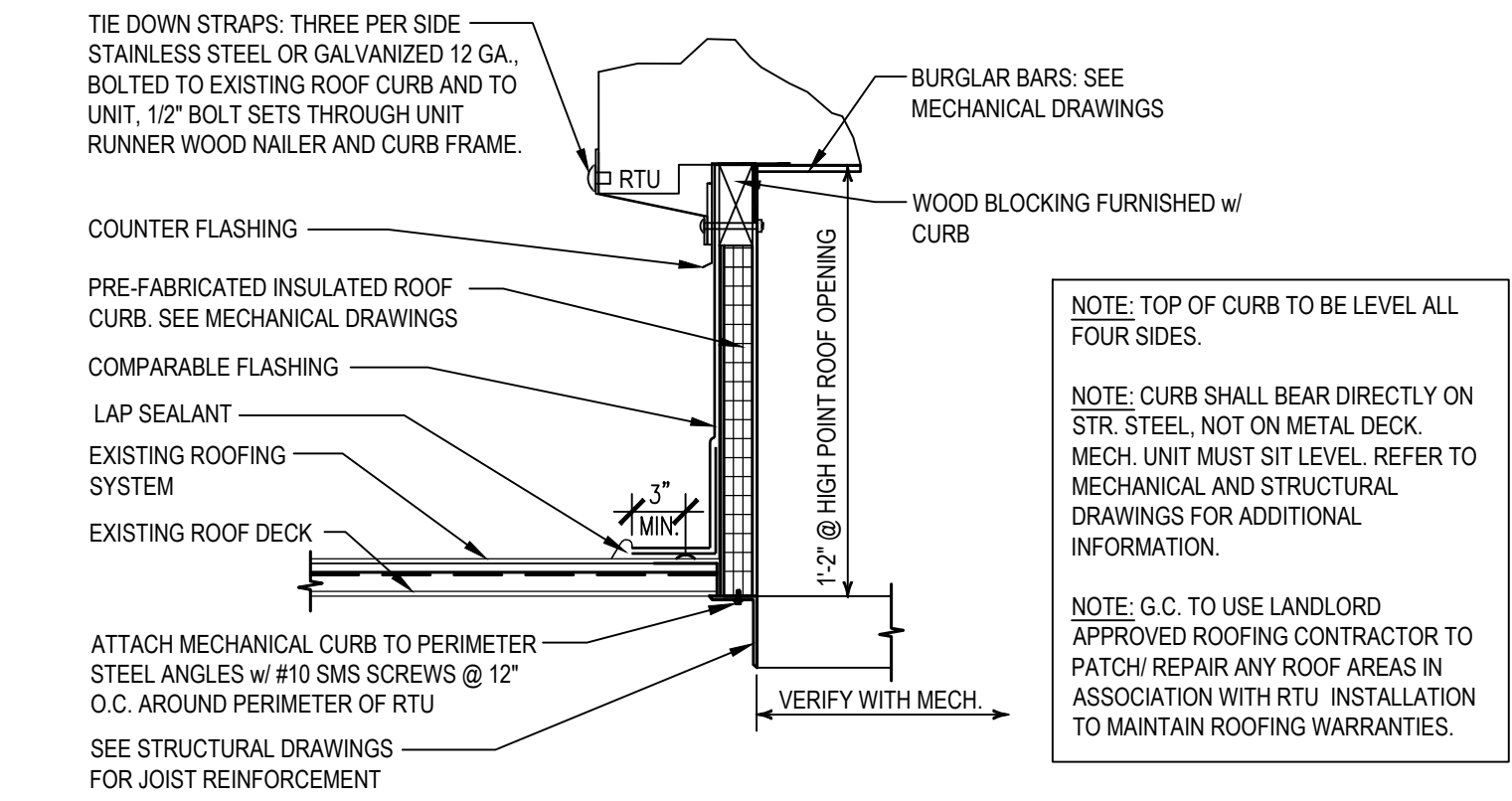


CEILING PLAN LEGEND			
2' X 4' RECESSED LIGHT FIXTURE SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION		SUPPLY AIR DIFFUSER SEE MECHANICAL PLANS FOR ADDITIONAL INFORMATION	
8' SURFACE MOUNTED LIGHT FIXTURE SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION		RETURN AIR DIFFUSER SEE MECHANICAL PLANS FOR ADDITIONAL INFORMATION	
4' SURFACE MOUNTED LIGHT FIXTURE SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION		EXHAUST FAN SEE MECHANICAL PLANS FOR ADDITIONAL INFORMATION	
EXTERIOR WALL MOUNTED LIGHT FIXTURE SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION		ELECTRIC UNIT HEATER SEE MECHANICAL PLANS FOR ADDITIONAL INFORMATION	
EXTERIOR SURFACE MOUNTED LIGHT FIXTURE SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION			

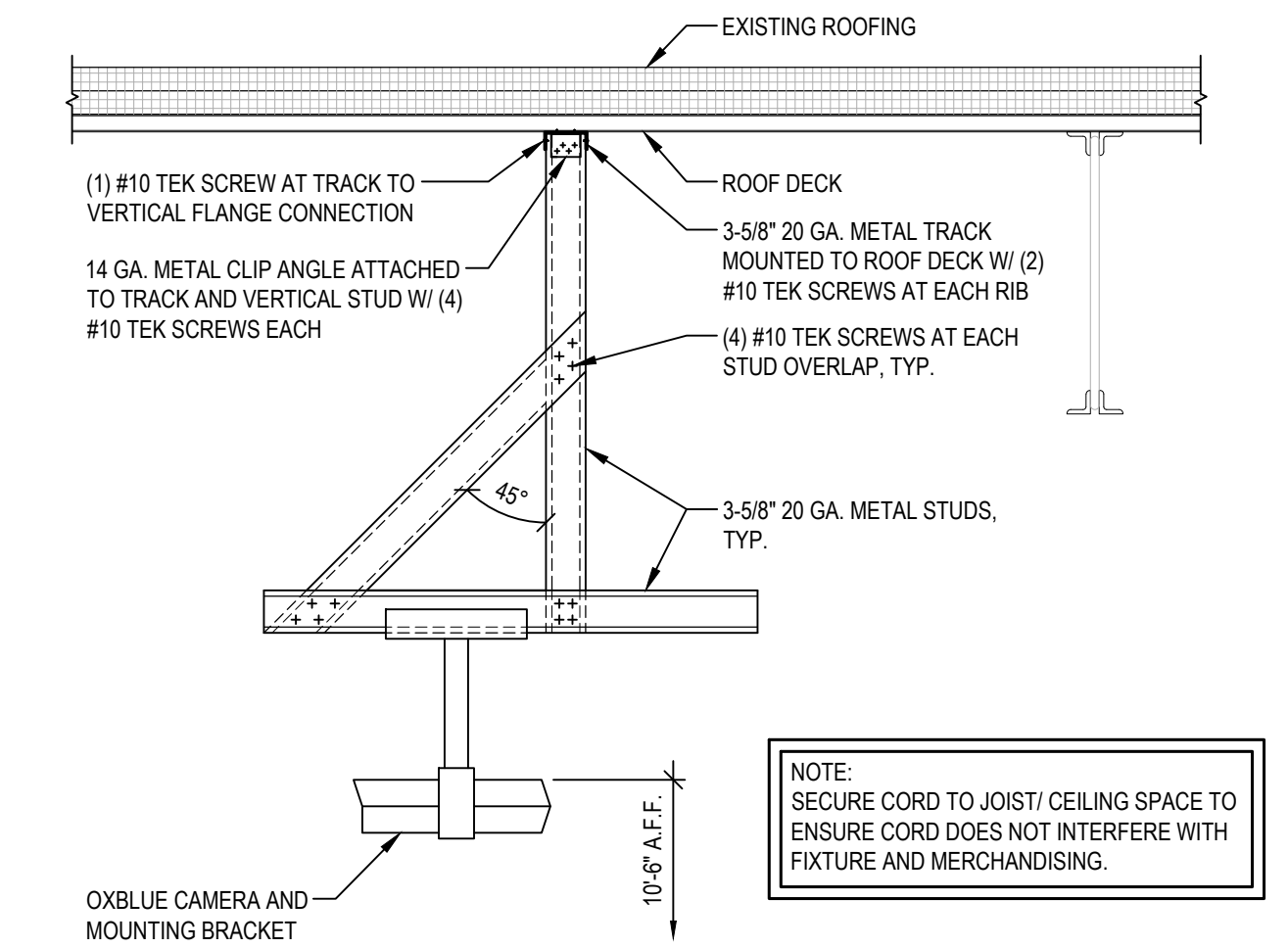
CEILING PLAN GENERAL NOTES	
1. REFER TO GENERAL NOTES OF SHEET A0.2 FOR ADDITIONAL INFORMATION. 2. HFT G.C. TO VISIT SITE AND VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING PROPOSALS AND COMMENCING WORK. 3. HFT G.C. TO NOTIFY HFT PROJECT MANAGER IMMEDIATELY AFTER DEMOLITION OR START OF CONSTRUCTION, IF PROPOSED CEILING HEIGHTS & MECHANICAL REQUIREMENTS CAN NOT BE ACHIEVED FOR ANY REASON. 4. HFT G.C. IS RESPONSIBLE FOR PATCHING & REPAIRING ALL FIREPROOFING AS REQUIRED DUE TO PRIOR TENANT CONSTRUCTION AND DUE TO ANY NEW DEMOLITION OR NEW CONSTRUCTION TO MEET BOTH LANDLORD AND BUILDING DEPARTMENT REQUIREMENTS. 5. HFT G.C. TO PROVIDE CEILING ACCESS PANELS AS REQUIRED TO ACCOMMODATE ELECTRICAL, PLUMBING, SPRINKLER AND/OR MECHANICAL SERVICES THAT PASS THROUGH THE LEASED PREMISES, IE., J-BOXES, DUCT SMOKE DETECTORS, FIRE DAMPERS, FLOW SWITCHES, UTILITY CONNECTION POINTS, ETC. 6. SUSPENSION WIRES SHALL BE INSTALLED WITH A MAXIMUM SPACING OF 48" O.C. 7. ALL LAY-IN CEILING GRIDS SHALL BE CENTERED IN ROOM U.N.O. 8. SEE FP1.0 FOR SPRINKLER INFORMATION.	
500 SERIES CEILING PLAN KEY NOTES	
500. APPROXIMATE LOCATION OF HFT LEASE LINE. 501. 2' X 4' SUSPENDED CEILING SYSTEM INSTALLED PER MANUFACTURERS SPECIFICATIONS. SEE FINISH SCHEDULE ON A1.3 FOR ADDITIONAL INFORMATION. CEILING TO BE CENTERED IN ROOM U.N.O. 502. APPROXIMATE LOCATION OF NEW HVAC ROOFTOP UNIT. G.C. TO CONTRACT WITH LANDLORD ROOFING CONTRACTOR TO MAINTAIN ALL ROOFING WARRANTIES. REFER TO DETAIL 1/A2.0, STRUCTURAL, AND MECHANICAL DRAWINGS. 503. RE-WORK EXISTING SPRINKLER SYSTEM TO WORK WITH ROOM LAYOUT. SEE FP1.0 FOR ADDITIONAL INFORMATION. 504. EXPOSED STRUCTURE. REMOVE ANY UNUSED EQUIPMENT, WIRES, HANGERS, ETC. FROM STRUCTURE AREA. PAINT ENTIRE STRUCTURE PER FINISH SCHEDULE ON SHEET A1.3. 505. NEW LIGHT FIXTURES THROUGHOUT ENTIRE HFT SPACE, UNLESS NOTED OTHERWISE. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION. 506. SUPPLY AND RETURN AIR DIFFUSERS OCCUR AT ROOM LOCATIONS. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION. 507. MOUNT OX-BLUE CAMERAS PER DETAIL 2 THIS SHEET. 12'-0" FROM THE CORNERS OF THE SPACE AT 45° ACROSS THE SALES AND STOCK AREAS. CAMERAS ARE TO BE MOUNTED AT OPPOSITE CORNERS OF THE SPACE. COORDINATE WITH HFT PM FOR FINAL QUANTITIES AND LOCATIONS. 508. WALL MOUNTED EXTERIOR LIGHT FIXTURE. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION. 509. LINE OF EXISTING CANOPY. SEE SHEET A3.0 FOR ADDITIONAL INFORMATION. 510. OVERHEAD COIL-UP DOOR HOUSING. SEE SHEET A5.0 FOR ADDITIONAL INFORMATION. 511. EXISTING ROOF HATCH. SEE SHEET A1.1 FOR ADDITIONAL INFORMATION. 512. GYPSUM BOARD SHELF AT 8'-0" A.F.F. TO BE PAINTED. SEE SHEET A1.3 AND DETAIL 1/A4.1 FOR ADDITIONAL INFORMATION. 513. ELECTRIC UNIT HEATER CABINET. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION. 514. EXISTING DUNNAGE TO BE ABANDONED IN PLACE. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION. 515. STEEL LINTEL. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION. 516. GAS UNIT HEATER. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION. 517. APPROXIMATE LOCATION OF DUCTWORK. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION. 518. EXISTING CANOPY LIGHT FIXTURES TO REMAIN. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION. 519. G.C. TO TIE BACK SUSPENDED CEILING SYSTEM TO NEW DEMISING WALL ON ALS SIDE. PATCH, REPAIR AND/OR REPLACE TILES TO MATCH EXISTING AS REQUIRED.	



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



1 MECHANICAL ROOF CURB DETAIL
SCALE: 3/4" = 1'-0"



2 OXBLUE MOUNTING DETAIL
SCALE: 3/4" = 1'-0"

DO NOT SCALE THESE DRAWINGS

ADA ARCHITECTS SERVICES, P.C.
Lakewood, Ohio 44107
17710 Detroit Avenue
Phone (216) 521-5134
Fax (216) 521-4824
www.adaarchitects.com

HARBOR FREIGHT TOOLS

314 NY ROUTE 59
NYACK, NY 10960

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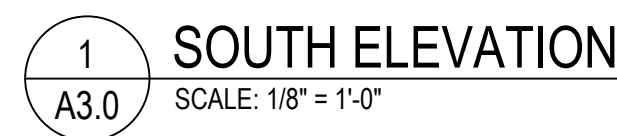
REFLECTED CEILING PLAN

DATE 9/22/21
JOB NO. 20420

A2.0
SHEET NO.



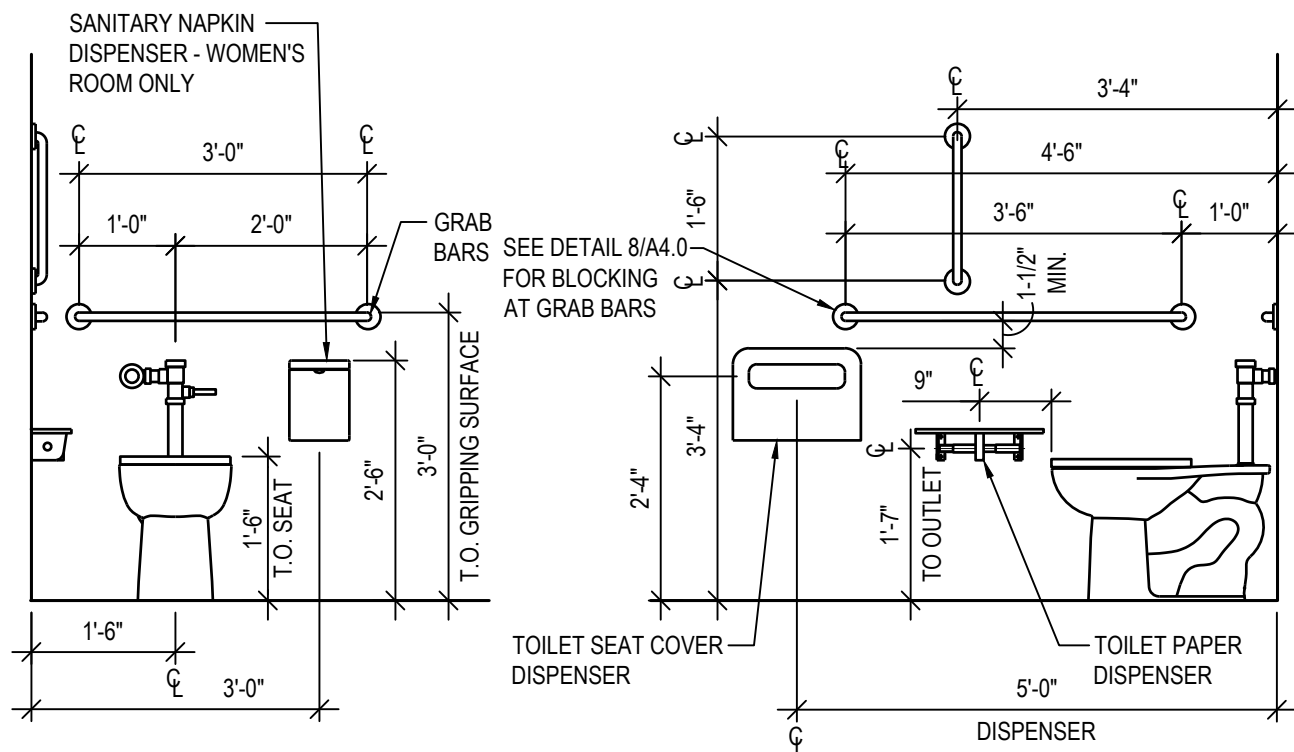
- | GENERAL NOTES | |
|---------------|---|
| 1. | REFER TO GENERAL NOTES ON SHEET A0.2 FOR ADDITIONAL INFORMATION. |
| 2. | SIGNAGE PERMIT DRAWINGS TO BE SUBMITTED SEPARATELY. |
| 3. | HFT GENERAL CONTRACTOR TO VISIT SITE AND VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING PROPOSALS AND COMMENCING WORK. |
| 4. | SIGNAGE SHOWN FOR REFERENCE ONLY - ACTUAL SIGNAGE SIZE AND TYPE TO BE DETERMINED BY HFT AND LANDLORD. |
| 5. | ALL SIGNAGE TO COMPLY WITH LANDLORD TENANT CRITERIA AND STATE / LOCAL CODES. |
| 6. | COORDINATE WITH SIGNAGE VENDOR FOR ANY SPECIFIC CRITERIA TO BE USED. |
| 7. | ALL SIGNAGE TO BE UL RATED. |
| 8. | EXISTING STOREFRONT CONSTRUCTION AND FINISHES TO REMAIN U.N.O. |
| 9. | WHERE A SURFACE IS NOTED TO BE PAINTED, PAINTING SHALL INCLUDE SURFACE PREPARATION FOR PAINT ACCORDING TO PAINT MANUFACTURER RECOMMENDATIONS. |



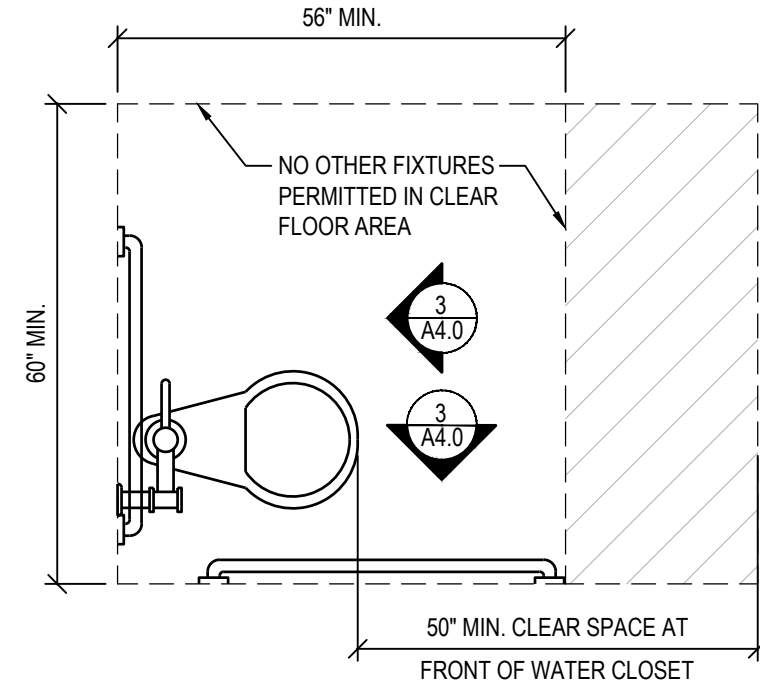
- ### 3 EYELET AND SCREW HOOK SPACING DETAIL

DO NOT SCALE THESE DRAWINGS

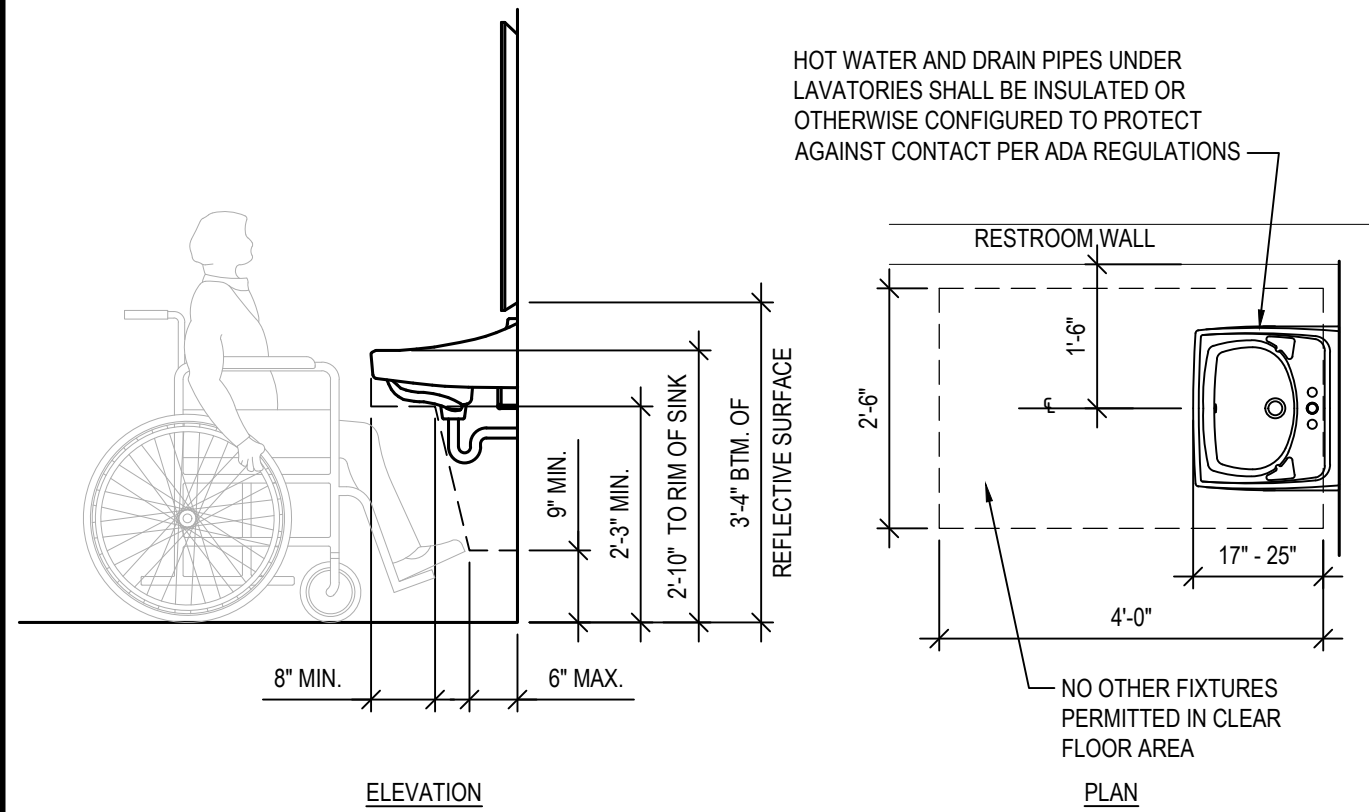
		 ADA ARCHITECTS SERVICES, P.C. 17710 Detroit Avenue Lakewood, Ohio 44107 Phone (216) 521-5134 Fax (216) 521-4824 www.adaarchitects.cc	
<h1>HARBOR FREIGHT TOOLS</h1> <hr/> <div style="text-align: center;"> 314 NY ROUTE 59 NYACK, NY 10960 </div> <hr/> <p>THESE DOCUMENTS CONTAIN INFORMATION PROPRIETARY TO ADA ARCHITECTS SERVICES, P.C. UNAUTHORIZED USE OF THESE DOCUMENTS IS EXPRESSLY PROHIBITED UNLESS AGREED UPON IN WRITING.</p>			
REVISIONS			
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EXTERIOR ELEVATIONS			
DATE		9/22/21	
JOB NO.		20420	
A3.0			
SHEET NO.			



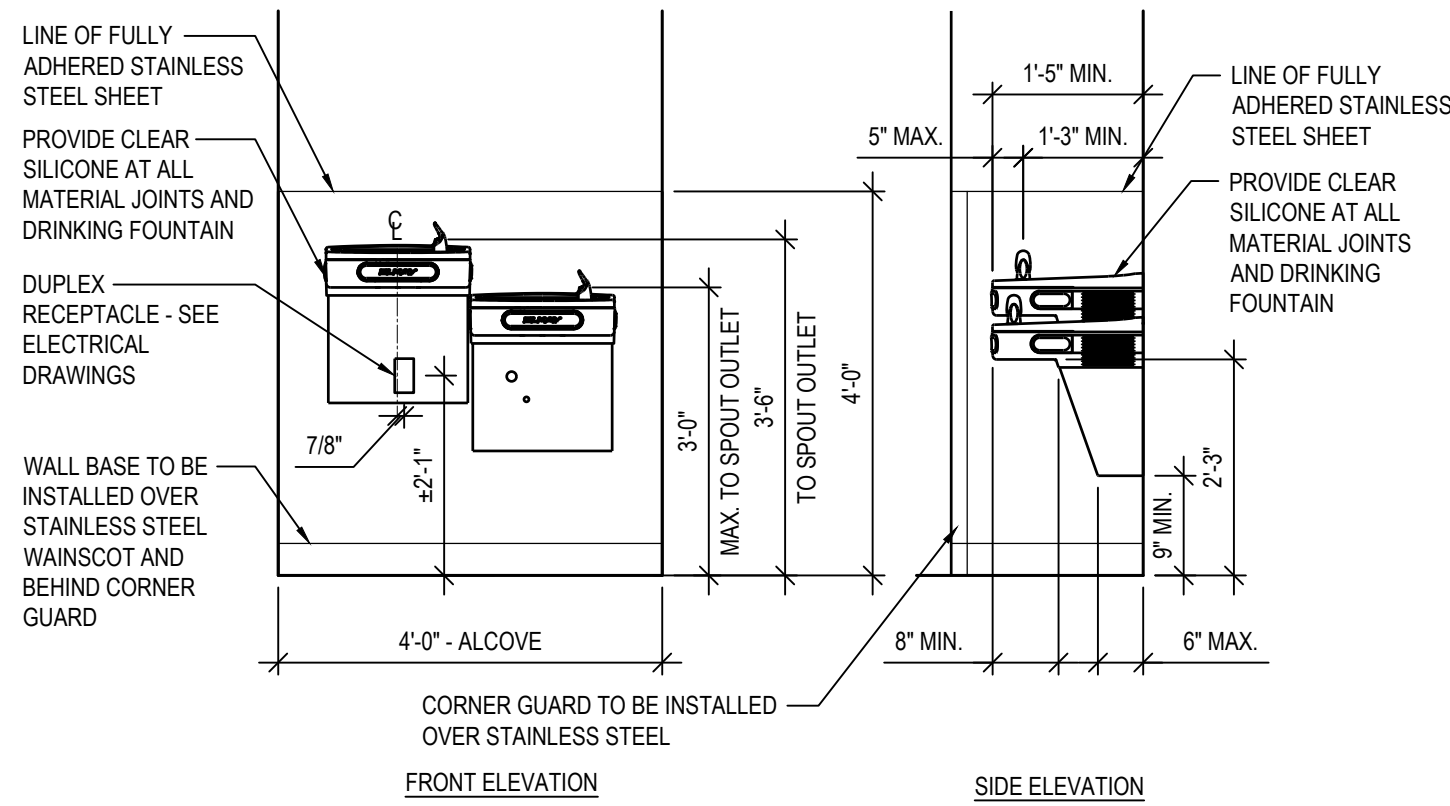
3 ACCESSIBLE WATER CLOSET ELEVATIONS
SCALE: 1/2" = 1'-0"



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



5 ACCESSIBLE LAVATORY PLAN & ELEVATION
SCALE: 1/2" = 1'-0"

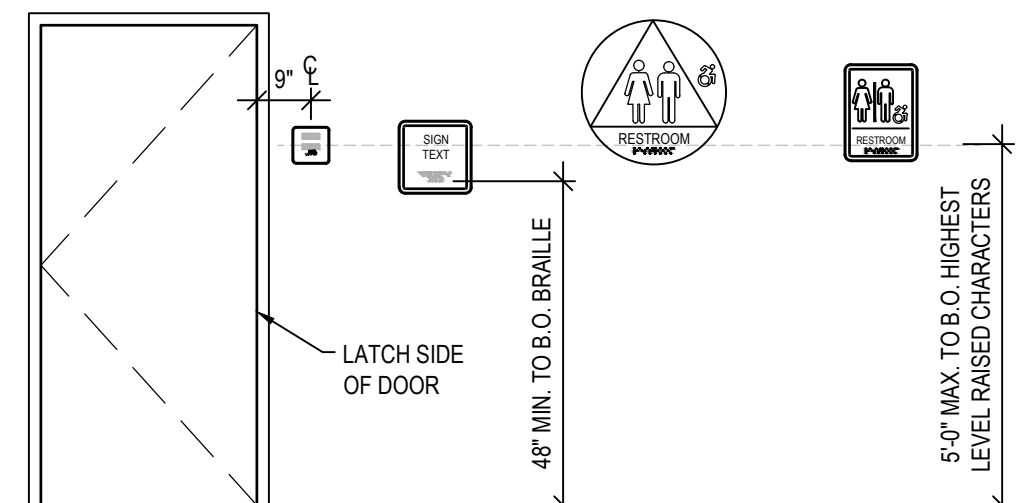


4 ACCESSIBLE DRINKING FOUNTAIN ELEVATIONS
SCALE: 1/2" = 1'-0"

TYPICAL ROOM / EXIT SIGNS

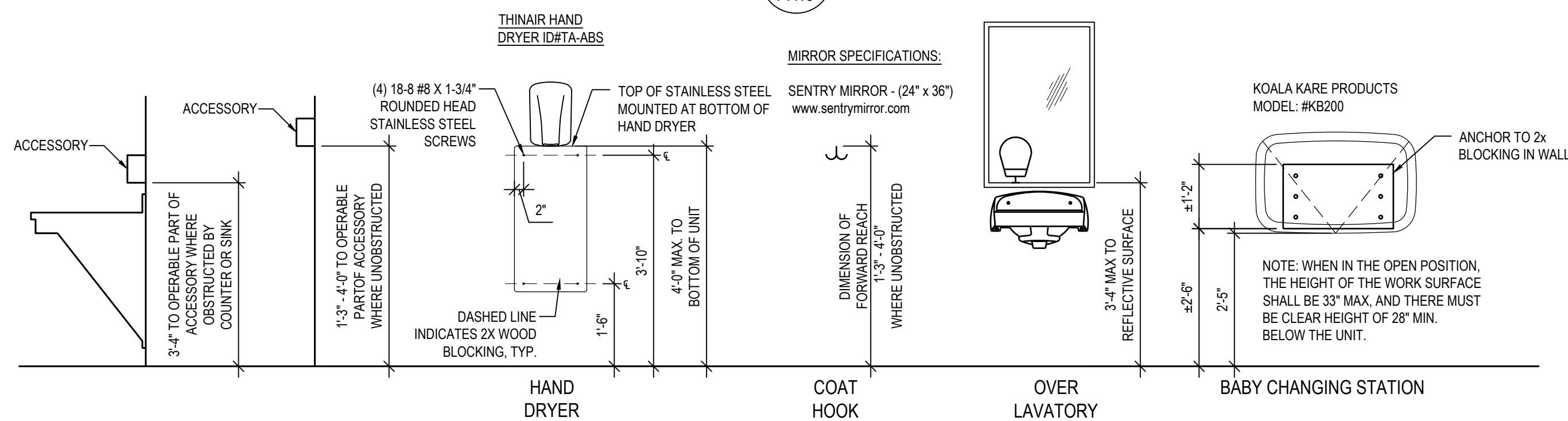
DOOR SIGN

WALL SIGN

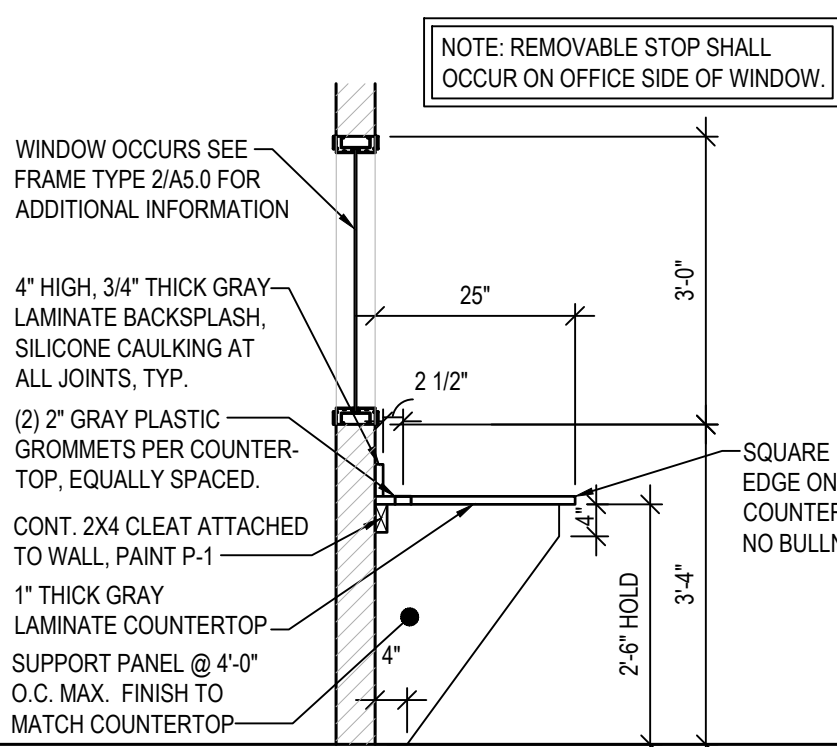


- NOTES:
1. CHARACTERS, SYMBOLS AND THEIR BACKGROUND SHALL HAVE A NON-GLARE FINISH. CHARACTERS AND SYMBOLS SHALL CONTRAST WITH THEIR BACKGROUND.
 2. CHARACTERS ON SIGNS SHALL BE RAISED 1/32" MINIMUM & SHALL BE SANS SERIF UPPERCASE CHARACTERS. CHARACTERS SHALL BE A MINIMUM OF 5/8" AND A MAXIMUM OF 2" HIGH.
 3. BRAILLE SHALL BE GRADE 2 AND SHALL COMPLY SIZE AND SPACING REQUIREMENTS IN THE ACCESSIBILITY CODE. BRAILLE CHARACTERS SHALL BE LOCATED BELOW THE SIGN TEXT, WITH A 3/8" MINIMUM SPACE BETWEEN BRAILLE AND TEXT OR OTHER SIGNAGE ELEMENTS (BORDER, PICTOGRAM, ETC).
 4. PICTOGRAMS SHALL BE ACCOMPANIED BY THE VERBAL DESCRIPTION PLACED DIRECTLY BELOW THE PICTOGRAM. THE OUTSIDE DIMENSION OF THE PICTOGRAM FIELD SHALL BE A MINIMUM OF 6" IN HEIGHT.

6 SIGN DETAILS
SCALE: N.T.S.



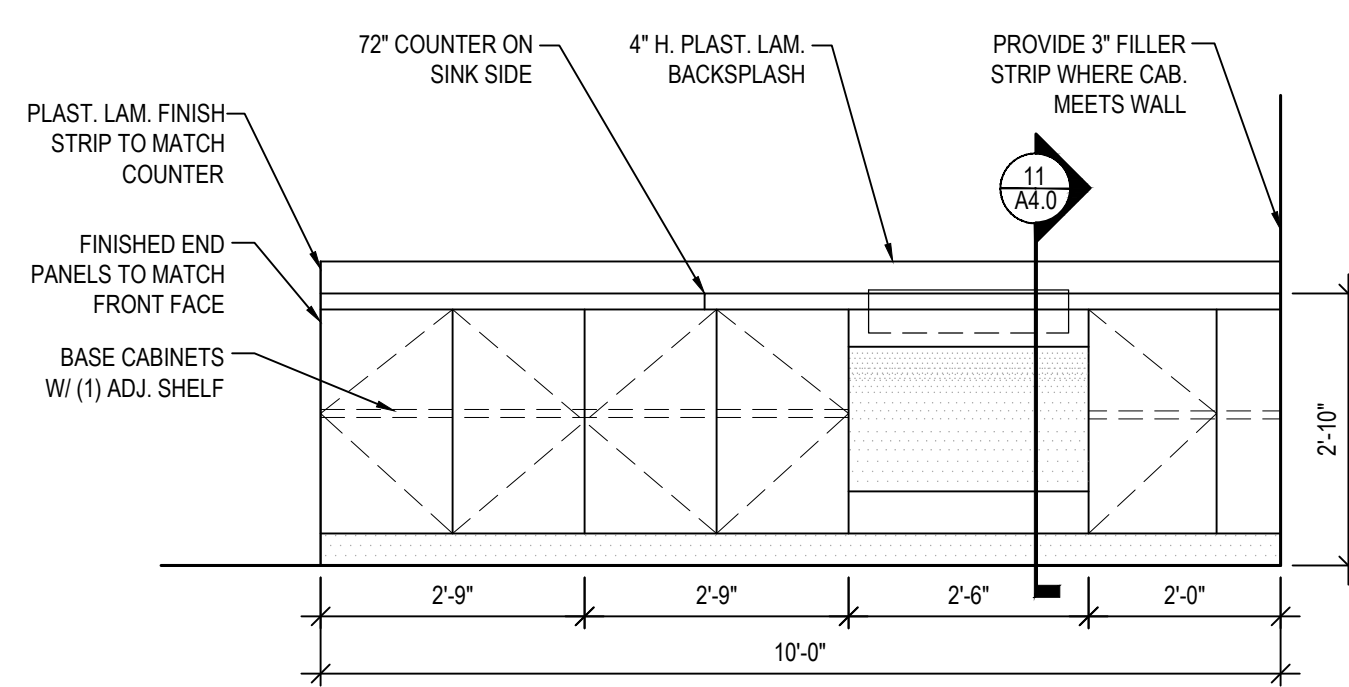
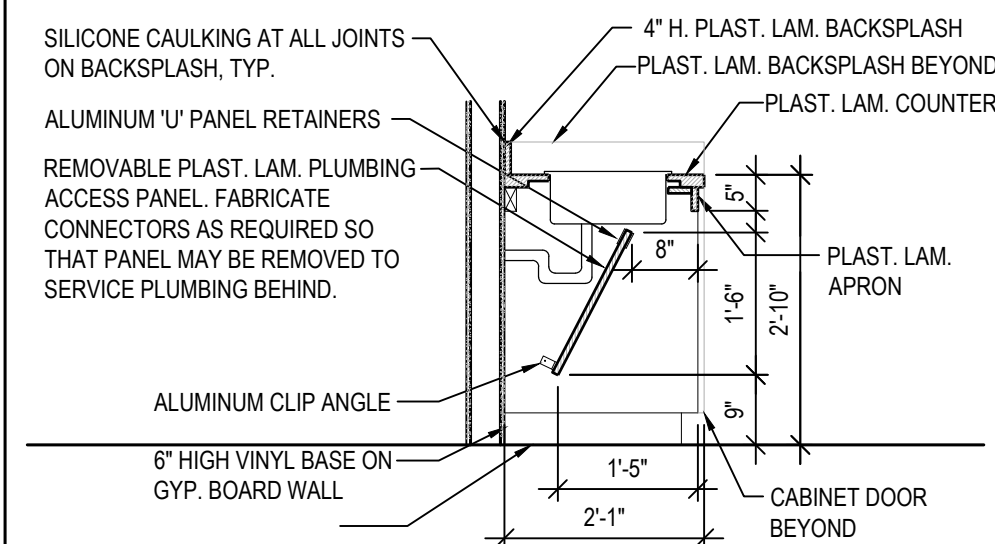
7 ACCESSORY MOUNTING HEIGHTS
SCALE: 1/2" = 1'-0"



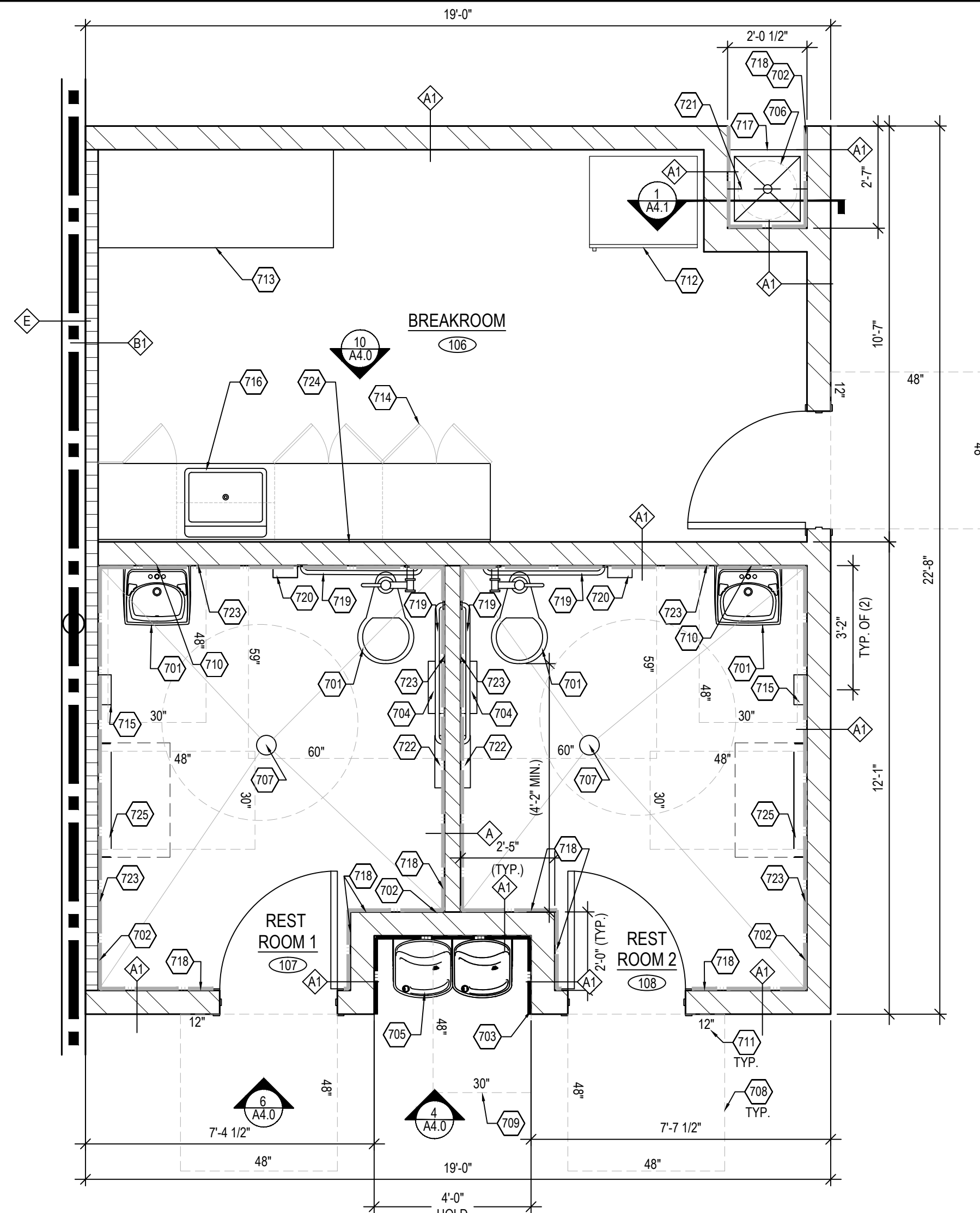
12 OFFICE COUNTERTOP SECTION
SCALE: 1/2" = 1'-0"

- CASEWORK NOTES
1. REFER TO GENERAL NOTES OF SHEET A2.0 FOR ADDITIONAL INFORMATION
 2. HFT GENERAL CONTRACTOR TO VISIT SITE AND VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING PROPOSALS AND COMMENCING WORK.
 3. CABINETS WITH DOORS
ALL PARTS EXPOSED TO VIEW SHALL BE COVERED WITH LAMINATED PLASTIC FINISH. INSIDE OF CABINETS SHALL BE MELAMINE.
 4. FURNISH ALL HARDWARE AS REQUIRED. PROVIDE ADJUSTABLE SHELVES AND REQUIRED HARDWARE WHERE SHOWN. (NO VISIBLE HARDWARE)
 5. PROVIDE ALL NECESSARY "IN-WALL" BLOCKING OR PLYWOOD BACKING AS REQUIRED TO SUPPORT COUNTERS, SHELVING, CABINETRY, ETC.
 6. PROVIDE SUPPORT BRACKETS AS REQUIRED AT ALL COUNTERS.
 7. PROVIDE 'CUTOUT' AND/OR OPENINGS AS MAY BE REQUIRED FOR PLUMBING FIXTURES, EQUIPMENT, ETC. VERIFY LOCATIONS WITH HFT.
 8. PROVIDE OPENING IN COUNTERS W/ PLASTIC GROMMETS FOR WIRING AT ELECTRIC & DATA OUTLETS AS MAY BE REQUIRED. VERIFY LOCATIONS WITH HFT.
 9. SEE DRAWING A1.2 FOR CASEWORK & COUNTERTOP LOCATIONS.
 10. PROVIDE RUBBER BASE OVER TOE KICK
 11. OPEN SHELVING: ALL SHELVING UNITS, EDGES OF SHELVES AND VERTICAL SUPPORTS SHALL HAVE PLASTIC LAMINATE FINISH ON ALL SURFACES EXPOSED TO VIEW.
 12. G.C. TO SILICON AROUND SINK AND AT ALL BACKSPLASH EDGES AND SEAMS WITH CLEAR SILICONE.

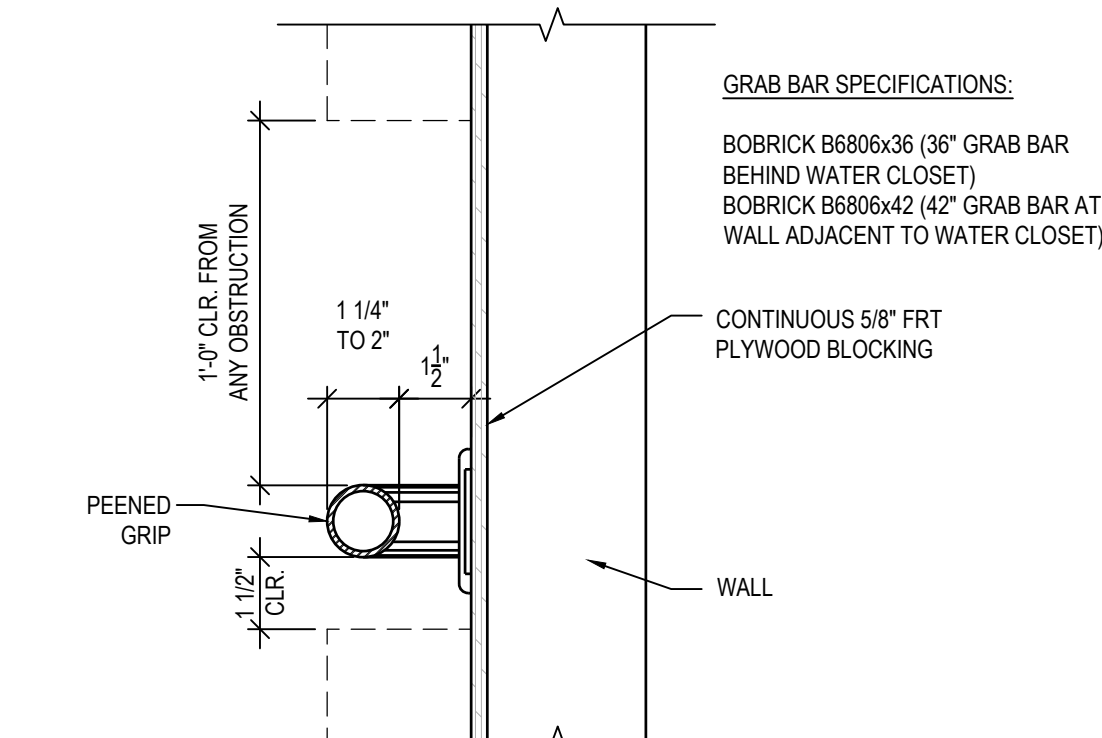
11 COUNTERTOP SECTION @ SINK
SCALE: 1/2" = 1'-0"



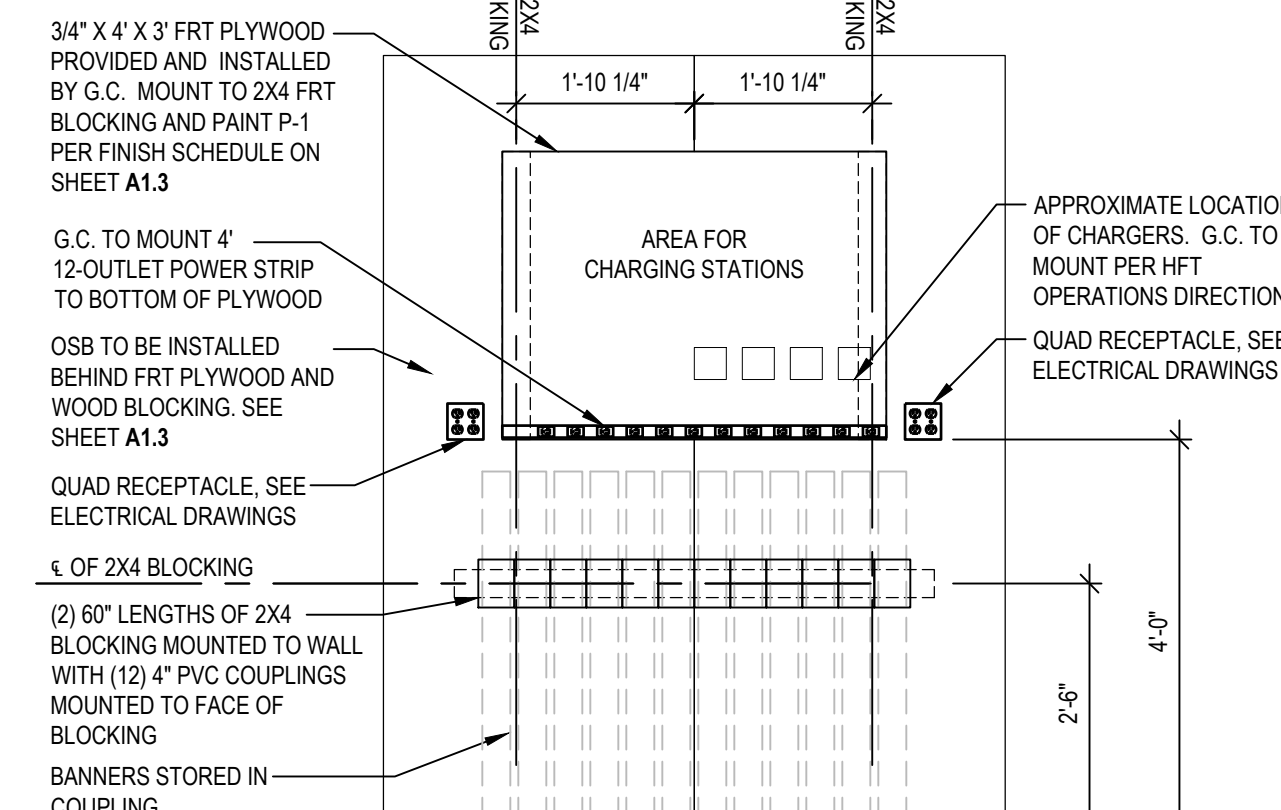
10 BREAK ROOM CASEWORK ELEVATION
SCALE: 1/2" = 1'-0"



1 ENLARGED RESTROOM / BREAK ROOM PLAN
SCALE: 3/8" = 1'-0"



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



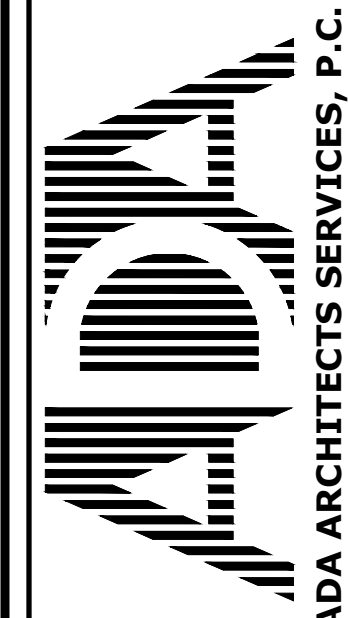
9 BANNER AND CHARGING STATION
SCALE: 1/2" = 1'-0"

GENERAL NOTES

1. SEE TYPICAL RESTROOM DETAILS THIS SHEET FOR ADDITIONAL INFORMATION.
2. SEE A1.1, & 4.1 FOR KEY NOTE REFERENCES, WALL TYPE REFERENCES, AND ADDITIONAL INFORMATION.
3. SEE PLUMBING SHEET FOR FIXTURE TYPES.
4. FURNISH ALL HARDWARE AS REQUIRED. PROVIDE ADJUSTABLE SHELVES AND REQUIRED HARDWARE WHERE SHOWN. (NO VISIBLE HARDWARE)
5. SEE ELECTRICAL & PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
6. SEE SHEET A0.0 FOR ITEMS FURNISHED BY HFT AND INSTALLED BY G.C.

700 SERIES KEY NOTES

701. RESTROOM FIXTURES. SEE DETAILS 2, 3 & 5 / A4.0 AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
702. DOTTED LINE INDICATES PROVIDE AND INSTALL WC-1 ON WALL AS SHOWN. SEE FINISH SCHEDULE A1.3 FOR ADDITIONAL INFO.
703. GREEN BOARD AND 20 GA. STAINLESS STEEL SHEET TO EXTEND FROM FLOOR TO 4'-0" A.F.F. AT ALL DRINKING FOUNTAIN WALLS. SEE DETAIL 4/A4.0 FOR ADDITIONAL INFORMATION.
704. TOILET PAPER DISPENSER BOBRICK MODEL: #B-2840.
705. DRINKING FOUNTAIN - REFER TO PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
706. WATER HEATER MOUNTED ABOVE MOP SINK ON SHELF. SHELF TO BE MOUNTED AT 8'-0" A.F.F. REFER TO PLUMBING DRAWINGS FOR MORE DETAILS.
707. FLOOR DRAIN. REFER TO PLUMBING DRAWINGS FOR MORE DETAILS. CONTRACTOR TO SLOPE FLOOR TOWARDS DRAIN. (SLOPE NOT TO EXCEED 2%). G.C. TO FILL CONCRETE AROUND DRAIN TO ACHIEVE A FLUSH LEVEL FINISH.
708. DASHED LINE INDICATES MIN. CLEAR FLOOR SPACE (TYP.)
709. CLEAR FLOOR SPACE CENTERED ON LOW DRINKING FOUNTAIN.
710. MIRROR LOCATION. SEE DETAIL 7 THIS SHEET FOR MOUNTING HEIGHTS AND DIMENSIONS.
711. NUMBERS INDICATE MINIMUM CLEAR AREA AT FLOOR SPACE DIAGRAMS (TYP.)
712. REFRIGERATOR LOCATION.
713. APPROXIMATE LOCATION OF BREAKROOM TABLE BY HFT.
714. BREAK ROOM CABINETS. SEE DETAILS 10&11 THIS SHEET.
715. THINAIR HAND DRYER (110-120V, 7 AMPS), MODEL #ITA-ABS, WITH ANTI-MICROBIAL WALL GUARDS, ID #89S. SEE DETAIL 7 THIS SHEET FOR MOUNTING INFORMATION. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFO.
716. BREAKROOM SINK SEE P1.0 PLUMBING FIXTURES SPECIFICATIONS.
717. MOP SINK - REFER TO PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
718. USE 3/4 GREEN BOARD IN PLACE OF 3/4 GYP BOARD AS NOTED.
719. GRAB BARS. SEE DETAILS 2, 3, & 8 / A4.0 FOR ADDITIONAL INFORMATION.
720. SANITARY NAPKIN DISPOSAL BOBRICK MODEL: #B-270.
721. (2) 12" DEEP WHITE WIRE SHELVES FOR CLEANING SUPPLIES.
722. TOILET SEAT COVER DISPENSER TORK MODEL: #99A.
723. USE 5/8" FRT PLYWOOD IN PLACE OF 5/8" GYP. BOARD AS NOTED.
724. REPLACE 5/8" GYP. BOARD WITH 5/8" GREEN BOARD OVER 5/8" FRT PLYWOOD AS NOTED.
725. BABY CHANGING STATION, KOALA KARE PRODUCTS MODEL: #KB200



HARBOR FREIGHT TOOLS

NYACK, NY 10960

314 NY ROUTE 59

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SECTIONS & DETAILS

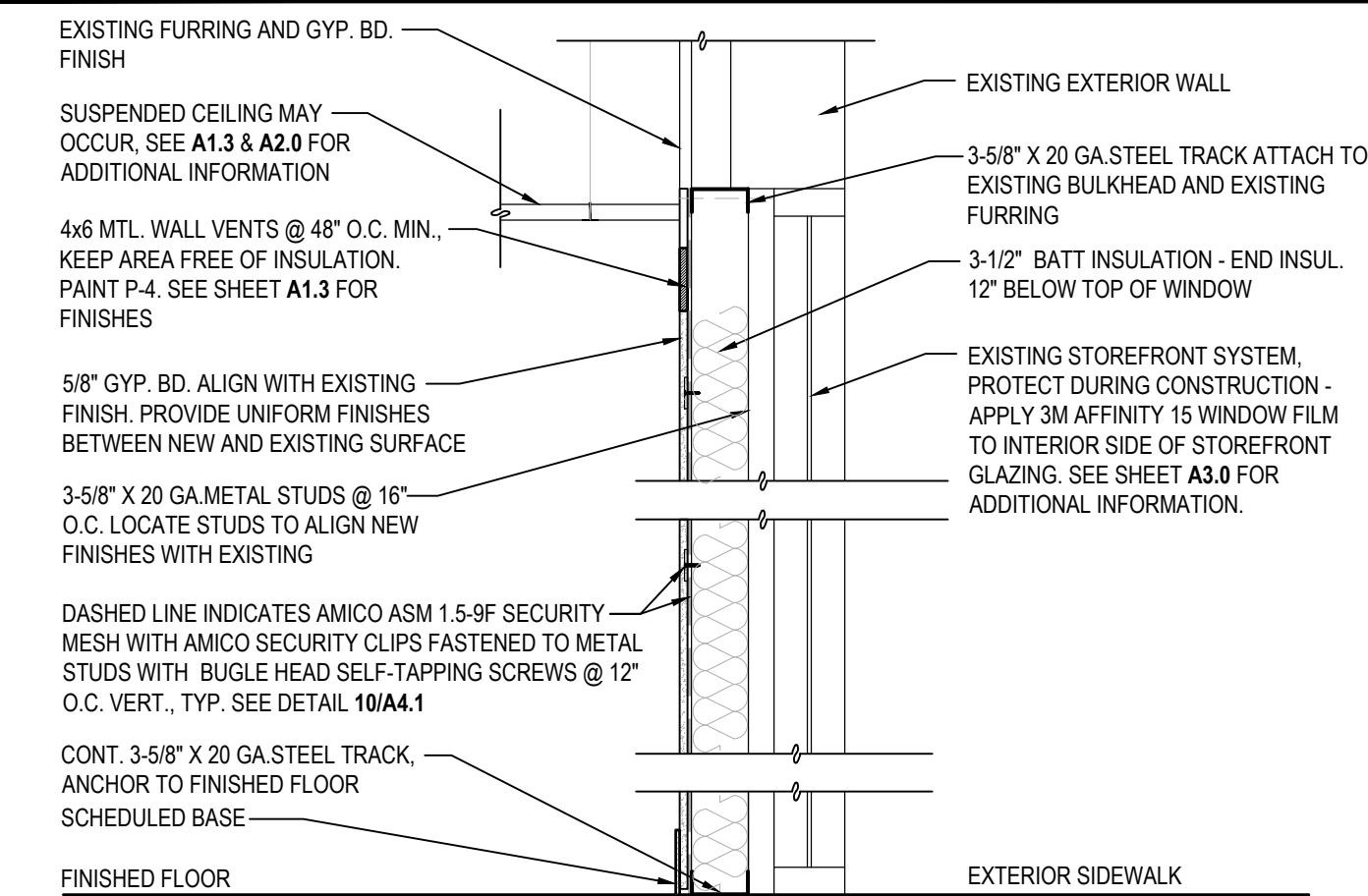
DATE 9/22/21

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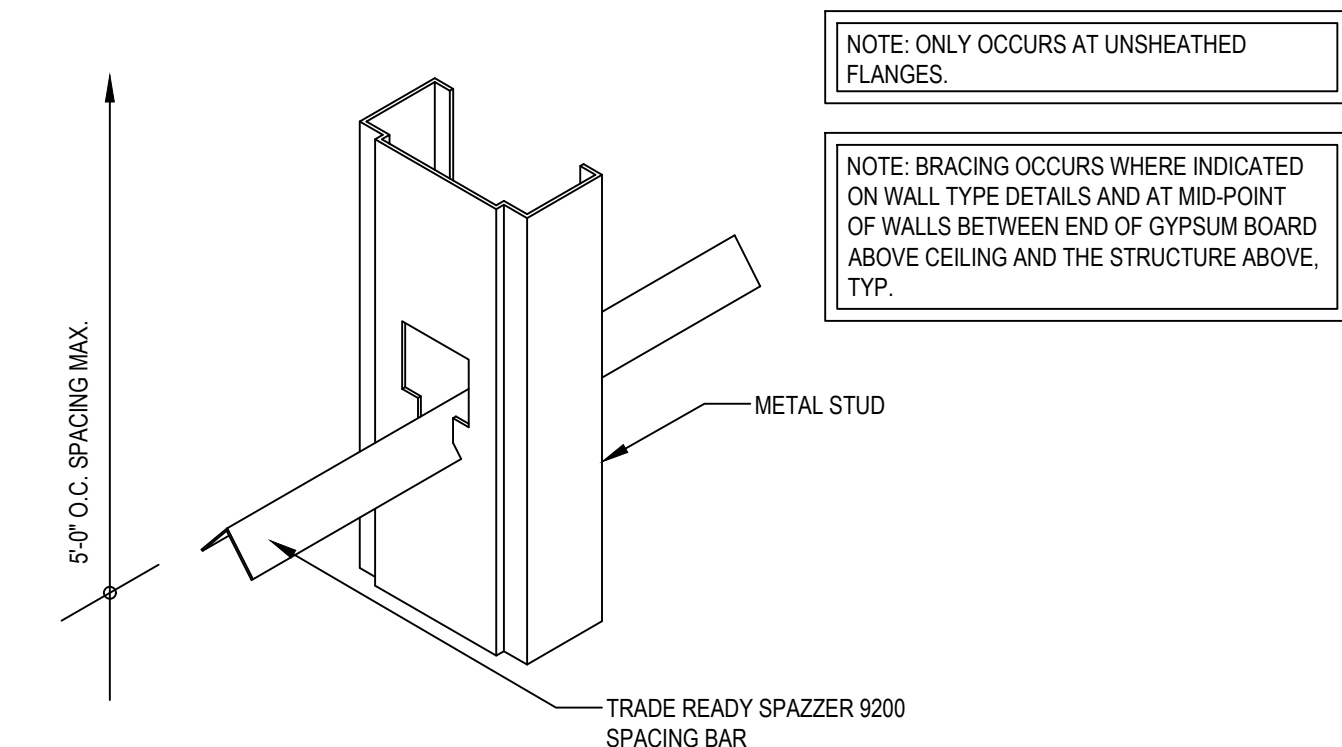
A4.0

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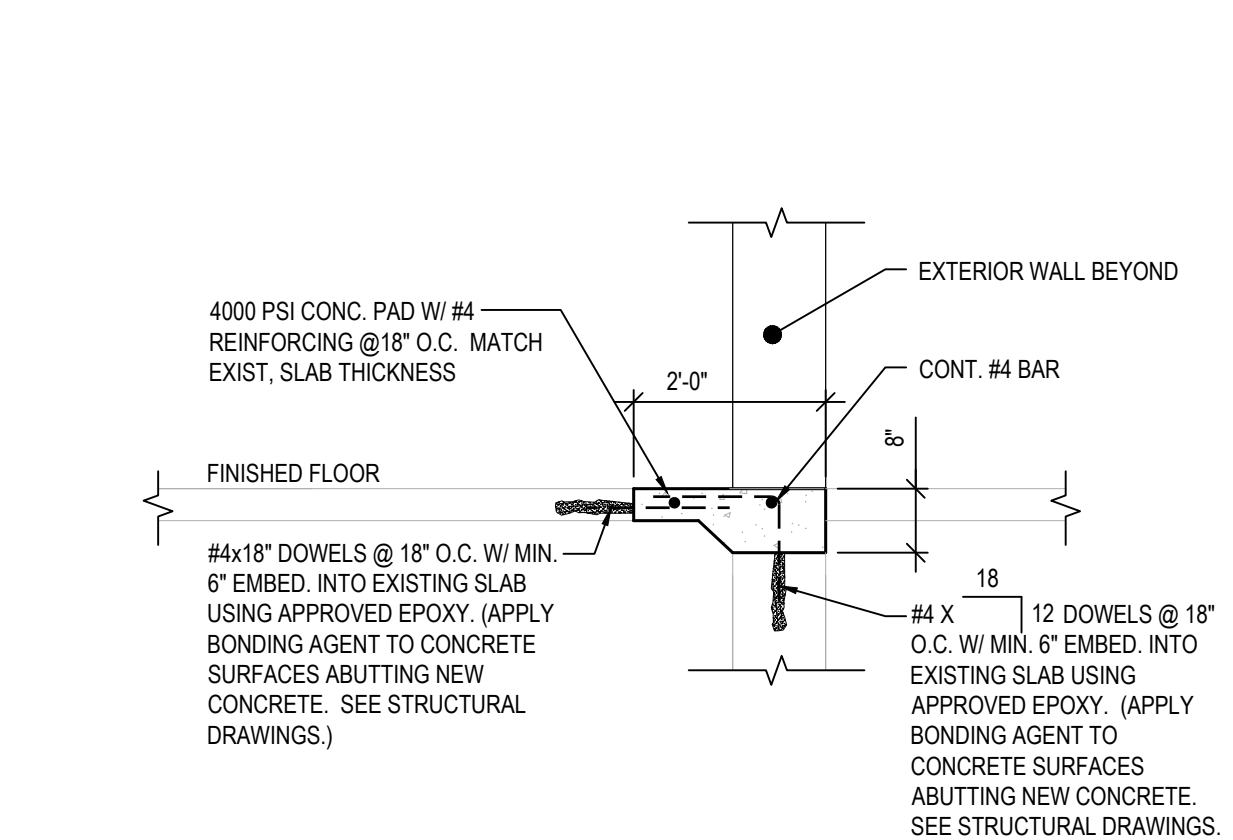
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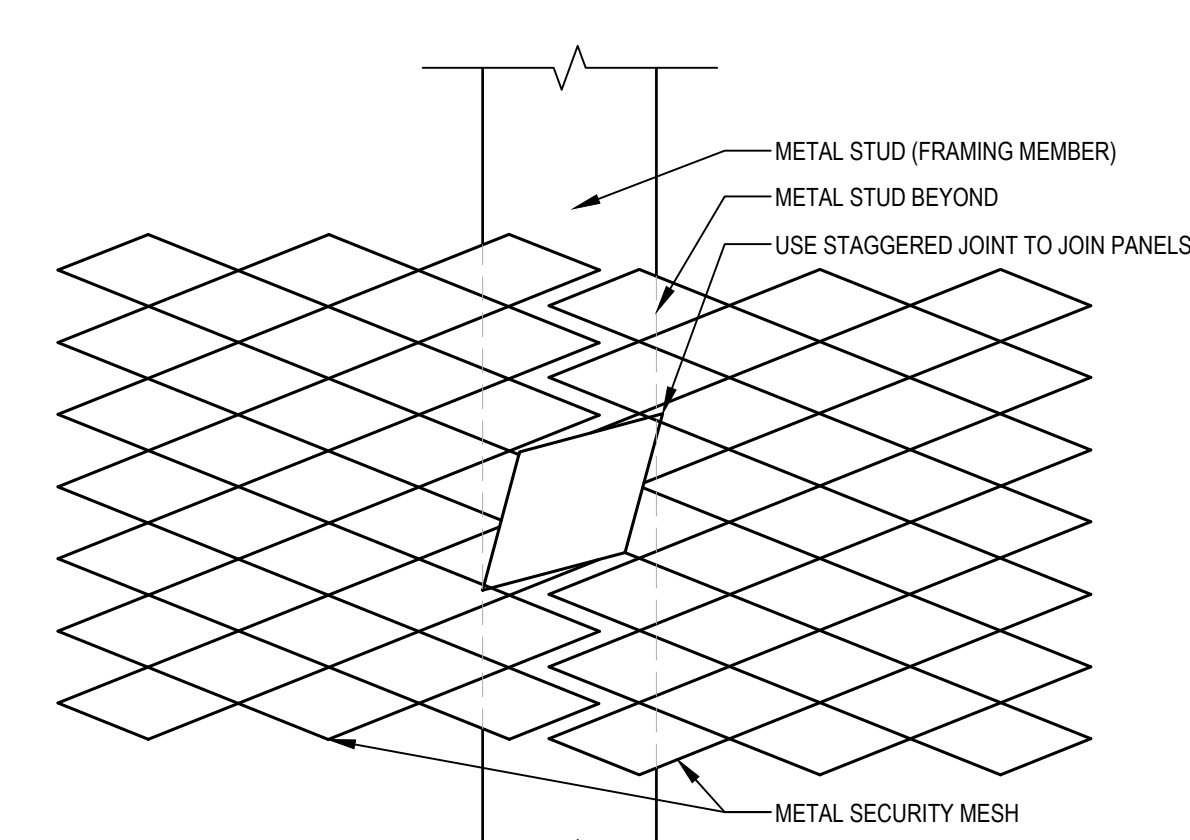
C WALL TYPE C
A4.1 SCALE: 1" = 1'-0"



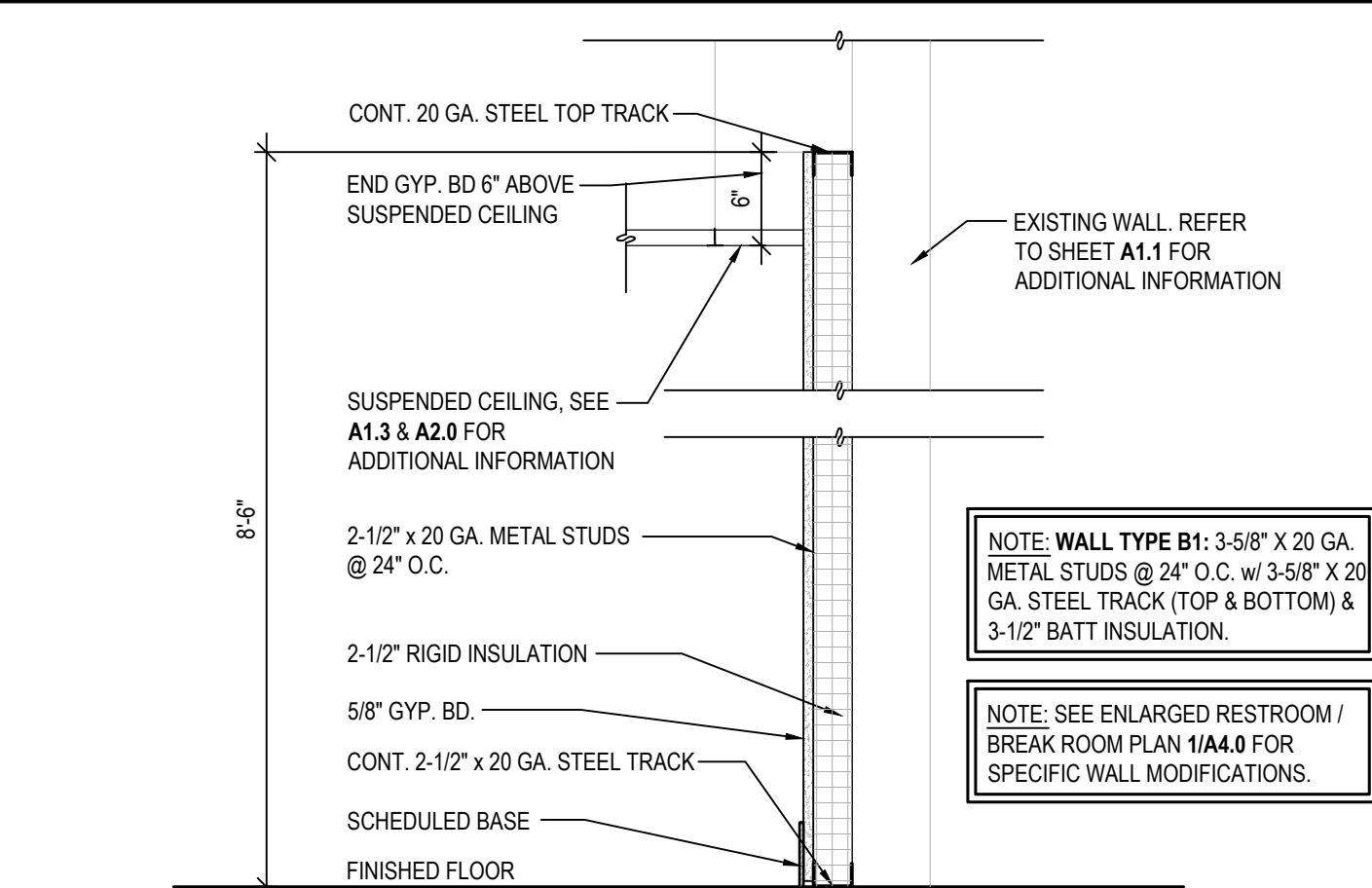
2 LATERAL BRACING @ FREE - STANDING WALLS
A4.1 SCALE: N.T.S.



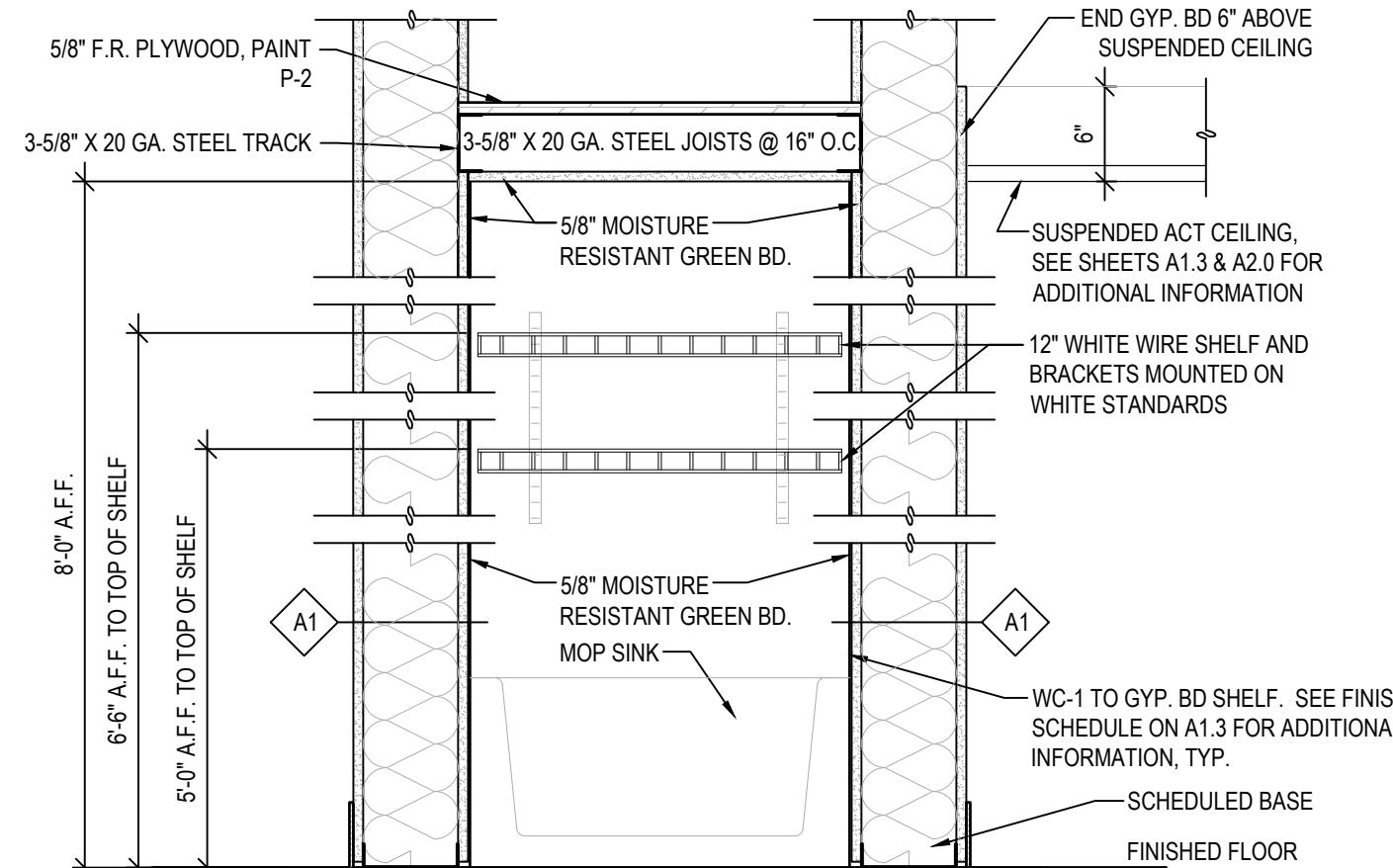
6 FLOOR REPAIR DETAIL
A4.1 SCALE: 1/2"=1'-0"



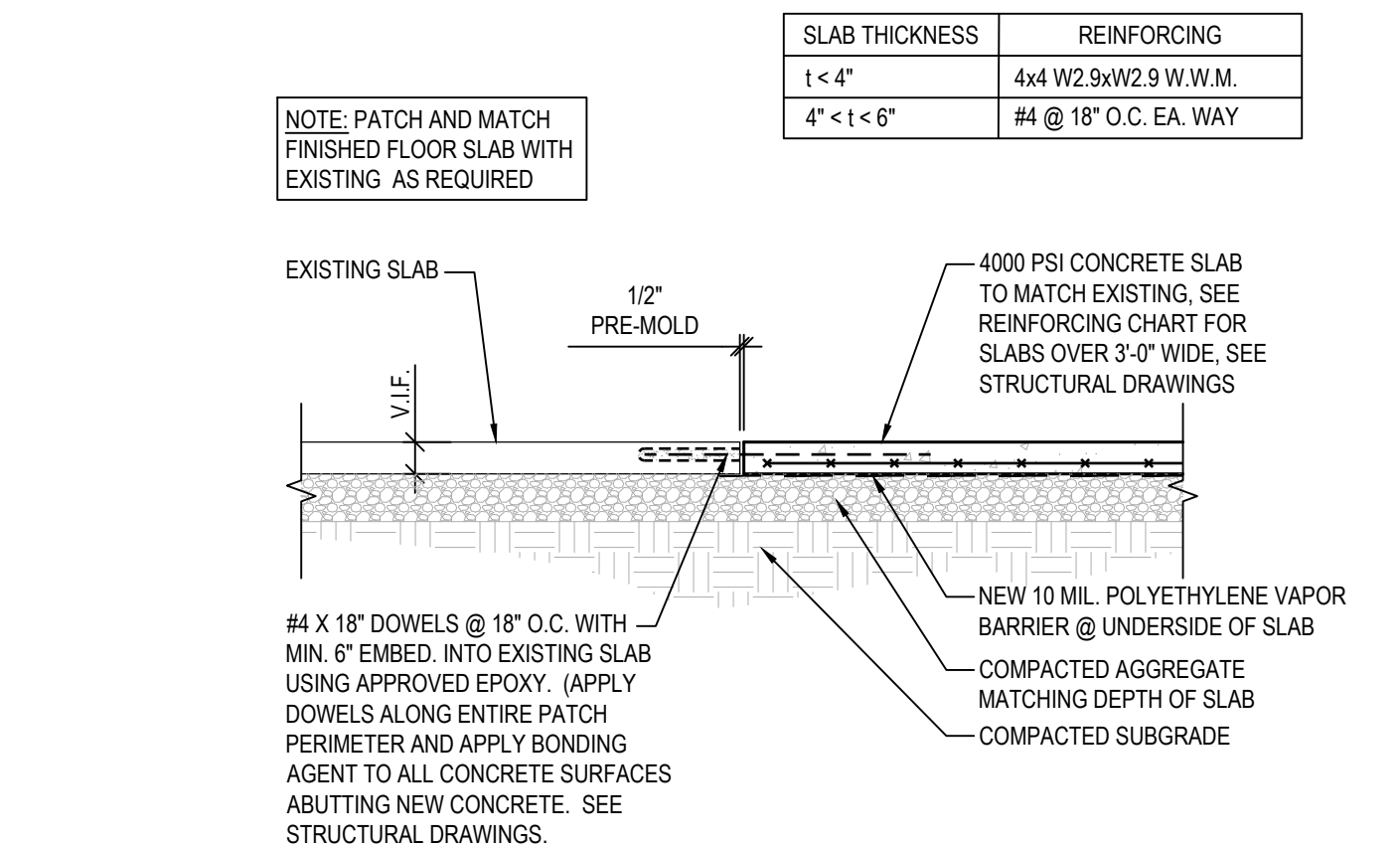
10 SECURITY MESH CONNECTION DETAIL
A4.1 SCALE: 3"=1'-0"



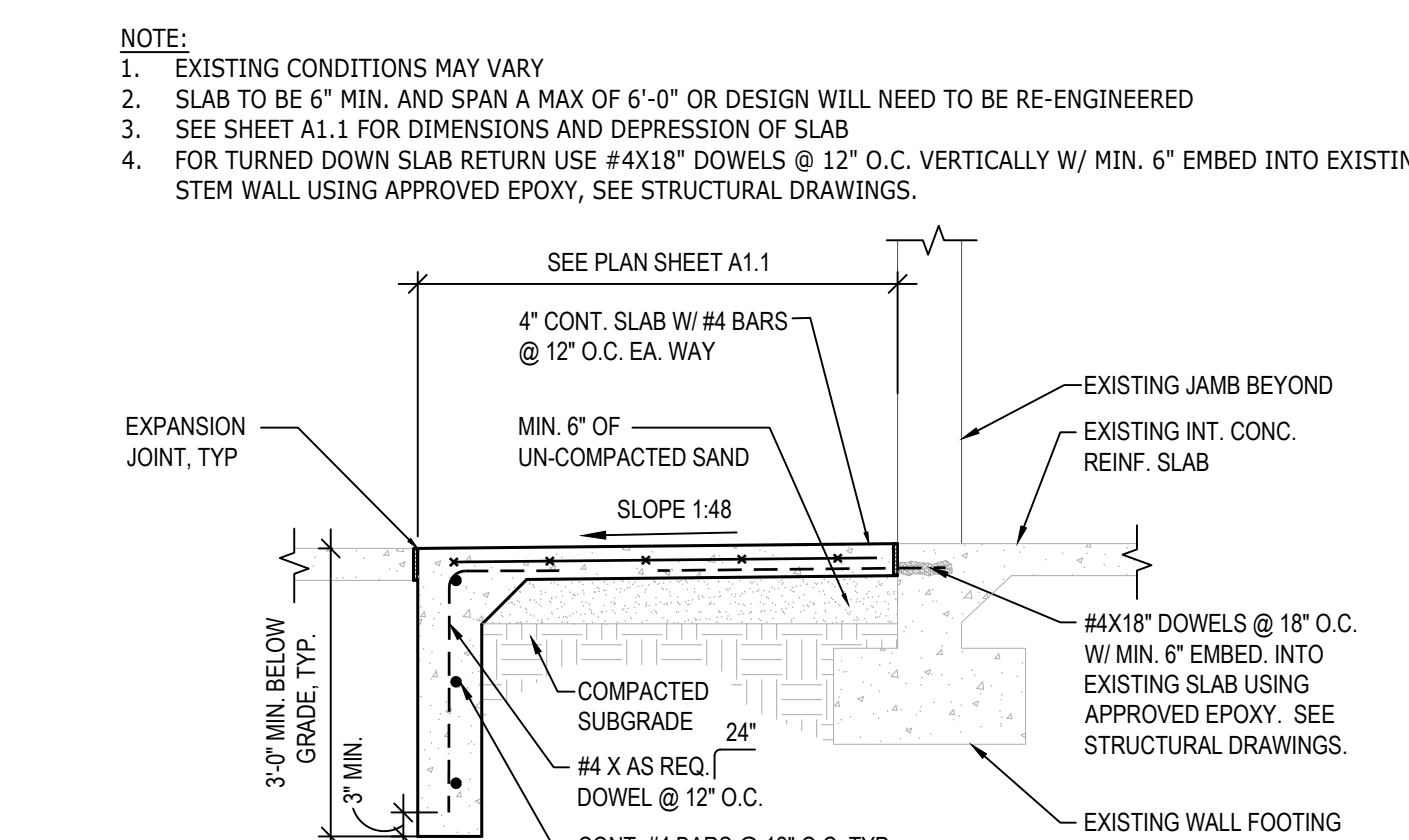
B WALL TYPE B, B1
A4.1 SCALE: 1" = 1'-0"



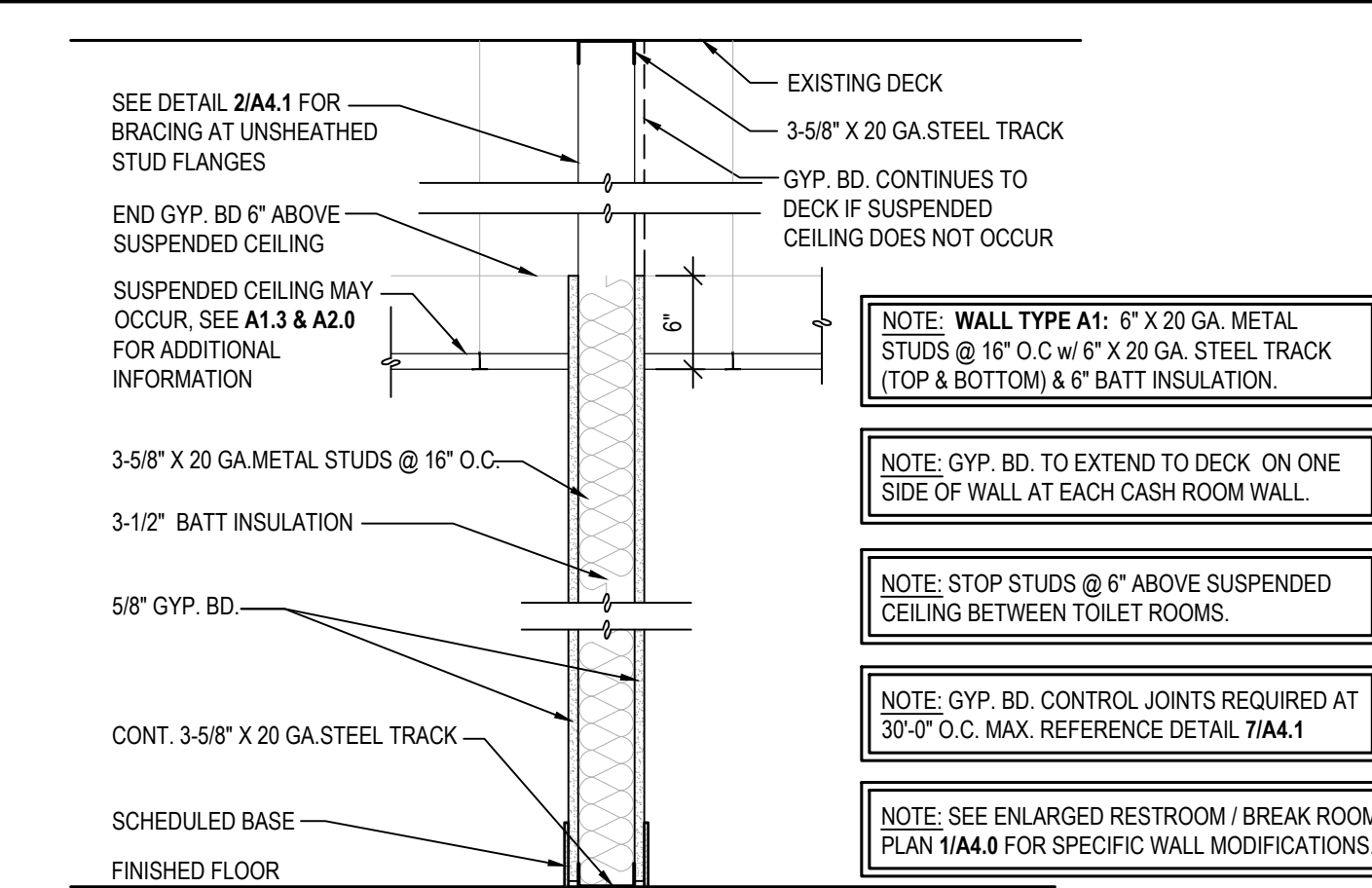
1 MOP SINK - HWH SHELF DETAIL
A4.1 SCALE: 1" = 1'-0"



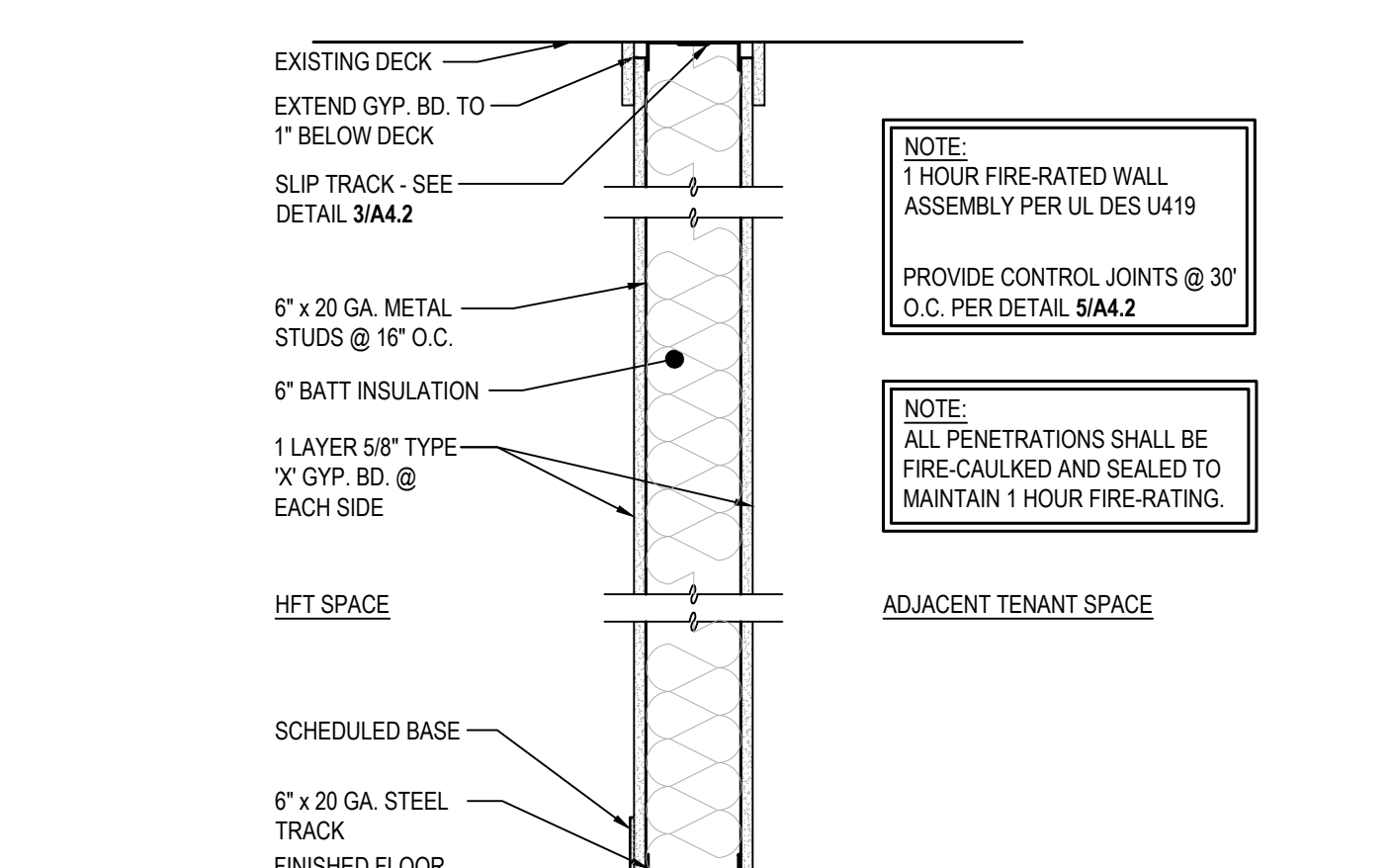
5 TYPICAL SLAB PATCH DETAIL
A4.1 SCALE: NONE



9 CONCRETE FROST SLAB
A4.1 SCALE: 1/2" = 1' - 0"

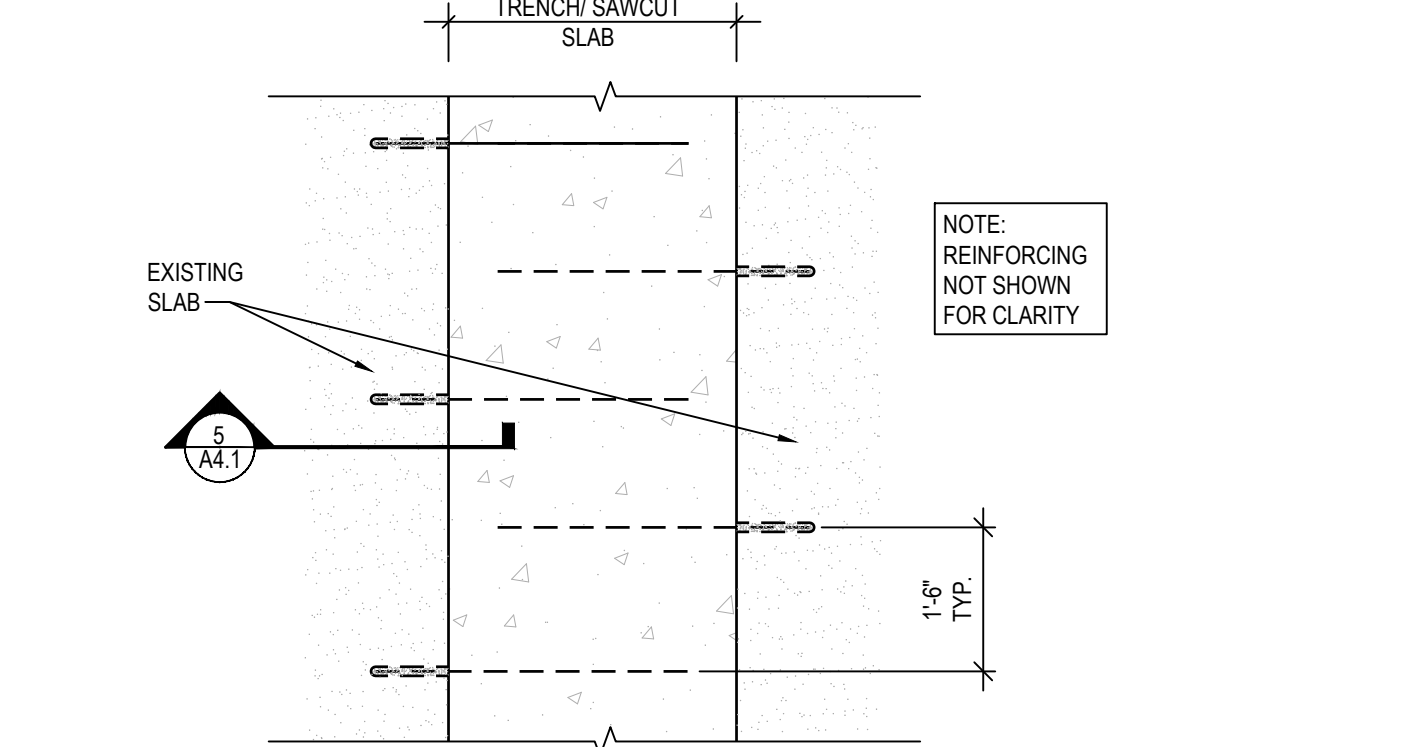


A WALL TYPE A, A1
A4.1 SCALE: 1" = 1'-0"

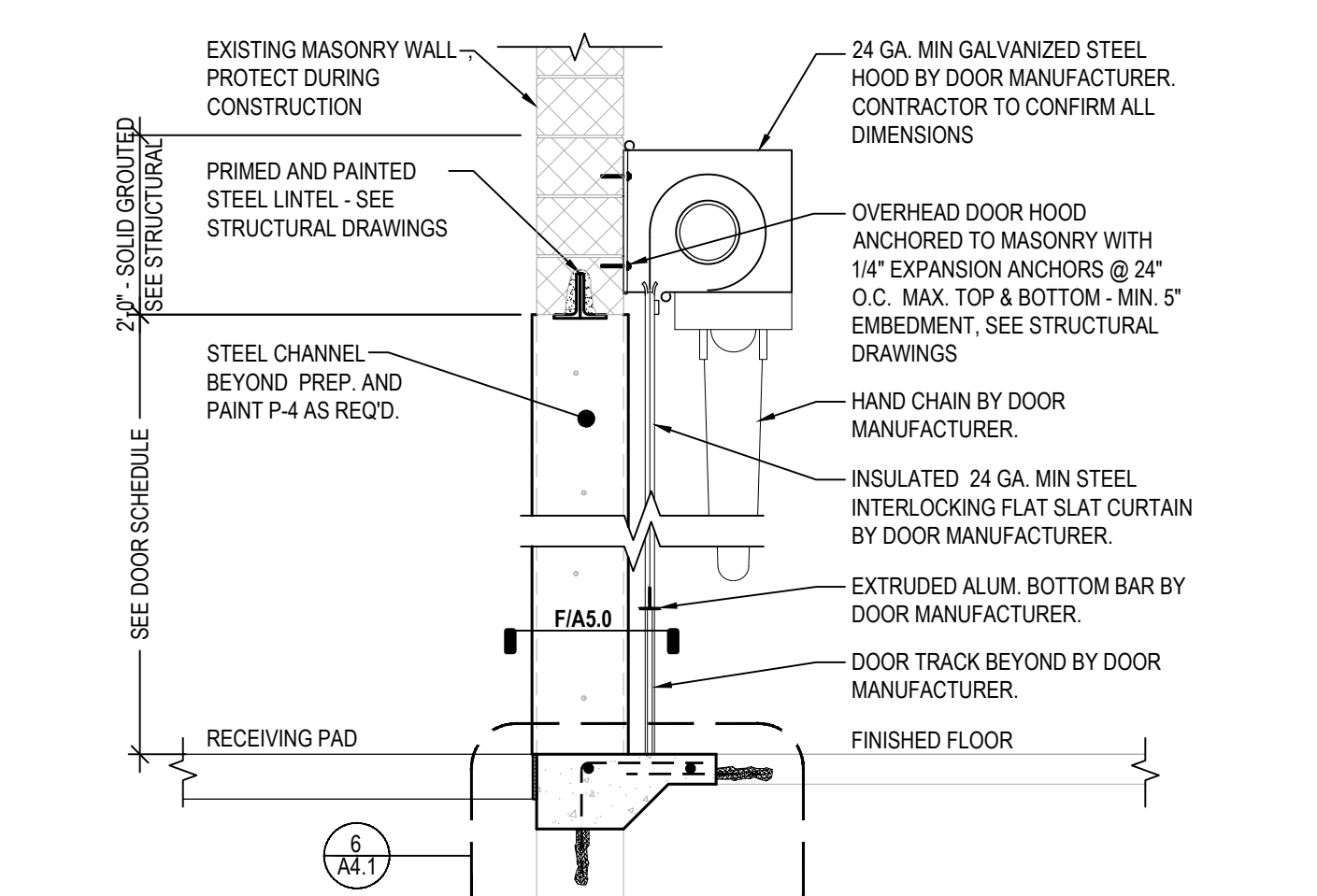


E WALL TYPE E : 1-HOUR FIRE RATED WALL
A4.1 SCALE: 1" = 1'-0"

NOTE: WALL TO BE (1) HOUR RATED FOLLOWING UL DESIGN **U419**

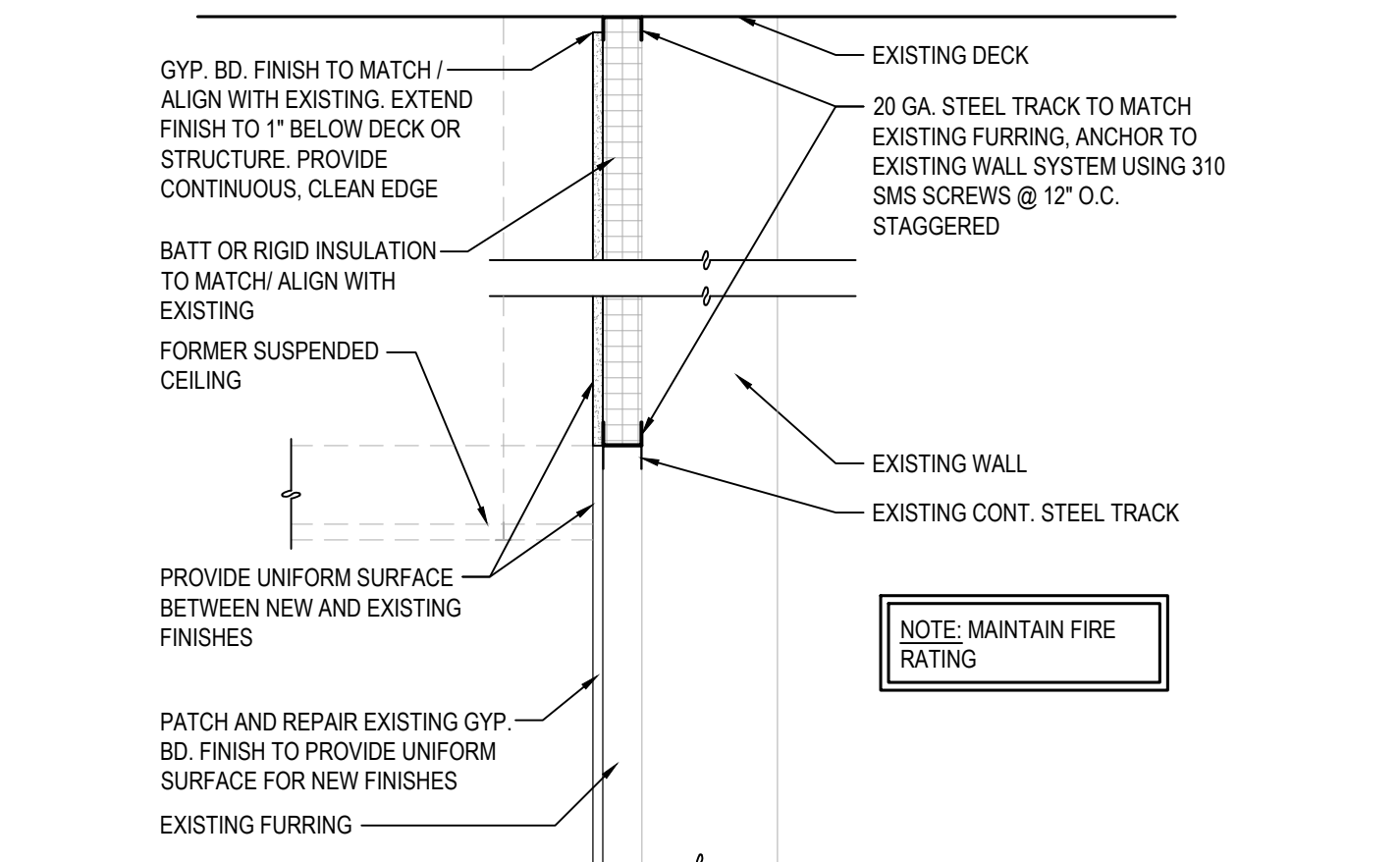


4 TRENCHED SLAB DOWEL PLAN
A4.1 SCALE: NONE

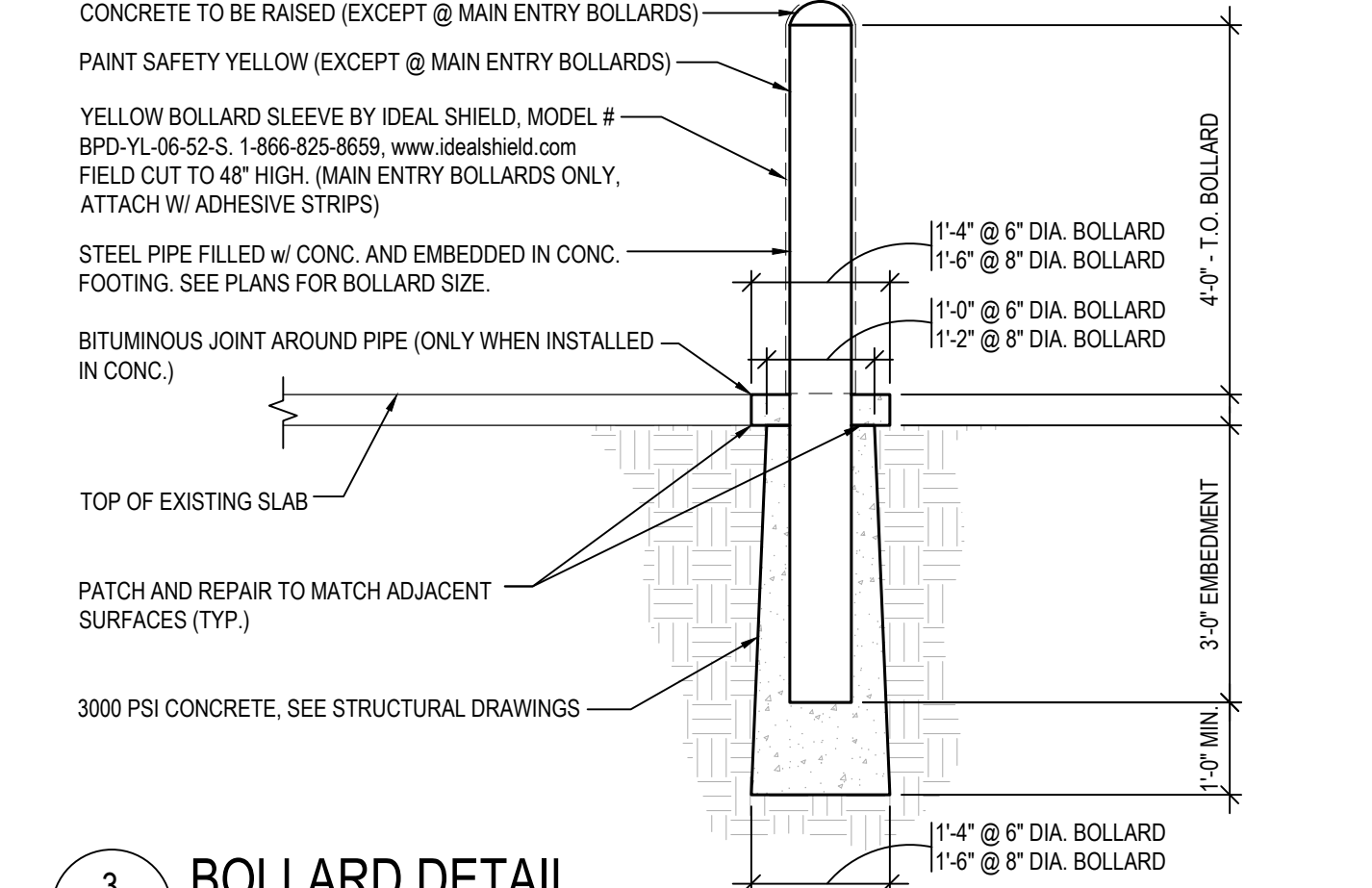


8 OVERHEAD DOOR DETAIL
A4.1 SCALE: 1/2"=1'-0"

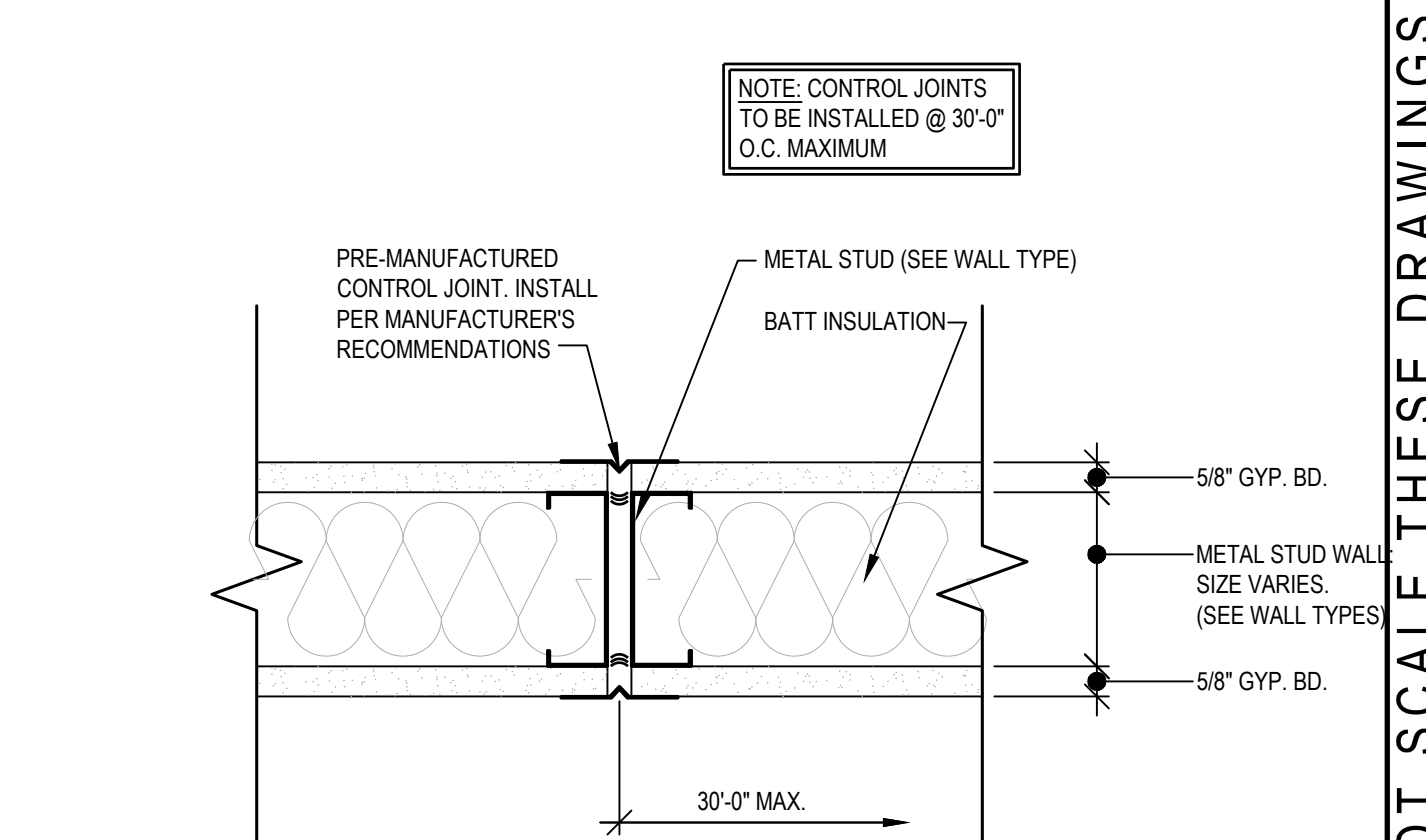
- ## WALL TYPE NOTES
- REFER TO GENERAL NOTES ON SHEET A0.2 FOR ADDITIONAL INFORMATION.
 - HFT GENERAL CONTRACTOR TO VISIT SITE AND VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING PROPOSALS AND COMMENCING WORK.
 - THE MATERIALS AND DETAILS SHOWN ARE FOR TYPICAL INSTALLATIONS WHERE THE STUD MANUFACTURES RECOMMENDATIONS OR LOCAL ORDINANCES ARE MORE RESTRICTIVE, THEY SHALL APPLY.
 - TYPICAL FASTENERS:
 - METAL STUDS TO METAL STUDS OR TRACKS: #8-18 1/2" SMS /2 WITH PHIL PAN HEAD FOR 25 GA. OR 20 GA. #10 - 16 X 9/16" SMS/3 WITH PHIL PAN HEAD FOR INTERCONNECTION OF 18 GA. OR 16 GA.
 - METAL STUDS OR TRACKS TO WOOD PURLINS, GIRDERS & BEAMS: #14-10 X 1 1/2" H.W.H. TYPE 'S' METAL- TO- WOOD SMS.
 - METAL STUDS OR TRACKS TO STRUCTURAL STEEL (TUBE STEEL, WIDE FLANGE COLUMNS, BEAMS, GIRDERS, ETC.): SMS/3 OR SMS/4 - GAUGE AND LENGTH AS REQUIRED FOR THE COMBINED THICKNESS OF THE FRAMING TO BE DRILLED.
 - PLYWOOD TO METAL STUDS: #10 - 24 X 3/4" SMS/3 (PLYMETAL SMS) WITH THIN WAFER HEAD
 - GYP. BOARD TO METAL STUDS: #7 X 1 1/4" H-I LO TYPE 'S' BUGLE HEAD SCREWS FOR 3/8" TO 5/8" GYP. BOARD TO 25 GAUGE OR 20 GAUGE STUDS. #6 X 1 1/4" TYPE S-12 BUGLE HEAD SCREWS FOR 3/8" TO 5/8" TO 18 GA. OR 16 GA. METAL STUDS OR TRACKS.
 - CONCRETE TO METAL STUDS: 0.157" DIA. SHOT PIN WITH MIN. 3/4" EMBEDMENT @ 16" O.C. SPACING. SEE STRUCTURAL.
 - ALL GYPSUM BOARD RETURNS SHALL HAVE METAL CORNER BEADS MINIMUM FLOOR TO CEILING. ALL PENETRATIONS IN DRYWALL CONSTRUCTION ABOVE FINISHED CEILING AND AS NOTED ELSEWHERE SHALL BE EFFECTIVELY SEALED TO PREVENT SOUND LEAKAGE AND FIRE CAULKED AT U.L. RATED PARTITIONS. ALL DRY-WALL JOINTS ABOVE FINISHED CEILING SHALL BE "FIRE TAPED." ALL MECHANICAL CHASES AND OTHER NOTED CHASES ARE TO EXTEND UP TO THE UNDERSIDE OF THE DECK STRUCTURE ABOVE. ALL PLUMBING CHASES UNLESS OTHERWISE NOTED SHALL EXTEND ABOVE THE HIGHEST ADJOINING CEILING AND BE BRACED TO STRUCTURE. ALL VERTICAL DIMENSIONS SHOWN ARE TO THE TOP OF THE SLAB, UNLESS NOTED OTHERWISE.
 - DRYWALL CONTROL JOINTS ARE TO BE INSTALLED AT MINIMUM 30'-0" O.C. AT PARTITIONS AND ELSEWHERE AS NOTED.
 - AT PARTITIONS HIGHER THAN 12'-0" PROVIDE HORIZONTAL LATERAL BRACING WITH 1 1/2" 16GA. COLD ROLLED CHANNELS AT 8'-0" O.C. VERT. ANCHORED TO STUDS. SEE DETAIL 2 THIS SHEET FOR ADDITIONAL INFORMATION.
 - ALL HFT FRAMING SHALL BE METAL STUDS.
 - ALL WOOD IS TO BE FIRE RETARDANT TREATED.
 - ALL RATED WALLS TO FOLLOW UL FOLLOWING UL DESIGN # U419.
 - REFER TO STRUCTURAL DRAWINGS FOR CONCRETE AND REINFORCING SPECIFICATIONS.
 - REFER TO SHEET S1.0 ON STRUCTURAL DRAWINGS FOR APPROVED ADHESIVE ANCHORING SYSTEMS.



D WALL TYPE D- EXTEND GYP. / FURRING TO DECK
A4.1 SCALE: 1" = 1'-0"



3 BOLLARD DETAIL
A4.1 SCALE: 1/2"=1'-0"



7 GYPSUM BOARD CONTROL JOINT DETAIL
A4.1 SCALE: 3"=1'-0"



HARBOR FREIGHT TOOLS

NYACK, NY 10960

314 NY ROUTE 59

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WALL TYPES & DETAILS

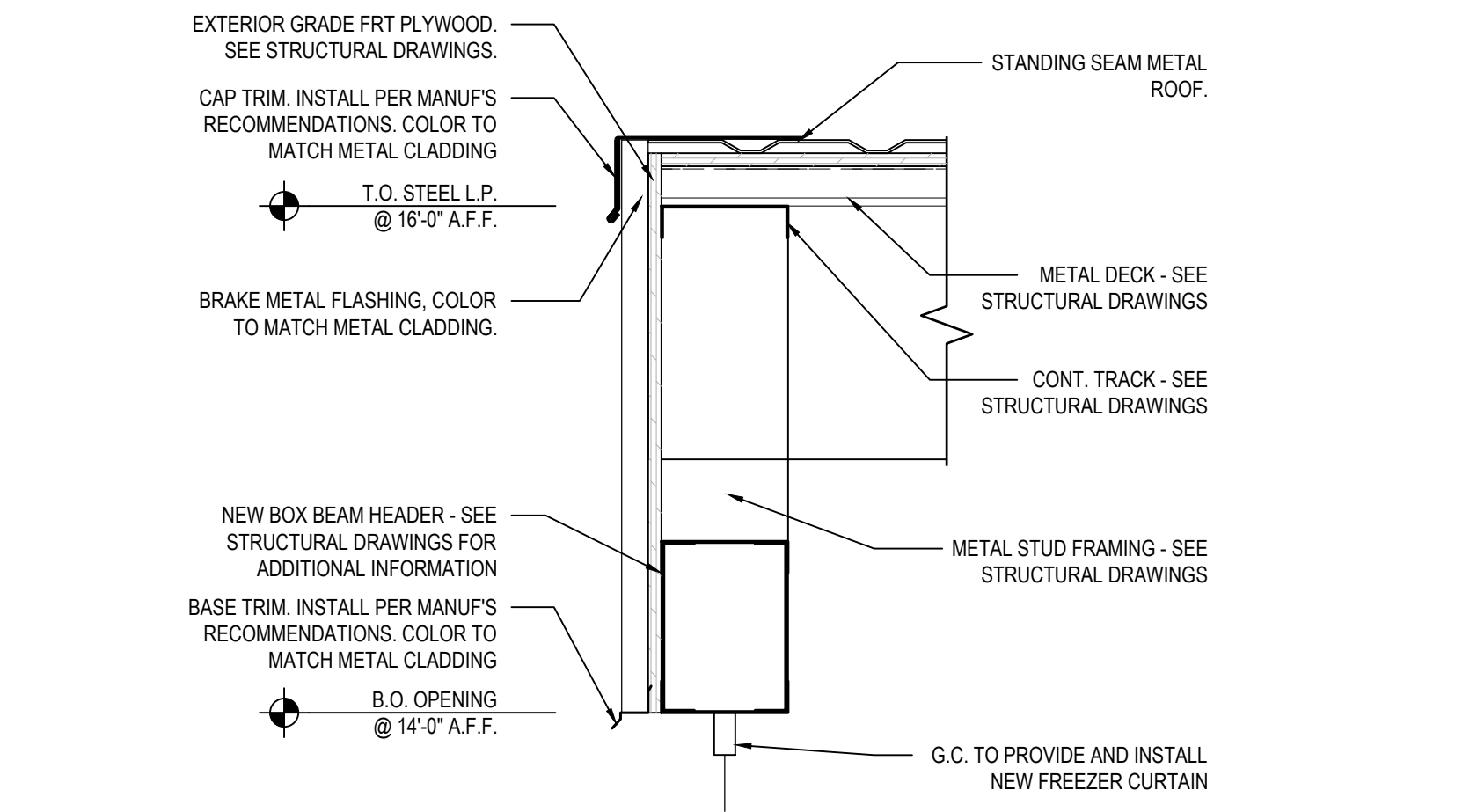
DATE 9/22/21

JOB NO. 20420

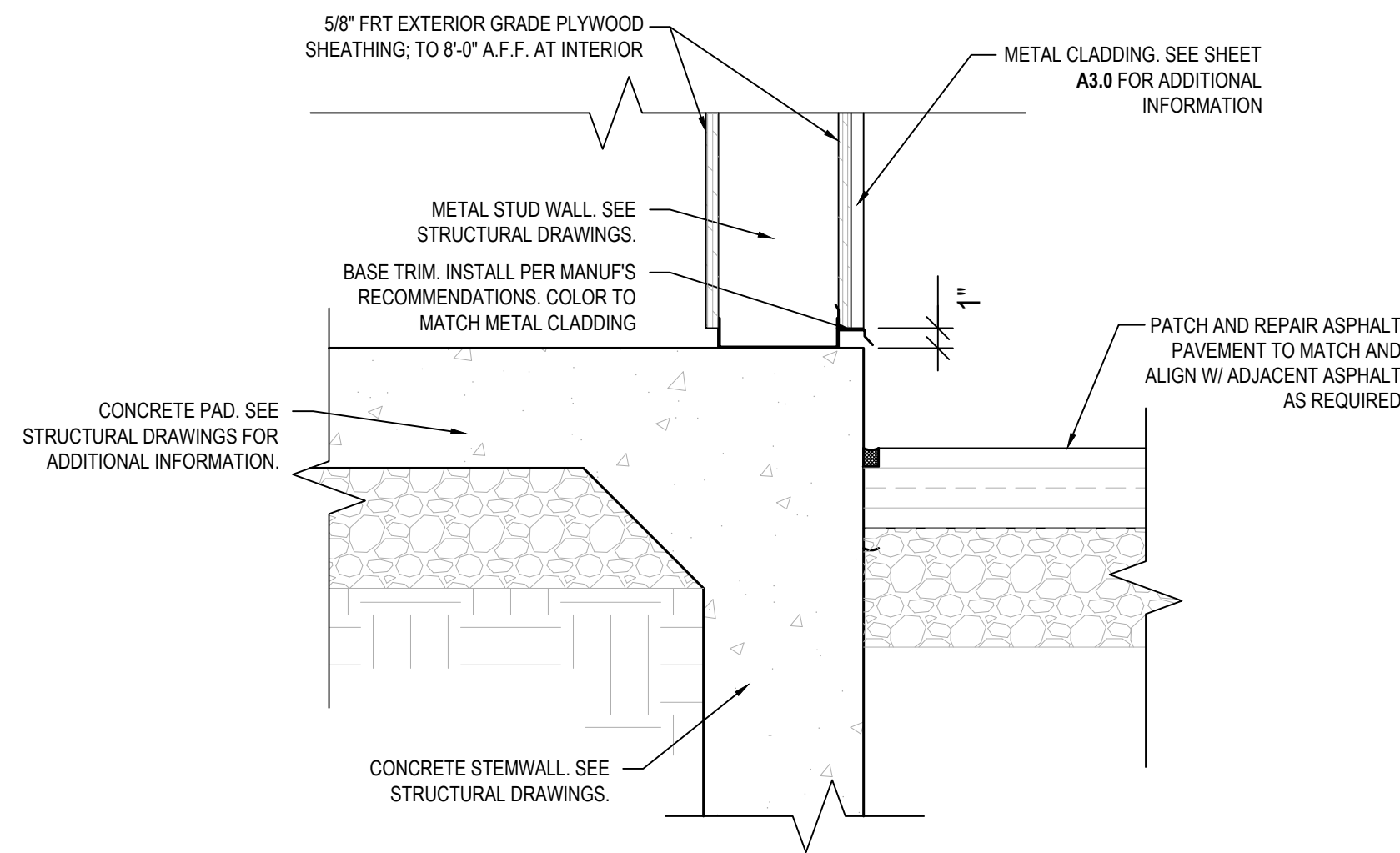
A4.1

SHEET NO.

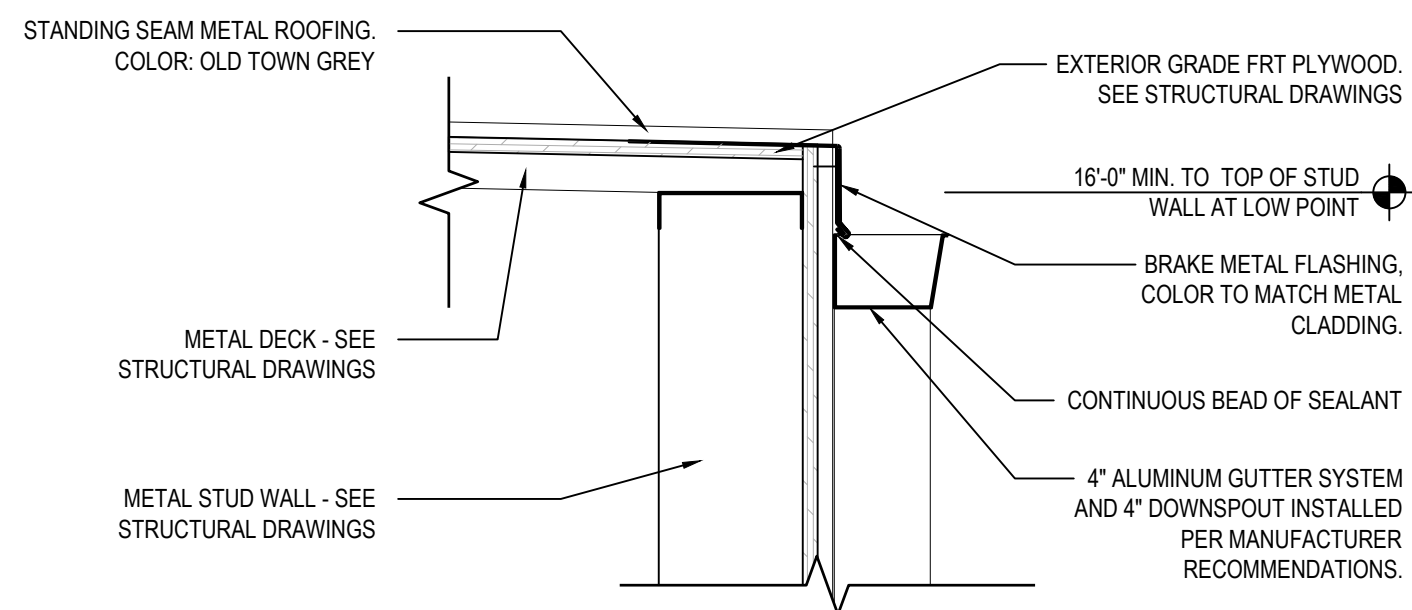
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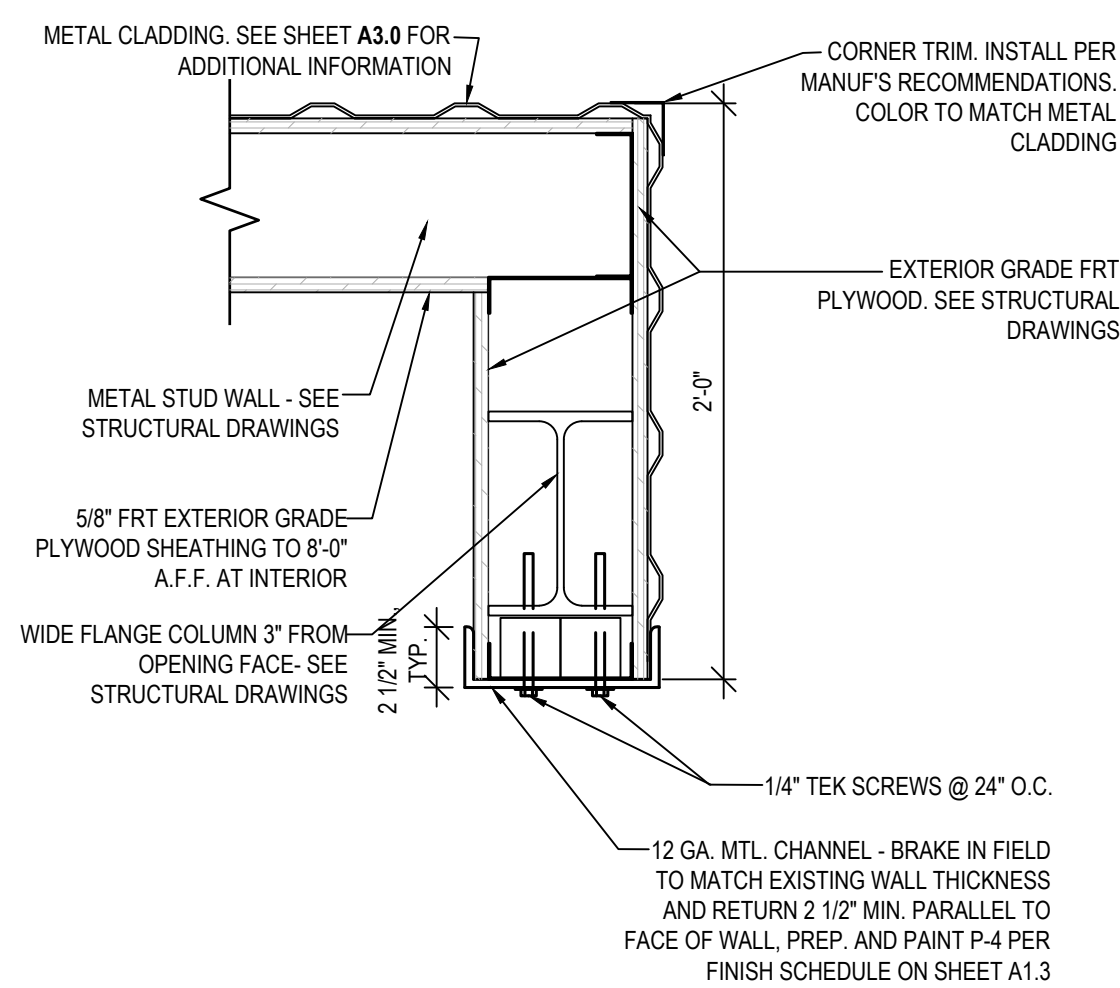
2 RECEIVING ENCLOSURE DRIP EDGE DETAIL
A4.3 SCALE: 1 1/2" = 1'-0"



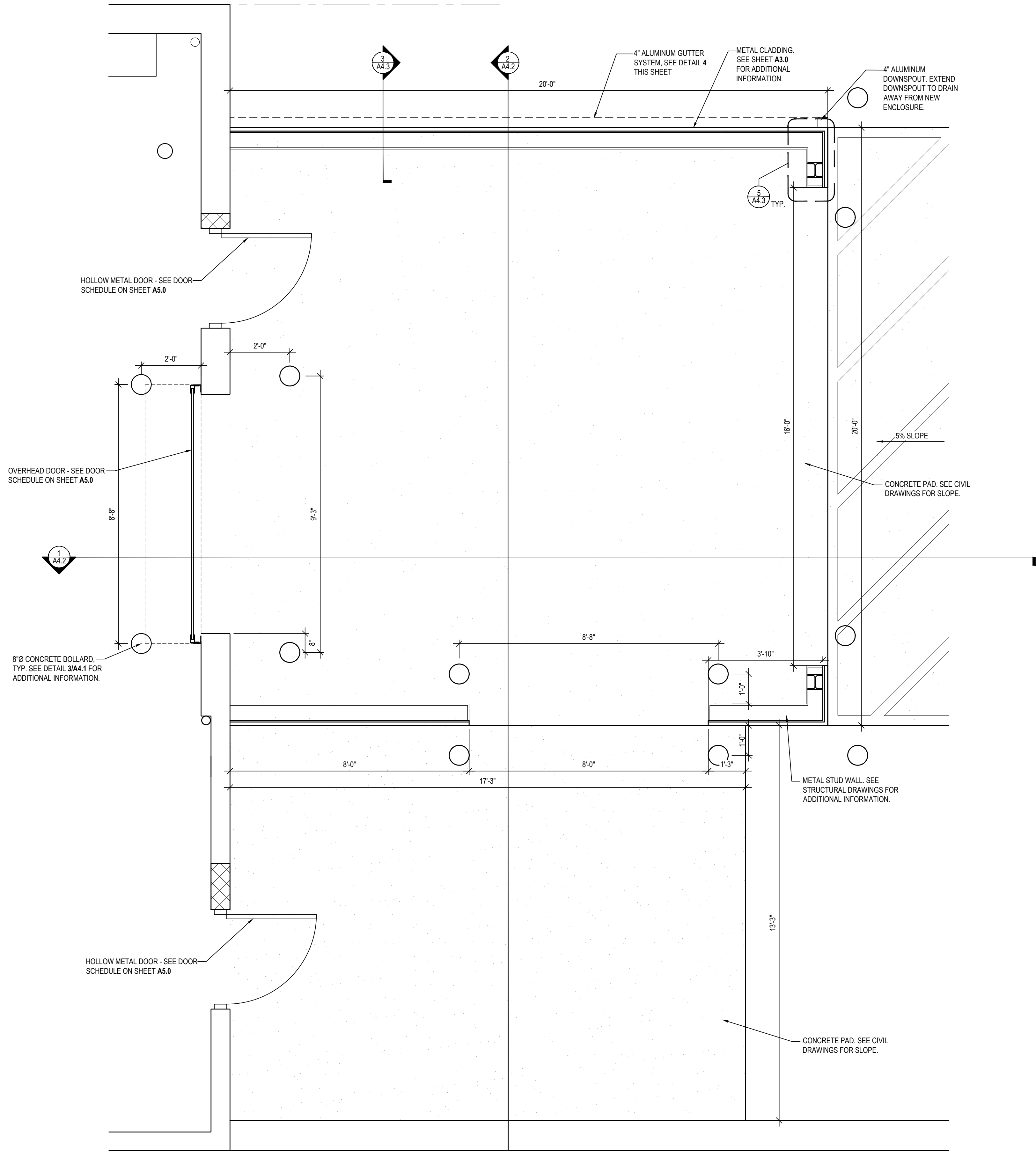
3 RECEIVING ENCLOSURE BASE DETAIL
A4.3 SCALE: 1 1/2" = 1'-0"



4 RECEIVING ENCLOSURE GUTTER DETAIL
A4.3 SCALE: 1 1/2" = 1'-0"



5 RECEIVING ENCLOSURE JAMB DETAIL
A4.3 SCALE: 1 1/2" = 1'-0"



5 RECEIVING ENCLOSURE PLAN
A4.3 SCALE: 1/2" = 1'-0"

METAL CLADDING SIDING TO BE WHIRLWIND STEEL "SUPER SPAN" METAL PANELS, AND STANDING SEAM METAL ROOFING, COLORS: OLD TOWN GREY.

DO NOT SCALE THESE DRAWINGS



HARBOR FREIGHT TOOLS

314 NY ROUTE 59
NYACK, NY 10960

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REVISIONS

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MISC. DETAILS

DATE 9/22/21

JOB NO. 20420

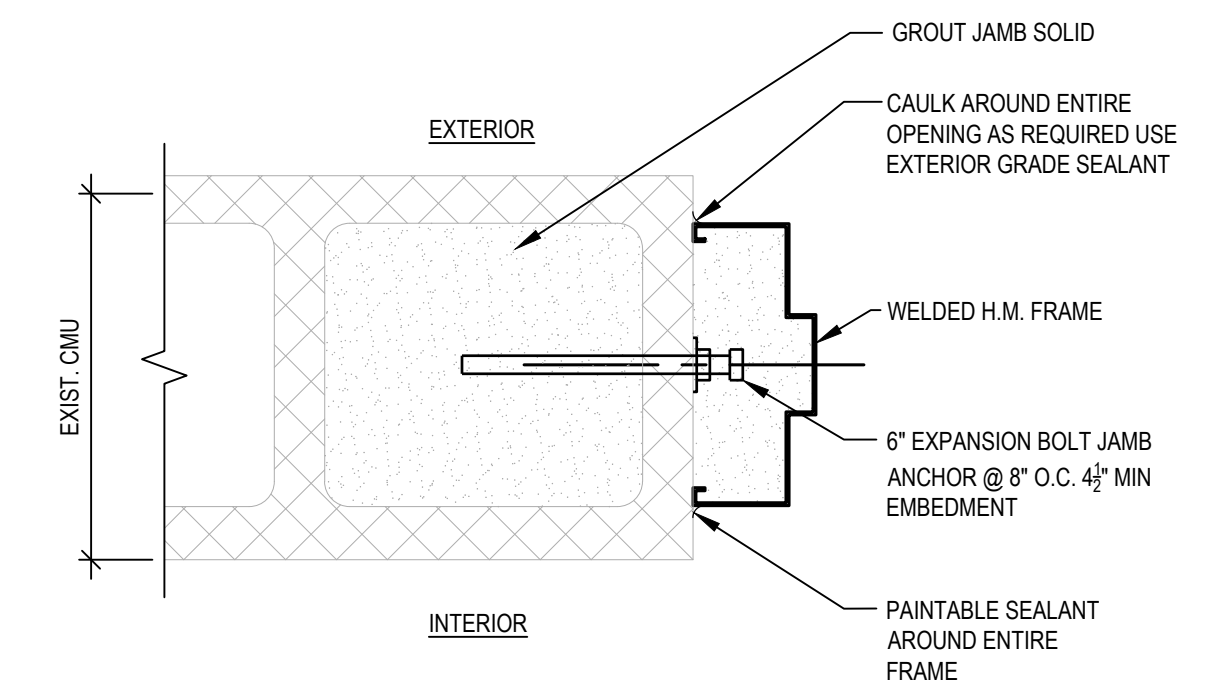
A4.3
SHEET NO.

DOOR AND FRAME SCHEDULE											
DOOR NO.	SIZE	DOOR			FRAME			FIRE LABEL	HARDWARE GROUP	HEAD/JAMB DETAIL	REMARKS
		TYPE	MAT'L	FINISH	TYPE	MAT'L	FINISH				
01A	12'-0" x 7'-8" HFT PACKAGED UNIT	A	GLASS/ALUM.	DARK BRONZE	PER MANF.	ALUM.	DARK BRONZE	-	SUPPLIED BY DORMA	PER MANF.	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
01B	12'-0" x 7'-8" HFT PACKAGED UNIT	A	GLASS/ALUM.	DARK BRONZE	PER MANF.	ALUM.	DARK BRONZE	-	SUPPLIED BY DORMA	PER MANF.	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
02	3'-0" x 7'-0" x 1 3/4"	B	S.C. WOOD	PAINTED	1	H.M.	PAINTED	-	1	A&B/A5.0	SEE DOOR SCHEDULE NOTES.
03	3'-0" x 7'-0" x 1 3/4"	B	S.C. WOOD	PAINTED	1	H.M.	PAINTED	-	2	A&B/A5.0	SEE DOOR SCHEDULE NOTES.
04	3'-0" x 7'-0" x 1 3/4"	B	S.C. WOOD	PAINTED	1	H.M.	PAINTED	-	2	A&B/A5.0	SEE DOOR SCHEDULE NOTES.
05	3'-0" x 7'-0" x 1 3/4"	B	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.
06	3'-0" x 7'-0" x 1 3/4"	B	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.
07	3'-0" x 7'-0" x 1 3/4"	B	S.C. WOOD	PAINTED	1	H.M.	PAINTED	-	3	A&B/A5.0	SEE DOOR SCHEDULE NOTES.
08	8'-0" x 10'-0" x 1/2"	D	MTL.	GALV.	BY MANF.	MTL.	PAINTED	+	5	F/A5.0&A4.1	CHAIN OPERATED INSULATED SERVICE DOOR FURNISHED AND INSTALLED BY O.H. DOOR VENDOR AT NEW OPENING.
09	3'-0" x 7'-0" x 1 3/4"	C	H.M.	PAINTED	3	H.M.	PAINTED	-	6	C&D/A5.0	VERIFY OPENING SIZE IN FIELD BEFORE ORDERING DOOR. SCHEDULE NOTES. INSTALL ADDRESS ON THIS DOOR.
10	3'-0" x 7'-0" x 1 3/4"	C	H.M.	PAINTED	3	H.M.	PAINTED	-	6A	C&D/A5.0	VERIFY OPENING SIZE IN FIELD BEFORE ORDERING DOOR. SEE DOOR SCHEDULE NOTES. DO NOT INSTALL ADDRESS ON THIS DOOR.

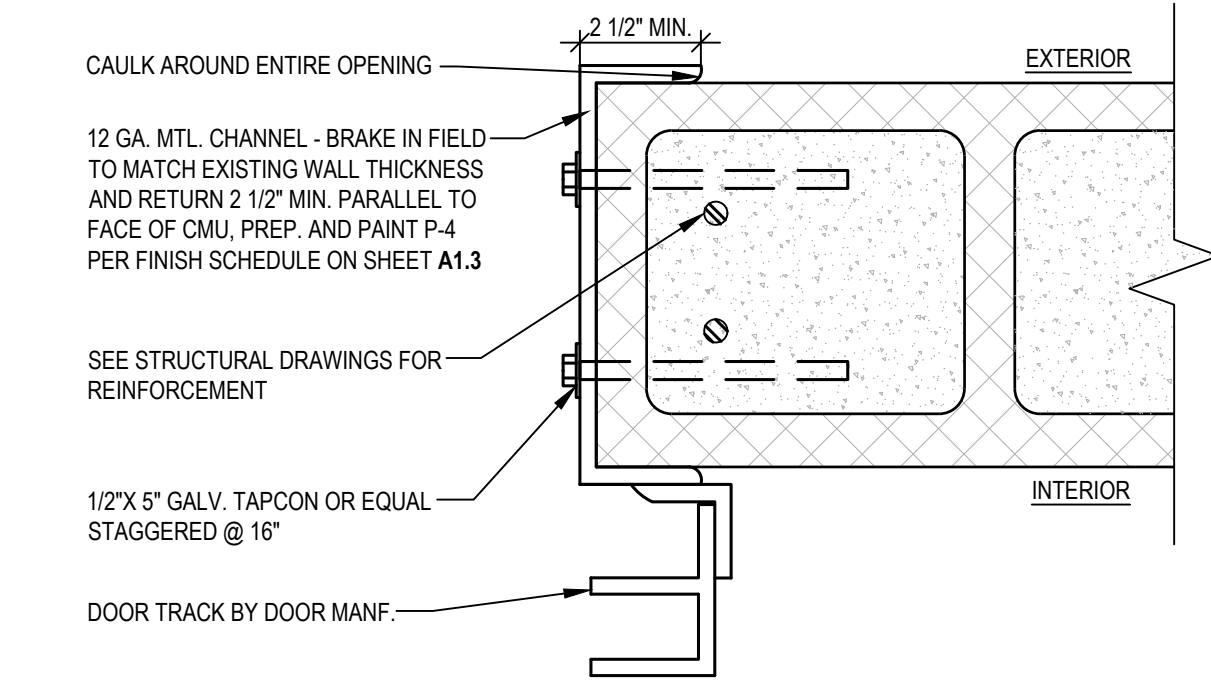
HARDWARE GROUP					
GROUP #1 (MANAGER, UTILITY)	GROUP #2 (CASH ROOM DOORS)	GROUP #3 (BREAK ROOM)	GROUP #4 (RESTROOMS)	GROUP #5 (OVERHEAD DOORS)	GROUP #6 (SINGLE EXIT DOORS) NOTE: (NO HARDWARE ON EXTERIOR SIDE, U.N.O.)
BUTTS: 1 - 1/2 PAIR MCKINNEY MP 79, 4 1/2" x 4 1/2", 26D.	BUTTS: 1 - 1/2 PAIR MCKINNEY MP 79, 4 1/2" x 4 1/2", 26D.	BUTTS: 1 - 1/2 PAIR MCKINNEY MP 79, 4 1/2" x 4 1/2", 26D.	BUTTS: 1 - 1/2 PAIR HAGER ECB81100, 4 1/2" x 4 1/2" x US26D.	DOOR PANELS: 2-3/4" INSULATED STEEL INTERLOCKING FLAT SLAT CURTAIN W/ ENDLOCKS @ BOTH ENDS BY VENDOR SCHLAGE K541F1200	BUTTS: 1 - 1/2 PAIR MCKINNEY MP 79, 4 1/2" x 4 1/2", 26D.
LATCH SET: FALCON 'ENTRANCE' LEVER W581HD-D-626	LATCH SET: FALCON 'STOREROOM' LEVER W581HD-D-626	LATCH SET: FALCON 'PASSAGE' LEVER W101S-D-626	LATCH SET: FALCON 'PASSAGE' LEVER W101S-D-626 (MULTI-USE RESTROOMS)		EXIT DEVICE: VON DUPRIN GUARD-X 2670-US28
LATCH GUARD: DON-JO ILP-212-SL	LATCH GUARD: DOOR #3: DON-JO ILP-212-SL DOOR #4 DON-JO OSLP-110-SL	CLOSER: FALCON SC71 RW / PA-689 (MTD. ON INSIDE)	FALCON 'PRIVACY' LEVER K301S-D-626 (SINGLE-USE RESTROOMS)	CYLINDER CORE: FALCON C649 (IHCK, IHK)-626 SCHLAGE 80-035-GRN 24 GA. MIN. GALVANIZED STEEL BY VENDOR HAND CHAIN BY VENDOR	CYLINDER CORE: FALCON C207-SC-C26D
CYLINDER CORE: FALCON C649 (CKWY-7 PIN)-626	DEAD BOLT: FALCON D241H-50-231F-7 PIN-626	KICKPLATE: ROCKWOOD K1050 - 10x34 US32D	CLOSER: FALCON SC71 RW / PA-689 (MTD. ON INSIDE)		CONST. CORE: FALCON C607 CCA 7-PIN
CLOSER: FALCON SC71 RW / PA-689 (MTD. ON INSIDE)	CYLINDER CORE: (2) FALCON C649 (CKWY-7 PIN)-626	SILENCER: (3) ROCKWOOD 608-26D	KICKPLATE: ROCKWOOD K1050 - 10x34 US32D		HOUSING: FALCON C953 (CKWY 7-PIN) 626
KICKPLATE: ROCKWOOD K1050 - 10x34 US32D	CLOSER: FALCON SC71 RW / PA-689 (MTD. ON INSIDE)	FLOOR STOP: ROCKWOOD 441-US26D DOME STOP	FLOOR STOP: ROCKWOOD 441-US26D DOME STOP		CLOSER: FALCON SC71 RW / PA-689 (MTD. INSIDE)
SILENCER: (3) ROCKWOOD 608-26D	KICKPLATE: ROCKWOOD K1050 - 10x34 US32D				DOOR STOP: ROCKWOOD 472-26D STOP W/ KEEPER
FLOOR STOP: ROCKWOOD 441-US26D DOME STOP	SILENCER: (3) ROCKWOOD 608-26D				DOOR VIEWER: DOORSCOPE DS2000 AL S
DOOR VIEWER: ROCKWOOD 622-26D DOOR VIEWERS FOR MANAGER OFFICE SIDE OF DOORS ONLY - NO DOOR VIEWERS INSTALLED ON UTILITY DOORS	FLOOR STOP: ROCKWOOD 441-US26D DOME STOP				DOOR BOTTOM: PEMKO 315-CN MILL 36"
DOOR VIEWER: ROCKWOOD 622-26D					GASKETING: PEMKO 303 AV (1) 36", (2) 84"

DOOR SCHEDULE NOTES

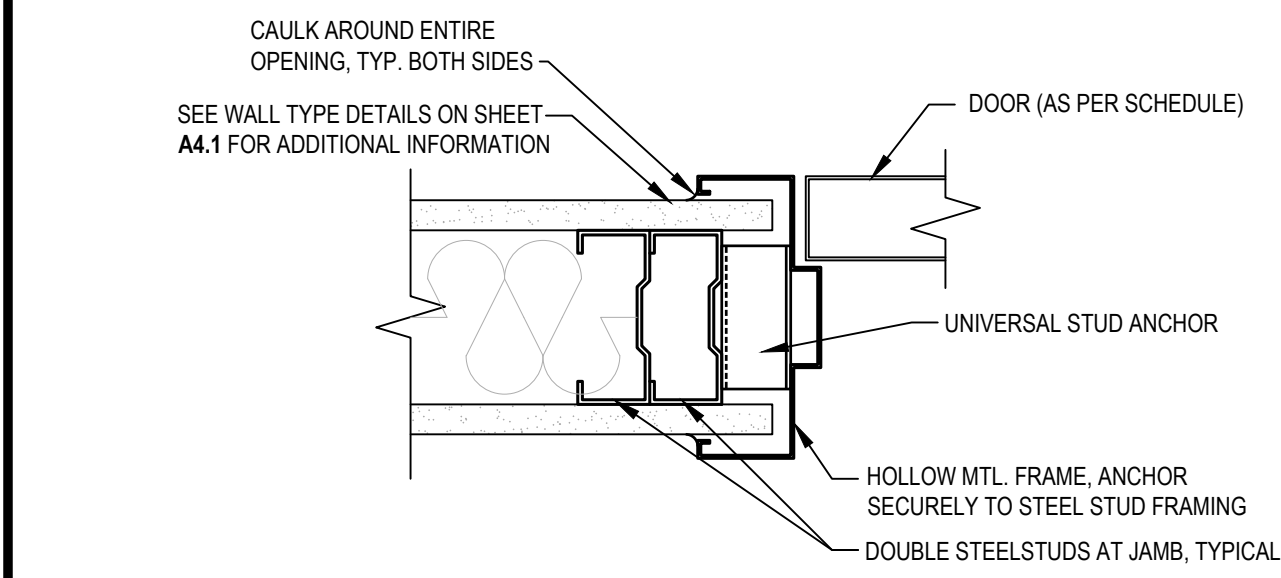
1. RATED DOORS SHALL BE A TIGHT-FITTING SMOKE AND DRAFT CONTROL ASSEMBLY.
2. ALL EXISTING/NEW DOORS AND HARDWARE SHALL COMPLY WITH CURRENT ADA REGULATIONS.
3. ALL INTERIOR/EXTERIOR METAL DOORS SHALL BE 20 GA. MINIMUM.
4. ALL DOOR HARDWARE SHALL BE LEVER TYPE OR PANIC HARDWARE.
5. EXTERIOR DOORS SHALL BE OPERABLE FROM THE INSIDE WITHOUT THE USE OF A KEY, SPECIAL KNOWLEDGE OR EFFORT.
6. OPENINGS SHALL BE A MINIMUM OF 32" WIDE WHEN DOOR IS AT RIGHT ANGLE TO CLOSED POSITION.
7. BOTTOM 10" OF ALL DOORS SHALL HAVE A SMOOTH, UNINTERRUPTED SURFACE FOR OPENING BY WHEELCHAIR FOOT REST.
8. 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.
9. SUBMIT HARDWARE CUT SHEETS FOR ANY ALTERNATES TO HFT REPRESENTATIVE PRIOR TO ORDERING HARDWARE FOR APPROVAL.
10. REPLACE ALL EXISTING HARDWARE TO COMPLY WITH HARDWARE SCHEDULE.
11. 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.
12. CONTRACTOR SHALL COORDINATE KEYING OF LOCKS WITH OWNER PRIOR TO INSTALLATION.
13. ALL HARDWARE LISTED TO BE SUPPLIED BY LISTED MANUFACTURER OR EQUAL.
14. ALL DOOR HARDWARE TO BE BRUSHED CHROME FINISH.
15. 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.
16. INTERIOR DOORS AND FRAMES TO BE PAINTED P-8. SEE FINISH SCHEDULE ON SHEET A1.3.
17. BI-PARTING DOOR THRESHOLDS TO BE PROVIDED AND INSTALLED BY DOOR VENDOR.
18. PROVIDE 8" HIGH WHITE VINYL NUMBERS STATING STREET ADDRESS IN HELVETICA FONT STYLE ON TRANSOM AT MAIN ENTRY DOOR.
19. INTERIOR DOOR FRAMES SHALL BE MIN. 20GA. U.N.O. EXTERIOR DOOR FRAMES SHALL BE MIN. 16GA. WELDED FRAMES, U.N.O.



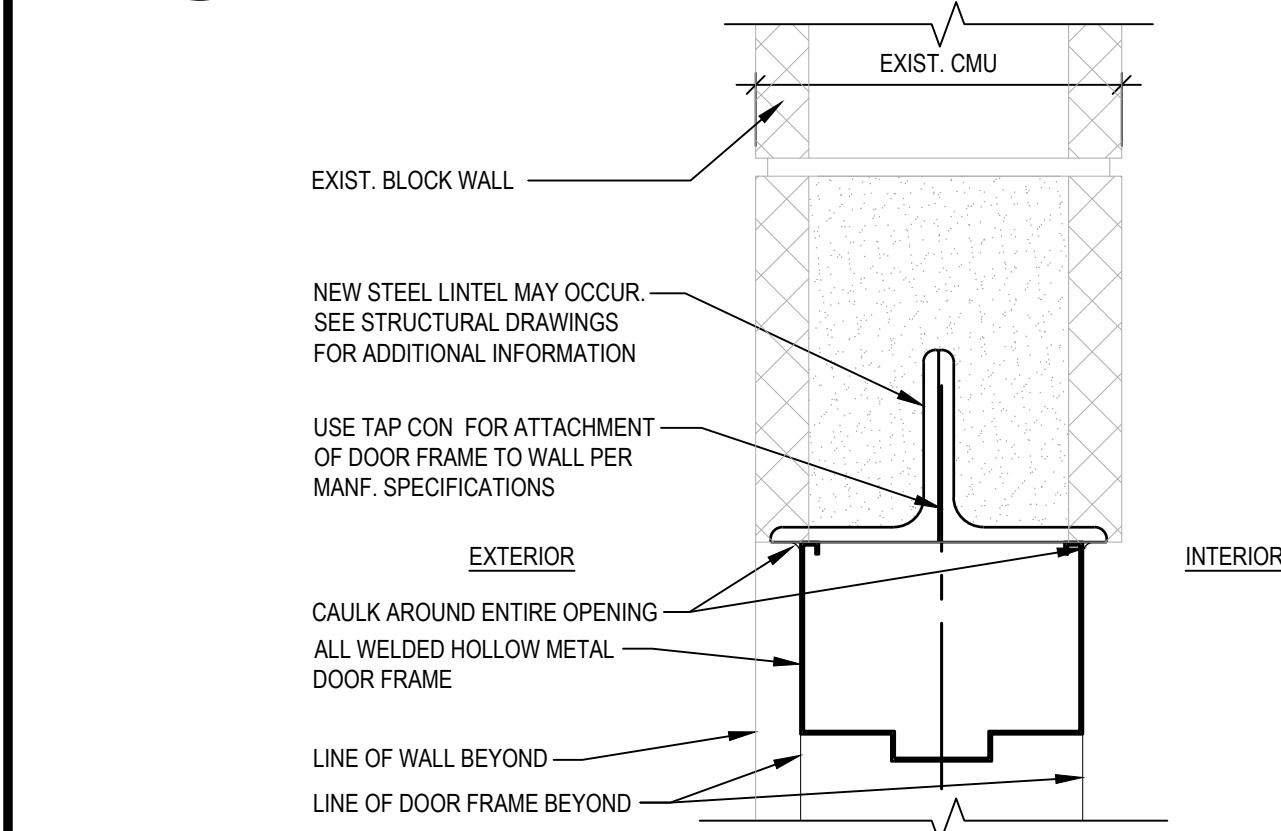
C TYP. EXTERIOR DOOR JAMB DETAIL
SCALE: 3" = 1'-0"



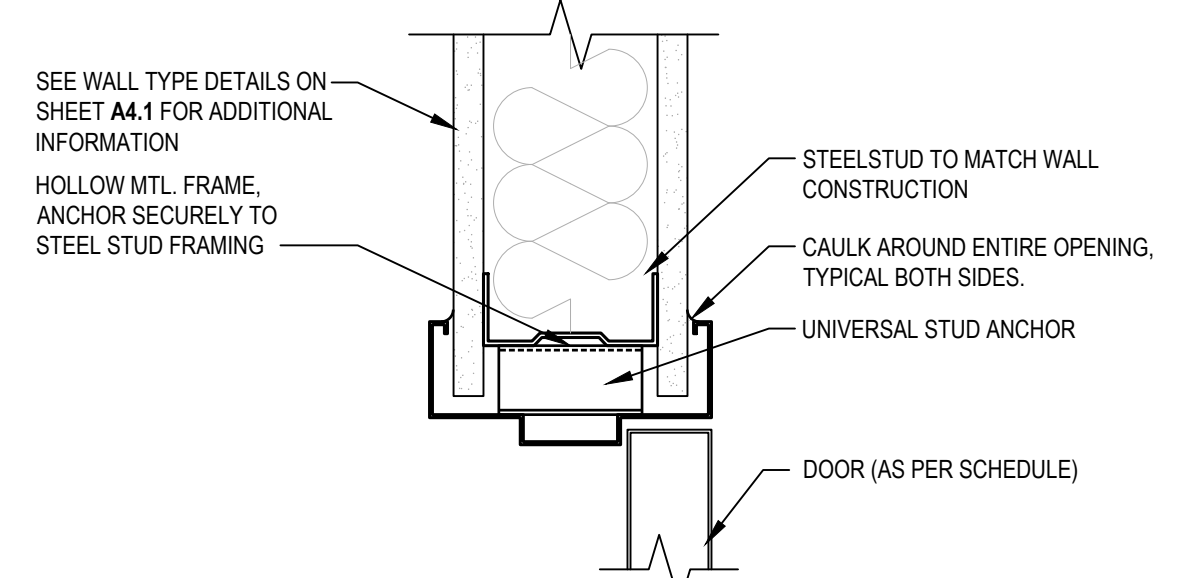
F OVERHEAD DOOR JAMB
SCALE: 3" = 1'-0"



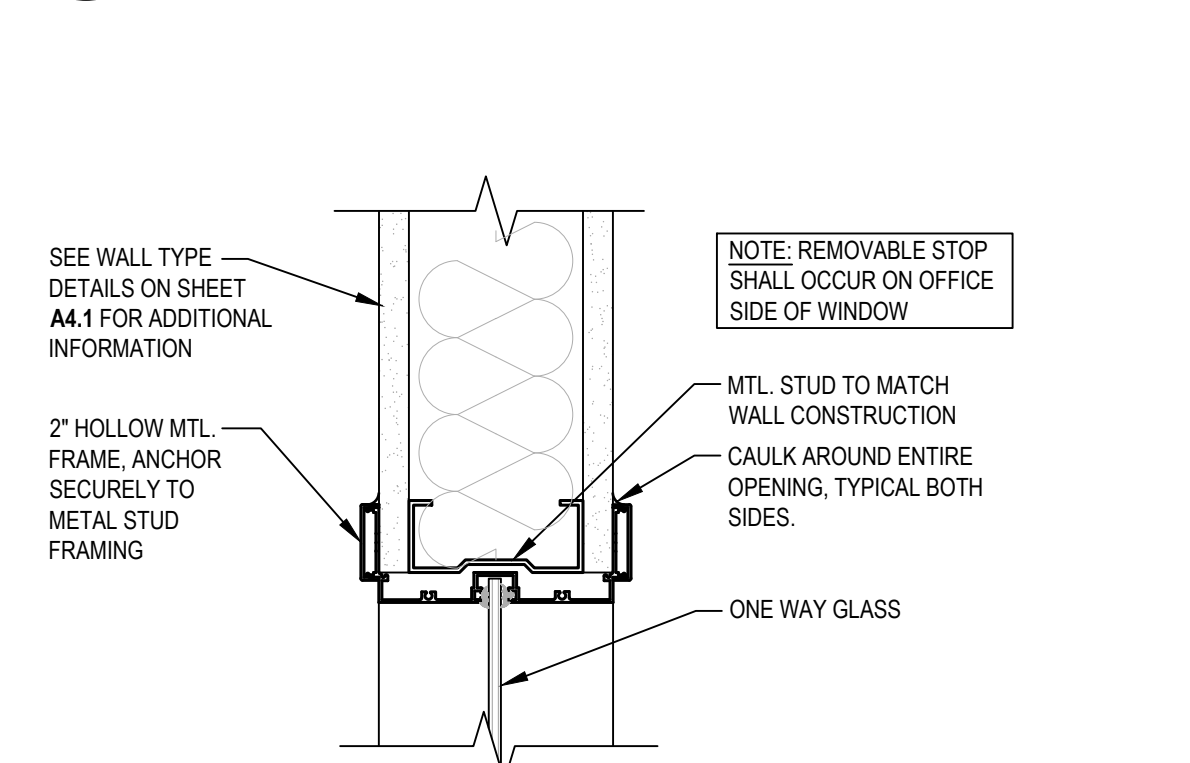
A TYP. INTERIOR DOOR JAMB DETAIL
SCALE: 3" = 1'-0"



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

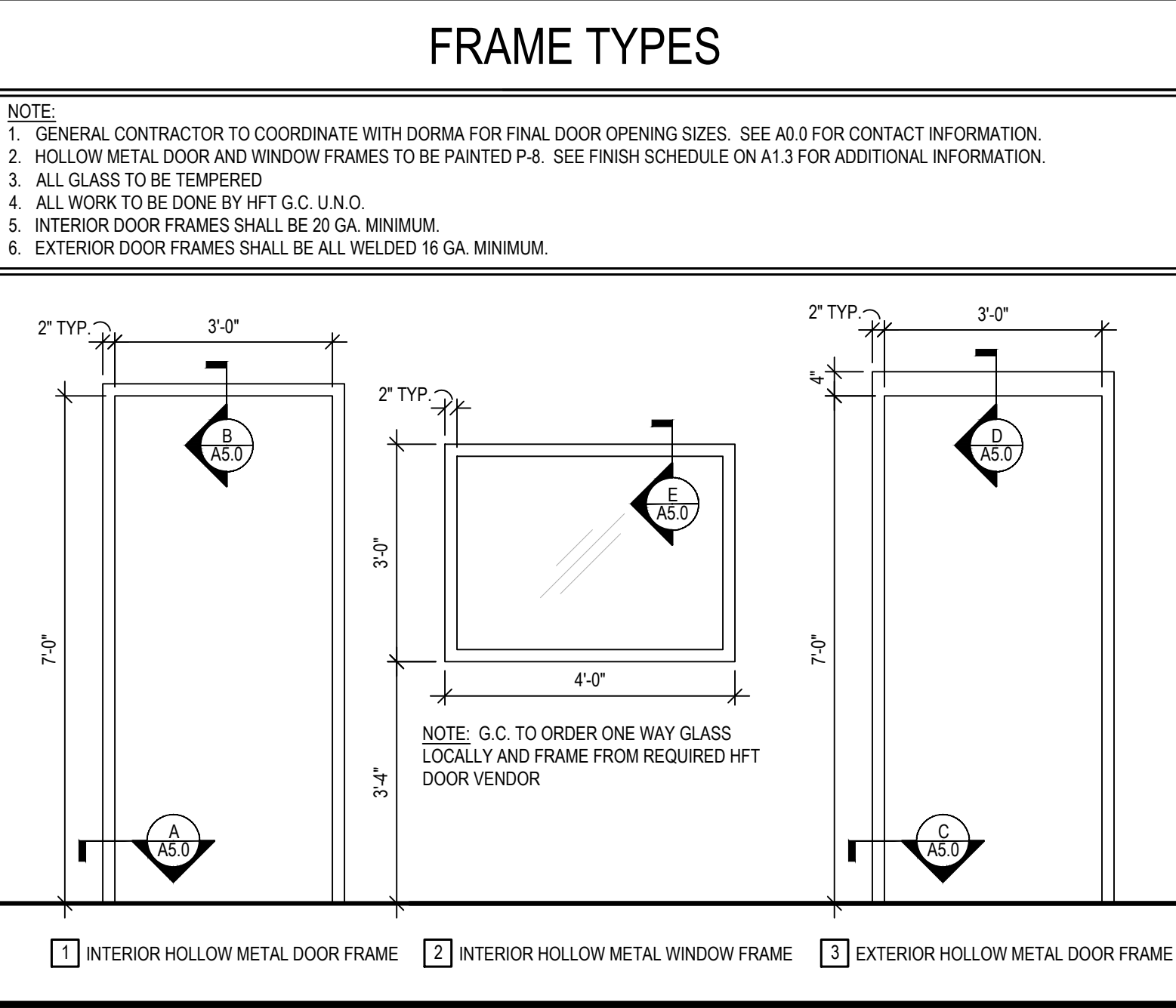
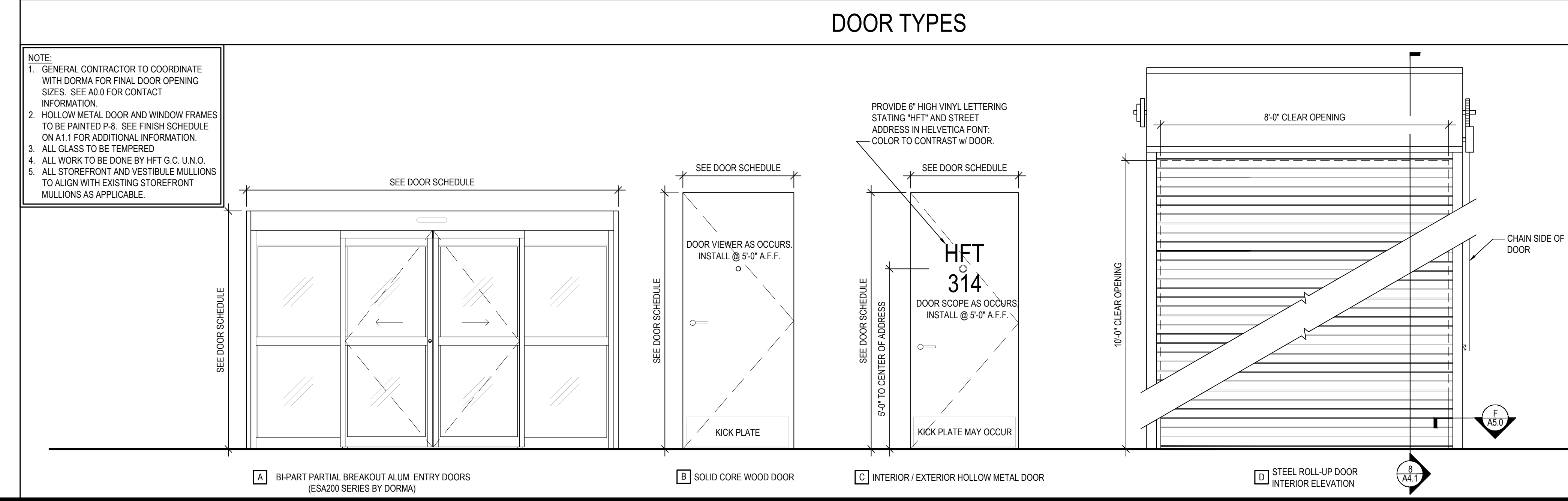


B TYP. INTERIOR DOOR HEAD DETAIL
SCALE: 3" = 1'-0"

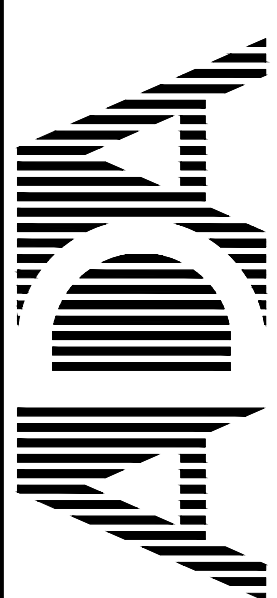


E TYP. INTERIOR WINDOW HEAD DETAIL
SCALE: 3" = 1'-0"

DOOR TYPES



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ADA ARCHITECTS SERVICES, P.C.
Lakewood, Ohio 44107
17710 Detroit Avenue Phone (216) 521-5134
Fax (216) 521-4824
www.adaarchitects.cc

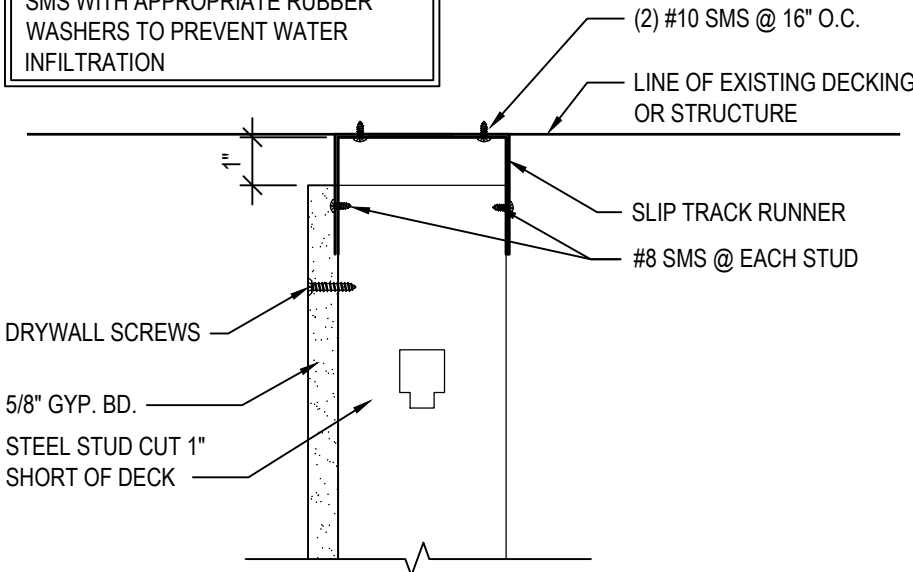
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314 NY ROUTE 59
NYACK, NY 10960

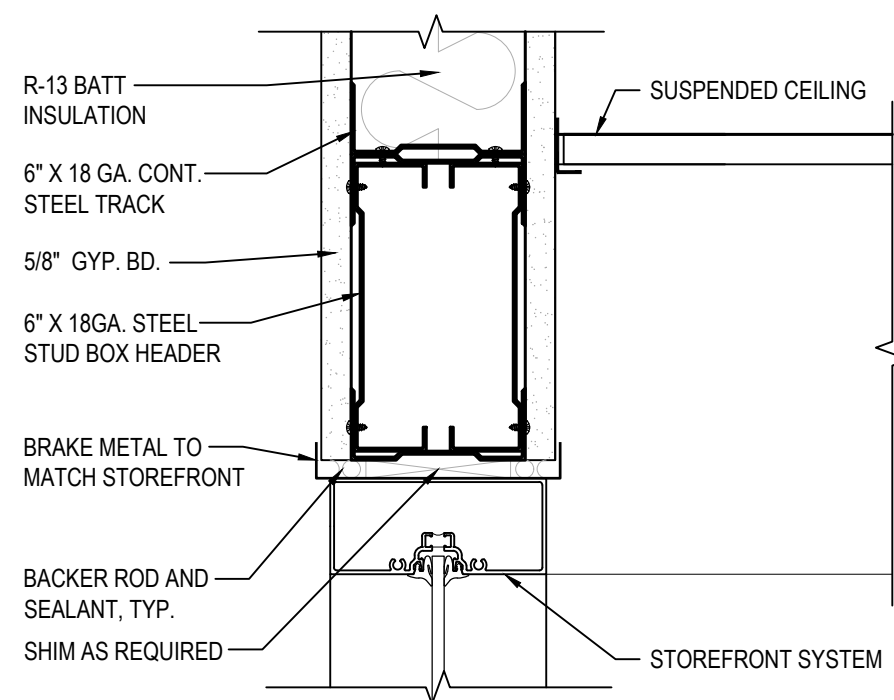
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DOOR SCHEDULE & DETAILS								
DATE			9/22/21					
JOB NO.			20420					
SHEET NO.			A5.0					

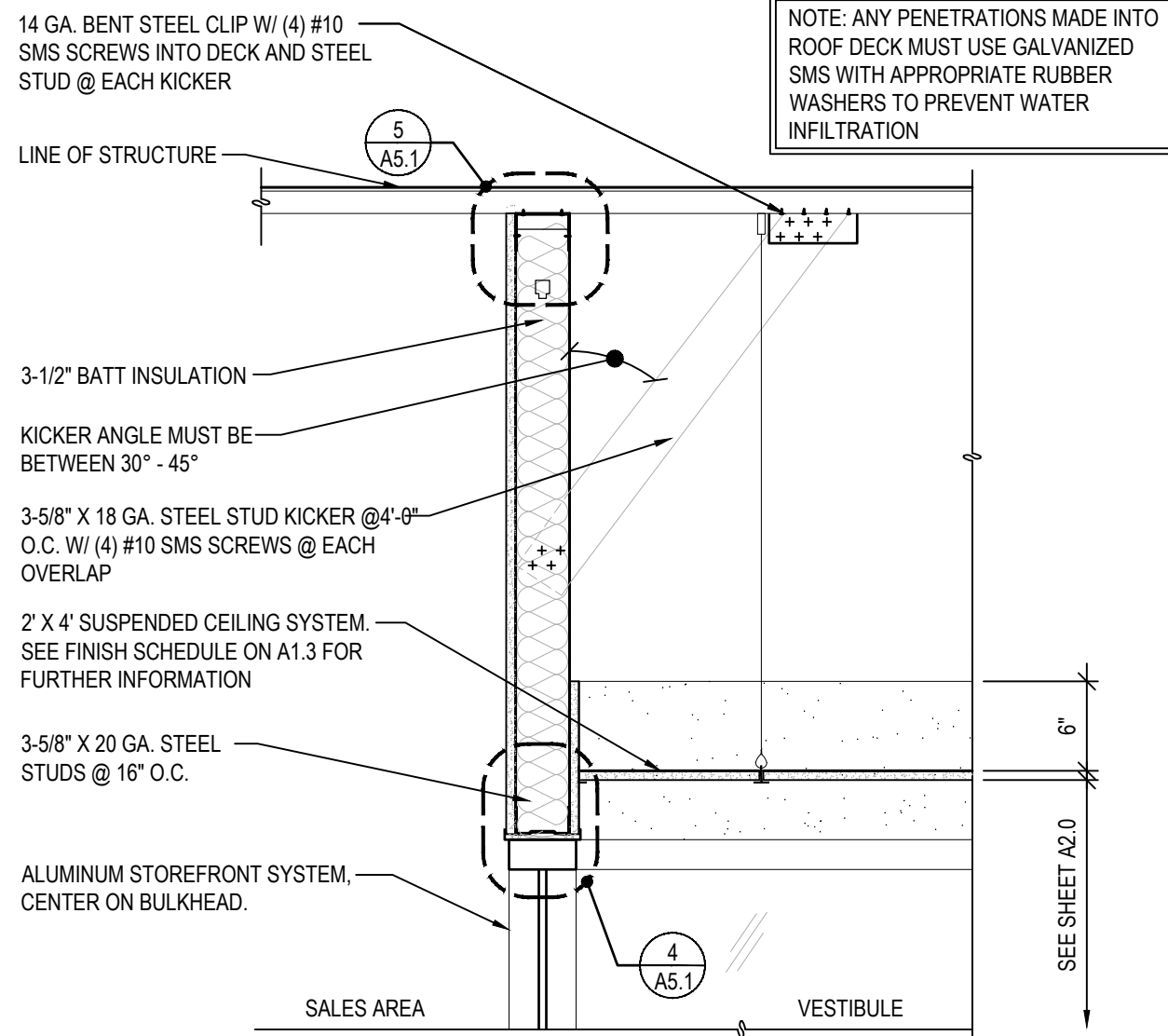
NOTE: ANY PENETRATIONS MADE INTO ROOF DECK MUST USE GALVANIZED SMS WITH APPROPRIATE RUBBER WASHERS TO PREVENT WATER INFILTRATION



5 TYPICAL SLIP TRACK DETAIL
SCALE: 3\"/>



4 VESTIBULE HEAD DETAIL
SCALE: 3\"/>



3 VESTIBULE BULKHEAD SECTION
SCALE: 1\"/>

NOTE: G.C. TO FIELD VERIFY ALL EXISTING DIMENSIONS AND COORDINATE WITH DORMA DOOR BEFORE ORDERING. NOTIFY ARCHITECT OF ANY DISCREPANCIES.

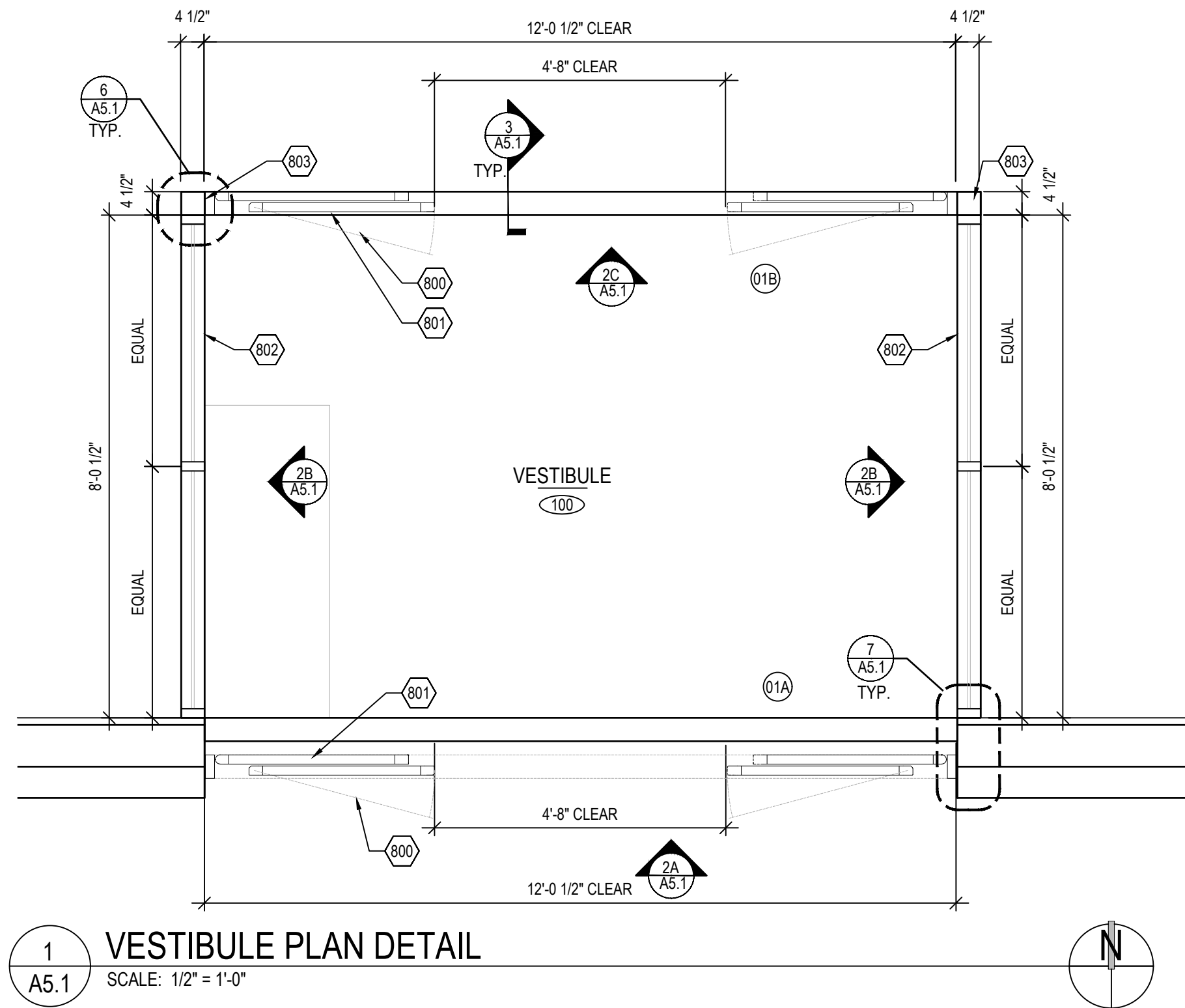
NOTE: ALL NEW ALUMINUM STOREFRONT FINISH TO MATCH DOOR SYSTEM IN DOOR SCHEDULE ON SHEET A5.0 (FINISH: DARK BRONZE)

GENERAL NOTES

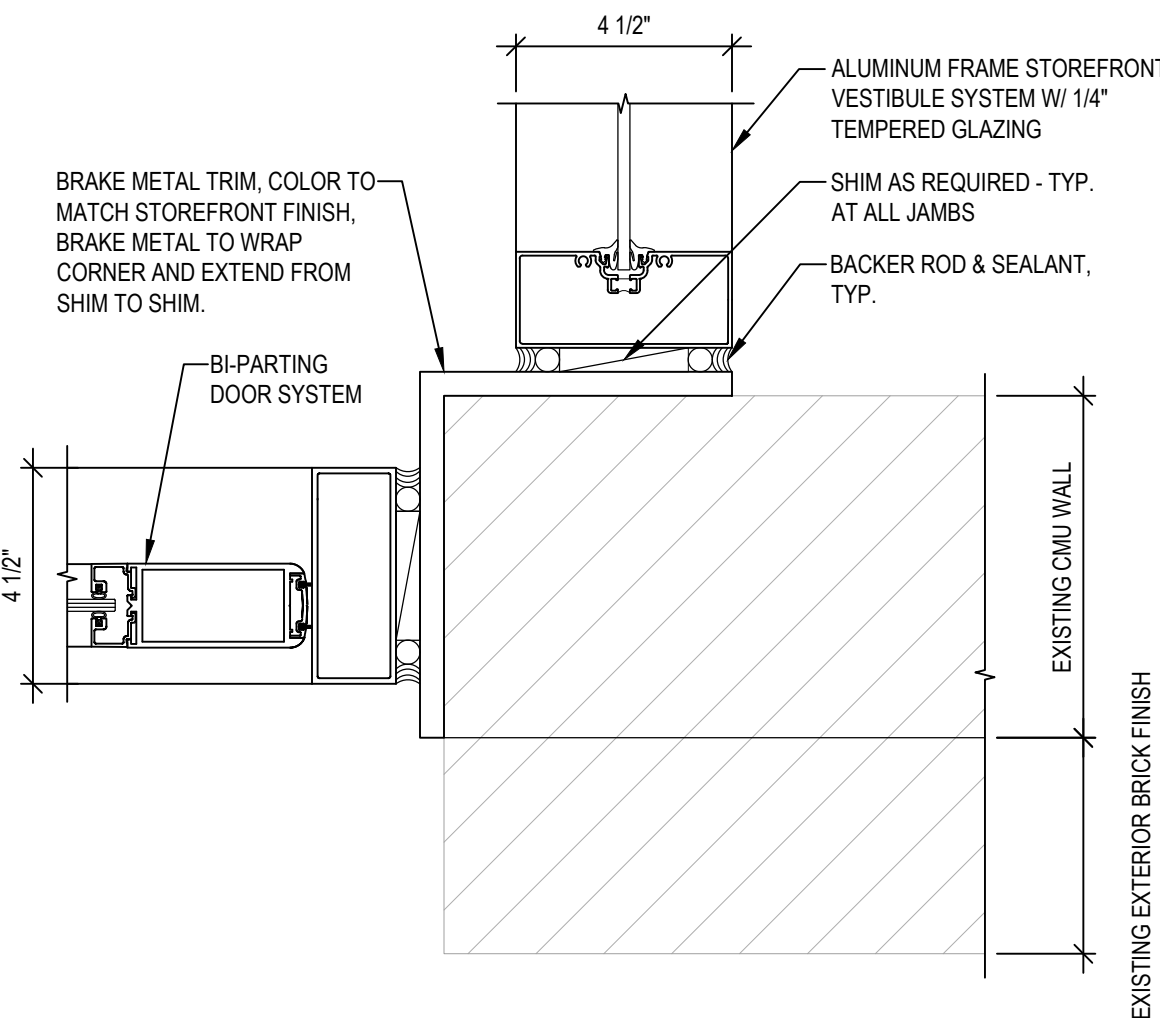
- ALL GLAZING TO BE 1/4\"/>

VESTIBULE KEY NOTES

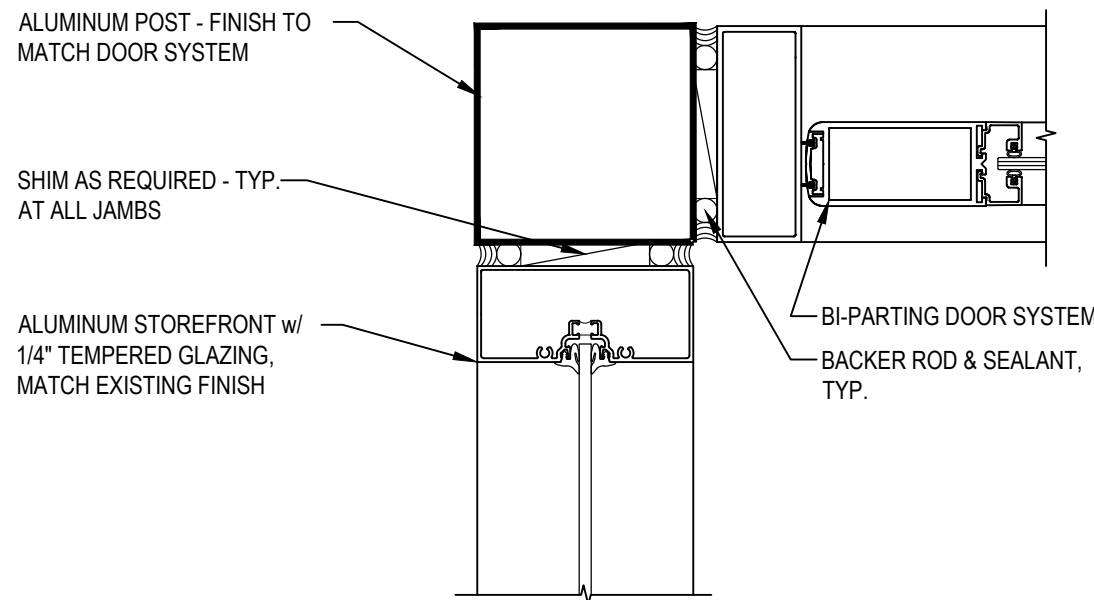
800. DENOTES EMERGENCY DOOR BREAK OUT.
801. DENOTES DORMA BI-PARTING ENTRY DOOR PACKAGE. TO BE CONSTRUCTED BY DORMA.
802. STOREFRONT SYSTEM TO MATCH EXISTING STOREFRONT FINISH.
803. 4-1/2\"/>



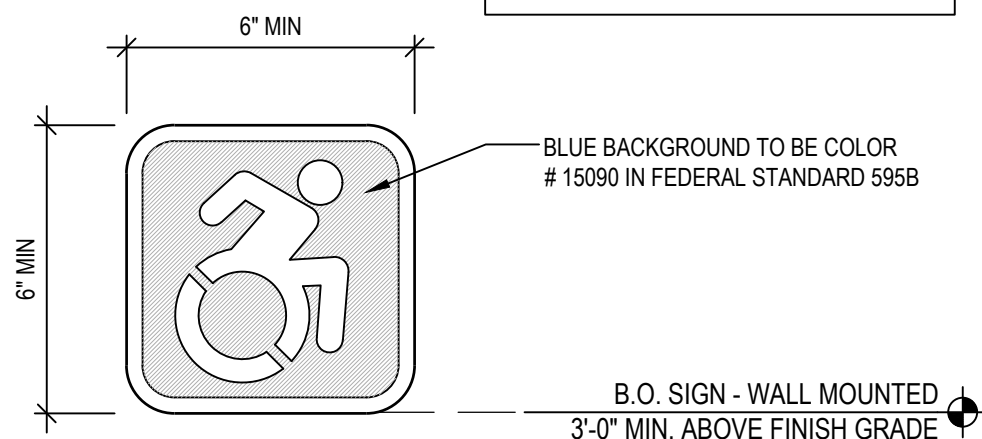
1 VESTIBULE PLAN DETAIL
SCALE: 1/2\"/>



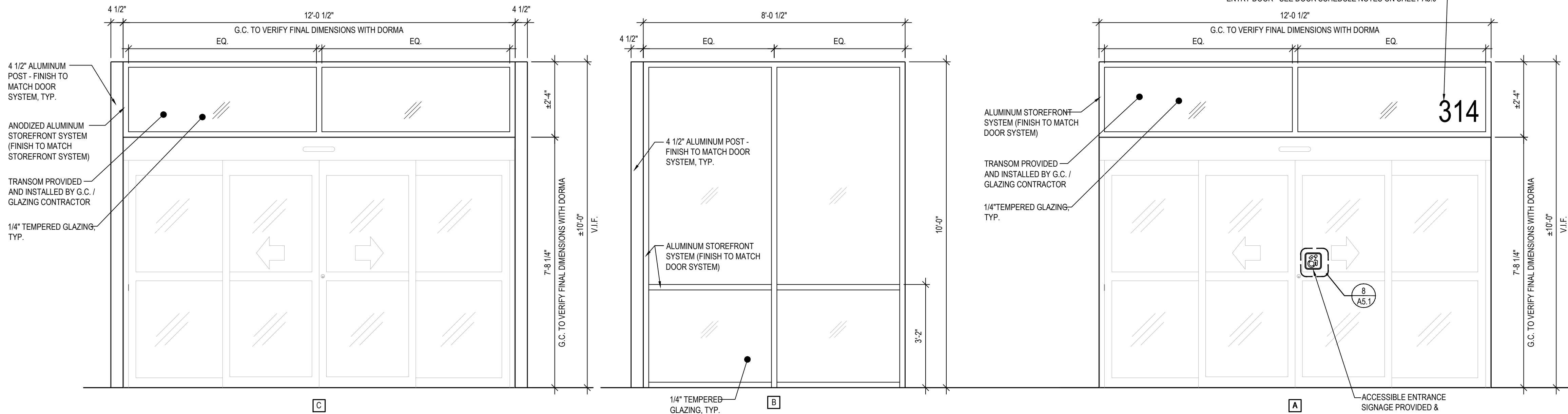
7 STOREFRONT JAMB DETAIL
SCALE: 3\"/>



6 STOREFRONT JAMB DETAIL
SCALE: 3\"/>

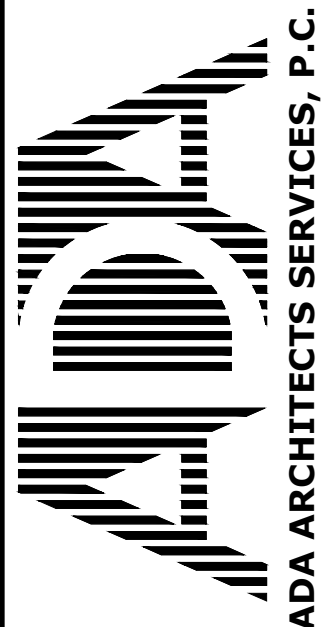


8 ACCESSIBLE ENTRANCE SIGNAGE
SCALE: 3\"/>



2 STOREFRONT ELEVATIONS
SCALE: 1/2\"/>

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ENLARGED VESTIBULE PLAN & DETAILS

DATE 9/22/21

JOB NO. 20420

A5.1

SHEET NO.

P. CONCRETE EXPOSURE CLASSES AND REQUIREMENTS

EXPOSURE CATEGORY: F								
EXPOSURE CLASS	MAXIMUM w/cm	MINIMUM f'c (psi)	AIR CONTENT (%)	LIMITS ON MAXIMUM PERCENT OF TOTAL CEMENTITIOUS MATERIALS BY MASS				
F0	N/A	2500	N/A	N/A				
F1	0.55	3500	5	N/A				
F2	0.45	4500	6	N/A				
F3	0.40	5000	6	ASTM C618	ASTM C989	ASTM C1240	TOTAL OF ASTM C618 & ASTM C1240	TOTAL OF ASTM C618 & ASTM C989 & ASTM C1240
				25%	50%	10%	35%	50%

--	--

- | EXPOSURE CLASS | MAXIMUM w/cm | MINIMUM f _c (psi) | CEMENTITIOUS MATERIALS | | | |
|----------------|--------------|------------------------------|------------------------------|--|-------------------------------|----------------------------|
| | | | ASTM C150 | ASTM C595 | ASTM C1157 | CALCIUM CHLORIDE ADMIXTURE |
| S0 | N/A | 2500 | N/A | N/A | N/A | N/A |
| S1 | 0.50* | 4000 | II | IP(MS), IS(MS), OR IT(MS) | MS | N/A |
| S2 | 0.45 | 4500 | V | IP(HS), IS(HS), OR IT(HS) | HS | NOT PERMITTED |
| S3 | 0.45 | 4500 | V + POZZOLAN OR ZOLAN CEMENT | IP(HS), IS(HS), OR IT(HS) + POZZOLAN OR ZOLAN CEMENT | HS + POZZOLAN OR ZOLAN CEMENT | NOT PERMITTED |

--	--

- | EXPOSURE CLASS | MAXIMUM w/cm | MINIMUM f'_c (psi) |
|----------------|--------------|----------------------|
| W0 | N/A | 2500 |
| W1 | 0.50 | 4000 |

EXPOSURE CATEGORY: C

- | EXPOSURE CLASS | MAXIMUM w/cm | MINIMUM f'c (psi) | MAXIMUM WATER-SOLUBLE CHLORIDE ION (Cl ⁻) CONTENT IN NONPRESTRESSED CONCRETE, PERCENT BY WEIGHT OF CEMENT |
|----------------|--------------|-------------------|---|
| C0 | N/A | 2500 | 1.00 |
| C1 | N/A | 2500 | 0.30 |
| C2 | 0.40 | 5000 | 0.15 |

Q. TEMPERATURE REQUIREMENTS:

1. CONCRETE SHALL BE MAINTAINED AT A TEMPERATURE MINIMUM OF 50°F AND IN A MOIST CONDITION FOR AT LEAST THE FIRST 7 DAYS AFTER PLACEMENT.
2. ADEQUATE EQUIPMENT SHALL BE PROVIDED FOR HEATING CONCRETE MATERIALS AND PROTECTING CONCRETE DURING FREEZING OR NEAR-FREEZING WEATHER.
3. FROZEN MATERIALS OR MATERIALS CONTAINING ICE SHALL NOT BE USED.
4. FORMS, MILLERS, AND GROUND WITH WHICH CONCRETE IS TO COME IN CONTACT SHALL BE FREE FROM FROST AND ICE.
5. CONCRETE SHALL NOT EXCEED A TEMPERATURE MAXIMUM OF 95° AT THE TIME OF PLACEMENT.
6. HANDLING, PLACING, PROTECTION, AND CURING PROCEDURES SHALL LIMIT CONCRETE TEMPERATURES OR WATER EVAPORATION THAT COULD REDUCE STRENGTH SERVICEABILITY, AND DURABILITY OF THE MEMBER OR STRUCTURE.
7. HOT WEATHER AND COLD WEATHER CONCRETING SHALL BE DONE IN COMPLIANCE WITH THE LATEST EDITION OF ACI 305.3R-08 AND ACI 308.3R-08, RESPECTIVELY.
8. CONCRETE MATERIALS AND PRODUCTION METHODS SHALL BE SELECTED SO THAT THE CONCRETE TEMPERATURE AT DELIVERY COMPLIES WITHIN THE SPECIFIED TEMPERATURE LIMITS.

R. THESE PROVISIONS DO NOT PROTECT CONCRETE AGAINST CHEMICALLY AGGRESSIVE SOLUTIONS, CONTACT E.O.R. IF SUCH CONDITIONS APPLY

- S. CONCRETE PLACEMENT:
1. STANDING WATER SHALL BE REMOVED FROM PLACE OF DEPOSIT BEFORE CONCRETE IS PLACED UNLESS A TREMIE IS USED.
 2. MASONRY FILLER UNITS THAT WILL BE IN CONTACT WITH CONCRETE SHALL BE PRE-WETTED PRIOR TO PLACING CONCRETE.
 3. CONCRETE SHALL NOT BE CONVEYED WITH PIPES, TREMIES, OR CHUTES MADE OF ALUMINUM OR ALUMINUM ALLOYS.
 4. CONCRETE SHALL BE PLACED:
 - a. AT A RATE SO CONCRETE AT ALL TIMES HAS SUFFICIENT WORKABILITY TO BE CONSOLIDATED APPROPRIATELY.
 - b. WITHOUT SEGREGATION OR LOSS OF MATERIALS.
 - c. WITHOUT DISRUPTIONS TO MAINTAIN WORKABILITY BETWEEN SUCCESSIVE PLACEMENTS TO PREVENT AN UNINTENTIONAL COLD JOINT.
 - d. DEPOSITED AS NEAR TO ITS FINAL LOCATION AS PRACTICABLE TO AVOID SEGREGATION DUE TO REHANDLING OR FLOWING.

5. CONCRETE THAT HAS BEEN CONTAMINATED OR HAS LOST ITS INITIAL WORKABILITY TO THE EXTENT THAT IT CAN NO LONGER BE CONSOLIDATED APPROPRIATELY SHALL NOT BE USED.

6. RETEMPERING CONCRETE IN ACCORDANCE WITH ASTM C94 SHALL BE PERMITTED AS LONG AS THE LIMITS ON MAXIMUM MIXING TIME AND w/c ARE NOT VIOLATED.
7. AFTER STARTING, CONCRETE SHALL BE A CONTINUOUS OPERATION UNTIL THE COMPLETION OF A PANEL OR SECTION, AS DEFINED BY ITS BOUNDARIES OR PREDETERMINED JOINTS.
8. CONCRETE SHALL BE CONSOLIDATED APPROPRIATELY DURING PLACEMENT AND SHALL BE WORKED AROUND REINFORCEMENT AND EMBEDMENTS AND INTO CORNERS OF FORMS.
9. TOP SURFACES OF VERTICALLY FORMED LIFTS SHALL BE GENERALLY LEVEL.
10. JOINT LOCATIONS OR JOINT DETAILS NOT SHOWN OR THAT DIFFER FROM THOSE INDICATED IN THE CONSTRUCTION DOCUMENTS SHALL BE SUBMITTED FOR REVIEW BY THE E.O.R.
11. CONSTRUCTION JOINTS SHALL BE CLEANED AND LAITANCE REMOVED BEFORE NEW CONCRETE IS PLACED.
12. SURFACE OF CONCRETE CONSTRUCTION JOINTS SHALL BE INTENTIONALLY ROUGHENED.
13. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, CONSTRUCTION JOINTS SHALL BE PRE-WETTED AND STANDING WATER REMOVED.
14. BEAMS, GIRDERS, OR SLABS SUPPORTED BY COLUMNS OR WALLS SHALL NOT BE CAST UNTIL CONCRETE IN THE VERTICAL SUPPORT MEMBERS IS NO LONGER WORKABLE AND SOFT.
15. BEAMS, GIRDERS, RAUNCHES, DROP PANELS, SHEAR CAPS, AND CAPITALS SHALL BE PLACED MONOLITHICALLY AS PART OF A SLAB SYSTEM, U.N.O.
16. SAW CUTTING IN SLABS-ON-GRADE IDENTIFIED IN THE CONSTRUCTION DOCUMENTS AS STRUCTURAL DIAPHRAGMS OR PART OF THE SEISMIC-FORCE-RESISTING SYSTEM SHALL NOT BE PERMITTED U.N.O.
17. ALUMINUM EMBEDMENTS SHALL BE COATED OR COVERED TO PREVENT ALUMINUM-CONCRETE REACTION AND ELECTROLYTIC ACTION BETWEEN ALUMINUM AND STEEL.
18. IN SOLID SLABS, PIPING, EXCEPT FOR RADIANT HEATING OR SNOW MELTING, SHALL BE PLACED BETWEEN TOP AND BOTTOM REINFORCEMENT.
19. CONDUIT AND PIPING SHALL BE FABRICATED AND INSTALLED SO THAT CUTTING, BENDING, OR DISPLACEMENT OF REINFORCEMENT FROM ITS SPECIFIED LOCATION IS NOT REQUIRED.

T. FORMWORK:

1. FORMWORK SHALL BE DESIGNED, FABRICATED, INSTALLED, AND REMOVED BY CONTRACTOR.
2. DESIGN OF FORMWORK SHALL TAKE INTO CONSIDERATION:
 - a. METHOD OF CONCRETE PLACEMENT.
 - b. RATE OF CONCRETE PLACEMENT.
 - c. CONSTRUCTION LOADS, INCLUDING VERTICAL, HORIZONTAL, AND IMPACT.
 - d. AVOIDANCE OF DAMAGE TO PREVIOUSLY CONSTRUCTED MEMBERS.
3. FORMWORK FABRICATION AND INSTALLATION SHALL RESULT IN A FINAL STRUCTURE THAT CONFORMS TO SHAPES, LINES, AND DIMENSIONS OF THE MEMBERS AS REQUIRED BY THE CONSTRUCTION DOCUMENTS.
4. FORMWORK SHALL BE SUFFICIENTLY TIGHT TO INHIBIT LEAKAGE OF PASTE OR MORTAR.
5. FORMWORK SHALL BE BRACED OR TIED TOGETHER TO MAINTAIN POSITION AND SHAPE.
6. PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR SHALL DEVELOP A PROCEDURE AND SCHEDULE FOR REMOVAL OF FORMWORK AND INSTALLATION OF RESHORES AND SHALL CALCULATE THE LOADS TRANSFERRED TO THE STRUCTURE DURING THIS PROCESS.
7. STRUCTURAL ANALYSIS AND CONCRETE STRENGTH REQUIREMENTS USED IN PLANNING AND IMPLEMENTING THE FORMWORK REMOVAL AND RESHORE INSTALLATION SHALL BE GIVEN BY THE CONTRACTOR TO THE E.O.R. AND TO THE BUILDING OFFICIAL, WHEN REQUESTED.
8. NO CONSTRUCTION LOADS SHALL BE PLACED ON, NOR ANY FORMWORK REMOVED FROM, ANY PART OF THE STRUCTURE UNDER CONSTRUCTION EXCEPT WHEN THAT PORTION OF THE STRUCTURE IN COMBINATION WITH REMAINING FORMWORK HAS SUFFICIENT STRENGTH TO SUPPORT ITS WEIGHT AND LOADS PLACED ON IT SAFELY AND WITHOUT IMPAIRING SERVICEABILITY.
9. NO CONSTRUCTION LOADS EXCEEDING THE COMBINATION OF SUPERIMPOSED DEAD PLUS LIVE LOAD INCLUDING REDUCTION SHALL BE PLACED ON ANY UNSHORED PORTION OF THE STRUCTURE UNDER CONSTRUCTION, UNLESS ANALYSIS INDICATES ADEQUATE STRENGTH TO SUPPORT SUCH ADDITIONAL LOADS AND WITHOUT IMPAIRING SERVICEABILITY.

4 REINFORCING STEEL

- A. ALL ARRANGEMENT AND DETAILING OF REINFORCING STEEL, INCLUDING BAR SUPPORTS AND SPACERS, SHALL BE IN ACCORDANCE WITH THE LATEST ACI 315 DETAILING MANUAL.
- B. ASTM A615, GRADE 40 (#3 REBAR OR SMALLER), ASTM A615, GRADE 60 (#4 REBAR OR LARGER), ASTM A185, GRADE 65 (WELDED WIRE FABRIC SHEETS). BARS TO BE WELDED SHALL BE ASTM A706, GRADE 60.
- C. DIMENSIONS OF REINFORCING ARE TO BAR CENTERLINES U.N.O. IN DRAWINGS.
- D. MINIMUM CLEAR PROTECTION FOR REINFORCEMENT SHALL BE AS FOLLOWS:
1. CONCRETE PLACED DIRECTLY AGAINST EARTH: = 3"
 2. FORMED SURFACES AND EXPOSED TO EXTERIOR (#5 BARS OR SMALLER): = 2"
 3. INTERIOR FACE OF WALLS: = 1 1/2"
- E. ALL REINFORCEMENT SHALL BE COLD BENT, UNLESS OTHERWISE PERMITTED BY THE BUILDING OFFICIAL AND ENGINEER OF RECORD. REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE OR MASONRY SHALL NOT BE FIELD BENT, UNLESS PERMITTED BY THE BUILDING OFFICIAL AND ENGINEER OF RECORD RE: 1/52.0
- F. MINIMUM REINFORCING LAP SPACES/DEVELOPMENT LENGTHS (F'c = 3,000 PSI):
- | BAR SIZE | HOOK LENGTH (IN) | DEVL./SPICE LENGTH (IN) |
|----------|------------------|-------------------------|
| 3 | 6 | 21 |
| 4 | 8 | 28 |
| 5 | 10 | 36 |
| 6 | 12 | 48 |

5 STRUCTURAL STEEL

- A. ALL STEEL CONSTRUCTION SHALL CONFORM TO REQUIREMENTS SET FORTH IN THE LATEST EDITIONS OF AISC, "AMERICAN INSTITUTE OF STEEL CONSTRUCTION", AISC 341-10, "SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS, INCLUDING SUPPLEMENT NO. 1, DATED 2010" AND AISC 360-10, "SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS".
- B. STEEL DESIGNATIONS:
1. WIDE FLANGE SHAPES (BEAMS & COLUMNS) = ASTM A992 (GRADE 50)
 2. OTHER ROLLED SHAPES & PLATE = ASTM A36 (U.N.O.) PIPE
 3. COLUMNS = ASTM A33, GRADE 'B'
 4. STRUCTURAL HSS TUBING = ASTM A500, GRADE 'B' 46 KSI
- C. ALL ANCHOR BOLTS, BOLTS AND LAGS IN WOOD SHALL CONFORM TO ASTM A307 STEEL U.N.O. AND SHALL HAVE STEEL WASHERS BENEATH ALL NUTS AND BOLT HEADS. IF A CERTAIN SITUATION IS NOT DETAILLED USE A SIMILAR DETAIL. ALL STRUCTURAL BOLTS SHALL CONFORM TO ASTM A325-N. CONNECTIONS SHALL GENERALLY FOLLOW THE TYPES SHOWN IN AISI MANUAL OF STEEL CONSTRUCTION.
- D. STEEL FABRICATOR SHALL ALSO INCLUDE AND COORDINATE ALL STRUCTURAL STEEL SHOWN ON ARCHITECTURAL SHEETS WITH THAT OF THE STRUCTURAL SHEETS, COORDINATE ANY STEEL NOT SHOWN ON STRUCTURAL DRAWINGS, CONTRACTOR TO VERIFY.
- E. ALL BEAMS ELEVATIONS FOR JOISTS, BEAMS, AND COLUMN HEIGHTS SHALL BE COORDINATED AND VERIFIED BY THE CONTRACTOR. *c/w/* ARCH. ALL ELEVATIONS MUST BE APPROVED BY ENGINEER AND ARCHITECT OF RECORD IN THE SHOP DRAWING REVIEW PROCESS.
- F. ALL STEEL WELDING SHALL CONFORM TO AWS D1.1 WITH E70XX ELECTRODES.
- G. PROVIDE HIGH STRENGTH GROUT UNDER ALL STEEL BASE PLATES, $F_c = 5,000$ PSI, MIN.

6 STRUCTURAL WELDS

- A. ALL WELDERS ON MEMBERS COMPRISING THE SEISMIC-FORCE-RESISTING SYSTEM (MONO AND BRACE FRAMES) SHALL EMPLOY WELD FILLER METALS CLASSIFIED FOR NOMINAL 70 KSI TENSILE STRENGTH, REFERRED TO AS E70 ELECTRODES, MEETING THE FOLLOWING MINIMUM MECHANICAL PROPERTY REQUIREMENTS:
1. CVN TOUGHNESS OF 20 FT-LB AT 0°F, USING AWS AS CLASSIFICATION TEST METHODS.
 2. CVN TOUGHNESS OF 40 FT-LB AT 70°F, USING THE TEST PROCEDURES DESCRIBED IN APPENDIX A.
 3. TENSILE STRENGTH OF 80 KSI MINIMUM, USING BOTH THE AWS AS CLASSIFICATION TEST (FOR E70 CLASSIFICATION ELECTRODES) AND THE TEST PROCEDURES DESCRIBED IN APPENDIX A.
 4. TENSILE STRENGTH: 70 KSI MINIMUM, USING BOTH THE AWS AS CLASSIFICATION TEST (FOR E70 CLASSIFICATION ELECTRODES) AND THE TEST PROCEDURES DESCRIBED IN APPENDIX A.
 5. ELONGATION: 22% MINIMUM, USING BOTH THE AWS AS CLASSIFICATION TEST AND THE TEST PROCEDURES DESCRIBED IN APPENDIX A.

7 PLYWOOD SHEATHING

- A. ALL PLYWOOD SHEATHING AT BUILDING SHALL BE GRADE RATED EXPOSURE 1 AND THICKNESS SHOWN ON DRAWINGS W/ SPAN INDEX 48/24 AND SHALL BE APA CD EXPOSURE 1 BOARD. ALL PLYWOOD ROOF PANELS SHALL BE BONDED W/ INTERMEDIATE OR EXTERIOR GLUE. ORIENTED STRAND BOARD (OSB) CAN BE SUBSTITUTED FOR PLYWOOD.
- B. SHEATHING SHALL HAVE THE FOLLOWING MINIMUM FASTENING AT ALL HORIZ. DIAPHRAGMS AND VERT. SHEAR WALL LOCATIONS: 8d NAILS @ 6" O.C. AT PANEL EDGES W/ HORIZ. BLOCKING AND AT 12" O.C. AT INTERMEDIATE SUPPORTS.
- C. PLYWOOD SHEATHING SHALL BE PLACED PERPENDICULAR TO FRAMING AND STAGGERED END JOINTS AT 4'-0".
- D. PROVIDE 1/4" SPACE AT ALL PANEL EDGES FOR EXPANSION, AT ALL ROOF WALLS.
- E. EXT. WALL SHEATHING: 5/8" CDX MIN. (24/0) SPAN RATING W/ 8d NAILS @ 6" O.C. EDGE, 12" O.C. FIELD U.N.O. ALL SPAN RATINGS TO MEET LOCAL CODES ORIENTED STRAND BOARD (OSB) WITH THE SAME SPAN RATING MAY BE SUBSTITUTED.
- F. SHEAR WALL SHEATHING SHALL CONSIST OF 7/16" MINIMUM APA RATED SHEATHING WITH A SPAN RATING OF 24/0, WITH FASTENER SIZE AND SPACING AS SHOWN ON PLANS. SEE SHEAR WALL SCHEDULE FOR ALL ADDITIONAL REQUIREMENTS.
- G. ALL PLYWOOD FINISH, RE-ARCH.

HEATING VENTILATING AND AIR


(E)	EXISTING	HVAC	HEATING VENTILATING AND AIR
(F)	FOOT	COND	CONDITIONING
(N)	NEW	I.D.	INSIDE DIAMETER
(R)	RENOVATE	IN.	INCH
○	CENTERLINE	INSUL	INSULATION
○	DIAMETER OR ROUND	INT.	INTERIOR
⊥	PERPENDICULAR	IT.	JOINT
□	SQUARE	K.O.	KNOCKOUT
#	NUMBER OR POUND	K.F.	LINEAL FEET OR FOOT
@	AT	L.L.V.	LONG LEG VERTICAL
A.B.	ABOVE	L.H.	LONG LEG HORIZONTAL
A.F.	ABOVE FINISH FLOOR	L.P.	LOW POINT
AN	ANCHOR	LSL	LAMINATED STRAND LUMBER
ADJ.	ADJUSTABLE	LVL	LAMINATE
AGG.	AGGREGATE	LVL	LAMINATED VENEER LUMBER
ALT.	ALTERNATIVE	LBS	POUNDS
ALUM.	ALUMINUM	M.B.	MACHINE BOLT
APPROX.	APPROXIMATE	M.H.	MANHOLE
ARCH.	ARCHITECTURAL	M.O.	MASONRY OPENING
B.O.	BOTTOM OF	M.X.	MAXIMUM
B.O.C.	BOTTOM OF CONCRETE	MECH.	MECHANICAL
B/T	BETWEEN	MET.	METAL
B.N.	BODY NAIL(ING)	MFR.	MANUFACTURER
B.U.	BUILT UP	MIN.	MINIMUM
B.D.	BOARD	MISC.	MISCELLANEOUS
BLDG.	BUILDING	MOUNT.	MOUNTED
BLK.	BLACK	MTRL	MATERIAL
B.M.	BEAM	N	NORTH
BM.	BOLT	N.I.C.	NOT IN CONTRACT
C.C.	CENTER TO CENTER	N.S.	NEAR SIDE
C.I.	CAST IRON	N.T.S.	NOT TO SCALE
C.I.P.	CAST IN PLACE	N.	NUMBER
CMU	CONCRETE MASONRY UNIT	NOM.	NOMINAL
C.O.	CONCRETE OPENING	N.S.	NEAR SIDE
CLG.	CeILING	O.H.	OVERHEAD
CLR.	CLEAR	O/J	OVER JOIST
CNTRSK.	COUNTERSUNK	O.	OVER ALL
COL.	COLUMN	O.C.	ON CENTER
CONC.	CONCRETE	O.D.	OUTSIDE DIAMETER
CONT.	CONTINUOUS	O.H.	OPPOSITE HAND
CORR.	CORRIDOR	OPNG.	OPENING
CWJ	COORDINATE WITH	OPP.	OPPOSITE
D.	DEEP	OZ.	OUNCE
D.B.A.	DEFORMED BAR ANCHOR	P.	PARTICLE
D.F.	DOUGLAS FIR	P/L	PROPERTY LINE
DET.	DETAIL	PL	PLATE
DIA.	DIAMETER	P.WYD.	PLYWOOD
DIA.G.	DIMENSION	PRE-ENG.	PRE-ENGINEERED METAL BUILDING
DIM.	DIMENSION	PT.	POINT
DN.	DOWN	P.S.L.	PARALLEL STRAND LUMBER
DWG.	DRAWINGS	R.	RADIUS OR RISER
E.	EXPANSION	R.D.	ROUGH DRAIN
E.B.E.	ECCENTRICALLY BRACED FEM	R.O.	ROUGH OPENING
E.J.	EXPANSION JOINT	RE.	REFERENCE (CW)
E.N.	EDGE NAIL(ING)	REINF.	REINFORCEMENT
EA.	EACH	REQD.	REQUIRED
EL.	ELEVATION	RM.	ROOM
ELEC.	ELECTRICAL	S.C.	SOLID CORE
ELEV.	ELEVATOR	S.F.	SQUARE FEET OR FOOT
ENG.	ENGINEER OF RECORD	S.S.	STAINLESS STEEL
E.S.	EDGE SCREW	SCHED.	SCHEDULE
EQU.	EQUAL	SECT.	SECTION
EQUIP.	EQUIPMENT	SHT.	SHEET
EXP.	EXPANSION	SM.	SIMILAR OR SIMILAR TO
EXT.	EXTERIOR	SPECS.	SPECIFICATIONS
F.B.	FLAT BAR	SQ.	SQUARE
F.D.	FLOOR DRAIN	STD.	STANDARD
F.O.	FACE OF	STRUC.	STRUCTURAL
F.O.C.	FACE OF CURB/CONCRETE	SUSP.	SUSPENDED
F.O.F.	FACE OF FINISH	SYM.	SYMMETRICAL
F.O.M.	FACE OF MASONRY	T&G.	TONGUE & GROOVE
F.O.S.	FACE OF STUDS	T.O.B.	TOP OF BEAM
F.O.T.	FACE OF TREAD	T.O.C.	TOP OF CURB/CONCRETE
FON.	FOUNDATION	T.O.D.	TOP OF DECK
FIN.	FINISH	T.O.M.	TOP OF MASONRY
FL.	FLOOR(ING)	T.O.S.	TOP OF SLAB
FLASH.	FLASHING	T.O.W.	TOP OF WALL
F.S.	FAIR SIDE	THK.	THICKNESS
FT.	FOOT OR FEET	TI	TRUSS JOIST I-JOIST
FTG.	FOOTING	TYP.	TYPICAL
FTW.	FIRE TREATED WOOD	U.B.C.	UNIFORM BUILDING CODE
FURR.	FURRING	U.N.C.	UNLESS OTHERWISE NOTED
G.	GAGE OR GAGE	U.N.O.	UNLESS OTHERWISE NOT OTHERWISE
GA.	GALVANIZED	V.F.	VERIFY IN FIELD
GSN	GENERAL STRUCTURAL NOTES	VERT.	VERTICAL
GYP.	GYPSUM	W/	WITH
H.	HIGH	W/O	WITHOUT
H.C.A.	HEADED CONCRETE ANCHOR	W.	WOOD
H.S.S.	HOLLOW STRUCTURAL STEEL	W.	WIDE
H.P.	HIGH POINT	W.P.	WORK POINT
HORIZ.	HORIZONTAL	W.W.F.	WELDED WIRE FABRIC
HR.	HOUR		
HT.	HORIZONTAL		

HARBOR FREIGHT SHEET LIST

SHEET NUMBER	SHEET NAME
S0.0	GENERAL STRUCTURAL NOTES
S0.1	GENERAL STRUCTURAL NOTES
S0.2	CONCRETE SLAB SPECS w/ FIBER
S1.0	PARTIAL FLOOR & ROOF FRAMING PLAN
S1.1	ENLARGED PLANS
S2.0	STRUCTURAL DETAILS
S2.1	STRUCTURAL DETAILS
S2.2	STRUCTURAL DETAILS
S2.3	LIGHT GAUGE FRAMING - SHOPS



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314 NY ROUTE 59

HARBOR FREIGHT TOOLS

REVISIONS

[illegible]

GENERAL STRUCTURAL NOTES

DATE 9/22/21

JOB NO. 20420

\$0.0

SHEET NO.

1 POST-INSTALLED ANCHORS

- A. ADHESIVE ANCHORS
- APPROVED ADHESIVE FOR CONCRETE:
 - HILTI HIT-RE 500V3 WITH SAFESTE TECHNOLOGY (ICC-ES ESR-3814)
 - HILTI HIT-HY 200 WITH SAFESTE TECHNOLOGY (ICC-ES ESR-3187)
 - DEWALT PURE 110+ (ICC-ES ESR-3298)
 - SIMPSON SET-XP (ICC-ES ESR-2508), (NOT APPROVED FOR >20DIA. EMBEDMENT)
 - APPROVED ADHESIVE FOR GROUTED MASONRY:
 - HILTI HIT-HY 270 (ICC-ES ESR-4143)
 - HILTI HIT-HY-200 (ICC-ES ESR-3963)
 - SIMPSON SET-XP (APMO UES ER-265)
 - DEWALT AC100+GOLD (ICC-ES ESR-3200)
 - APPROVED ADHESIVE FOR UNGROUTED MASONRY:
 - HILTI HIT-HY 270 (ICC-ES ESR-4143)
 - DEWALT AC100+GOLD (ICC-ES ESR-3200)
 - APPROVED ADHESIVE FOR UNREINFORCED MASONRY OR BRICK:
 - HILTI HIT-HY 270 (ICC-ES ESR-4144)
 - SIMPSON SET (ICC-ES ESR-1772)
 - DEWALT AC100+GOLD (ICC-ES ESR-4105)
 - PLASTIC MESH OR STAINLESS-STEEL SCREEN TUBES SHALL BE USED FOR HOLLOW MASONRY IF INDICATED BY E.O.R. ON STRUCTURAL PLANS.
 - FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS AND CERTIFICATION TESTING REPORTS FOR ADHESIVE INSTALLATION.
 - ALTERNATIVE EPOXIES MAY BE USED IF AN (ICC-ES ESR) OR (APMO-UES ER) APPROVAL FOR USE IN CRACKED CONCRETE IS SUBMITTED TO THE E.O.R. AND APPROVED PRIOR TO USE.
 - UTILIZE HOLE CLEANING AS RECOMMENDED FOR THE PRODUCT BY THE MANUFACTURER, REFER TO THE MANUFACTURED PUBLISHED INSTALLATION INSTRUCTIONS (MPII) FOR INSTALLATION INSTRUCTIONS.
 - EPOXY SHALL BE WITHIN THE MANUFACTURERS RECOMMENDED LIFE TIME AND PRIOR TO EXPIRATION DATE. DO NOT USE EPOXY THAT HAS NOT BEEN STORED PER MANUFACTURES RECOMMENDATIONS AND MAY HAVE EXPERIENCED FREEZE THAW CYCLES OR EXTREME HEAT.
 - DO NOT INSTALL ADHESIVE ANCHORS IN CONCRETE IF CONCRETE IS LESS THAN 21 DAYS OLD, CONTRACTOR MUST OBTAIN WRITTEN APPROVAL FROM THE E.O.R. TO INSTALL IN THE 7-21 DAY TIME PERIOD.
 - DO NOT INSTALL ADHESIVE ANCHORS IF SUBSTRATE TEMPERATURE IS BELOW 40 DEGREE F UNLESS EPOXY IS APPROVED FOR LOWER TEMPERATURE, REFER TO MANUFACTURES PUBLISHED INSTALLATION INSTRUCTIONS (MPII)
 - DO NOT INSTALL ADHESIVE ANCHOR IN WET OR DAMP HOLE UNLESS PRODUCT IS APPROVED FOR SUCH CONDITIONS WITHOUT STRENGTH REDUCTION, CONTACT ENGINEER IF HOLES BECOME WET OR DAMP.
 - ADHESIVE ANCHORS INSTALLED IN HORIZONTAL OR VERTICAL OVERHEAD ORIENTATION TO SUPPORT SUSTAINED TENSION LOADS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER (AAI) AS CERTIFIED THROUGH ACI/CRSI (ACI 318) PROOF OF CURRENT CERTIFICATION SHALL BE SUBMITTED TO E.O.R. FOR APPROVAL PRIOR TO INSTALLATION.
 - SHOULD AN ACI CERTIFIED INSTALLER NOT BE AVAILABLE AT A MINIMUM THE INSTALLER SHALL BE TRAINED BY THE MANUFACTURES EMPLOYED REPRESENTATIVE.
 - INSTALLATION OF ANCHORS SHALL HAVE CONTINUOUS OR PERIODIC INSPECTION IN ACCORDANCE WITH CURRENT IBC AND WHERE DESIGNATED IN THE SPECIAL INSPECTIONS PROGRAM.
 - HOLES WILL BE EPOXY FILLED UTILIZING A "PISTON PLUG" OR EQUIVALENT DEVICE TO ELIMINATE THE POSSIBILITY OF AIR GAPS.
 - BARs AND RODS USED MUST BE DEFORMED OR THREADED FOR THE FULL EMBEDMENT DEPTH EPOXY IS APPLIED.
- B. MECHANICAL ANCHORS
- APPROVED MECHANICAL ANCHORS FOR CONCRETE:
 - HILTI KWIK BOLT T2Z (ICC-ES ESR-4266)
 - SIMPSON STRONG-BOLT 2 (ICC-ES ESR-3037)
 - DEWALT POWER-STUD+S02 (ICC-ES ESR-2502)
 - APPROVED MECHANICAL ANCHORS FOR GROUTED MASONRY:
 - HILTI KWIK BOLT T2Z (ICC-ES ESR-4561)
 - SIMPSON WEDGE-ALL (ICC-ES ESR-1396)
 - SIMPSON STRONG-BOLT 2 (APMO-UES ER-240)
 - DEWALT POWER-STUD+S01 (ICC-ES ESR-2966)
 - FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS AND CERTIFICATION TESTING REPORTS FOR MECHANICAL ANCHOR INSTALLATION.
 - ALTERNATIVE MECHANICAL ANCHORS MAY BE USED IF AN (ICC-ES ESR) OR (APMO-UES ER) APPROVAL FOR USE IN CRACKED CONCRETE IS SUBMITTED TO THE STRUCTURAL ENGINEER AND APPROVED PRIOR TO USE.
 - DO NOT INSTALL MECHANICAL ANCHORS IN CONCRETE LESS THAN 7 DAYS OLD, CONTRACTOR MUST OBTAIN WRITTEN APPROVAL FROM THE ENGINEER TO INSTALL IN THE 7-21 DAY TIME PERIOD.
- C. SCREW ANCHORS
- APPROVED SCREW ANCHORS FOR CONCRETE:
 - HILTI KWIK HUS-EZ (ICC-ES ESR-3027)
 - SIMPSON TITEN HD (ICC-ES ESR-2713)
 - DEWALT SCREW BOLT+ (ICC-ER ESR-3889)
 - APPROVED SCREW ANCHORS FOR GROUTED MASONRY:
 - HILTI KWIK HUS-EZ (ICC-ES ESR-3056)
 - SIMPSON TITEN HD (ICC-ES ESR-1056)
 - DEWALT WEDGE-BOLT+ (ICC-ER ESR-2526)
 - FOLLOW ALL OF THE MANUFACTURER'S RECOMMENDATIONS AND CERTIFICATION TESTING REPORTS FOR SCREW ANCHOR INSTALLATION.
 - ALTERNATIVE SCREW ANCHORS USED IN CONCRETE APPLICATION MAY BE USED IF AN (ICC-ES ESR) OR (APMO-UES ER) APPROVAL FOR USE IN CRACKED CONCRETE IS SUBMITTED TO THE E.O.R. PRIOR TO USE.
 - ALTERNATIVE SCREW ANCHORS USED IN GROUTED MASONRY APPLICATION MAY BE USED IF AN (ICC-ES ESR) OR (APMO-UES ER) APPROVAL FOR USE IN GROUTED MASONRY IS SUBMITTED TO THE E.O.R. AND APPROVED PRIOR TO USE.
- D. POWDER ACTUATED FASTENERS
- APPROVED POWDER ACTUATED FASTENERS DRIVEN INTO STEEL:
 - HILTI X-U P8 TH UNIVERSAL KNURLED SHANK FASTENER (ICC-ES ESR-2269)
 - SIMPSON PDPA DRIVE PIN (ICC-ES ESR-2138)
 - DEWALT BMM HEAD SPIRAL CSI DRIVE PIN (ICC-ES ESR-2024)
 - APPROVED POWDER ACTUATED FASTENERS DRIVEN INTO CONCRETE:
 - HILTI X-U UNIVERSAL KNURLED SHANK FASTENER (ICC-ES ESR-2269)
 - SIMPSON PDPA (ICC-ESR-2138)
 - DEWALT BMM HEAD SPIRAL CSI DRIVE PIN (ICC-ES ESR-2024)
 - APPROVED POWDER ACTUATED FASTENERS DRIVEN INTO MASONRY:
 - HILTI X-U UNIVERSAL KNURLED SHANK FASTENER (ICC-ES ESR-2269)
 - SIMPSON PDPA (ICC-ESR-2138)
 - FOLLOW THE MANUFACTURER'S RECOMMENDATIONS AND CERTIFICATION TESTING REPORTS FOR POWDER ACTUATED FASTENER INSTALLATION.
 - ALTERNATIVE POWDER ACTUATED FASTENERS MAY BE USED IF AN (ICC-ES ESR) OR (APMO-UES ER) APPROVAL FOR USE IN STEEL IS SUBMITTED TO THE E.O.R. AND APPROVED PRIOR TO USE.
 - ALTERNATIVE POWDER ACTUATED FASTENERS MAY BE USED IF AN (ICC-ES ESR) OR (APMO-UES ER) APPROVAL FOR USE IN CRACKED CONCRETE IS SUBMITTED TO THE E.O.R. AND APPROVED PRIOR TO USE.
 - ALTERNATIVE POWDER ACTUATED FASTENERS MAY BE USED IF AN (ICC-ES ESR) OR (APMO-UES ER) APPROVAL FOR USE IN MASONRY IS SUBMITTED TO THE E.O.R. AND APPROVED PRIOR TO USE.
- E. ANCHOR CAPACITY USED IN DESIGN SHALL BE BASED ON THE TECHNICAL DATA PUBLISHED BY MANUFACTURER OR SUCH OTHER METHOD AS APPROVED BY THE E.O.R. SUBSTITUTION REQUESTS FOR ALTERNATE PRODUCTS MUST BE APPROVED IN WRITING BY THE E.O.R. PRIOR TO USE. SUBSTITUTIONS WILL BE EVALUATED BY THEIR HAVING AN ICC ESR SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE FOR SEISMIC USES, LOAD RESISTANCE, INSTALLATION CATEGORY, AND AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS. ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE TEMPERATURE AND INSTALLATION TEMPERATURE.
- F. REFER TO STRUCTURAL DRAWINGS FOR EMBEDMENT DEPTH, ROD TYPE AND SIZE, AND OTHER SPECIFIC INFORMATION.
- G. DO NOT APPLY LOAD TO ANCHOR UNTIL CONCRETE OR GROUT HAS REACHED FULL DESIGN STRENGTH.
- H. ALL HOLES SHALL BE DRILLED WITH ANSI STANDARD BIT DESIGNED FOR CONCRETE OR HOLLOW DRILL BIT, DIAMOND CORED HOLES ARE NOT ALLOWED UNLESS INDICATED IN DESIGN DETAIL OR PRE-APPROVED BY THE E.O.R.
- I. ABANDONED HOLES – NO ANCHOR SHALL BE INSTALLED WITHIN 1.5 ROD DIAMETERS OF AN ABANDONED HOLE THAT HAS BEEN GROUT FILLED, (3.0 ROD DIAMETERS FOR UN-GROUTED HOLES).
- J. OVER DRILL BAR DIAMETER BY 1/8" U.N.O. BY THE MANUFACTURER AND TO THE REQUIRED DEPTH AS INDICATED ON THE STRUCTURAL DRAWINGS.
- K. REMOVE ALL DIRT, DUST, WATER AND ICE FROM DRILLED HOLES BEFORE INSTALLATION.
- L. REMOVE ANY DIRT, DUST, RUST OR OIL ON BAR OR ROD BEFORE INSTALLATION U.N.O.
- M. ALL MANUFACTURERS RECOMMENDATIONS SHALL BE FOLLOWED EXACTLY.

2 MASONRY

- A. 8" WALLS, SPECIFIED COMPRESSIVE STRENGTH, f'm= 2,000 PSI
- MASONRY UNITS = ASTM C-90, GRADE N, f'm = 2,000 PSI MIN. NORMAL WEIGHT BLOCK.
 - MORTAR = ASTM C-270, TYPE S, MIN. COMPRESSIVE STRENGTH OF 1,500 PSI.
 - GROUT STRENGTH = 2,000 PSI MIN.
- B. REBAR USED = ASTM A615, GRADE 60 WHERE WELDING REQUIRED USE ASTM A706, GRADE 60.
- C. ALL REINFORCING SHALL BE CENTERED IN WALL, U.N.O.
- D. ALL CMU WALLS SHALL BE RUNNING BOND, U.N.O.
- E. REINFORCING BAR LAP = 60 BAR DIAMETERS.
- F. TYPICAL REINFORCING SHALL BE #5 VERT. BARS AT 16" O.C. w/ #5 HORIZ. BARS IN CMU BOND BEAM AT 4'-0" O.C., U.N.O., RE: PLAN.
- G. SPECIAL INSPECTIONS ARE REQUIRED ON A CONTINUOUS BASIS.
- H. THE TYPICAL UNTEL OVER OPENINGS IN THE WALL SHALL HAVE (2) SETS OF (2) #5 BARS EQUALLY SPACED FOR 8" WALLS, U.N.O.
- I. LAP ALL BOND BEAMS WHERE STEPPED 4'-0".
- J. THERE SHALL BE A MIN. OF (1) #4 BAR ON ALL SIDES OF, AND ADJACENT TO, EVERY OPENING WHICH IS LESS THAN 48" IN BOTH DIRECTIONS. WHERE THE OPENINGS ARE 48" OR GREATER IN EITHER DIRECTION, A MIN. OF (2) #5 BAR SHALL BE USED, AND SUCH BARS SHALL EXTEND NOT LESS THAN 24" BEYOND THE CORNER OF THE OPENINGS, U.N.O. AS SHOWN.
- K. AT CORNERS AND WALL INTERSECTIONS, GROUT THE ADJACENT CORNERS WITH A VERTICAL BAR AND LAP THE BOND BEAM STEEL OR PROVIDE CORNER BARS OF EQUAL SIZE, RE:
- L. ALL DOWELS FROM THE FOUNDATION WALL SHALL MATCH SIZE AND LOCATION OF VERTICAL REINFORCING IN MASONRY, U.N.O. EXTEND DOWEL A MIN. OF 30 BAR DIAMETERS INTO THE FOUNDATION.
- M. VERTICAL CONTROL JOINT SHALL BE PROVIDED IN THE WALLS AS SHOWN ON THE ELEVATIONS AND RE:
- N. THE MASONRY CONTRACTOR SHALL COORDINATE THE PLACING OF ANY OPENINGS WITH THE GENERAL CONTRACTOR, RE: ROOF PLAN.
- O. COORD. WITH ARCH. SHEETS FOR TYPE OF BLOCK USED.
- P. ALL CMU WALLS ABOVE GRADE ARE TO BE PARTIALLY GROUTED, U.N.O. ALL CMU CELLS RECEIVING REINFORCEMENT, ANCHOR BOLTS OR H.C.A. SHALL BE SOLID GROUTED.
- Q. ALL CMU WALLS BELOW GRADE / FINISHED FLOOR ARE TO BE SOLID GROUTED, HIGH STRENGTH BLOCK & TYPE 'N' MORTAR.
- R. WET SETTING OF REINFORCING BARS IN FOOTINGS AND WALLS IS NOT ALLOWED.
- S. ALL CELLS CONTAINING REINFORCEMENT SHALL BE FILLED SOLIDLY WITH GROUT. GROUT SHALL BE A WORKABLE MIXTURE SUITABLE FOR PUMPING WITHOUT SEGREGATION AND SHALL BE THOROUGHLY MIXED. GROUT SHALL BE CONSOLIDATED BY MECHANICAL VIBRATION DURING PLACING AND RECONSOLIDATED AFTER EXCESS MOISTURE HAS BEEN ABSORBED, BUT BEFORE WORKABILITY IS LOST. THE GROUTING OF A WALL SHALL BE COMPLETED IN ONE DAY WITH NO INTERRUPTIONS GREATER THAN ONE HOUR.

3 GENERAL STRUCTURAL NOTES

- ALL ELEVATIONS AND HEIGHTS GIVEN ARE FROM THE FINISHED FLOOR DATUM ELEVATION, WHICH IS SET AT 100'-0".
- DO NOT SCALE DRAWINGS, CONTACT A.O.R. OR E.O.R. FOR DIMENSION CLARIFICATIONS PRIOR TO CONSTRUCTION.
- VERIFY ALL OPENINGS, BUILDING DIMENSIONS, COLUMN GRID LOCATIONS AND DIMENSIONS WITH OWNER PRIOR TO POURING OF ANY CONCRETE FOUNDATIONS OR CONSTRUCTION.
- THE ENGINEER OF RECORD IS NOT RESPONSIBLE FOR ANY DEVIATIONS FROM THESE PLANS UNLESS SUCH CHANGES ARE AUTHORIZED IN WRITING TO THE STRUCTURAL ENGINEER OF RECORD.
- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING SAFE AND ADEQUATE SHORING AND/OR TEMPORARY STRUCTURAL STABILITY FOR ALL PARTS OF THE STRUCTURE DURING CONSTRUCTION. THE STRUCTURE SHOWN ON THE DRAWINGS HAS BEEN DESIGNED FOR FINAL CONFIGURATION.
- NOTCHING AND/OR CUTTING OF ANY STRUCTURAL MEMBER IN THE FIELD IS PROHIBITED, UNLESS PRIOR CONSENT IS GIVEN BY THE STRUCTURAL ENGINEER OF RECORD.
- IT IS NECESSARY THAT THE STRUCTURAL DRAWINGS BE USED IN CONJUNCTION WITH THE ARCHITECTURAL DRAWINGS TO HAVE A COMPLETE SCOPE OF WORK INVOLVED IN THIS PROJECT.

4 STRUCTURAL OBSERVATIONS

- A. PER IBC SECTION 1709, STRUCTURAL OBSERVATIONS SHALL BE PERFORMED BY A REPRESENTATIVE FROM THE ENGINEER OF RECORD'S OFFICE (TAMARACK GROVE ENGINEERING, PLLC) OR AN APPOINTED REPRESENTATIVE TO PERFORM ON-SITE STRUCTURAL OBSERVATION VISITS DURING SIGNIFICANT TIMES OF CONSTRUCTION-RELATED TO OUR DEFERRED SUBMITTAL SCOPE OF WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL SIGNIFICANT TIMES OF CONSTRUCTION WITH THE ENGINEER OF RECORD'S OFFICE PRIOR TO THE COMPLETION POINT REQUIRING SITE OBSERVATIONS FOR THE CONSTRUCTION AND/OR PLACEMENT (MINIMUM OF 4 CALENDAR DAYS). SIGNIFICANT TIMES OF CONSTRUCTION ARE AS FOLLOWS:
- CONCRETE FOUNDATION AND REBAR PLACEMENT.
 - PLACEMENT OF PERIMETER LOAD BEARING WALLS, LOAD SUPPORTING BEAMS, FLOOR FRAMING AND/OR HEADERS AND LATERAL RESISTING CONNECTION ELEMENTS.
 - COMPLETION OF ROOF FRAMING AND LATERAL BRACING (SHEAR WALLS), PRIOR TO COVERING WITH ANY ARCHITECTURAL FINISHES.
 - COMPLETION OF ALL STRUCTURAL SYSTEMS AS REQUIRED AND/OR DEFINED BY THE LOCAL JURISDICTION.
- B. STRUCTURAL OBSERVATIONS DO NOT INCLUDE OR WAIVE THE RESPONSIBILITY FOR THE SPECIAL INSPECTIONS REQUIRED BY THE IBC SECTION 1704 OR OTHER SECTIONS OF THE CODE AS REQUIRED BY THE LOCAL BUILDING JURISDICTION.
- C. STRUCTURAL OBSERVATIONS REQUIRED IN OBSERVANCE OF SECTION 1704 OR PER LOCAL JURISDICTION.

5 EXISTING CONDITIONS

- A. CONTRACTOR SHALL VERIFY ANY AND ALL APPLICABLE EXISTING CONDITIONS, CONSTRUCTION, DIMENSIONS AND ELEVATIONS AND IMMEDIATELY NOTIFY ARCH. AND EOR OF ANY DISCREPANCIES BEFORE PROCEEDING WITH ANY CONSTRUCTION.

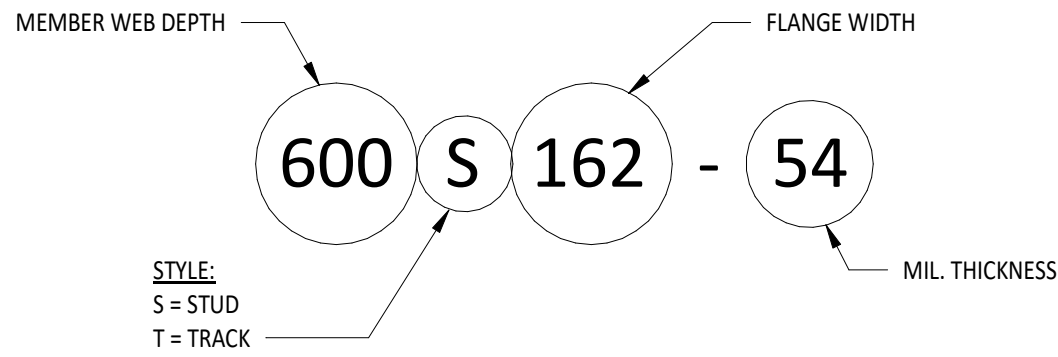
6 SPECIAL INSPECTIONS AND TESTING

- A. AS REQUIRED BY THE LOCAL JURISDICTION.

SPECIAL INSPECTIONS PROGRAM			
ESTABLISHED PER 2018 IBC CHAPTER 17			
ITEM	CONTINUOUS	PERIODIC	COMMENTS
GENERAL STRUCTURAL INSPECTIONS AS REQUIRED BY SECTION 1704.4			
SLAB REINFORCEMENT			BY BUILDING OFFICIAL
FINAL INSPECTION			BY BUILDING OFFICIAL
CONCRETE			
REINFORCING SIZE AND PLACEMENT		X	ACI 318: 20, 25.2, 25.3, 26.6.1-26.6.3
INSPECT ANCHORS CAST IN CONCRETE	X		ACI 318: 17.8.2
VERIFY USE OF REQUIRED DESIGN MIX		X	IBC 1904.1, 1904.2, 1908.3, ACI 318: 19, 26.4.3, 26.4.4
PREPARATION OF TEST SPECIMENS	X		ASTM C 172, ASTM C 31, ACI 318: 26.4, 26.12
CONCRETE PLACEMENT	X		IBC 1908.6-1908.8, ACI 318: 26.5
LIGHT WEIGHT CONCRETE AIR-DRY UNIT WEIGHT	X		ACI 318/EOR
MAINTENANCE OF SPECIFIED CURING TEMPERATURES AND TECHNIQUES		X	IBC 1908.9, ACI 318: 26.5.3-26.5.5
INSPECT FORM WORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED		X	ACI 318: 26.11.1.2(b)
WELDING: STRUCTURAL STEEL			
MATERIAL VERIFICATION OF WELD FILLER MATERIALS			AISC 360, SECTION A3.5
COMPLETE AND PARTIAL PENETRATION	X		IBC 1704.3.1, AWS D1.1
MULTIPASS FILLET WELDS	X		
SINGLE PASS FILLETS > 5/16"	X		
SINGLE PASS FILLETS ≤ 5/16"		X	
FLOOR AND ROOF DECK WELDS		X	AWS D1.3
WELDED STUDS		X	IBC 1704.3
WELDING OF STAIRS AND RAILING SYSTEMS		X	IBC 1704.3
SPECIAL CASES: (IBC 1704.13)			
EPOXY OR ADHESIVE ANCHOR PLACEMENT	X		BY BUILDING OFFICIAL
EXPANSION OR SCREW ANCHOR PLACEMENT	X		WHERE INDICATED ON DRAWINGS

7 LIGHT GAUGE STEEL FRAMING

- A. MEMBER REQUIREMENTS:
- A. DESIGN, FABRICATION AND ERECTION OF LIGHT GAUGE STEEL FRAMING SHALL CONFORM TO THE SPECIFICATIONS AND STAND OF THE AMERICAN IRON AND STEEL INSTITUTE (AISI), AS CONTAINED IN THE "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS", LATEST EDITION, INCLUDING ALL APPLICABLE AMENDMENTS.
- B. FRAMING MEMBER AND ACCESSORIES SHALL CONFORM TO:
- 16 GAUGE AND HEAVIER =ASTM A1003, GR. 50
 - GALVANIZED =ASTM A 653, GR. 50
 - PAINTED =ASTM A 570, GR. 50
 - 18 GAUGE AND LIGHTER =ASTM A1003, GR. 33
 - GALVANIZED =ASTM A 653, GR. 33
 - PAINTED =ASTM A 570, GR. C
- C. FOR MEMBERS 54 MILS (16 GAUGE) THICK OR THICKER, ALL STRUCTURAL MEMBERS SHALL HAVE A MIN. YIELD STRENGTH OF 50 KSI. U.N.O. ALL THINNER SHALL HAVE MIN. YIELD STRENGTH OF 33 KSI.
- D. ALL CONT. TRACKS SHALL BE UNPUNCHED AND MATCH STUD GAUGE U.N.O. TYPICAL GAP AT SLOTTED SLIP TRACKS SHALL BE 3/4". U.N.O.
- E. ALL MEMBERS SHALL CONFORM TO THE SECTION PROPERTIES TABLE OF STEEL STUD MANUFACTURERS ASSOCIATION (SSMA) (ICPO ER-4943P).
- F. WALL STUD BRIDGING AS RECOMMENDED BY MFR SHALL BE INSTALLED AT 4'-0" O.C. TO PREVENT BOTH WEAK AXIS BENDING AND STUD ROTATION. WALLS 8'-0" OR SHORTER SHALL HAVE A SINGLE ROW OF BRIDGING AT MID-HEIGHT. ADDITIONALLY, BRIDGING SHALL BE PROVIDE AT ROOF LINES AND WHERE NOTED ON THE DRAWINGS. SOLID BLOCKING SHALL BE INSTALLED IN LIEU OF BRIDGING WHERE NOTED ON THE DRAWINGS. WALL STUD BRIDGING ONLY REQUIRED WHEN WALL SHEATHING/DRYWALL IS NOT PROVIDED ON EITHER SIDE.
- G. ALL MEMBERS SHALL BE ERECTED PLUMB AND BE SECURELY SEATED FOR FULL END BEARING ON TOP AND BOTTOM TRACK. U.N.O.
- H. BRACING OF AXIALLY LOADED STUDS OR BRACING IS NOT PERMITTED.
- I. FRAMING COMPONENTS SHALL BE CUT SQUARELY OR TO THE EXACT ANGLE TO TIGHT FIT THE ABUTTING MEMBERS. MEMBERS SHALL BE HELD FIRMLY UNTIL PROPERLY FASTENED.
- J. PROVIDE BACK-TO-BACK OR NESTED MEMBERS AT ALL JAMBS, CORNERS, INTERSECTIONS AND BEAM BEARING. U.N.O.
- K. FOR LEDGER TRACK CONDITIONS, THE SUPPORTED FRAMING IS TO BE WITHIN 1/8" OF TRACK LEDGER WEB.
- L. PUNCH OUTS SHALL NOT BE LOCATED WITHIN 10" FROM ANY SUPPORT, BEARING LOCATIONS OR APPLIED LOAD.
- M. NOTCHING OR COPING OF STUDS IS NOT ALLOWED, UNLESS SPECIFICALLY NOTED.
- N. TYPICAL LIGHT GAUGE STEEL FRAMING MEMBER NOTATION SHOWN BELOW:



B. FASTENING/WELDING REQUIREMENTS

- A. FASTENING OF COMPONENTS SHALL BE WITH #10 SELF-TAPPING SCREWS OR WELDS AND FOLLOW THE LATEST EDITION OF THE AISI GUIDELINE RECOMMENDATIONS. WIRE TYING OF COMPONENTS IS NOT PERMITTED.
- B. SCREWS SHALL BE SELF-TAPPING PAN HEAD, HEX HEAD OR WAFER HEAD SHEET METAL SCREWS AND HAVE A MINIMUM THREE (3) THREADS PENETRATION INTO SUPPORTING MEMBER. SCREWS WHICH ARE REMOVED SHALL BE REPLACED BY A SCREW OF A LARGER DIA. WHERE THE REPLACEMENT IS MADE INTO AN EXISTING HOLE. REPLACE ALL SCREWS WITH STRIP OUT MATERIAL. SCREWS SHALL BE SPACED NO CLOSER THAN 5/8" O.C. AND WITH A MIN. FREE EDGE DISTANCE OF 1/2". CLIP ANGLES OR FLAT CLIPS USED FOR ATTACHMENT SHALL BE 18 GA. MIN. U.N.O. ALL SCREWS #8 AND LARGER SHALL HAVE A MIN. HEAD SIZE OF 5/16".
- C. ALL WELDING SHALL BE PERFORMED BY WELDERS EXPERIENCED IN LIGHT GAUGE STEEL FRAMING WORK. ALL WELDING SHALL CONFORM WITH THE LATEST AMERICAN WELDING SOCIETY STANDARDS AND CONFORM TO THE FOLLOWING (MIN. ROD DIA.=1/8"):
- 18 GAUGE AND LIGHTER: E60XX
 - 16 GAUGE AND HEAVIER: E70XX
 - LIGHT GAUGE TO STRUCTURAL STEEL: E70XX (LOW HYDROGEN)
- D. ALL WELDS OF GALVANIZED STEEL SHALL BE TOUCHED UP WITH ZINC-RICH PAINT. ALL WELDS OF CARBON SHEET STEEL SHALL BE TOUCH UP WITH RUST INHIBITIVE PAINT.



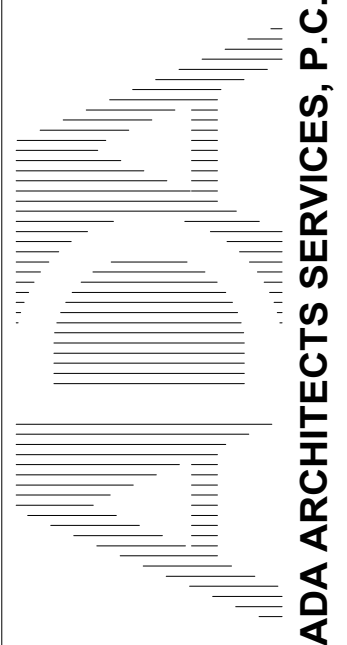
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9/22/21



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REVISIONS

DATE	TYPE	#	1	2	3	4	5	6	7	8	9	10

GENERAL
STRUCTURAL
NOTES

DATE 9/22/21

JOB NO. 20420

S0.1

SHEET NO.

1. CONCRETE CIP SPECIFICATIONS

- PART 1 - GENERAL**
QUALITY ASSURANCE
- CONCRETE SUPPLIER: A FIRM EXPERIENCED IN PRODUCING READY-MIXED CONCRETE THAT COMPLIES WITH ASTM C 94 REQUIREMENTS FOR PRODUCTION FACILITIES AND EQUIPMENT. COMPLY WITH ACI 301, "SPECIFICATION FOR STRUCTURAL CONCRETE."
 - MANUFACTURER CERTIFIED ACCORDING TO NRMCA'S "CERTIFICATION OF READY MIXED CONCRETE PRODUCTION FACILITIES." CERTIFICATION SHALL NOT BE MORE THAN TWELVE MONTHS OLD.
 - TESTING AGENCY QUALIFICATIONS: AN INDEPENDENT AGENCY, QUALIFIED ACCORDING TO ASTM C 1077 AND ASTM E 329 FOR TESTING INDICATED, AS DOCUMENTED ACCORDING TO ASTM E 548.
 - PERSONNEL CONDUCTING FIELD TESTS SHALL BE QUALIFIED AS ACI CONCRETE FIELD TESTING TECHNICIAN, GRADE 1, ACCORDING TO ACI CP-01 OR AN EQUIVALENT CERTIFICATION PROGRAM.
 - PERSONNEL PERFORMING LABORATORY TESTS SHALL BE ACI CERTIFIED CONCRETE STRENGTH TESTING TECHNICIAN AND CONCRETE LABORATORY TESTING TECHNICIAN (GRADE I). TESTING AGENCY LABORATORY SUPERVISOR SHALL BE AN ACI CERTIFIED CONCRETE LABORATORY TESTING TECHNICIAN (GRADE II).
 - CONCRETE CONTRACTOR QUALIFICATION: CONCRETE CONTRACTOR SHALL INCLUDE IN THEIR BID PACKAGE TO THE GENERAL CONTRACTOR, A MINIMUM OF THREE SIMILAR AND SUCCESSFUL PROJECTS THAT CLEARLY INDICATES THE CONCRETE CONTRACTOR'S ABILITY TO SUCCESSFULLY PERFORM THE WORK AND TO ACHIEVE THE INTERIOR SALES FLOOR SLAB TOLERANCES REQUIRED IN THIS SPECIFICATION. THE CONCRETE CONTRACTOR'S TEAM SHALL HAVE PARTICIPATED IN THE MAJORITY OF THESE PROJECTS, AND THAT TEAM SHALL REMAIN THE SAME THROUGHOUT THE DURATION OF THIS PROJECT. CONCRETE CONTRACTOR'S QUALIFICATION SHALL BE SUBMITTED AS PART OF THE BID PACKAGE. BASED ON EXPERIENCE, THE OWNER HAS THE RIGHT TO REJECT THE CONCRETE CONTRACTOR.
 - LIQUID DENSIFIER / SEALER AND JOINT FILLING APPLICATION: ALL GENERAL CONTRACTORS BIDDING OR NEGOTIATING A HARBOR FREIGHT PROJECT SHALL CONTACT EUCLID CHEMICAL TO OBTAIN A LIST OF TRAINED APPLICATION LOCATIONS WITHIN THE GEOGRAPHIC REGION OF THE PROJECT. GENERAL CONTRACTORS SHALL SOLICIT AND ACCEPT PRICING ONLY FROM THOSE APPLICATIONS AS PROVIDED BY EUCLID CHEMICAL. **THE TRAINED APPLICATION LOCATIONS SELECTED FOR THE INITIAL APPLICATION OF LIQUID DENSIFIER / SEALER SHALL BE THE SAME AS FOR THE JOINT FILLING AND ADDITIONAL APPLICATION OF LIQUID DENSIFIER / SEALER.**
 - PHILIP BRANDT: EUCLID CHEMICAL - 877-438-3826 / PBRANDT@EUCLIDCHEMICAL.COM
CONCRETE SALES FLOOR PRE-INSTALLATION CONFERENCE: AT LEAST 30 DAYS PRIOR TO THE START OF THE CONCRETE SLAB CONSTRUCTION, THE GENERAL CONTRACTOR SHALL CONDUCT A MEETING TO REVIEW THE PROPOSED CONCRETE MIX DESIGNS AND TO DISCUSS THE REQUIRED METHODS AND PROCEDURES TO ACHIEVE THE REQUIREMENTS OF THIS SPECIFICATION. THE GENERAL CONTRACTOR SHALL SEND A PRE-CONCRETE CONFERENCE AGENDA TO ALL ATTENDEES 10 DAYS PRIOR TO THE SCHEDULED DATE OF THE CONFERENCE.
 - THE GENERAL CONTRACTOR SHALL REQUIRE RESPONSIBLE REPRESENTATIVES OF EVERY PARTY CONCERNED WITH THE CONCRETE WORK TO ATTEND THE CONFERENCE, INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:
 - GENERAL CONTRACTOR: PROJECT MANAGER AND SUPERINTENDENT
 - TESTING AGENCY: RESPONSIBLE FOR CONCRETE MIXES, QUALITY CONTROL, FLOOR TOLERANCE TESTING, ETC.
 - READY-MIX CONCRETE PRODUCER: CONCRETE MIX DISCUSSION
 - CONCRETE CONTRACTOR
 - CHEMICAL ADMIXTURE MANUFACTURER
 - EUCLID CHEMICAL: LIQUID DENSIFIER SEALER AND JOINT FILLER MANUFACTURER
 - TRAINED APPLICATOR: LIQUID DENSIFIER SEALER AND JOINT FILLING APPLICATION
 - PHILIP BRANDT: EUCLID CHEMICAL - 877-438-3826 / PBRANDT@EUCLIDCHEMICAL.COM
 - MINUTES OF THE MEETING SHALL BE RECORDED, TYPED AND PRINTED BY THE GENERAL CONTRACTOR AND DISTRIBUTED TO ALL CONCERNED PARTIES, INCLUDING THE OWNER, ARCHITECT, STRUCTURAL ENGINEER AND HARBOR FREIGHT PROJECT MANAGER, WITHIN THREE DAYS OF THE MEETING.
 - THE MINUTES SHALL INCLUDE A STATEMENT BY THE CONCRETE SUPPLIER STATING THAT THE PROPOSED CONCRETE MIX DESIGNS WILL PRODUCE THE CONCRETE QUALITY REQUIRED BY THESE SPECIFICATIONS.
 - THE MINUTES SHALL INCLUDE A STATEMENT BY THE GENERAL CONTRACTOR THAT THE PROPOSED CONCRETE MIX DESIGNS WILL PROVIDE APPROPRIATE WORKABILITY AND SETTING TIMES, TO ENSURE THAT THE CONCRETE CONTRACTOR CAN ACHIEVE THE REQUIREMENTS OF THIS SPECIFICATION.

- PART 2 - PRODUCTS**
MATERIALS
- CONCRETE MATERIALS:
 - PORTLAND CEMENT: ASTM C 150/ C150M, TYPE I, TYPE II OR TYPE /II. USE ONE BRAND OF CEMENT THROUGHOUT THE PROJECT.
 - COARSE AND FINE AGGREGATES: ASTM C 33. COMBINED AGGREGATE GRADATION FOR SLABS ON GRADE AND OTHER DESIGNATED CONCRETE SHALL BE 8% - 18% FOR LARGE TOP SIZE AGGREGATES (1½") OR 8% - 22% FOR SMALLER TOP SIZE AGGREGATES (1" OR ¾") RETAINED ON EACH SIEVE BELOW THE TOP SIZE AND ABOVE THE NO. 100 SIEVE.
 - UNLESS INDICATED OTHERWISE ON DRAWINGS, INTERIOR AND EXTERIOR SLABS ON GROUND (4"-5" NOMINAL THICKNESS), AS WELL AS FOOTINGS, PIERS AND BEAMS SHALL HAVE A MAXIMUM COARSE AGGREGATE SIZE OF 1" (#57 STONE).
 - WATER: COMPLYING WITH ASTM C 94.
 - AIR-ENTRAINING ADMIXTURE (INTERIOR CONCRETE): AIR-ENTRAINING ADMIXTURE SHALL NOT BE ADDED FOR INTERIOR CONCRETE.
 - AIR-ENTRAINING ADMIXTURE (EXTERIOR CONCRETE): ASTM C-260. ADMIXTURE MANUFACTURER SHALL PROVIDE WRITTEN CERTIFICATION THAT THE AIR-ENTRAINING ADMIXTURE IS COMPATIBLE WITH OTHER REQUIRED ADMIXTURES. ALL EXTERIOR SLABS SHALL BE AIR-ENTRAINED. ACCEPTABLE PRODUCTS: EUCLID CHEMICAL AEA-92 OR AIR 40; BASF MICRO AIR, W.R. GRACE DARAVAIR OR DAREX.
 - WATER-REDUCING ADMIXTURE: ASTM C494, TYPE A CONTAINING NOT MORE THAN 0.05% CHLORIDE IONS. ACCEPTABLE PRODUCTS: EUCLID CHEMICAL EUCON SERIES; BASF POZZOLITH SERIES; W.R. GRACE WRDA OR DARACEM SERIES.
 - WATER-REDUCING, RETARDING ADMIXTURE: ASTM C494, TYPE D CONTAINING NOT MORE THAN 0.05% CHLORIDE IONS. ACCEPTABLE PRODUCTS: EUCLID CHEMICAL RETARDER 75; BASF POZZOLITH SERIES OR DELVO; W.R. GRACE DARATARD 17.
 - HIGH RANGE WATER-REDUCING ADMIXTURE (SUPERPLASTICIZER): ASTM C494, TYPE F OR G CONTAINING NOT MORE THAN 0.05% CHLORIDE IONS. ACCEPTABLE PRODUCTS: EUCLID CHEMICAL EUCON 37; BASF RHEOBUILD 1000; W.R. GRACE DARACEM-100.
 - WATER-REDUCING, NON-CORROSIVE ACCELERATING ADMIXTURE: ASTM C494, TYPE C OR E CONTAINING NOT MORE CHLORIDE IONS THAN ARE PRESENT IN MUNICIPAL DRINKING WATER. THE ADMIXTURE MANUFACTURER MUST HAVE LONG-TERM, NON-CORROSIVE TEST DATA FROM AN INDEPENDENT TESTING LABORATORY (OF AT LEAST A YEAR'S DURATION) USING AN ACCEPTABLE ACCELERATED CORROSION TEST METHOD SUCH AS THAT USING ELECTRICAL POTENTIAL MEASURES. ACCEPTABLE PRODUCTS: EUCLID CHEMICAL ACEL-GUARD 80/90 OR NCA; BASF NC34 OR POZZUTEC 20; W.R. GRACE POLARSET.
 - PROHIBITED ADMIXTURES:
 - CALCIUM CHLORIDE OR ADMIXTURES CONTAINING MORE THAN 0.05% CHLORIDE IONS ARE NOT PERMITTED.
 - FLYASH IS ONLY PERMITTED IN EXTERIOR CONCRETE IN AREAS KNOWN FOR ALKALI SILICA REACTIVITY (ASR). (MAXIMUM OF 15%)
 - MACRO-SYNTHETIC FIBERS: COMPLY WITH ASTM C1116. "STRUCTURAL" FIBERS SHALL BE A PATENTED COARSE MONOFILAMENT, SELF-FIBRILLATING, POLYPROPYLENE/POLYETHYLENE FIBER WITH A MINIMUM TENSILE STRENGTH OF 73XSI AND MINIMUM LENGTH OF 2 INCHES. ACCEPTABLE MACRO-SYNTHETIC FIBER (NO SUBSTITUTIONS): EUCLID CHEMICAL "TUF-STRAND SF". PHILIP BRANDT - 877-438-3826 / PBRANDT@EUCLIDCHEMICAL.COM
 - RELATED MATERIALS:
 - EVAPORATION RETARDER: WATERBORNE, MONOMOLECULAR FILM FORMING, MANUFACTURED FOR APPLICATION TO FRESH CONCRETE.
 - ACCEPTABLE MANUFACTURER: EUCLID CHEMICAL "EUCOBAR"
 - INTERIOR CURING: ASTM C-309 WITH A MAXIMUM VOC CONTENT OF 350G/L. THE INTERIOR SALES FLOOR SLAB SHALL BE CURED USING A REDUCED ODOR, DISSIPATING OR REMOVABLE LIQUID MEMBRANE FORMING CURING COMPOUND.
 - ACCEPTABLE MANUFACTURER: EUCLID CHEMICAL "KUREZ DR VOX" OR "KUREZ DR 100."
 - INTERIOR LIQUID DENSIFIER / SEALER: SODIUM SILICONATE CONTAINING AT LEAST 24% SOLIDS BY WEIGHT. MANUFACTURER OF LIQUID DENSIFIER AND SEALER MUST BE CONTACTED PRIOR TO BIDDING FOR PRICING AND APPLICATION REQUIREMENTS.
 - ACCEPTABLE MANUFACTURER: EUCLID CHEMICAL "EUCO DIAMOND HARD"
 - INTERIOR SEMI-RIGID POLYUREA JOINT FILLER: COMPLY WITH ACI 302, SHALL BE A TWO (2) COMPONENT, 100% SOLIDS, UV RESISTANT COMPOUND, WITH MINIMUM SHORE "A" HARDNESS OF 80. COLOR TO MATCH ADJACENT CONCRETE SURFACES.
 - ACCEPTABLE MANUFACTURER: EUCLID CHEMICAL "QUIKJOINT UVF"
 - EXTERIOR CURING: ASTM C 1315 WITH A MAXIMUM VOC CONTENT OF 700 G/L. ALL EXTERIOR CONCRETE SLABS SHALL BE CURED USING A LIQUID MEMBRANE-FORMING CURING COMPOUND.
 - ACCEPTABLE MANUFACTURER: EUCLID CHEMICAL "SUPER DIAMOND CLEAR VOX."
 - EXTERIOR URETHANE JOINT SEALANT: ASTM C 920-86, TYPE S, GRADE NS, AND CLASS 25 INDUSTRIAL GUN GRADE POLYURETHANE SEALANT SHALL EXHIBIT A SHORE "A" HARDNESS OF 40 AND AN ELONGATION OF 250%.
 - ACCEPTABLE MANUFACTURER: EUCLID CHEMICAL "EUCOLASTIC 1 NS/SL"

- CONCRETE MIXES
- COMPLY WITH ACI 301 REQUIREMENTS FOR CONCRETE MIXES.
 - CONCRETE MIXES SHALL BE PROPORTIONED ACCORDING TO ACI 301, FOR NORMAL-WEIGHT CONCRETE DETERMINED BY EITHER LABORATORY TRIAL MIX OR FIELD TEST DATA.
 - COMPRESSIVE STRENGTH (28 DAYS):
 - INTERIOR SLAB: 4000 PSI, WITH A MAXIMUM WATER/CEMENT RATIO OF .53, UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
 - INTERIOR SLAB: 4000 PSI, WITH A MAXIMUM WATER/CEMENT RATIO OF .45, UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
 - CONCRETE MATERIALS INCLUDED IN THE MIX DESIGN SHALL BE THE SAME MATERIALS PROVIDED TO THE PROJECT, AND SHALL BE PREPARED BY AN INDEPENDENT TESTING LABORATORY APPROVED BY THE OWNER. PER ACI REQUIREMENTS, IF SUFFICIENT BACKUP DATA IS NOT AVAILABLE, THE LABORATORY MIX SHALL EXCEED THE DESIRED JOB STRENGTH OF CONCRETE BY 1,200 PSI. FOUR COPIES OF THE MIX SHALL BE SUBMITTED TO THE OWNER BEFORE CONCRETE WORK BEGINS.
 - SLUMP: CONCRETE SHALL HAVE A MAXIMUM SLUMP OF 5½" FOR INTERIOR AND EXTERIOR CONCRETE. UNLESS INDICATED ON DRAWINGS, ALL OTHER CONCRETE SHALL NOT EXCEED A 4" SLUMP.
 - MACRO-SYNTHETIC FIBER ADDITION: ALL INTERIOR AND EXTERIOR SLABS ON GROUND CONCRETE SHALL CONTAIN THE SPECIFIED MACRO-SYNTHETIC FIBER USED AT A RATE OF NO LESS THAN 5.0 LBS./CUBIC YARD. ACTUAL FIBER DOSAGE MAY VARY BASED ON JOB SITE CONDITIONS AND SHALL BE CALCULATED BY STRENGTH EQUIVALENCY TO CONVENTIONAL REINFORCEMENT REQUIREMENTS. REQUIRED INFORMATION MAY INCLUDE, BUT NOT BE LIMITED TO SITE PREP, SUBBASE AND CONCRETE PROPERTIES, CURING AND LOADING CONDITIONS. THE "ENGINEER OF RECORD" SHALL CONTACT EUCLID CHEMICAL TO DISCUSS ACTUAL PROJECT CONDITIONS AND THE RESULTANT REQUIRED FIBER DOSAGE RATE. FIBERS MAY BE ADDED AT PLANT LOCATION OR JOB-SITE AND SHALL BE MIXED IN CONCRETE FOR A MINIMUM OF 4 MINUTES. EUCLID CONTACT: MIKE MAHONEY - 216-692-8301 / DON MILLER - 216-692-8140.
 - ADJUSTMENT TO CONCRETE MIXES: MIX ADJUSTMENTS MAY BE REQUESTED BY THE GENERAL CONTRACTOR WHEN CHARACTERISTICS OF MATERIALS, JOB CONDITIONS, WEATHER, TEST RESULTS OR OTHER CIRCUMSTANCES WARRANT, AT NO ADDITIONAL COST TO THE OWNER AND AS ACCEPTED BY THE OWNER. LABORATORY TEST DATA FOR REVISED MIX AND STRENGTH RESULTS MUST BE SUBMITTED TO AND ACCEPTED BY THE OWNER PRIOR TO WORK. CONCRETE TESTING AND INSPECTION AGENCY AND CONCRETE CONTRACTOR SHALL VERIFY THAT THE CONCRETE MIX DESIGN WILL PRODUCE CONCRETE THAT MEETS THE SPECIFICATIONS AS SPECIFIED HERE. IN ADDITION, THE GENERAL CONTRACTOR AND CONCRETE CONTRACTOR SHALL VERIFY THAT THE WORKABILITY, FINISHABILITY AND SETTING TIMES ARE APPROPRIATE FOR CONCRETE INSTALLATIONS. PLACEMENT SHALL BE MADE BY CONCRETE TRUCK CHUTE. IF CONCRETE PUMPING IS REQUIRED, THE PROPORTIONS ESTABLISHED ABOVE SHALL NOT BE ALTERED TO SUIT THE CAPABILITIES OF THE PUMPING EQUIPMENT. FOR CONCRETE CONTAINING MACRO-SYNTHETIC FIBERS, ADDITIONAL WATER REDUCER MAY BE NECESSARY. THE ADDITION OF WATER IS NOT PERMITTED INTO CONCRETE MIXTURE AFTER ADDITION OF MACRO-SYNTHETIC FIBERS.

- G. INTERIOR CONCRETE: CONCRETE SHALL BE DESIGNED TO MEET 4000 PSI COMPRESSIVE STRENGTH @ 28 DAYS AND EXHIBIT ≤0.04% SHRINKAGE @ 28 DAYS. THE MIX SHALL CONTAIN APPROXIMATELY 12 CUBIC FEET OF #57 AGGREGATE (1" TOP SIZE), THE SPECIFIED WATER REDUCING ADMIXTURE AND A MAXIMUM WATER / CEMENT RATIO OF 0.53 (MAX.). AIR-ENTRAINMENT IS PROHIBITED. PROPOSED MIX DESIGN SHALL BE SIMILAR TO THE FOLLOWING MIX:

INTERIOR SALES FLOOR PROTOTYPE MIX:	
MATERIALS	PROTOTYPE 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 - 300 lbs.
AIR CONTENT (ENTRAPPED AIR ONLY)	3.0%(MAX.)
WATER REDUCER (TYPE A/F)	3oz.-10oz./100wt +/- (MID-RANGE)
WATER/CEMENT RATIO	0.53 (MAX.)
INITIAL SLUMP (WATER)	3"
FINAL SLUMP (WITH WATER REDUCER)	5.5" (MAX.)
MACRO SYNTHETIC FIBER (TUF-STRAND SF)	3 lbs./CUBIC YARD (MIN.)
MAXIMUM SHRINKAGE	≤ 0.04% @ 28 DAYS

- H. EXTERIOR CONCRETE: CONCRETE SHALL BE DESIGNED TO MEET 4000 PSI COMPRESSIVE STRENGTH @ 28 DAYS AND EXHIBIT ≤0.04% SHRINKAGE @ 28 DAYS. THE MIX SHALL CONTAIN APPROXIMATELY 12 CUBIC FEET OF #57 AGGREGATE (1" TOP SIZE), THE SPECIFIED WATER REDUCING ADMIXTURE AND ACHIEVE A MAXIMUM WATER / CEMENT OF 0.45. AIR-ENTRAINMENT SHALL BE AS SPECIFIED. PROPOSED MIX DESIGN SHALL BE SIMILAR TO THE FOLLOWING PROTOTYPE MIX:

EXTERIOR SIDE YARD PROTOTYPE MIX:	
MATERIALS	PROTOTYPE MIX
CEMENT	517-564 lbs.
FLY ASH/SLAG	PROHIBITED, EXCEPT IN AREAS OF KNOWN ALKALI SILICA REACTIVITY
COARSE AGGREGATE	12 CUBIC FEET +/- .50 (#57 STONE)
FINE AGGREGATE	7 CUBIC FEET +/- (ADJUST AS NECESSARY)
WATER CONTENT	250 - 300 lbs.
AIR CONTENT (ENTRAPPED AIR ONLY)	6.0%(MAX.)
WATER REDUCER (TYPE A/F)	3oz.-10oz./100wt +/- (MID-RANGE)
WATER/CEMENT RATIO	0.45 (MAX.)
INITIAL SLUMP (WATER)	3"
FINAL SLUMP (WITH WATER REDUCER)	5.5" (MAX.)
MACRO SYNTHETIC FIBER (TUF-STRAND SF)	5 lbs./CUBIC YARD (MIN.)
MAXIMUM SHRINKAGE	≤ 0.04% @ 28 DAYS

- PART 3 - EXECUTION**
INSTALLATION (GENERAL)
- FORMWORK: DESIGN, CONSTRUCT, ERECT, SHORE, BRACE, AND MAINTAIN FORMWORK ACCORDING TO ACI 301.
 - FORM WORK: FORM ALL SLABS, STAIRS AND OTHER FORMED CONCRETE WITH METAL FORMS OR ¾" PLYWOOD. FOR EXPOSED SURFACES USE FORMS WITH AN UNDAMAGED FACEL.
 - VAPOR RETARDER: ASTM E 1643 (IF INDICATED ON DRAWINGS): INSTALL, PROTECT, AND REPAIR VAPOR-RETARDER SHEETS; PLACE SHEETS IN POSITION WITH LONGEST DIMENSION PARALLEL WITH DIRECTION OF POUR.
 - PLASTIC VAPOR RETARDER FOR CONCRETE FLOOR SLAB SHALL BE 10-MIL (MINIMUM) POLYETHYLENE. SEAL VAPOR RETARDER COMPLETELY AROUND ALL PIPES AND CONDUITS. INSPECT VAPOR RETARDER THOROUGHLY AND REPAIR ALL PUNCTURES AND TEARS IMMEDIATELY PRIOR TO PLACING CONCRETE. ALL LAPS SHALL BE 18" MINIMUM, AND SEALED WITH A COMPLETELY CONTINUOUS PRESSURE SENSITIVE TAPE

- CONCRETE PLACEMENT
- CARBON MONOXIDE / CARBON DIOXIDE EXPOSURE: IF THE BUILDING IS ENCLOSED/SALES FLOOR SLAB IS PLACED LAST, GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING SALES FLOOR EXPOSURE TO EXCESSIVE EXHAUST GASES CONTAINING CARBON DIOXIDE (CO₂) OR CARBON MONOXIDE (CO). TO MINIMIZE POTENTIAL DAMAGE TO INTERIOR CONCRETE FLOOR DURING SLAB PLACEMENT AND CURING PERIODS, MAXIMUM CO₂ LEVELS SHALL BE 4,500 PARTS PER MILLION AND MAXIMUM CO LEVELS SHALL BE 15 PARTS PER MILLION AT CONCRETE SURFACE WITHIN 5 FEET OF ANY SOURCE OF EXHAUST GASES. UNVENTED COMBUSTION HEATERS SHALL NOT BE IN OPERATION DURING CONCRETE PLACEMENT, AND EQUIPMENT INSIDE THE BUILDING DURING CONCRETE PLACEMENT SHALL BE LIMITED TO THE EQUIPMENT NECESSARY TO PLACE AND FINISH CONCRETE. ONLY ONE CONCRETE TRUCK SHALL BE IN THE BUILDING AT ANY GIVEN TIME, AND UNDER NO CIRCUMSTANCE SHALL THERE BE ANY EARTH MOVING EQUIPMENT, DUMP TRUCKS, GRADING EQUIPMENT, OR ANY OTHER MOTORIZED EQUIPMENT IN OPERATION UNTIL AFTER THE INTERIOR CONCRETE FLOOR IS PLACED AND PROTECTED BY SPECIFIED CURING METHOD. CARBON MONOXIDE AND CARBON DIOXIDE SHALL BE CHECKED USING AN APPROPRIATE METER FROM A COMPANY SIMILAR TO THE FOLLOWING: CEA INSTRUMENTS, INC., 16 CHESTNUT STREET, EMERSON, NJ 07630; PHONE (201-967-5660); WEBSITE: WWW.CEAINSTR.COM.
 - COMPLY WITH REQUIREMENTS IN ACI 301 FOR MEASURING, MIXING, TRANSPORTING, AND PLACING CONCRETE.
 - INSTALL CRUSHED STONE BASE TO THE MINIMUM COMPACTED THICKNESS AS INDICATED ON THE CONSTRUCTION DOCUMENTS. CRUSHED STONE SHALL BE COMPACTED TO 98% STANDARD PROCTOR DENSITY IN ACCORDANCE WITH ASTM D 1557. THE IN-PLACE DENSITY SHALL BE TESTED FOR COMPLIANCE NO MORE THAN 48 HOURS PRIOR TO CONCRETE PLACEMENT USING ASTM D 1556, ASTM D 2167, OR ASTM D 2922. ONE COPY OF TEST RESULTS SHALL BE FORWARDED TO THE OWNER.
 - COOPERATE WITH ALL OTHER TRADES. CONFER WITH ELECTRICAL, MECHANICAL, PLUMBING, CARPENTERS, STEEL WORKERS, ETC. MAKE SURE THAT ALL SLEEVES, ANCHOR, INSERT, CONDUIT, FLOOR BOXES, PIPES, FITTINGS, AND OTHER ITEMS ARE INSTALLED BEFORE PLACING CONCRETE. MAKE PROVISIONS FOR DOOR SADDLES, AND THRESHOLDS.
 - THE GENERAL CONTRACTOR SHALL ENSURE THE ACCURACY, PLACEMENT AND ALIGNMENT OF ALL UNDER-SLAB WORK. THE PLACEMENT OF ALL BOXES SHALL BE SQUARE, LEVEL AND TRUE IN ALL RESPECTS.
 - CONCRETE SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM C 94.
 - COMPLY WITH ACI 305, "HOT WEATHER CONCRETE" AND ACI 306, "COLD WEATHER CONCRETE" FOR PROTECTION DURING PLACING, FINISHING AND CURING.
 - FORM-RELEASE AGENT: COAT ALL REMOVABLE WOOD AND METAL FORMING WITH A VOC COMPLIANT, LIGHT VISCOSITY NON-STAINING, CONCRETE FORM-RELEASE AGENT. ALLOW EXCESS LIQUID TO DRAIN OFF BEFORE FORMS ARE PLACED.
 - TRANSPORT: PLACE AT POINT OF USE AND CONSOLIDATE WITH A CONCRETE VIBRATOR. DO NOT ALLOW CONCRETE TO SEGREGATE. MAXIMUM FREE FALL FOR CONCRETE IS 3 FEET. A VIBRATOR IS REQUIRED FOR PLACEMENT OF CONCRETE IN WALLS, PIERS, FOOTINGS AND TURNDOVNS.
 - CONCRETE PLACEMENT: PLACE ON FIRM, UNDISTURBED EARTH OR PROPERLY COMPACTED FILL. CONSOLIDATE BY VIBRATING, WITHOUT SEGREGATION. DO NOT PLACE CONCRETE WHEN TEMPERATURE IS 40°F AND FALLING OR WHEN FREEZING WEATHER IS PREDICTED WITHIN 24 HOURS.
 - PLACE CONCRETE WITHIN THE MINIMUM TEMPERATURE RANGE AS SPECIFIED IN ACI 301.
 - PROTECT CONCRETE AS REQUIRED IN ACI 301
 - CONCRETE SHALL NOT CONTAIN TYPE III, HIGH EARLY STRENGTH CEMENT, CALCIUM CHLORIDE, CORROSIVE ACCELERATORS OR ANTIFREEZE.
 - CONCRETE SHALL BE PLACED BEFORE INITIAL SET HAS OCCURRED AND IN NO EVENT AFTER IT HAS CONTAINED ITS WATER CONTENT FOR MORE THAN 1½ HOURS.
 - UNLESS OTHERWISE SPECIFIED, ALL CONCRETE SHALL BE PLACED UPON CLEAN, DAMP, SMOOTH SURFACES THAT ARE FREE FROM RUNNING WATER. SUBGRADE AND BASE SHALL BE PROPERLY CONSOLIDATED AND RUT-FREE.
 - CONCRETE SHALL NOT BE PLACED UPON SOFT MUD OR DRY POROUS EARTH. THE CONCRETE SHALL BE CONSOLIDATED AND WORKED, IN AN APPROVED MANNER, INTO ALL CORNERS AND ANGLES OF THE FORMS AND AROUND REINFORCEMENT AND EMBEDDED FIXTURES IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE COARSE AGGREGATE AS REQUIRED IN ACI 301.
 - CAREFULLY PROTECT ALL MASONRY AND METAL BUILDING WALLS BY COVERING WITH WATERPROOF PAPER WHILE CONCRETE IS PLACED.

- FORMED SURFACE FINISHES
- ROUGH-FORMED FINISH: AS-CAST CONCRETE TEXTURE IMPARTED BY FORM-FACING MATERIAL WITH THE HOLES AND DEFECTIVE AREAS REPAIRED AND PATCHED, AND FINS AND OTHER PROJECTIONS EXCEEDING ¼" IN HEIGHT SHALL BE RUBBED DOWN OR CHIPPED OFF.
 - APPLY TO CONCRETE SURFACES NOT EXPOSED TO PUBLIC VIEW.
 - SMOOTH-FORMED FINISH: AS-CAST CONCRETE TEXTURE IMPARTED BY FORM-FACING MATERIAL, ARRANGED IN AN ORDERLY AND SYMMETRICAL MANNER WITH A MINIMUM OF SEAMS. REPAIR AND PATCH THE HOLES AND DEFECTIVE AREAS. COMPLETELY REMOVE FINS AND OTHER PROJECTIONS. ALL EXPOSED CONCRETE WALLS ARE TO BE GROUDED AND HAND RUBBED.
 - APPLY TO CONCRETE SURFACES EXPOSED TO PUBLIC VIEW OR TO BE COVERED WITH A COATING OR COVERING MATERIAL APPLIED DIRECTLY TO CONCRETE, SUCH AS WATERPROOFING, DAMP-PROOFING, VENEER PLASTER, OR PAINTING.
 - DO NOT APPLY RUBBED FINISH TO SMOOTH-FORMED FINISH.
 - APPLY SMOOTH-RUBBED FINISH, DEFINED IN ACI 301, TO SMOOTH-FORMED FINISHED CONCRETE.
 - TEXTURED UNFORMED SURFACES: AT TOPS OF WALLS, HORIZONTAL OFFSETS, AND SIMILAR UNFORMED SURFACES ADJACENT TO FORMED SURFACES, STRIKE OFF SMOOTH AND FINISH WITH A TEXTURE MATCHING ADJACENT FORMED SURFACES. CONTINUE FINAL SURFACE TREATMENT OF FORMED SURFACES UNIFORMLY ACROSS ADJACENT UNFORMED SURFACES, UNLESS OTHERWISE INDICATED.

- CONCRETE FINISHES AND TOLERANCES
- GENERAL: UNLESS OTHERWISE NOTED BY OWNER, CONCRETE SALES FLOOR SLAB SHALL BE CAST IN ONE CONTINUOUS PLACEMENT. CONCRETE SHALL BE PLACED, SCREEDED, RE-STRAIGHTENED, AND FINISHED AS NECESSARY TO MEET THE F₁ AND F₂ TOLERANCE REQUIREMENTS. INTERIOR MACHINE TROWEL FINISH SHALL BE ACHIEVED WITHIN A 2"-3" TOLERANCE OF ALL WALLS, COLUMNS AND PARTITIONS. DO NOT WET CONCRETE SURFACES WHILE FINISHING CONCRETE.
 - LASER SCREEDS (REQUIRED), VIBRATORY SCREEDS, HIGHWAY STRAIGHTEDGES AND WOOD OR RESINOUS BULL FLOATS SHALL BE USED TO INITIATE SCREEDING AND FLOATING PROCESS TO FORM A UNIFORM AND OPEN-TEXTURED SURFACE PLANE BEFORE EXCESS MOISTURE OR BLEED WATER APPEARS ON THE SURFACE. A BACK-UP LASER SCREED IS REQUIRED DURING CONCRETE PLACEMENT OF THE INTERIOR SALES FLOOR SLAB. REMOVE EXCESS WATER BEFORE STARTING FLOATING OPERATIONS. DO NOT FURTHER DISTURB SURFACES BEFORE STARTING FINISHING OPERATIONS.
 - HIGHWAY STRAIGHTEDGE OPERATIONS SHALL CONTINUE BEFORE, DURING AND AFTER TROWELING OPERATION, UNTIL THE MINIMUM SPECIFIED FLOOR TOLERANCES ARE ACHIEVED.
 - TROWEL FINISH WITH TROWEL MACHINE EQUIPPED WITH ADJUSTABLE BLADES. TROWEL THE SURFACE SUFFICIENTLY TO PRODUCE A SMOOTH, TIGHT, ABRASION RESISTANT SURFACE. CARE SHALL BE TAKEN NOT TO OVERWORK OR BURN THE SURFACE. USE 6" WIDE FINISH STYLE STEEL-REINFORCED BLADES ON FINAL PASSES. FINISHING BLADES SHALL BE IN NEW CONDITION AND COMPLETELY CLEAN OF ANY DELETERIOUS MATERIALS.
 - PROTECTION: CARE SHALL BE TAKEN TO PROTECT THE INTERIOR SALES FLOOR. ENTRANCES SHALL INCLUDE CLEAN FLOOR MATS TO PREVENT MUD STAINS AND ALL EQUIPMENT ON THE FLOOR SHALL BE DIAPERED TO PREVENT SPILLS. CUTTING OILS ARE NOT ALLOWED ON THE SALES FLOOR SLAB AT ANY TIME DURING THE CONSTRUCTION PROCESS.
 - TROWEL FINISH (OTHER THAN SALES FLOOR): APPLY A HARD TROWEL FINISH TO SURFACES INDICATED AND TO FLOOR AND SLAB SURFACES EXPOSED TO VIEW OR TO BE COVERED WITH RESILIENT FLOORING, CARPET, CERAMIC OR QUARRY TILE SET OVER A CLEAVAGE MEMBRANE, PAINT, OR ANOTHER THIN FILM-FINISH COATING SYSTEM.
 - HEAVY BROOM FINISH: SIDE YARD, MAIN ENTRY, EXIT VESTIBULES, CART STORAGE, RAMPS, APRONS AND WALKS SHALL RECEIVE A HEAVY BROOM FINISH.

- B. TOLERANCES: ACI 117, "SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION & MATERIALS." THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH FLOOR TOLERANCE TESTING. A COPY OF THE FINAL FLOOR TOLERANCE REPORT SHALL BE PROVIDED BY THE GENERAL CONTRACTOR TO OWNER WITHIN 24 HOURS OF RECEIVING THE REPORT FROM THE TESTING LABORATORY.
- ALL PERIMETER AREAS AND EDGES OF THE INTERIOR SALES FLOOR SHALL EXHIBIT THE SAME FINAL FINISH.

LOCATION	F ₁ TOLERANCE	F ₂ TOLERANCE	NOTES
INTERIOR SALES FLOOR	50	35	ACI 302: TYPE 5, SINGLE COURSE, HARD STEEL TROWEL FINISH
EXTERIOR CONCRETE	20	17	FLOATED AND/OR BROOMED SURFACE

- CAST-IN-PLACE CONCRETE JOINTS
- GENERAL: JOINTS SHALL BE CUT AS INDICATED ON DRAWINGS, AND AS SOON AS THE SLAB WILL SUPPORT THE WEIGHT OF THE SAW AND OPERATOR AND WHEN CUTTING ACTION WILL NOT TEAR, ABRASE OR OTHERWISE DAMAGE THE CONCRETE SURFACE. CUTS MUST BE MADE BEFORE CONCRETE DEVELOPS RANDOM CONTRACTION CRACKS. EMPLOY SUFFICIENT NUMBER OF SAWS AND WORKERS TO COMPLETE CUTTING OF SAW JOINTS WITHIN 2 HOURS AFTER FINAL FINISH OF INTERIOR FLOOR SLAB. AFTER SAW CUTTING, IMMEDIATELY VACUUM UP AND REMOVE ALL RESIDUES COMPLETELY.
 - CONSTRUCTION JOINTS:
 - CONSTRUCTION JOINTS SHALL BE TRUE TO LINE WITH FACES PERPENDICULAR TO SURFACE PLANE OF CONCRETE (REFER TO DRAWINGS), SO AS NOT TO IMPAIR STRENGTH OR APPEARANCE OF CONCRETE
 - CONSTRUCTION JOINTS IN SLAB ON GRADE SHALL BE BUTT JOINTS WITH SQUARE PLATE DOWELS. DO NOT USE METAL KEYWAYS.
 - ISOLATION JOINTS: INSTALL JOINT-FILLER STRIPS AT JUNCTIONS WITH SLABS-ON-GRADE AND VERTICAL SURFACES, SUCH AS COLUMN PEDESTALS, FOUNDATION WALLS, GRADE BEAMS, AND OTHER LOCATIONS, AS INDICATED.
 - EXTEND JOINT FILLERS FULL WIDTH AND DEPTH OF JOINT, TERMINATING FLUSH WITH FINISHED CONCRETE SURFACE, UNLESS OTHERWISE INDICATED.
 - CONTROL JOINTS: FORM WEAKENED-PLANE CONTROL JOINTS, SECTIONING CONCRETE INTO AREAS AS INDICATED:
 - ALL SAW CUTTING SHALL BE ACCOMPISHED WITH A "SOFF-CUT" SAW, BY HUSQVARNA CONSTRUCTION PRODUCTS (800-288-5040), EQUIPPED WITH A PATENTED COLOR-CODED, DIAMOND BLADE AND SKID PLATE IN NEW CONDITION. CONCRETE SUBCONTRACTOR MUST HAVE DOCUMENTED SUCCESSFUL EXPERIENCE IN THE USE OF THIS METHOD PRIOR TO THIS PROJECT. USING A 1/8" THICK BLADE, CUT A MINIMUM OF 1" DEEP FOR 4" THICK SLABS AND 1¼" DEEP FOR 5" THICK SLABS. WHITE CHALK LINES AND CONCRETE DUST SHALL BE REMOVED COMPLETELY AND IMMEDIATELY AFTER CUTTING OPERATION.
 - RANDOM DEPTH CHECKS SHALL BE PERFORMED BY AN INDEPENDENT TESTING COMPANY TO CONFIRM THAT THE SPECIFIED DEPTH OF CUT IS MADE. ANY CUT(S) FOUND TO BE LESS THAN PROPER DEPTH SHALL BE RE-CUT TO THE PROPER DEPTH AND FILLED WITH SPECIFIED JOINT FILLER AT THE GENERAL CONTRACTOR'S EXPENSE.

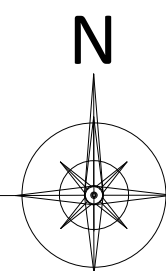
- INTERIOR SALES FLOOR PROTECTION AND CURING
- PROTECTION: PROTECT FRESHLY PLACED CONCRETE FROM PREMATURE DRYING AND EXCESSIVE COLD OR HOT TEMPERATURES. COMPLY WITH ACI 305 FOR HOT-WEATHER PROTECTION AND ACI 306 FOR COLD-WEATHER PROTECTION DURING PLACING AND CURING. FOR CONCRETE PLACEMENT DURING HOT, DRY AND WINDY CONDITIONS, GENERAL CONTRACTOR SHALL USE THE SPECIFIED EVAPORATION RETARDER AS PER MANUFACTURER INSTRUCTIONS TO MAINTAIN A MOIST CONDITION AND TO MINIMIZE PLASTIC DRYING SHRINKAGE CRACKING.
 - INTERIOR SALES FLOOR SLAB PROTECTION: TAKE THE FOLLOWING MEASURES TO PROTECT THE INTERIOR SALES FLOOR:
 - WRAP OR DIAPER ALL MOTORIZED AND HYDRAULIC EQUIPMENT TO PREVENT FLUID LEAKS
 - PROVIDE NON-MARKING TIRES ON RUBBER TIRED VEHICLES OR EQUIP RUBBER TIRES WITH TIRE BOOTS MADE OF NYLON FABRIC
 - PROVIDE MATS AT ALL ENTRANCES TO PREVENT MUD STAINS
 - INTERIOR CONCRETE CURING: THE INTERIOR SALES FLOOR SLAB SHALL BE CURED USING THE SPECIFIED DISSIPATING OR REMOVABLE LIQUID MEMBRANE-FORMING CURING COMPOUND. ALL APPLICATIONS SHALL BE MADE BY AN APPROVED APPLICATION OF THE MANUFACTURER IMMEDIATELY FOLLOWING FINAL FINISH. THE CONCRETE AND AIR TEMPERATURE SHALL BE ABOVE 50°F. SURFACE SHALL BE DAMP, BUT NOT WET AND CAN NO LONGER BE MARRED BY WALKING WORKMEN. APPLY "KUREZ DR VOX" OR "KUREZ DR 100" AT AN APPLICATION RATE OF 400SF/GALLON.
 - EXTERIOR CONCRETE CURING: ALL INTERIOR CONCRETE SLABS SHALL BE CURED USING THE SPECIFIED LIQUID MEMBRANE-FORMING CURING COMPOUND. APPLICATION SHALL BE MADE BY AN APPROVED APPLICATION OF THE MANUFACTURER IMMEDIATELY FOLLOWING FINAL FINISH. CONCRETE AND AIR TEMPERATURE SHALL BE ABOVE 50°F. SURFACE SHALL BE CLEAN AND DAMP, BUT NOT WET AND CAN NO LONGER BE MARRED BY WALKING WORKMEN. APPLY "SUPER DIAMOND CLEAR VOX" AT AN APPLICATION RATE OF 400SF/GALLON.


- INTERIOR CONCRETE JOINT FILLER
- 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 "FUTURE DATE."
 - JOINT FILLER INSTALLATION: COMPLY WITH ACI 302 AS APPLICABLE TO MATERIALS, APPLICATIONS, AND CONDITIONS.
 - SURFACE CLEANING OF JOINTS: CLEAN JOINTS IMMEDIATELY BEFORE INSTALLING JOINT FILLER. REMOVE FOREIGN MATERIAL THAT COULD INTERFERE WITH ADHESION 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
 - JOINT FILLER SEPARATION: THE APPROVED JOINT FILLING APPLICATION SHALL INCLUDE IN THEIR BID A COST PER LINEAL 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 ONE WEEK PRIOR TO GRAND OPENING, OR AT OWNER'S REQUEST.

- LIQUID DENSIFIER / SEALER AND POLISHING PROCESS
- 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 APPLICATION 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 EQUIPMENT, 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.
 - VERBIE PRESENCE OF CURING AND SEALING COMPOUND BY APPLYING WATER TEST TO THE SURFACE OF SLAB.
 - 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
 - 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.
 - 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 FROM MOCK-UP TEST SLAB.
 - OPERATE MACHINES AT 400 SQUARE FEET AN HOUR (MAX 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.
 - RESIN BOND DIAMOND TOOLING SHALL BE INCREASED AT SAME OUTPUT RATES AND HEAD SPEEDS UP TO 400 GRIT HONING.
 - FINAL POLISHING PROCESS:
 - CLEAN FLOOR AND MACHINE OF ACCUMULATED LAITANCE.
 - 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.
 - APPLY EUCO DIAMOND HARD LIGHTLY AT 700 SQUARE FEET PER GALLON JYI PRIOR TO BURNISHING.
 - CLEAN FLOOR AND BURNISH WITH 1500 GRIT DIAMOND PAD AT 500 SQUARE FEET PER HOUR WITH A 27" BURNISHER AT 2500 RPM.
 - POLISH RESULTS: PERFORM POLISHING PROCESS TO REACH A SPECIFIED OVERALL GLOSS VALUE (SGOV) OF ≥35 AS MEASURED WITH A HORIBA IG-320, AND A SPECIFIED MINIMUM GLOSS READING (SGMV) OF ≥30. THE APPROVED APPLICATION 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 UNIT.

- URETHANE EXPANSION JOINT SEALANT APPLICATION
- URETHANE JOINT SEALANT APPLICATION:
 - APPLY JOINT SEALANTS IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
 - BACK-UP MATERIAL:
 - INSTALL APPROPRIATE SIZE BACKER ROD, LARGER THAN THE JOINT WHERE NECESSARY PER MANUFACTURER'S RECOMMENDATIONS AND IN A MANNER TO PROVIDE CONCAVE SEALANT PROFILE.
 - WHERE JOINT DEPTH DOES NOT PERMIT INSTALLATION OF BACKER ROD, INSTALL ADHESIVE-BACKED POLYETHYLENE BOND-BREAKER TAPE ALONG THE ENTIRE BACK OF JOINT TO PREVENT 3-SIDED ADHESION OF JOINT SEALANT.
 - SEALANT: VERIFY THAT THE TEMPERATURE AND MOISTURE CONDITIONS ARE WITHIN MANUFACTURER'S ACCEPTABLE LIMITS. USING FRESH SEALANT AND EQUIPMENT THAT IS IN PROPER WORKING ORDER, COMPLETELY FILL JOINT WITH SEALANT, FILLING FROM BOTTOM UP TO AVOID ENTRAPPING AIR.
 - USING CLEAN, DRY TOOL WITH ROUNDED EDGE AND OF APPROPRIATE WIDTH FOR EACH JOINT, TOOL FRESHLY INSTALLED SEALANT TO PROVIDE PREFERRED CONCAVE PROFILE, TO ENSURE INTIMATE CONTACT BETWEEN SEALANT AND SUBSTRATE AND TO PROVIDE NEAT APPEARANCE. WHERE SURFACE AGGREGATE DOES NOT PERMIT PROPER TOOLING, INSTALL SEALANT AND BACKER ROD SO THAT FACE OF JOINT IS RECESSED BEHIND EXPOSED AGGREGATE AND SEALANT IS BONDED TO FIRM, EVEN SURFACE. USE DRY TOOLING METHOD. DO NOT USE TOOLING AGENTS SUCH AS SOAPY WATER OR TOOLING AGENTS THAT HAVE NOT BEEN APPROVED BY SEALANT MANUFACTURER.






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REVISIONS

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PARTIAL FLOOR & ROOF FRAMING PLAN

DATE	9/22/21
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JOB NO.	20420
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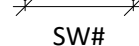
S1.0

SHEET NO.

FOOTING SCHEDULE			
TYPE	FOOTING SIZE	Bottom Reinforcing	Top Reinforcing
CF1	2'-0"xCont.x1'-0"	#5 @12" O.C. PARALLEL & #5 @ 12" O.C. PERPENDICULAR	N/A

HOLDOWN SCHEDULE - LIGHT GAUGE					
HOLD-DOWN	STUD MEMBER	STUD FASTENERS	ANCHOR DIA.	EMBED.	ANCHOR TYPE
S/HDU4	(2) 600S162-54	(6) #14	5/8"	7"	EPOXY ANCHOR

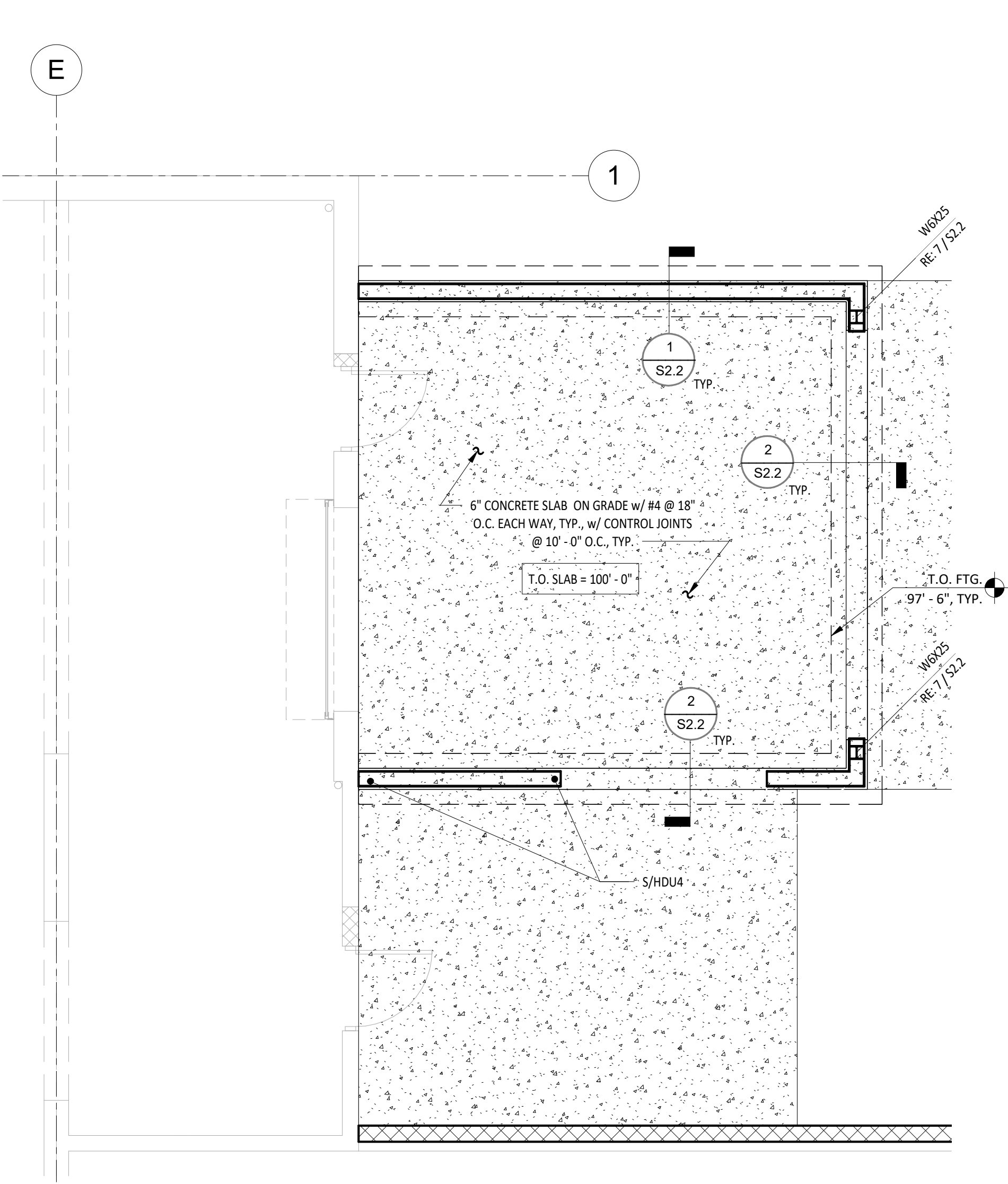
MARK	SHEATHING	FASTENER SIZE	EDGE NAILING "E.N."	SILL PLATE ANCHORAGE
SW1	EX. GRADE 5/8" APA RATED PLY	#8	6" BOTH EDGE & FIELD	5/8"x8" HEADED ANCHOR SPACING 48" O.C.

Shear Wall Notes:	
1.	SHADED WALLS DENOTE SHEARWALL LOCATIONS.
2.	#' - #' INDICATES SHEARWALL LENGTH & TYPE, RE:  SW#

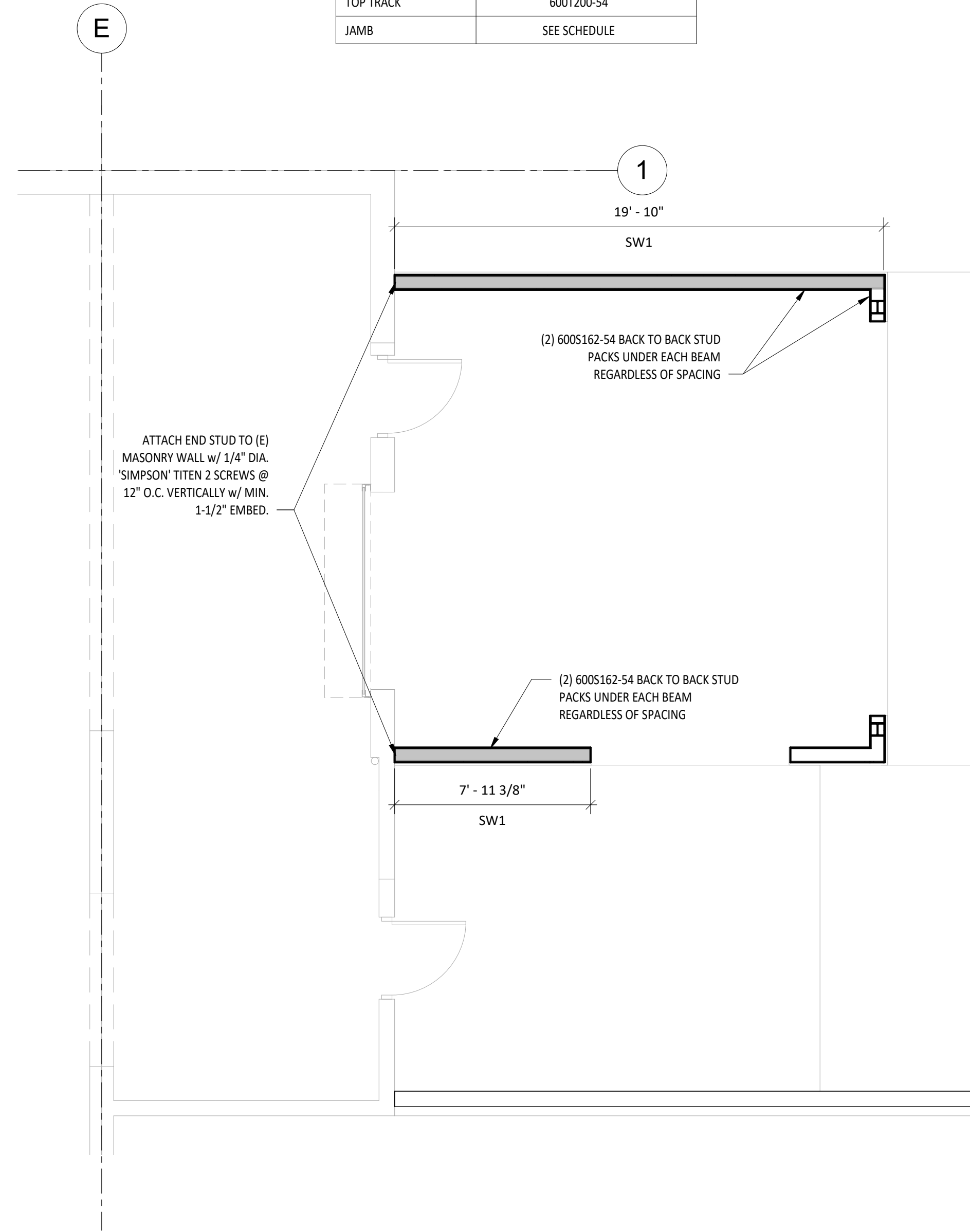
EXTERIOR LIGHT GUAGE SCHEDULE	
	6" WALL FRAMING
BOTTOM TRACK	600T200-54
WALL FRAMING	600S162-54 @ 16" O.C.
SILL	600T300-54
HEADER	SEE SCHEDULE
TOP TRACK	600T200-54
JAMB	SEE SCHEDULE

MARK	HEADER SIZE	POST
H1	(2) 600S162-54 BOXED w/ (2) 600T200-54 TOP & BOT.	BACK TO BACK 600S250-54
H2	W12X22	SEE PLANS
H3	(2) 600S162-54 BOXED w/ (2) 600T300-68 TOP & BOT.	BACK TO BACK 600S250-54

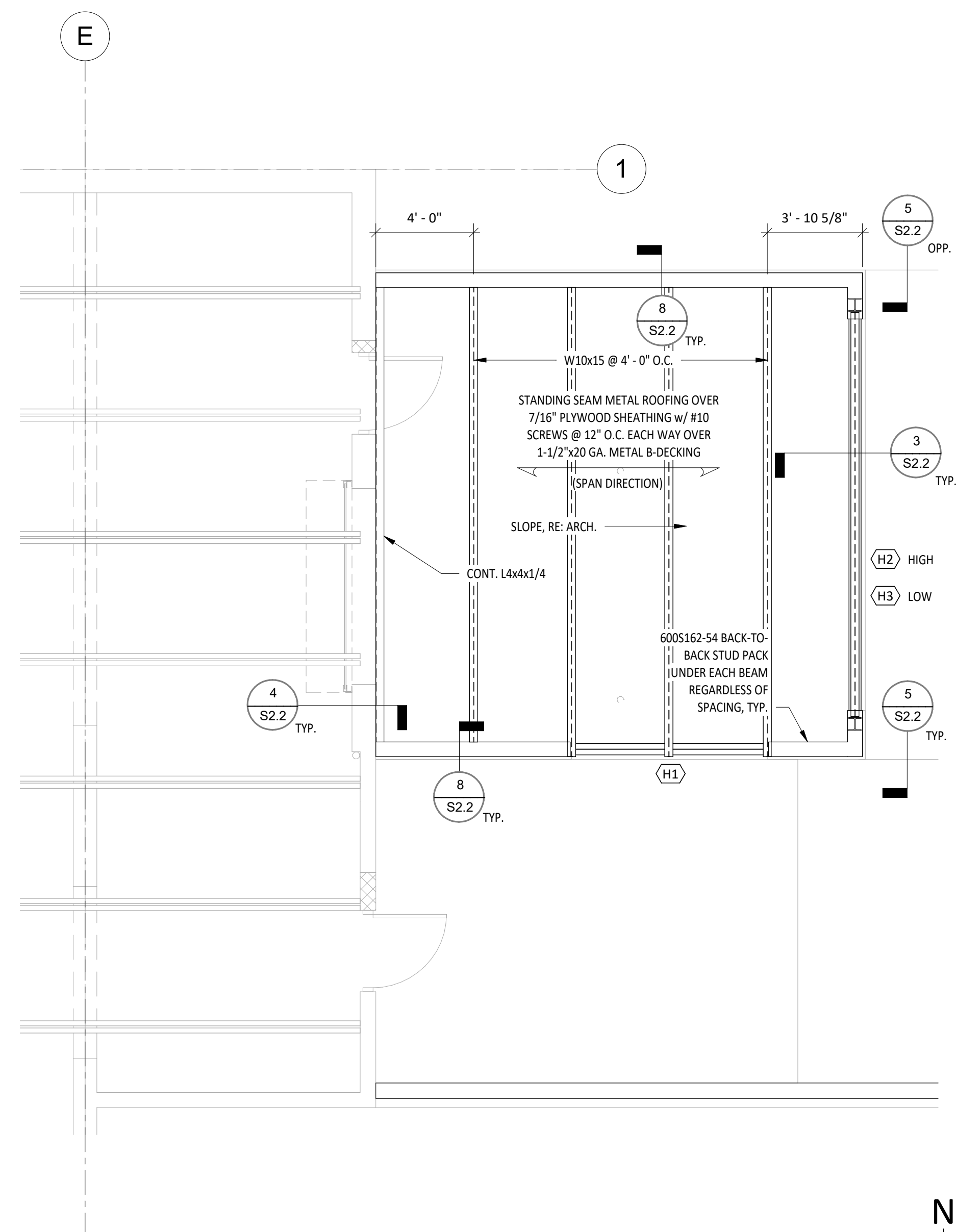
NOTE:
1. ALL HEADER'S NOT LABELED ON PLANS SHALL BE H3.
2. FOR HEADER CONNECTIONS, RE: 5 / S2.3



1 ENLARGED PARTIAL FOUNDATION PLAN
1/4" = 1'-0"



2 ENLARGED PARTIAL SHEAR WALL PLAN
1/4" = 1'-0"



3 ENLARGED PARTIAL ROOF FRAMING PLAN
1/4" = 1'-0"



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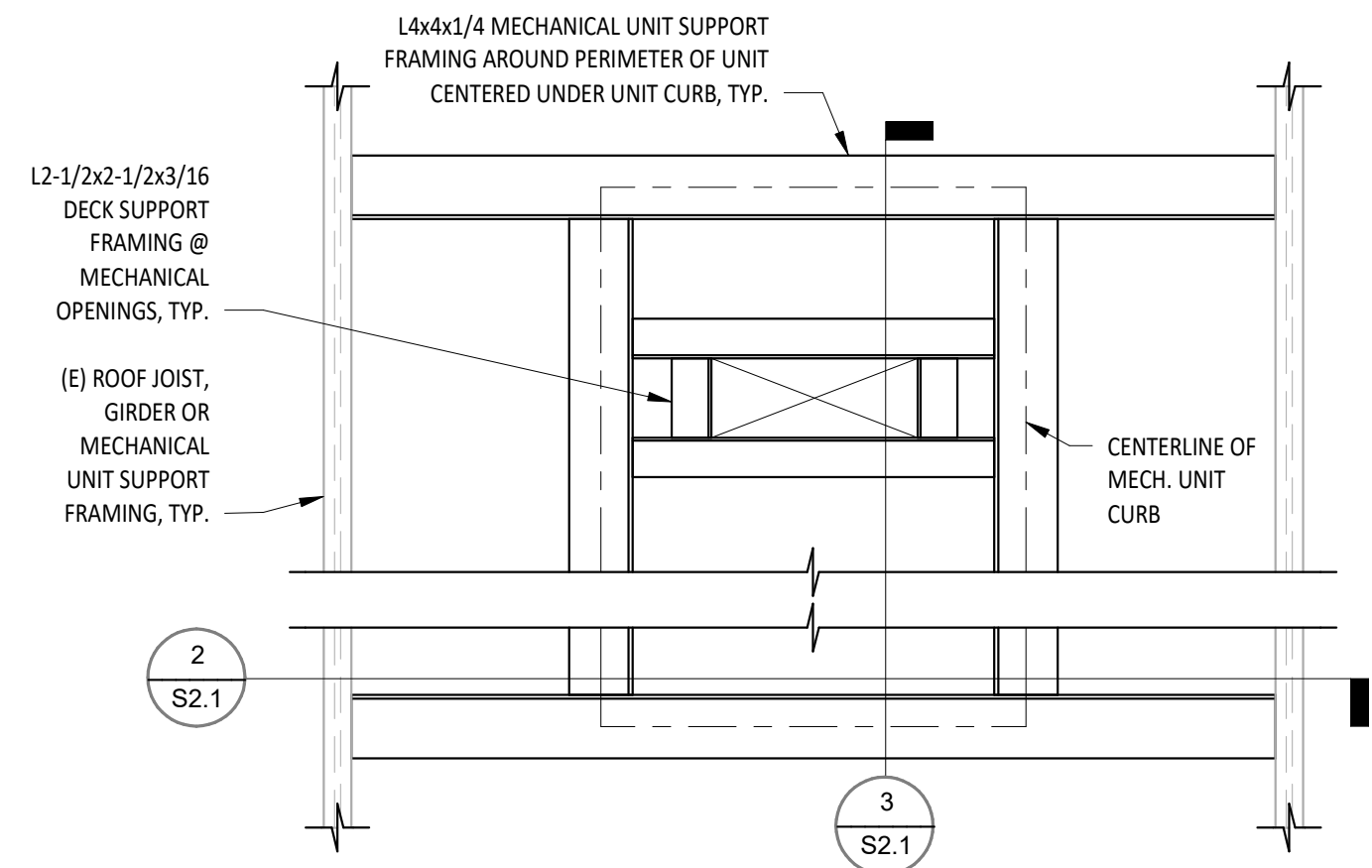
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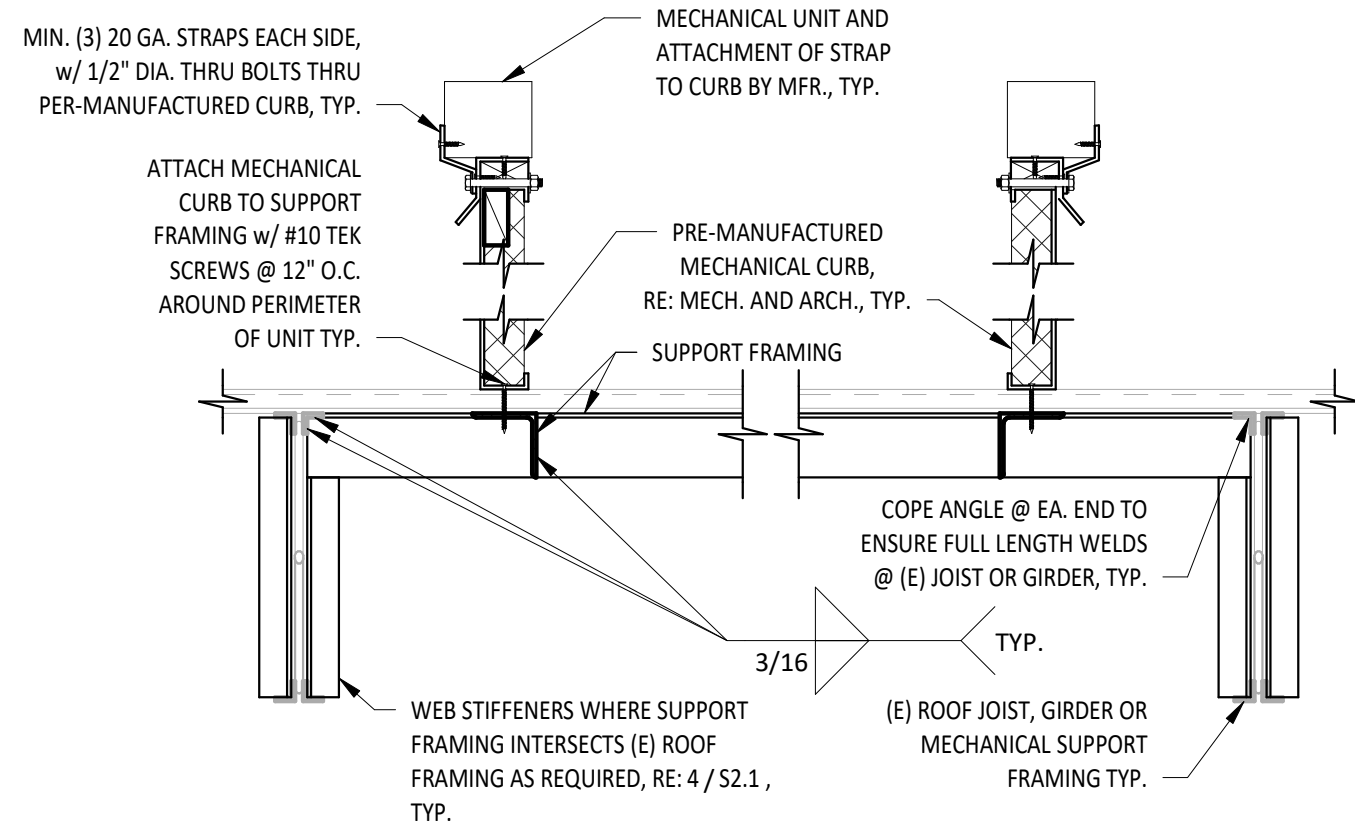
ENLARGED PLANS	
DATE	9/22/21
JOB NO.	20420
SHEET NO.	S1.1



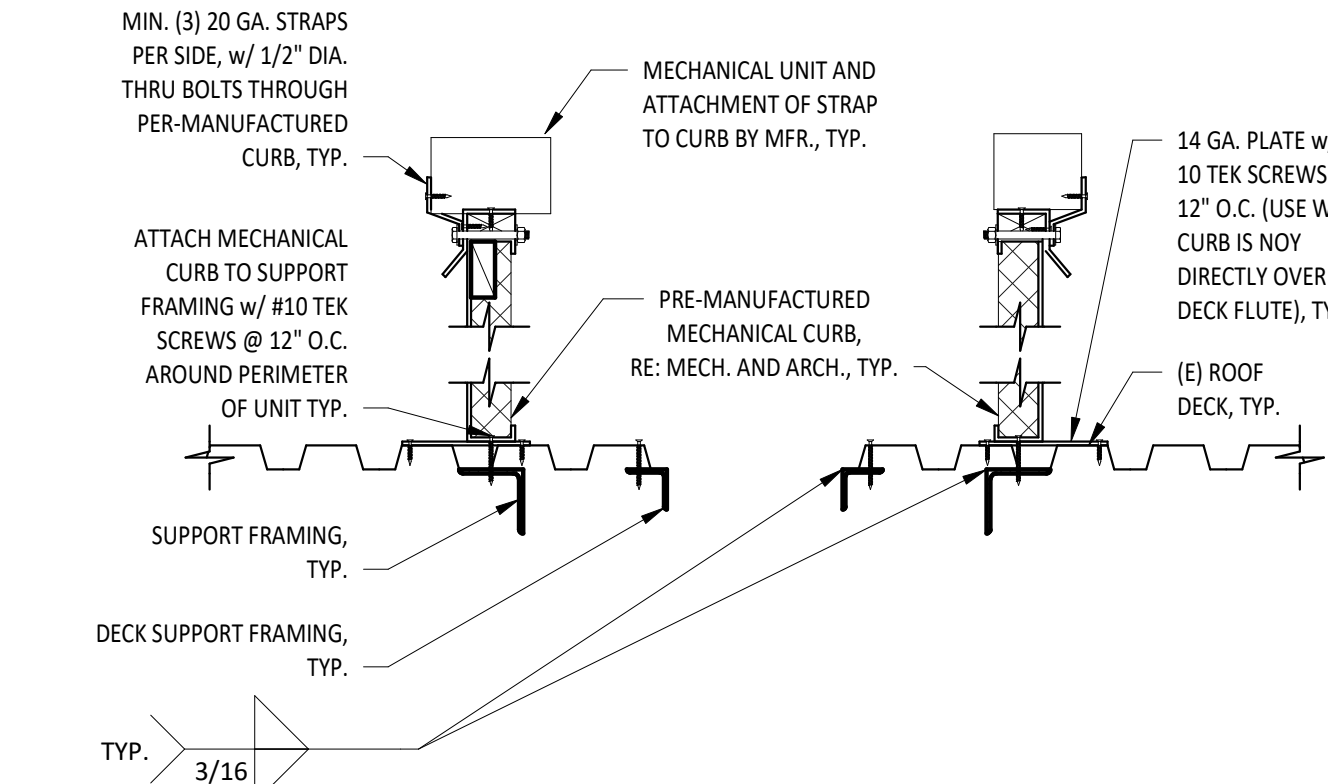
NOTE:

1. REFER TO MECHANICAL FOR EXACT LOCATION AND SIZE OF ROOF OPENINGS. PROVIDE DECK SUPPORT FRAMING FOR OPENINGS LARGER THAN 12" DIA. OR 12"x12" SQ. G.C. TO ENSURE THAT NO STRUCTURAL FRAMING MEMBERS ARE CUT OR DAMAGED WHEN OPENING IS CUT.
2. FASTEN DECK SUPPORT FRAMING TO (E) ROOF DECK AROUND MECHANICAL OPENING w/ #10 TEK SCREWS @ 6" O.C., USING NEOPRENE WASHERS.
3. REFER TO MECHANICAL FOR EXACT LOCATION OF MECHANICAL UNIT. PROVIDE MECHANICAL UNIT SUPPORT FRAMING UNDER ENTIRE CURB. ATTACH CURBING TO EXISTING FRAMING MEMBERS, IF DIRECTLY UNDER CURB, IN LIEU OF ANGLE SUPPORT FRAMING.

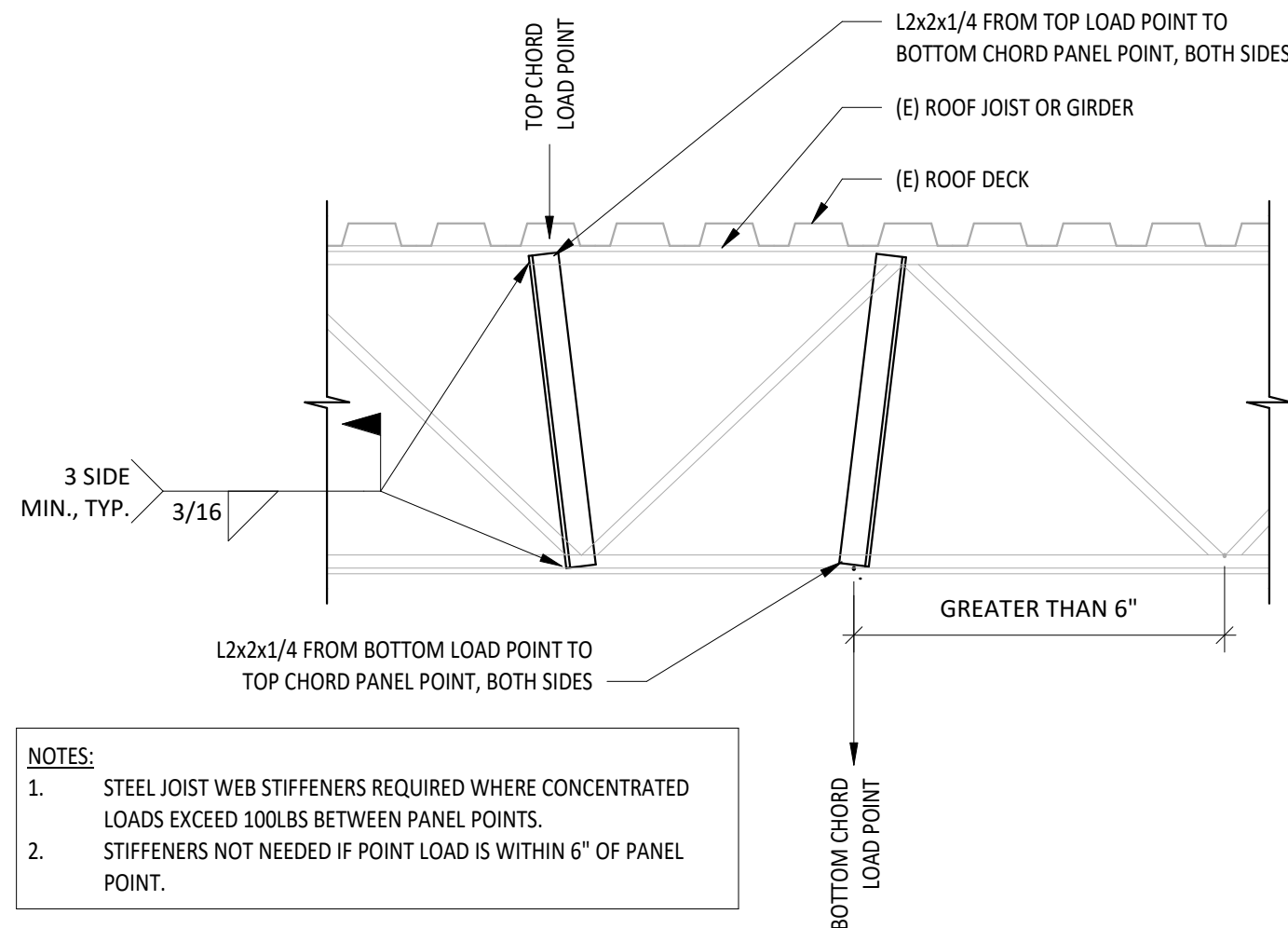
① MECHANICAL UNIT SUPPORT FRAMING
1" = 1'-0"



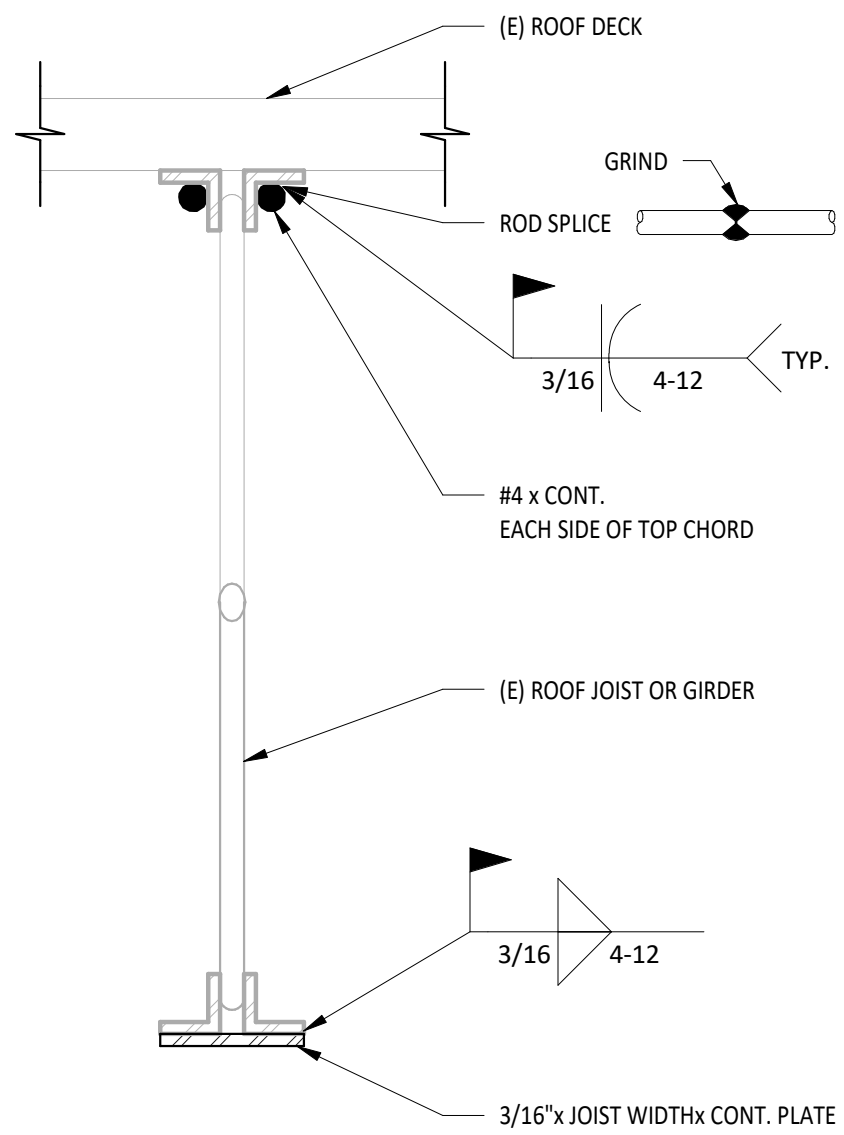
② MECHANICAL UNIT SUPPORT FRAMING SECTION
1" = 1'-0"



③ MECHANICAL UNIT SUPPORT FRAMING SECTION
1" = 1'-0"



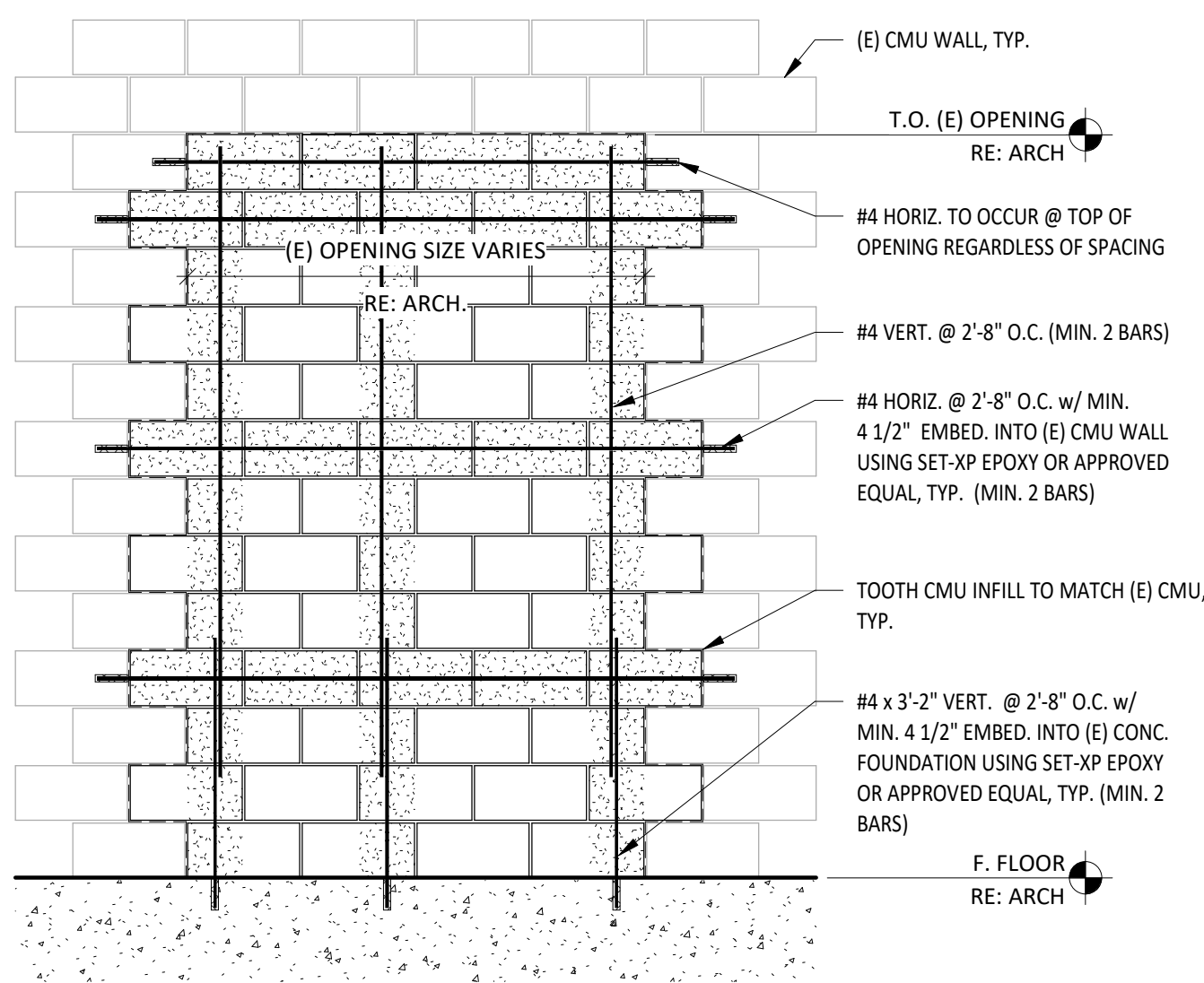
④ (E) STEEL TRUSS WEB STIFFENERS
1" = 1'-0"



NOTE:

1. REINFORCING TO OCCUR THE WHOLE LENGTH OF THE JOIST.
2. ROOF JOISTS NEED TO BE REINFORCED WHILE IN THE SHORED POSITION.
3. ROOF JOISTS TO BE REINFORCED BEFORE MECHANICAL UNIT LOADS ARE APPLIED AND WHILE EXISTING ROOF LIVE LOAD IS REMOVED.

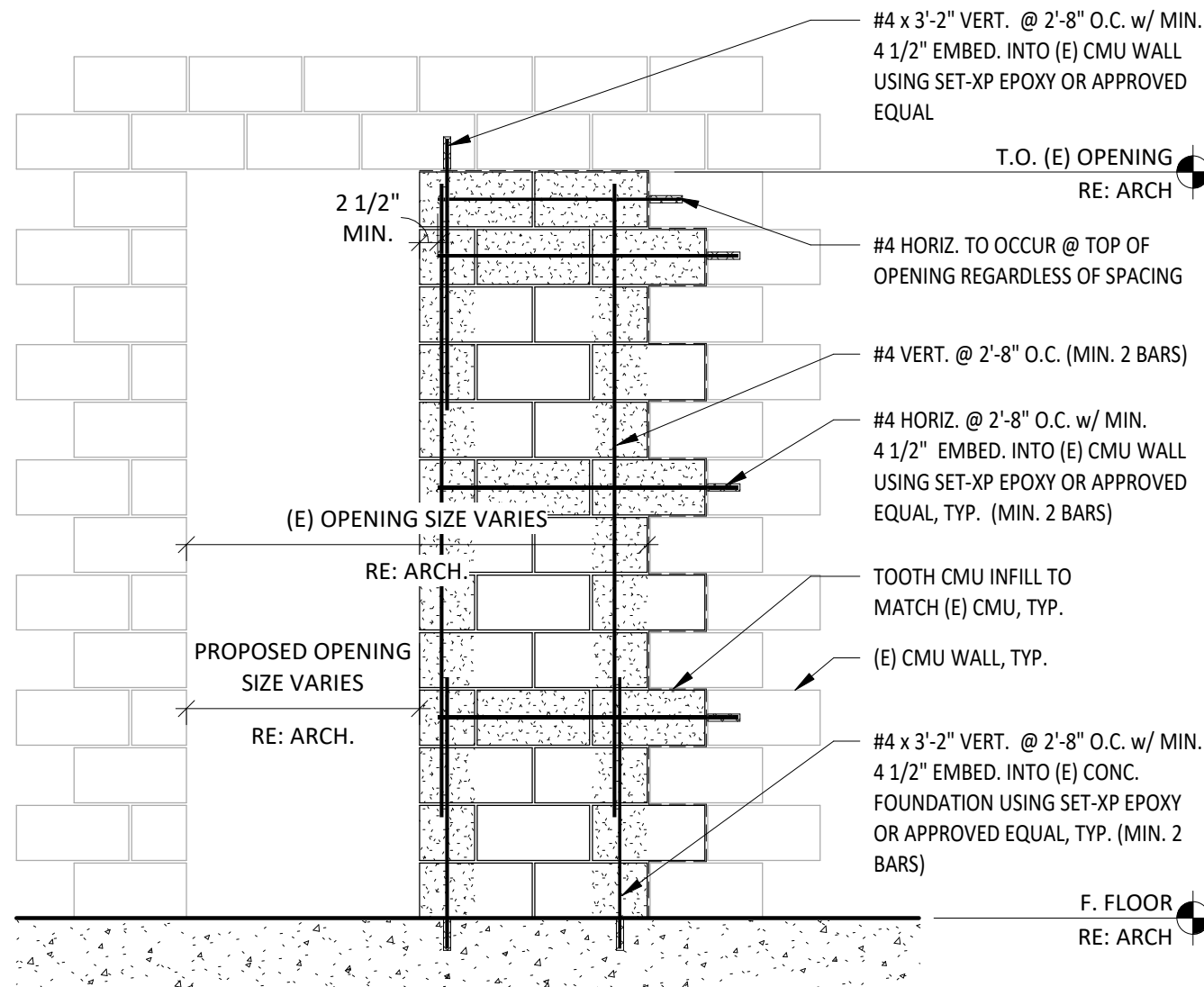
⑤ (E) STEEL TRUSS CHORD REINFORCING
3" = 1'-0"



NOTE:

1. MASONRY VENEER MAY OCCUR (BUT IS NOT SHOWN FOR CLARITY), RE: ARCH.
2. HORIZ. BARS SHOULD BE CENTERED IN CMU BLOCK.
3. APPROVED SCREEN TUBES MAY BE USED WHEN EPOXYING INTO HOLLOW CMU.

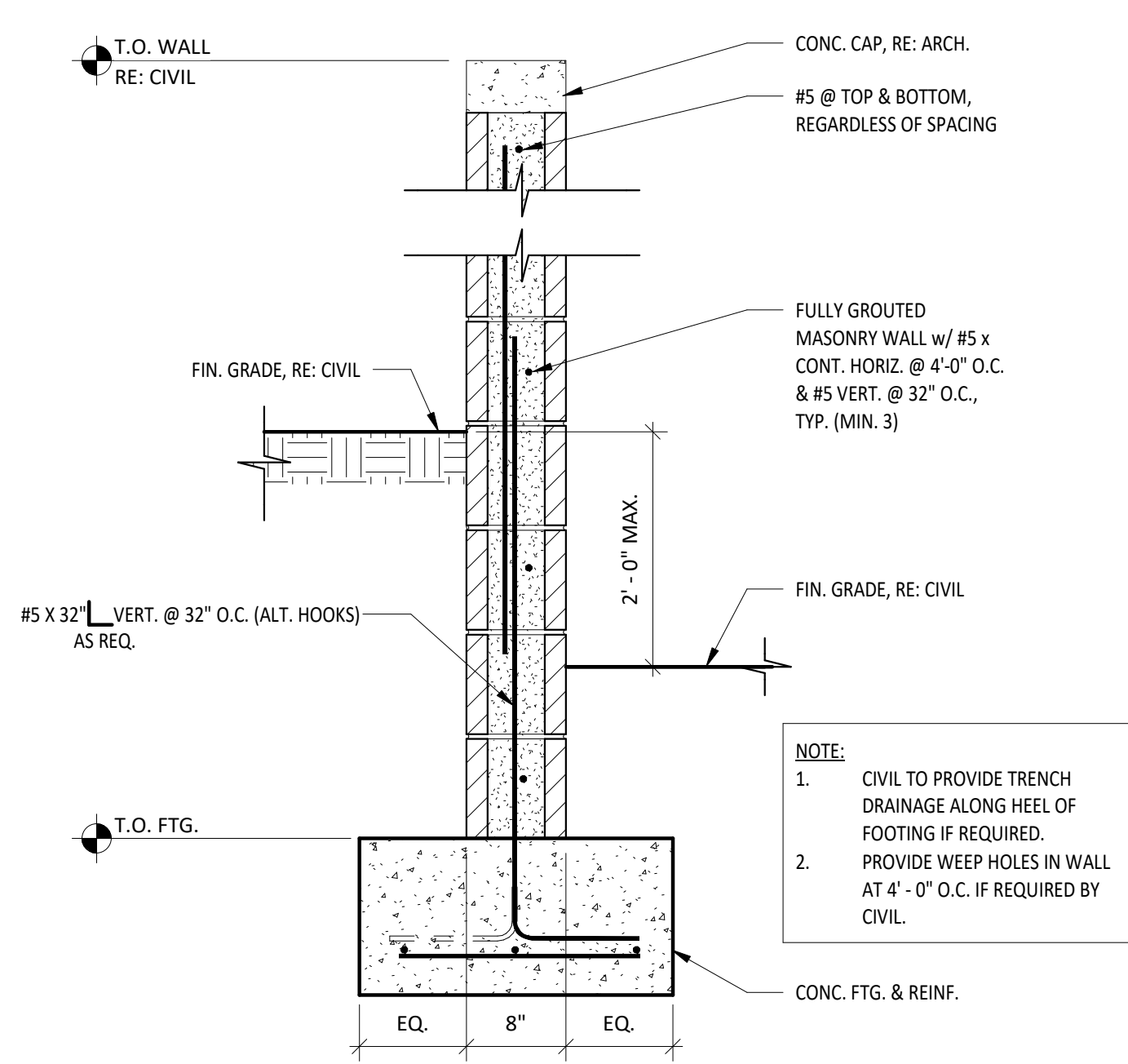
⑥ CMU INFILL AT (E) CMU WALL
1/2" = 1'-0"



NOTE:

1. MASONRY VENEER MAY OCCUR (BUT IS NOT SHOWN FOR CLARITY), RE: ARCH.
2. HORIZ. BARS SHOULD BE CENTERED IN CMU BLOCK.
3. APPROVED SCREEN TUBES MAY BE USED WHEN EPOXYING INTO HOLLOW CMU.

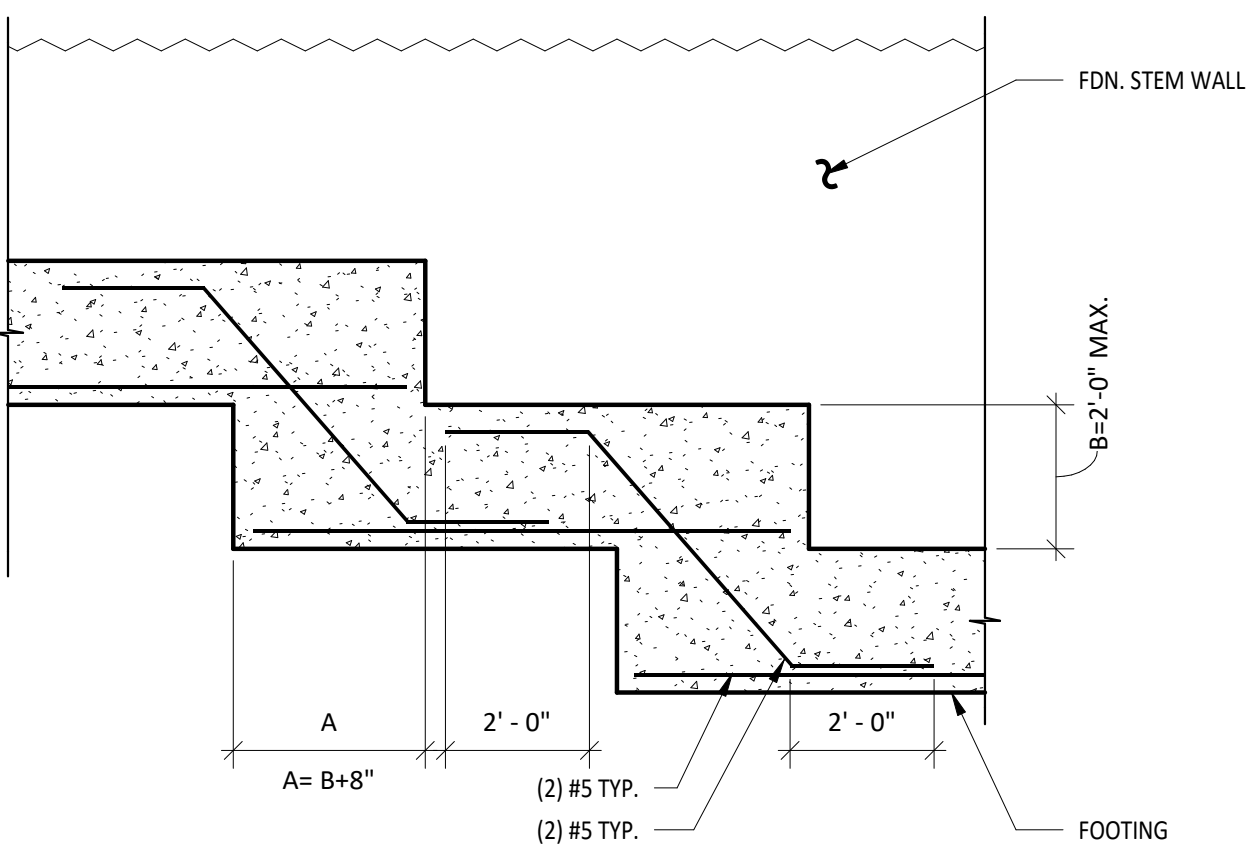
⑦ PARTIAL CMU INFILL AT (E) CMU WALL
1/2" = 1'-0"



NOTE:

1. CIVIL TO PROVIDE TRENCH DRAINAGE ALONG HEEL OF FOOTING IF REQUIRED.
2. PROVIDE WEEP HOLES IN WALL AT 4' - 0" O.C. IF REQUIRED BY CIVIL.

⑧ CMU RETAINING WALL
1" = 1'-0"



⑨ CONCRETE FOUNDATION WALL AT STEPPED FOOTING
3/8" = 1'-0"



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DATE 9/22/21

JOB NO. 20420

S2.1

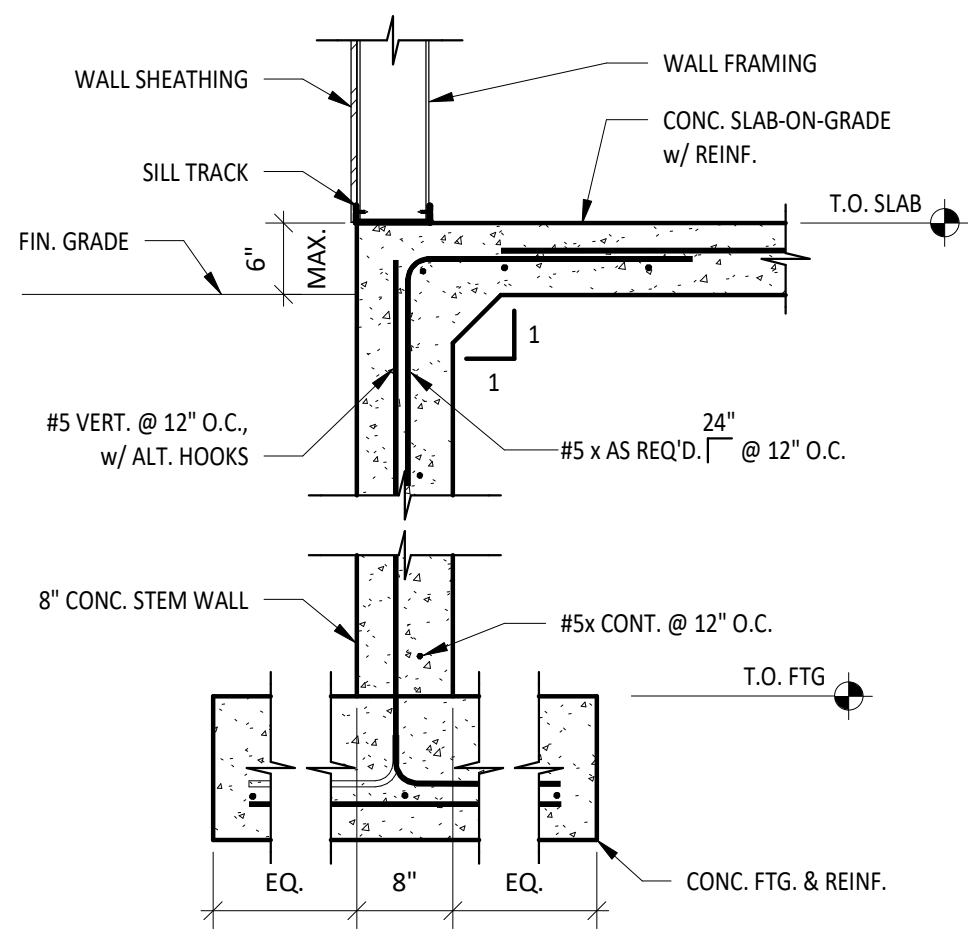
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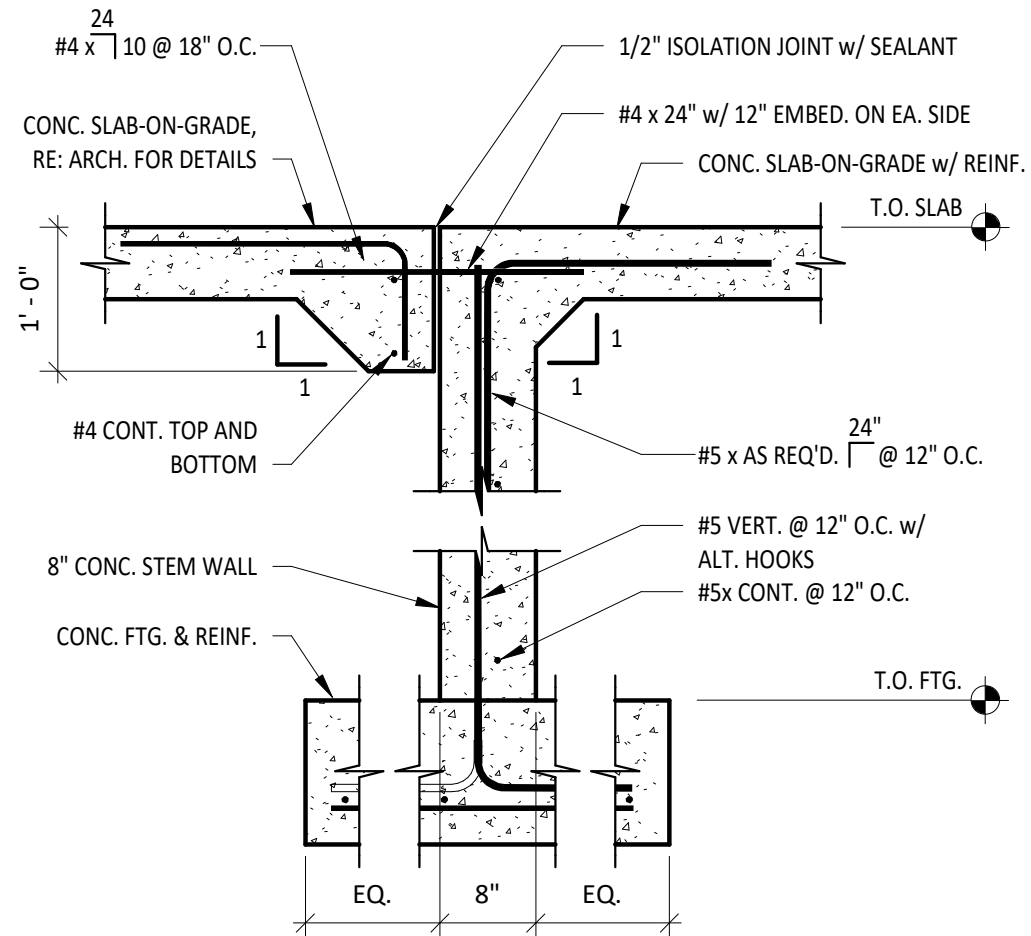
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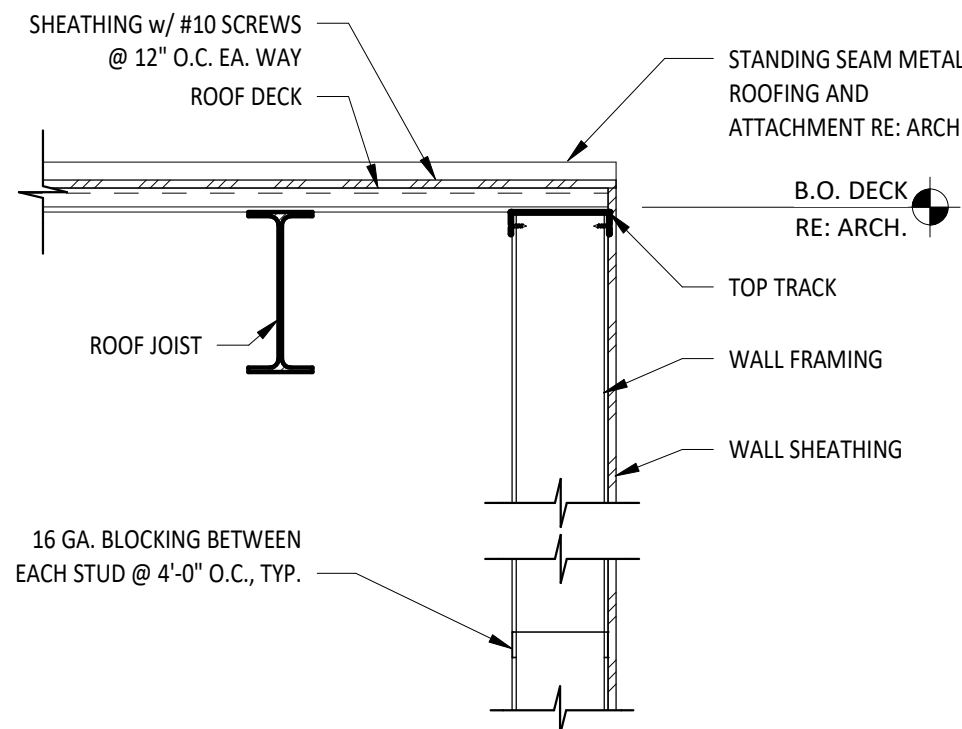
NOTE:
1. AT FTG. AND STEM WALL RETURNS, EPOXY CONT. BARSW INTO (E) FOUNDATION w/ A 4\"/>

1 EXTERIOR WALL FOOTING
3/4\"/>

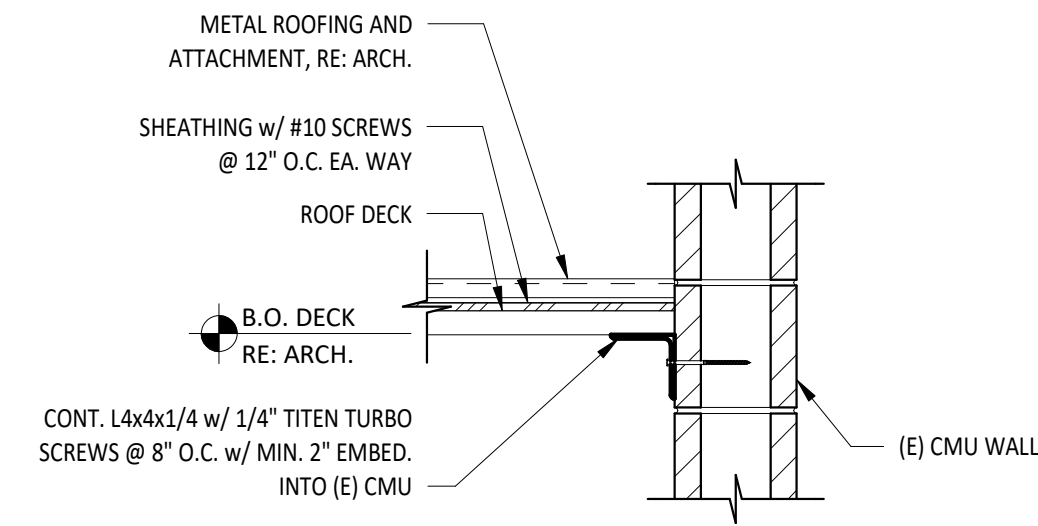


NOTE:
1. AT FTG. AND STEM WALL RETURNS, EPOXY CONT. BARSW INTO (E) FOUNDATION w/ A 4\"/>

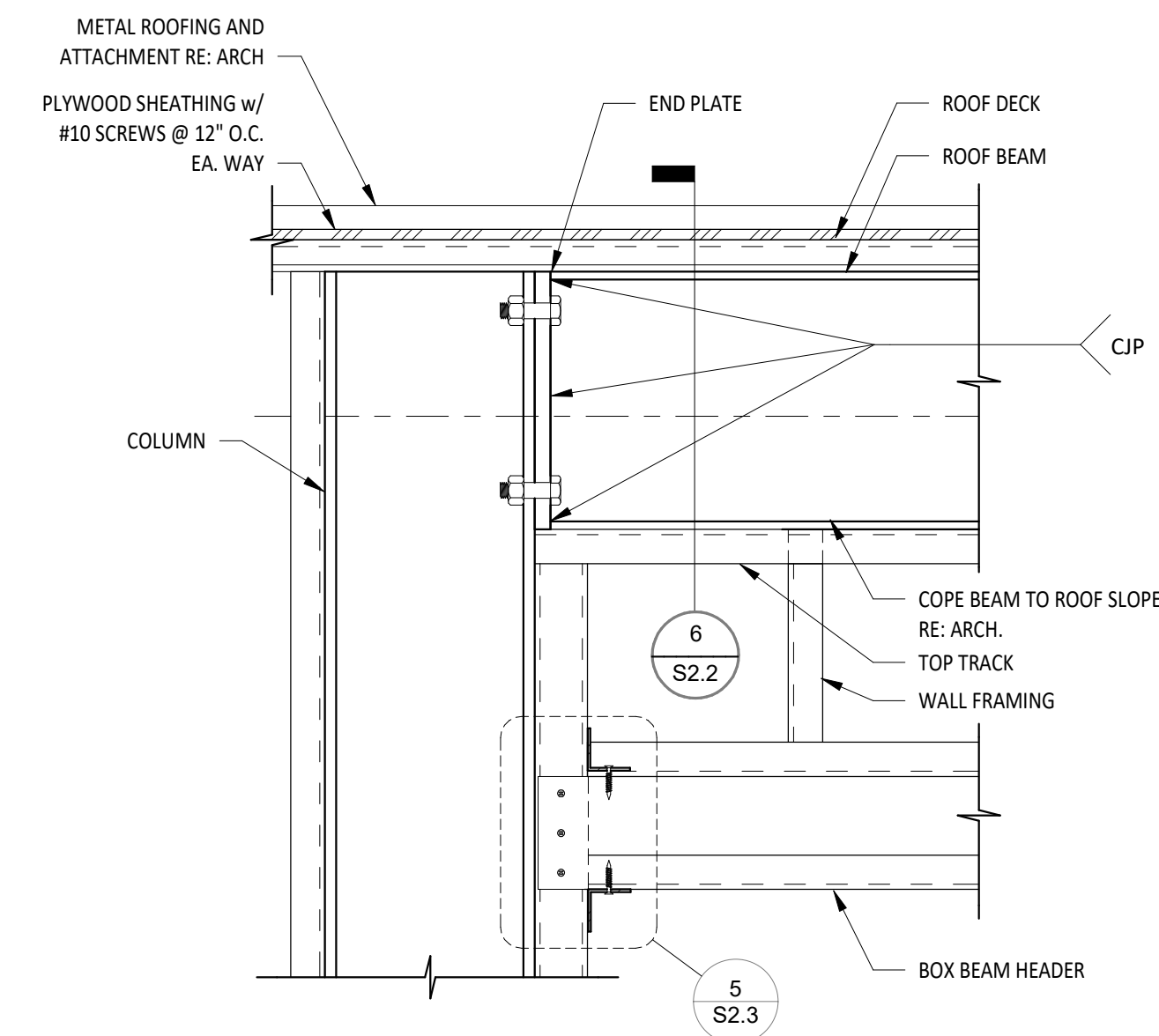
2 EXTERIOR WALL FOOTING @ ENTRY
3/4\"/>



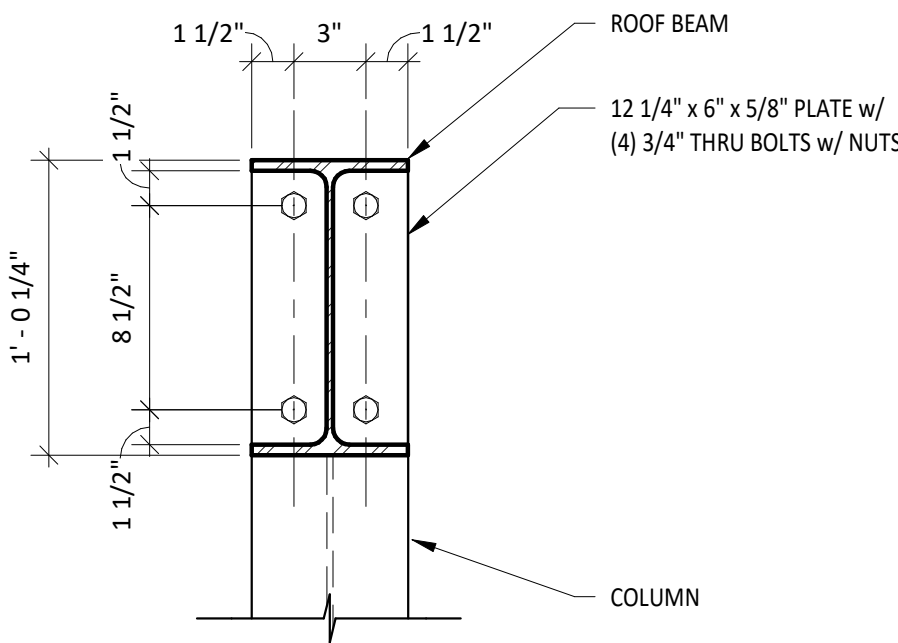
3 ROOF JOIST TO WALL - PARALLEL
1\"/>



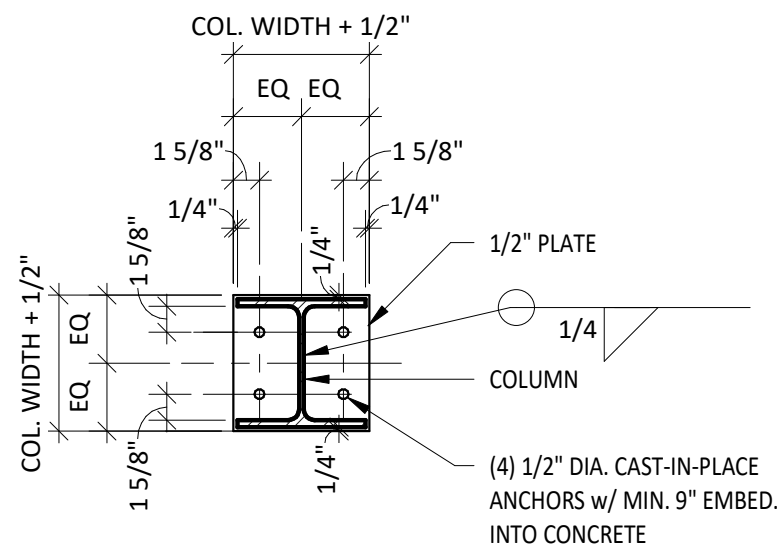
4 ANGLE LEDGER TO CMU
1\"/>



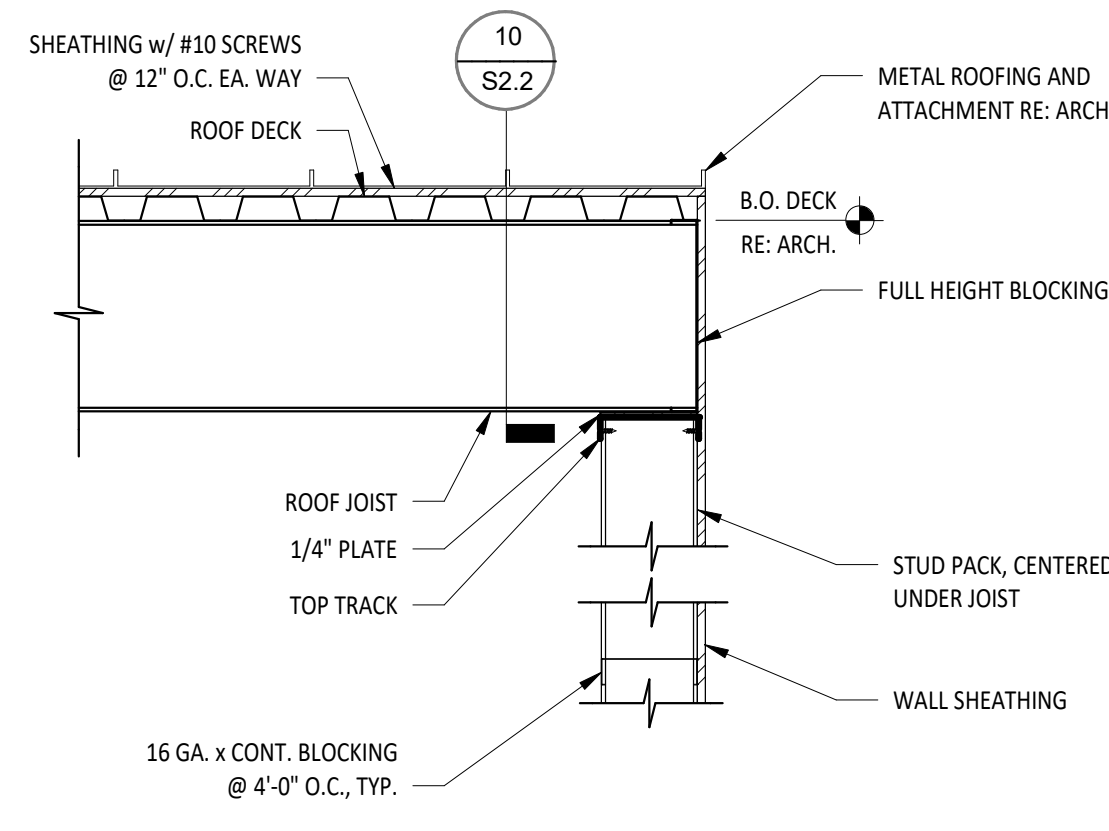
5 WIDE FLANGE MOMENT FRAME
1 1/2\"/>



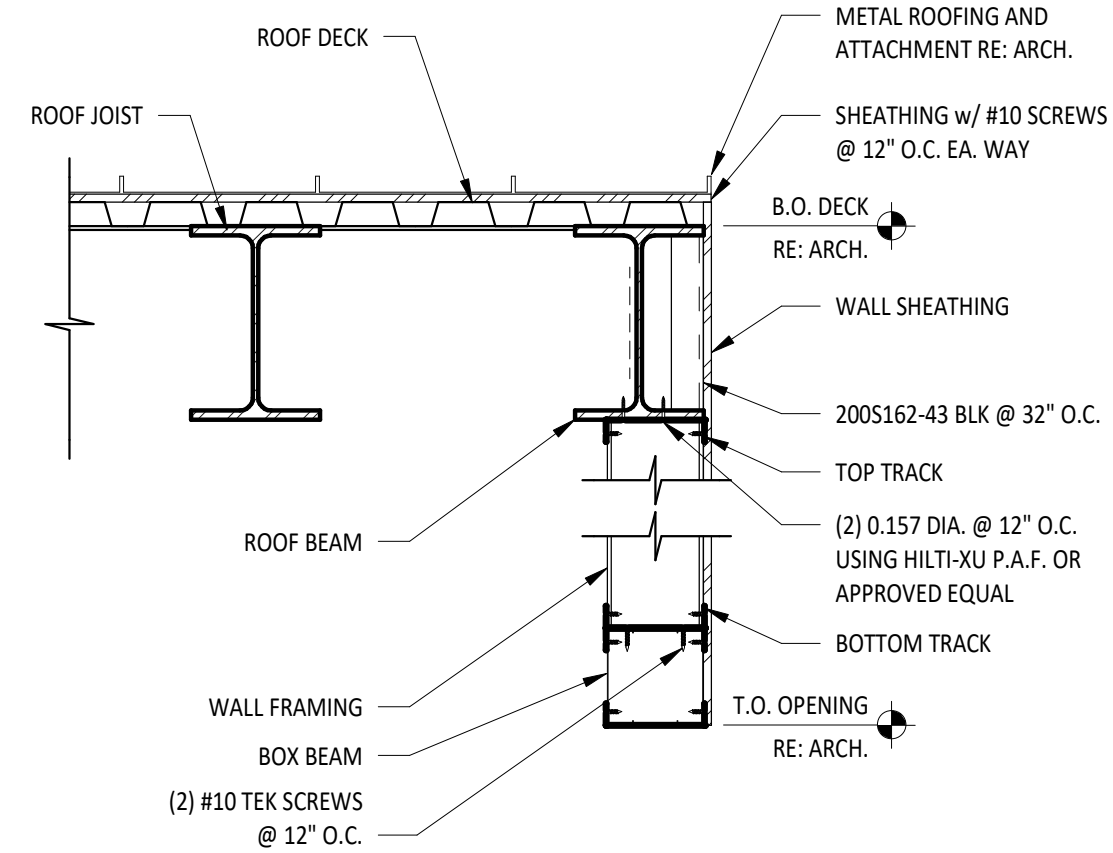
6 WIDE FLANGE BEAM END-PLATE BOLT HOLE LAYOUT
1 1/2\"/>



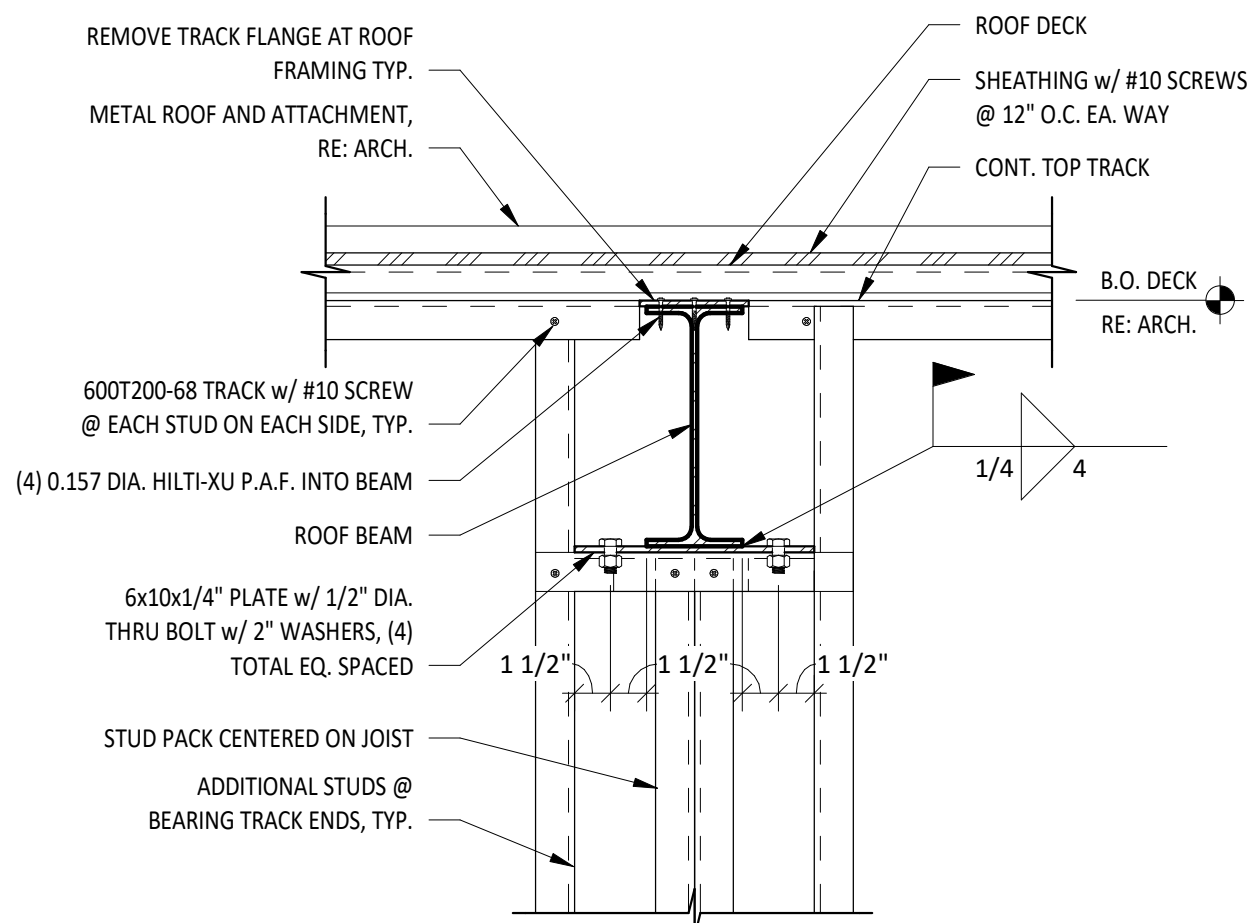
7 WIDE FLANGE COLUMN BASE PLATE
1\"/>



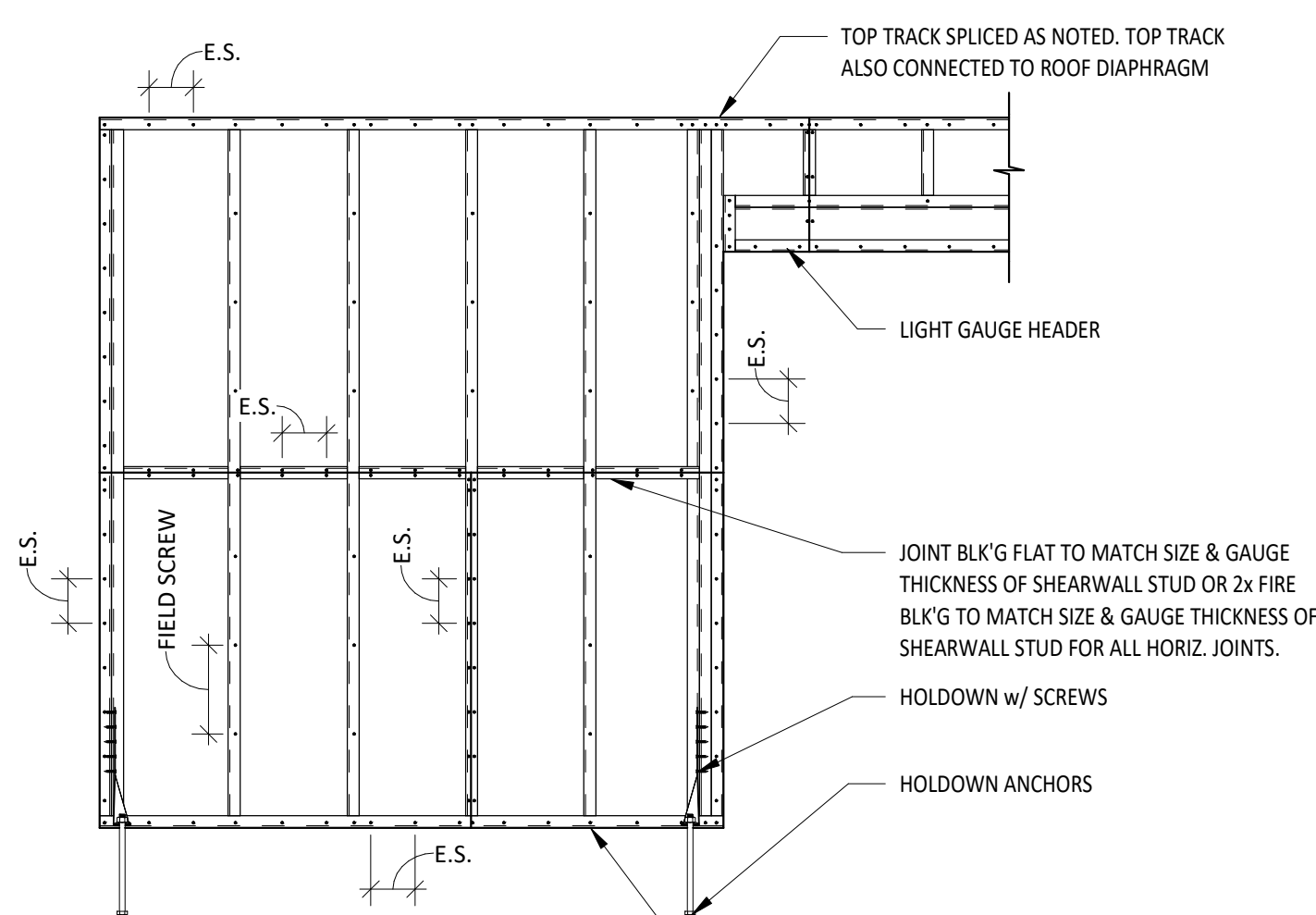
8 ROOF JOIST TO WALL - PERPENDICULAR
1\"/>



9 ROOF JOIST TO MOMENT FRAME BEAM
1\"/>



10 LIGHT GAUGE JOIST BEARING/STUD PACK ELEVATION
1 1/2\"/>



11 STRUCTURAL SHEARWALL SCHEDULE
1/2\"/>

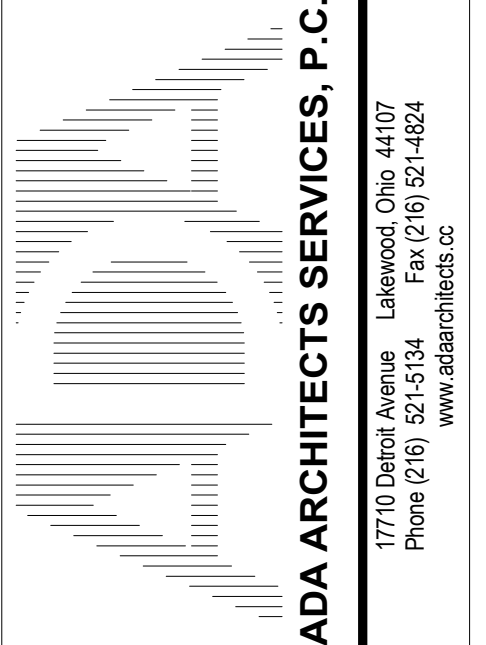
- NOTES:
- WHERE PLYWOOD PANELS ARE APPLIED ON BOTH FACES OF A WALL, PLYWOOD PANEL JOINS SHALL OCCUR AT FRAMING, INCLUDING BLOCKING, AND FASTENERS ON EA. SIDE OF THE EDGE SHALL BE STAGGERED.
 - THE MINIMUM EDGE DISTANCE FOR FASTENERS IN THE RECEIVING MEMBERS AND THE PLYWOOD SHALL BE 3/8\".
 - THE HOLDOWN ANCHOR IS IN ADDITION TO THE SILL ANCHOR BOLTS.
 - NO PANEL WIDTH LESS THAN 12\" SHALL BE USED.
 - PLYWOOD MAY BE INSTALLED VERT. OR HORIZ.
 - SHEAR WALLS MORE THAN ONE VERT. PANEL IN HEIGHT SHALL HAVE EITHER VERT. OR HORIZ. STAGGERED SPICED JOINTS AT CONT. HORIZ. JOINTS THE BLOCKING SHALL BE A MIN. THICKNESS OF 33 MIL. w/ A MIN. WIDTH OF 1 1/2\" AND SHALL BE EITHER INSTALLED ON TOP OF OR BELOW SHEATHING.
 - SHEARWALL SHEATHING AND FASTENERS PATTERN TO BE CONTINUOUS ABOVE AND BELOW OPENING.
 - GRADE EXPOSURE 1CDX (32/16).
 - ORIENTED STRAND BOARDS (OSB) OF THE SAME EQUIVALENCE MAY BE SUBSTITUTED.
 - END STUDS SHALL BE FULL HEIGHT.
 - WHERE STUD MUST BE CUT DUE TO THE PLACEMENT OF ANCHOR BOLTS OR OTHER PRODUCTS, AN ADDITIONAL STUD SHALL BE INSERTED ALONG SIDE.
 - ALL PANEL EDGES SHALL BE BLOCKED WITH A MIN. THICKNESS OF 33 MIL w/ A MIN. WIDTH OF 1 1/2\" AND SHALL BE EITHER INSTALLED ON TOP OF OR BELOW SHEATHING.
 - ALL SHEAR WALL SHEATHING SHALL BE 7/16\" THICK A.P.A. RATED SHEATHING, EXPOSURE 1.
 - SHEATHING SHALL BE APPLIED WITH EDGES 1/8\" APART AT SIDE JOINTS AND 1/8\" APART AT END JOINTS.
 - CONTRACTOR TO VERIFY THE SHEAR ANCHORS ARE A MINIMUM OF 5/8\" DIA. SPACED @ 48\" O.C. MAX. CONTACT E.O.R. IF ANCHORS DO NOT MEET THIS REQUIREMENT.
 - ALL SHEAR WALL PLYWOOD TO BE EXTERIOR GRADE.



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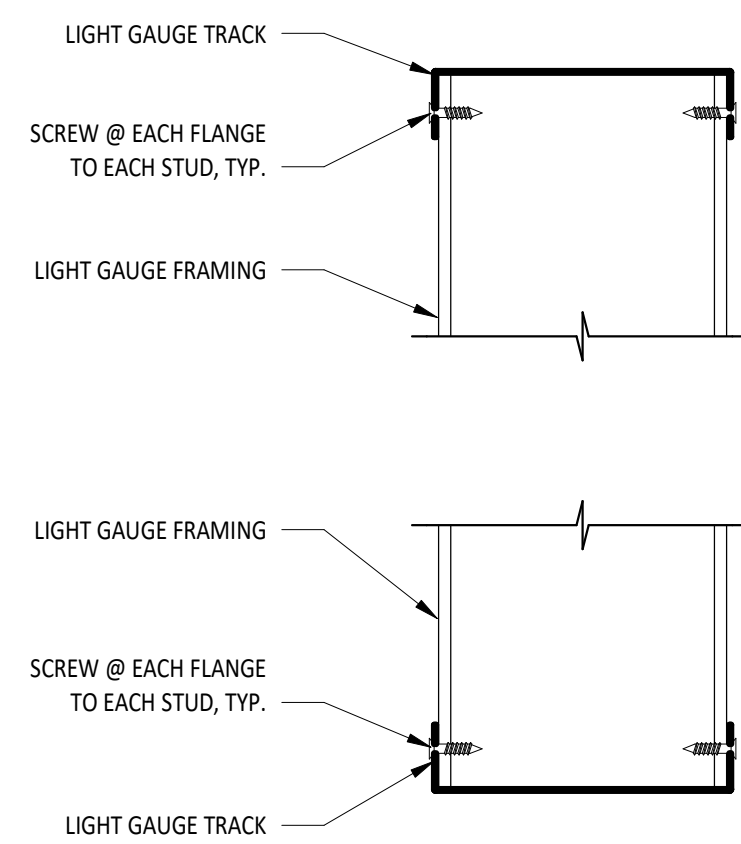
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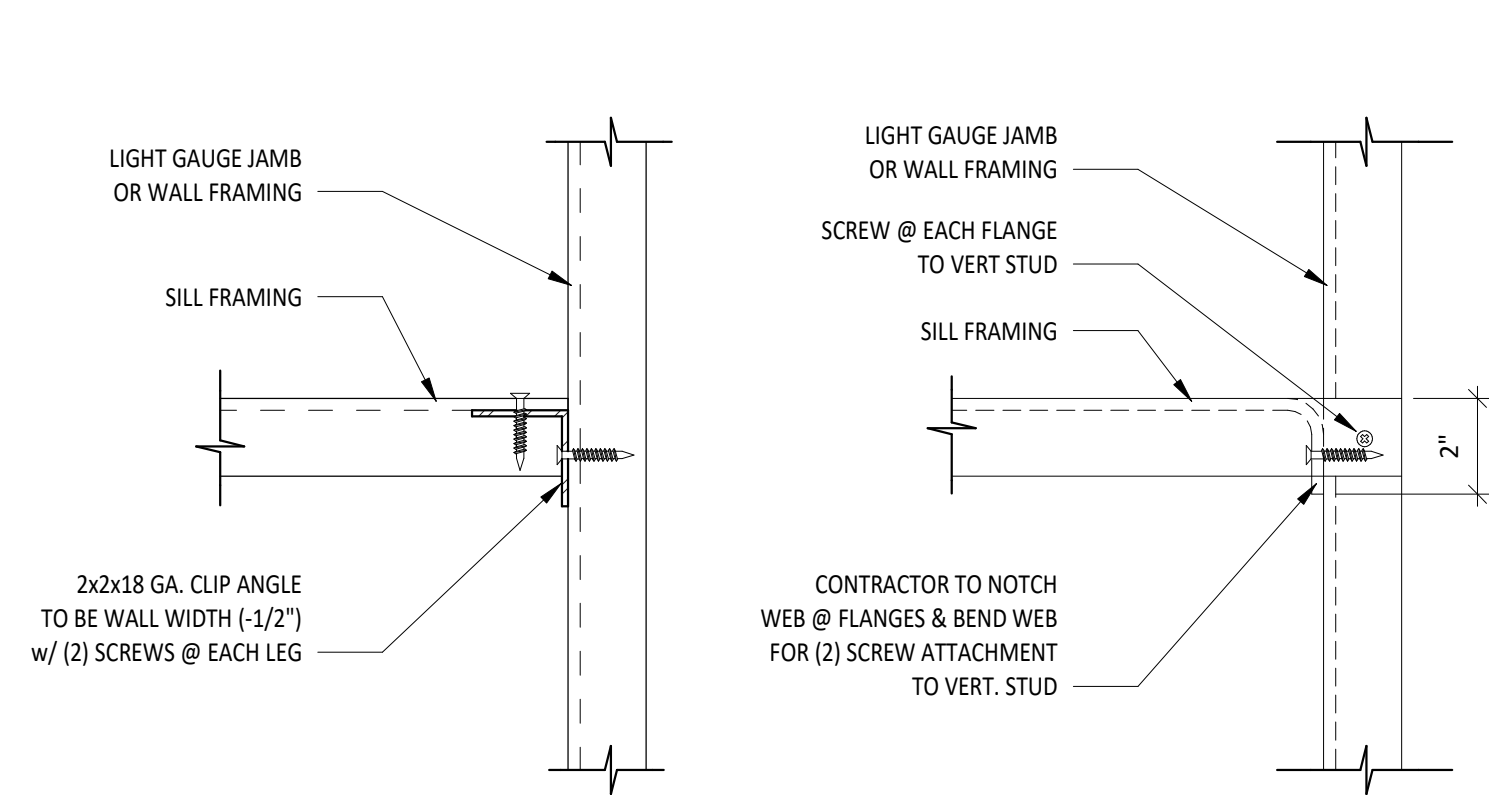
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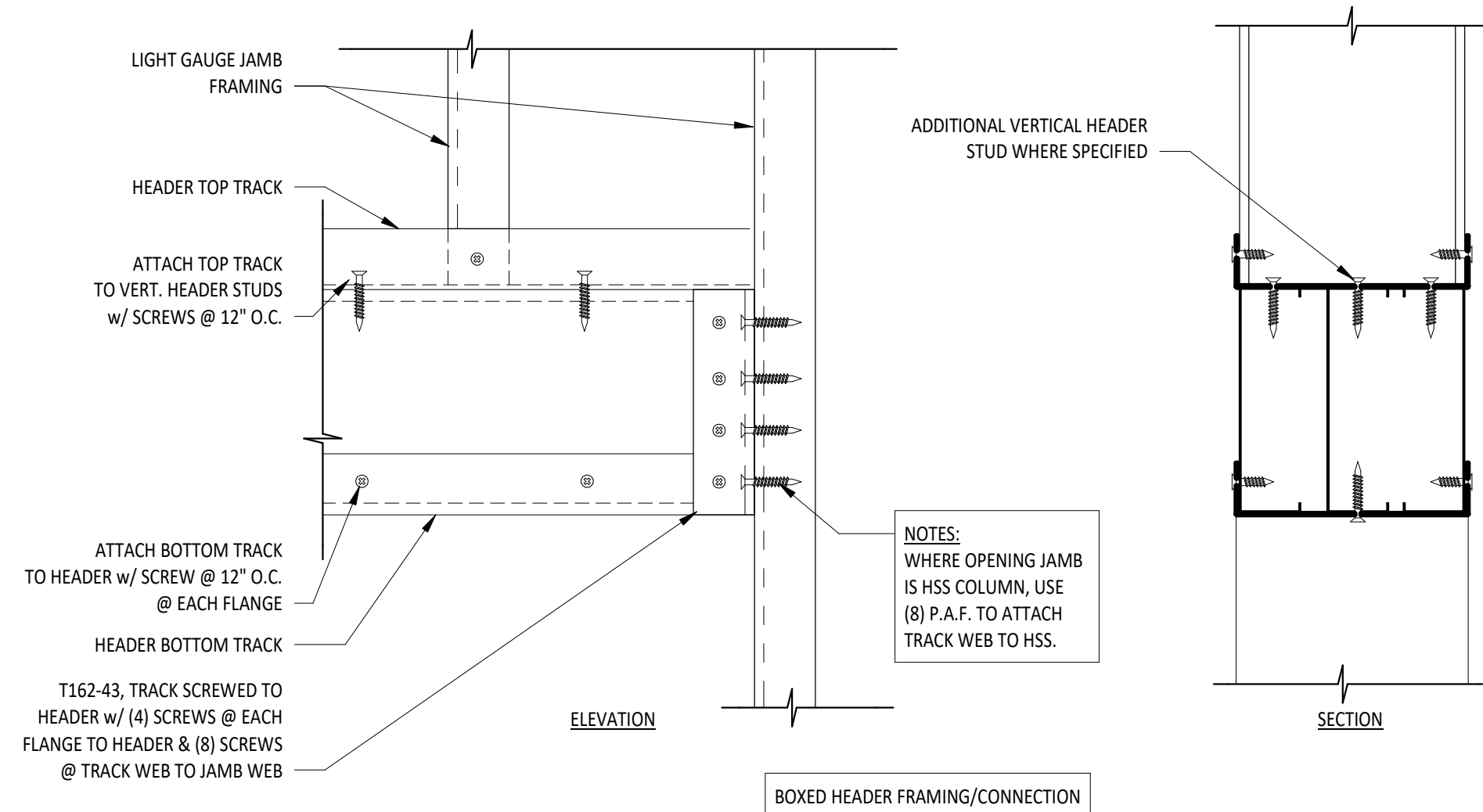
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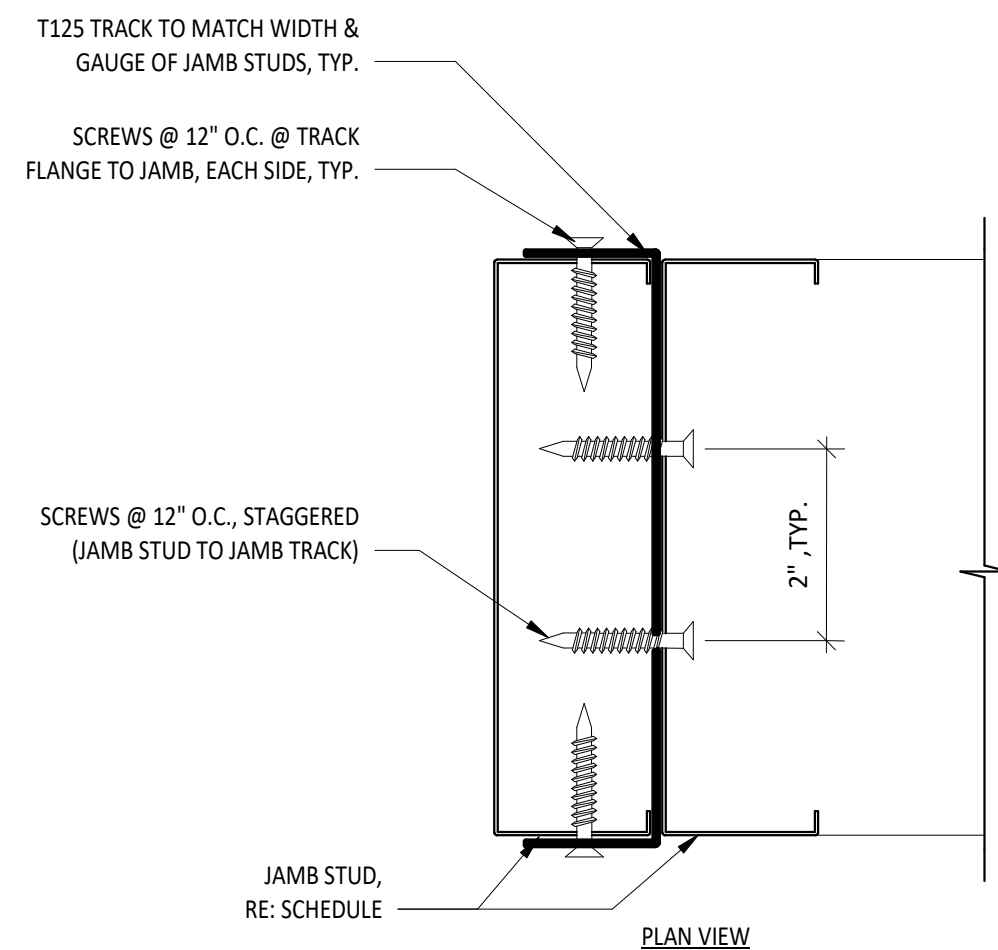
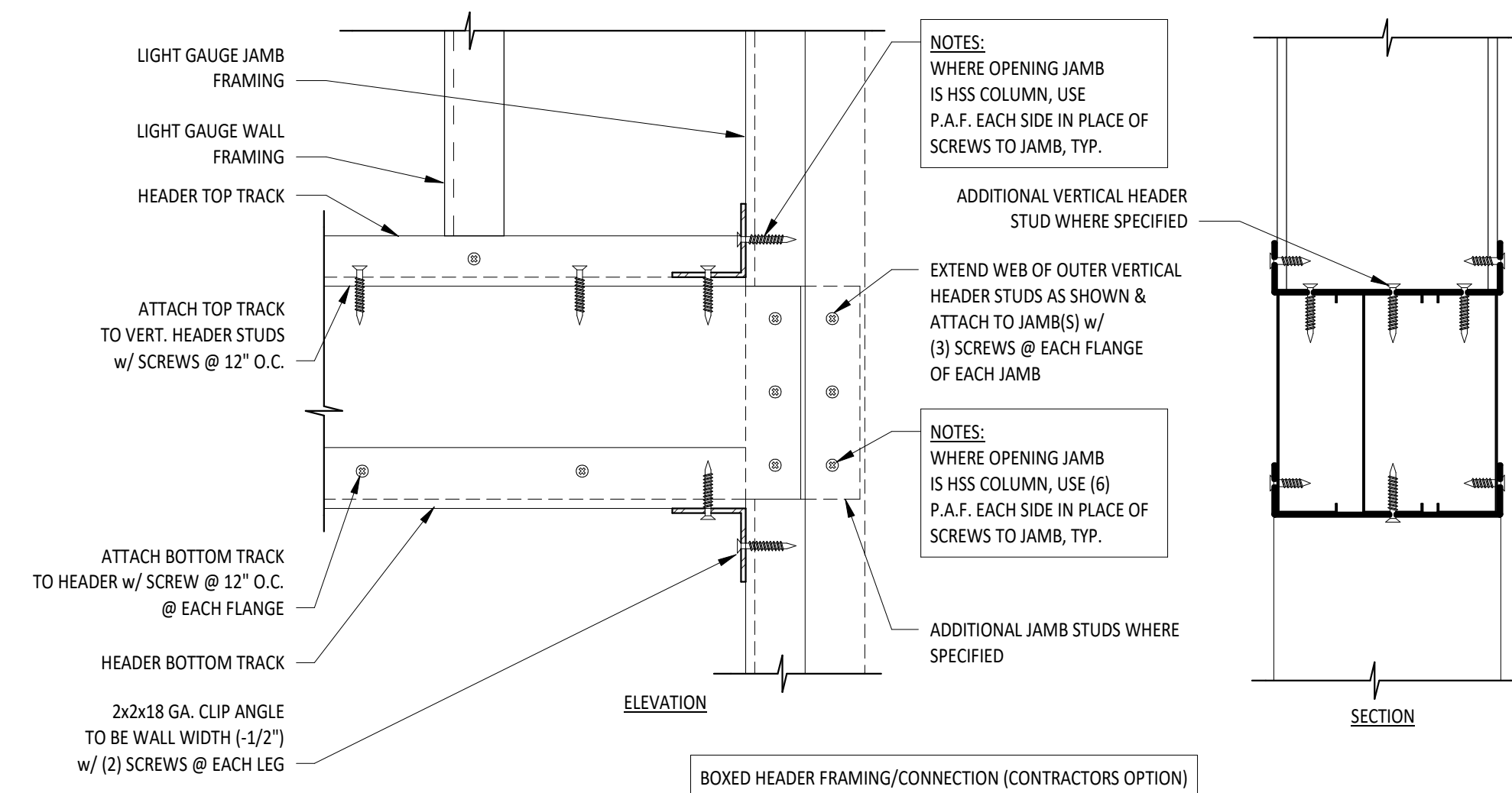


② TRACK - STUD CONNECTION
3" = 1'-0"

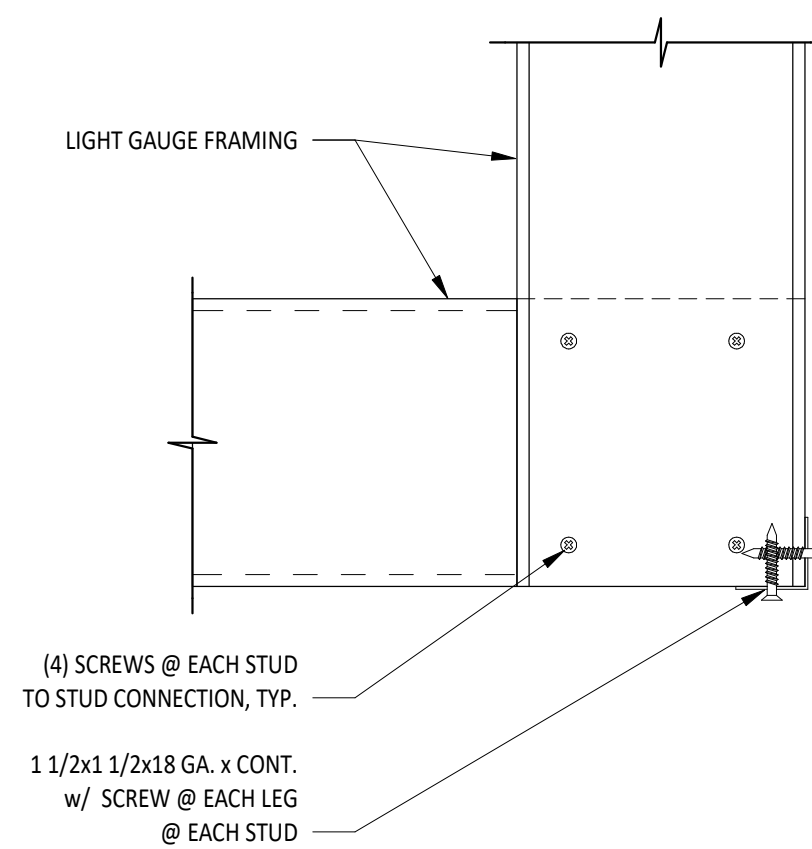


④ SILL - JAMB CONNECTION
3" = 1'-0"

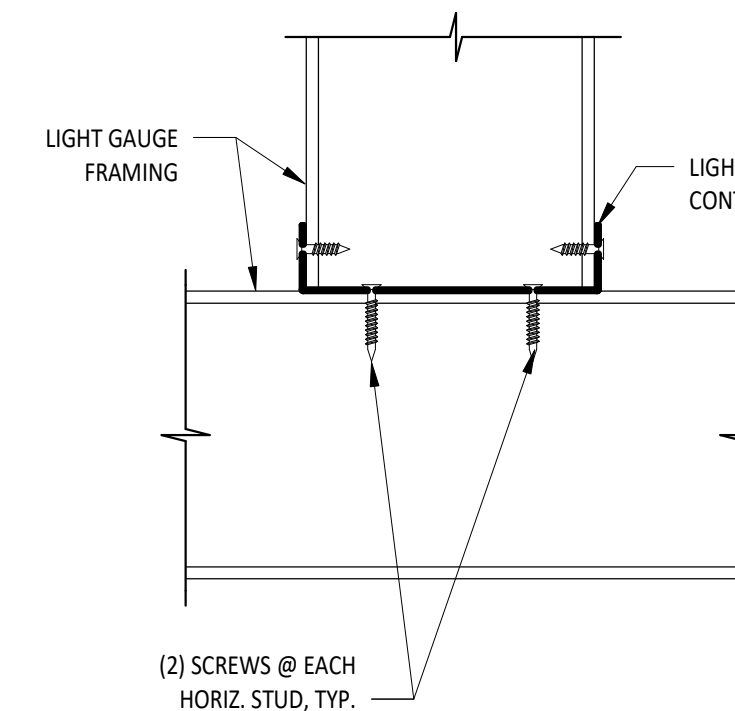




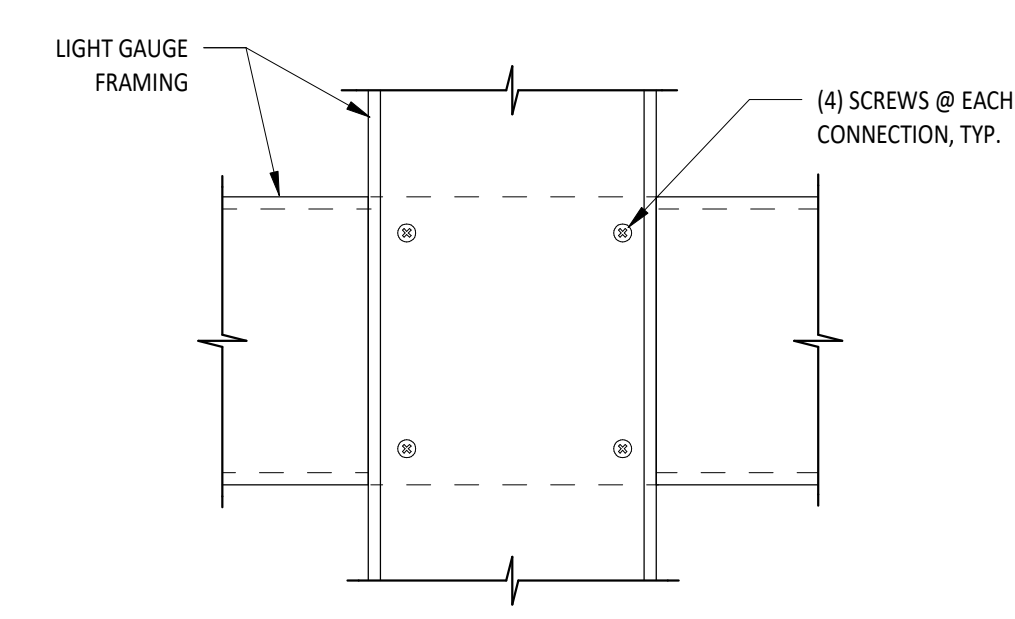
7 MULTIPLE JAMB CONNECTION - OPTION 2
6" = 1'-0"



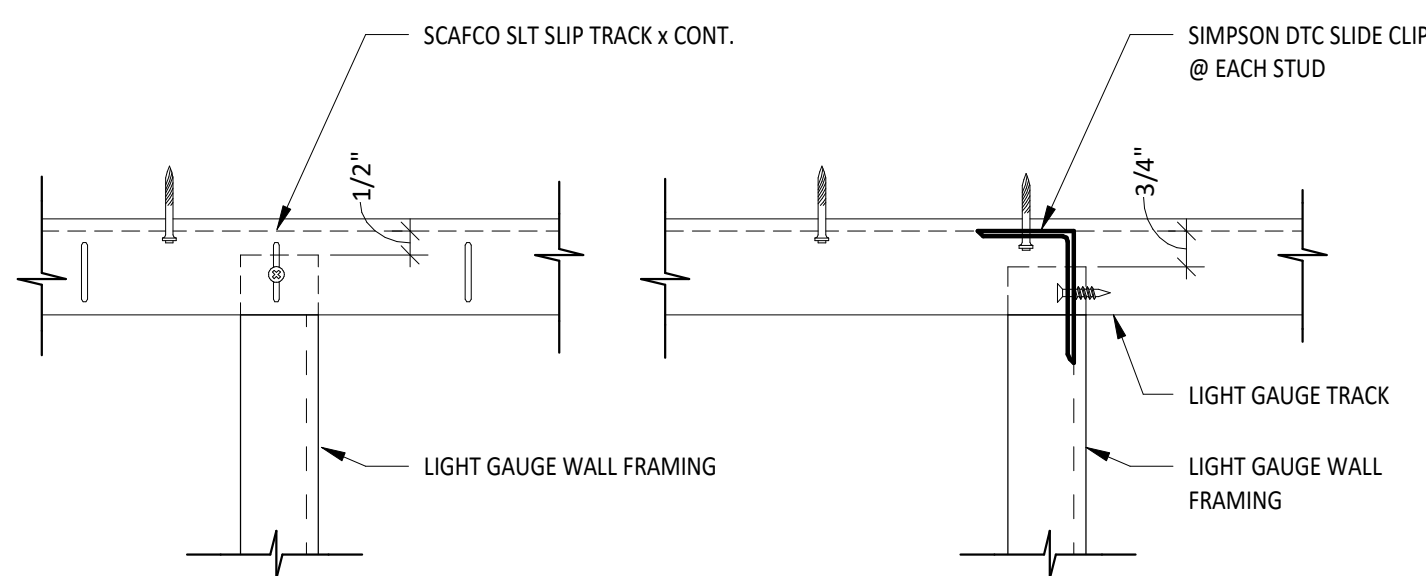
8 CORNER FRAMING CONNECTION
3" = 1'-0"



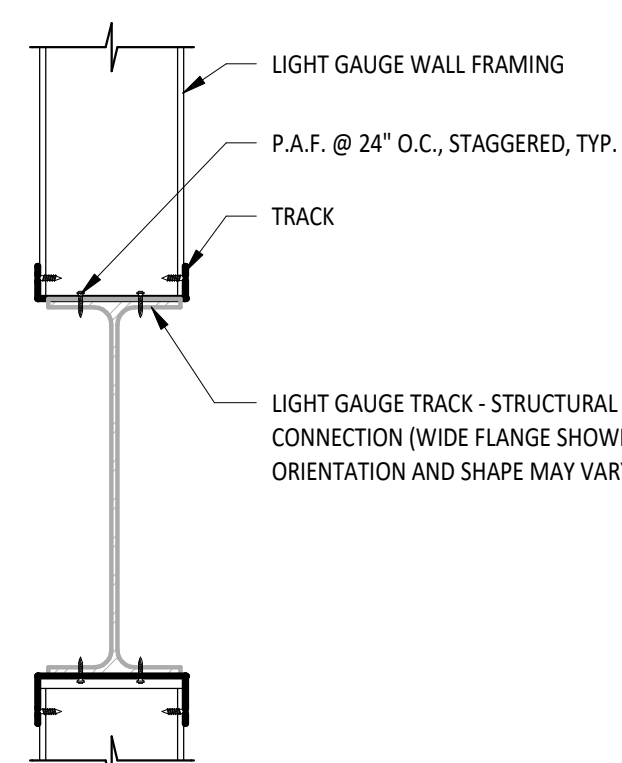
⑨ TRACK - CROSSING STUD CONNECTION
3" = 1'-0"



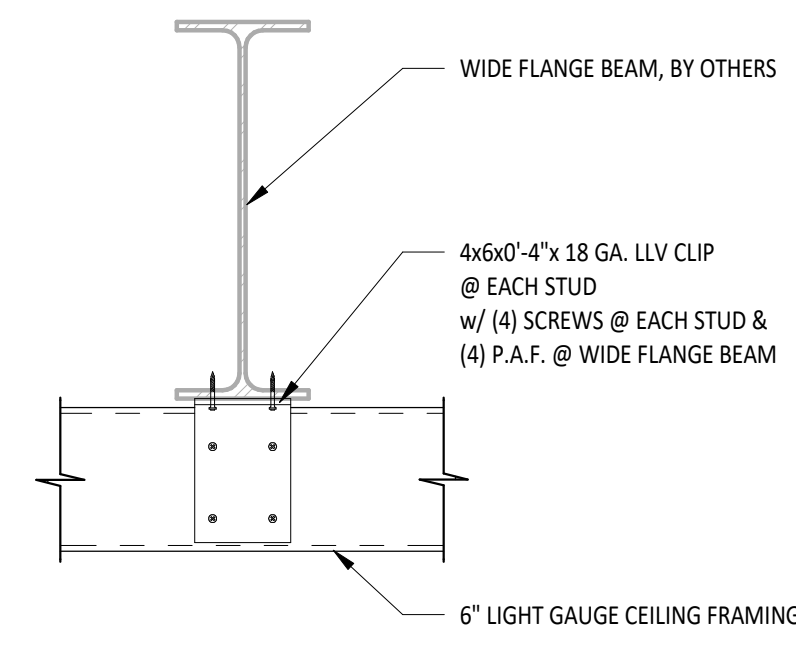
10 TYPICAL STUD - STUD CONNECTION
3" = 1'-0"



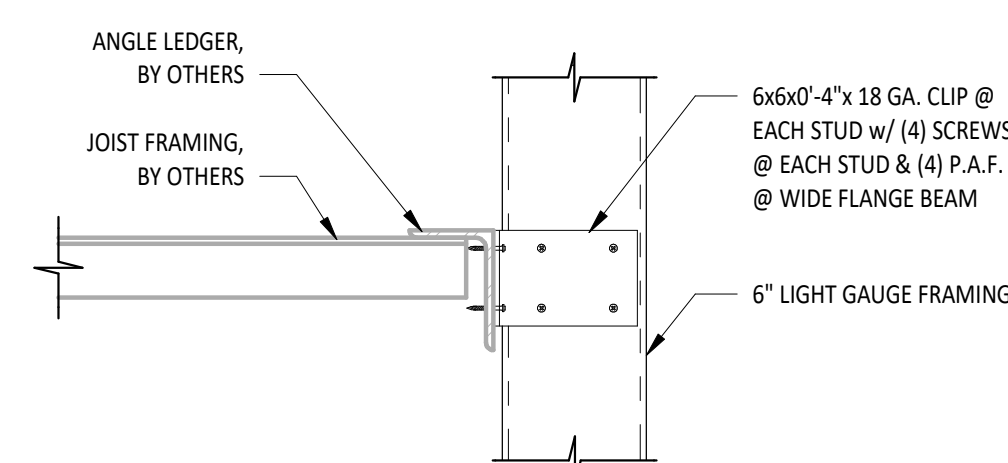
11 TYPICAL STEEL STUD - SLIP TRACK CONNECTION
3" = 1'-0"



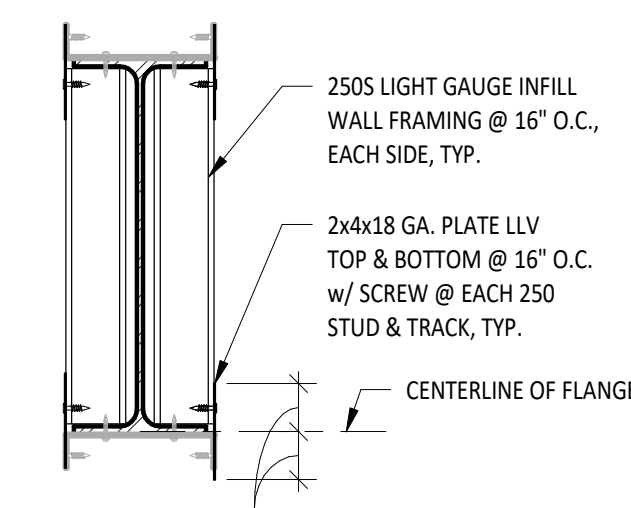
12 STUD WALL TRACK - STRUCTURE CONN.
1 1/2" = 1'-0"



13 STUD WALL TRACK - STRUCTURE CONNECTION
1 1/2" = 1'-0"



14 STUD WALL TRACK - STRUCTURE CONNECTION
1 1/2" = 1'-0"



15 STUD WALL TRACK - STRUCTURE CONNECTION
1 1/2" = 1'-0"



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Project No: TGE21-17855
Checked By: DDH
Drawn By: TW



HARBOR FREIGHT TOOLS

NYACK, NY 10960

314 NY ROUTE 59

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EVIDENCES	
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8	
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10	

LIGHT GAUGE
FRAMING - SHOPS

DATE	9/22/21
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OB NO.	20420
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62.3

SHEET NO.

MECHANICAL EQUIPMENT TAG NOTES:

- A 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 1500 LBS.
- B 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 1400 LBS.
- C EXISTING EMPTY ABANDONED DUNNAGE TO REMAIN.
- D EXISTING ROOFTOP UNIT TO REMAIN SERVING HARBOR FREIGHT TOOLS' ADJACENT LEASE SPACE TO THE WEST.

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

NOTE:
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.

NOTE:
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.

NOTE:
MECHANICAL CONTRACTOR SHALL REFER TO THE SIEMENS
EMS DRAWING SET (EMS-1 THRU EMS-3) FOR COMPLETE
INTERFACE REQUIREMENTS.

NOTE:
MECHANICAL CONTRACTOR SHALL LEAVE ROOFTOP UNITS'
IN WIRED THERMOSTAT MODE UNTIL COMMISSIONING.

NOTE:
THERE IS (1) EXISTING ROOFTOP UNIT RESIDING OVER THE ADJACENT LEASE SPACE TO THE WEST OF
HARBOR FREIGHT TOOLS THAT IS TO REMAIN AND BE OPERATIONAL. MECHANICAL CONTRACTOR SHALL
ENSURE THIS EXISTING ROOFTOP UNIT IS IN PROPER WORKING CONDITION AND PROVIDE (1) YEAR
WARRANTY FOR EXISTING UNIT FROM DATE OF STORE OPENING. MECHANICAL CONTRACTOR SHALL ALSO
ENSURE THAT THE EXISTING THERMOSTATS SERVING THIS EXISTING UNIT ARE LOCATED WITHIN THE
ADJACENT LEASE SPACE TO THE WEST. RELOCATE THERMOSTATS SERVING THIS ROOFTOP UNIT TO
ADJACENT LEASE SPACE IF NECESSARY. FIELD VERIFY EXISTING CONDITIONS PRIOR TO STARTING WORK.
CONTACT ARCHITECT AND/OR ENGINEER OF RECORD IF PROBLEMS ARISE INCLUDING INABILITY TO BRING
EXISTING UNITS TO REMAIN OPERATIONAL OR ANY EXCESSIVE COSTS ASSOCIATED WITH THIS WORK.

NOTE:
MECHANICAL CONTRACTOR SHALL CUT AND CAP ANY EXISTING
DUCTWORK WHICH MAY ENTER INTO HARBOR FREIGHT TOOLS'
LEASE SPACE FROM EXISTING ROOFTOP UNIT LOCATED TO THE
WEST OF THE HARBOR FREIGHT TOOLS' LEASE SPACE. DUCTS
SHALL BE CAPPED TO THE WEST OF THE NEW DEMISING WALL.
FIELD VERIFY EXISTING CONDITIONS PRIOR TO STARTING WORK.

NOTE:
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.

NOTE:
EMS TOUCHPAD LOCATED IN MANAGERS
OFFICE. REFER TO MECHANICAL GENERAL NOTE
#5 ON THIS DWG. FOR ADDITIONAL INFORMATION

NOTE:
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.

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

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

MECHANICAL GENERAL NOTES:

- 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.
- PERFORM ALL WORK IN ACCORDANCE WITH THE, RULES & REGULATIONS OF THE
APPROPRIATE STATE AND LOCAL BUILDING CODES AND SUBTILES.
- QUESTIONS REGARDING THESE DRAWINGS SHALL BE ADDRESSED TO THE ENGINEER PRIOR
TO THE AWARDED OF THE CONTRACT. OTHERWISE THE ENGINEER'S INTERPRETATION OF
THE MEANING AND INTENT OF THE DRAWINGS SHALL BE FINAL.
- 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).
- 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):

- 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.
- 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.
- MECHANICAL CONTRACTOR SHALL RUN ALL DUCTWORK AS HIGH AS POSSIBLE; MINIMUM OF
12'-6" A.F.F.
- 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.
- 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.
- 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.

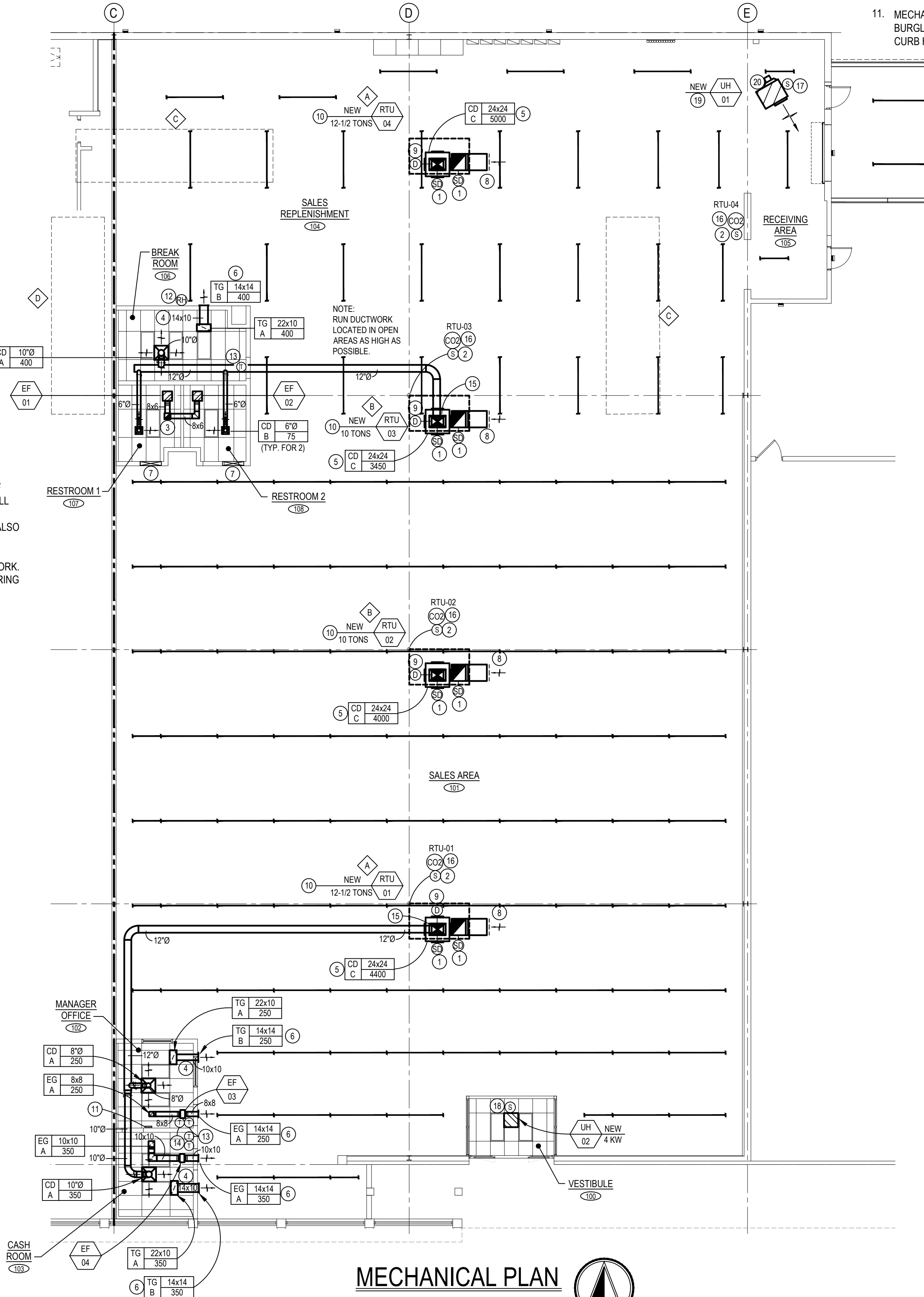
MECHANICAL LEGEND	
SYMBOL	DESCRIPTION
SA	SUPPLY AIR
EA	EXHAUST AIR
EF	EXHAUST FAN
EG	EXHAUST GRILLE
CD	CEILING DIFFUSER
OA	OUTSIDE AIR
RA	RETURN AIR
TG	TRANSFER GRILLE
RTU	ROOFTOP UNIT
AFF	ABOVE FINISH FLOOR
MC	MECHANICAL CONTRACTOR
PC	PLUMBING CONTRACTOR
EC	ELECTRICAL CONTRACTOR
GC	GENERAL CONTRACTOR
LL	LANDLORD
⑩	DUCT TEMPERATURE SENSOR
⑪	THERMOSTAT (MTD. 4'-0" AFF)
⑫	SPACE TEMPERATURE SENSOR (AS NOTED)
⑬	SMOKE DETECTOR
⑭	RELATIVE HUMIDITY
⑮	FLEXIBLE DUCT (8'-0" MAX. LENGTH)
⑯	FLEXIBLE DUCT CONNECTOR
⑰	MANUAL VOLUME DAMPER
⑱	ELBOW W/ DBL THICKNESS TURNING VANES
⑲	FRESH RETURN EXHAUST AIR DUCT
⑳	SUPPLY AIR DUCT
E.S.P.	EXTERNAL STATIC PRESSURE

MECHANICAL PLAN TAG NOTES:

- 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-AIS 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.
- 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 SUPPLY AIR DUCT IN DROP AND CONNECT TO
DROP DIFFUSER SYSTEM. MOUNT DROP DIFFUSER SYSTEM AS HIGH AS POSSIBLE. REFER 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.
- 1" TOTAL FREE AREA BETWEEN FLOORING AND BOTTOM OF DOOR. UNDERCUT DOOR BY
GENERAL CONTRACTOR.
- 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-3) FOR MORE INFORMATION.
- ROOFTOP UNIT DIGITAL ZONE CONTROLLER. REFER TO THE SIEMENS EMS DRAWING SET
(EMS-1 THRU EMS-3) FOR MORE INFORMATION.
- EMS TOUCHPAD. COORDINATE WITH ELECTRICAL CONTRACTOR AND EMS DRAWINGS FOR
MORE INFORMATION.
- RELATIVE HUMIDITY SENSOR MOUNTED ON COLUMN AT 7'-0" A.F.F. NOTE: REFER TO SIEMENS
EMS DRAWINGS SET FOR ADDITIONAL INFORMATION.
- THERMOSTAT MOUNTED ON WALL AT 4'-0" A.F.F. TO CONTROL DIFFUSER.
- THERMOSTAT MOUNTED ON WALL AT 4'-0" A.F.F. TO EXHAUST FAN.
- 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.
- CARBON DIOXIDE SENSOR MOUNTED ON COLUMN AT 7'-0" A.F.F. REFER TO THE SIEMENS EMS
DRAWING SET (EMS-1 THRU EMS-3) FOR MORE INFORMATION.
- UH-01 SENSOR. REFER TO THE SIEMENS EMS DRAWING SET (EMS-1 THRU EMS-3) FOR MORE
INFORMATION.
- UH-02 SENSOR. REFER TO THE SIEMENS EMS DRAWING SET (EMS-1 THRU EMS-3) FOR MORE
INFORMATION.
- NEW GAS-FIRED UNIT HEATER. SUSPEND GAS UNIT HEATER WITH ALL THREADED RODS AND
NEOPRENE VIBRATION ISOLATORS FROM STRUCTURE FRAMING AS HIGH AS POSSIBLE.
COORDINATE IN FIELD. MOUNT AT 14'-0" A.F.F. MINIMUM.
- 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.

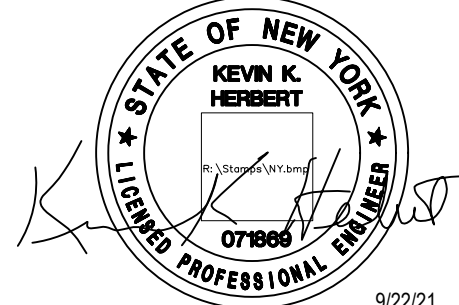
TONNAGE BREAKDOWN

TOTAL TONNAGE	45
TOTAL SQUARE FOOTAGE	15,172
SQUARE FOOT/TON	337



MECHANICAL PLAN

SCALE: 3/32" = 1'-0"



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HARBOR FREIGHT TOOLS

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REVISIONS

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MECHANICAL
PLAN

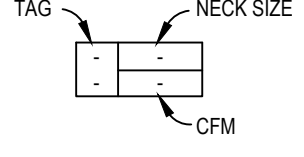
DATE 9/22/21





JOB NO. 20420

M1.0


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




ROOFTOP UNIT SCHEDULE (NO SUBSTITUTIONS ALLOWED)																			
TAG	LABEL TAG	MANUFACTURER MODEL NUMBER	NOMINAL TONNAGE	CFM	E.S.P. (IN.)	OUTDOOR AIR	HEATING CAPACITY		GROSS COOLING CAPACITY					ELECTRICAL DATA			WEIGHT (LBS)	REMARKS	
							1st STAGE (MBH)	2nd STAGE (MBH)	AFUE (%)	EAT DBWB	TOTAL (MBH)	SENSIBLE (MBH)	EER/SEER IEER	AMBIENT TEMP.	S/A FAN HP VOLTAGE	MCA			MOCF
 RTU-01	XXXX-RTU-01	LENNOX LGH1504MH1Y	12-1/2	5000	0.8"	1250	156/124.8	240/192	80	80/67	154.8	116.1	10.8 EER 13.5 IEER	95°F	5 HP 208/230V 3 PH	71	90	1500	SEE NOTES BELOW.
 RTU-02	XXXX-RTU-02	LENNOX LGH1204MH1Y	10	4000	0.6"	1000	156/124.8	240/192	80	80/67	124.4	89.6	12.0 EER 13.8 IEER	95°F	3 HP 208/230V 3 PH	52	60	1400	SEE NOTES BELOW.
 RTU-03	XXXX-RTU-03	LENNOX LGH1204MH1Y	10	4000	0.8"	1000	156/124.8	240/192	80	80/67	124.4	89.6	12.0 EER 13.8 IEER	95°F	3 HP 208/230V 3 PH	52	60	1400	SEE NOTES BELOW.
 RTU-04	XXXX-RTU-04	LENNOX LGH1504MH1Y	12-1/2	5000	0.6"	750	156/124.8	240/192	80	80/67	154.8	116.1	10.8 EER 13.5 IEER	95°F	5 HP 208/230V 3 PH	71	90	1500	SEE NOTES BELOW.
FURNISH WITH THE FOLLOWING:																			
1. 14" HIGH PRE-FABRICATED INSULATED ROOF CURB BY MECHANICAL CONTRACTOR																			
2. BAROMETRIC RELIEF DAMPERS																			
3. HIGH PERFORMANCE ECONOMIZER 0-100% COMPLETE WITH FAULT DETECTOR AND DIAGNOSTICS SYSTEM (FDD)																			
4. DIRTY FILTER SWITCH, 2" MERV 8 FILTERS																			
5. BURGLAR BARS BY MECHANICAL CONTRACTOR																			
6. MSV (MULTI-STAGE AIR VOLUME) SUPPLY AIR BLOWER																			
7. FACTORY INSTALLED UNIT NON-FUSED DISCONNECT - WEATHERPROOF																			
8. R-410a REFRIGERANT																			
9. HINGED ACCESS PANELS																			
10. HIGH AND LOW PRESSURE SWITCHES																			
11. FREEZE STAT																			
12. SERVICE VALVES																			
13. COMBINATION HAIL/COIL GUARD																			
14. CYCLE PROTECTION																			
15. 5-YEAR COMPRESSOR WARRANTY																			
16. GFCI - FACTORY INSTALLED/FIELD WIRED BY ELECTRICIAN																			
17. CURBS PLUS, INC. DROP DIFFUSER SYSTEM																			
(4) VFPD 2410-10-12.5																			
18. ROOFTOP UNITS REMOTE SPACE TEMPERATURE SENSORS AND CARBON DIOXIDE SENSORS REFER TO THE SIEMENS EMS DRAWING SET (EMS-1 THRU EMS-3) FOR MORE INFORMATION.																			
19. SMOKE DETECTORS IN THE SUPPLY AND RETURN																			
20. DRAIN PAN OVERFLOW SWITCH																			
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.																			
LENNOX CONTACT: Derek Gareen: LemnoxNationalAccounts@LemnoxInd.com (972) 497-6082																			
LENNOX NATIONAL ACCOUNT TECH SUPPORT: (800) 367 6285 option 2																			

GRILLE, REGISTER AND DIFFUSER SCHEDULE											
TAG	MANUFACTURER & MODEL NUMBER	CFM	AIR PATTERN	NECK SIZE	DAMPER	FRAME STYLE	PANEL SIZE	MAXIMUM NC LEVEL	FINISH	MATERIAL	REMARKS
CD-A	PRICE PRODIGY PPD2	AS NOTED	AS SHOWN	AS NOTED	OPPOSED BLADE	LAY-IN CEILING	24x24	30	WHITE POWDER COAT	STEEL	PROVIDE WITH WALL MOUNTED ROOM TSTAT W/LOC DISPLAY. MC TO PROVIDE 120/24V CONTROL TRANSFORMER. MC SHALL WIRE LOW VOLTAGE TSTATS. PROVIDE WITH INSULATED BACKPANS.
CD-B	PRICE SPD	AS NOTED	AS SHOWN	AS NOTED	OPPOSED BLADE	SURFACE MOUNTED	12x12	30	WHITE POWDER COAT	STEEL	
CD-C	CURBS PLUS, INC. VFPD 2410 10-12.5	AS NOTED	4-WAY	24x24	-	EXPOSED	44x44	36	MILL FINISH	STEEL	FURNISHED BY LENNOX AND INSTALLED BY THE MECHANICAL CONTRACTOR.
EG-A	PRICE 535	AS NOTED	EXHAUST	AS NOTED	-	SURFACE MOUNTED	NECK SIZE + 1-3/4"	30	WHITE POWDER COAT	STEEL	
TG-A	PRICE 81	AS NOTED	TRANSFER	AS NOTED	-	LAY-IN CEILING	24x12	30	WHITE POWDER COAT	ALUMINUM	
TG-B	PRICE 535	AS NOTED	TRANSFER	AS NOTED	-	SURFACE MOUNTED	NECK SIZE + 1-3/4"	30	WHITE POWDER COAT	STEEL	

FAN SCHEDULE												
PLAN TAG	LABEL TAG	MANUFACTURER & MODEL NUMBER	AREA SERVED	SERVICE	CFM	ESP	WATTS & VOLTAGE	FAN RPM	FAN TYPE	MAX. SOUND LEVEL	WEIGHT (LBS)	REMARKS
 EF-01	XXXX-EF-01	GREENHECK SP-A190	RESTROOM 1	EXHAUST	100	.3"	113 WATTS 120V/1/0	1400	CEILING MTD.	3.4 SONES	17	SEE NOTES 1 - 7 BELOW
 EF-02	XXXX-EF-02	GREENHECK SP-A190	RESTROOM 2	EXHAUST	100	.3"	113 WATTS 120V/1/0	1400	CEILING MTD.	3.4 SONES	17	SEE NOTES 1 - 7 BELOW
 EF-03	XXXX-EF-03	FANTECH FG 8	MANAGER'S OFFICE	EXHAUST	250	.5"	119 WATTS 120V/1/0	2550	IN-LINE		12	SEE NOTES 3 & 8 BELOW
 EF-04	XXXX-EF-04	FANTECH FG 10	CASH OFFICE	EXHAUST	350	.5"	138 WATTS 120V/1/0	3000	IN-LINE		12	SEE NOTES 3 & 8 BELOW
NOTES: PROVIDE WITH THE FOLLOWING ITEMS:												
1. DISCONNECT SWITCH				5. CONTROLLED BY LIGHT SWITCH (WHEN LIGHT SWITCH IS ACTIVATED THE FAN WILL ENGAGE)				8. LINE VOLTAGE (120V) COOLING ONLY THERMOSTAT TPI#ET9SGRTS				
2. GRAVITY BACKDRAFT DAMPER				6. 14" HIGH PRE-FAB ROOF CURB								
3. INTEGRAL SPEED CONTROL SWITCH FOR BALANCING				7. HANGING KIT WITH NEOPRENE VIBRATION ISOLATORS								
4. METAL CEILING GRILLE												

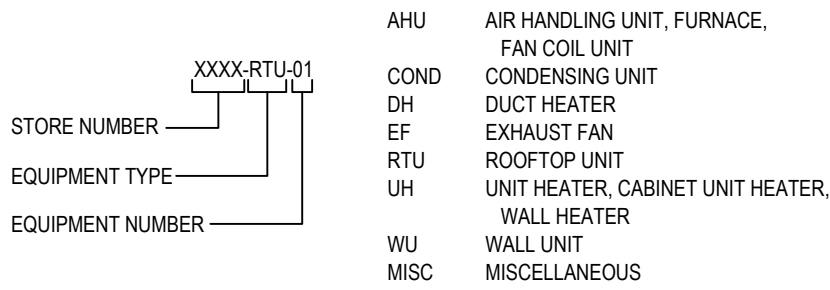
GAS UNIT HEATER SCHEDULE													
PLAN TAG	LABEL TAG	MANUFACTURER & MODEL NUMBER	AREA SERVED	GAS MBH		CFM	AFUE	HP & VOLTAGE	FLA	MOCF	VENT CONN.		REMARKS
				INPUT	OUTPUT						INLET	OUTLET	
<div>UH 01</div>	XXXX-UH-01	REZNOR UB2125	RECEIVING	120	99.6	2049	83%	3/4 HP 120V/1 PH.	13.2	30	4" DIA.	4" DIA.	SEE NOTES BELOW
NOTES: PROVIDE WITH THE FOLLOWING ITEMS: 1. VERTICAL CONCENTRIC COMBUSTION AIR/VENT KIT(CC2) 2. FACTORY INSTALLED DISCONNECT SWITCH 3. SUMMER FAN SWITCH 4. 30" DOWNTURN NOZZLE 5. UNIT HEATER TO BE CONTROLLED FROM "UNIT MOUNTED" ZONE CONTROLLER SENSOR (REFER TO THE SIEMENS EMS DRAWING SET EMS-1 THRU EMS-3 FOR MORE INFORMATION.)													

ELECTRIC CABINET UNIT HEATER SCHEDULE						
PLAN TAG	LABEL TAG	MANUFACTURER & MODEL NUMBER	HEATING CAPACITY		VOLTAGE	REMARKS
			KW	BTU/HR		
 UH-02	XXXX-UH-02	MARKEL F3484	4	13,600	208V 1 PHASE	425 19.2 SEE NOTES 1-3 BELOW
NOTES: 1. PROVIDE INTEGRAL DISCONNECT, LOUVER OUTLET, AND MOUNTING HARDWARE 2. HEATER TO BE RECESSED CEILING (LAY-IN MOUNTED) 3. UNIT HEATER TO BE CONTROLLED FROM "UNIT MOUNTED" ZONE CONTROLLER SENSOR (REFER TO THE SIEMENS EMS DRAWING SET EMS-1 THRU EMS-3 FOR MORE INFORMATION.)						

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 (9,406 SF)	7.5 CFM/PERSON 12 CFM/SF (1.25)	2733	2962	PER NEW YORK MECHANICAL CODE
 RTU-04	RECEIVING / SALES REPLENISHMENT AREA 104 & 105	6 (5,052 SF)	5 CFM/PERSON .06 CFM/SF (1.25)	416	750	PER NEW YORK MECHANICAL CODE
 RTU-01	CASH ROOM 103	1 (126 SF)	5 CFM/PERSON .06 CFM/SF (1.25)	16	88	PER NEW YORK MECHANICAL CODE
	MANAGER OFFICE 102	1 (128 SF)	5 CFM/PERSON .06 CFM/SF (1.25)	16	62	PER NEW YORK MECHANICAL CODE
 RTU-03	BREAK ROOM 106	6 (154 SF)	5 CFM/PERSON .06 CFM/SF (1.25)	49	100	PER NEW YORK 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)
NOTE: NEW YORK MECHANICAL CODE BREATHING ZONE OUTDOOR AIR FLOW (CFM) VBz = RpP2+RaAz x 1.25 WHERE Az = ZONE FLOOR AREA P2= POPULATION Rp = TABLE 6.1 OUTDOOR AIR PER PERSON Ra = TABLE 6.1 OUTDOOR AIR PER AREA						

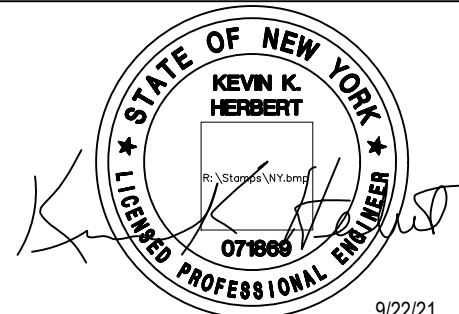
DUCTWORK SCHEDULE				
DUCT SYSTEM	SMACNA PRESSURE CLASS	SMACNA SEAL CLASS	DUCT MATERIAL	INSULATION
EXPOSED SUPPLY AIR DUCTWORK	2" W.C.	B	GALVANIZED STEEL	REFER TO SPECIFICATIONS
CONCEALED SUPPLY AIR DUCTWORK	2" W.C.	B	GALVANIZED STEEL	2" DUCT WRAP
RETURN AIR DUCTWORK	1" W.C.	C	GALVANIZED STEEL	1" DUCT LINING
EXHAUST AIR DUCTWORK	1" W.C.	C	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 (MON. SAT.)	INDOOR LIGHTS (SUNDAY)	INTERIOR SIGN (MON. SAT.)	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: CONTROL ZONE THE SYSTEM CAN BE OVERRIDDEN BY THE SECURITY KEYPAD. COORDINATE ON/OFF TIMES WITH HARBOR FREIGHT PRIOR TO PROGRAMMING.									



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.

DIRECTIONS:
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.



HARBOR FREIGHT TOOLS

NYACK, NY 10960

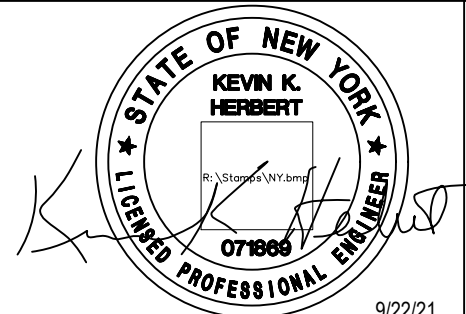
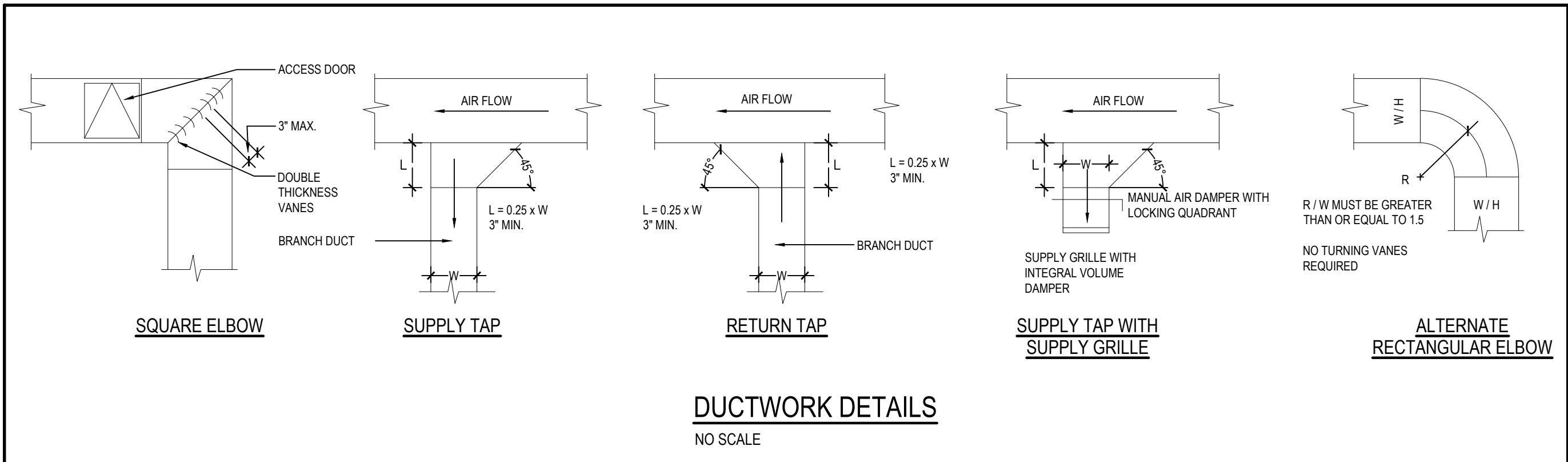
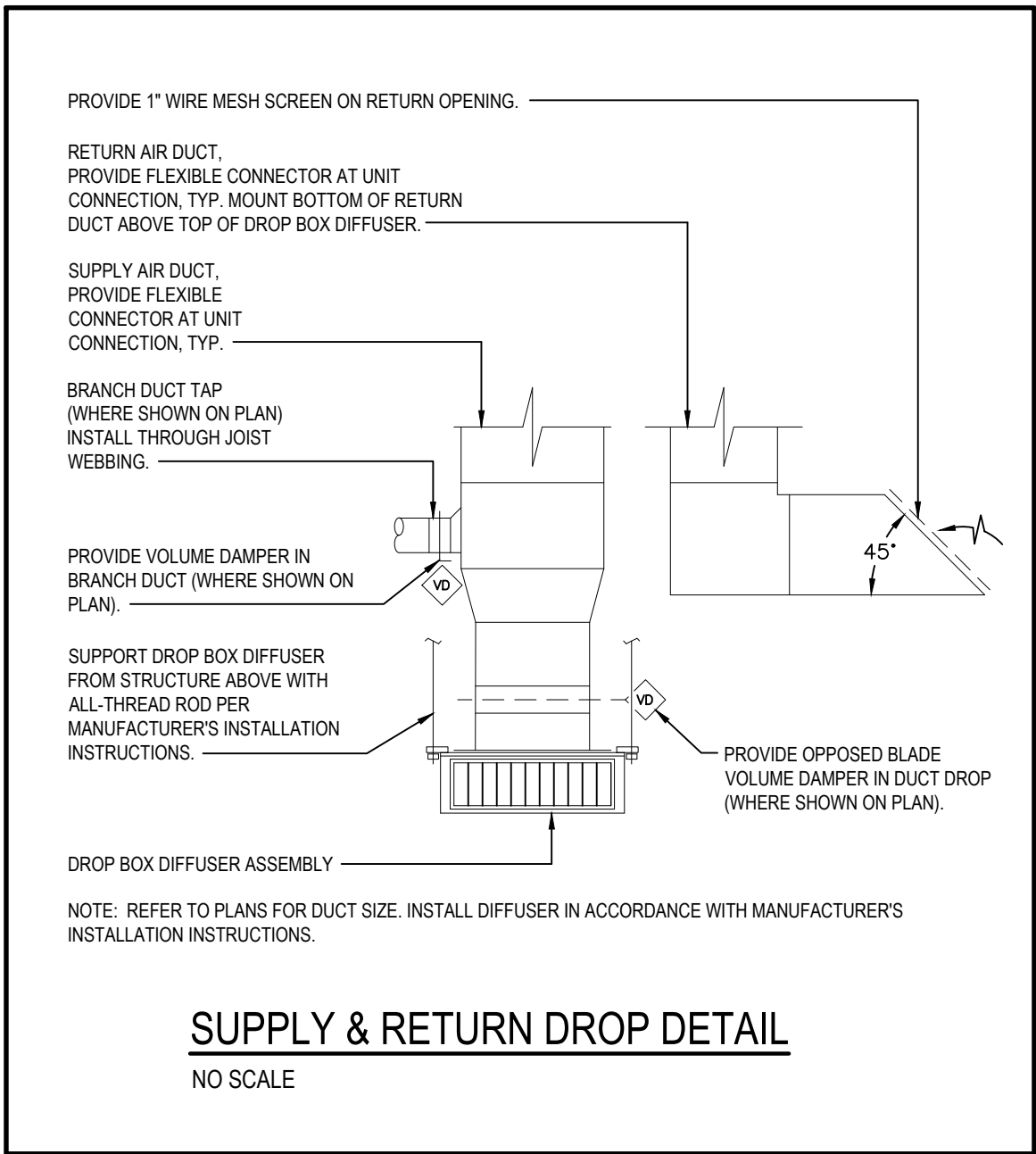
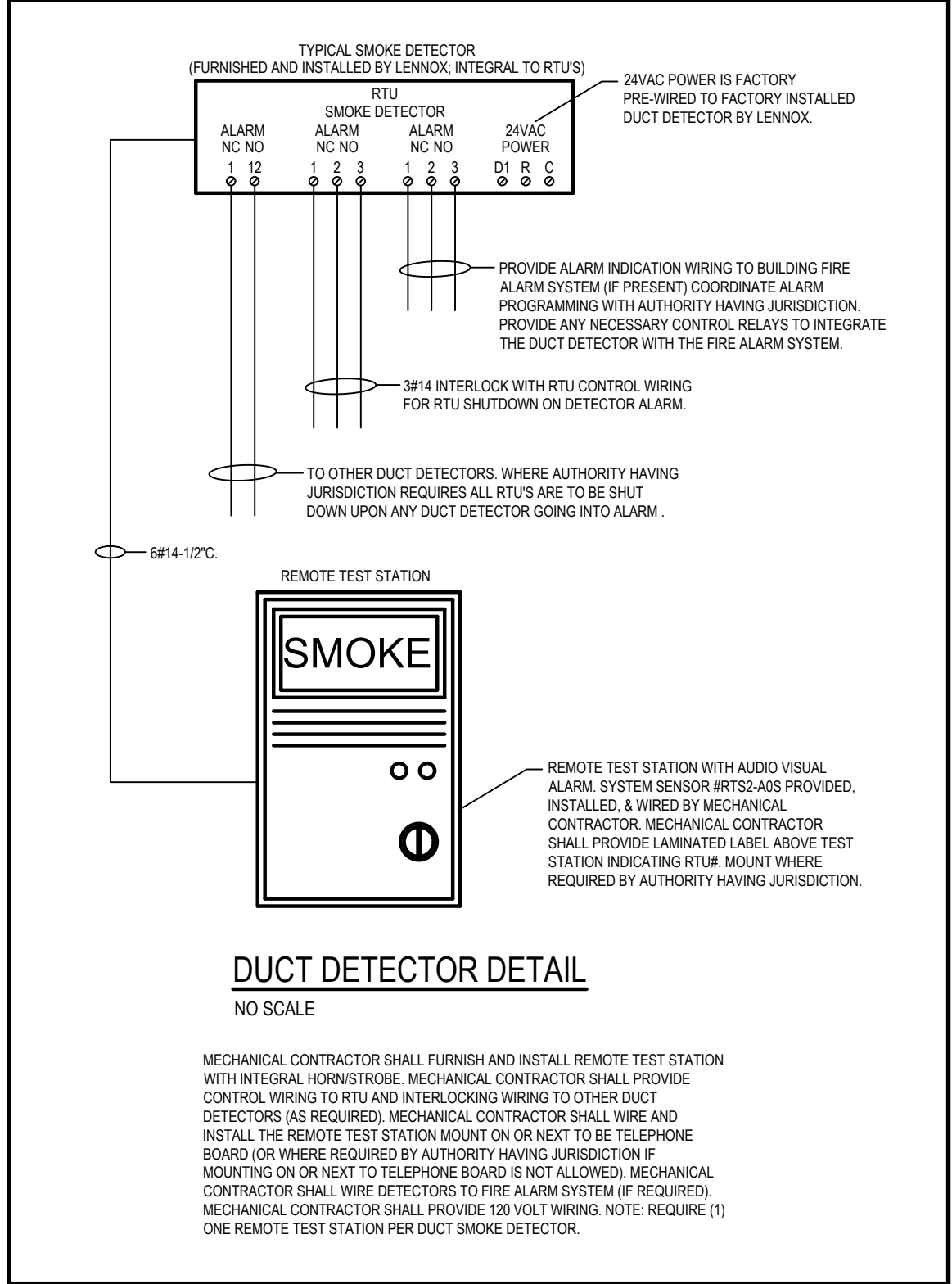
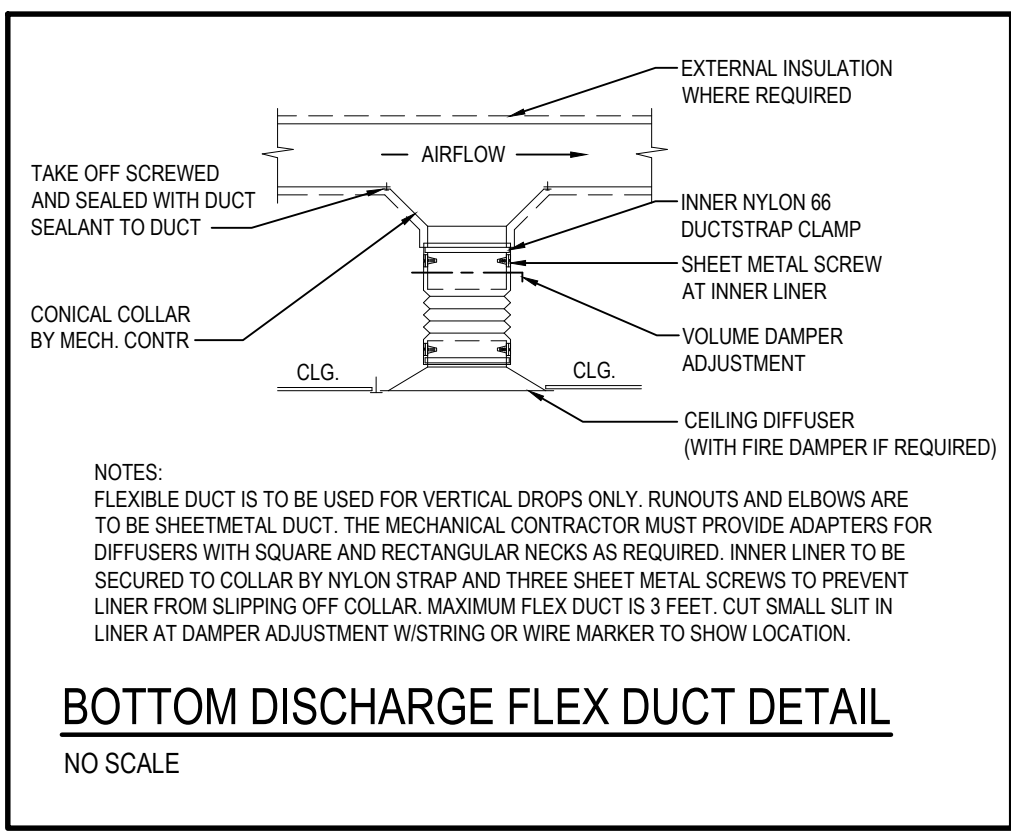
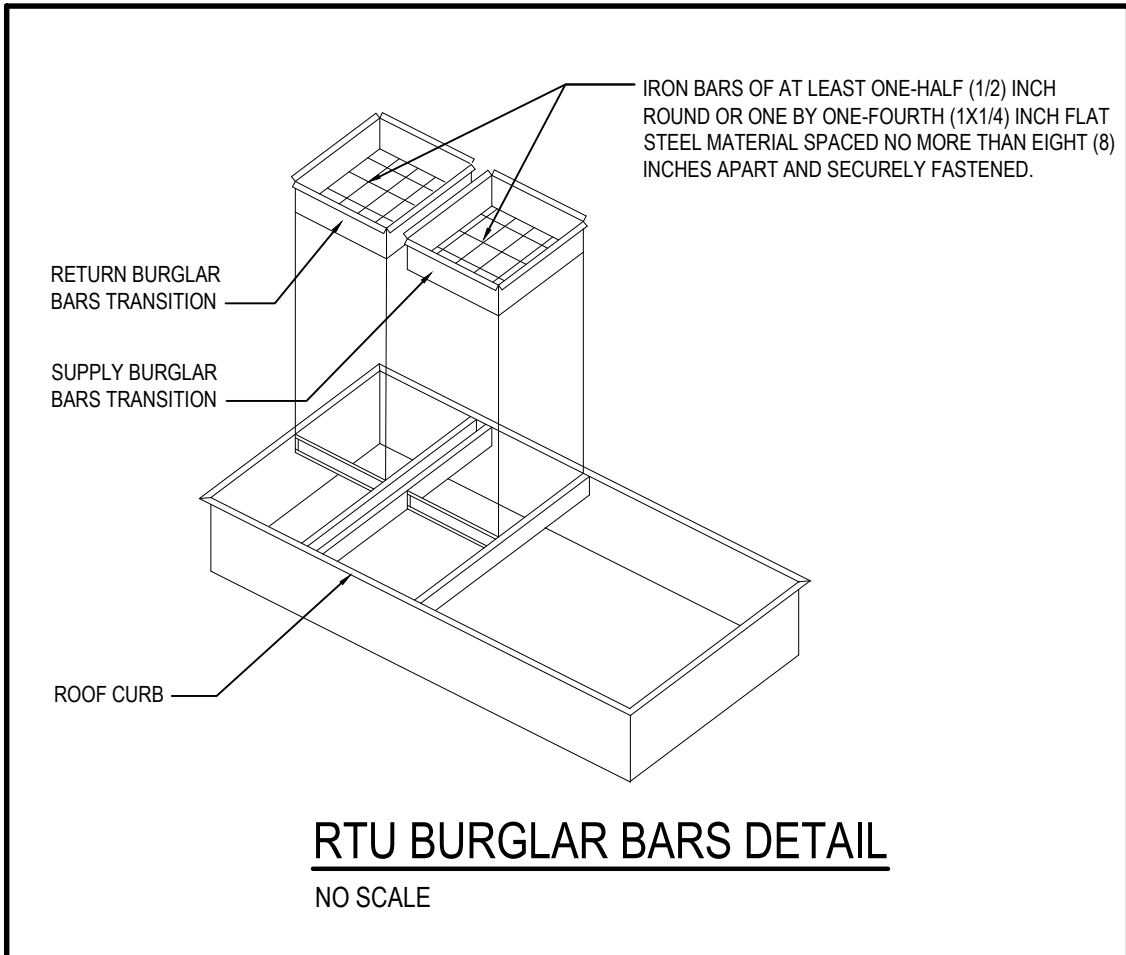
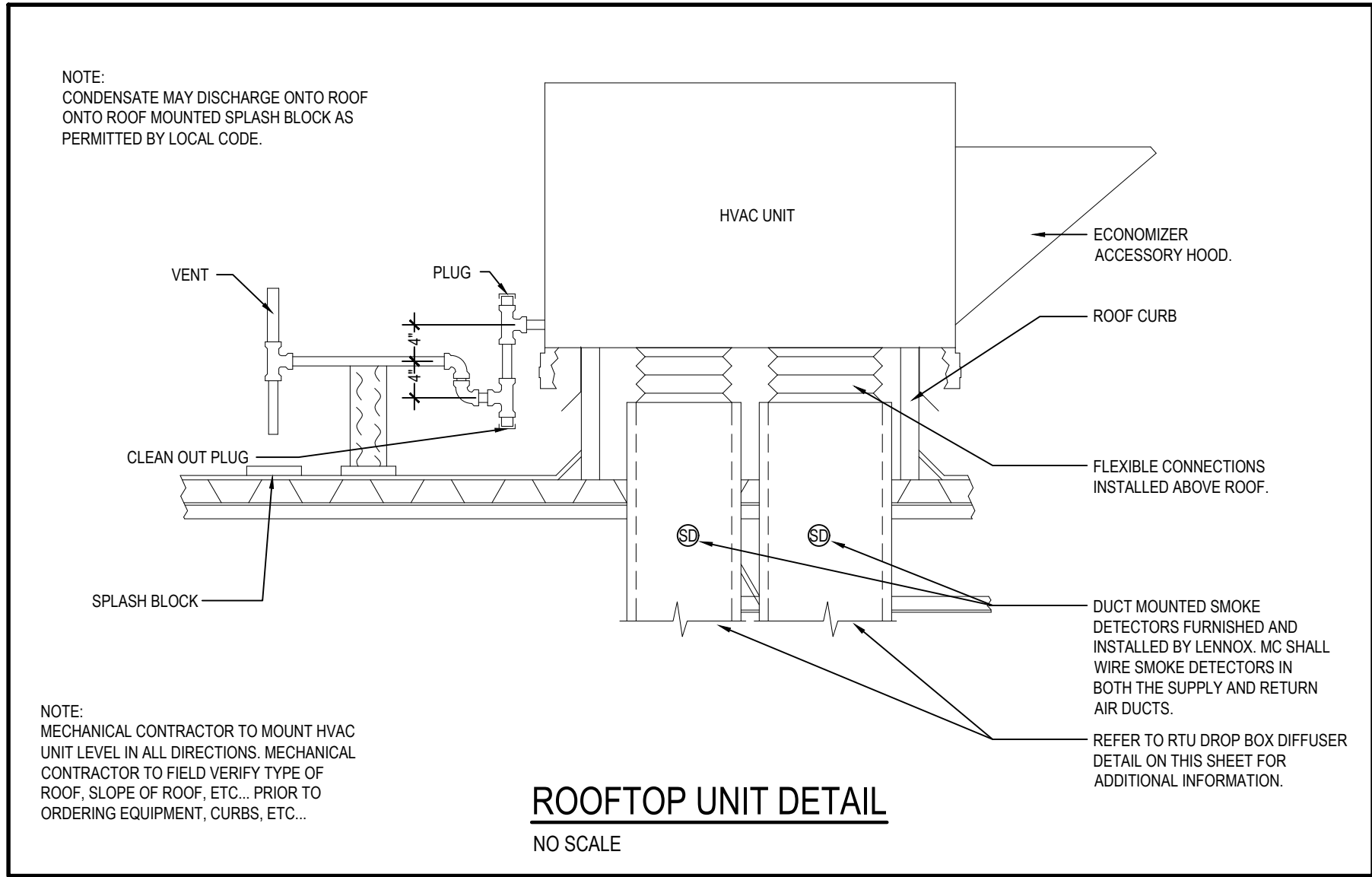
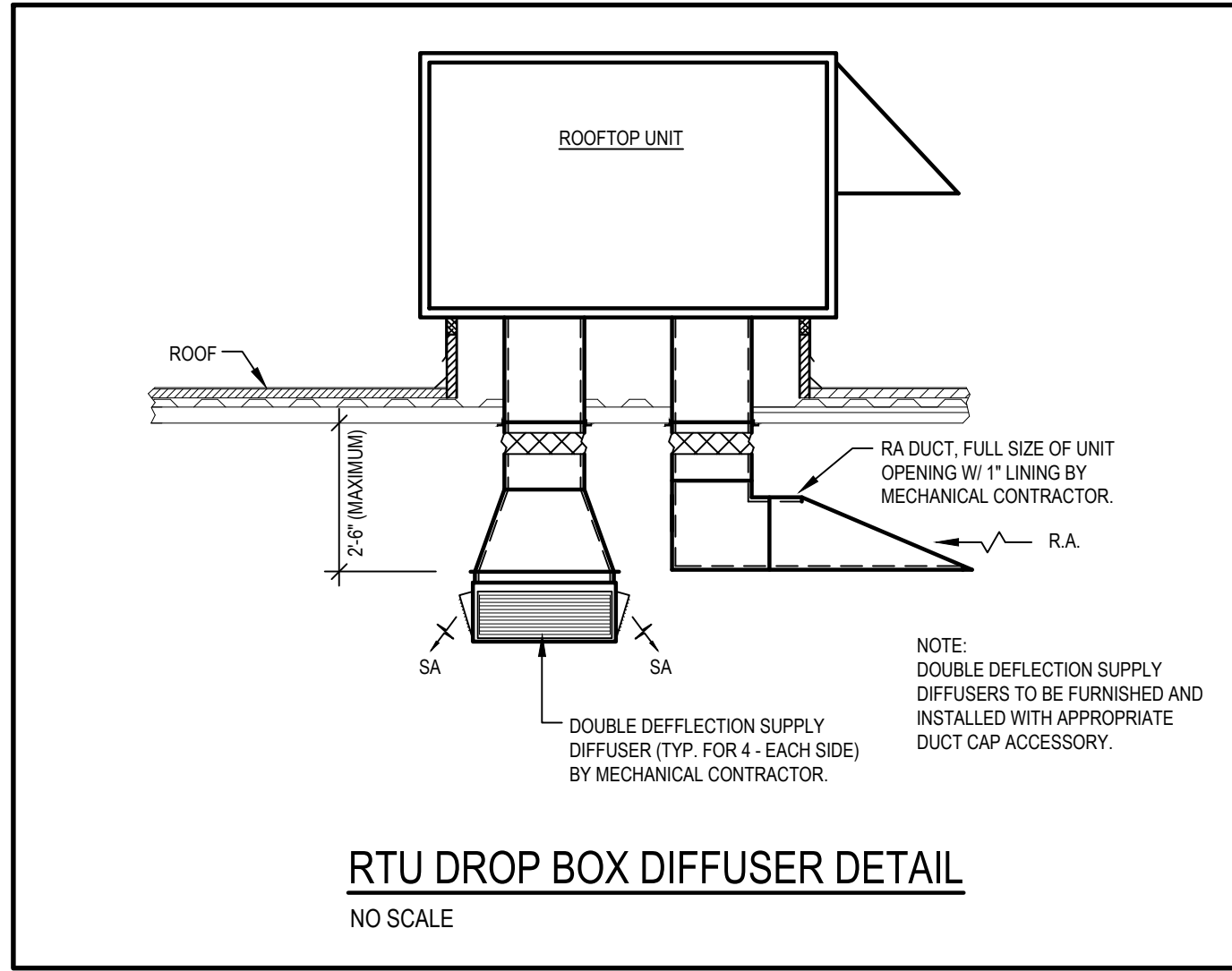
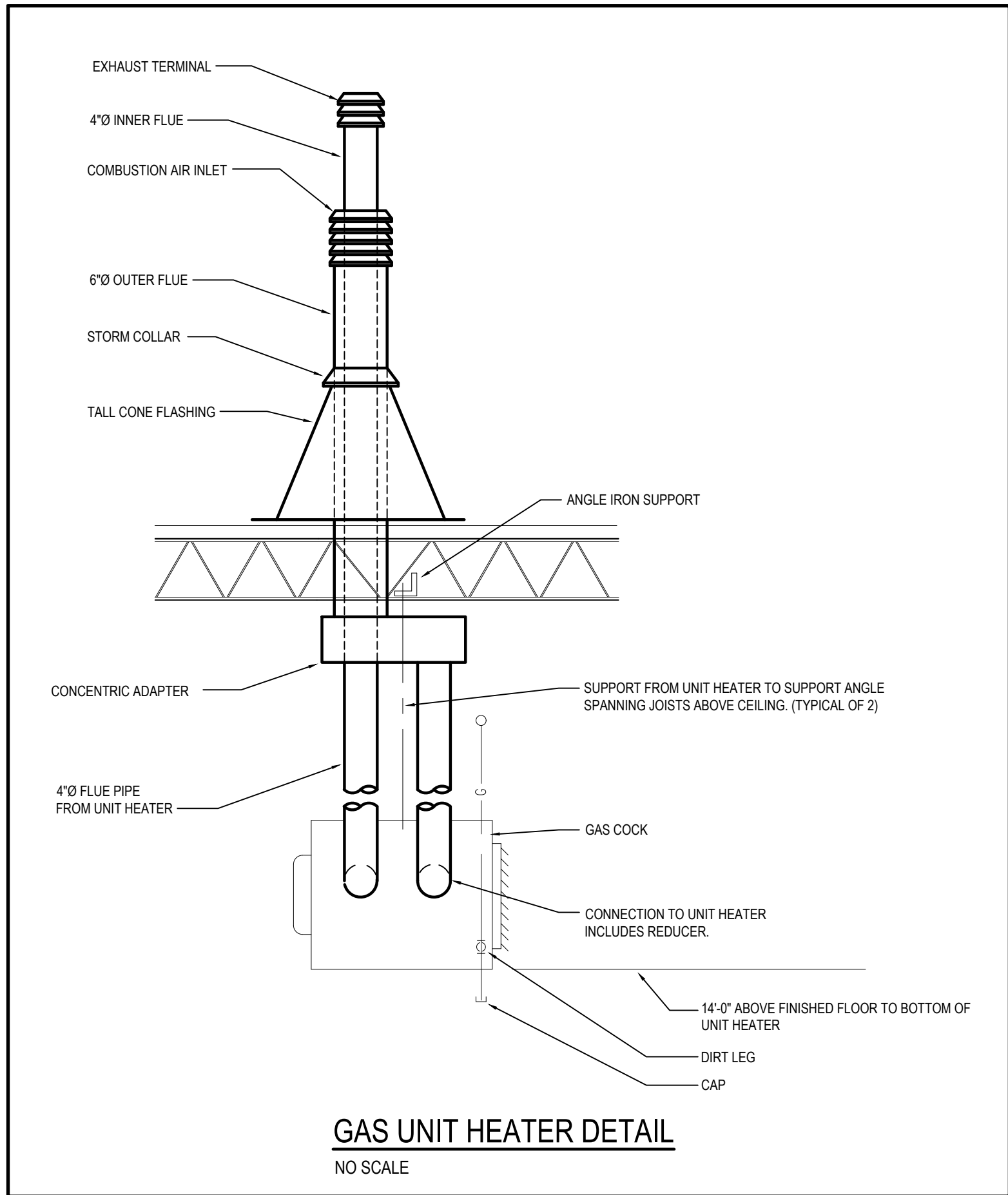
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REVISIONS

TYPE	DATE	#	1	2	3	4	5	6	7	8	9

MECHANICAL SCHEDULES	
DATE	9/22/21
JOB NO.	20420
M1.1 SHEET NO.	



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HARBOR FREIGHT TOOLS

NYACK, NY 10960

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MECHANICAL
DETAILS

DATE 9/22/21

JOB NO. 20420

M1.2

SHEET NO.

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 (240,000 BTU/Hr)
TOTAL GAS DEMAND	1,080.0 CFH (1,080,000 BTU/Hr)

NOTES:

- GAS PRESSURE APPEARS TO BE 7" W.C. CONFIRM GAS DELIVERY PRESSURE PRIOR TO STARTING WORK.
- GAS PIPE SIZES ARE BASED ON THE 2020 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 200 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.

NOTE:
THE FORMER TENANT WAS A SUPERMARKET. THERE ARE MULTIPLE FLOOR/HUB DRAINS, FLOOR SINKS, CLEANOUTS, WATER LINES, ETC... LOCATED THROUGHOUT THE LEASE SPACE. REFER TO PLUMBING DEMOLITION NOTES ON THIS DRAWING FOR ADDITIONAL INFORMATION.

PLUMBING DEMOLITION GENERAL NOTES:

- 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.
- THE PLUMBING CONTRACTOR SHALL CUT EXISTING SANITARY AND WASTE PIPING 3" BELOW FLOOR AND PLUG WITH PERMANENT STOPPER.
- 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.
- THE PLUMBING DEMOLITION WORK SHALL BE PERFORMED EXCLUSIVELY BY THE PLUMBING CONTRACTOR UNLESS OTHERWISE INDICATED.
- ALL PATCHING AND SEALING OF WALLS, FLOORS, CEILINGS, ETC... TO BE DONE BY GENERAL CONTRACTOR.
- THE PLUMBING CONTRACTOR TO MAKE ALL FINAL PLUMBING CONNECTIONS TO FIXTURES & EQUIPMENT.
- THE PLUMBING CONTRACTOR SHALL CUT AND CAP UNUSED EXISTING WATER AND VENT LINES BELOW FLOOR.
- THE PLUMBING CONTRACTOR SHALL REMOVE ALL UNUSED EXPOSED EXISTING WASTE, VENT, GAS AND WATER PIPING COMPLETE.
- 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 LEGEND	
SYMBOL	DESCRIPTION
---	COLD WATER PIPING (CW)
---	HOT WATER PIPING (HW)
---	SANITARY SEWER (BELOW GRADE)
⊙	CLEANOUT
---	SANITARY VENT PIPING
G	GAS PIPING
✂	SHUT-OFF VALVE IN RISER
✂	SHUT-OFF VALVE
⤵	RISER DOWN (ELBOW)
⤴	RISER UP (ELBOW)
⊕	BRANCH-TOP CONNECTION
⊖	BRANCH-BOTTOM CONNECTION
+	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

GAS PIPING NOTES:

- PLUMBING CONTRACTOR TO NOTIFY THE AUTHORITY HAVING JURISDICTION WHEN THE INSTALLATION IS READY FOR INSPECTION (AT ROUGH-IN PRIOR TO COVERING AND FINAL).
- 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.
- GAS PIPING IS SIZED WITH LONGEST LENGTH METHOD AND BASED ON THE INTERNATIONAL FUEL GAS CODE; SCHEDULE 40 METALLIC PIPE TABLE 402.4(2).
- 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.
- 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-LET FITTINGS.
- 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 OF PIPE (INCHES)	SPACING OF SUPPORT (FEET)	NOMINAL SIZE OF TUBING, SMOOTH-WALL (INCHES O.D.)	SPACING OF SUPPORT (FEET)
1/2	6	1/2	4
3/4 TO 1	8	5/8 OR 3/4	6
1-1/4 OR LARGER (HORIZONTAL)	10	7/8 OR 1 (HORIZONTAL)	8
1-1/4 OR LARGER (VERTICAL)	EVERY FLOOR LEVEL	1 OR LARGER (VERTICAL)	EVERY FLOOR LEVEL

PLUMBING DEMISE CRITERIA:

WATER SERVICE:

THERE IS AN EXISTING 1-1/2" DOMESTIC WATER SERVICE AND METER LOCATED NEAR THE FIRE SERVICE IN THE REAR OF THE HARBOR FREIGHT TOOLS' LEASE SPACE. HARBOR FREIGHT TOOLS TO SPLIT THE SERVICE AND PROVIDE THE ADJACENT LEASE SPACE WITH A 1" WATER LINE STUBBED INTO THE ADJACENT LEASE SPACE. NOTE: EXISTING WATER METER TO BE UTILIZED FOR HARBOR FREIGHT TOOLS' LEASE SPACE. FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING INCOMING DOMESTIC WATER SERVICE SERVING HARBOR FREIGHT TOOLS' LEASE SPACE PRIOR TO STARTING WORK. THERE IS NO BACKFLOW PREVENTER CURRENTLY INSTALLED ON THE DOMESTIC WATER SERVICE, FURNISH AND INSTALL BACKFLOW PREVENTER AS REQUIRED.

SEWER SERVICE:

EXISTING TOILET ROOMS ARE LOCATED IN THE REAR OF THE SPACE, UNDERNEATH THE EXISTING MEZZANINE. HARBOR FREIGHT TOOLS TO TRENCH NEW SANITARY LINE APPROXIMATELY 50 FEET TO THE NEW RESTROOM LOCATION AT THE SALES STOCK DIVIDE AND TO REWORK CONCRETE AT REQUIRED. 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. NOTE: HARBOR FREIGHT TOOLS TO PROVIDE A NEW 4" SANITARY SEWER STUB INTO THE ADJACENT LEASE SPACE, JUST PAST THE NEW DEMISING WALL.

GAS SERVICE:

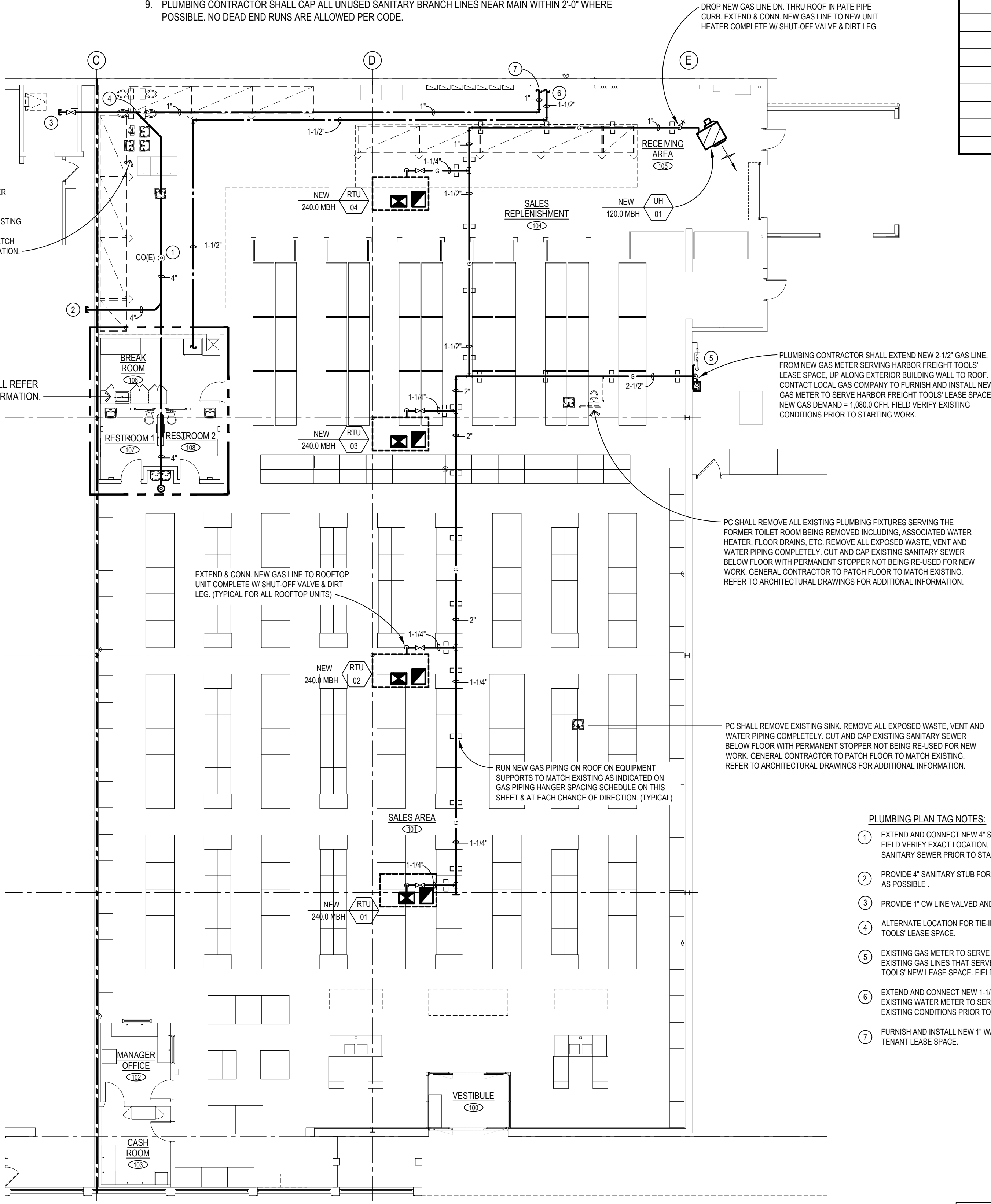
THERE IS AN EXISTING 1-1/2" GAS LINE RUNNING INTO THE METER WITH MULTIPLE 2" LINES OUT OF THE METER SERVING THE SPACE. HARBOR FREIGHT TOOLS TO MAINTAIN EXISTING SERVICE AND PIPING FOR THE ADJACENT LEASE SPACE, AND TO INSTALL A NEW METER AND PIPING AS REQUIRED FOR HARBOR FREIGHT TOOLS' LEASE SPACE. COORDINATE WORK WITH LOCAL GAS COMPANY. NEW GAS DEMAND = 1,080.0 CFH. FIELD VERIFY EXISTING CONDITIONS PRIOR TO STARTING WORK.

STORM SERVICE:

WATER EVACUATES ROOF TO THE FRONT OF THE SPACE TO ROOF DRAINS TO AN INTERIOR COLLECTOR TO A SUBGRADE SYSTEM HIDDEN IN THE SPACE. PLUMBING CONTRACTOR SHALL INSULATE ANY MISSING OR DAMAGED INSULATION ON THE INTERIOR STORM LEADER AND ROOF DRAIN SUMP. PIPE INSULATION SHALL BE 1" THICK SIMILAR TO DOMESTIC COLD WATER. PLUMBING CONTRACTOR TO COORDINATE WITH GENERAL CONTRACTOR FOR CLEANING OF ROOF DRAIN STRAINERS TO ENSURE PROPER WORKING CONDITION.

PC SHALL REMOVE ALL EXISTING PLUMBING FIXTURES SERVING THE FORMER TOILET ROOMS BEING REMOVED INCLUDING, ASSOCIATED WATER HEATER, FLOOR DRAINS, ELECTRIC WATER COOLER, MOP SINK, ETC. REMOVE ALL EXPOSED WASTE, VENT AND WATER PIPING COMPLETELY. CUT AND CAP EXISTING SANITARY SEWER BELOW FLOOR WITH PERMANENT STOPPER NOT BEING RE-USED FOR NEW WORK. GENERAL CONTRACTOR TO PATCH FLOOR TO MATCH EXISTING. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.

PLUMBING CONTRACTOR SHALL REFER TO DWG. P1.1 FOR MORE INFORMATION.



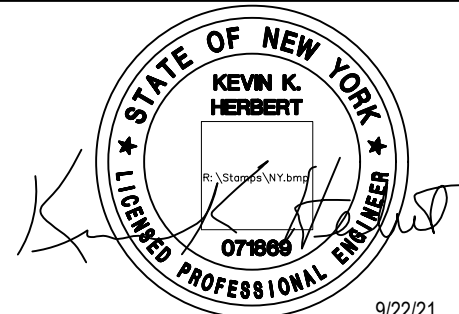
PLUMBING PLAN TAG NOTES:

- EXTEND AND CONNECT NEW 4" SANITARY SEWER INTO LOCATION OF EXISTING CLEANOUT. FIELD VERIFY EXACT LOCATION, DIRECTION OF FLOW, AND INVERT ELEVATION OF EXISTING SANITARY SEWER PRIOR TO STARTING WORK.
- PROVIDE 4" SANITARY STUB FOR ADJACENT LEASE SPACE. 4" SANITARY STUB TO BE AS DEEP AS POSSIBLE.
- PROVIDE 1" CW LINE VALVED AND CAPPED FOR ADJACENT LEASE SPACE.
- ALTERNATE LOCATION FOR TIE-IN OF NEW 4" SANITARY SEWER SERVING HARBOR FREIGHT TOOLS' LEASE SPACE.
- EXISTING GAS METER TO SERVE ADJACENT TENANT'S LEASE SPACE. CUT AND CAP ANY EXISTING GAS LINES THAT SERVED GAS-FIRED EQUIPMENT LOCATED WITHIN HARBOR FREIGHT TOOLS' NEW LEASE SPACE. FIELD VERIFY EXISTING CONDITIONS PRIOR TO STARTING WORK.
- EXTEND AND CONNECT NEW 1-1/2" CW LINE INTO EXISTING 1-1/2" METERED CW LINE. NOTE: EXISTING WATER METER TO SERVE HARBOR FREIGHT TOOLS' LEASE SPACE. FIELD VERIFY EXISTING CONDITIONS PRIOR TO STARTING WORK.
- FURNISH AND INSTALL NEW 1" WATER SUBMETER AND 1" WATER LINE TO SERVE ADJACENT TENANT LEASE SPACE.

PLUMBING PLAN

SCALE: 3/32" = 1'-0"

NOTE: PLUMBING CONTRACTOR SHALL REFER TO DWG. M1.3 FOR PLUMBING SPECIFICATIONS



HARBOR FREIGHT TOOLS

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PLUMBING PLAN

DATE 9/22/21

JOB NO. 20420

P1.0

SHEET NO.

PLUMBING GENERAL NOTES:

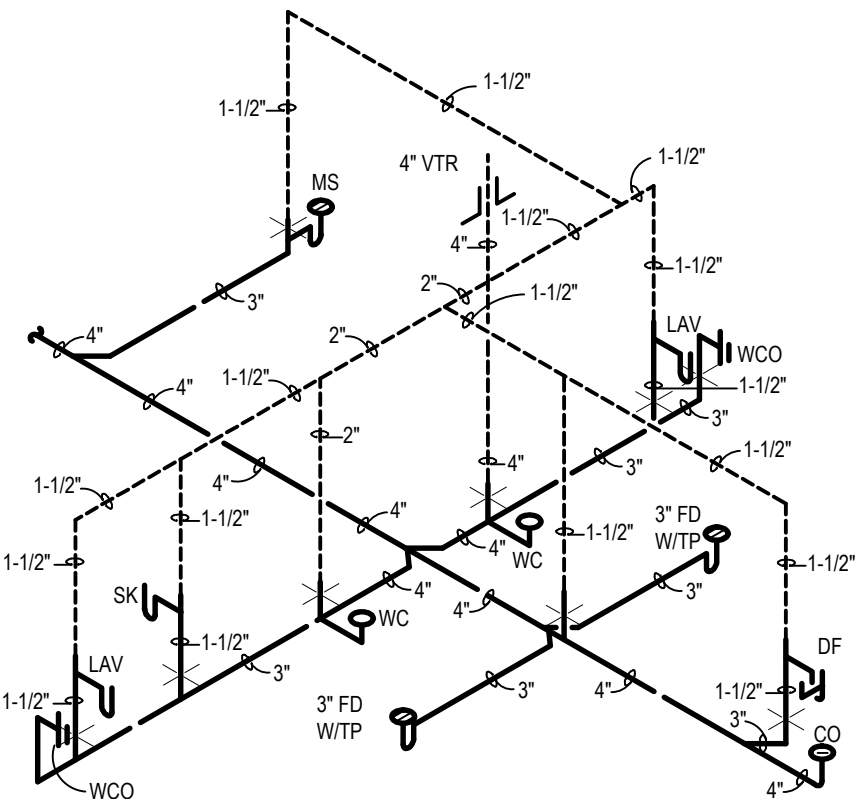
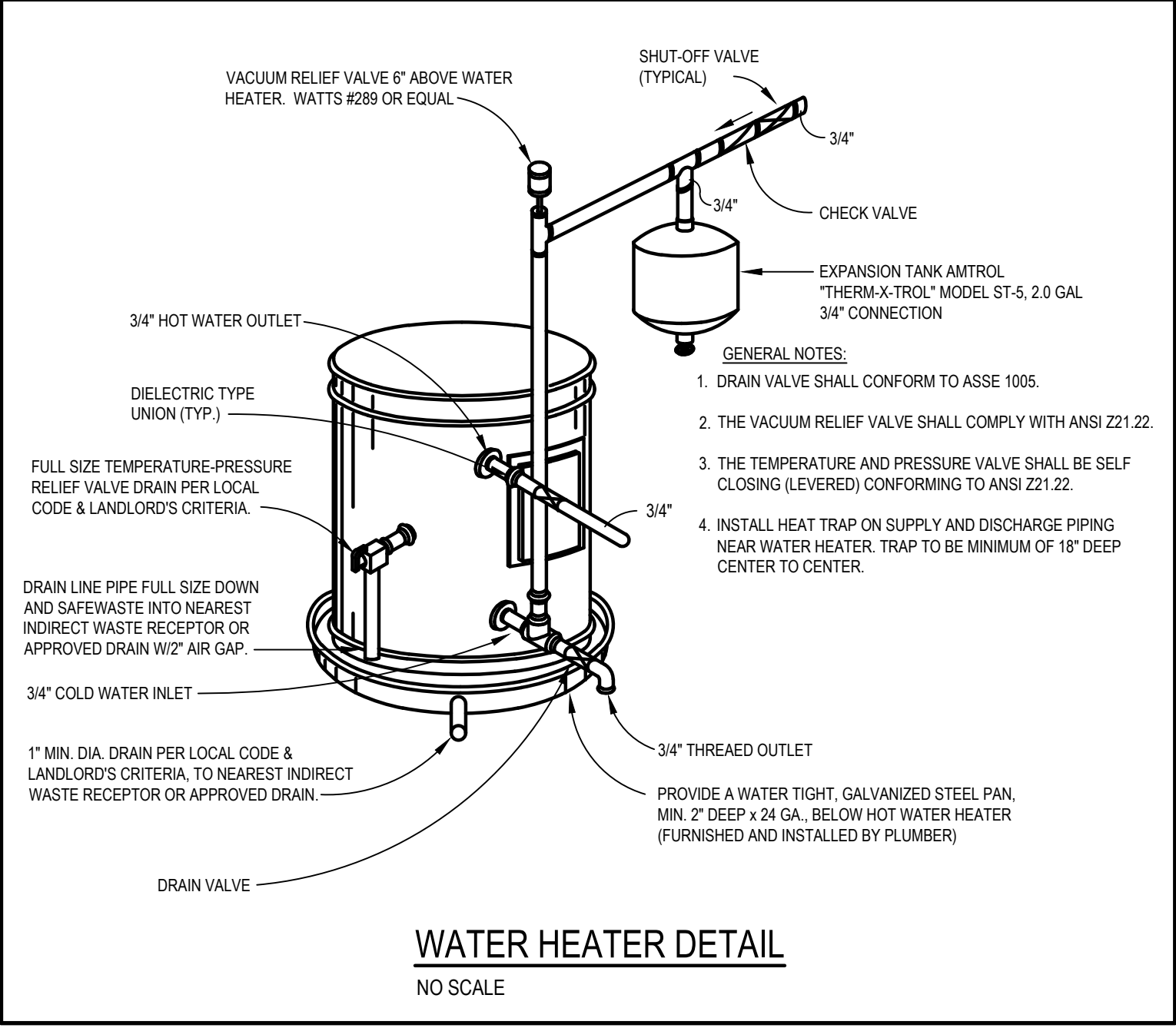
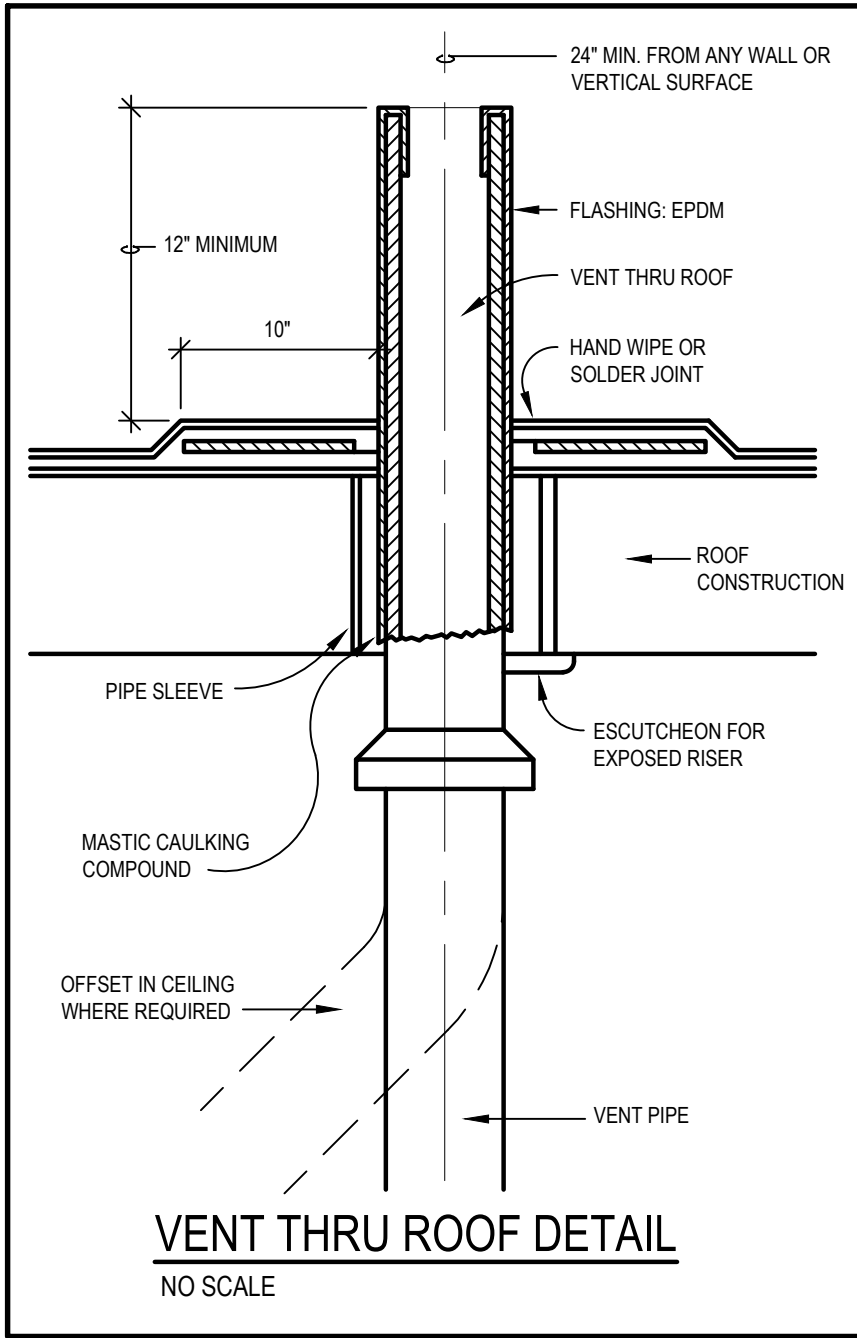
- EACH LENGTH OF PIPE, FITTINGS, TRAP, FIXTURE, MATERIAL, ETC., UTILIZED IN THE PLUMBING SYSTEM SHALL BEAR THE IDENTIFICATION OF THE MANUFACTURER, AND APPLICABLE STANDARD TO WHICH IT WAS MANUFACTURED.
- ALL MATERIALS USED SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE STANDARDS UNDER WHICH THE MATERIALS ARE ACCEPTED. ALSO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS SHALL BE FOLLOWED.
- PIPES PASSING THROUGH CONCRETE SHALL BE PROTECTED AGAINST EXTERNAL CORROSION BY A PROTECTIVE SHEATHING OR WRAPPING.
- PLUMBING SYSTEM SHALL BE INSTALLED SO AS TO PREVENT STRAINS AND STRESSES THAT EXCEED THE STRUCTURAL STRENGTH OF THE PIPE.
- JOINTS AT THE FLOOR, ROOF AND AROUND VENT PIPES SHALL BE MADE WATER TIGHT.
- 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:

CAST IRON PIPE	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"
- RIGID SUPPORT SWAY BRACINGS SHALL BE PROVIDED AT CHANGES IN DIRECTION OVER 45° FOR PIPE SIZE 4" AND ABOVE.
- 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:

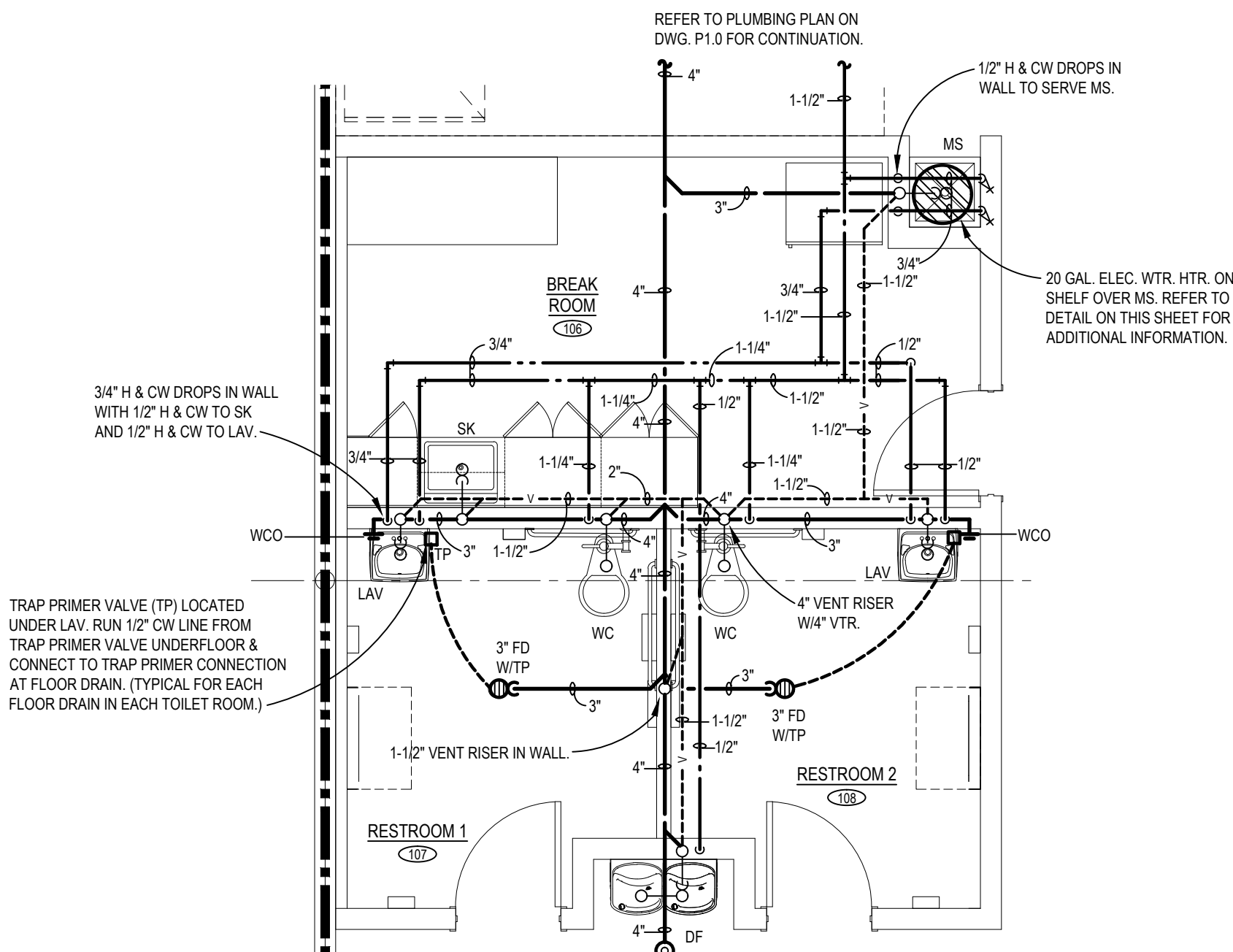
DRAINAGE & VENT WATER TEST:	MINIMUM 10 FEET OF HEAD AND KEPT IN FOR AT LEAST 15 MINUTES BEFORE INSPECTION STARTS
DRAINAGE & VENT AIR TEST:	MINIMUM 5 PSI FOR AT LEAST 15 MINUTES
DRAINAGE & VENT FINAL TEST:	SHALL BE VISUAL AND IN SUFFICIENT DETAIL TO DETERMINE COMPLIANCE
WATER DISTRIBUTION SYSTEM:	MINIMUM 100 PSI WATER PRESSURE
- THE SUPPLY LINES AND FITTINGS FOR EVERY FIXTURE SHALL BE INSTALLED TO PREVENT BACKFLOW.
- THE FIXTURES SHALL BE SET LEVEL AND IN PROPER ALIGNMENT.
- CONNECTIONS BETWEEN THE DRAIN AND FLOOR OUTLET PLUMBING FIXTURE SHALL BE MADE WITH A FLOOR FLANGE.
- FLOOR DRAIN SHALL CONFORM TO ASME A112.6.3 OR ASME A112.3.1.
- WATER HEATER RELIEF VALVE SHALL CONFORM TO ANSI Z21.22.
- WATER HEATER DRAIN VALVE SHALL CONFORM TO ASSE 1005.
- AFTER CONSTRUCTION THE INDIVIDUAL WATER SUPPLY SYSTEM SHALL BE PURGED OF DELETERIOUS MATTER AND DISINFECTED.
- WATER-HAMMER ARRESTOR SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION AND ASSE 1010.

- 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 AND FLUXES.
- 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.
- 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.
- 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.
- VENT PIPES SHALL EXTEND THROUGH THE ROOF AND TERMINATE AT LEAST 12 INCHES ABOVE THE ROOF. VENT PIPE THROUGH ROOF TO BE MADE WATER TIGHT.
- THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE, THE PLUMBING CONTRACTOR SHALL INCLUDE ALL NEEDED OFFSETS, CHANGES IN DIRECTION, ETC. NEEDED FOR COMPLETE AND OPERATIONAL SYSTEMS.
- THE CONTRACTOR WILL VISIT THE SITE AND BE FAMILIAR WITH SITE CONDITIONS. NO EQUIPMENT OR MATERIAL IS TO BE ORDERED OR 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.
- 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.
- TENANT'S CONTRACTOR IS TO VERIFY POINTS OF CONNECTION OF ALL VENT, SEWER AND WATER LINES WITH LANDLORD BEFORE PROCEEDING WITH WORK.
- INSTALL SHUT OFF VALVES AT ALL PLUMBING FIXTURES.
- INSTALL HAMMER ARRESTORS AT ALL PLUMBING FIXTURES.
- ALL EXPOSED PIPING ABOVE TENANT'S CEILING SHALL BE INSULATED WITH A MINIMUM OF 1" GLASS FIBER WITH NON-COMBUSTIBLE UL RATED VAPOR BARRIER JACKET PER CODE.
- TENANT'S CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH ALL WITHIN THE LANDLORD'S TENANT CRITERIA MANUAL INCLUDING MALL MANAGEMENT'S RULES AND REGULATIONS.
- 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 CABOJANSI STANDARDS WHICHEVER APPLICATION IS MORE STRINGENT FOR ITS USE.
- TENANT CONTRACTOR IS TO HAVE ALL WEATHERPROOFING OF ROOF PENETRATIONS DONE BY LANDLORD'S APPROVED ROOFING CONTRACTOR.
- PLUMBING CONTRACTOR TO INSULATE ANY EXISTING EXPOSED OR RE-INSULATE ANY DAMAGED, MISSING PIPE INSULATION WITH NEW PIPE INSULATION.
- 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.
- 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 PROVIDE A CD IN CLOSEOUT PACKAGE.
- 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.

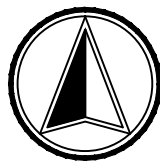
FIXTURE CONNECTION SCHEDULE				
TAG	DESCRIPTION	CW (IN.)	HW (IN.)	WASTE (IN.)
WC	WATER CLOSET	1	-	4
LAV	LAVATORY	1/2	1/2 (105°F)	1-1/2
DF	DRINKING FOUNTAIN	1/2	-	1-1/2
SK	SINK	1/2	1/2 (105°F)	1-1/2
MS	MOP SINK	1/2	1/2	3



SANITARY SCHEMATIC
NO SCALE



ENLARGED PLUMBING PLAN
SCALE: 1/4" = 1'-0"



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 EGSF20, 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. 1065SSC 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.

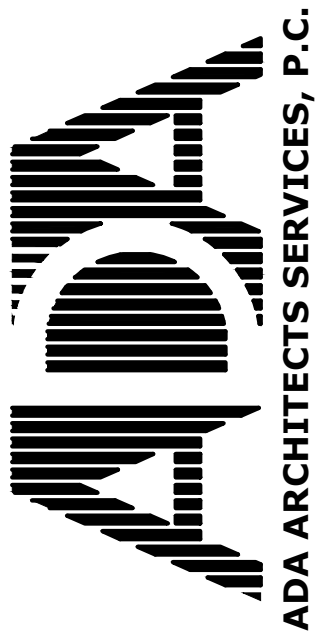
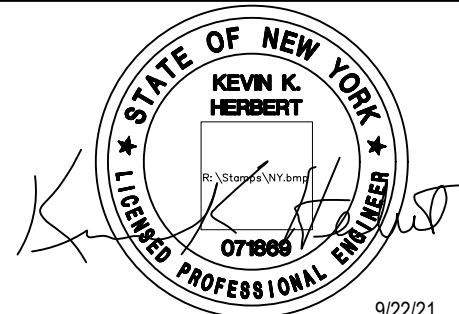
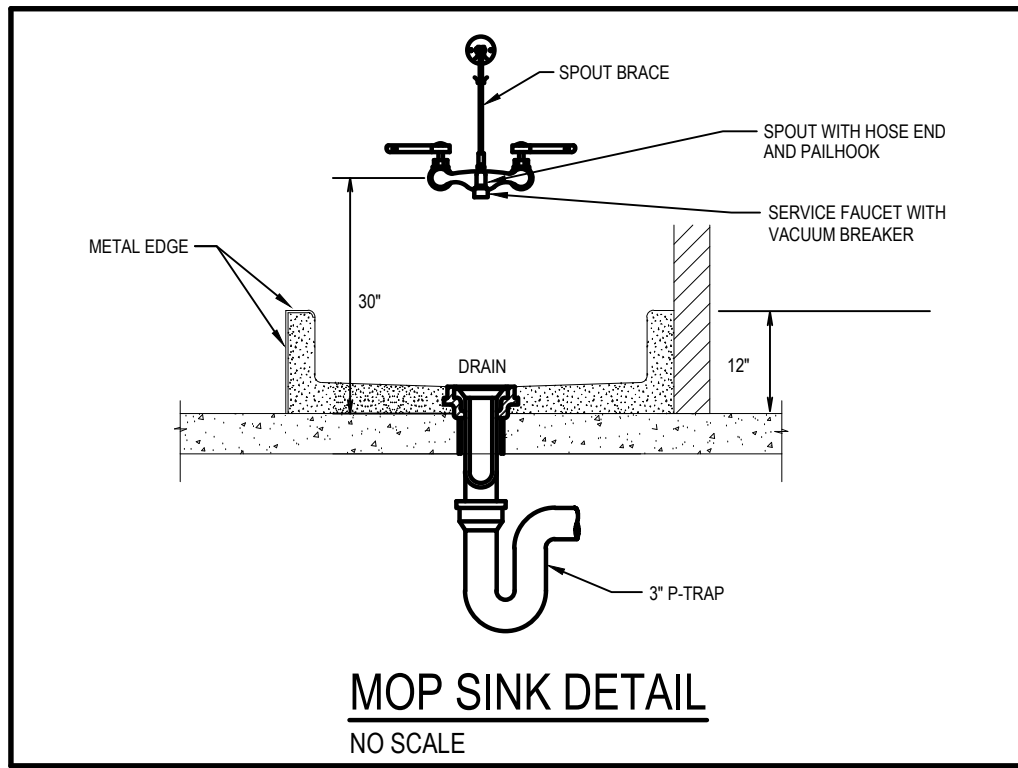
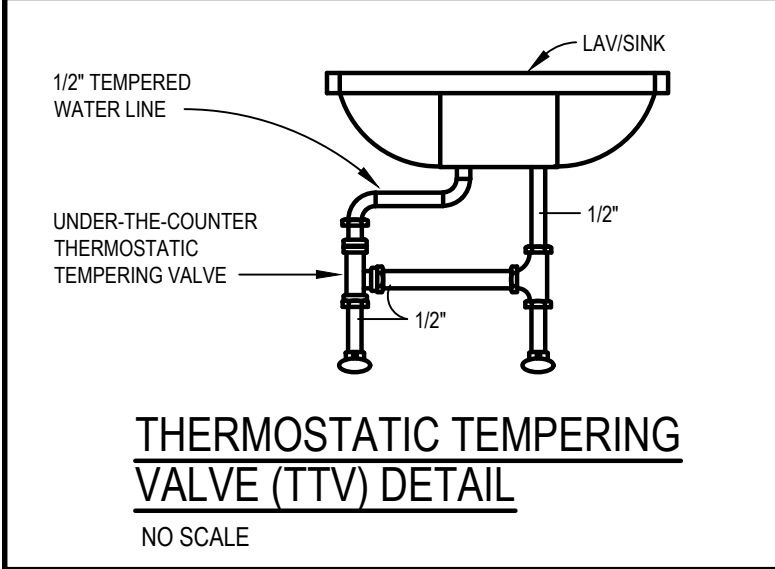
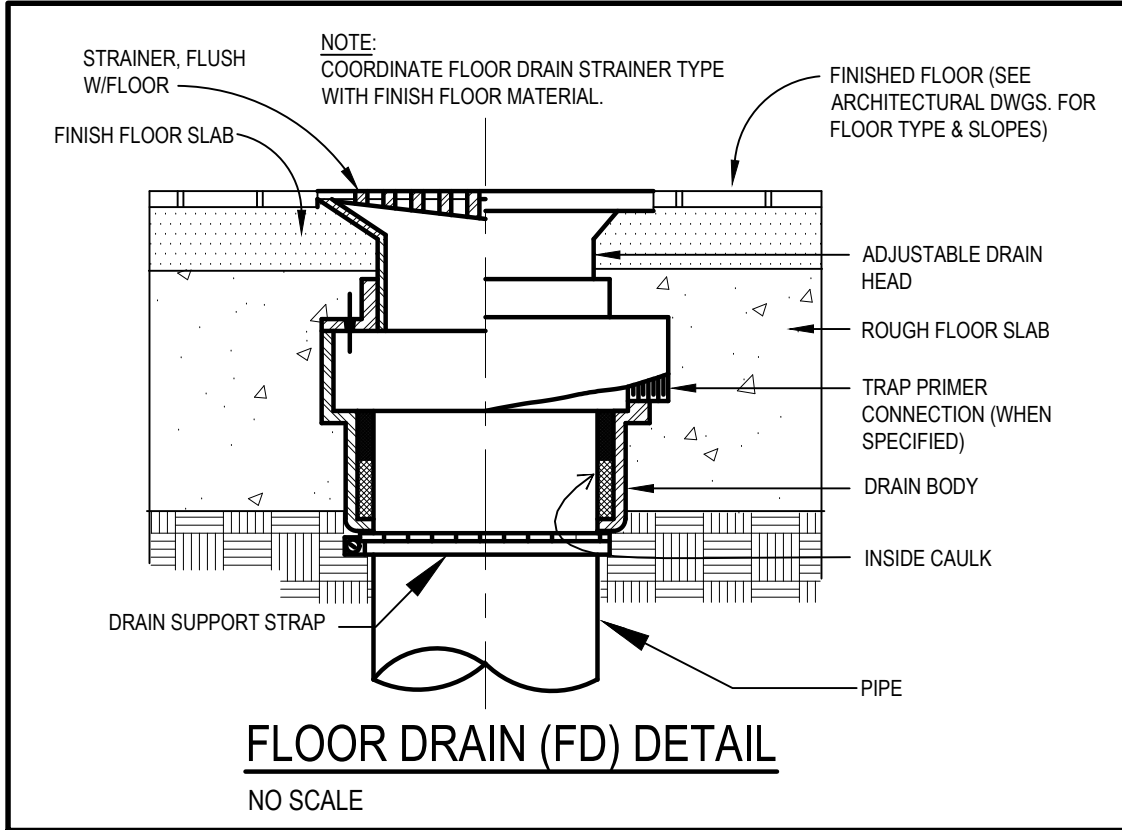
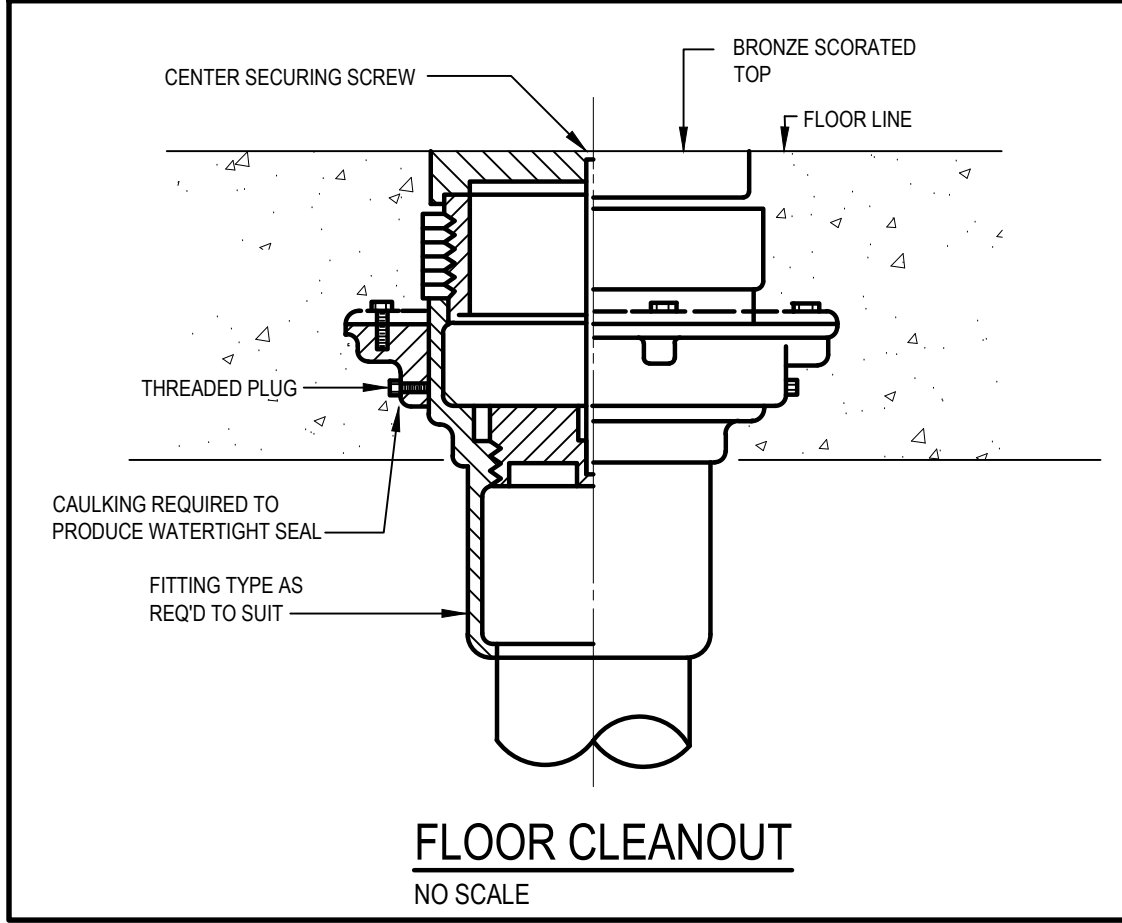
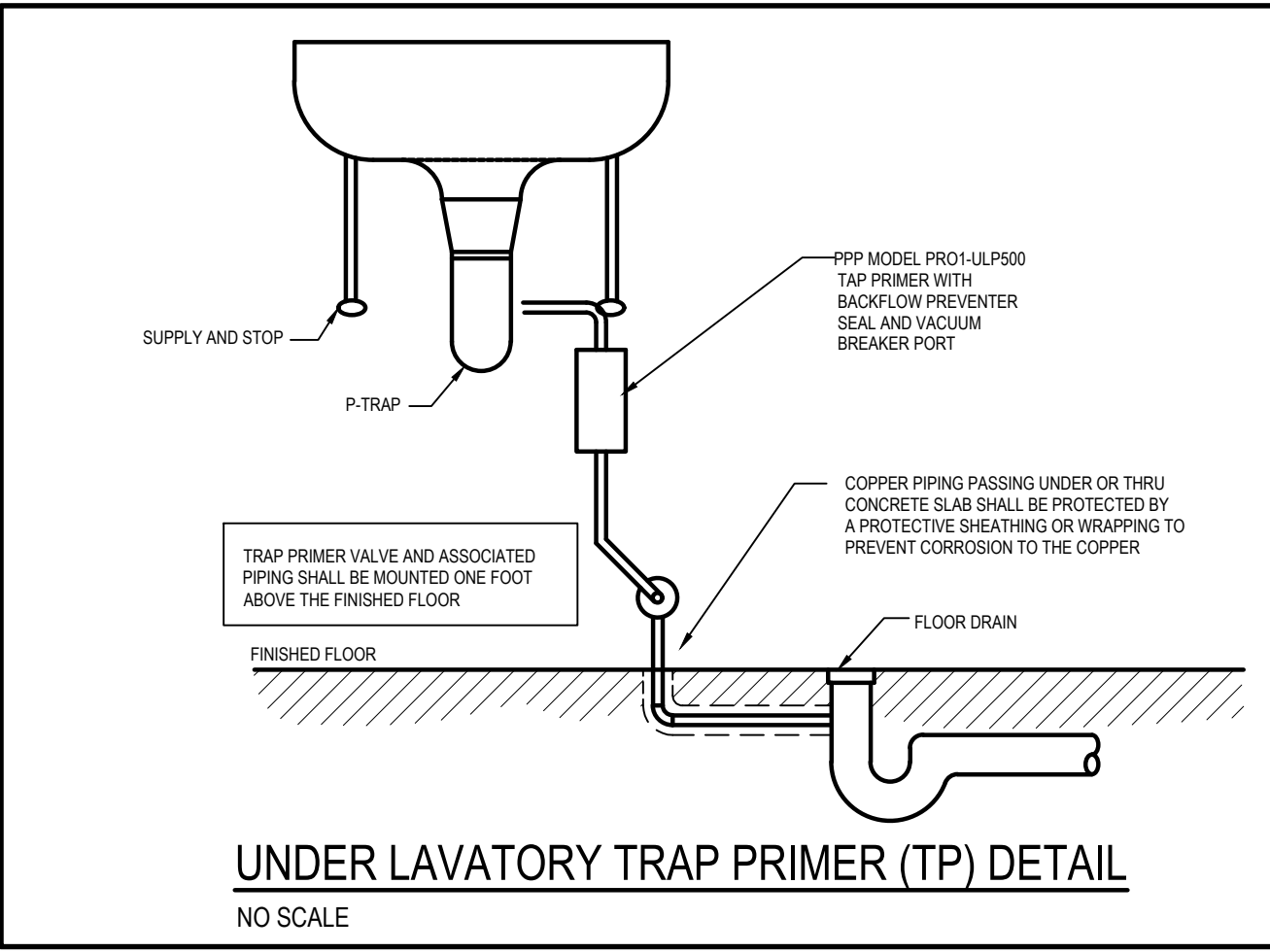
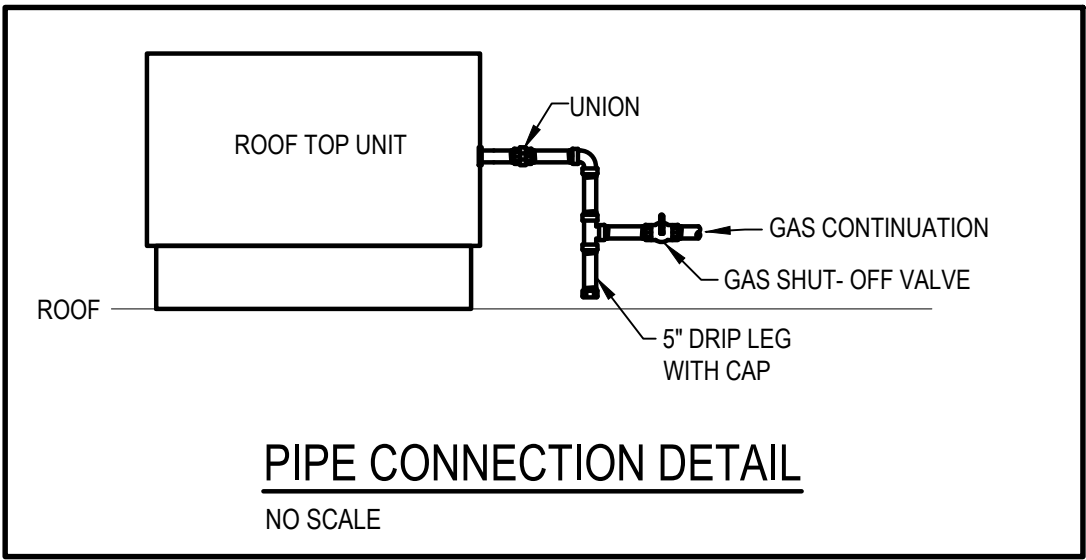
MOP SINK (MS): "FIAT" MODEL TS8100 TERRAZZO MOP SERVICE BASIN (24"x24"x12"). PROVIDE COMPLETE WITH STAINLESS STEEL CAPS ON ALL CURBS; HOSE AND HOSE BRACKET MODEL 832AA; (3) WALL GUARDS AND (2) ANGLE BRACKETS MODEL MSC2424; STAINLESS STEEL STRAINER MODEL 1453BB; SILICONE SEALANT MODEL 833AA; FAUCET: CHICAGO 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-35-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 EZSTDLC 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 LFMM/V 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.

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



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HARBOR FREIGHT TOOLS

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314 NY ROUTE 59

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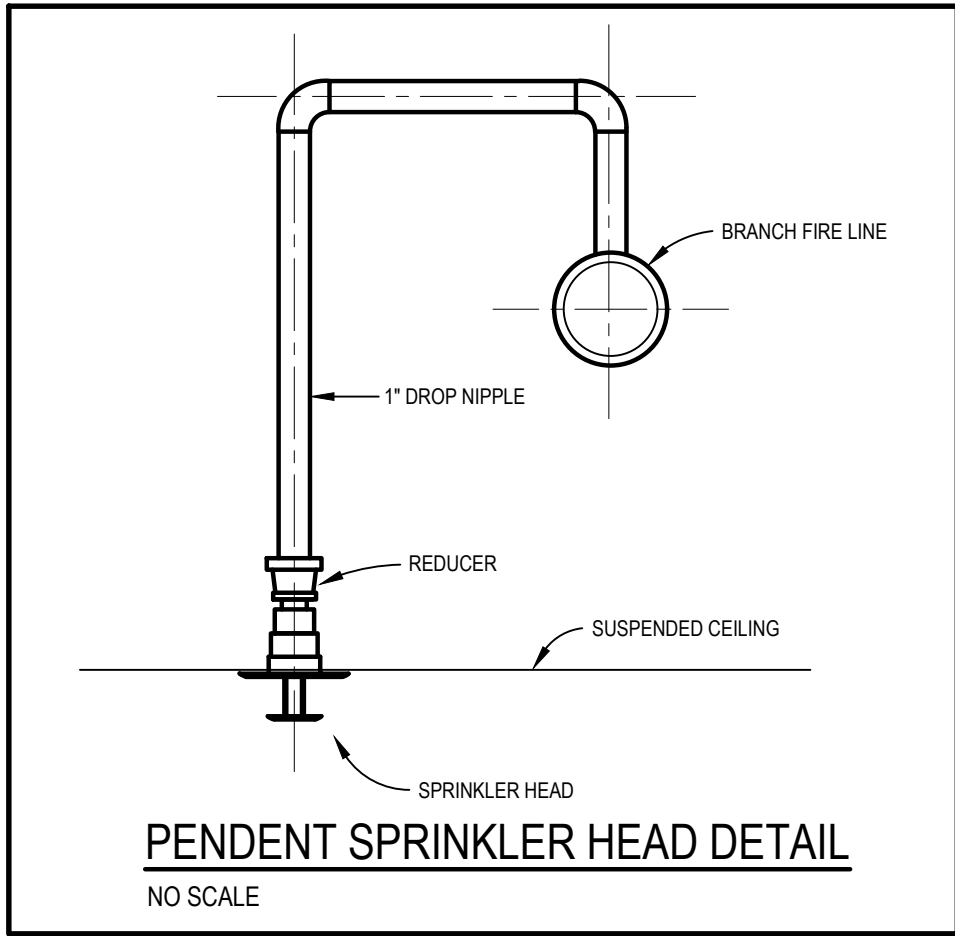
PLUMBING
DETAILS

DATE 9/22/21

JOB NO. 20420

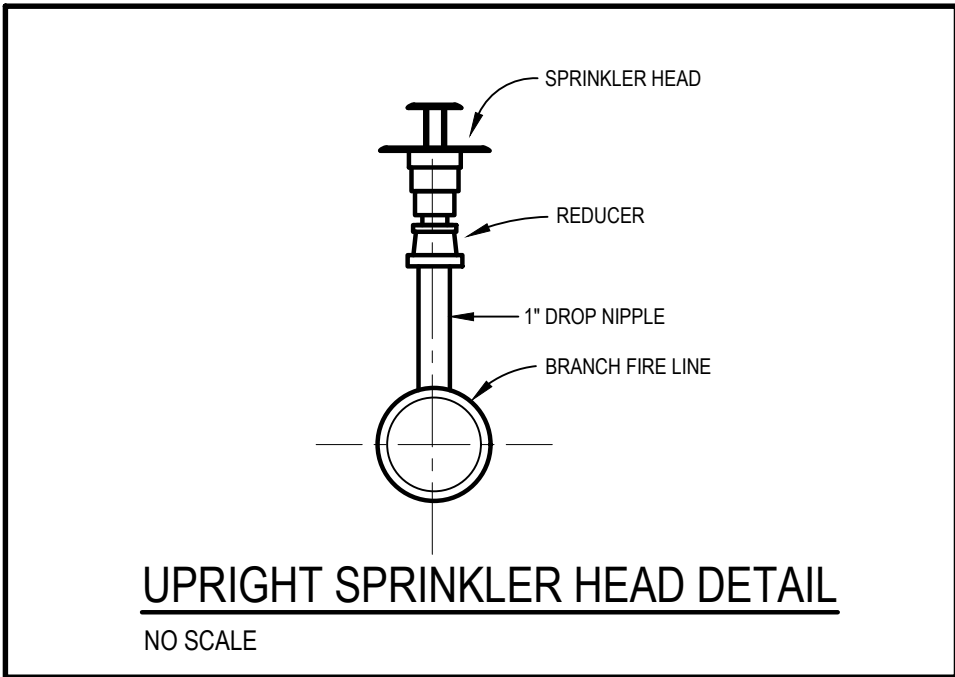
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SHEET NO.



NOTE:
THE SPACE IS FULLY SPRINKLED AND SERVED BY A 4" DIAMETER SPRINKLER MAIN LOCATED IN THE REAR OF THE BUILDING NEAR THE EXISTING ELECTRICAL SERVICE OF HARBOR FREIGHT TOOLS' LEASE SPACE.

NOTE:
GENERAL CONTRACTOR SHALL COORDINATE WITH BV AND LANDLORD FOR MONITORING REQUIREMENTS.



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.

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

- FIRE PROTECTION KEY NOTES:**
1. MODIFY SPRINKLERS AND PIPING OF EXISTING FIRE PROTECTION SYSTEM AS NECESSARY TO ACCOMMODATE THE REMOVAL OF EXISTING CEILINGS, LIGHTS AND WALLS AND THE INSTALLATION OF NEW FULL HEIGHT WALLS, CEILING GRIDS AND LIGHTS PER NFPA 13 REQUIREMENTS. SPRINKLER HEADS SHALL BE PENDENT TYPE.
 2. MODIFY SPRINKLERS AND PIPING OF EXISTING FIRE PROTECTION SYSTEM AS NECESSARY TO ACCOMMODATE THE REMOVAL OF EXISTING CEILINGS, LIGHTS AND WALLS AND THE INSTALLATION OF NEW WALLS AND LIGHTS PER NFPA 13 REQUIREMENTS. SPRINKLER HEADS SHALL BE UPRIGHT TYPE IN OPEN AREAS. NOTE: EXISTING SPRINKLER HEADS IN THIS AREA ARE PENDENT TYPE.
 3. MODIFY SPRINKLERS AND PIPING OF EXISTING FIRE PROTECTION SYSTEM AS NECESSARY TO ACCOMMODATE THE REMOVAL OF EXISTING LIGHTS AND WALLS AND THE INSTALLATION OF NEW LIGHTS PER NFPA 13 REQUIREMENTS. SPRINKLER HEADS SHALL BE UPRIGHT TYPE IN OPEN AREAS TO MATCH EXISTING. NOTE: EXISTING SPRINKLER HEADS IN THIS AREA ARE UPRIGHT TYPE.
 4. MODIFY SPRINKLERS AND PIPING OF EXISTING FIRE PROTECTION SYSTEM AS NECESSARY TO ACCOMMODATE REMOVAL OF EXISTING MEZZANINE AND CATWALK IN THIS GENERAL AREA PER NFPA 13 REQUIREMENTS. SPRINKLER HEADS SHALL BE UPRIGHT TYPE IN OPEN AREAS TO MATCH EXISTING.
 5. MODIFY SPRINKLERS AND PIPING OF EXISTING FIRE PROTECTION SYSTEM AS NECESSARY TO ACCOMMODATE NEW DEMISING WALL. MODIFY SPRINKLERS AND PIPING ON BOTH SIDES OF DEMISING WALL PER NFPA 13 REQUIREMENTS. FIELD VERIFY EXISTING CONDITIONS TO PROVIDE PROPER TYPE OF SPRINKLER HEAD.

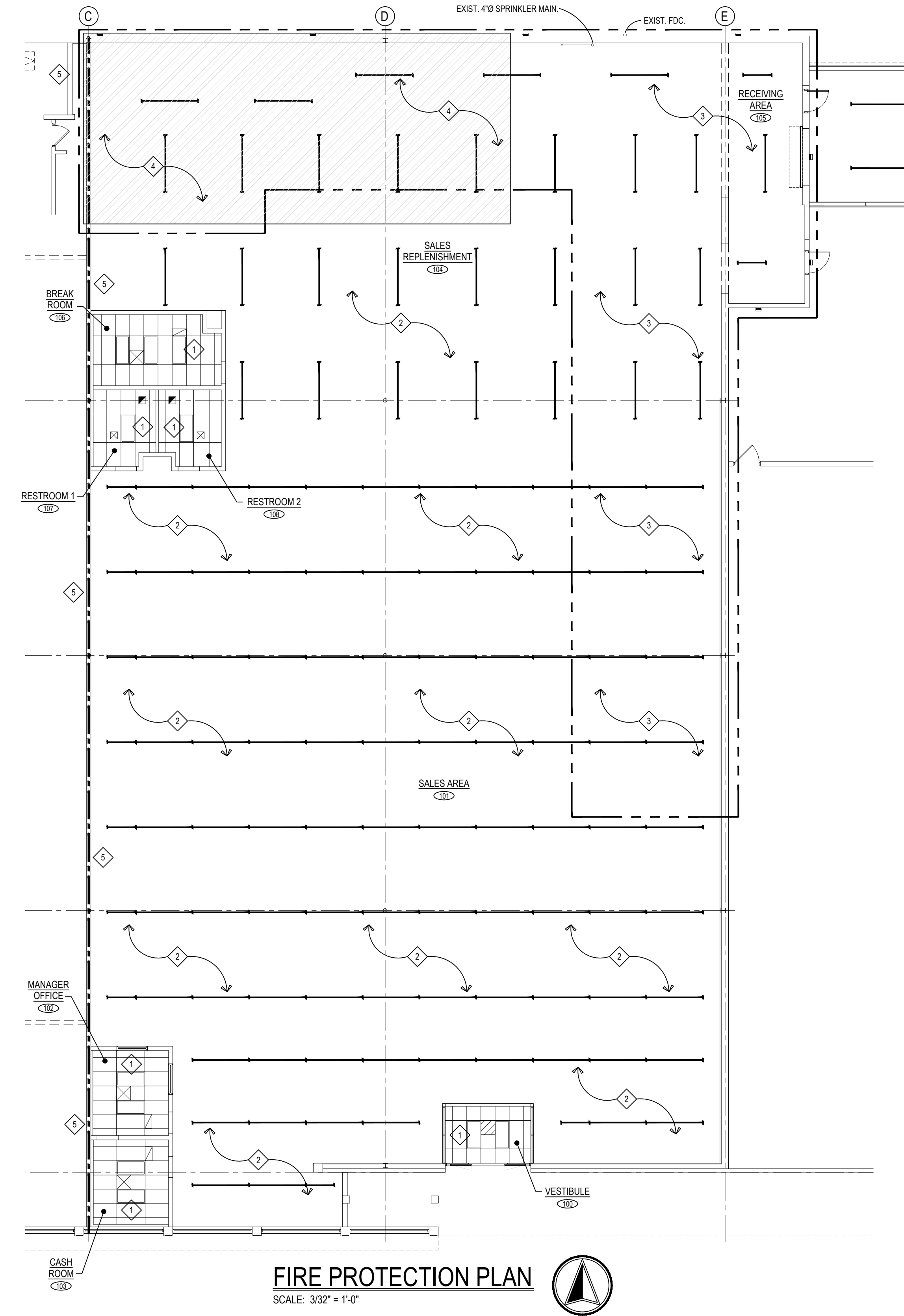
- FIRE PROTECTION NOTES:**
1. THIS DRAWING IS FOR REFERENCES PURPOSE ONLY. THE FIRE SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE FOR THE FULL DESIGN OF THE SPRINKLER SYSTEM AND ITS CONFORMANCE TO NFPA 13 AND ANY LOCAL CODE REQUIREMENTS. THE FIRE PROTECTION CONTRACTOR SHALL INCLUDE ALL NEEDED OFFSETS, CHANGES 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.
 3. 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 AWARDED 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.

DESIGN CRITERIA
FIRE PROTECTION AREA TYPES:

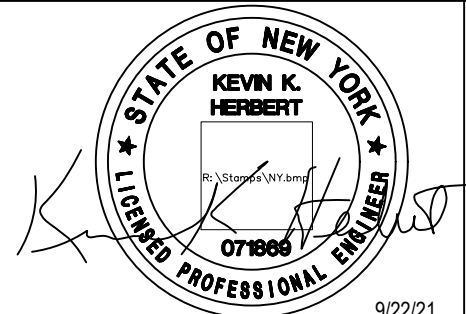
A) ORDINARY HAZARD II - 0.20 GPM/SQ.FT. OVER 1500 SQ.FT. WITH 250 GPM HOSE ALLOWANCE. SPRINKLERS SHALL E SPACED AT A 130 SQ.FT. MAXIMUM WITH SPRINKLER HEADS AT A MAXIMUM OF 13'-0" APART AND SPACED AT A MAXIMUM OF 6'-6" FROM ALL WALLS.

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



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FIRE PROTECTION PLAN	
DATE	9/22/21
JOB NO.	20420
FP1.0	
SHEET NO.	

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.
 - Furnish and install new fuses, circuit breakers, panelboards etc.
 - Install new lighting fixtures as indicated.
 - Furnish & install new light fixtures as indicated.
 - 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:
- The National Electrical Code - sometimes referred to herein as the "NEC" - (NFPA-70)
 - National Electrical Safety Code (ANSI-C2)
 - All applicable state and local codes.
 - Applicable provisions of the Occupational Safety and Health Act.

C. GENERAL REQUIREMENTS FOR SUBMITTING A 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 otherwise. 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 250-95 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 green "scotch" marking tape, code markers, or other approved means.

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 junction 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:

- Straight runs - not over one hundred (100) feet apart.
- One (1) 90 degree bend - not over seventy five (75) feet apart.
- 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 all 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 a #10 pull wire.

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:

- Provide all necessary trenching, backfill & removal of trenched material from site.

i. 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. Shoring, 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 6'. 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 tied 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 flow over the ducts.

vi. Bell ends shall be installed at 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

- 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.
- Fittings for rigid plastic conduit: Polyvinyl chloride, joints solvent welded in field, providing continuity of mechanical strength and watertightness. Fittings and cement shall be produced by the same manufacturer as the conduit.
- 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 manufacturers 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 Manufacturers: Crouse-Hinds, Pyle-National, Appleton, Adaliet, O-Z Gedney, or Killark.

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 to the following:

- Entering or cross-connecting enclosures containing arcing or high temperature devices.
- Two-inch conduit and larger entering any enclosure.
- Passing from Division 1 to Division 2, from Division 2 to non-classified areas, with or without a barrier.
- 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:

- Wood - wood screws.
- Concrete - expansion bolts or cast in place anchors.
- 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.

H. WIRING DEVICES

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. Conform color selection with architect before purchasing and installing.

2. Receptacles: Devices shall be specification grade, NEMA 5-20R configuration. Duplex type, Hubbell Cat No. CFS362, single outlet type, Hubbell Cat No. CFS361, GFCI duplex, Hubbell Cat No. GR CFS362. 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:

Hubbell
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.

7. 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.

8. 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. These phase receptacles shall be wired such that all have the same phase sequence.

iv. The receptacles 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 separate boxes.

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

i. Lighting Fixtures: see drawings for manufacturers catalog numbers.

2. Indoor Installation:

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 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 placed at 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, lay-in 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 plumbing equipment.

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 approved installation.

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 architectural 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 Lufftless 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:

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 sora 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 sornatube. 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.

J. Panelboards

1. Panelboards for 480/277, 208/120, or 240/120 panels shall be dead front type, conforming to NEMA standard PB-1-171 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 pultrux 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 UL listed type "SWQ" for that application. All circuit breakers used for protection of motors, refrigeration equipment, or HVAC equipment shall be UL listed type "HACR" for that application.

ii. Circuit breakers furnished with panelboards shall conform to the following interrupting ratings (symmetrical) in amperes unless otherwise noted:

Voltage Rating	Trip Rating	No. of Poles	I.c. Amperes (Symmetrical)	Frame Size	
120	15-100 ampere	1	22,000	100 amp	
240	15-100 ampere	2&3	22,000	100 amp	
240	125-225 ampere	2&3	22,000	225 amp	
240	250-400 ampere	2&3	42,000	400 amp	
277	15-100 ampere	1	25,000	100 amp	
480	15-100 ampere	2&3	25,000	100 amp	
480	125-225 ampere	2&3	30,000	225 amp	
480	250-400 ampere	2&3	42,000	400 amp	
480	400-800 ampere	2&3	42,000	800 amp	

iii. Ground fault circuit interrupters shall be similar to general use circuit breakers specified; 15-20 ampere, 1 or 2 pole with 5ma sensitivity. Furnish when indicated on drawing.

iv. Fuses over 600 ampere shall be Busman Hi-cap time delay type KRP-2, or Gould Shawmut A4BQ (601-2000 ampere) or Gould Shawmut A4BY (2001-6000 ampere) 600 volt, UL Class I with minimum interrupting rating of 200,000 ampere rms symmetrical.

v. Fuses 600 ampere or below shall be Busman low-peak dual element type LPN-RK (250 volt) or LPN-RK (600 volt) or Gould Shawmut Amp-trap type AZK (250 volt) or ARK (600 volt) UL Class RK1 with minimum interrupting rating of 200,000 ampere rms symmetrical.

vi. Provide space circuit breakers installed in panelboards as indicated on the panel schedule as shown on the drawings. Provide 10% space (minimum of 3) of each type and rating of fuses installed.

3. Safety Switches

i. Provide fusible or non-fusible safety switches as indicated on the drawings. Switches shall be quick-make, 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

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 celcius ambient temperature with a temperature rise not to exceed 80 degrees celcius. 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% 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:

KVA	dB level
0-150	42

iii. Furnish transformers having voltage, KVA ratings and connections as indicated on the drawings.

5. Panelboard and Transformer Installation

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 laminated plastic inside the door for panelboards in finished areas and on the outside of panelboards in unfinished areas with the panel designation as shown on the drawings.

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.

- 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 from the wall to permit back ventilation.
- 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.

vii. Approved Manufacturers for Power Distribution Equipment:

General Electric Company	Siemens
Cutler Hammer/Westinghouse	Cleveland Switchboard Co.
Square D	

K. RACEWAY AND GENERAL GROUNDING

1. The entire power, lighting system as well as building structure, mechanical & plumbing systems, fences & similar 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 stringent.

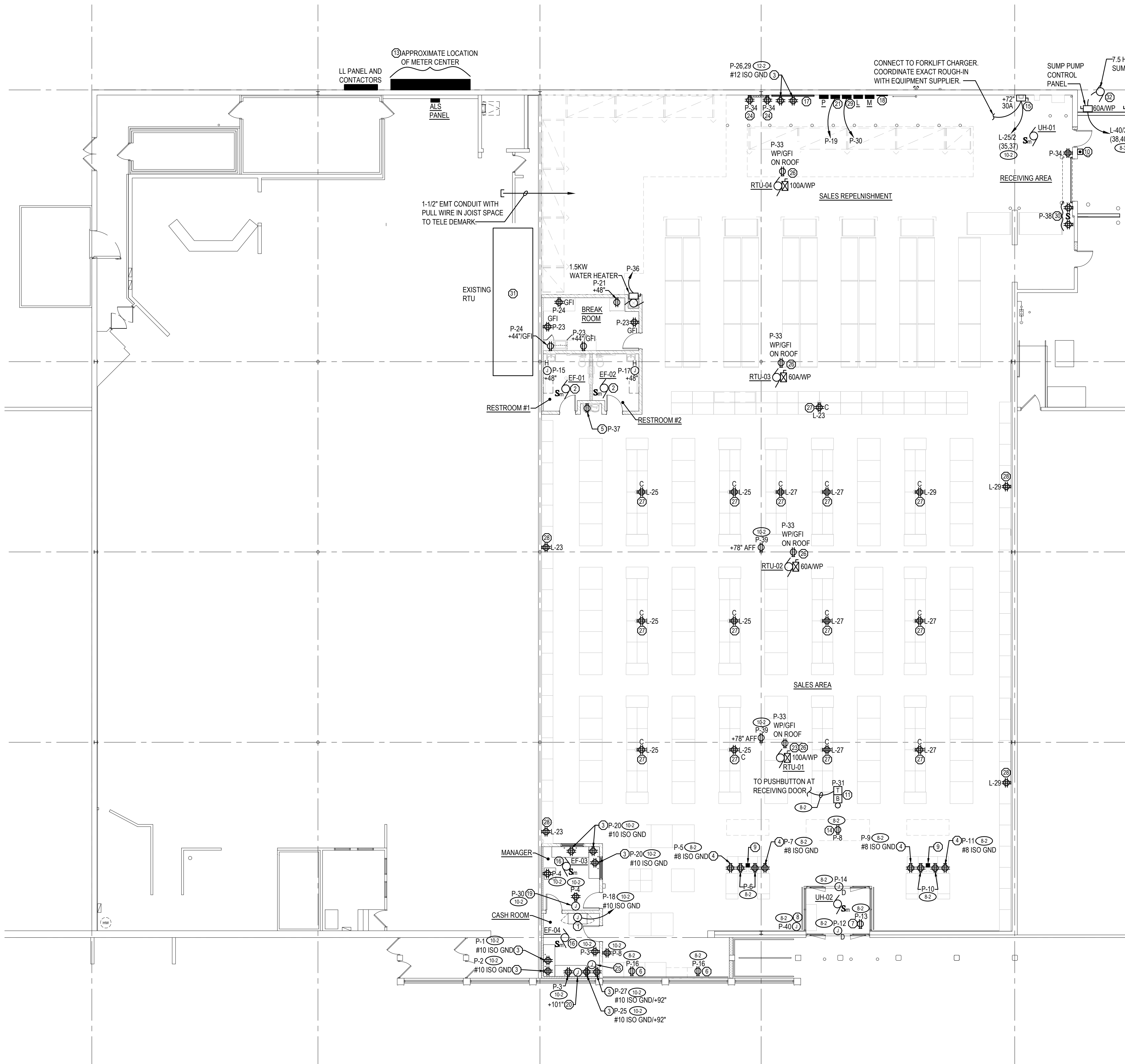
2. Ground conductors shall be stranded, annealed copper with green insulation (insulation material as specified for general building use).

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 trolleys or portable lighting units shall be



FOR GENERAL ELECTRICAL DEMOLITION NOTES
AND POWER PLAN NOTES, SEE SHEET E1.0A.

CONDUITS OR MOUNTING HARDWARE SHALL NOT
BE DIRECTLY MOUNTED TO THE ROOF DECK.

MECHANICAL EQUIPMENT SCHEDULE								
MARK	DESCRIPTION	LOAD	VOLTAGE & PHASE	PANEL	CIRCUIT	C.B.	WIRE	NOTES
RTU-1	ROOF TOP UNIT	71 MCA	208V-3PH	M	1,3,5	903	2-3	1,3
RTU-2	ROOF TOP UNIT	52 MCA	208V-3PH	M	2,4,6	603	6-3	1,3
RTU-3	ROOF TOP UNIT	52 MCA	208V-3PH	M	7,9,11	603	6-3	1,3
RTU-4	ROOF TOP UNIT	71 MCA	208V-3PH	M	8,10,12	903	2-3	1,3
UH-01	UNIT HEATER	1.8 KW	120V-1PH	P	22	301	10-2	1,3
UH-02	UNIT HEATER	4 KW	208V-1PH	L	39,41	252	10-2	1,2
EF-1	EXHAUST FAN #1	0.1 KW	120V-1PH	P	41	201	12-2	1,2,4
EF-2	EXHAUST FAN #2	0.1 KW	120V-1PH	P	41	201	12-2	1,2,4
EF-3	EXHAUST FAN #3	0.1 KW	120V-1PH	P	35	201	12-2	1,2,5
EF-4	EXHAUST FAN #4	0.1 KW	120V-1PH	P	35	201	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 BREAKER.
 4. CONTROL CIRCUIT WITH TIME CLOCK.
 5. WIRE TO 120 VOLT TSTAT AND LOUVER.

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



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DO NOT SCALE THESE DRAWINGS

REVISIONS	
#	DATE
1	
2	
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5	
6	
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8	
9	

POWER PLAN	
DATE	9/22/21
JOB NO.	20420
E1.0	
SHEET NO.	



1
E1.0 CASH WRAP POWER / COMMUNICATION DETAIL
SCALE: NOT TO SCALE

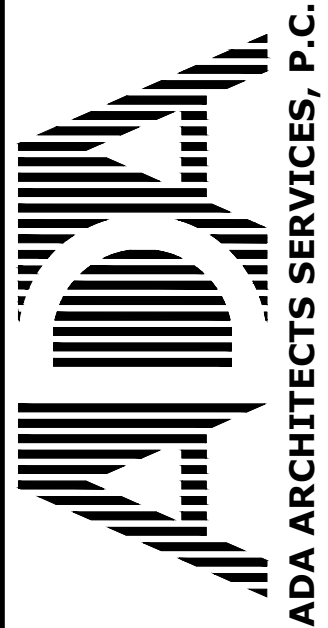
GENERAL ELECTRICAL DEMOLITION NOTES

- 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 NOTED OTHERWISE NOTED.**
- B) 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.
- D) 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.
- G) 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.
- H) 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.
- I) 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.

POWER PLAN NOTES

- 01 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 1'E1.0. 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 WINDOW.
- 07 DUPLEX OUTLET MOUNTED FLUSH IN WALL ABOVE GLASS FOR NEON SIGNS BY T.G.C.
- 08 J-BOXES WITH SERVICE DISC SWITCH FOR SIGN CIRCUITS. COORDINATE ROUGH-IN REQUIREMENTS WITH SYSTEM CONTRACTOR.
- 09 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 WHITE). SEE ARCHITECTURAL DRAWINGS FOR ROOF STRUCTURE HEIGHTS.
- 10 24 VAC WEATHERPROOF PUSH BUTTON MOUNTED 48" CONNECT TO LOAD SIDE OF TRANSFORMER. DORTRONICS #WRS276-HDZ9.
- 11 SERVICE BELL MOUNTED TO BOTTOM OF ROOF STRUCTURE. EDWARDS #340-6G5698-348.
- 12 REMOVE EXISTING ELECTRICAL PANELS IF NOT SHOWN ON THIS PLAN OR E2.0 AS EXISTING TO REMAIN.
- 13 INTERCEPT EXISTING SECONDARY CONDUITS AND EXTEND INTO NEW METER CENTER. PROVIDE NEW CONDUITS BETWEEN TRANSFORMER AS REQUIRED. UTILIZE EXISTING TO EXTENT POSSIBLE. SEE DRAWING E2.0 FOR DETAILS. ELECTRICAL CONTRACTOR SHALL COORDINATE NEW SWITCH & METER REQUIREMENTS WITH POWER COMPANY IMMEDIATELY UPON RECEIVING CONTRACT. CONDUITS BETWEEN THE SERVICE DISCONNECT SWITCH AND OR METER ENCLOSURE & THE TENANT DISTRIBUTION PANELS SHALL BE ROUTED VERTICALLY UP EXTERIOR WALL. PENETRATE EXTERIOR WALL IN JOIST SPACE. TURN CONDUIT & ROUTE TIGHT TO EXTERIOR WALL IN JOIST SPACE TO TENANT DISTRIBUTION PANELS. TURN CONDUITS DOWN & ROUTE VERTICALLY TO PANELS & CONNECT. PROVIDE FILL BOXES AS REQUIRED. SEAL CONDUIT AT EXTERIOR WALL PENETRATION. CONDUIT SHALL BE RUN IN JOIST WEB SPACE FOR THE ENTIRE ROUTE UNTIL THE VERTICAL DROP AT THE PANELS. INTERCEPT EXISTING EXTERIOR WALL LIGHTING, SITE LIGHTING, PYLON SIGNS, SUMP PUMPS, ETC. ANY LOAD THAT IS CONSIDERED A LANDLORD LOAD AND RE ROUTE TO PANEL 'LL' WITH LINE WIRE AND CONDUIT. PROVIDE CONTROL THAT MATCHES EXTERIOR LIGHTING AND SIGN SYSTEMS.
- 14 DUPLEX RECEPTACLE FOR SUSPENDED MONITOR. E.C. SHALL PROVIDE MC CABLE & CAST BOX & MOUNT RECEPTACLE ON MONITOR ARM. COORDINATE EXACT LOCATION WITH COMMUNICATIONS CONTRACTOR.
- 15 208/240V CHARGER WIRED & INSTALLED BY ELECTRICAL CONTRACTOR. COORDINATE ROUGH-IN REQUIREMENTS WITH EQUIPMENT MANUFACTURER PRIOR TO INSTALLATION.
- 16 UTILIZE EXHAUST FAN CIRCUIT & CONNECT POWERED LOUVER 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.
- 17 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 EXISTING TELEPHONE DEMARK CABINET.
- 19 6"x6"x4" DEEP BOX MOUNTED AT 40" AFF TO BOTTOM FOR ENERGY MANAGEMENT SYSTEM TOUCH SCREEN CONTROLLER. STUB (1) 1" CONDUIT ABOVE CEILING FOR COMMUNICATION CABLES. STUB A 3/4" CONDUIT TO A SINGLE GANG BOX MOUNTED 6" ABOVE CEILING FOR POWER SUPPLY WIRING. FROM SINGLE GANG BOX MOUNTED ABOVE CEILING HOMERUN BRANCH CIRCUIT TO PANEL BOX. STUB 3/4" WIPPLE INTO A 6" X 6" BOX LOCATED 6" ABOVE CEILING. EMS VENDOR SHALL INSTALL TOUCH SCREEN CONTROLLER POWER SUPPLY AND CONNECT LOW VOLTAGE POWER TO TOUCH SCREEN CONTROLLER. E.C. SHALL EXTEND LINE VOLTAGE TOUCH SCREEN CONTROLLER POWER SUPPLY CABLES AND CONNECT TO 120 VOLT POWER. TOUCH SCREEN CONTROLLER POWER SUPPLY AND TOUCH SCREEN CONTROLLER SHALL BE LOCATED WITHIN 6'-0" OF EACH OTHER.
- 20 SURFACE MOUNTED TERMINAL BOX MOUNTED NEXT TO SECURITY PANEL FOR EMS TO SECURITY SYSTEM INTERFACE.
- 21 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 AND 2.1.
- 22 NOTE NOT USED.
- 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 HFT SHALL PROVIDE 12 OUTLET 4" PLUGSTRIP WITH 6" POWER CORD AND POWER SWITCH. EC SHALL INSTALL. EC SHALL MOUNT QUAD RECEPTACLE AT 48" AFF ON EACH SIDE OF PEGBOARD. SEE BANNER/CHARGER STATION DETAIL ON DRAWING H4.0.
- 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.
- 26 ELECTRICAL CONTRACTOR SHALL INSTALL A HEAVY DUTY NEMA 3R DISCONNECT SWITCH. PROVIDE REJECTION TYPE FUSES SIZED PER THE MOCOP 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 MECHANICAL EQUIPMENT.
- 27 THE ELECTRICAL CONTRACTOR SHALL INSTALL AND WIRE A QUAD RECEPTACLE FOR EACH CORD REEL INDICATED ON THE FIXTURE PLAN. THE RECEPTACLE SHALL BE MOUNTED AT 18 INCHES ABOVE THE BOTTOM OF THE JOIST. INSTALL ALL THE OUTLET IN A WHITE CAST BOX WITH WHITE COVER. PROVIDE UNISTRUT BRACKETING IN JOIST SPACE PER HFT INSTALLATION DOCUMENTATION. OBTAIN INSTALL DOCUMENTATION PRIOR TO BIDDING.
- 28 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 WHITE CAST BOX AND PAINT EMT CONDUIT TO MATCH WALL SURFACE.
- 29 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.
- 30 ELECTRICAL CONTRACTOR SHALL INSTALL A RECEPTACLE MOUNTED AT 95" 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.
- 31 EXISTING RTU TO REMAIN. UTILIZE EXISTING CONDUIT AND WIRE TO EXTENT POSSIBLE. EXTEND FEEDER WITH MATCHING STYLE CONDUIT AND WIRE TO 'ALS' PANEL AS REQUIRED. VERIFY EXACT BREAKER SIZE AND ADJUST AS REQUIRED. LOOK OUT AIR CONDITIONING FUNCTION OF RTU.
- 32 SUMP PUMP AND CONTROL PANEL SHALL BE INSTALLED BY G.C. WIRED BY HFT E.C. PROVIDE POWER AND CONTROL WIRING BETWEEN SUMP PUMP AND CONTROL PANEL.
- 33 GRINDER PUMP AND CONTROL PANEL SHALL BE INSTALLED BY G.C. WIRED BY HFT E.C. PROVIDE POWER AND CONTROL WIRING BETWEEN GRINDER PUMP AND CONTROL PANEL.

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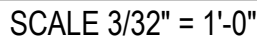
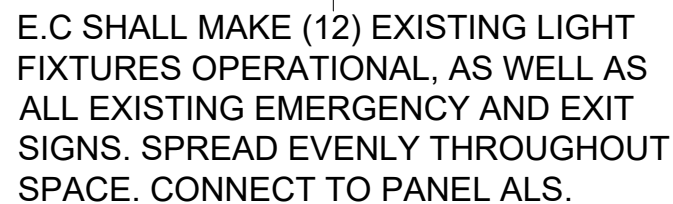
POWER PLAN

DATE 9/22/21

JOB NO. 20420

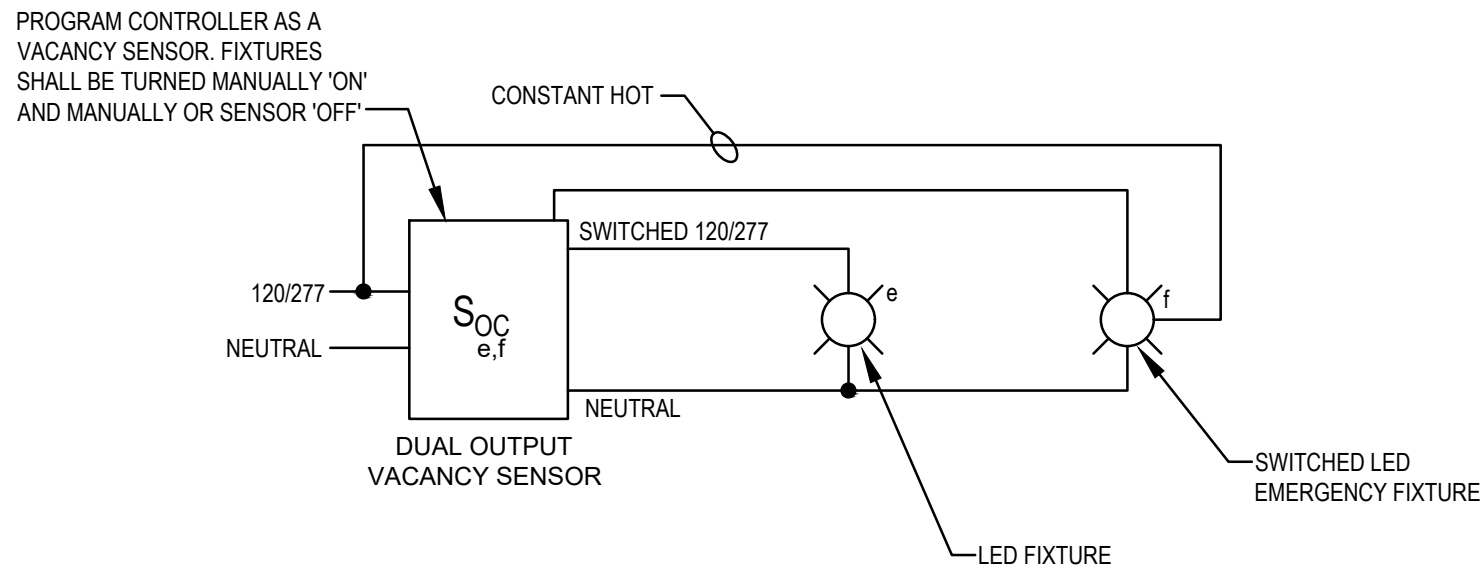
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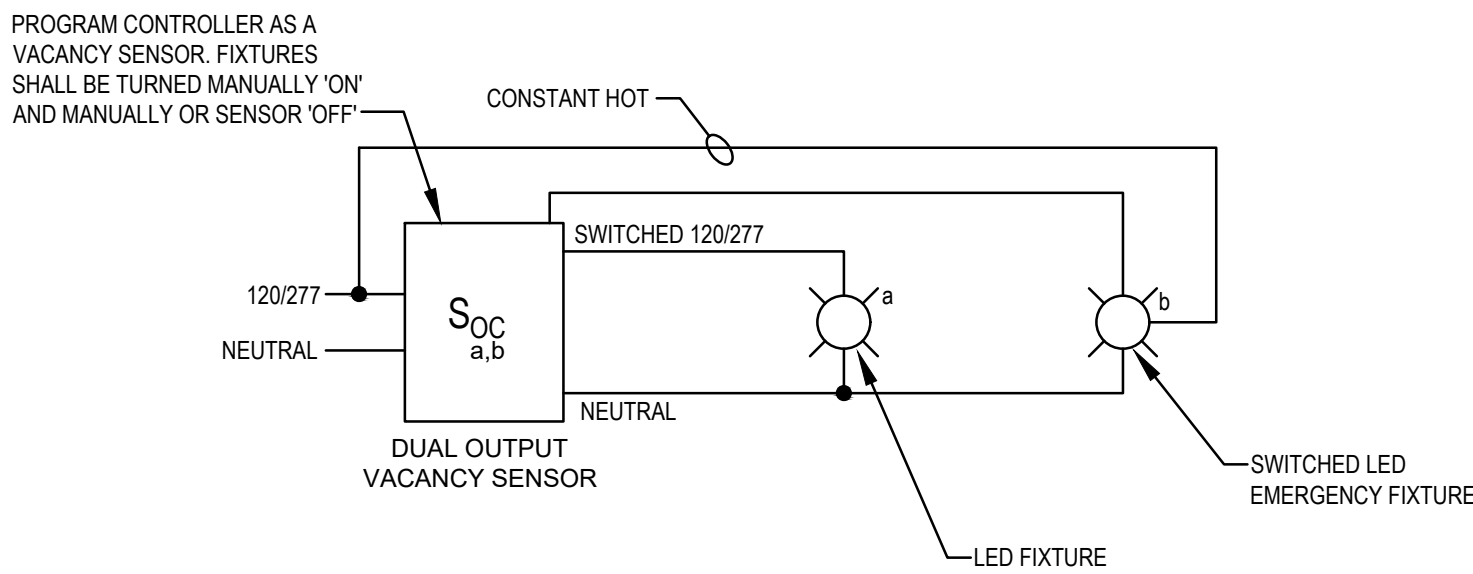


SALES FLOOR LIGHTING SHALL BE CHAIN MOUNTED
AT 12'-0" TO THE BOTTOM OF THE FIXTURE.

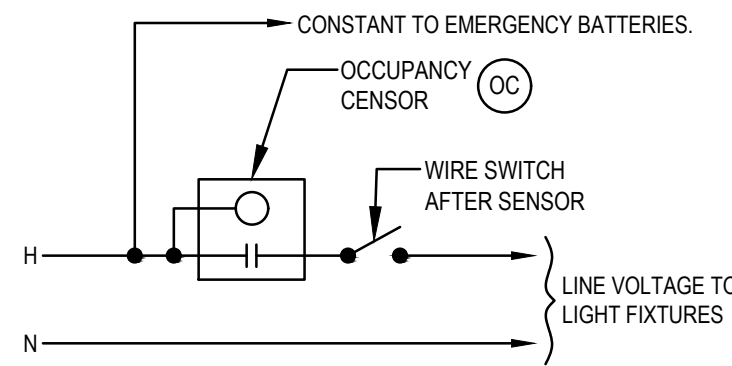
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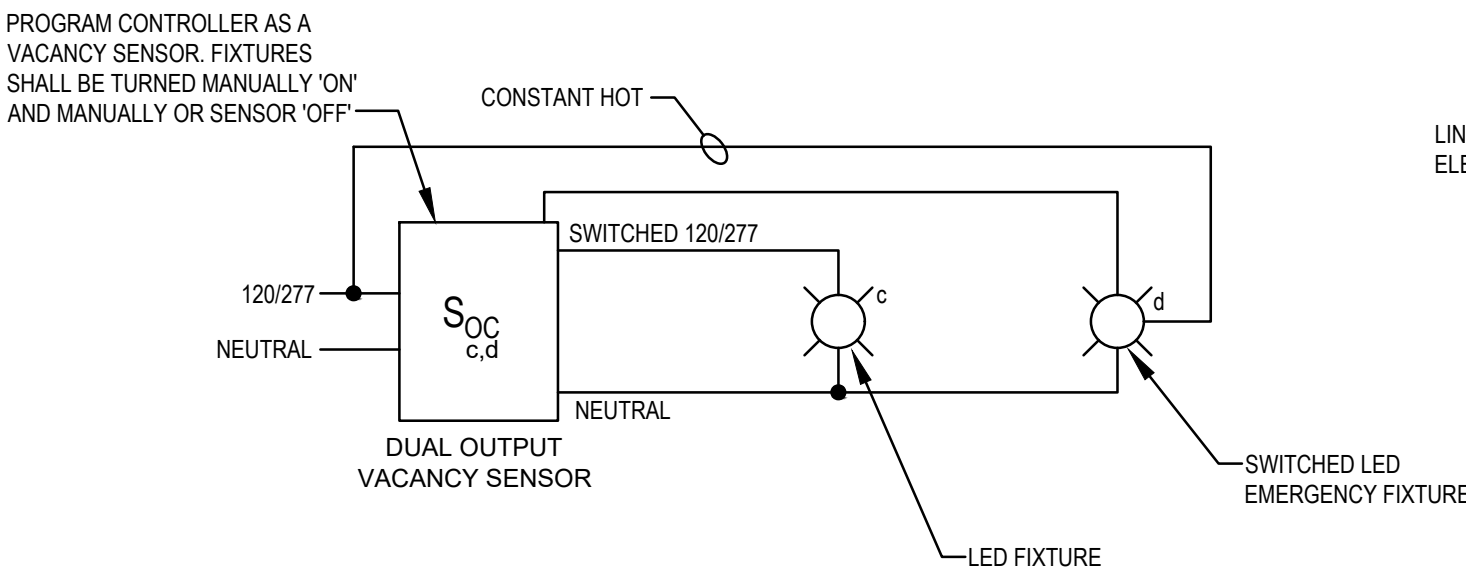
BREAK ROOM CONTROL SCHEME
N.T.S.



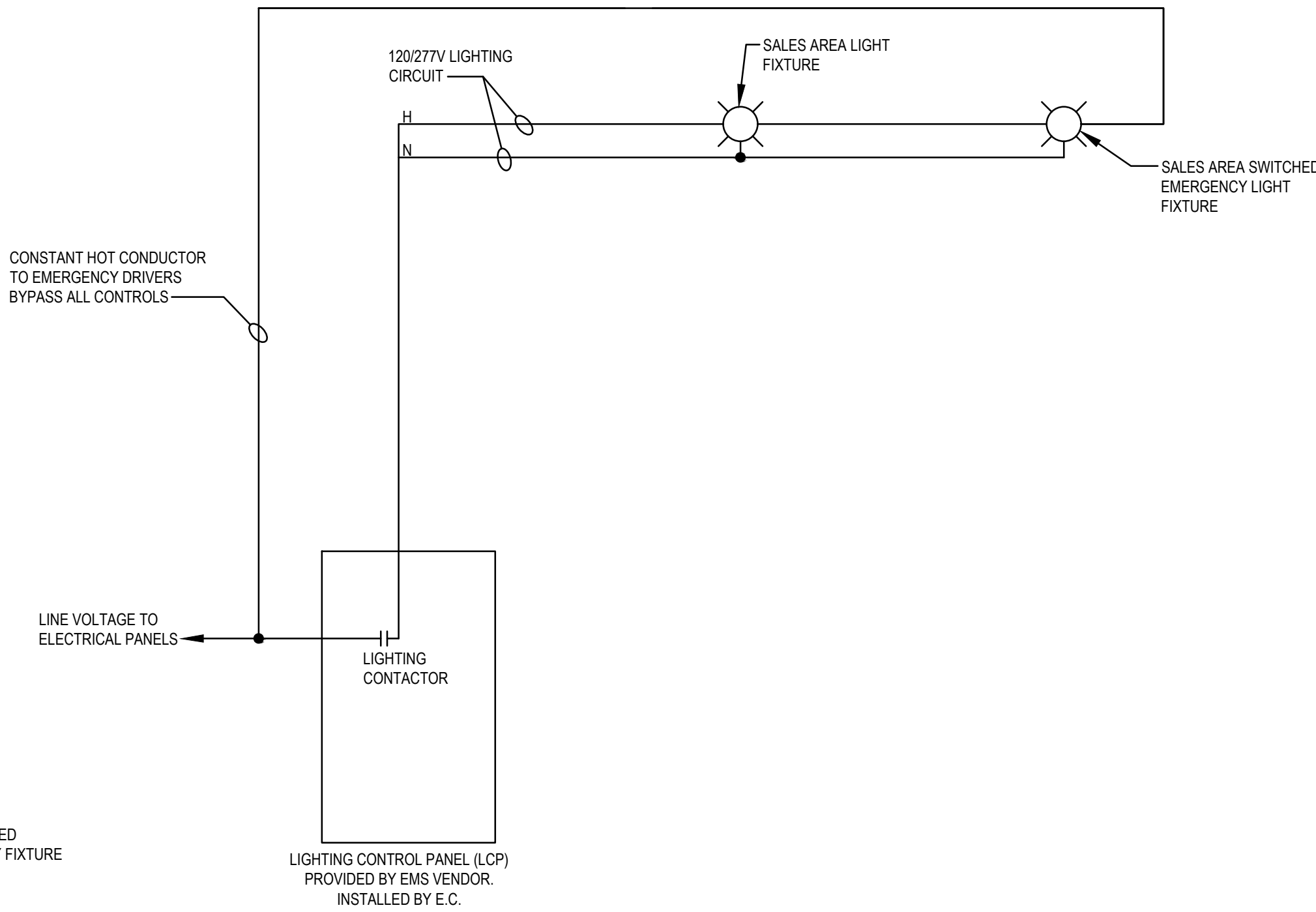
MANAGER'S OFFICE CONTROL SCHEME
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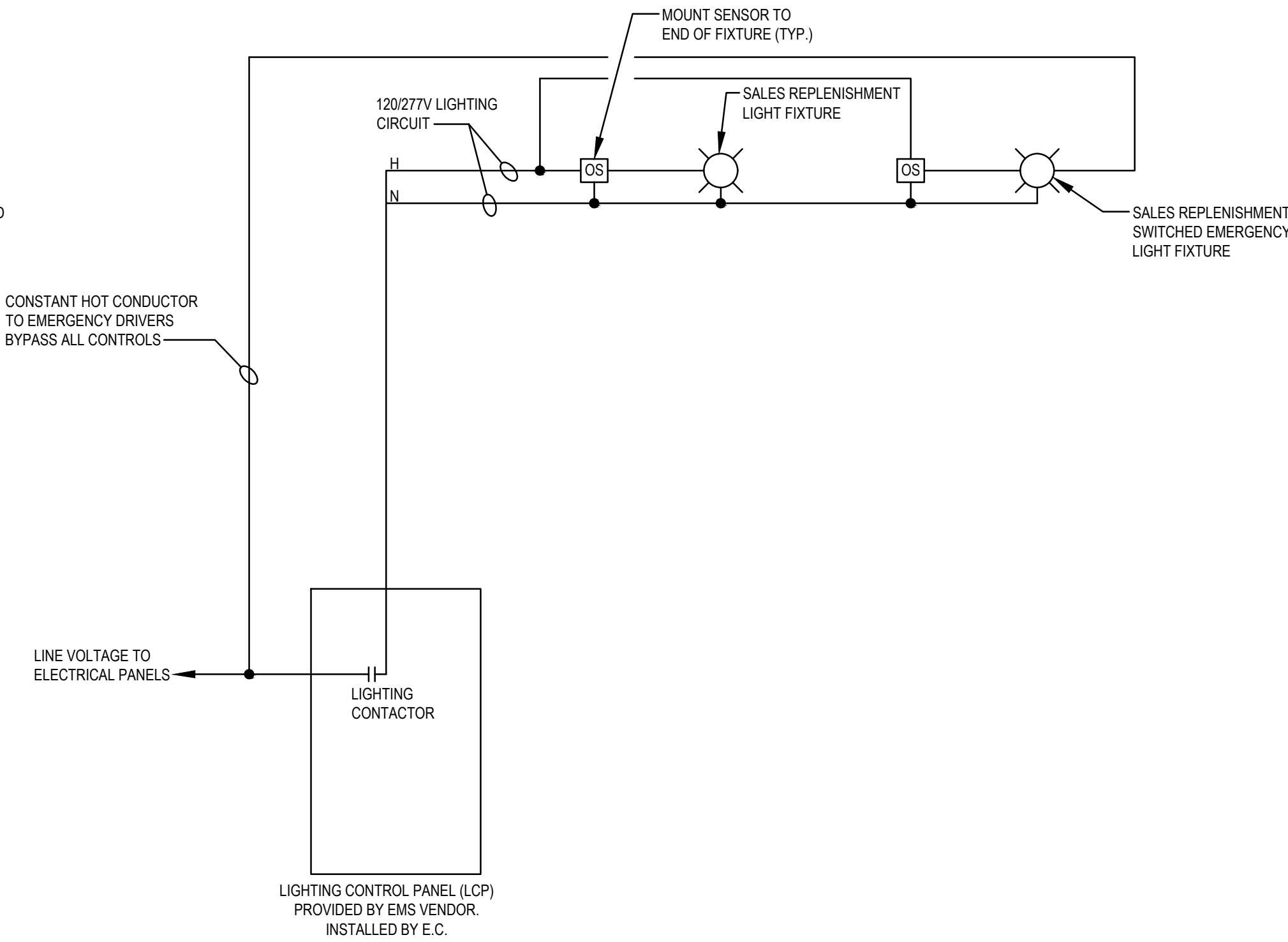
TOILET ROOM OCCUPANCY CONTROL SCHEME
N.T.S.



CASH ROOM CONTROL SCHEME
N.T.S.

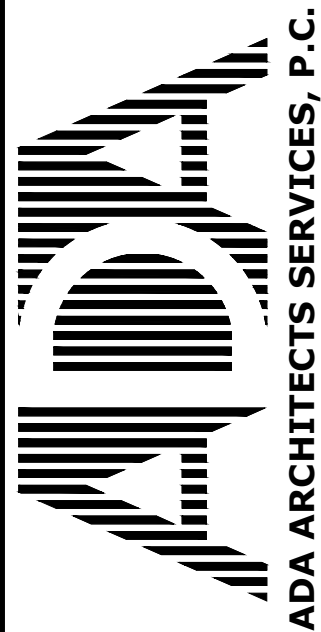


SALES FLOOR CONTROL SCHEME
N.T.S.



SALES REPLENISHMENT CONTROL SCHEME
N.T.S.

ALL DEVICES SHOWN FOR OCCUPANCY / DIMMING CONTROL INDICATED ON THIS 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.



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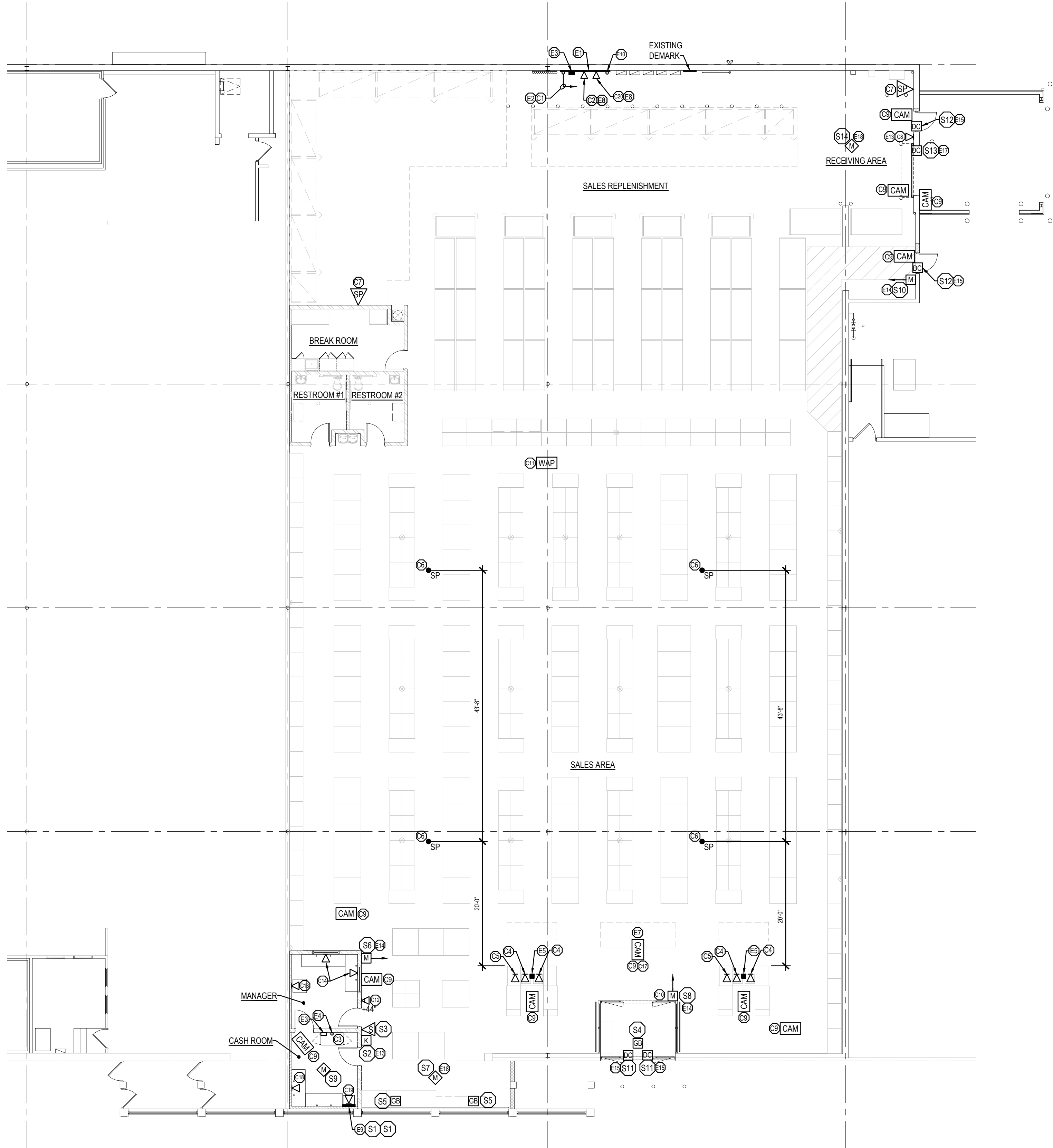
ROOM LIGHTING CONTROL / DIMMING SYSTEM DETAILS

DATE 9/22/21

JOB NO. 20420

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SHEET NO.



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

SECURITY SYSTEM NOTES

- S1 (1)HONEYWELL ADEMP00 VISTA - 20P (8) ZONE CONTROL PANEL AND (1) HONEYWELL #4219 ADEMO 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 4" AFF.
- S3 (1)HONEYWELL WAVE2 2-TONE SOUNDER (SIREN HORN) ON THE MANAGERS OFFICE WALL FACING THE SALES FLOOR MOUNTED AT 12' AFF.
- 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 SALES FLOOR MOUNTED AT 9'-6" AFF.
- S9 (1)CEILING MOUNTED 360° BOSCH #DS9370 PANORAMIC TRITECH DETECTOR IN THE CENTER OF THE CASH OFFICE AWAY FROM ANY AIR DEVICES.
- S10 (1)WALL MOUNTED BOSCH #DS860 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.
- S12 (1) NASCOM N200AUIST DOOR CONTACT FOR EXTERIOR DOORS AND ROOF HATCH (IF APPLICABLE). (2) DOOR CONTACTS REQUIRED AT DOUBLE DOORS.
- S13 (1) HONEYWELL #999 DOOR CONTACT FOR OVERHEAD DOOR.
- S14 (1) CEILING MOUNTED 360° BOSCH #DS9370 PANORAMIC TRITECH DETECTOR IN THE CENTER OF THE RECEIVING AREA MOUNTED AT 15' TO 25' AFF. (NO OTHERS NEEDED IN SALES REPLENISHMENT).

GENERAL ELECTRICAL / COMMUNICATION / SECURITY NOTES

- 01 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.
- 02 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.
- 04 ALL LOW VOLTAGE CABLES SHALL BE PLENUM RATED.
- 05 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.
- 06 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.
- 07 THE COMMUNICATIONS CONTRACTOR SHALL TEST EACH CABLE AFTER INSTALLATION AND TERMINATION TO CERTIFY THAT EACH CABLE COMPLIES WITH TIA/EIA CATEGORY 6 STANDARDS. PROVIDE DOCUMENTATION PER HFT REQUIREMENTS.
- 08 SECURITY SYSTEM WIRING SHALL BE HONEYWELL #11045501 PLENUM GENESIS 22/4 STRANDED UNSHIELDED CABLE.
- 09 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.
- 10 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.
- 11 THE CONTRACTOR SHOULD **NEVER** PROGRAM / INSTALL ANY TYPE OF LOCKOUT CODE INTO THE PANEL OR EXPANDER.
- 12 COORDINATE CONDUIT AND/OR JUNCTION BOXES AS REQUIRED FOR SECURITY SYSTEM.
- 13 ALL PRODUCTS SPECIFIED ARE FEATURED IN PRODUCT BROCHURES FROM THE MANUFACTURER.

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

GENERAL ELECTRICAL DEMOLITION NOTES

- 1) 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.
- 2) REMOVE AND/OR RELOCATE EXISTING DEVICES ON WALLS OR CEILING BEING REMOVED. COORDINATE SUCH CONDITIONS WITH ARCHITECTURAL DRAWINGS.
- 3) ALL UNUSED WIRE (POWER & COMMUNICATION) SHALL BE REMOVED.
- 4) 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

- E1 4"x8"x3/4" PAINTED FIRE RATED PLYWOOD FOR TELEPHONE BACKBOARD. REFER TO DETAIL ON SHEET E2.2 FOR MORE DETAILS.
- 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.
- E3 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.
- E6 NOTE NOT USED.
- E7 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.
- E8 PROVIDE 2 GANG BOX WITH 1 1/2" CONDUIT & PULL STRING TO JOIST SPACE.
- E9 (3) 1 1/2" CONDUITS & PULL STRINGS FROM TOP OF SECURITY PANEL TO JOIST SPACE.
- E10 1" CONDUIT WITH PULL STRING FROM AMPLIFIER TO JOIST SPACE.
- E11 2" CONDUIT SLEEVE BETWEEN BACKBOARD & EXISTING TELEPHONE CABINET.
- E12 NOTE NOT USED.
- E13 FLUSH SINGLE GANG BOX MOUNTED AT 48" AFF WITH 3/4" EMT CONDUIT STUB TO CEILING JOIST.
- E14 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.
- E15 3/4" CONDUIT STUBBED INTO DOOR FRAME FOR DOOR CONTACT.
- E16 PROVIDE 3/4" EMT CONDUIT DROP FROM JOIST & SINGLE GANG BOX MOUNTED AT 12'-0" FOR SALES REPLENISHMENT MOTION SENSOR.
- E17 PROVIDE 2 GANG BOX AT 4" AFF. WITH 3/4" CONDUIT STUB TO JOIST SPACE FOR OVERHEAD DOOR CONTACT.
- E18 PROVIDE OCTAGONAL BOX ON BOTTOM OF JOIST.

COMMUNICATIONS KEY NOTES

- C1 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 BOTH ENDS.
- 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 (2) CAT 6 24AWG 4 PAIR CABLES FROM MANAGERS WALL TO HFT RACK. TERMINATE AT BOTH ENDS.
- C16 NOTE NOT USED.
- C17 (1) RG59 COAXIAL CABLE FROM CCTV MONITOR TO RACK. TERMINATE AT BOTH ENDS.
- C18 (1) CAT 6 24AWG 4 PAIR CABLE FROM CASH ROOM TO HFT RACK. TERMINATE AT BOTH ENDS.
- C19 (1) RJ31X PHONE JACK MOUNTED AT ~101" AFF FOR SECURITY PANEL.
- C20 (1) RJ31X PHONE JACK & 4 PAIR CAT 6 24AWG CABLE BETWEEN PHONE BOARD & HFT RACK FOR FIRE ALARM PANEL. TERMINATE ON BOTH ENDS. (TO BE PROVIDED WHEN FIRE ALARM SYSTEM IS TO BE INSTALLED).

COMMUNICATIONS SYMBOL LEGEND

SYMBOL	DESCRIPTION
	SECURITY CAMERA
	DOOR CONTACT
	GLASS BREAK DETECTOR
	CEILING MOUNTED 360° DETECTOR
	WALL MOUNTED MOTION DETECTOR
	POWER POLE
	SPEAKERS
	WIRELESS ACCESS POINT
	DATA CABLE
	SPEAKERS & AMPLIFIER

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REVISIONS

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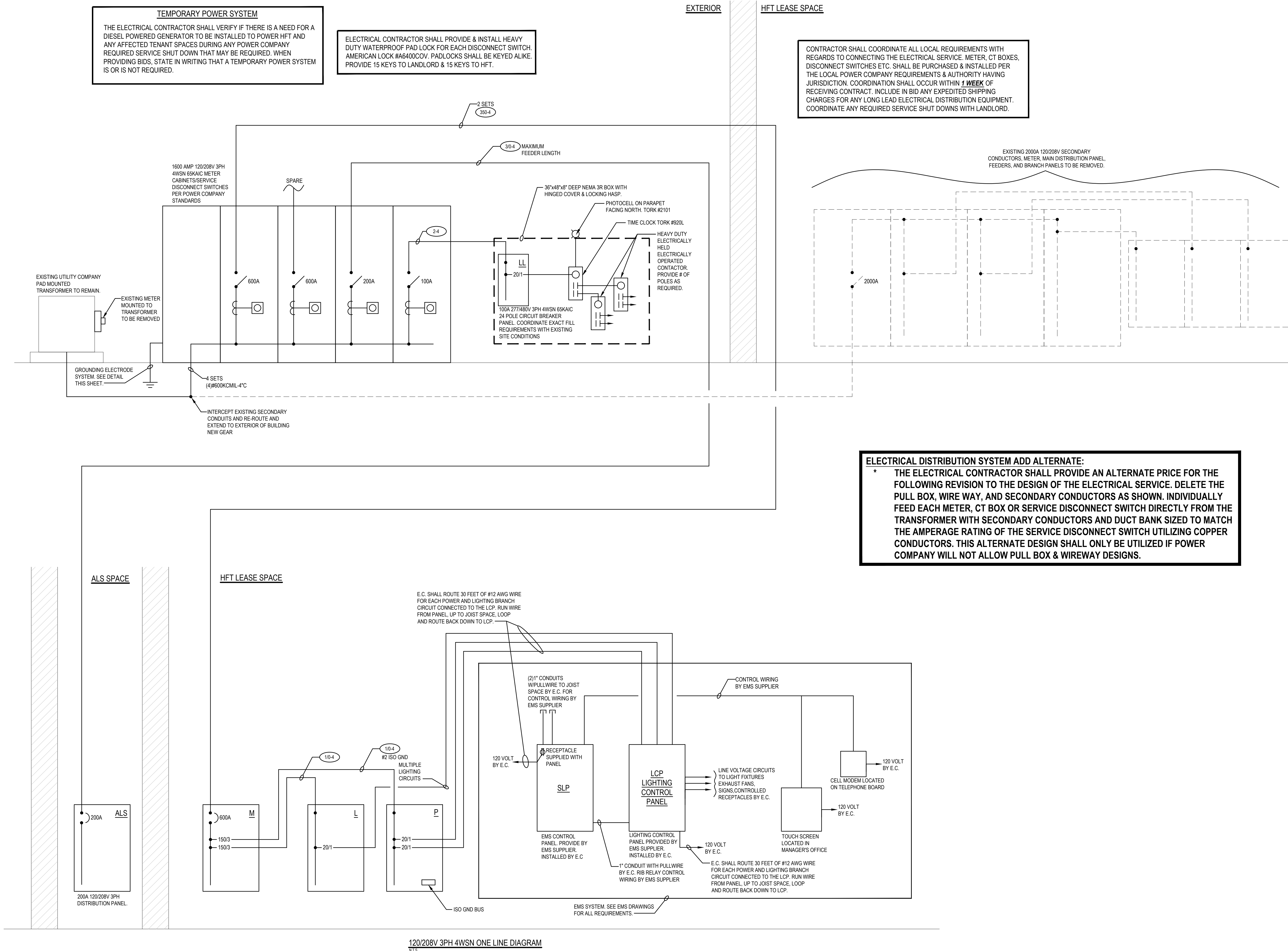
COMMUNICATIONS PLAN

DATE 9/22/21

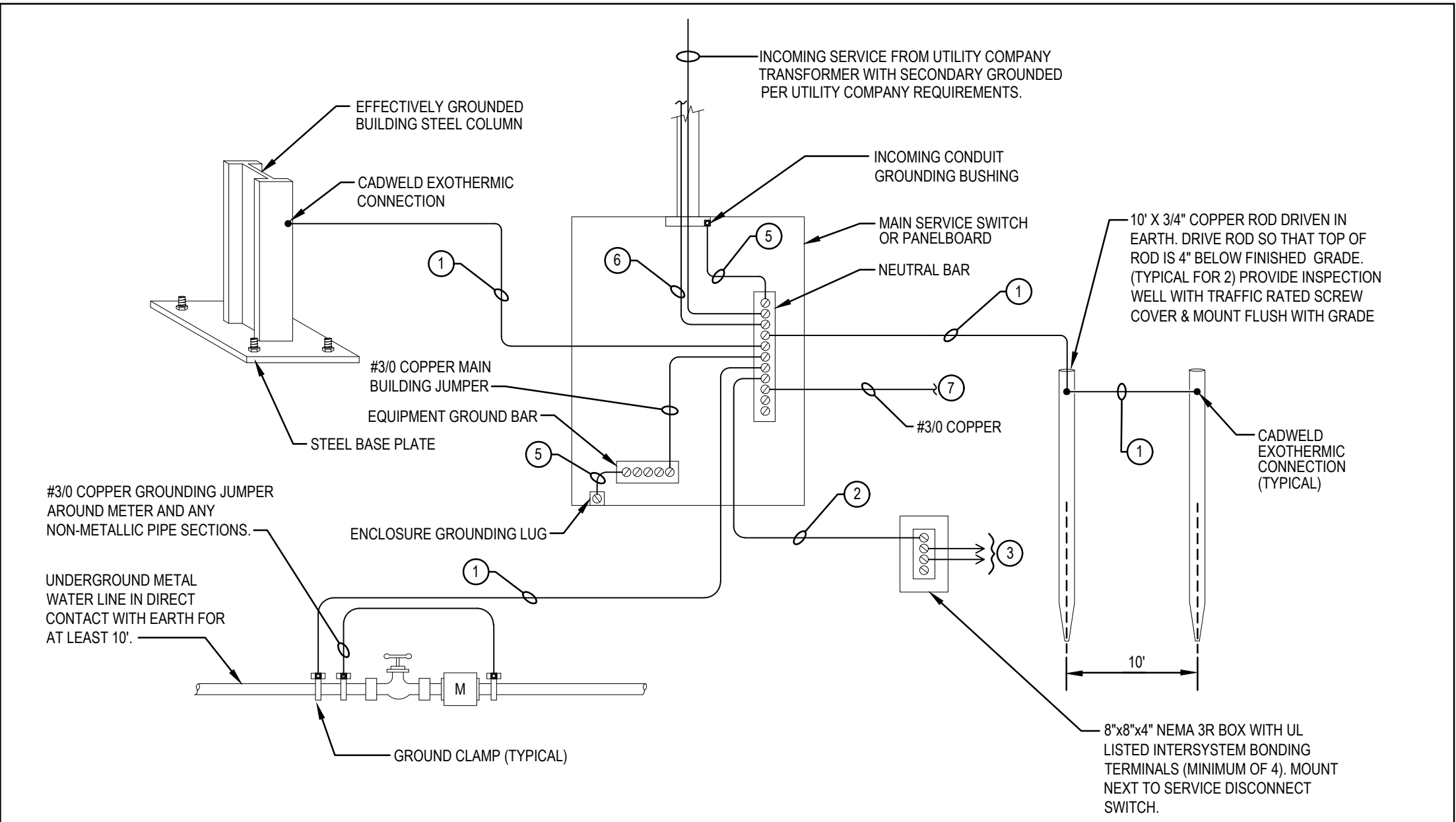
JOB NO. 20420

E1.2

SHEET NO.



ELECTRICAL SYMBOL LEGEND	
SYMBOL	DESCRIPTION
	HOMERUN TO PANEL "A" INDICATING CIRCUIT NUMBER(S) - ALL WIRING SHALL BE #12 WITH EQUIPMENT GROUND WIRE UON (INCREASE TO #10 FOR CIRCUITS OVER 100 FT.) - ALL HOMERUNS ARE TO A 20 AMPERE, 1 POLE CIRCUIT BREAKER U.O.N. - QUANTITY OF CONDUCTORS AS NECESSARY TO ACCOMMODATE CIRCUITS AND CONTROL INDICATED. CROSS HATCHES INDICATE REQUIRED LIGHTING CONTROL U.O.N.
	CONDUIT RUN IN OR UNDER FLOOR SLAB (1" C. MINIMUM, UON)
	SCHEDULE 40 PVC CONDUIT RUN AT 36" BELOW FINISHED GRADE. CONTRACTOR SHALL BORE BELOW STREET, COORDINATE WITH CITY. TRANSITION TO HEAVYWALL RIGID STEEL CONDUIT 2 FEET BELOW GRADE WHEN CONDUIT IS TO RISE ABOVE GRADE.
	SWITCH - 20 AMPERE, 120/277 VOLT, SINGLE POLE - MTD AT 48" AFF UON ("a"=DENOTES SWITCHING, "K" = KEY OPERATED, "P" = PILOT LIGHT, "L" = ILLUMINATED TOGGLE, "3" = THREE-WAY, "4" = FOUR-WAY, "M" = MANUAL MOTOR STARTER, "D" = DIMMER SWITCH ("LUTRON NOVA SERIES")
	DUPLEX RECEPTACLE - 20 AMPERE, 125 VOLT - MOUNTED AT 15" AFF UON (TO BOTTOM), SUBSCRIPT "T" DENOTES TAMPER RESISTANT. C=WHITE RECEPTACLE & COVER MOUNTED FLUSH IN CEILING. IF CEILING IS MORE THEN 15" ABOVE TOP OF WINDOW MOUNT RECEPTACLES 12" ABOVE TOP OF WINDOW. IG= ISOLATED GROUND TYPE. TVSS= SURGE PROTECTED TYPE. ALL EXTERIOR RECEPTACLES SHALL BE WEATHER RESISTANT LABELED "WR".
	DOUBLE DUPLEX RECEPTACLE - 20 AMPERE, 125 VOLT - MOUNTED AT 15" AFF UON (TO BOTTOM)
	DUPLEX RECEPTACLE MOUNTED IN A FLUSH FLOOR BOX. PROVIDE ALUMINIUM DUAL FLIP LID ACTIVATION KIT.
	JUNCTION BOX - MOUNTING HEIGHT AND SIZE AS REQUIRED BY CODE OR AS NOTED ON DRAWINGS
	JUNCTION BOX - FOR SIGN. PROVIDE LOCAL DISCONNECT & COORDINATE LOCATION & MOUNTING HEIGHT WITH SIGN CONTRACTOR IN THE FIELD.
	HEAVY DUTY NON FUSIBLE DISCONNECT SWITCH.
	HEAVY DUTY FUSIBLE DISCONNECT SWITCH. FUSE SIZE TO BE DETERMINED FROM EQUIPMENT TO BE SERVED NAMEPLATE DATA
	FLUSH COMMUNICATIONS OUTLET WITH TWO GANG BOX SINGLE GANG EXTENSION RING, MOUNTED AT 15" AFF U.O.H. (TO BOTTOM) AND 1" CONDUIT, STUBBED TO NEAREST ACCESSIBLE CEILING. PROVIDE BLANK COVER. W=MOUNTED 54" AFF.
	COMMUNICATION OUTLET MOUNTED IN A FLUSH FLOOR BOX. PROVIDE (4) JACKS AND AN ALUMINIUM DUAL FLIP LID ACTIVATION KIT.
	SPECIAL NEMA CONFIGURED OUTLET MOUNTED AS REQUIRED TO SERVE APPLIANCE. VERIFY CONFIGURATION PRIOR TO ROUGH-IN AND ADJUST WIRING AND CIRCUIT BREAKER SIZE AS REQUIRED.
	GROUND ROD- 3/4" X 10' COPPER CLAD
	WIRE LEGEND TAG (12= CONDUCTOR SIZE, 4= QUANTITY OF CONDUCTORS.)
	DUCT MOUNTED SMOKE DETECTOR. SEE DETAIL THIS SHEET.
	ABOVE FINISHED FLOOR
	INDICATES DEVICE MOUNTED AT 8" ABOVE COUNTER
	ELECTRICAL CONTRACTOR
	GROUND FAULT CIRCUIT INTERRUPTER TYPE
	UNLESS OTHERWISE NOTED
	ISOLATED GROUND
	EXISTING TO REMAIN
	NIGHT LIGHT
	WALL MOUNTED MULTI TECHNOLOGY DUAL CIRCUIT VACANCY SENSOR WITH WHITE FINISH HUBBEL # LHDCMTDZ-WH
	WALL MOUNTED MULTI TECHNOLOGY SINGLE CIRCUIT OCCUPANCY SENSOR WITH WHITE FINISH HUBBEL # LHMTS1WH
	CEILING MOUNTED OCCUPANCY SENSOR HUBBELL #DOMINDT1000-LVPP
	20A 120 VOLT RECEPTACLE MOUNTED AT 15" AFF U.O.N. CONTROLLED BY LOCAL OCCUPANCY SENSOR. PROVIDE COVERPLATE WITH BLACK SCREENED LETTERS "SWITCHED".
	FIXTURE MOUNTED OCCUPANCY SENSOR. INSTALL LOW MOUNT LENS FOR FIXTURES MOUNTED AT 16" AND LOWER. CAP INTEGRAL PHOTOCELL CONTROL WIRES. SET TIMED OFF TO 20 MINUTES. HUBBELL # VSP-EM4UNV-(L360, L180, OR LA)
	LED DIMMER SWITCH FOR MANUAL CONTROL OF SALES FLOOR AND SALES REPLENISHMENT LIGHTING. PROVIDED BY E.C. FOR SIEMENS EMS SYSTEM. 0-10V DIMMER EATON #SF16P-W.
	WALL MOUNTED DUAL TECHNOLOGY VACANCY SENSOR WITH INTEGRAL PHOTOCELL & 0-10V DIMMER. HUBBELL #LHDMMTS-2NWH.
	PHOTO SENSOR FOR SIEMENS EMS SYSTEM. WIRED AND INSTALLED BY EMS VENDOR.
	30A-2P HEAVY DUTY ELECTRICALLY HELD ELECTRICALLY OPERATED RELAY. MATCH COIL VOLTAGE WITH LIGHTING SYSTEM VOLTAGE.



SERVICE GROUNDING ELECTRODE SYSTEM WIRING DIAGRAM ④

SCALE: NOT TO SCALE

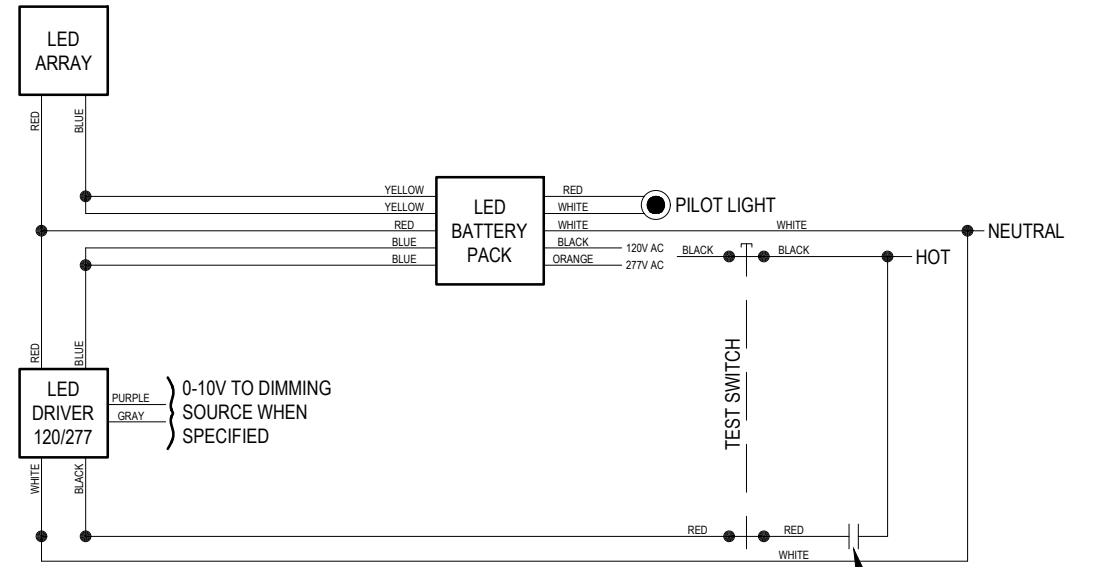
GROUNDING DIAGRAM NOTES:

- ① THE GROUNDING ELECTRODE CONDUCTORS SHALL BE 3/0 COPPER.
- ② #2 AWG FOR INTERSYSTEM BONDING.
- ③ MINIMUM #6 AWG TO OTHER SYSTEMS (TELECOMMUNICATIONS, GAS, ETC.) FOR INTERSYSTEM BONDING PER NEC 250.94.
- ④ ALL WIRING & CONNECTIONS SHALL MEET THE NATIONAL ELECTRICAL CODE ARTICLE 250 & BE UL LISTED TO UL STANDARD 467.
- ⑤ #3/0 AWG BONDING JUMPER.
- ⑥ #3/0 SUPPLY SIDE BONDING JUMPER TO UTILITY METER (IF ALLOWED), METALLIC WIREWAYS OR PULL BOXES.
- ⑦ PROVIDE A 12"x3"x16" GROUNDING ELECTRODE BUS BAR MOUNTED IN A 24"x24" NEMA 3R BOX & CONNECT TO NEUTRAL BAR WITH #3/0 COPPER. MOUNT BUS BAR ON ISOLATORS & BOND TO BOX. CONNECT GROUNDING ELECTRODE CONDUCTORS TO GROUNDING BUS BAR WHERE NEUTRAL BAR WILL NOT ACCOMMODATE CONNECTIONS OR WHEN REQUIRED BY A.H.J.

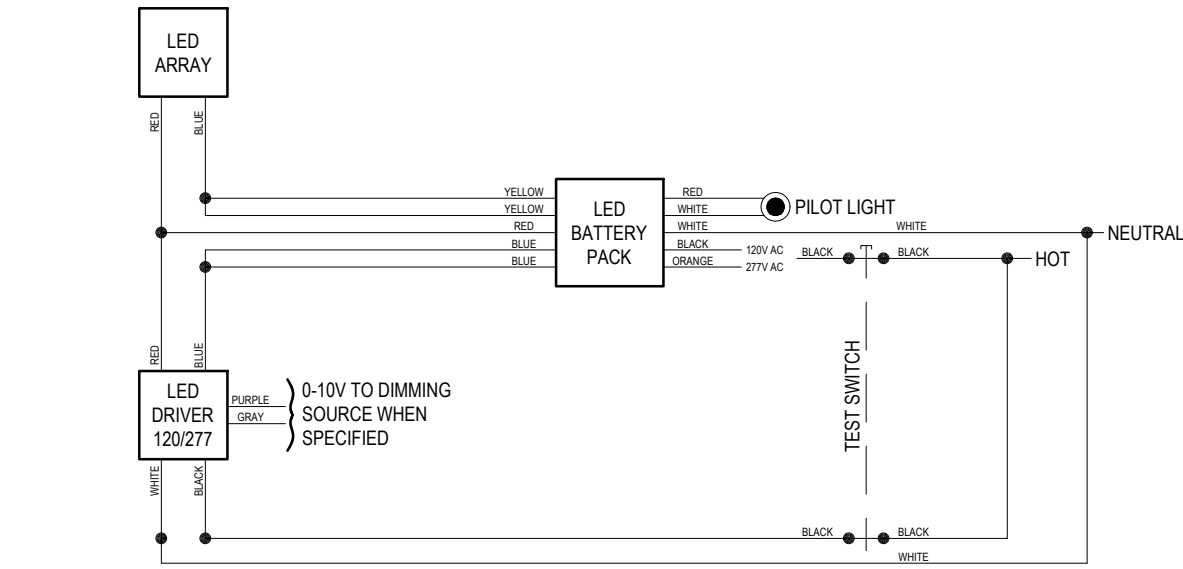
LIGHTING SCHEDULE					INTERIOR SIGN	
	PARKING LOT / NON SECURITY BUILDING FIXTURES	EXTERIOR SIGNS / SECURITY BUILDING FIXTURES	INDOOR LIGHTS (MON.-SAT.)	INDOOR LIGHTS (SUNDAY)	MON-SAT	SUNDAY
ON	DUSK (BY PHOTOCELL)	DUSK TO DAWN PHOTOCCELL (ALWAYS ON DURING DARK)	7:00 AM	8:00 AM	STORE OPEN	STORE OPEN
OFF	10:15 PM	DURING THE DAY	10:00 PM	8:00 PM	9:00 PM	6:00 PM
LIGHTING CONTROL ZONE	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 CAPABLE OF MANUALLY TURNING OFF GROUP 2 LIGHTING CONTACTORS. COORDINATE ON/OFF TIMES WITH HARBOR FREIGHT PRIOR TO PROGRAMMING.					

WIRE LEGEND					
Tag	Fill	Tag	Fill	Tag	Fill
No Tag	(2) #12, #12GND-3/4" C	4-4	(4) #4, #4GND-1 1/4" C	40-3	(3) #4/0, #2GND-2" C
12-3	(3) #12, #12GND-3/4" C	2-2	(2) #2, #4GND-1" C	40-4	(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, #10GND-2" C
10-2	(2) #10, #10GND-3/4" C	2-4	(4) #2, #4GND-1 1/4" C	300-3	(3) 300KCMIL, #10GND-2 1/2" C
10-3	(3) #10, #10GND-3/4" C	1-2	(2) #1, #4GND-1 1/4" C	300-4	(4) 300KCMIL, #10GND-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, #30GND-2" C
8-2	(2) #8, #8GND-3/4" C	1-4	(4) #1, #4GND-1 1/2" C	350-3	(3) 350KCMIL, #30GND-2 1/2" C
8-3	(3) #8, #8GND-1" C	10-2	(2) #10, #2GND-1 1/4" C	350-4	(4) 350KCMIL, #30GND-3" C
8-4	(4) #8, #8GND-1" C	10-3	(3) #10, #2GND-1 1/2" C	500-2	(2) 500KCMIL, #30GND-2 1/2" C
6-2	(2) #6, #6GND-1" C	10-4	(4) #10, #2GND-2 1/2" C	500-3	(3) 500KCMIL, #30GND-3" C
6-3	(3) #6, #6GND-1" C	30-2	(2) #30, #2GND-1 1/2" C	500-4	(4) 500KCMIL, #30GND-3 1/2" C
6-4	(4) #6, #6GND-1" C	30-3	(3) #30, #2GND-2" C	600-2	(2) 600KCMIL, #30GND-3" C
4-2	(2) #4, #4GND-1" C	30-4	(4) #30, #2GND-2" C	600-3	(3) 600KCMIL, #30GND-3 1/2" C
4-3	(3) #4, #4GND-1" C	40-2	(2) #40, #2GND-2" C	600-4	(4) 600KCMIL, #30GND-3 1/2" C

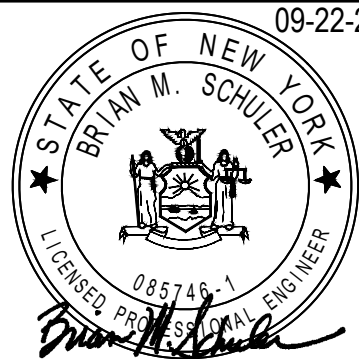
NOTE: CONDUIT SIZES ARE FOR EMT & NMC. FOR PVC & RSC INCREASE CONDUIT BY (1) TRADE SIZE. FOR FLEXIBLE CONDUIT SIZES REFER TO NEC. ALL WIRE SIZES SHOWN ON DRAWINGS ARE FOR COPPER CONDUCTORS. INCREASE CONDUIT ONE TRADE SIZE FOR ISOLATED GROUND CONDUCTOR IF REQUIRE TO ACCOMMODATE ALL CONDUCTORS



SWITCHED EMERGENCY LIGHT FIXTURE
TYPICAL WIRING SCHEMATIC
N.T.S.



EMERGENCY NIGHT LIGHT FIXTURE
TYPICAL WIRING SCHEMATIC
N.T.S.



09-22-21



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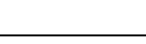
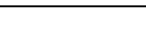


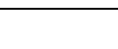
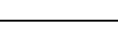










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ELECTRICAL DETAILS	
DATE	9/22/21
JOB NO.	20420
E2.1	
SHEET NO.	

'LCP' LIGHTING CONTACTOR SCHEDULE				
CIRCUIT	DESCRIPTION	ZONE	CONTACTOR SIZE	CONTACTOR #
L-1	EMPLOYEE LIGHTING	GROUP 1	30A/4P	1
L-3	EMPLOYEE LIGHTING	GROUP 1		
L-6	EMPLOYEE LIGHTING	GROUP 1		
L-9	EMPLOYEE LIGHTING	GROUP 1		
P-41	EXHAUST FAN	GROUP 1	30A/4P	2
L-12	SALES REPLENISHMENT LTG.	GROUP 1		
L-14	SALES REPLENISHMENT LTG.	GROUP 1		
-	SPARE	GROUP 1		
-	SPARE	GROUP 1	30A/4P	3
-	SPARE	GROUP 1		
-	SPARE	GROUP 1		
-	SPARE	GROUP 1		
L-2	CUSTOMER LIGHTING	GROUP 2	30A/4P	4
L-4	CUSTOMER LIGHTING	GROUP 2		
L-5	CUSTOMER LIGHTING	GROUP 2		
L-7	CUSTOMER LIGHTING	GROUP 2		
L-8	CUSTOMER LIGHTING	GROUP 2	30A/4P	5
P-13	INTERIOR SIGN	GROUP 2		
-	SPARE	GROUP 2		
-	SPARE	GROUP 2		
L-23	FURNITURE RECEPTACLES	GROUP 2	30A/4P	6
L-25	FURNITURE RECEPTACLES	GROUP 2		
L-27	FURNITURE RECEPTACLES	GROUP 2		
L-29	FURNITURE RECEPTACLES	GROUP 2		
L-17	EXTERIOR SECURITY LIGHTING	GROUP 3	30A/4P	7
P-40	EXTERIOR SIGN	GROUP 3		
-	SPARE	GROUP 3		
-	SPARE	GROUP 3		
L-19	EXTERIOR LIGHTING	GROUP 4	30A/4P	8
-	SPARE	GROUP 4		
-	SPARE	GROUP 4		
-	SPARE	GROUP 4		
-	SPARE	GROUP 4	30A/4P	9
-	SPARE	GROUP 4		
-	SPARE	GROUP 4		
-	SPARE	GROUP 4		
-	SPARE	SPARE	30A/4P	10
-	SPARE	SPARE		
-	SPARE	SPARE		
-	SPARE	SPARE		

LIGHT FIXTURE SCHEDULE									
TYPE	SYMBOL	DESCRIPTION	MANUFACTURER	LAMPS	VOLT	WATTS	REMARKS		
A		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. VERIFY THAT EM BALLAST IS WIRED FOR APPROPRIATE VOLTAGE PRIOR TO WIRING FIXTURE. FACTORY INSTALLED WHIP CONNECTION.		
B		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. FACTORY INSTALLED WHIP CONNECTION.		
C		8' - LED CHAIN MOUNTED STRIP FIXTURE	COLUMBIA LIGHTING# MPS-8-40-HLHC-CW-EDV-INT-LBC	LED 4000K	120/277	100	SALES & STORAGE AREA FOR OPEN CEILINGS PROVIDE CHAIN & INSTALL AT HEIGHT NOTED ON E1.1 (CSHC). RUN IN CONTINUOUS ROWS WHERE SHOWN. PROVIDED WITH COUPLER. NOTE #2 & #4		
CE		8' - LED CHAIN MOUNTED STRIP WITH 1400 LUMEN BATTERY	COLUMBIA LIGHTING# MPS-8-40-HLHC-CW-EDV-ELL14-INT-LBC	LED 4000K	120/277	100	SALES & STORAGE AREA FOR OPEN CEILINGS PROVIDE CHAIN & INSTALL AT HEIGHT NOTED ON E1.1 (CSHC). RUN IN CONTINUOUS ROWS WHERE SHOWN. EMERGENCY BATTERY. SEE GENERAL NOTE #1.2.4. PROVIDED WITH COUPLER.		
C1		4' - LED CHAIN MOUNTED STRIP FIXTURE	COLUMBIA LIGHTING# MPS-8-40-HLHC-CW-EDV-INT-LBC	LED 4000K	120/277	50	SALES & STORAGE AREA FOR OPEN CEILINGS PROVIDE CHAIN & INSTALL AT HEIGHT NOTED ON E1.1 (CSHC). RUN IN CONTINUOUS ROWS WHERE SHOWN. PROVIDED WITH COUPLER. NOTE #2 & #4		
C1E		4' - LED CHAIN MOUNTED STRIP FIXTURE WITH 1400 LUMEN BATTERY	COLUMBIA LIGHTING# MPS-8-40-HLHC-CW-EDV-ELL14-INT-LBC	LED 4000K	120/277	50	SALES & STORAGE AREA FOR OPEN CEILINGS PROVIDE CHAIN & INSTALL AT HEIGHT NOTED ON E1.1 (CSHC). RUN IN CONTINUOUS ROWS WHERE SHOWN. EMERGENCY BATTERY. SEE GENERAL NOTE #1.2.4. PROVIDED WITH COUPLER.		
D		8' - LED SURFACE MOUNTED STRIP FIXTURE	COLUMBIA LIGHTING# MPS-8-40-HLHC-CW-EDV	LED 4000K	120/277	100	SALES & STORAGE AREA SURFACE MOUNTED. FOR CEILING / JOIST MOUNT PROVIDE CEILING CLIPS & SUPPORT FROM STRUCTURE AS REQUIRED BY CODE. FOR JOIST MOUNT, PROVIDE MOUNTING HARDWARE & UNISTRUT AS REQUIRED. RUN IN CONTINUOUS ROWS WHERE SHOWN. PROVIDED WITH COUPLER.		
DE		8' - LED SURFACE MOUNTED STRIP FIXTURE WITH 1400 LUMEN BATTERY	COLUMBIA LIGHTING# MPS-8-40-HLHC-CW-EDV-ELL14	LED 4000K	120/277	100	SALES & STORAGE AREA SURFACE MOUNTED. FOR CEILING / JOIST MOUNT PROVIDE CEILING CLIPS & SUPPORT FROM STRUCTURE AS REQUIRED BY CODE. FOR JOIST MOUNT, PROVIDE MOUNTING HARDWARE & UNISTRUT AS REQUIRED. RUN IN CONTINUOUS ROWS WHERE SHOWN. EMERGENCY BATTERY. SEE GENERAL NOTE #1.2. PROVIDED WITH COUPLER.		
D1		4' - LED SURFACE MOUNTED STRIP FIXTURE	COLUMBIA LIGHTING# MPS-8-40-HLHC-CW-EDV	LED 4000K	120/277	50	SALES & STORAGE AREA SURFACE MOUNTED. FOR CEILING / JOIST MOUNT PROVIDE CEILING CLIPS & SUPPORT FROM STRUCTURE AS REQUIRED BY CODE. FOR JOIST MOUNT, PROVIDE MOUNTING HARDWARE & UNISTRUT AS REQUIRED. RUN IN CONTINUOUS ROWS WHERE SHOWN. PROVIDED WITH COUPLER.		
D1E		4' - LED SURFACE MOUNTED STRIP FIXTURE WITH 1400 LUMEN BATTERY	COLUMBIA LIGHTING# MPS-8-40-HLHC-CW-EDV-ELL14	LED 4000K	120/277	50	SALES & STORAGE AREA SURFACE MOUNTED. FOR CEILING / JOIST MOUNT PROVIDE CEILING CLIPS & SUPPORT FROM STRUCTURE AS REQUIRED BY CODE. FOR JOIST MOUNT, PROVIDE MOUNTING HARDWARE & UNISTRUT AS REQUIRED. RUN IN CONTINUOUS ROWS WHERE SHOWN. EMERGENCY 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		EMERGENCY/EXIT LIGHTS EQUIPPED WITH 90 MINUTE BATTERY BACK-UP. WIRE AHEAD OF LOCAL CONTROL.
EM2		SELF-POWERED EXIT SIGN WITH LED LAMPS - UNIVERSAL MOUNTED - DOUBLE FACE NOTE #3	COMPASS# CER	LED	120/277	5	SALES & STORAGE AREA		
EM3		SURFACE MOUNTED 2 HEAD EMERGENCY UNIT WITH REMOTE CAPACITY	DUAL LITE# L230	HALOGEN	120/277	5	SALES & STORAGE AREA REMOTE CAPACITY		
EM4		EXTERIOR WP 2 LAMP REMOTE HEADS	DUAL LITE# OCR-DB-0605	HALOGEN	6	-	EXTERIOR		PROVIDE WITH 2 HEAD MOUNTING PLATE. WIRE TO EM3.
EM5		EXTERIOR WP LED EMERGENCY FIXTURE WITH 4 LAMPS	HUBBELL LIGHTING# PG-Z	LED	120/277	5	EXTERIOR		WIRE SO THAT FIXTURE IS OFF WHEN BUILDING POWER IS AVAILABLE.
SA		EXTERIOR WALL MOUNTED FIXTURE	HUBBELL LIGHTING# SG1-20-4K7-DB	LED 4000K	120/277	20	EXTERIOR WALL MOUNTED FIXTURE. SEE ARCHITECTURAL 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" ABOVE FINISHED GRADE.		
SC		EXTERIOR CEILING MOUNTED FIXTURE	BEACON# SRT1-35-4K7-SQW	LED 4000K	120/277	35	SURFACE MOUNT ON CANOPY.		
LIGHTING FIXTURE SCHEDULE NOTES (SEE REMARKS)									
1. 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 BATTERY. FIXTURES SHALL BE SHUT OFF WITH LOCAL LIGHT FIXTURE CONTROL.								REFER TO SHEET A0.0 FOR LIGHTING VENDOR CONTACT INFORMATION.	
2. FOR ALL CHAIN MOUNTED FIXTURES E.C. SHALL PROVIDE EXTENSIONS AS REQUIRED TO INSTALL LIGHT FIXTURES AT HEIGHTS AS NOTED.									
3. 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.									

M																					
MOUNTING: SURFACE					LOCATION:										BREAKER REMARKS C-CONTACTOR CONTROLLED, S-SHUNT TRIP, L-LOCK ON, G-GFCI, A-ARC FAULT, SW-SWITCHING DUTY, HA-HACR, HI-HID						
BUS RATING: 600A					A.I.C.: 65,000					AMPS CONN.: 369.2											
600A MAIN CIRCUIT BREAKER										AMPS DEMAND.: 402.5											
VOLTAGE: 120/208V-3PH-4W																					
COMMENTS:																					
CKT.	DESCRIPTION				KVA CONNECTED				C/B	REMARKS		C/B	KVA CONNECTED				DESCRIPTION				CKT
					LTG.	REC.	HVAC	MISC.					MISC.	HVAC	REC.	LTG.					
1	RTU-01						6.8		90/3	-	-	60/3		5.0			RTU-02		2		
3					6.8		-	-		5.0				4							
5					6.8		-	-		5.0				6							
7					5.0		-	-		6.8				8							
9	RTU-03						5.0		60/3	-	-	90/3		6.8			RTU-04		10		
11					5.0		-	-		6.8				12							
13							-	-						14							
15							-	-						16							
17	PANEL 'L'		17.8	-	4.0	11.5	150/3	-	-	150/3		9.2	2.6	15.8	1.2	PANEL 'P'		18			
19						-		-					-		20						
21		SPARE		-				80/3	-		-	80/3					-	SPARE		22	
23				-					-		-				-				24		
25			-			50/3	-		-	100/3					-	SPARE			26		
27			-				-		-					-			28				
29					-		-				-		30								
TOTALS			17.8	0.00	39.4		11.5							9.2	38.0		15.8	1.2	TOTALS		
LOAD		CONNECTED				DEMAND															
LIGHTING		19.0				28.8															
RECEPTACLE		15.8				12.9															
HVAC		77.4				82.5															
MISC		20.7				20.7															

L														
MOUNTING: SURFACE						LOCATION:						BREAKER REMARKS C-CONTACTOR CONTROLLED, S-SHUNT TRIP, L-LOCK ON, G-GFCI, A-ARC FAULT, SW-SWITCHING DUTY, HA-HACR, HI-HID		
BUS RATING: 200A						A.I.C.: 65,000								
200A MAIN LUG ONLY						AMPS CONN.: 92.5								
VOLTAGE: 120/208V-3PH-4W						AMPS DEMAND.: 107.8								
COMMENTS: CAN BE SERIES RATED														
CKT.	DESCRIPTION	KVA CONNECTED				C/B	REMARKS	C/B	KVA CONNECTED				DESCRIPTION	CKT
		LTG.	REC.	HVAC	MISC.				MISC.	HVAC	REC.	LTG.		
1	SALES LIGHTING	0.9				20/1	C C	20/1				0.8	SALES LIGHTING	2
3	SALES LIGHTING	0.9				20/1	C C	20/1				1.1	SALES LIGHTING	4
5	SALES LIGHTING	1.0				20/1	C C	20/1				1.1	SALES LIGHTING	6
7	SALES LIGHTING	1.0				20/1	C C	20/1				1.1	SALES LIGHTING	8
9	SALES LIGHTING	0.8				20/1	C -	20/1				-	SPARE	10
11	SPARE	-				20/1	- C	20/1				1.3	SALES REPLENISHMENT LIGHTING	12
13	OFFICE, BREAKROOM, TOILET LIGHTING	0.4				20/1	- C	20/1				0.7	SALES REPLENISHMENT LIGHTING	14
15	NIGHT / EMERGENCY LIGHTING	1.2				20/1	L -	20/1				0.2	DOCK LIGHTING	16
17	EXTERIOR LIGHTING	0.3				20/1	C -	20/1				-	SPARE	18
19	EXTERIOR LIGHTING	0.2				20/1	C -	20/1				-	SPARE	20
21	SPARE	-				20/1	- -	20/1				-	SPARE	22
23	FURNITURE RECEPTACLE	1.2				20/1	C -	20/1				-	SPARE	24
25	FURNITURE RECEPTACLE	1.2				20/1	C -	20/1				-	SPARE	26
27	FURNITURE RECEPTACLE	1.2				20/1	C -	20/1				-	SPARE	28
29	FURNITURE RECEPTACLE	1.2				20/1	C -	20/1				-	SPARE	30
31	SPARE	-				20/1	- -					0.5		32
33	SPARE	-				20/1	- -	30/3				0.5	GRINDER PUMP CONTROL	34
35	CHARGER				2.0	25/2	- -					0.5		36
37					2.0	25/2	- -					2.0		38
39	UH-02			2.0		25/2	- -	40/3				2.0	SUMP PUMP CONTROL	40
41				2.0		25/2	- -					2.0		42
TOTALS		11.5	0.00	4.0	4.0				7.5	0.00	0.00	6.3	TOTALS	
LOAD		CONNECTED				DEMAND								
LIGHTING		17.8				22.3								
RECEPTACLE		-				-								
HVAC		4.0				5.0								
MISC		11.5				11.5								

EMS DEVICES SCHEDULE AND CONSTRUCTION INSTALLATION RESPONSIBILITIES MATRIX

HFT GENERAL CONTRACTOR IS TO MANAGE AND VALIDATE THE EMS INSTALLATION AND COMMISSIONING THROUGH COMPLETION AND FINAL OPERATION.

SYMBOL	DEVICE	QUANTITY SUPPLIED BY SIEMENS	DEVICE CABLE TYPE	DEVICE LOCATION	PROVIDED BY	MOUNTING	BOX/RACEWAYS	INSTALL CABLE/WIRE, TERMINATE BOTH ENDS	INSTALLATION NOTES
C	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	
Ⓢ	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
Ⓢ	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	
Ⓢ	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	
Ⓢ	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
Ⓢ	MICRO I/O	1 (STOCK ROOM RTU)	AS REQUIRED	MOUNTED ON DZC-RT	SIEMENS	SIEMENS	N/A	SIEMENS	
Ⓢ	OUTSIDE SENSING DEVICE	1	18/4	ROOF	SIEMENS	SIEMENS	M.C.	SIEMENS	
Ⓢ	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	
Ⓢ	SCREAM LOGIC PANEL	1 PER EACH DIMMING GROUP ON SALES FLOOR	VARIES PER CONNECTED DEVICES.	ELECTRICAL ROOM OR STOCKROOM	SIEMENS	E.C.	E.C.	E.C. / SIEMENS WILL TERMINATE LOW VOLTAGE WIRING AT SLP	
Ⓢ	SLIDER SWITCH	1	18/2	WALL BETWEEN STOCK AND SALES FLOOR	SIEMENS	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	
Ⓢ	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 NUMBER.

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

KARLA LARA AT KARLA.LARA@SIEMENS.COM

II. PLEASE DIRECT ALL TECHNICAL RFI TO JUAN CABRERA AT JUANCABRERA@SIEMENS.COM, CC TO LESLIE.VAUGHN@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 TO 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 DEVICES.

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 E.C. SHALL WIRE AND INSTALL A LOW VOLTAGE DIMMER LOCATED OUTSIDE OF THE BREAK ROOM FOR SALES REPLENISHMENT FIXTURES MANUAL DIMMING. THE DIMMING SWITCH

WRES SHALL BE TERMINATED IN A JUNCTION BOX MOUNTED ABOVE DCP. SIEMENS TO EXTEND WIRING TO DCP.

GENERAL LV CABLE INSTALLATION INSTRUCTIONS

1. HOME RUNS:

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.

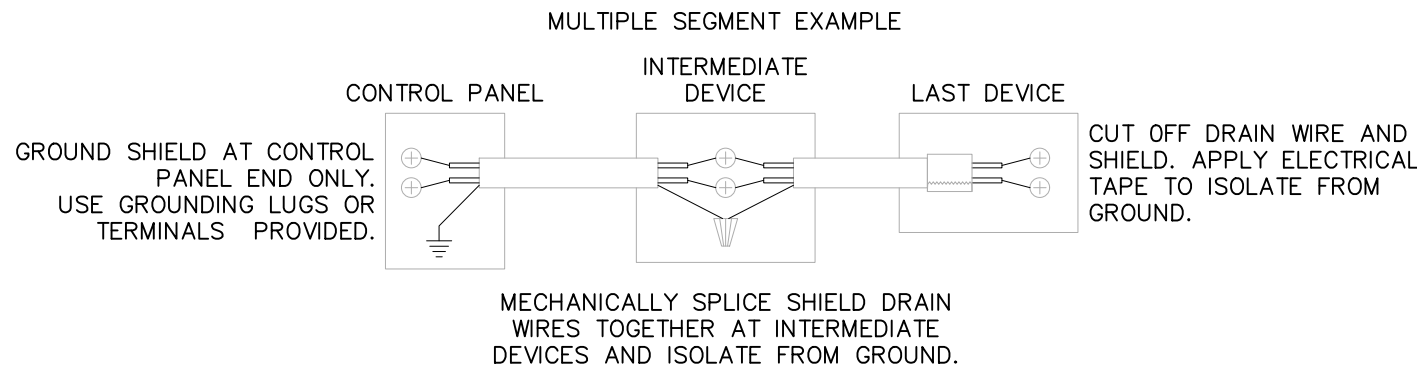
II. IN THE CASE OF MULTIPLE DEVICES SUCH AS COMMUNICATIONS WIRING, THE SHIELD DRAIN WIRES AT THE INTERMEDIATE DEVICES SHALL BE MECHANICALLY SPLICED TOGETHER

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.



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 MUST NOT EXCEED 300 FEET.

GENERAL NON-EMS CONTROLS

1. 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

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:

SOME 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

ACCORDING TO THE MANUFACTURER'S INSTRUCTION.

CABLE SCHEDULE

CABLE	TYPE	MANUFACTURER	SIEMENS PART #
18/2	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
24/1P	24AWG, TWISTED PAIR, SHIELDED, STRANDED, PLENUM, WHITE	ANIXTER	RCS-TP24-CMP-WH
CAT-5	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:

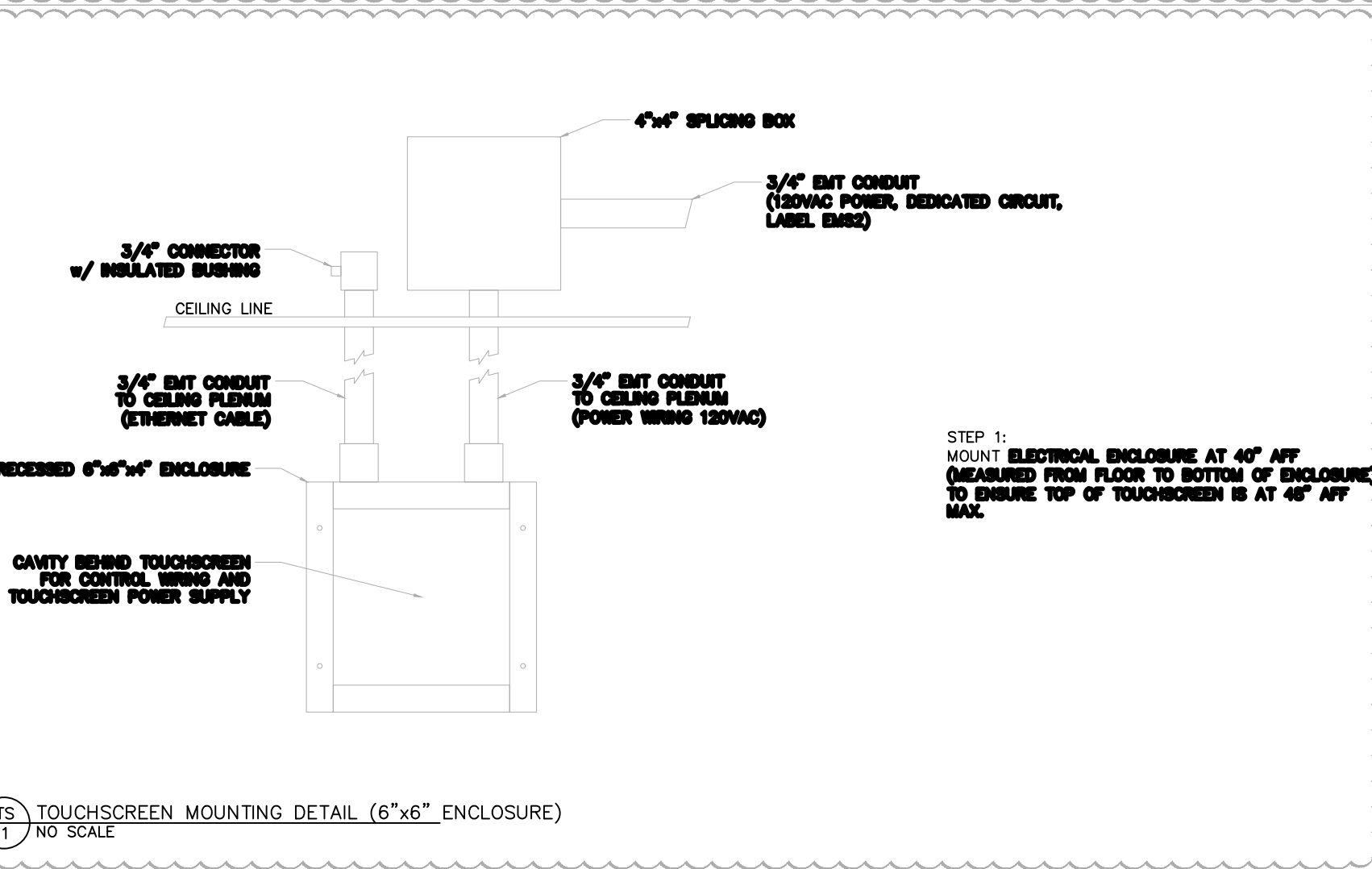
PHONE: (888) 479-3830

FAX: (888) 479-3834

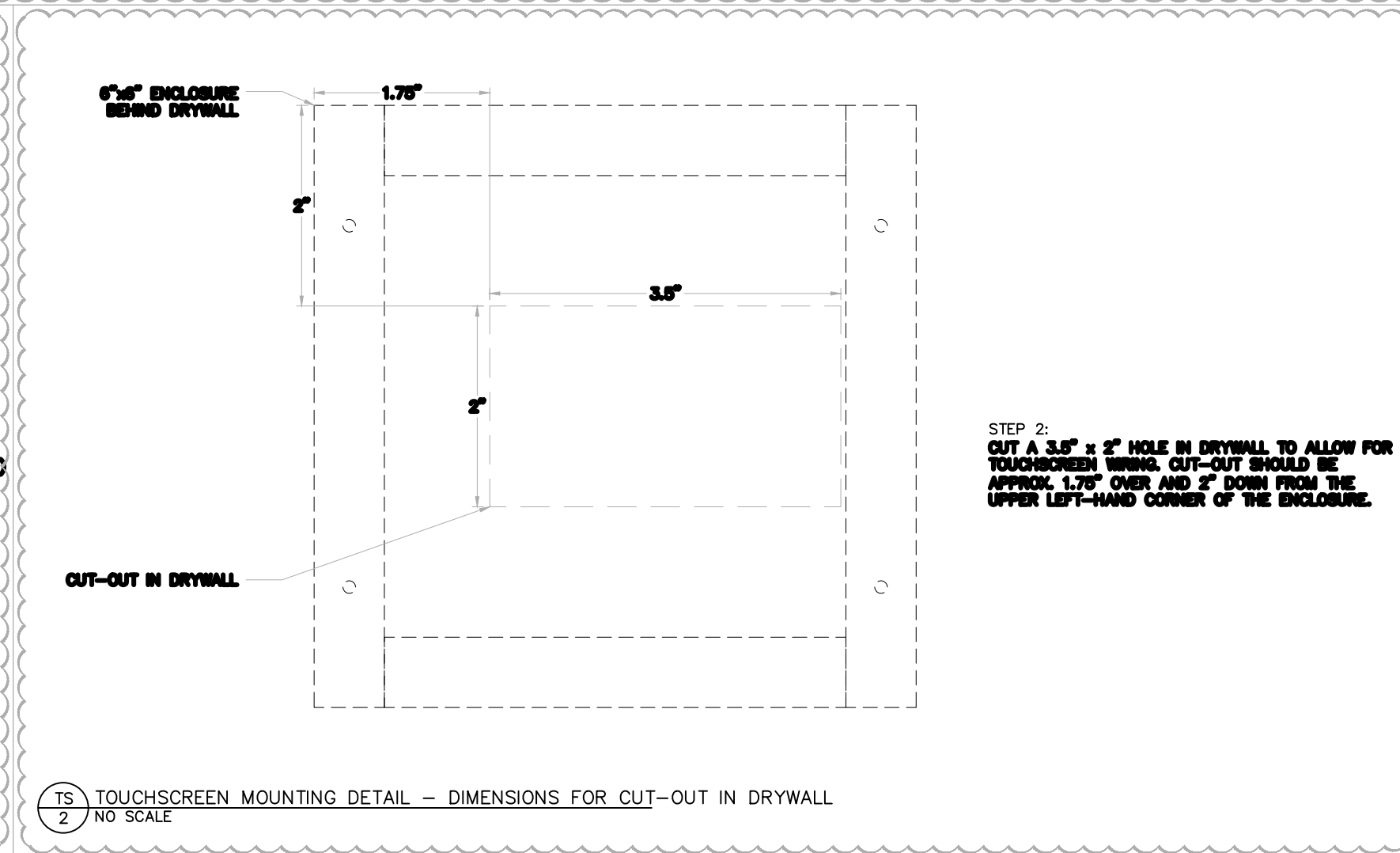
EMAIL: SBT@anixter.com

WEBSITE FOR SIEMENS BT: www.anixter.com/SBT (BUILDING AUTOMATION TAB)

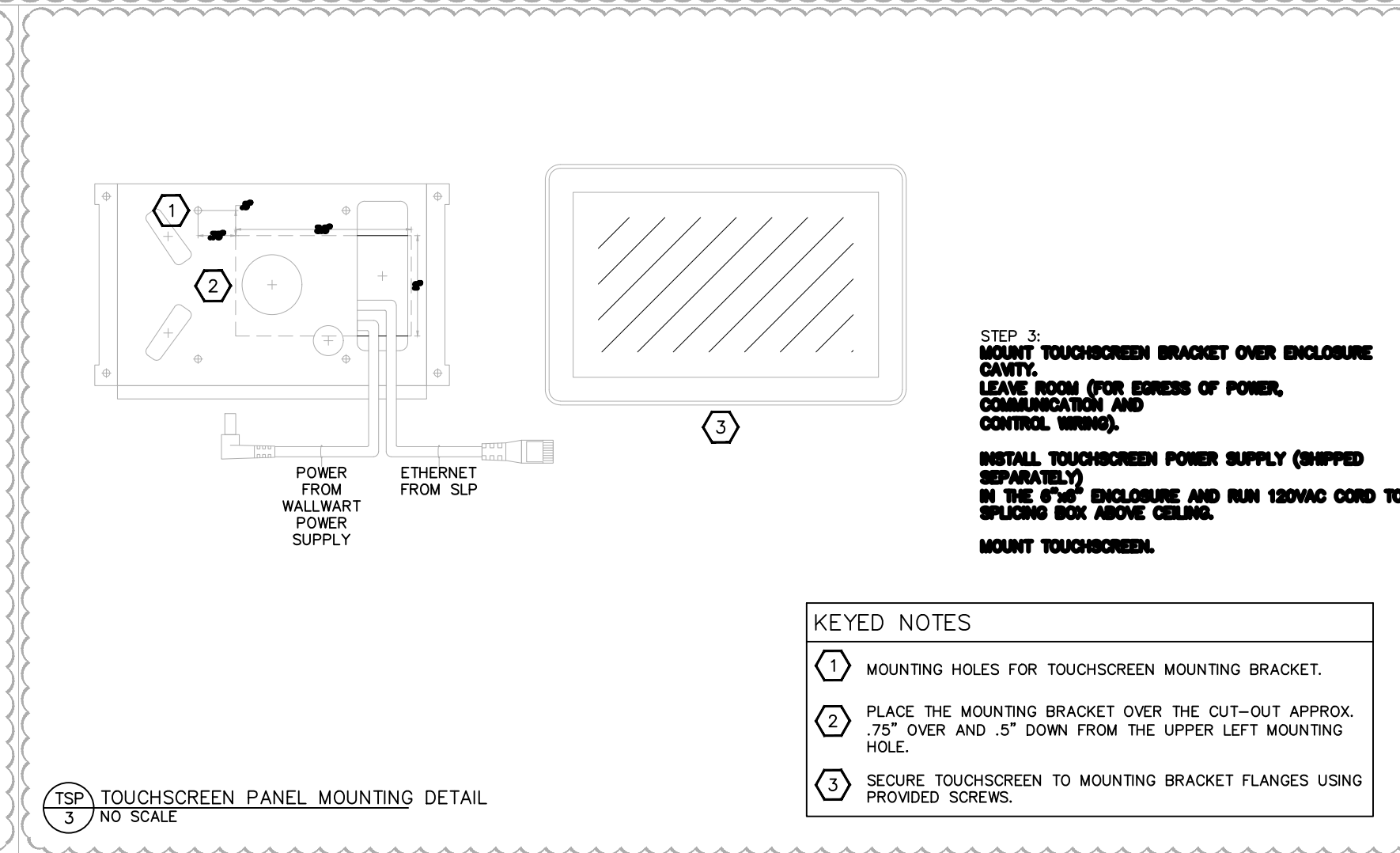
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TS 1 TOUCHSCREEN MOUNTING DETAIL (6"x6" ENCLOSURE) NO SCALE



TS 2 TOUCHSCREEN MOUNTING DETAIL -- DIMENSIONS FOR CUT-OUT IN DRYWALL NO SCALE



TSP 3 TOUCHSCREEN PANEL MOUNTING DETAIL NO SCALE

Project:

Description:

HARBOR FREIGHT
NEW CONSTRUCTION
PROTOTYPICAL
NATIONAL EMS BID SET

Dwg.

#	DESCRIPTION	DATE	BY
0	Initial Release	11-15-17	MS
3	Revised	4-23-18	MS
4	Revised	8-12-19	MS
5	Revised	10-10-19	MS
6	Revised	3-3-20	MS
7	Revised	4-13-20	MS
8	Revised	6-2-20	MS

REVISIONS

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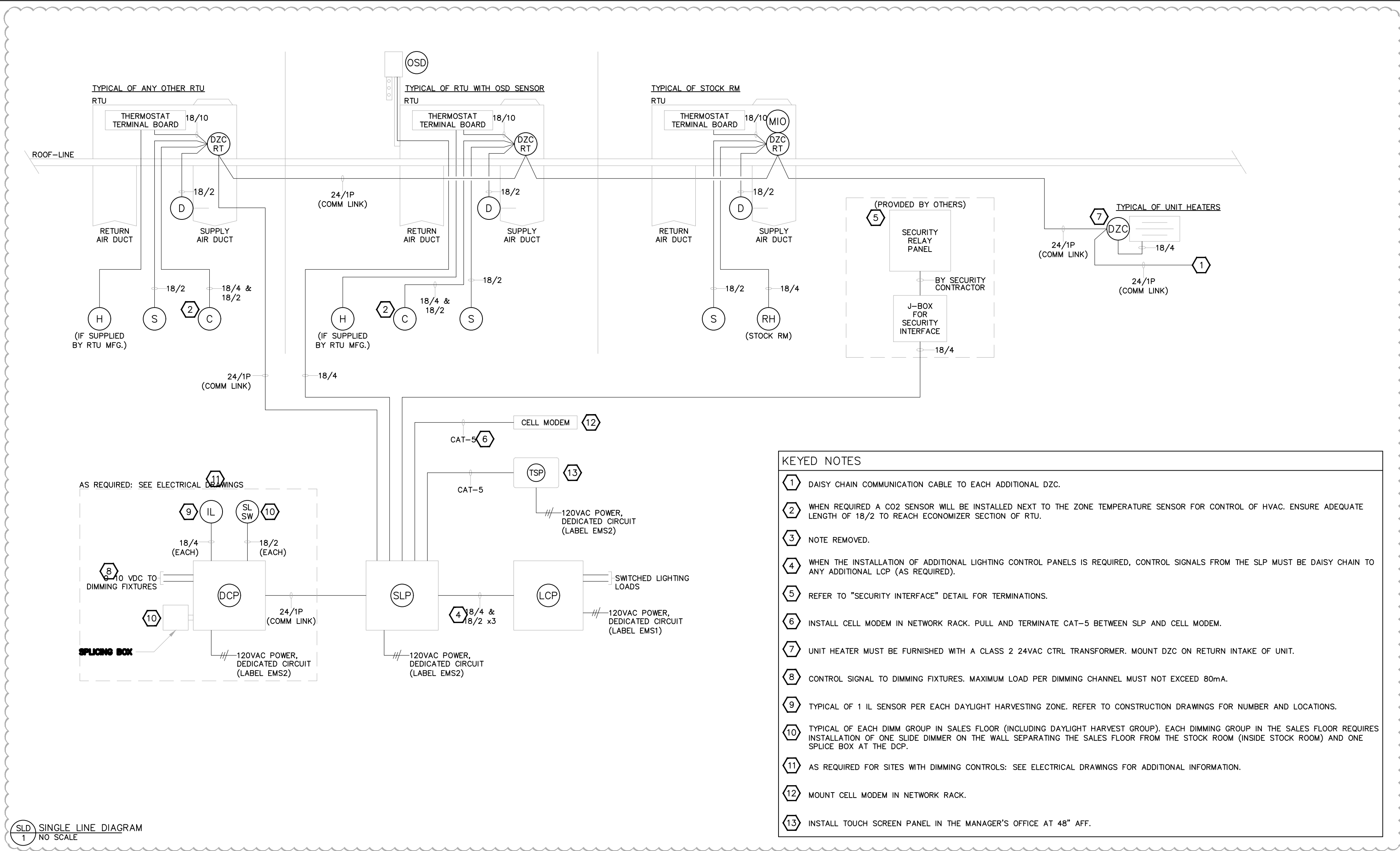
NTS

Scale:

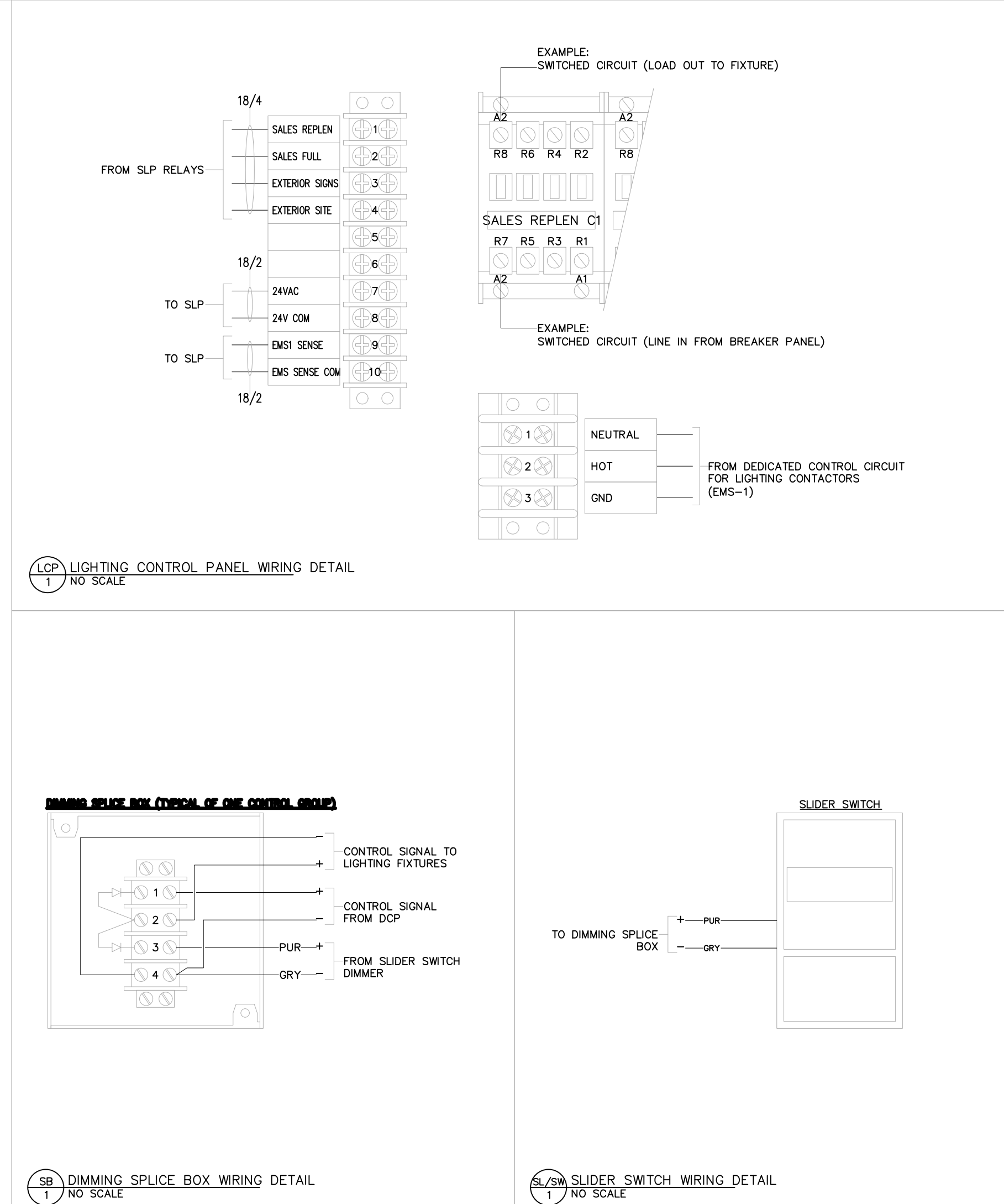
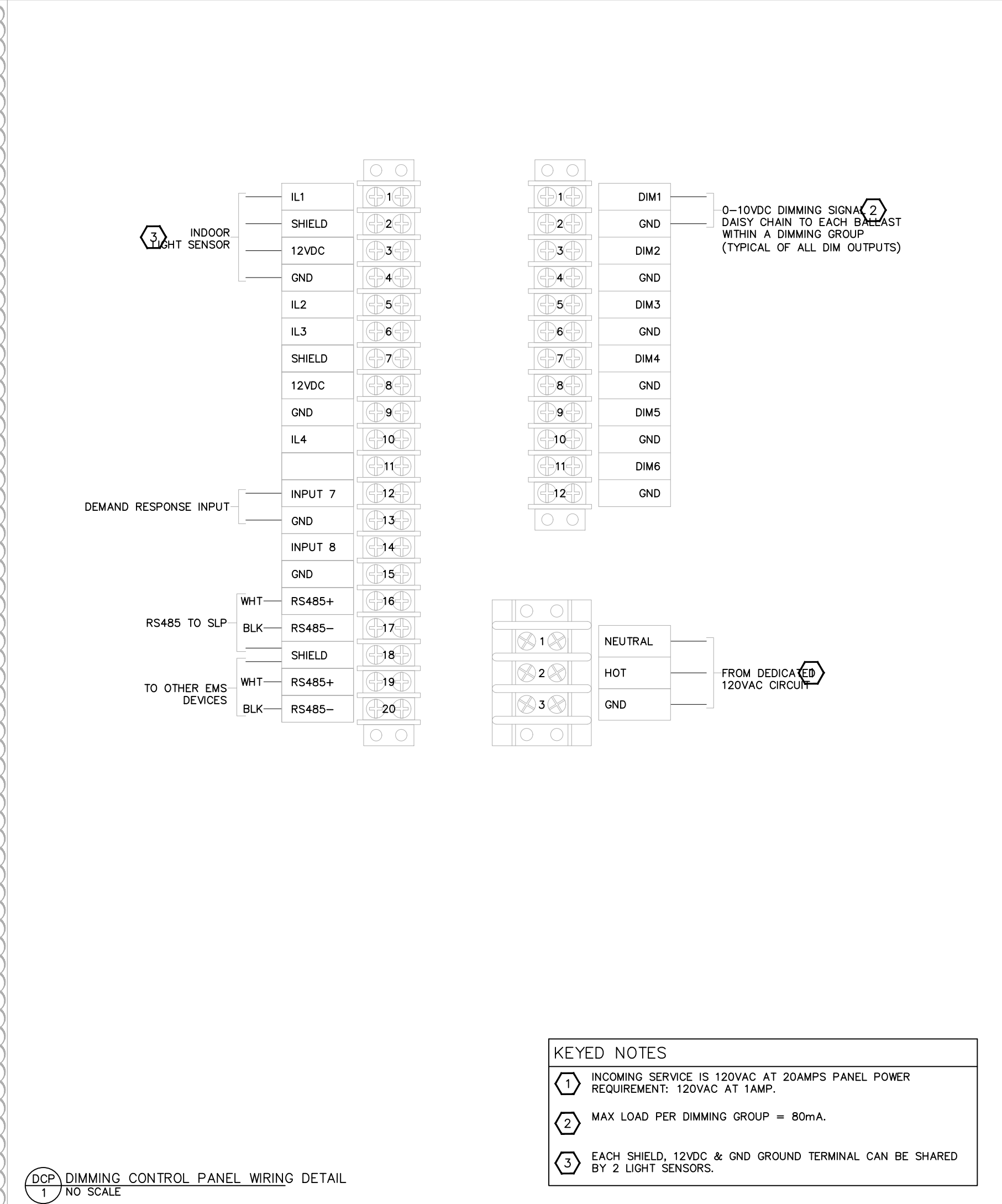
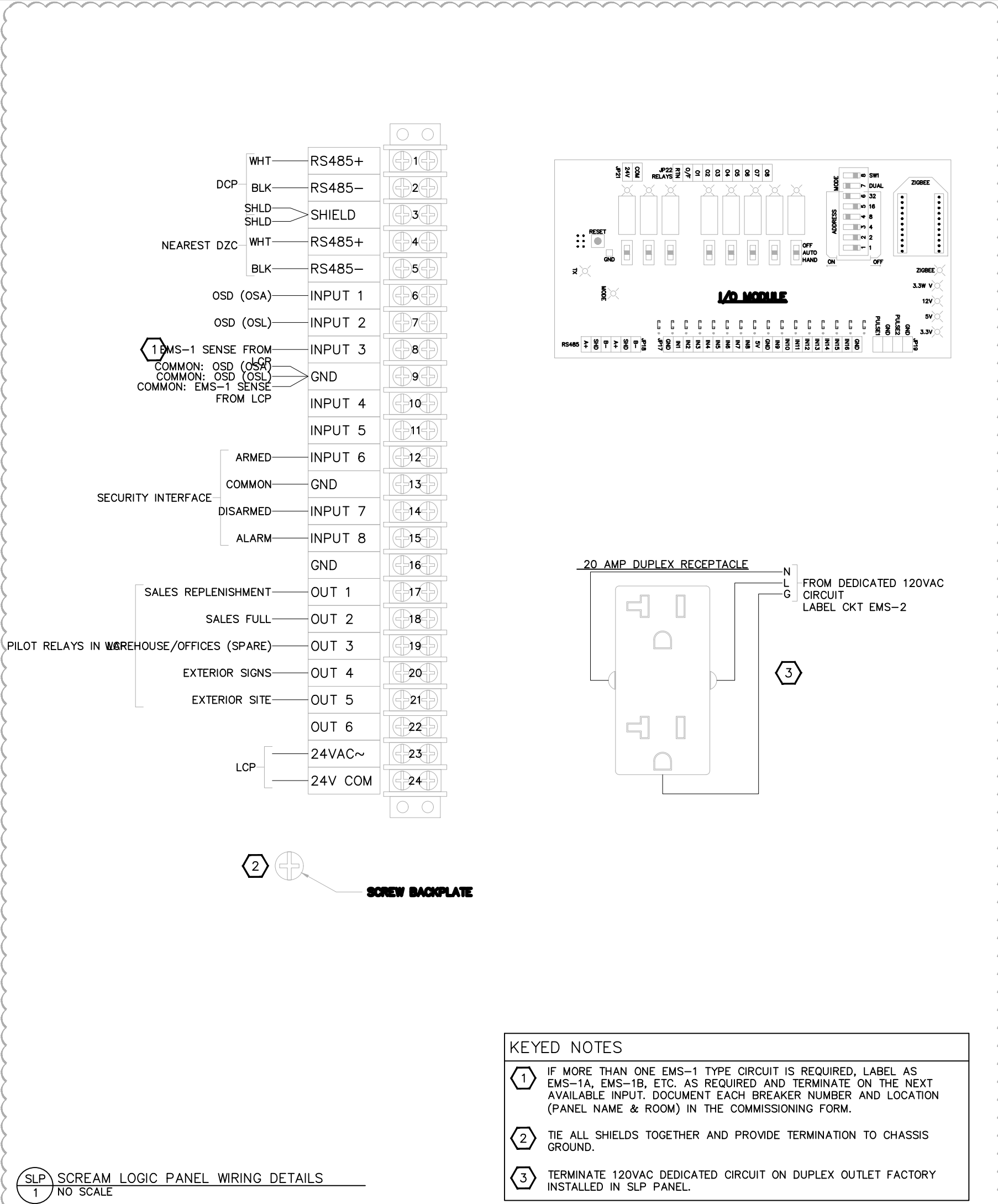
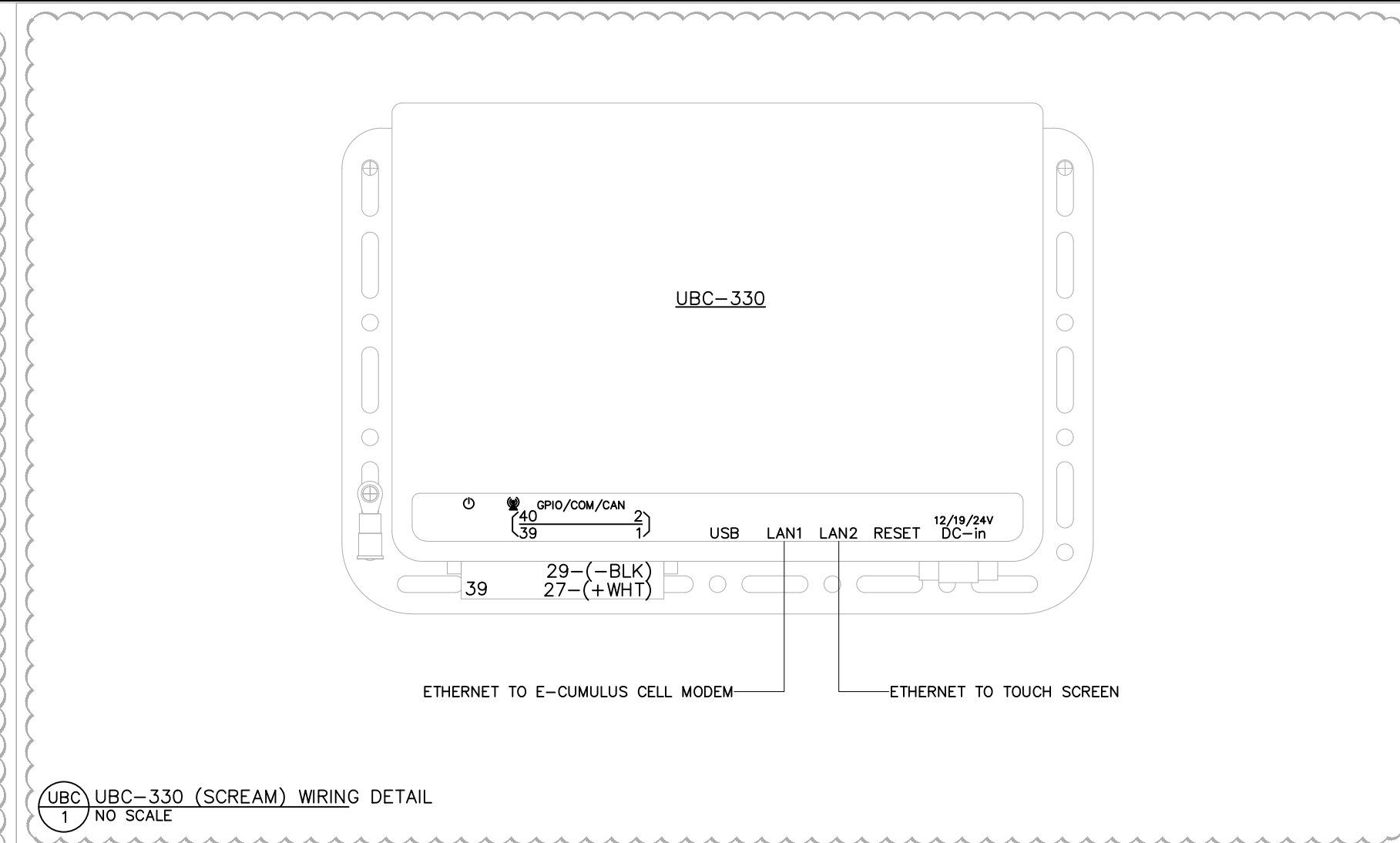
11-15-17

Date:

SIEMENS
9225 BEE CAVES ROAD, BLDG. B, SUITE 100,
AUSTIN, TEXAS 78733 Phone: 512-421-6257



SLD SINGLE LINE DIAGRAM
1 NO SCALE



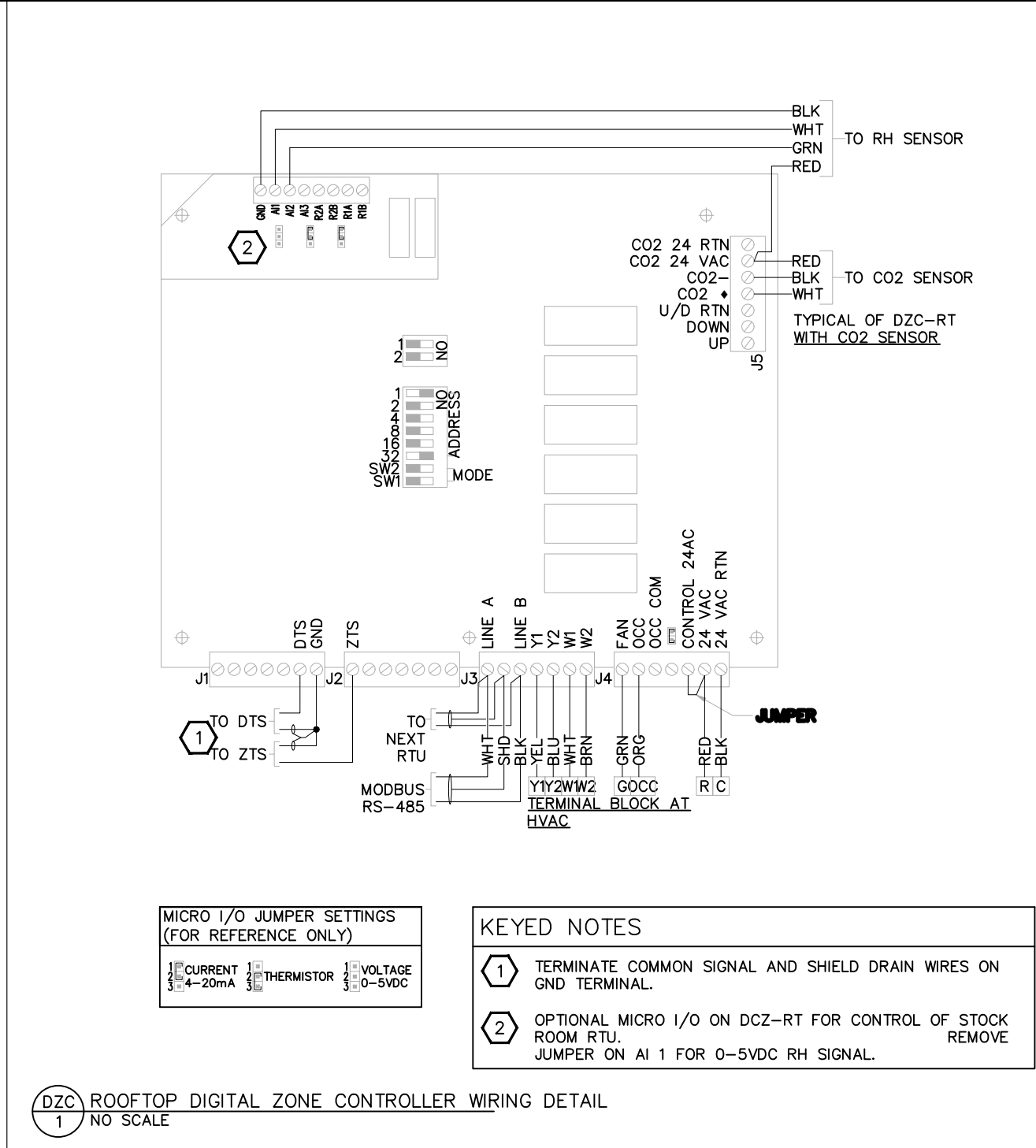
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Description: **PROTOTYPICAL NATIONAL EMS BID SET**

Date: 11-15-17
Scale: NTS

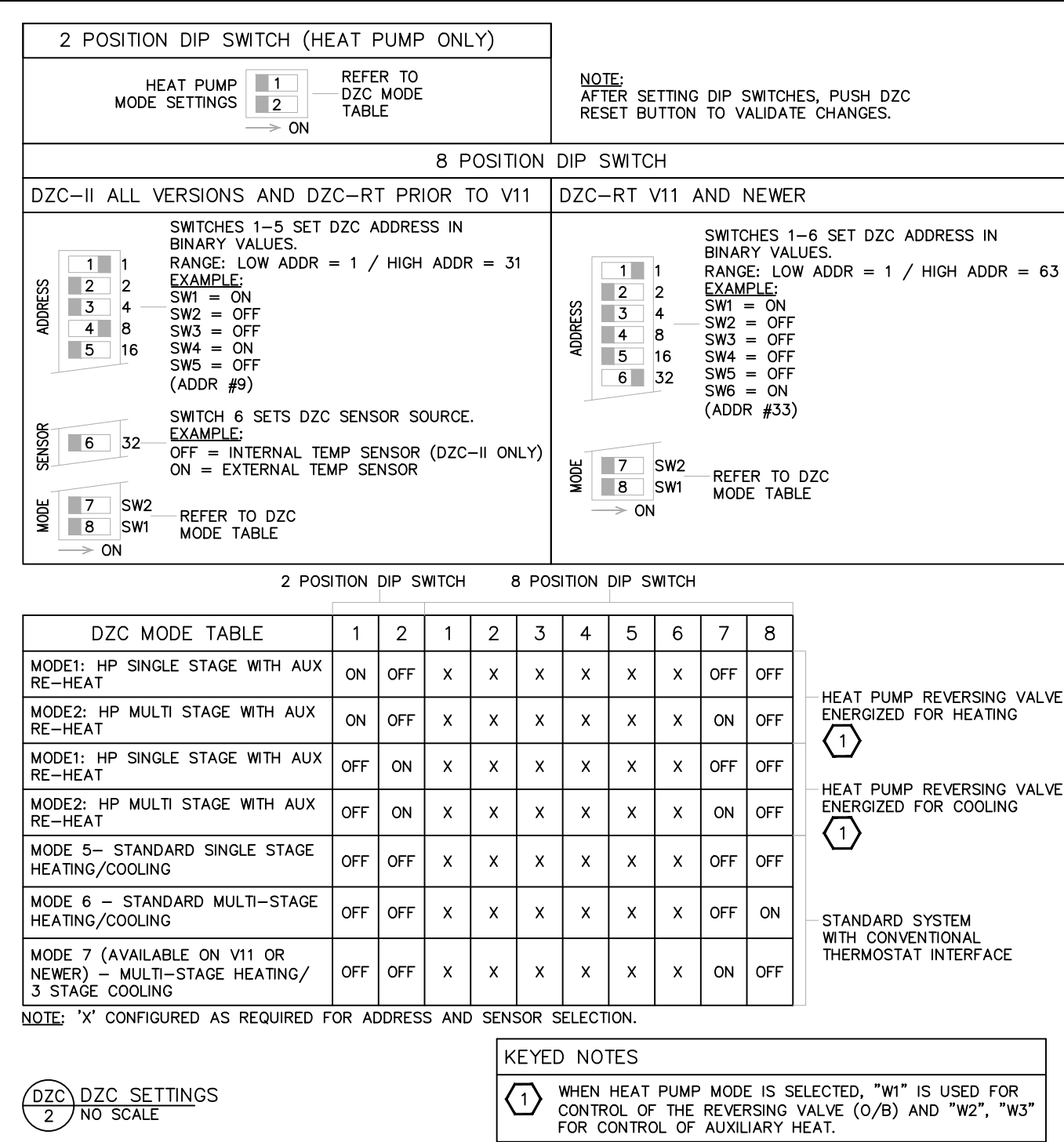
Revisions:

#	DESCRIPTION	DATE	BY	DWG.
0	Initial Release	11-15-17	MS	
3	Revised	4-23-18	MS	
4	Revised	8-12-19	MS	
5	Revised	10-10-19	MS	
6	Revised	3-3-20	MS	
7	Revised	4-13-20	MS	
8	Revised	6-2-20	MS	

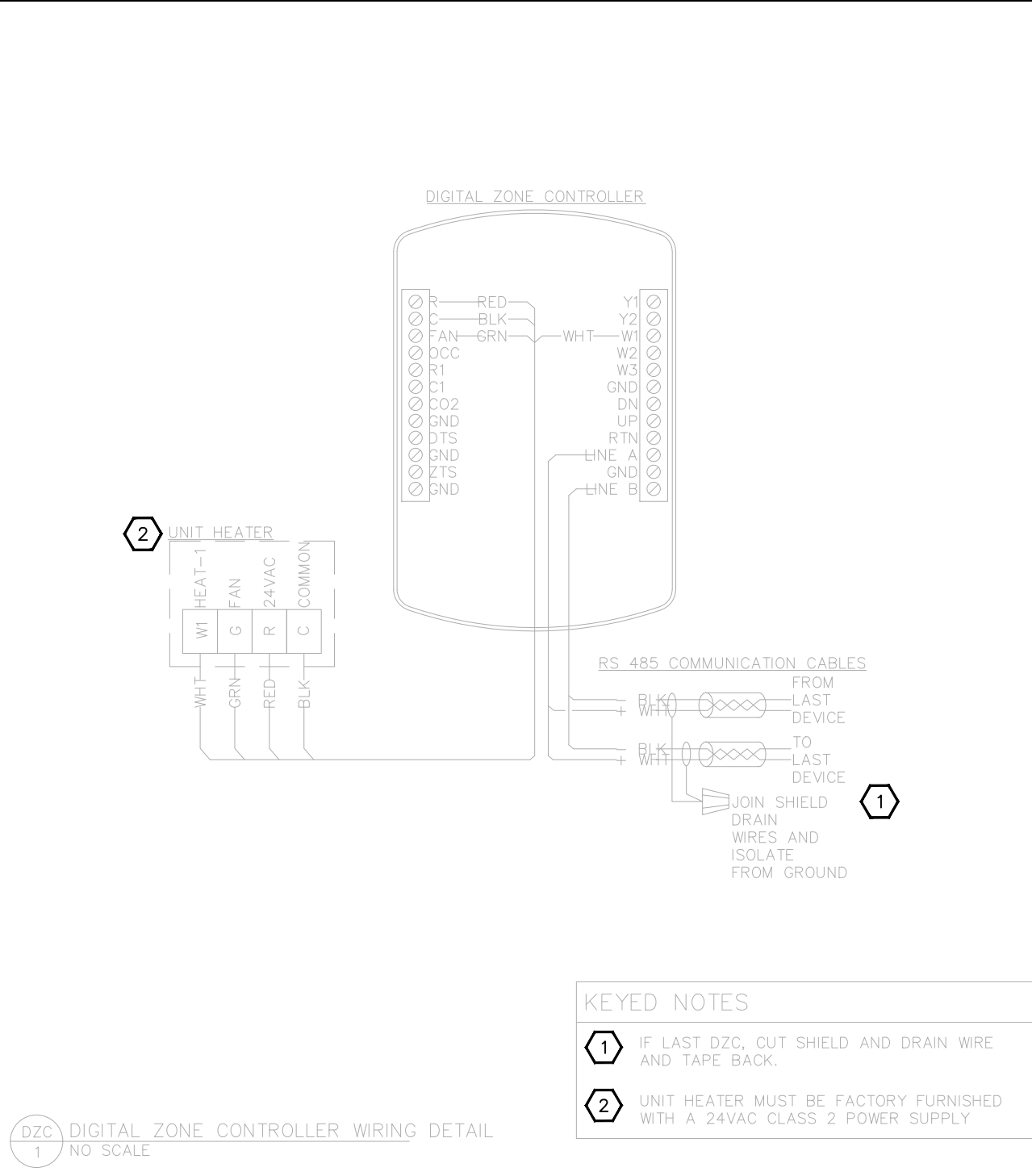
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9225 BEE CAVES ROAD, BLDG. B, SUITE 100,
AUSTIN, TEXAS 78733 Phone: 512-421-6257



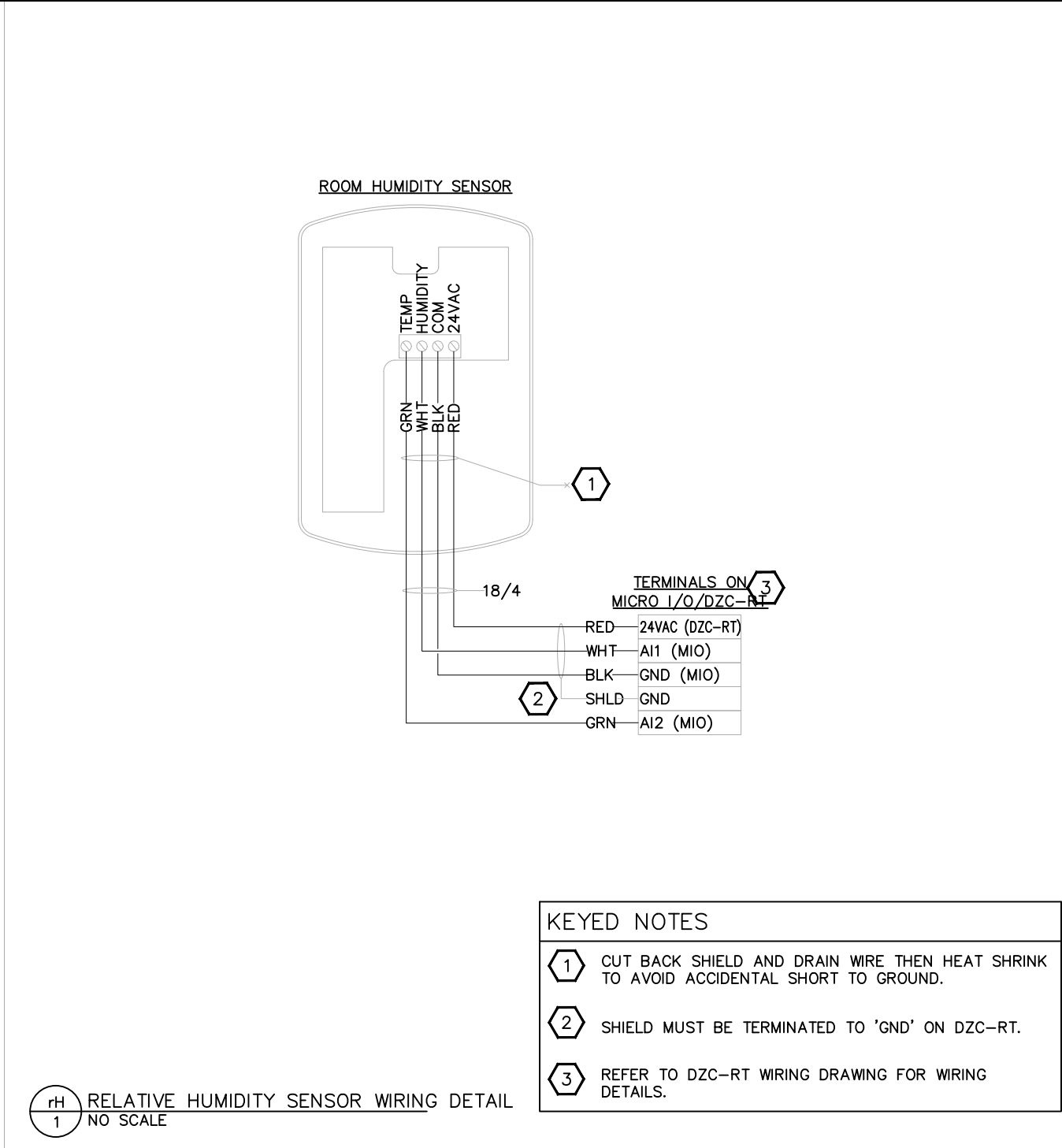
DZC ROOFTOP DIGITAL ZONE CONTROLLER WIRING DETAIL
1 NO SCALE



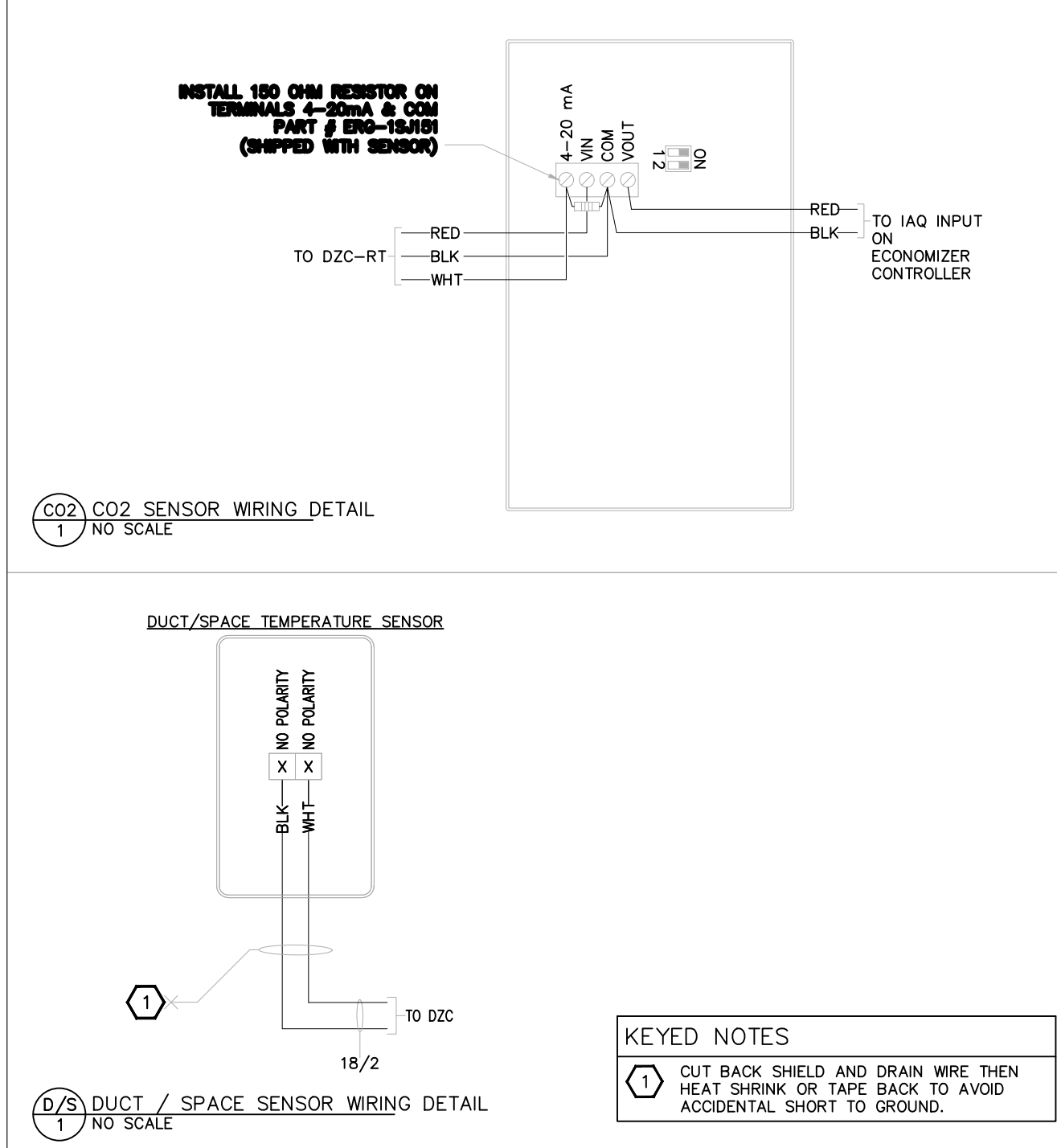
DZC SETTINGS
2 NO SCALE



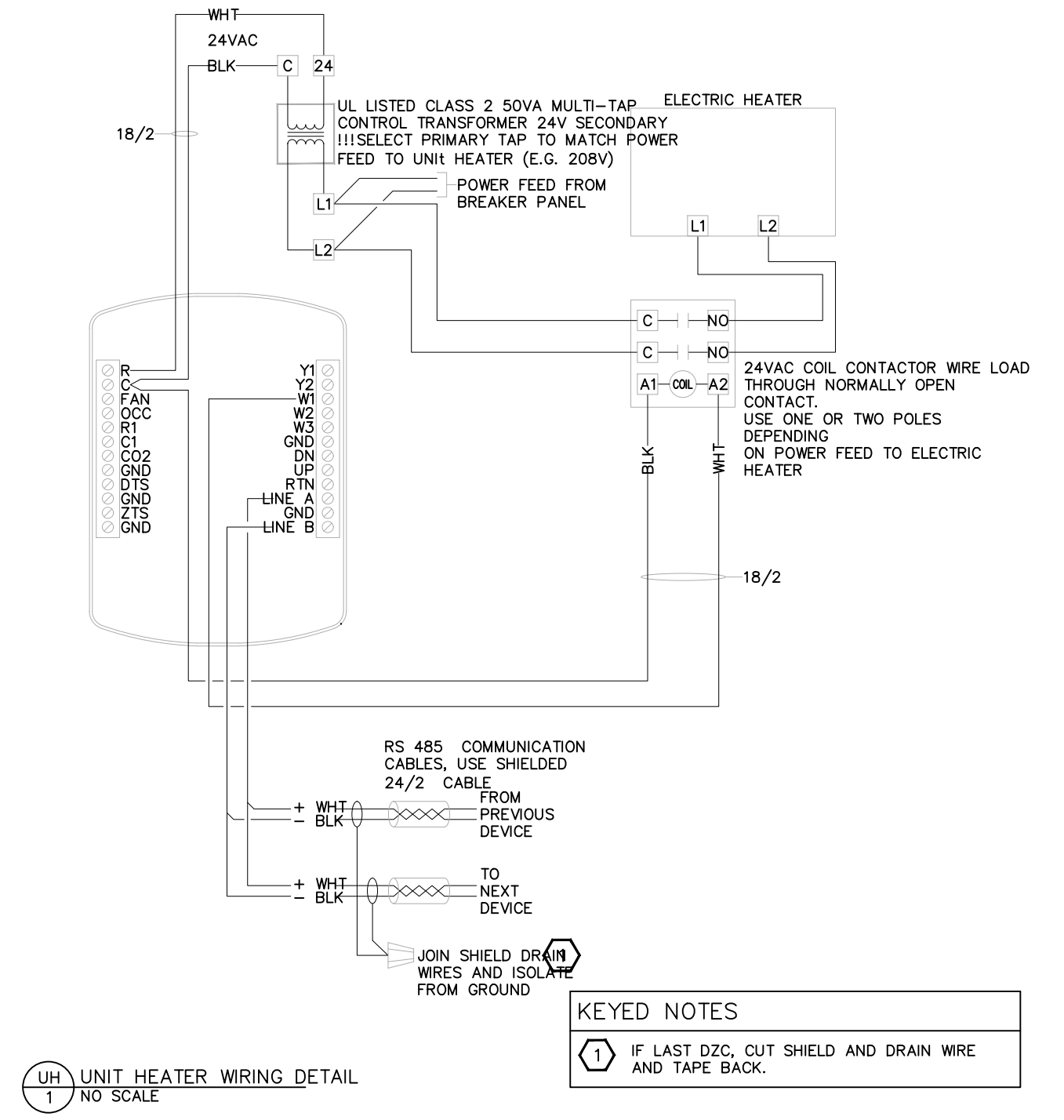
DZC DIGITAL ZONE CONTROLLER WIRING DETAIL
1 NO SCALE



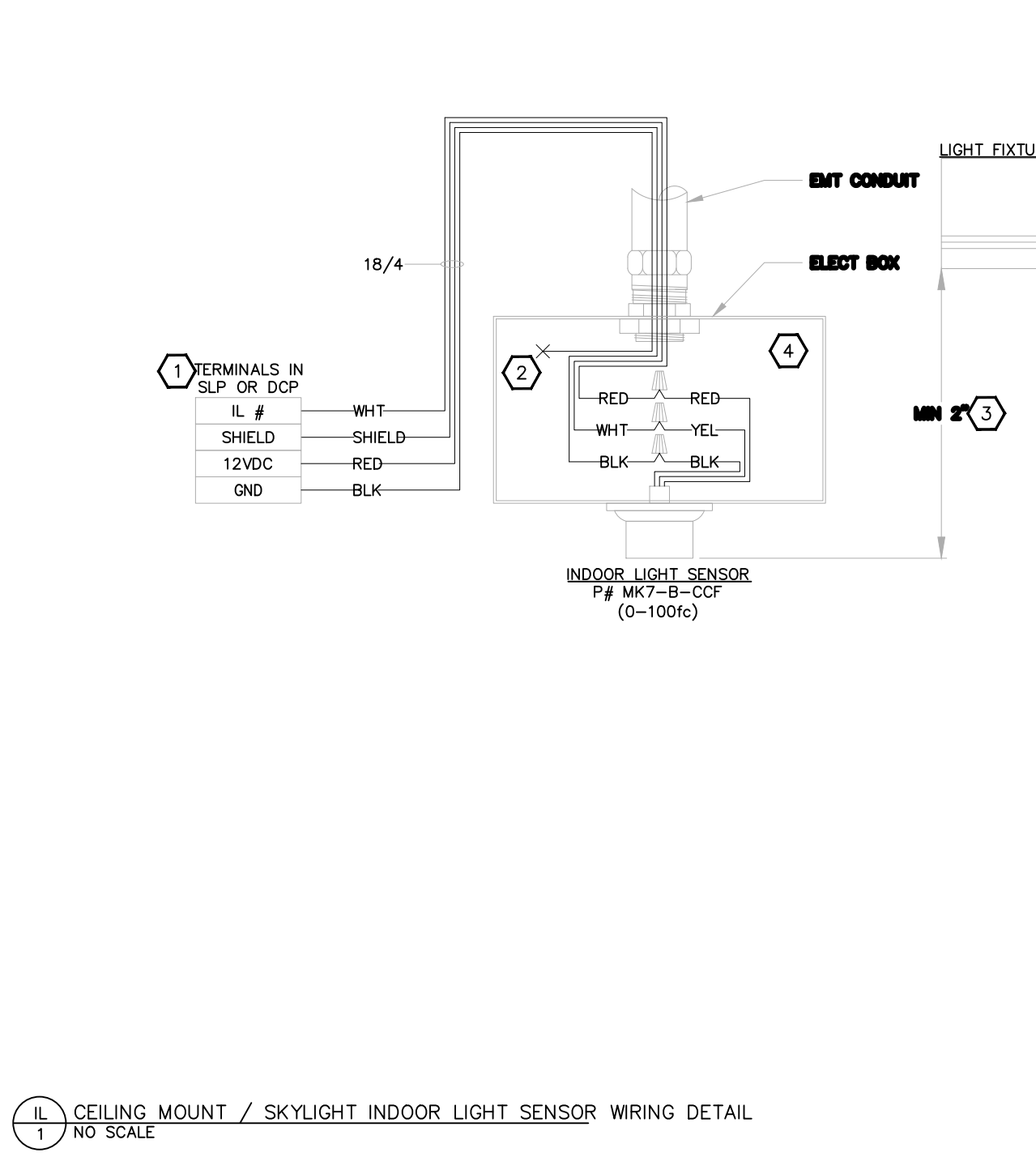
RELATIVE HUMIDITY SENSOR WIRING DETAIL
1 NO SCALE



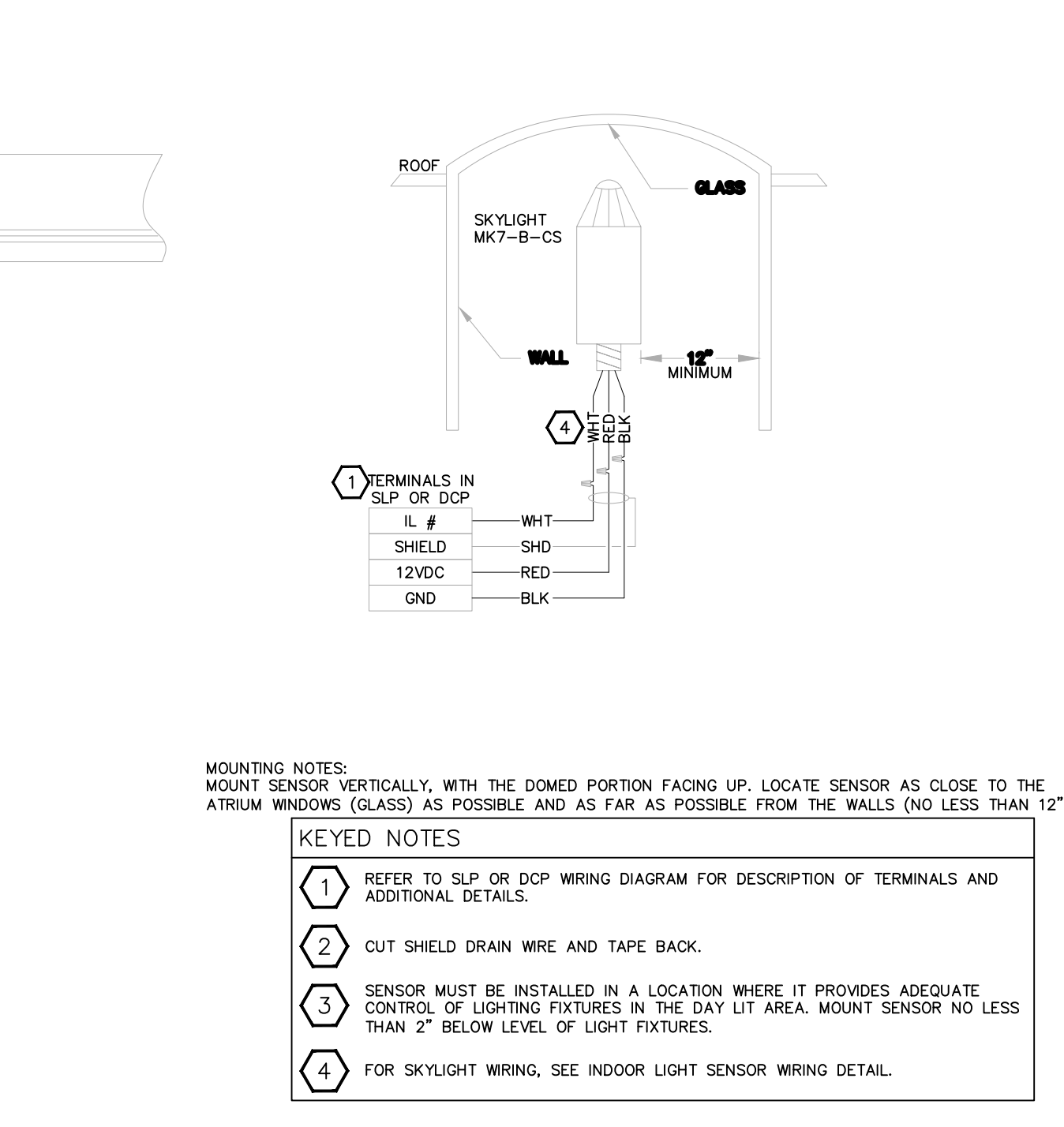
CO2 SENSOR WIRING DETAIL
1 NO SCALE



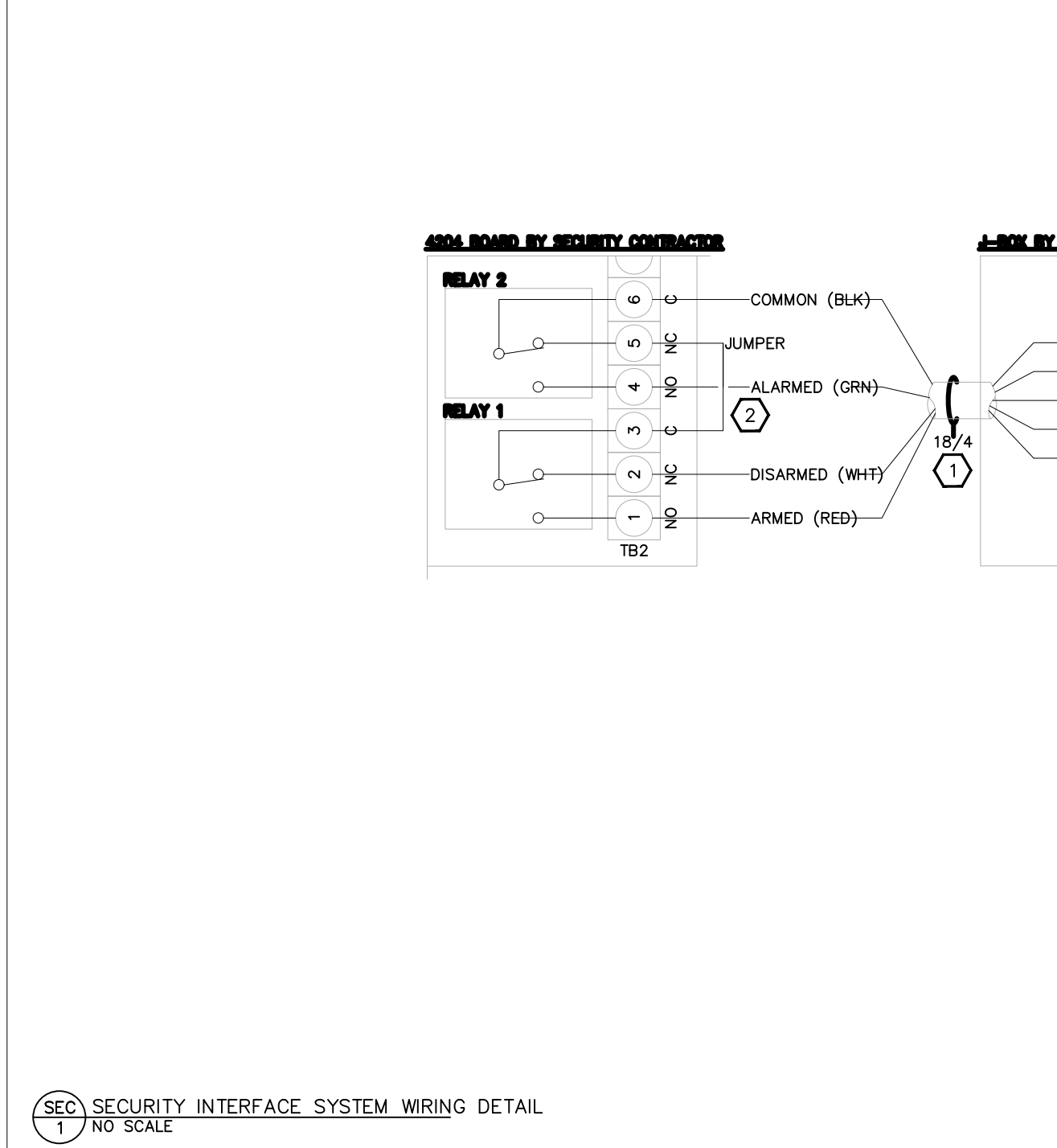
UNIT HEATER WIRING DETAIL
1 NO SCALE



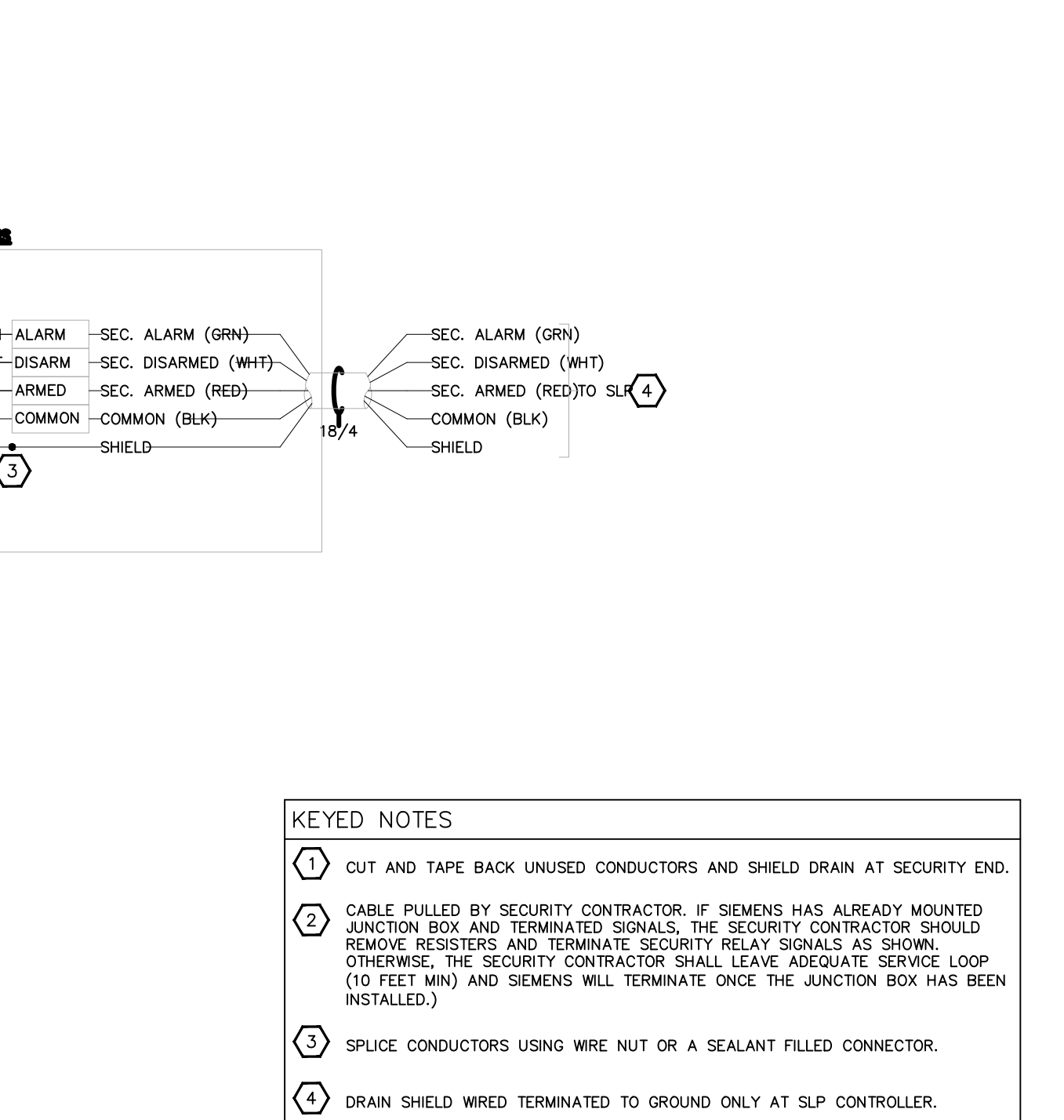
CEILING MOUNT / SKYLIGHT INDOOR LIGHT SENSOR WIRING DETAIL
1 NO SCALE



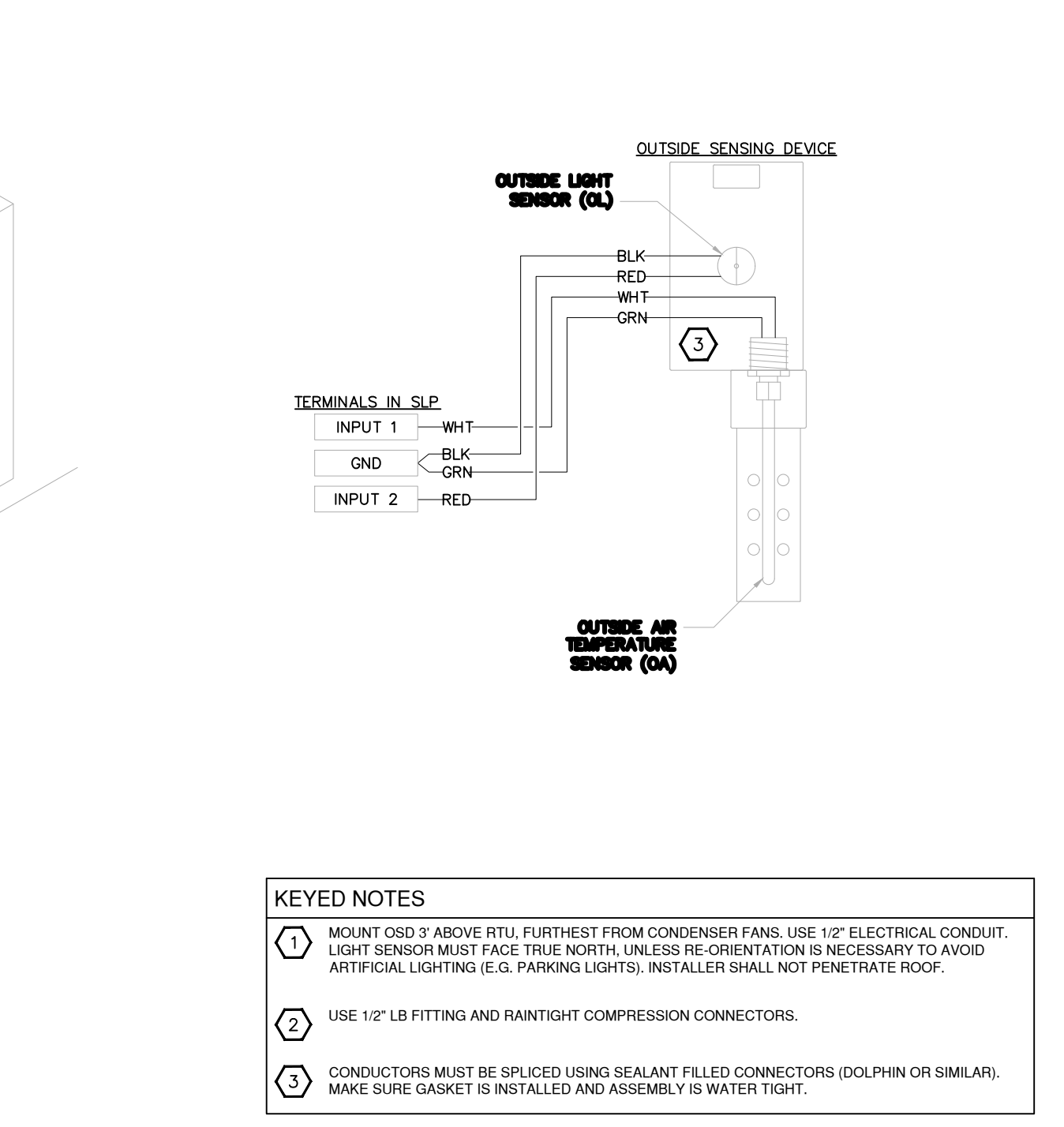
DUCT / SPACE SENSOR WIRING DETAIL
1 NO SCALE



SECURITY INTERFACE SYSTEM WIRING DETAIL
1 NO SCALE



OUTSIDE SENSING DEVICE MOUNTING AND WIRING DETAILS
1 NO SCALE



OUTSIDE SENSING DEVICE MOUNTING AND WIRING DETAILS
1 NO SCALE

SITE DEVELOPMENT PLANS

HARBOR FREIGHT TOOLS

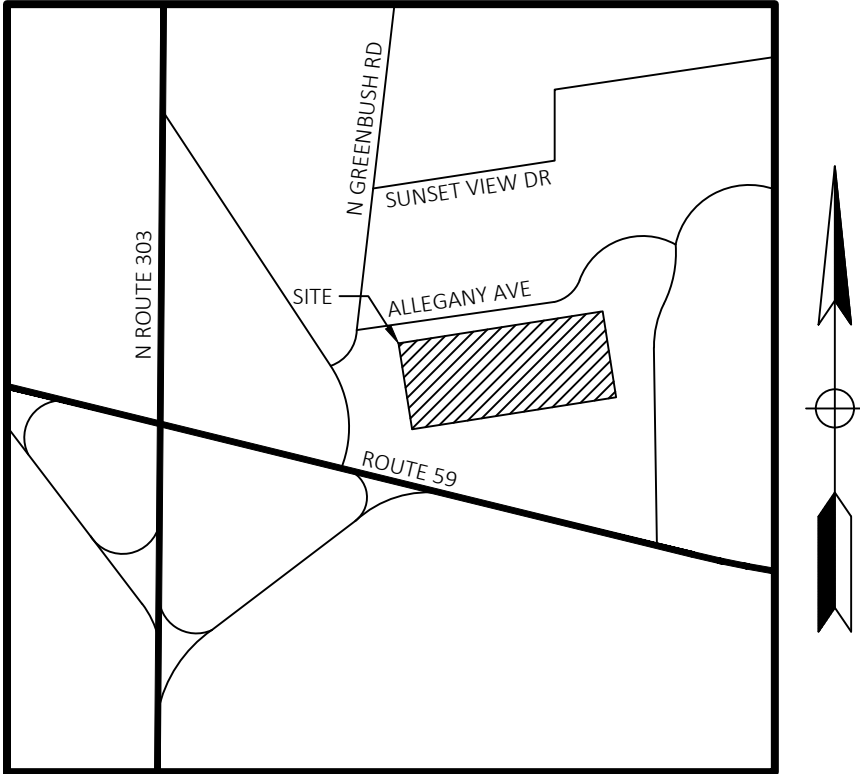
388 ROUTE 59
NYACK, NEW YORK, 10960

GENERAL NOTES:

- A. TOPOGRAPHIC BOUNDARY SURVEY, INCLUDING PROPERTY LINES, LEGAL DESCRIPTION, EXISTING UTILITIES, SITE TOPOGRAPHY WITH SPOT ELEVATIONS, OUTSTANDING PHYSICAL FEATURES AND EXISTING STRUCTURE LOCATIONS WAS PROVIDED BY THE FOLLOWING COMPANY, AS A CONTRACTOR TO THE SELLER/OWNER:
- TOPOGRAPHY: AREK SURVEYING PC,
 10 TAFT PL
 ALBERTSON, NY 11507
 (516) 792-6676
- CEI ENGINEERING AND ITS ASSOCIATES WILL NOT BE HELD RESPONSIBLE FOR THE ACCURACY OF THE SURVEY OR FOR DESIGN ERRORS OR OMISSIONS RESULTING FROM SURVEY INACCURACIES.
- B. ALL PHASES OF SITE WORK FOR THIS PROJECT SHALL MEET OR EXCEED THE OWNER / DEVELOPER SITE WORK SPECIFICATIONS.
- C. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF EXISTING STRUCTURES, RELATED UTILITIES, PAVING, UNDERGROUND STORAGE TANKS AND ANY OTHER EXISTING IMPROVEMENTS AS NOTED. SEE SITE WORK SPECIFICATIONS.
- D. CONTRACTOR IS TO REMOVE AND DISPOSE OF ALL DEBRIS, RUBBISH AND OTHER MATERIALS RESULTING FROM PREVIOUS AND CURRENT DEMOLITION OPERATIONS. DISPOSAL WILL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND/OR FEDERAL REGULATIONS GOVERNING SUCH OPERATIONS.
- E. THE GENERAL CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR AND SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID PROPERTY DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASES OF THIS PROJECT.
- F. WARRANTY/DISCLAIMER: THE DESIGNS REPRESENTED IN THESE PLANS ARE IN ACCORDANCE WITH ESTABLISHED PRACTICES OF CIVIL ENGINEERING FOR THE DESIGN FUNCTIONS AND USES INTENDED BY THE OWNER AT THIS TIME. HOWEVER, NEITHER THE ENGINEER NOR ITS PERSONNEL CAN OR DO WARRANT THESE DESIGNS OR PLANS AS CONSTRUCTED EXCEPT IN THE SPECIFIC CASES WHERE THE ENGINEER INSPECTS AND CONTROLS THE PHYSICAL CONSTRUCTION ON A CONTEMPORANEOUS BASIS AT THE SITE.
- G. SAFETY NOTICE TO CONTRACTOR: IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. ANY CONSTRUCTION OBSERVATION BY THE ENGINEER OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES, IN, ON OR NEAR THE CONSTRUCTION SITE.
- H. ALL CONSTRUCTION IN STATE HIGHWAY DEPARTMENT RIGHT-OF-WAY SHALL BE COORDINATED WITH THE HIGHWAY DEPARTMENT RESIDENT ENGINEER.
- I. WETLANDS NOTE: ANY DEVELOPMENT, EXCAVATION, CONSTRUCTION, OR FILLING IN A U.S. CORPS OF ENGINEERS DESIGNATED WETLAND IS SUBJECT TO LOCAL, STATE AND FEDERAL APPROVALS. THE CONTRACTOR SHALL COMPLY WITH ALL PERMIT REQUIREMENTS AND/OR RESTRICTIONS AND ANY VIOLATION WILL BE SUBJECT TO FEDERAL PENALTY. THE CONTRACTOR SHALL HOLD THE OWNER/DEVELOPER, THE ENGINEER AND THE LOCAL GOVERNING AGENCIES HARMLESS AGAINST SUCH VIOLATION.
- J. RESIDENT ENGINEERING SERVICES: WHEN REQUESTED BY THE OWNER, RESIDENT ENGINEERING SERVICES SHALL BE PROVIDED BY THE ENGINEERS (ON A TIME AND FREQUENCY BASIS) ACCEPTABLE TO THE CITY ENGINEER FOR IMPROVEMENTS TO PUBLIC WATER MAINS, PUBLIC SEWER, AND CITY STREETS, AT THE COMPLETION OF CONSTRUCTION, THE ENGINEER SHALL CERTIFY THE CONSTRUCTION TO BE IN COMPLIANCE WITH THE PLANS AND SPECIFICATIONS. THIS WORK WILL BE AT THE OWNER/DEVELOPER'S DIRECT EXPENSE AND SHALL BE COORDINATED WITH CEI ENGINEERING ASSOCIATES, INC. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE RESIDENT ENGINEER OF ANY PRECONSTRUCTION / CONSTRUCTION CONFERENCES AND ANY PUBLIC CONSTRUCTION 24 HOURS PRIOR TO SAID ACTION.

FLOOD CERTIFICATION:

BY SCALED MAP LOCATION AND GRAPHICAL PLOTTING ONLY. THIS PROPERTY IS DETERMINED TO BE LOCATED WITHIN ZONE "X", OR AREAS OUTSIDE THE 0.2% ANNUAL CHANCE 100-YR FLOODPLAIN AS DETERMINED BY THE NATIONAL FLOOD INSURANCE PROGRAM. FLOOD INSURANCE MAP FOR ALLEGANY COUNTY, NEW YORK.
MAP NUMBER: 36087C0177G
MAP REVISED: 8/26/2021



VICINITY MAP
NOT TO SCALE

CEI CONTACT:

NAME: JOEL E. HAYS
EMAIL: JHAYS@CEIENG.COM
PHONE: (972) 488-3737

CLIENT CONTACT:

NAME: DAN COLLINS
EMAIL: DCOLLINS@ADAARCHITECTS.COM
PHONE: (216) 521-5134
ADDRESS: 17710 DETROIT AVE.
LAKEWOOD, OH 44107



CIVIL ENGINEERING • LANDSCAPE ARCHITECTURE • LAND SURVEYING • PLANNING
BENTONVILLE | DALLAS | FRESNO | HOUSTON | JACKSONVILLE | MINNEAPOLIS | PHILADELPHIA | PHOENIX



CEI ENGINEERING ASSOCIATES, INC.
3108 SW REGENCY PKWY
BENTONVILLE, AR 72712
PHONE: (479) 273-9472
FAX: (479) 273-0844

PLAN INDEX:

- C0 COVER SHEET
C1 DEMOLITION & EROSION CONTROL PLAN
C1.1 EROSION CONTROL NOTES
C2 SITE PLAN
C3 PAVEMENT PLAN
C4 UTILITY PLAN
C5 GRADING PLAN
C6 DETAIL SHEET 1

ASSOCIATED PLANS:

1. SURVEY

RESOURCE LIST:

AGENCY
TOWN OF CLARKSTOWN
10 MAPLE AVE #5013
NEW CITY, NEW YORK 10956
PHONE: (845) 639-2000

AGENCY
VILLAGE OF NYACK WATER DEPARTMENT
9 N BROADWAY
NYACK, NEW YORK 10960
PHONE: (845) 358-0641

HARBOR FREIGHT TOOLS

388 ROUTE 59
NYACK, NEW YORK, 10960

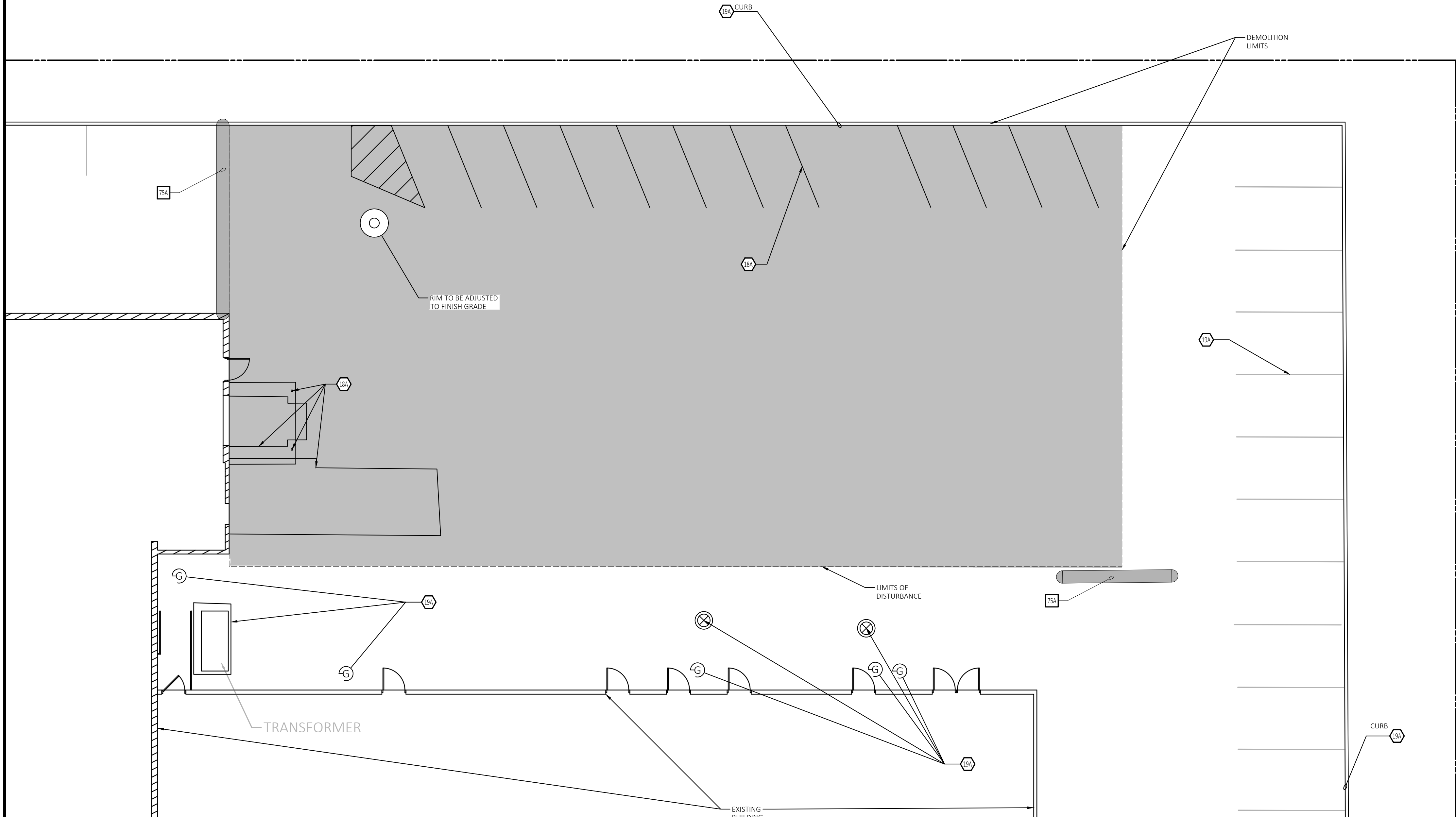
PROFESSIONAL OF RECORD	JDG
PROJECT MANAGER	JEH
DESIGNER	HMK
CEI PROJECT NUMBER	32286
DATE	9/21/2021
REVISION	REV-0

COVER

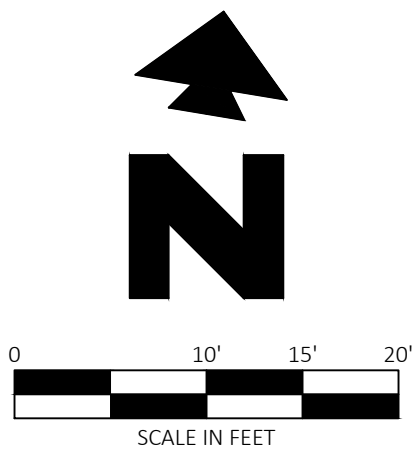
SHEET TITLE
SHEET NUMBER

C0

HARBOR FREIGHT TOOLS
(14,435 SQ. FT.)
FF= 116.31



NOTE:
SEE ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF
PORCHES, RAMPS, VESTIBULE, SLOPED PAVING, TRUCK DOCKS, BUILDING
UTILITY ENTRANCE LOCATIONS AND PRECISE BUILDING DIMENSIONS.



Know what's below.
Call before you dig.

EXISTING LEGEND

<i>e</i>	EAST OR ELECTRIC	<i>OHT</i>	OVERHEAD TELEPHONE
<i>n</i>	NORTH	<i>OHTV</i>	OVERHEAD TV
<i>oh</i>	OVERHEAD	<i>X\"SS</i>	SANITARY SEWER
<i>f</i>	SOUTH OR SEWER	<i>UGE</i>	UNDERGROUND ELECTRIC
<i>t</i>	TELEPHONE	<i>UGE&T</i>	UNDERGROUND ELECTRIC AND TELEPHONE
<i>ug</i>	UNDERGROUND	<i>UGT</i>	UNDERGROUND TELEPHONE
<i>w</i>	WEST OR WATER	<i>UGTV</i>	UNDERGROUND TV
---	PROPERTY LINE	<i>X\"W</i>	WATER
---	RIGHT OF WAY LINE		
---	STORM DRAIN		
<i>X\"G</i>	GAS		
<i>OHE</i>	OVERHEAD ELECTRIC		
<i>OHE&T</i>	OVERHEAD ELECTRIC AND TELEPHONE		

GENERAL DEMOLITION NOTES

- THE SITE WORK FOR THIS PROJECT SHALL MEET OR EXCEED THE "VILLAGE OF NYACK STANDARD SITE WORK SPECIFICATIONS".
- CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF THE EXISTING STRUCTURES, RELATED UTILITIES, PAVING, UNDERGROUND STORAGE TANKS AND ANY OTHER EXISTING IMPROVEMENTS AS NOTED. SEE SITE WORK SPECIFICATIONS.
- CONTRACTOR IS TO REMOVE AND DISPOSE OF ALL DEBRIS, RUBBISH AND OTHER MATERIALS RESULTING FROM PREVIOUS AND CURRENT DEMOLITION OPERATIONS. DISPOSAL WILL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND/OR FEDERAL REGULATIONS GOVERNING SUCH OPERATIONS.
- THE GENERAL CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID PROPERTY DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASES OF THIS PROJECT. THE CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR ANY DAMAGES TO THE ADJACENT PROPERTIES OCCURRING DURING THE CONSTRUCTION PHASES OF THIS PROJECT.
- ENGINEER'S NOTICE TO CONTRACTOR
THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
- ALL CURB TO REMAIN IN PLACE OR BE REPLACED IF DAMAGED DURING CONSTRUCTION.

DEMOLITION LEGEND

---	PROPERTY LINE/RIGHT OF WAY LINE
---	CONCRETE CURB AND GUTTER TO REMAIN IN PLACE
---	LIMITS OF SAWCUT, DEMOLITION, AND DISTURBANCE

DEMOLITION NOTES

- EXISTING TO BE REMOVED.
- EXISTING TO REMAIN.

PROPOSED LEGEND

---	PROPERTY LINE/RIGHT OF WAY LINE
---	SWP-CI (BIG RED)

EROSION DETAILS

75A BIG RED

GENERAL EROSION NOTES

- SEE SHEET "EROSION CONTROL NOTES" FOR EROSION CONTROL NOTES AND DETAILS.

AREA OF DISTURBANCE = 0.229 ACRES (10,000 S.F.)

SWP-CI "Big Red"

Curb Inlet Protector

By ASP Enterprises and Storm Water Products

Temporary and Reusable Solutions for Sediment Control



- Reusable Curb Inlet Protection
- Environmentally Friendly
- Drops out sediment by dissipating the water energy

"Big Red" Filter Advantages:

- Easy to Install
- Versatile for a variety of curb inlets
- Reusable and Extremely easy to clean
- Made from 90% Inert Recycled Materials

The SWP-CI "Big Red" Filter is a REUSABLE inlet protector that keeps out sediment throughout the entire construction project. There are no pockets to fill, no velcro bags, no assembly etc. Simply place in front of the inlet, make sure it lays in the contour, and you are DONE!

Simple installation also translates into simple removal, cleanup and reuse at the next project or phase. Maintenance is simple as well by lifting the unit from the inlet, shaking the mud off of it, removing the sediment on the concrete, and placing the unit back. If it is severely filled with sediment, wash it out in a vegetated area and it is as good as new.

All of these features and benefits combine to make the SWP-CI "Big Red" curb inlet protector the perfect choice for all curb inlet applications. It comes in 24" long for single curb inlets and 104" lengths for double curb inlets.

- High Flow Rate
- Made of Durable High-Strength Geotextile
- Fully Reusable
- Made of Recycled Materials



SWP-CI "Big Red"

Curb Inlet Protector

By ASP Enterprises and Storm Water Products



- Infill Material: shredded recycled rubber tires
- Weight: approx. 10 lbs per linear foot
- Diameter: approx. 8"

Geotextile fabric made of durable high flow fabric with the following properties:

Properties:	Test Method	Units	Typical Value
Weight	ASTM D1536	wt/yd	2-3
Grab Tensile Strength	ASTM D4632	lb	warp 250 fill 290
Tear Strength (Trapezoid)	ASTM D4533	lb	warp 60 fill 50
Burst	ASTM D3786	psi	440

(Efforts were made to determine flow rate-the fabric exceeded all capacities of the testing equipment)



ASP Enterprises and Storm Water Products assume no liability for the accuracy or completeness of this information or for the ultimate use of the information. ASP and SWP products are not all tested, certified, or otherwise evaluated, warranted or guaranteed, including without limitation any implied warranty as to merchantability or fitness for a particular purpose or arising from a course of dealing or usage of trade in any equipment, material or information furnished herewith. This document should not be construed as engineering advice.



CEI ENGINEERING ASSOCIATES, INC.
3108 SW REGENCY PKWY
BENTONVILLE, AR 72712
PHONE: (479) 273-9472
FAX: (479) 273-0844

HARBOR FREIGHT TOOLS

388 ROUTE 59
NYACK, NEW YORK, 10960

PROFESSIONAL OF RECORD	JDG
PROJECT MANAGER	JEH
DESIGNER	HMK
CEI PROJECT NUMBER	32286
DATE	9/21/2021
REVISION	REV-0

DEMOLITION & EROSION CONTROL PLAN

SHEET TITLE
SHEET NUMBER

C1

DRAWING LOCATION: P:\2020\032286\0\DRAWINGS\DESIGN\WORKING\32286-EP.DWG -- SAVED BY: HKDD

GENERAL EROSION NOTES

- A. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH STORM WATER POLLUTION PREVENTION SHALL OBTAIN A COPY OF THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND THE STATE OF _____ NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT (NPDES PERMIT) AND BECOME FAMILIAR WITH THEIR CONTENTS.
- B. A COPY OF THE SWPPP AND EROSION CONTROL PLANS, INCLUDING APPLICABLE DETAIL SHEETS, MUST REMAIN ONSITE THROUGHOUT CONSTRUCTION AND MADE AVAILABLE TO THE PUBLIC UNTIL THE SITE IS TERMINATED AND/OR PERMANENTLY STABILIZED PER THE NPDES PERMIT.
- C. THE CONTRACTOR MUST UPDATE THE SWPPP AND EROSION CONTROL PLANS TO REFLECT THE PROGRESS OF CONSTRUCTION AND GENERAL CHANGES TO THE PROJECT SITE. CHANGES MAY INCLUDE BMP INSTALLATION, MODIFICATION, OR REMOVAL, CONSTRUCTION ACTIVITIES, CLEARING, GRUBBING, OR GRADING, AND TEMPORARY OR PERMANENT STABILIZATION.
- D. THE CONTRACTOR MUST ADHERE TO ANY HOURS OF WORK, NOISE LEVEL, OR OTHER CONSTRUCTION RELATED RESTRICTIONS IN ACCORDANCE WITH LOCAL OR STATE REGULATIONS.
- E. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ANY OFFSITE BORROW, SPOIL, OR STORAGE AREAS TO BE UTILIZED, BUT NOT PROVIDED WITHIN THE PROJECT'S LIMITS OF DISTURBANCE, ARE TO BE PROPERLY LICENSED AND PERMITTED.
- F. THE NPDES PERMIT DOES ALLOW CERTAIN NON-STORMWATER DISCHARGES AT THE CONSTRUCTION SITE, SEE NPDES PERMIT, SECTION NA FOR A COMPLETE LIST OF PERMITTED DISCHARGES. THESE DISCHARGES MUST BE TREATED BY AN ONSITE BMP PRIOR TO LEAVING THE SITE AND MUST NOT CAUSE EROSION OR DAMAGE TO DOWNSTREAM PROPERTIES AND INFRASTRUCTURE. ALL OTHER DISCHARGES ARE STRICTLY PROHIBITED UNLESS AN APPLICABLE PERMIT HAS BEEN OBTAINED PRIOR TO THE DISCHARGE BY THE CONTRACTOR.
- G. THE TEMPORARY PARKING AND STORAGE AREA SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AREA, EQUIPMENT CLEANING AREA, EMPLOYEE BREAK AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS AND TOILET FACILITIES. THE EXACT LOCATIONS SHALL BE COORDINATED WITH THE OWNER'S CONSTRUCTION MANAGER AND DEPICTED ON THE ONSITE EROSION CONTROL PLAN.
- H. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, EQUIPMENT CLEANING, ETC.) SHALL BE DISPOSED OF IN A MANNER THAT PREVENTS CONTACT BETWEEN THESE MATERIALS AND STORM WATER THAT IS DISCHARGED FROM THE SITE.
- I. MAINTAIN ON THE SITE OR HAVE READILY AVAILABLE SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS TO CONTAIN AND CLEAN UP FUEL OR CHEMICAL SPILLS AND LEAKS.
- J. ADEQUATE HOUSEKEEPING MEASURES SHALL BE IMPLEMENTED SO THAT LOOSE TRASH, MATERIALS, TOOLS, AND EQUIPMENT ARE COLLECTED AND PROPERLY STORED AT THE CONSTRUCTION SITE.
- K. DUST ON THE SITE SHALL BE CONTROLLED BY SPRAYING WATER ON DRY AREAS OF THE SITE. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS PROHIBITED.
- L. NO RUBBISH, TRASH, GARBAGE OR OTHER SUCH MATERIALS SHALL BE DISCHARGED INTO DRAINAGE DITCHES, DRAINAGE STRUCTURES, OR WATERS OF THE STATE.
- M. ALL STORM WATER POLLUTION PREVENTION MEASURES PRESENTED ON THIS PLAN, AND IN THE STORM WATER POLLUTION PREVENTION PLAN, SHALL BE INITIATED AS SOON AS PRACTICABLE.
- N. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY WILL STOP FOR AT LEAST 14 DAYS, SHALL BE TEMPORARILY STABILIZED IMMEDIATELY.
- O. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS PERMANENTLY STOPPED SHALL BE PERMANENTLY STABILIZED. THESE AREAS SHALL BE STABILIZED IMMEDIATELY, BUT NO LATER THAN 14 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY OCCURRING IN THESE AREAS. REFER TO THE LANDSCAPING PLAN.
- P. IF THE ACTION OF VEHICLES TRAVELING OVER THE GRAVEL CONSTRUCTION ENTRANCES IS NOT SUFFICIENT TO REMOVE THE MAJORITY OF DIRT OR MUD, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES ENTER A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE. THE EXACT LOCATIONS SHALL BE COORDINATED WITH THE OWNER'S CONSTRUCTION MANAGER.
- Q. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
- R. CONTRACTORS OR SUBCONTRACTORS WILL BE RESPONSIBLE FOR REMOVING SEDIMENT IN THE DETENTION POND AFTER THE STABILIZATION OF THE SITE AND ANY SEDIMENT THAT MAY HAVE COLLECTED IN THE STORM SEWER DRAINAGE SYSTEMS.
- S. IF SOIL STOCKPILING IS EMPLOYED ON THE SITE, SILT FENCES SHALL BE USED TO HELP CONTAIN THE SEDIMENT.
- T. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
- U. SEDIMENT BASINS AND TRAPS ARE ATTRACTIVE TO CHILDREN AND CAN BE VERY DANGEROUS. IN ALL CASES, LOCAL AND/OR STATE ORDINANCES AND REGULATIONS REGARDING HEALTH AND SAFETY MUST BE ADHERED TO.
- V. ALL EXISTING AND PROPOSED STORM SEWER PIPES, DRAINAGE STRUCTURES, AND DRAINAGE DITCHES WITHIN THE PROJECT AREA SHALL BE CLEANED OF ANY TRASH AND ACCUMULATED SEDIMENT PRIOR TO FINAL STABILIZATION.
- W. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE DISPOSED OF WITHIN 30 DAYS AFTER FINAL STABILIZATION. FINAL STABILIZATION HAS OCCURRED WHEN ALL SOIL DISTURBING ACTIVITIES ARE COMPLETED AND A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF NA COVER FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES HAS BEEN EMPLOYED.
- X. DUE TO THE GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, WATTLES, ETC.) TO HELP PREVENT EROSION AND STORM WATER POLLUTION.
- Y. ALL OFF-SITE CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH WORKING DAY. THIS INCLUDES BACKFILLING OF TRENCHES FOR STORM DRAINS & UTILITY CONSTRUCTION AND PLACEMENT OF GRAVEL OR BITUMINOUS PAVING FOR ROAD CONSTRUCTION.
- Z. IN AN EMERGENCY SITUATION, THE CONTRACTOR IS RESPONSIBLE FOR MODIFYING OR ADDING BMPS NECESSARY TO STOP POLLUTANT OR SEDIMENT DISCHARGES FROM THE CONSTRUCTION SITE AND PROTECT THE WATER QUALITY OF THE RECEIVING WATERBODY.
- AA. IF AN EXCAVATION NEEDS TO BE DEWATERED DUE TO A RECENT RAINFALL EVENT, THE CONTRACTOR CAN DEWATER THE EXCAVATION VIA A PUMPED FILTER BAG. THE PUMPED FILTER BAG MUST DISCHARGE ONTO A STABILIZED SURFACE AND UPSTREAM OF AN EROSION CONTROL BMP LIKE A SEDIMENT BASIN/TRAP, SILT FENCE, OR OTHER PERIMETER BMP. IT IS STRICTLY PROHIBITED TO DISCHARGE THE PUMPED FILTER BAG INTO A STORM DRAIN OR OTHER CONVEYANCE STRUCTURE WITHOUT THE RUNOFF BEING TREATED VIA AN EROSION CONTROL BMP FIRST.

SEQUENCE OF CONSTRUCTION

NOTE: DOWNSLOPE PROTECTIVE MEASURES MUST ALWAYS BE IN PLACE BEFORE SOIL IS DISTURBED. CONSTRUCTION STEPS CAN BE IMPLEMENTED CONCURRENTLY ONLY IF ASSOCIATED DOWNSLOPE PROTECTIVE MEASURES HAVE BEEN INSTALLED FOR EACH ACTIVITY.

1. INSTALL BIG RED PRIOR TO SAWCUT OPERATIONS.
2. CLEAR AND GRUB THE SITE.
3. BEGIN GRADING THE SITE.
4. START CONSTRUCTION OF BUILDING PAD AND STRUCTURES.
5. INSTALL UTILITIES, UNDERDRAINS, STORM SEWERS, CURBS AND GUTTERS.
6. INSTALL INLET PROTECTION DEVICES.
7. PREPARE SITE FOR PAVING.
8. PAVE SITE.
9. REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES (ONLY IF SITE IS STABILIZED).

GENERAL EROSION NOTES CONT'D

MAINTENANCE
ALL MEASURES STATED ON THIS EROSION AND SEDIMENT CONTROL PLAN, AND IN THE STORM WATER POLLUTION PREVENTION PLAN, SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON AT LEAST ONCE EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A RAINFALL EVENT GREATER THAN 3-INCHES, AND SHOULD BE CLEANED AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:

1. INLET PROTECTION DEVICES AND BARRIERS SHALL BE REPAIRED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING, OR SHALL BE REPLACED IF THEY SHOW SIGNS OF DETERIORATION.
2. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED AND RESEEDED AS NEEDED.
3. SILT FENCES AND WATTLES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES AND WATTLES WHEN IT REACHES ONE-THIRD TO ONE-HALF THE HEIGHT OF THE BMP.
4. THE CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION ENTRANCES AS CONDITIONS DEMAND.
5. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE), THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AS CONDITIONS DEMAND.
6. OUTLET STRUCTURES IN THE SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES. SEDIMENT IN THE SEDIMENTATION BASINS SHALL NOT EXCEED A DEPTH OF APPROXIMATELY NA.
7. IF THE STONES IN THE GRAVEL INLET SEDIMENT FILTERS OR ROCK CHECK DAMS BECOME CLOGGED WITH SEDIMENT, THE STONES MUST BE PULLED AWAY, CLEANED AND REPLACED.
8. THE EMBANKMENT OF THE SEDIMENTATION BASIN SHALL BE CHECKED REGULARLY TO ENSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT.
9. SEDIMENT IN THE TEMPORARY SEDIMENT TRAP SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS REACHED A DEPTH OF APPROXIMATELY NA.
10. THE TEMPORARY SEDIMENT TRAP AND SEDIMENTATION BASIN STRUCTURES SHALL BE CHECKED REGULARLY TO ENSURE THAT THEY ARE STRUCTURALLY SOUND AND HAVE NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT.
11. DIVERSION DIKES AND/OR DITCHES SHALL BE CHECKED REGULARLY FOR EROSION AND SCOUR. ANY ERODED AREAS FOUND MUST BE IMMEDIATELY REPAIRED.
12. CONCRETE WASHOUT AREAS SHALL BE CHECKED REGULARLY FOR LEAKS AND CAPACITY. ALL LEAKS MUST BE REPAIRED IMMEDIATELY. WHEN THE WASHOUT VOLUME HAS BEEN REDUCED BY 85%, THE BMP MUST BE REMOVED AND REPLACED.



**Solutions for
Land and Life**

CEI ENGINEERING ASSOCIATES, INC.
3108 SW REGENCY PKWY
BENTONVILLE, AR 72712
PHONE: (479) 273-9472
FAX: (479) 273-0844

HARBOR FREIGHT TOOLS

388 ROUTE 59
NYACK, NEW YORK, 10960

PROFESSIONAL OF RECORD	JDG
PROJECT MANAGER	JEH
DESIGNER	HMK
CEI PROJECT NUMBER	32286
DATE	9/21/2021
REVISION	REV-0

EROSION CONTROL
NOTES

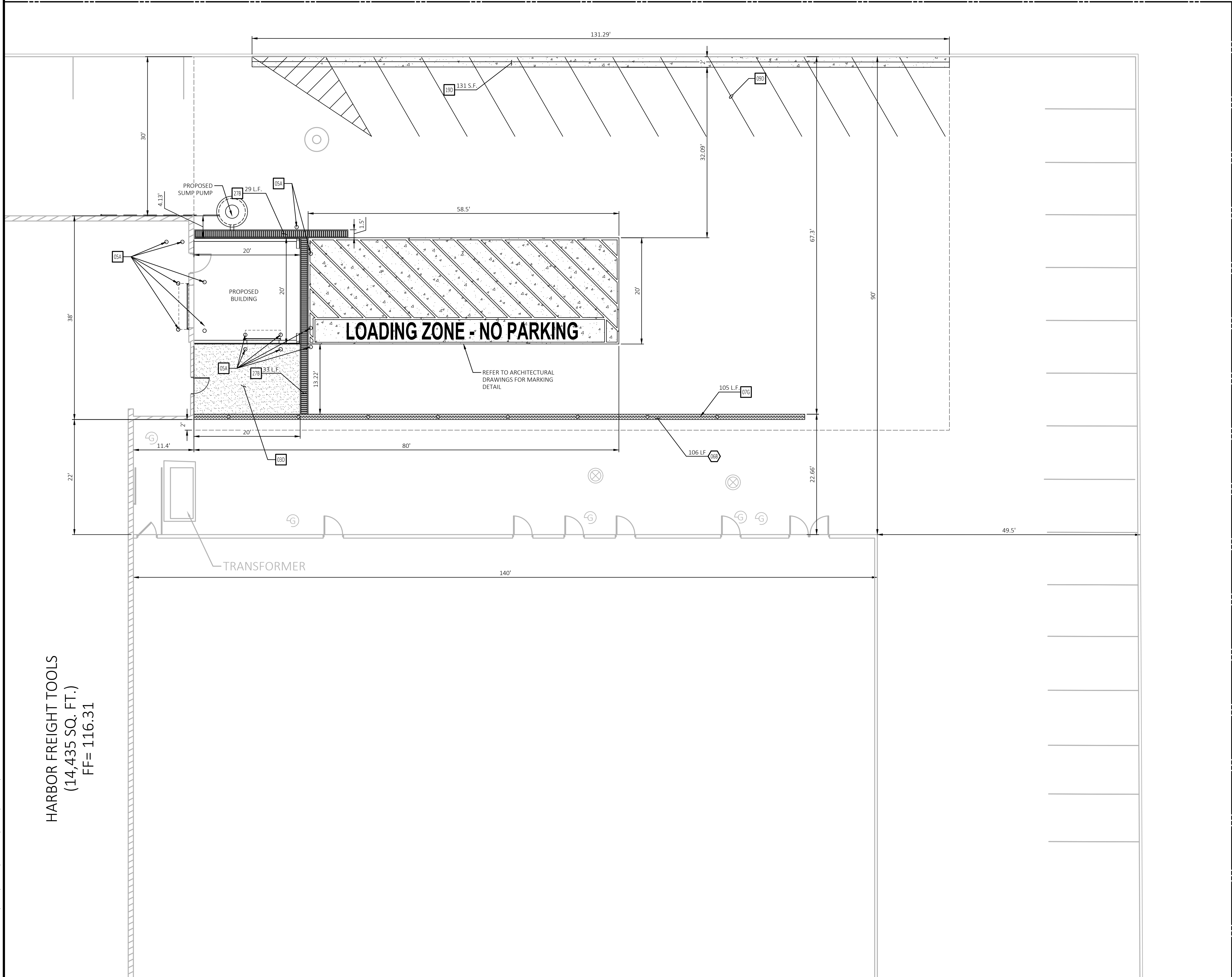
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SHEET NUMBER

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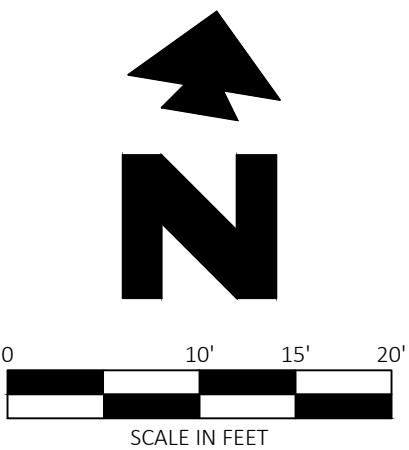
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HARBOR FREIGHT TOOLS
(14,435 SQ. FT.)
FF= 116.31



NOTE:
SEE ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF
PORCHES, RAMPS, VESTIBULE, SLOPED PAVING, TRUCK DOCKS, BUILDING
UTILITY ENTRANCE LOCATIONS AND PRECISE BUILDING DIMENSIONS.



Know what's below.
Call before you dig.

EXISTING LEGEND

<i>e</i>	EAST OR ELECTRIC	<i>OHT</i>	OVERHEAD TELEPHONE
<i>n</i>	NORTH	<i>OHTV</i>	OVERHEAD TV
<i>oh</i>	OVERHEAD	<i>X"SS</i>	SANITARY SEWER
<i>s</i>	SOUTH OR SEWER	<i>UGE</i>	UNDERGROUND ELECTRIC
<i>t</i>	TELEPHONE	<i>UGE&T</i>	UNDERGROUND ELECTRIC AND TELEPHONE
<i>ug</i>	UNDERGROUND	<i>UGT</i>	UNDERGROUND TELEPHONE
<i>w</i>	WEST OR WATER	<i>UGTV</i>	UNDERGROUND TV
---	PROPERTY LINE	<i>X"W</i>	WATER
---	RIGHT OF WAY LINE	<i>.5-10-11-50.5</i>	TREE INFO .5 = DIAMETER OF TRUNK IN FEET 10 = HEIGHT OF TREE IN FEET 11 = CANOPY DIAMETER IN FEET 50.5 = ELEVATION AT BASE OF TREE
---	STORM DRAIN		
<i>X"G</i>	GAS		
<i>OHE</i>	OVERHEAD ELECTRIC		
<i>OHE&T</i>	OVERHEAD ELECTRIC AND TELEPHONE		

PROPOSED LEGEND

---	PROPERTY LINE/RIGHT OF WAY LINE
---	LIMITS OF DISTURBANCE
---	RETAINING WALL
---	LIMITS OF SIDEWALKS AND CONCRETE APRONS (PER ARCH. PLANS)
---	TRENCH GRATE

GENERAL SITE NOTES

- ALL DIMENSIONS SHOWN ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
- UNLESS OTHERWISE SHOWN, CALLED OUT OR SPECIFIED HEREON OR WITHIN THE SPECIFICATIONS: PAVEMENT SHALL BE INSTALLED IN ACCORDANCE WITH DETAIL 08A OVER THE ENTIRE PARKING LOT AREA AND ALL APPROACH DRIVES. ALL PARKING LOT STRIPING INCLUDING ACCESSIBLE AND VAN ACCESSIBLE SPACES SHALL BE PAINTED PER DETAIL 09A.

SITE DETAILS

03D	CONCRETE SIDEWALK
05A	GUARD POST (REFER TO ARCHITECTURAL PLANS)
07G	HAND RAIL
09D	60 DEGREE ACCESSIBLE PARKING SPACE STRIPING
19D	SLOPED PAVING/PROTECTION
27B	TRENCH DRAIN

SITE NOTES

06B	RETAINING WALL
-----	----------------



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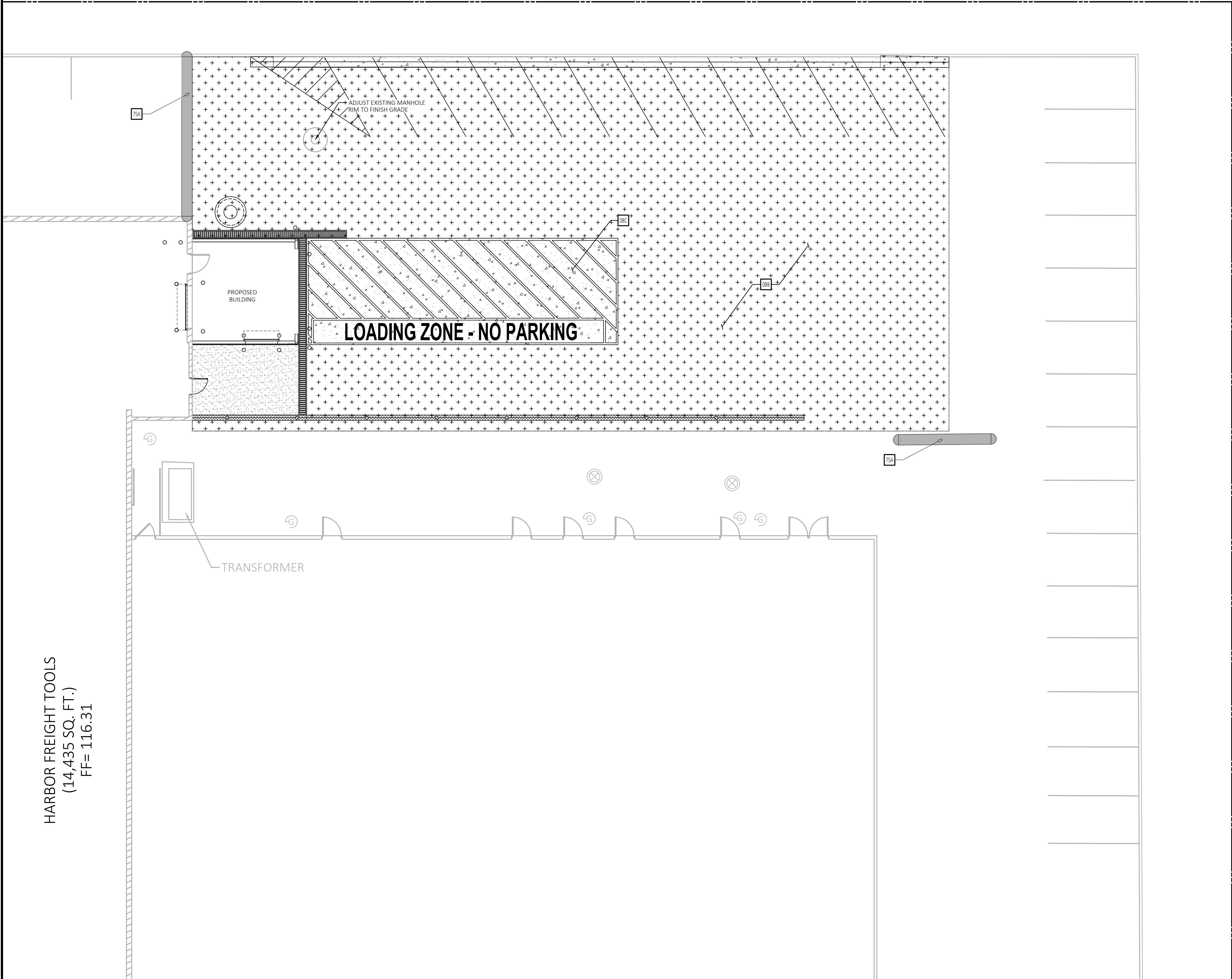
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SHEET TITLE
SHEET NUMBER

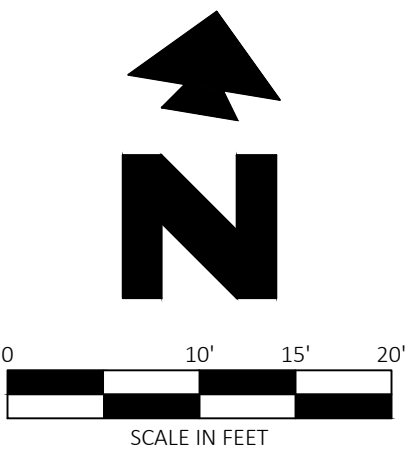
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HARBOR FREIGHT TOOLS
(14,435 SQ. FT.)
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EXISTING LEGEND

e	EAST OR ELECTRIC	OHT	OVERHEAD TELEPHONE
n	NORTH	OHTV	OVERHEAD TV
oh	OVERHEAD	X"SS	SANITARY SEWER
s	SOUTH OR SEWER	UGE	UNDERGROUND ELECTRIC
t	TELEPHONE	UGE&T	UNDERGROUND ELECTRIC AND TELEPHONE
ug	UNDERGROUND	UGT	UNDERGROUND TELEPHONE
w	WEST OR WATER	UGTV	UNDERGROUND TV
---	PROPERTY LINE	X"W	WATER
---	RIGHT OF WAY LINE		
---	STORM DRAIN		
X"G	GAS		
OHE	OVERHEAD ELECTRIC		
OHE&T	OVERHEAD ELECTRIC AND TELEPHONE		

PROPOSED LEGEND

--- PROPERTY LINE/RIGHT OF WAY LINE

GENERAL SITE NOTES

- ALL DIMENSIONS SHOWN ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
- ALL CURB RETURN RADII SHALL BE 2' OR 10', AS SHOWN TYPICAL ON THIS PLAN, UNLESS OTHERWISE NOTED.
- UNLESS OTHERWISE SHOWN, CALLED OUT OR SPECIFIED HEREON OR WITHIN THE SPECIFICATIONS: PAVEMENT SHALL BE INSTALLED IN ACCORDANCE WITH DETAIL 08B OVER THE ENTIRE PARKING LOT AREA AND ALL APPROACH DRIVES. ALL PARKING LOT STRIPING SHALL BE PAINTED PER DETAIL: 09B.

PAVING DETAILS

03D	CONCRETE SIDEWALK
08C	HEAVY DUTY CONCRETE PAVING WITH STRUCTURAL FIBER REINFORCEMENT, SEE STRUCTURAL DRAWING FOR ADDITIONAL INFORMATION.
08B	LOCAL ROAD PAVING SECTION.

HARBOR FREIGHT TOOLS

388 ROUTE 59
NYACK, NEW YORK, 10960

PROFESSIONAL OF RECORD	JDG
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REVISION	REV-0

PAVING PLAN

SHEET TITLE
SHEET NUMBER

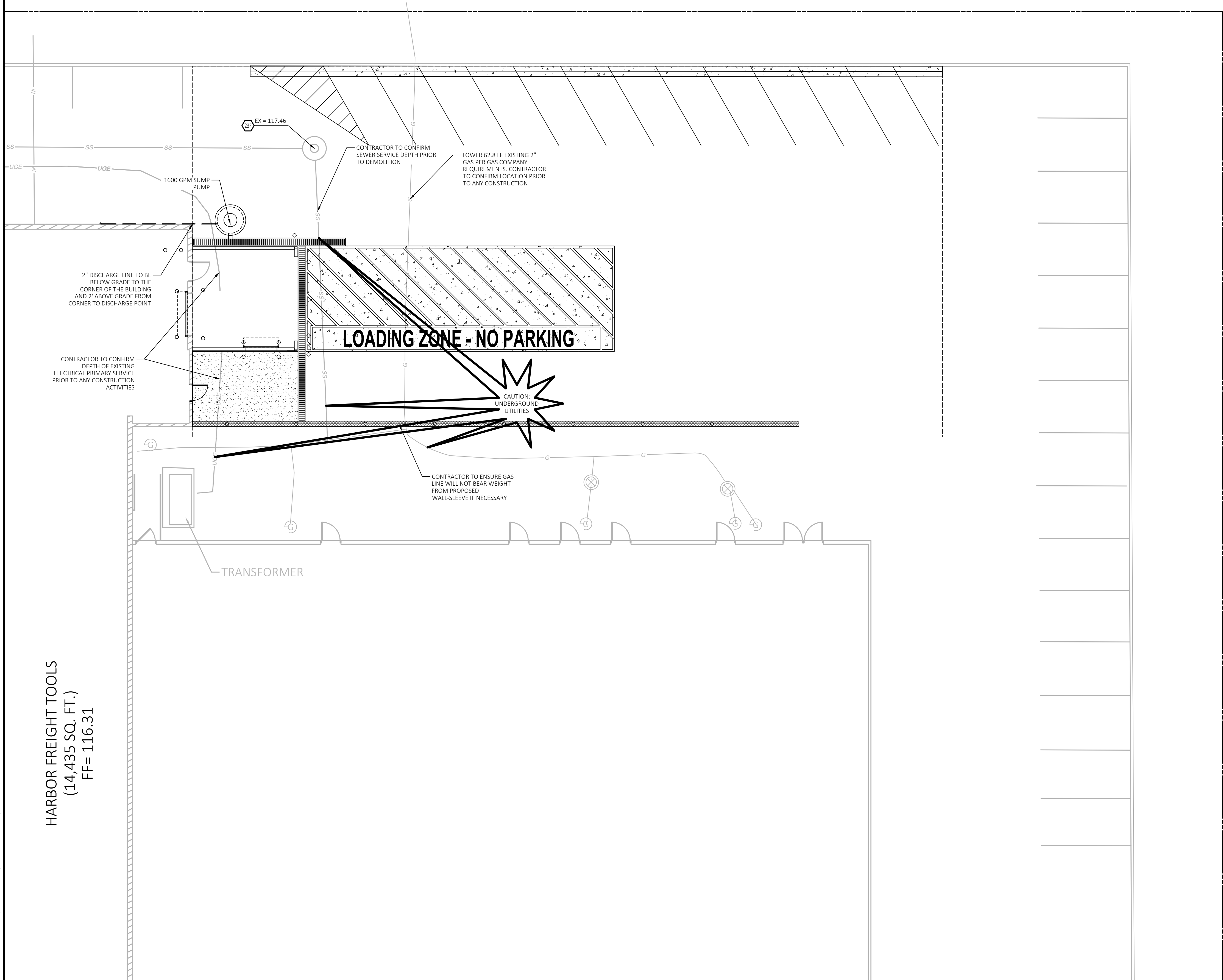
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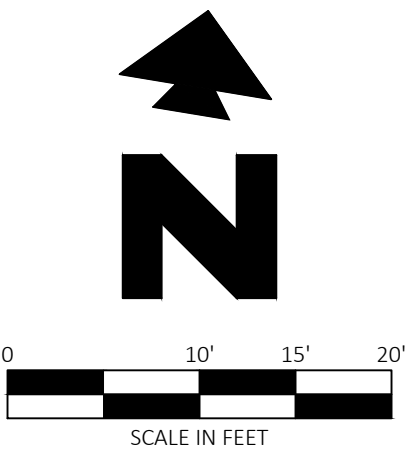
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HARBOR FREIGHT TOOLS
(14,435 SQ. FT.)
FF= 116.31



NOTE:
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EXISTING LEGEND

e	EAST OR ELECTRIC	OHT	OVERHEAD TELEPHONE
n	NORTH	OHTV	OVERHEAD TV
oh	OVERHEAD	X"SS	SANITARY SEWER
s	SOUTH OR SEWER	UGE	UNDERGROUND ELECTRIC
t	TELEPHONE	UGE&T	UNDERGROUND ELECTRIC AND TELEPHONE
ug	UNDERGROUND	UGT	UNDERGROUND TELEPHONE
w	WEST OR WATER	UGTV	UNDERGROUND TV
---	PROPERTY LINE	X"W	WATER
---	RIGHT OF WAY LINE		
---	STORM DRAIN		
X"G	GAS		
OHE	OVERHEAD ELECTRIC		
OHE&T	OVERHEAD ELECTRIC AND TELEPHONE		
⊗	GAS VALVE		
⊕	GAS METER		

PROPOSED LEGEND

---	PROPERTY LINE/RIGHT OF WAY LINE
---	STORM DRAIN
X"G	GAS SERVICE
UGE	UNDERGROUND ELECTRIC SERVICE
X"SS	SANITARY SEWER SERVICE
X"W	WATER SERVICE

GENERAL UTILITY NOTES

- CONTRACTOR SHALL COORDINATE ANY DISRUPTIONS TO EXISTING UTILITY SERVICES WITH ADJACENT PROPERTY OWNERS.
- ALL ELECTRIC, TELEPHONE AND GAS ADJUSTMENTS INCLUDING SERVICE LINES SHALL BE CONSTRUCTED TO THE APPROPRIATE UTILITY COMPANY SPECIFICATIONS. ALL UTILITY DISCONNECTIONS SHALL BE COORDINATED WITH THE DESIGNATED UTILITY COMPANIES.
- CONSTRUCTION SHALL NOT START ON ANY PUBLIC UTILITY SYSTEM UNTIL WRITTEN APPROVAL HAS BEEN RECEIVED BY THE ENGINEER FROM THE APPROPRIATE GOVERNING AUTHORITY AND CONTRACTOR HAS BEEN NOTIFIED BY THE ENGINEER.
- PRIOR TO THE CONSTRUCTION OF OR CONNECTION TO ANY STORM DRAIN, SANITARY SEWER, WATER MAIN OR ANY OF THE DRY UTILITIES, THE CONTRACTOR SHALL EXCAVATE, VERIFY AND CALCULATE ALL POINTS OF CONNECTION AND ALL UTILITY CROSSINGS AND INFORM CEI ENGINEERING AND THE OWNER/DEVELOPER OF ANY CONFLICT OR REQUIRED DEVIATIONS FROM THE PLAN. NOTIFICATION SHALL BE MADE A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION. CEI ENGINEERING AND ITS CLIENTS SHALL BE HELD HARMLESS IN THE EVENT THAT THE CONTRACTOR FAILS TO MAKE SUCH NOTIFICATION.
- SUMP PUMP DISCHARGE POINT TO BE DETERMINED BY OWNER.
- SUMP PUMP LID AND FRAME TO BE HS20 RATED AND CAN BE GRATED.

UTILITY NOTES

23F ADJUST MANHOLE RIM TO MATCH FINISH GRADE.



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HARBOR FREIGHT TOOLS

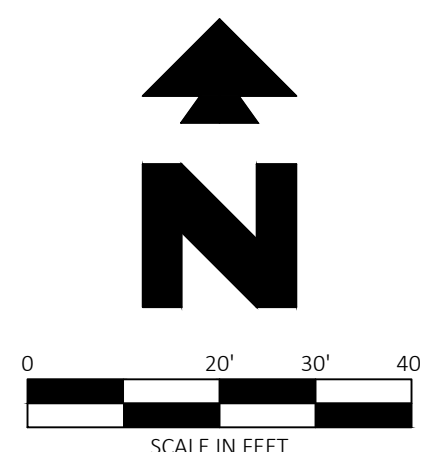
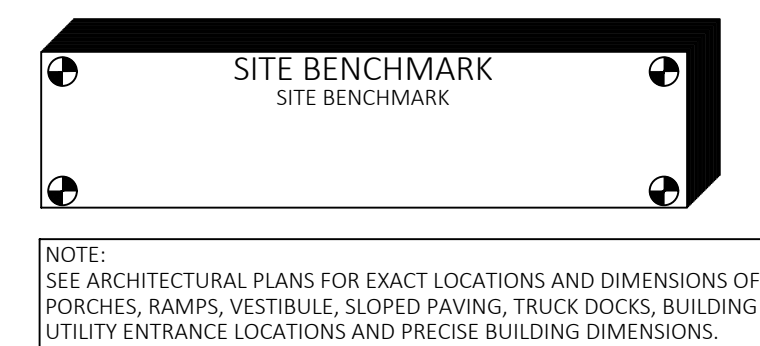
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PROFESSIONAL OF RECORD	JDG
PROJECT MANAGER	JEH
DESIGNER	HMK
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DATE	9/21/2021
REVISION	REV-0

































UTILITY PLAN

SHEET TITLE
SHEET NUMBER

C4



Know what's **below**.
Call before you dig.

EXISTING LEGEND		
	EAST OR ELECTRIC	 OHT  OVERHEAD TELEPHONE
	NORTH	 OHTV  OVERHEAD TV
	OVERHEAD	
	SOUTH OR SEWER	 X"SS  SANITARY SEWER
	TELEPHONE	 UGE  UNDERGROUND ELECTRIC
	UNDERGROUND	 UGE&T  UNDERGROUND ELECTRIC AND TELEPHONE
	WEST OR WATER	
	PROPERTY LINE	 UGT  UNDERGROUND TELEPHONE
	RIGHT OF WAY LINE	 UGTV  UNDERGROUND TV
	STORM DRAIN	 X"W  WATER
		
	X"G GAS	5-10-11 50.5 TREE INFO
		.5 = DIAMETER OF TRUNK IN FEET
	OHE OVERHEAD ELECTRIC	10 = HEIGHT OF TREE IN FEET
		11 = CANOPY DIAMETER IN FEET
	OHE&T OVERHEAD ELECTRIC AND TELEPHONE	50.5 = ELEVATION AT BASE OF TREE

PROPOSED LEGEND		
	PROPERTY LINE/RIGHT OF WAY LINE	x XX.XX
	CONTOUR ELEVATIONS	
	GRADE BREAK	
	FLOWLINE	
	STORM DRAIN	
		SPOT ELEVATIONS: TC = TOP OF CURB G = GUTTER FFE = FINISH FLOOR ELEVATION FG = FINISH GRADE

GENERAL GRADING NOTES

- A. ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION SHALL BE GRADED SMOOTH AND 4" OF TOPSOIL APPLIED, IF ADEQUATE TOPSOIL IS NOT AVAILABLE ON SITE. THE CONTRACTOR SHALL PROVIDE TOPSOIL, APPROVED BY THE COUNTY, AS NEEDED. THE CONTRACTOR SHALL MAINTAIN ADEQUATE EROSION CONTROL MEASURES TO PREVENT EROSION UNTIL HARDY GRASS GROWTH IS ESTABLISHED IN ALL AREAS (SEE LANDSCAPE PLAN FOR SEED MIX AND PROPER APPLICATION RATE). ANY AREAS DISTURBED FOR ANY REASON PRIOR TO FINAL ACCEPTANCE OF THE PROJECT SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- B. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORD DRAWINGS AND FIELD SURVEY DATA. WHERE POSSIBLE, THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES BY EXCAVATION AND RECORD THE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO RELOCATE EXISTING FIELD LINES.

HARBOR FREIGHT TOOLS
(14,435 SQ. FT.)
FF= 116.31

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HARBOR FREIGHT TOOLS

388 ROUTE 59
NYACK, NEW YORK, 10960

PROFESSIONAL OF RECORD	JDG
PROJECT MANAGER	JEH
DESIGNER	HMK
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REVISION	REV-C

GRADING PLAN

SHEET TITLE
SHEET NUMBER

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